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The plunder of bluefin tuna in the Mediterranean and East Atlantic in 2004 and 2005

Uncovering the real story

The collapse of fisheries management

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An independent study conducted by ATRT, S.L. for WWF

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May 2006

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This study has been conducted thanks to funding by the OAK Foundation

Introductory section by WWF

Foreword

WWF has been closely monitoring the rise of tuna farming activities in the Mediterranean since their early beginning, particularly addressing how the rapid expansion of this new industrial activity in the Mediterranean was exacerbating the mismanagement of the already overexploited East Atlantic stock of bluefin tuna (BFT). The reports *Tuna farming in the Mediterranean: the "coup de grâce" to a dwindling population?* and *Tuna farming in the Mediterranean: the bluefin tuna stock at stake*, released by WWF in 2002 and 2004, respectively, soon became acknowledged references on the real extent of the problem and raised international concern on the fate of the world's major bluefin tuna fishery. Indeed, the latter one included a first preliminary assessment of real total catches on the stock, which were roughly established at more than 40,000 t based on the historical share of purse seine catches with respect to total catches. This preliminary assessment already pointed to very substantial unreported IUU catches (if compared to a total TAC of 32,000 t).

Unfortunately enough, the facts during the last 5 years have largely demonstrated that WWF's repeated warns were proven fully justified. ATRT's Tuna Ranching Intelligence Unit reports released in 2004 and 2005 fully confirmed the points raised by WWF, stressing the full global dimension underlying the plunder of the Mediterranean and Eastern Atlantic bluefin tuna population. Today there is consensus that in a context of sustained increase of fishing and farming overcapacity, all the attempts to achieve a real regional management of this key Mediterranean fish resource have resulted in a complete failure. It is not an overstatement to say that the fishery – itself amongst the oldest in the world- faces a high risk of collapse. And this risk is socially and ecologically unaffordable. In this context, WWF believes that the next ICCAT meeting to be held in Duvrovnik (Croatia) in November 2006, where the management of the Atlantic bluefin tuna is to be completely revisited, could well be the last chance to reverse this limit situation.

With the above antecedents, and in view of all the failed previous attempts to reverse this mismanagement picture, WWF has commissioned to ATRT S.L. the current report, with the difficult and challenging task to uncover -for the first time ever- the real figures of IUU catches on the bluefin tuna stock harvested in the Mediterranean and Eastern Atlantic waters. Also, in addition to replying to the question of "how much" this report was asked to give a clear answer to the related key questions of "how?", "by whom?", and "why?", so that in addition to providing a documented assessment of the fishery it gives useful clues on the effective remedial actions that should be adopted by ICCAT this year.

Main findings

For the sake of credibility and transparency of the study, a robust and strongly conservative approach for bluefin tuna (BFT) catch estimates for 2004 and 2005 has been sought. To this end five parallel studies, based on different research approaches and the analysis of independent datasets, have been done. These refer to a) external trade data, b) fisheries data (2004 only; crosscheck of different official reports), c) fisheries data (2005 only; real catch estimates), d) farmed production data and e) traffic of specialized bluefin tuna reefers and containers outwards the Mediterranean. In some of the studies, as deemed necessary, different scenarios have been envisaged. Throughout the different analytical approaches, the best conversion factors to estimate wild round weight have been chosen; in case of doubt, the most conservative figures have been selected.

The main results of this study and some of their immediate implications are summarized as follows:

- **Total catches on the East Atlantic (incl. Mediterranean) BFT stock are dramatically higher than the 32,000 t ICCAT quota.** According to the different studies and scenarios analysed, minimum catches in 2004 and 2005 can be summarized by the following ranges:

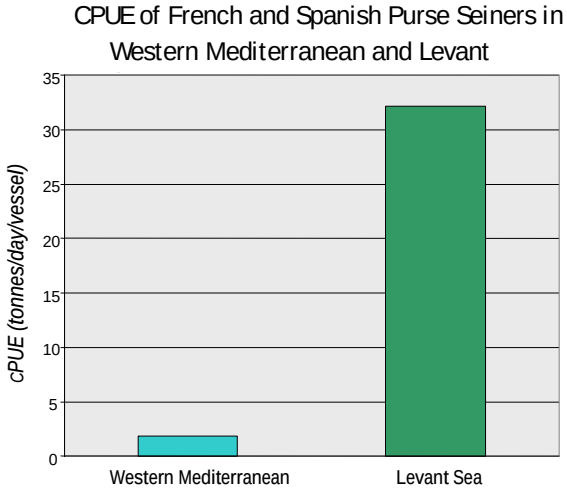
2004 ⇨ 41,998 t < BFT round wild weight < 47,898 t (average of 44,948 t)

2005 ⇨ 41,904 t < BFT round wild weight < 49,191 t (average of 45,547 t)

Conservative estimates of approx. 45,000 t of BFT taken on the Eastern Atlantic stock in 2004 and 2005 reported above entail a minimum illegal overquota catch of 40% above the total quota of 32,000 t set by ICCAT. Accounting for BFT harvested by national fleets in Spain, France and Italy and destined to the respective internal markets would likely point to actual total catches well in excess of 50,000 t.

The above catch estimates are fully consistent with estimates of BFT farmed in the Mediterranean (around 30,000 t per year in 2004 and 2005) and estimates of shipments out of the Mediterranean as reported below.

- **Current catches rely on the last spawning aggregations of BFT in the Southern and Eastern Mediterranean**. Purse seine fleets in the Mediterranean are quickly switching from the more traditional fishing grounds in the Western Basin, now considerably exhausted, to the last breeding refuges in the region found in the Levant Sea and Libya. Dramatically higher catch rates (see Figure below)



and much reduced fuel prices are at the roots of this fishing effort migration.

- **Real catch figures are deliberately underreported at the official level**. In some instances, an important mismatch between official declarations is detected when comparing national reports on trade flows and national catch reports to ICCAT officially informing on compliance with the quota. France's officially reported total catches in the Mediterranean and East Atlantic for 2004 amounted to 9,458 t according to EU Eurostat database (9,456 t reported by OFIMER-DPMA), to be compared to only 7,030 t reported to ICCAT. The former figure is worth 3,225 t above the national quota (51% overfishing).

- **An increasing amount of unreported tuna catches is shipped out of the Mediterranean on board massive reefer vessels and cold containers**. According to industry sources and Lloyd's Marine Intelligence Unit at least 13 reefer freezing vessels and smaller long-line type boats performing 19 trips operated in 2004 to ship frozen BFT out of the Mediterranean, either to Japan or to intermediate transhipment ports like Las Palmas. Reefer activity was higher in 2005, with a minimum fleet of 18 vessels totalling 29 trips. Total estimated frozen BFT taken out of the Mediterranean by these fleets amounted to 25,012 t in 2004 and 47,965 t in 2005 (equivalent round weight at slaughter), assuming -based on industry sources- they operated at their maximum capacity. The latter figure includes 6,403 t of BFT (equivalent round weight) loaded in 230 cold containers in Spain.

- **EU fleets (mostly French) and Libya are largely responsible for most of IUU catches**. According to this report, total BFT catches in the Mediterranean in 2005 by the mixed French, Spanish and Libyan purse seine fleets operating in partnership amounted to 17,232 t (of which some 7,000 t would have been taken in Libyan waters); this figure, attributed to only purse seine vessels operating in the Mediterranean, largely exceeds the total combined 2005 quota (East Atlantic and Mediterranean, all gears) for these three countries. This fleet includes a total 51 modern purse seine vessels, 10 of them being former French ones recently reflagged in Libya but still under direct French control and effectively based in France. Libya has not reported to ICCAT any catch statistics for 2004 and 2005.

  Besides, unreported catches within Libya's Fisheries Zone (excluding the activity of the mixed "multinational" fleets referred to above) are estimated at 3,570 t in 2005, 2,140 t in excess of Libya's ICCAT quota. According to the report, a Korean/Maltese/Libyan "Tuna Hotel" joint-venture inside Libya's Fisheries Zone during 2005 accounted for 1,750 t of BFT having been transferred live to cages, slaughtered and processed at sea (not undergoing any proper ranching activity). Further 910 t were purse-seined and slaughtered at sea by Libyan vessels. These catches remain unreported to ICCAT.

  Some 52 BFT cages were operational inside Libya's Fisheries Zone during 2005. Purse seine fishing there benefited from illegal tuna-spotting flights in June, some of them being operated from Malta and Lampedusa (Italy).

- **Illegal activities by EU BFT fleets are a mockery to European taxpayers.** Most of EU purse seine BFT fishing fleets operating in the Mediterranean were completely renewed in the last 10 years thanks to massive EU public funds out of the

former Financial Instrument for Fisheries Guidance (FIFG). In the case of the French fleet 10 of the original vessels were not scrapped, but reflagged in Libya from where they continued exploiting the same BFT stock under effective French control. The large amounts of unreported catches generated by this highly overcapacity renewed and exported fleet likely result in a gigantic tax fraud to the national and European economic authorities.

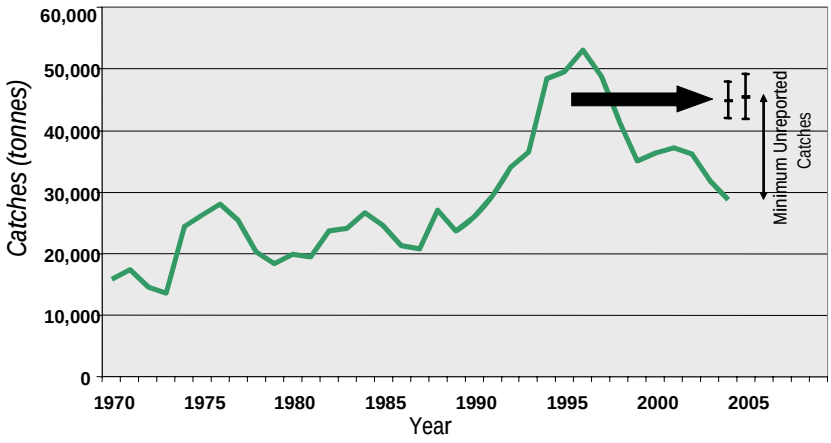
- **The irregular situation of Turkey in ICCAT (no specific quota allocated) has resulted in significant unreported catches**. According to this report, around 2,800 t of unreported BFT catches were ranched in North Cyprus in 2004.

From the above data it can thus be concluded that a very significant share of all BFT harvested in the Mediterranean and Eastern Atlantic waters qualifies as IUU production. Worryingly enough, these massive unreported catches result from the activity of regional fleets belonging to prominent ICCAT Contracting Parties.

It is undisputable that the BFT fishery is currently running out of control, victim of widespread violations of ICCAT rules and of the overall inadequacy of the current management system. Indeed, the scenario pinpointed by this study clearly shows that current catches on eastern Atlantic BFT are similar to those reported in the mid 90's, which suggests that the TAC-based ICCAT management system established in the late 90's was simply never implemented:

The real stagnation of catches during the last 10 years in spite of the dramatic increase in fishing capacity of industrial purse seine fleets, fuelled by the

BFT Catches (E. Atlantic + Mediterranean)

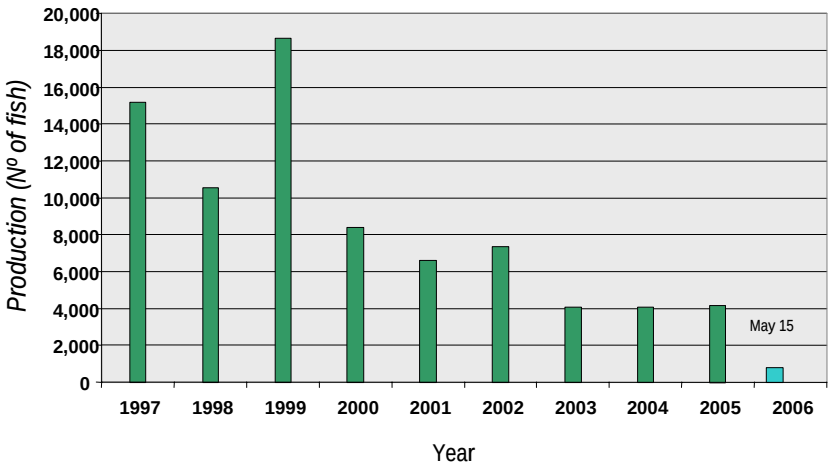


unrestricted expansion of tuna farms, added to the current reliance of catches on the last, previously unexploited, spawning refuges of the species in the Mediterranean (Levant Sea and Libya), points to the likely pre-collapse status of this fishery.

Captures by the 4 Spanish tuna traps in the straits of Gibraltar during the last 3 years declined by near 80% with respect of reference levels in late 90's (from 15,000/18,000 individuals to merely 4,000 individuals). 2006 fishing season (May-June) is the worst ever on record (tuna traps being many centuries old). Only a few hundred tunas had been caught at the mid of the season, which suggest the effective collapse of this fishery, the oldest BFT fishery in the Mediterranean.

Unless strong management measures are immediately implemented to reduce fishing mortality –and it may well be already too late- the collapse of the overall BFT fishery will soon follow.

Spanish Atlantic Tuna Traps Production



Management proposals

WWF calls on the responsibility of ICCAT contracting parties and urges them to adopt a real **long-term recovery plan for the East Atlantic stock of BFT** this year, which should include a set of effective management measures in the framework of an effective reporting system and much reduced fishing possibilities. In the meantime, given the virtual unregulated nature of the fishery and the strong likeliness of a near collapse, **WWF calls for the immediate and complete closure of the fishery**.

In this broader context, WWF believes that the following **4 measures** should be **included in the above-mentioned recovery plan** so as to maximize the chances for the currently overexploited BFT population to rebuild to safe biological levels compatible with a long-term sustainable exploitation, and to avoid the current risk of collapse of the fishery:

1. **Extension of the current seasonal closure for purse seining**

Based on SCRS and other scientific advice:

⇨ Purse seine fishing on BFT in the East Atlantic and Mediterranean shall be prohibited during the period between 1 May and 31 July..

Rationale.- The current overcapacity of tuna farms around the Mediterranean results in a real race for the last tuna. In this context, only clear effort management measures, easy to apply and control, can lead to an immediate real reduction of fishing effort, consistent with the actual harvesting possibilities offered by the stock. Fishing pressure is extreme on the adult, spawner tuna population fraction, which exacerbates the risk of stock collapse. The bulk of spawning size fish catches occur between May and July.

2. **Improved reporting system including observers and real time submission of information to a centralized ICCAT body**

For *Purse seine vessels*:

⇨ Contracting Parties shall appoint observers on board all purse seiners (> 24-m of desk length) targeting BFT, during the whole fishing season.
⇨ Catches resulting from each fishing operation will be reported electronically by the captain of the fishing vessels to the fishing authorities of the flag state within 24 hours.
⇨ The fishing authorities of the flag state will submit to a centralized ICCAT body daily information on total BFT catches by their national purse seine fleet within the following 3 days.
⇨ Observers shall record the amount of catches per fishing operation as well as geographical information and submit it electronically to both the fishing authorities of the flag state and ICCAT centralized body on a weekly basis. They will also inform on any transshipment operation.

For *Farms*:

⇨ Contracting Parties shall appoint 1 observer on each authorized farm during the whole farming period.
⇨ Observers shall record the amount of live tuna involved in each transfer operation (inputs and outputs), including information on the tug boat and the source fishing vessel(s) for

inputs and on transshipments to reefers for outputs. The information will be submitted electronically on a weekly basis to both the fishing authorities of the farming state and ICCAT centralized body.

Rationale.- The current quota system is little more than a political tool to share fishing opportunities among Contracting Parties; it should be urgently transformed into an operational management tool. To achieve this, a new reporting system tailored to fisheries management purposes and supporting real time interventions is needed. Taking into account the enormous difficulties to obtain reliable statistics, the strong concentration of catches in a very short main fishing season and the high economic profitability of the fishery, a compulsory comprehensive observer programme should be put in place for this purpose.

3. Allocation of a total quota for farming on a country basis

⇨ The total amount of BFT authorized to be farmed won't exceed 50% of the total annual TAC for the whole Eastern Atlantic stock.

⇨ Farming possibilities among Contracting Parties will be allocated according to the relative contribution of national farms to total farming capacity as derived from the list of farming facilities authorized by ICCAT as of 1st January 2006.

Rationale.- A limitation of farming rights is essential to put and immediate end to farm overcapacity (currently > 40,000 t) and the resulting race for the last tuna by ever-growing purse seine fleets, as well as to safeguard the short-term profitability of the tuna sector itself. The proposed figure takes into account the needs of other tuna harvesters, like tuna traps, longliners and hook-and-line ones, as well as the market profitability of farmed products.

4. Setting a biologically-based minimum landing size

Minimum landing size (as weight) of BFT in the East Atlantic and Mediterranean will be increased to 30-kg, to match sexual maturity of the species

The opinions expressed in this report do not necessarily reflect
the positions of WWF on the issues herein raised.

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Foreword

The economic and stock sustainability of BlueFin Tuna (*Thunnus thynnus*) BFT is directly linked to its current over-targeting and over-fishing.

On one hand mature and saturated markets have dramatically pulled-down cross-board prices of a once highly profitable commodity to trade with.

On the other hand, it is widely accepted by the scientific community that BFT (currently suffering the highest fishing pressure of its entire history) stock's integrity and regenerative capacity have diminished and deteriorated accordingly.

The unrestrained over-targeting and over-fishing of BFT inside the Mediterranean Sea is paradigmatic, to such an extent that it is difficult to predict whether tuna fishermen will be simply put out of a no-longer profitable business or whether a precarious BFT's stock will continue to spiral downward and simply reach its recruitment failure threshold as its total spawning biomass is no longer able to produce the Maximum Sustainable Yield (MSY)

Certainly this could be a matter for economists and marine biologists to debate about, at a time when achieving both economic and stock sustainability for BFT does not seem to be on everybody's agenda, not to mention the total disconnect between distant Mediterranean BFT fishing & ranching sectors and BFT's traditional main consumer, Japan

As Professor Wilfram Ken Swartz rightly puts it, "*…there now exists a clear disconnect between resource harvesters and resource consumers… The disconnect between extractor and consumer requires that, to fully describe the impact of a population on marine fisheries resources, both consumption and extraction patterns must be described.*"[1]

Undercover of its punch-line title THUNNUS NOSTRUM this report's only pretence is to shed some much needed light on Mediterranean Sea BFT extractor-based exploitation patterns, dominant markets consumer-based exploitation patterns, as well as interactions and imbalances between them, as a mean to analyse and explain the economics fuelling BFT's worrisome over ICCAT-quota/EU-TAC catches in the Mediterranean Sea.

Where needed as specific evidential support, marine biology-based scientific references are cited and their source clearly stated. The reader may further access such references when cited as *Ref.00x*, on this report's attached References CD-Rom.

This report identifies and monitors the economic parameters driving massive BFT over-fishing and therefore of its collateral Illegal, Unregulated and/or Unreported BFT fishing (I/U/U), its incentives, causes and consequences such as market price distortions and damage done to legitimate BFT fishing/ranching operators in the Mediterranean Sea.

Agnew & Barnes of MRAG, Ltd. London[2] qualitative analytical framework to study economic incentives to engaging in Illegal, Unregulated and/or Unreported fishing activities is based around the very basic equation:

IUU incentive ~ Profit from IUU fishing
=
Benefit from IUU fishing – Cost of IUU fishing

According to the same authors, "*there is very little information on which to make quantitative analyses*".

Indeed, obtaining good information and quantitative statistics on the historical and existing levels of BFT over-fishing in the Mediterranean is difficult since the adoption of effective solutions and implementation of compliance measures in one area have simply move such phenomena to another.

Such difficulty, not impossibility, is furthermore enhanced by what can be mildly described as general information and statistical opacity from the sector itself as well as from international and national bodies, regulating and implementing BFT fishing quotas and TACs compliance.

This report nevertheless sustains that BFT over-fishing in the Mediterranean Sea can be circumscribed to the following specific interacting factors:

[1] *Source: Global maps of the growth of Japanese marine fisheries and fish consumption by: Wilfram Ken Swartz B.Sc., The University of British Columbia, 2000, a thesis submitted in partial fulfilment of the requirements for the Degree of Master of Science in the faculty of graduate studies resource management and environmental studies (fisheries centre) September 2004.* Ref. 001.

[2] *AGR/FI/I/U/U(2004)2. ECONOMIC ASPECTS AND DRIVERS OF I/U/U FISHING: BUILDING A FRAMEWORK, Written by consultants Messrs David J. Agnew and Colin T. Barnes of MRAG Ltd., London.2004.* Ref. 002.

- **IUU BFT fishing and illegal use of tuna-spotting airplanes,**
- **ICCAT and EU lack of control over BFT fishing and ranching activities,**
- **An exponentially growing Asian sushi-sashimi consumer market,**
- **Japan's BFT market/distribution transformation,**
- **The modernization of most of the Mediterranean Sea BFT purse seine fishing vessel fleets,**
- **A declining Japanese Yen Vs. Euro,**
- **Lower Yen average prices per kilogram of ranched BFT,**
- **Cross-board rising fuel prices,**

The issue of massive BFT over-fishing is not just circumscribed to the Mediterranean Sea BlueFin Tuna.

[3]Japan has said it has suspicions about Australia as the amount of Southern BlueFin Tuna it exports to Japan allegedly exceeds what it catches.

According to Japanese Fisheries official Shingo Kurohagi "*the fish farmed by Australia become so big to the extent that is impossible biologically; if it is keeping its own limit of tuna catches*".

This report also focuses on documenting the total real captures on the BlueFin Tuna (BFT) stock in the Mediterranean waters made during 2004 and 2005 fishing season mainly by European Union (EU) fleets, including the role played by "data black holes" such as some tuna ranches, tuna high-seas "hotels" and some foreign tuna reefer vessels.

When duly supported by evidential proof, over-quota catches are accurately described and accounted.

This report includes a conservative estimate of real BlueFin Tuna catches during 2004-2005.

Estimates rely on referenced hard facts, official trade statistics and customs declarations. Such data is compared to the officially reported figures to uncover discrepancies.

A detailed account is made of BlueFin Tuna catches occurred offshore Libya and Egypt in spring/summer 2004 and 2005, as a particular case study.

[3] Southern BlueFin Tuna is protected after years of heavy fishing, with the worldwide catch limited to 14,080 Metric Tonnes. Japan is allowed to catch 6,065 Metric Tonnes per year. Australia pointed out at the commission's annual meeting in October 2005 that as much as 99% of the world catch circulated in Japan. An investigation found that Japan has already exceeded its limit by 1,500 tons in the fiscal year that ends in March, Kurohagi said. (Source: atuna news March 7th 2006)

It includes information on total catches, the fishing vessels and companies responsible for them and the precise fate of the fish caught (with detailed references to reefers, farms involved and export ways to Japan).

The authors of this report wish to express their gratitude to an increasing number of Mediterranean Tuna Ranching operators and industry analysts for their help and insider information.

Their legitimate concerns as to the Tuna Ranching industry's future, both from a BFT stock sustainability and a business viability standpoint, clearly reflect the utmost importance of the issues raised.

Further to the July 2005 Yokohama Declaration of responsible tuna fishers,[4] and the set of Fishing Capacity Control measures set forth by Prof. Makoto Miyake and the Organization for the Promotion of Responsible Tuna Fisheries[5], they also clearly call for an implementation of ICCAT's compliance issues executive powers and prerogatives as to the BlueFin Tuna fishery rules' control and enforcement at a time when the European Union has started negotiations with its Euro-Mediterranean partners to reduce tariffs on imports of fish as planned in the 1995 Barcelona Declaration[6].[7]

[4] The Yokohama Declaration of responsible tuna fishers issued at the International Tuna Fishers Conference on Responsible Fisheries and Third International Fishers Forum, July 25-29, 2005, Yokohama, Japan. Ref. 050.

[5] Source: OPRT Newsletter Nº: 10. March 2006. Ref. 003.

[6] November 2005, senior officials kicked off the process, which aims to have a EuroMed Free Trade Area (EMFTA) by 2010, at the first meeting of the Follow-up Committee for the Euro-Mediterranean Roadmap for Agriculture in Brussels. "I believe that trade liberalisation in fisheries products will bring economic benefits and help strengthen co-operation in ensuring sustainable fisheries in the Mediterranean," Joe Borg, EU Commissioner of Fisheries and Maritime Affairs, said. Environmental group Friends of the Earth, on the other hand, said that negotiations should be halted until the end of 2006 when the Sustainability Impact Assessment (SIA) commissioned by the EU will issue its recommendations on the proposed fish and agriculture liberalisation. The EuroMed countries, which include Algeria, Egypt, Israel, Jordan, Lebanon, Morocco, Palestinian Authority, Tunisia and Turkey, have substantial fisheries sectors that, according to WWF, are characterised by widespread violation of management rules that could make them vulnerable to over fishing. In the Mediterranean tuna fishery, for example, WWF has pointed to fishing levels that are over two times higher than the BlueFin tuna populations can sustain. (Source: BRIDGES Trade BioRes, Vol. 5 No. 21, 25 November 2005)

[7] For further information: The European Tuna Sector, Economic Situation, Prospects and Analysis of the impact of the liberalisation of trade. Final Report by: Oceanic Developpement, Poseidon Aquatic Resource Management, Ltd. & Megapesca. November 2005. Ref. 040.

Introduction

Catch limits for BlueFin Tuna (Thunnus thynnus) have been in place for the eastern Atlantic and Mediterranean management unit since 1998. In 2002, ICCAT fixed the Total Allowable Catch for the East Atlantic and Mediterranean BlueFin tuna at 32,000 Metric Tonnes for the years 2003, 2004, 2005 and 2006 [Rec. 02-08]. Compliance ICCAT contracting parties were allotted the following BlueFin Tuna fishing quotas expressed in Metric Tonnes:

Table 001.- BlueFin Tuna EU TACS for the Atlantic Ocean, East of longitude 45°W, and Mediterranean Sea (BFT/AE045W area) were adopted in the framework of ICCAT as follows and for the following Mediterranean EU coastal countries

Distribution of EU 2004 & 2005 BlueFin Tuna TACs for EU Mediterranean coastal states		
Total Tacs for Atlantic Ocean E of longitude 45°W and Mediterranean BFT/AE045W	2004	2005
Cyprus	*	*
Greece	326,00	323,40
Spain	6.317,00	6.276,70
France	6.233,00	6.192,70
Italy	4.920,00	4.888,00
Malta	*	*
* Cyprus and Malta may fish BFT under "Others" ICCAT quota in accordance with COUNCIL REGULATION (EC) No 2287/2003 of 19 December 2003, Ref. 004. & COUNCIL REGULATION (EC) No 27/2005 of 22 December 2004		

Table 002[8] [9] [10]

Country/Year	2003	2004	2005	2006
Algeria	1.500	1.550	1.600	1.700
China (People's Republic)	74	74	74	74
Croatia	900	935	945	970
European Community	18.582	18.450	18.331	18.301
Iceland	30	40	50	60
Japan	2.949	2.930	2.890	2.830
Korea	Pm	Pm	Pm	Pm
Tunisia	2.503	2.543	2.583	2.625
Libya	1.286	1.300	1.400	1.440
Morocco	3.030	3.078	3.127	3.177
Chinese Taipei	Pm	Pm	Pm	Pm
Others	1.146	1.100	1.000	823
Totals:	32.000	32.000	32.000	32.000
Pm: Fishing possibilities attributed to Korea & Chinese Taipei based on their traditional shares of 1,5% and 1,5% will only be activated in a given year when they individually have fished their current level of underages.				

France, Spain and Morocco are the area countries sharing a double Atlantic / Mediterranean coastal façade. France is the only country to distribute its total EU BFT TAC as follows:

Table 003[11]

France 2004 & 2005 BlueFin Tuna Quotas in MT (EU & ICCAT, by region & gears)	2004	2005
Sub Total Mediterranean Sea French Purse Seiner Vessels' Quota	5.309	5.272
Sub Total Mediterranean Sea French "thonailles" or "courantille volante" Vessels' Quota	300	300
Sub Total Mediterranean Sea French Quota	5.609	5.572
Sub Total Atlantic Ocean French Quota E of longitude 45°W	624	620
Total EU BFT French TAC	**6.233**	**6.192**

[8] *Source: COUNCIL REGULATION (EC) No 2287/2003 of 19 December 2003, Ref. 004. & COUNCIL REGULATION (EC) No 27/2005 of 22 December 2004, Ref. 005.*

[9] *See France's BFT yearly TAC distribution and allocation by Sea and fishing gear.*

[10] *See Italy's BFT TAC distribution and allocation by year and fishing gear.*

[11] *Sources: COUNCIL REGULATION (EC) No 2287/2003 of 19 December 2003.*
COUNCIL REGULATION (EC) No 27/2005 of 22 December 2004.
J.O. 134 du 11 juin 2004. Arrêté du 2 juin 2004 portant répartition de certains quotas de pêche accordés à la France pour l'année 2004.
J.O. n° 190 du 17 août 2004. Arrêté du 9 août 2004 portant répartition du quota de thon rouge (Thunnus thynnus) accordé à la France pour 2004 pour la Méditerranée.
J.O. nº 248 du 23 octobre 2004. Arrêté du 14 octobre 2004 portant fermeture du quota de thon rouge (Thunnus thynnus) en Méditerranée pour l'année 2004.
J.O. n° 121 du 26 mai 2005. Arrêté du 16 mai 2005 portant répartition du quota de thon rouge (Thunnus thynnus) accordé à la France, pour l'année 2005, pour la Méditerranée
J..O n° 154 du 3 juillet 2005. Arrêté du 23 juin 2005 portant répartition du quota de thon rouge (Thunnus thynnus) accordé à la France pour l'année 2005 pour l'océan Atlantique.
J.O. nº 240 du 14 octobre 2005. Arrêté du 6 octobre 2005 portant fermeture du quota de thon rouge (Thunnus thynnus) attribué à la France pour l'année 2005 pour l'océan Atlantique, à l'est de la longitude 45° Ouest, et la Méditerranée. Ref. 006. & Ref. 007.

Italy is the only EU Mediterranean country that distributes its total EU BFT TAC as follows:

Table 004[12]

Italy 2004 & 2005 Bluefin Tuna Quotas in MT (EU & ICCAT, by region & gears)	2004	2005
Sub Total Mediterranean Sea Italian Purse Seine Vessels' Quota	3.788,40	3.763,76
Associazione Produttori Tonnieri del Tirreno di Salerno	2.809,10	2.958,88
Armatori Operatori della Pesca di Cesenatico	51,26	48,63
Organizzazione Produttori Tonnieri Siciliani di Messina	355,79	461,61
Others	572,25	294,64
Sub Total Italian Unclassified Gear Quota	246,00	244,40
Sub Total Italian Trap Net Quota	221,40	219,96
Sub Total Italian Sport Fishing Quota	172,20	171,08
Sub Total Italian Long Line Quota	492,00	488,80
Total EU BFT Italian TAC	**4.920**	**4.888**

Figure 001.- GFCM Geographic Sub-areas (Athens, June 2001)

[12] *Sources: MINISTERO DELLE POLITICHE AGRICOLE E FORESTALI. DECRETO 24 giugno 2003. Ripartizione quota nazionale di cattura del tonno rosso tra sistemi di pesca e quote individuali per la campagna di pesca 2003. DECRETO 21 aprile 2004. Ripartizione della quota nazionale di cattura del tonno rosso tra sistemi di pesca e criteri di attribuzione, nonchè ripartizione delle quote individuali per la campagna di pesca 2004. DECRETO 7 aprile 2005. Ripartizione della quota nazionale di cattura del tonno rosso tra i sistemi di pesca e criteri di attribuzione e ripartizione delle quote individuali per la campagna di pesca 2005.* Ref. 008. & Ref. 009.

Table 005.-.[13]

Fishing Cooperative	ICCAT List Number	Current & Reporting Flag	IRCS	Registry Number	Vessel Name	Length	GRT	BlueFin Tuna Assigned Quota
Armatori Operatori della Pesca di Cesenatico	ATEC0ITA00631	EC-Italy	IQGM	ITA000026375	ALTO MARE PRIMO	36	179	23,17
	ATEC0ITA00268	EC-Italy	IQXG	ITA000018123	GIOMADA	24,1	34	20,35
	Not registered with ICCAT	EC-Italy	N/A	04RM00625	NUOVO MADONNA DELLE GRAZIE	N/A	N/A	5,11
Organizzazione Produttori Tonnieri Siciliani di Messina	ATEC0ITA00064	EC-Italy	IZMO	ITA000025652	ASIA	27,56	84,69	25,35
	ATEC0ITA00140	EC-Italy	IWSC	ITA000005167	CRISTIAN PRIMO	25,13	73,79	44,71
	ATEC0ITA00192	EC-Italy	IZRV	ITA000025963	EUREKA	27,56	84,69	31,82
	ATEC0ITA00219	EC-Italy	ITGF	ITA000003246	FRANCESCO PRIMO	31,49	160,63	97,32
	ATEC0ITA00693	EC-Italy	IJPM	ITA000026066	GAETANO PADRE	30,23	89,29	24,75
	ATEC0ITA00671	EC-Italy	IPNG	ITA000026364	MICHELANGELO	37,56	83	44,58
	ATEC0ITA00060	EC-Italy	ICOQ	ITA000017064	ARIES SECONDA*	30,11	162,47	48,63
	ATEC0ITA00073	EC-Italy	ITQB	ITA000016061	AZZURRA*	28,52	100,39	62,40
	ATEC0ITA00424	EC-Italy	ILDQ	ITA000003453	NINO TESTA*	33,1	141,42	26,08
	Not registered with ICCAT	EC-Italy	N/A	00CT02648	COLOMBA II	N/A	N/A	9,00
	Not registered with ICCAT	EC-Italy	N/A	00CT02801	DANIELE	N/A	N/A	4,87
	Not registered with ICCAT	EC-Italy	N/A	07SA00749	LA MARISA	N/A	N/A	3,83
	Not registered with ICCAT	EC-Italy	N/A	07SA00635	S. MARIA A MARE 2	N/A	N/A	12,09
	Not registered with ICCAT	EC-Italy	N/A	05CT00841	SAN PIETRO 2	N/A	N/A	26,18
Independent Vessels	ATEC0ITA00639	EC-Italy	IRDX	ITA000026582	ASSUNTA MADRE	29,71	97,98	33,19
	ATEC0ITA00138	EC-Italy	ITTC	ITA000015869	COSTELLAZIONE	26,73	105,2	59,00
	ATEC0ITA00285	EC-Italy	INJA	ITA000015024	GIUSEPPE DI MERCURIO	24,65	53,67	30,82
	ATEC0ITA00372	EC-Italy	IWLR	ITA000013938	MARIA LUISA	26,22	90,09	48,57
	ATEC0ITA00630	EC-Italy	IIYS	ITA000019198	MARIA PIA	37,54	97,73	54,38
	ATEC0ITA00489	EC-Italy	IJPG	ITA000017244	PETRUSKA	26,5	77,63	45,12
	ATEC0ITA00504	EC-Italy	IZLH	ITA000025622	RAFFAELE PADRE	31,75	53	12,83
	ATEC0ITA00016	EC-Italy	IQAB	ITA000007069	ALDEBARAN*	26,3	75,22	26,71
	ATEC0ITA00066	EC-Italy	IMNV	ITA000007888	ATLANTIDE*	37,99	185,17	1,38
	ATEC0ITA00193	EC-Italy	IQTE	ITA000018189	EUROPA*	27,84	103,55	3,70
	ATEC0ITA00226	EC-Italy	IQXF	ITA000018141	FRANCO PRIMO*	25,4	59,58	0,67
	ATEC0ITA00349	EC-Italy	IFIE	ITA000024891	MAESTRALE*	30,7	118,53	3,81
	ATEC0ITA00541	EC-Italy	IKEW	ITA000004920	SAN FRANCESCO D'ASSISI*	26,15	58,48	1,39
	Not registered with ICCAT	EC-Italy	N/A	00PC01047	ANTONELLA LUCI	N/A	N/A	46,55
	Not registered with ICCAT	EC-Italy	N/A	00VM00617	EUGENIO PADRE	N/A	N/A	1,77
	Not registered with ICCAT	EC-Italy	N/A	03CR00345	MARIA MARGHERITA	N/A	N/A	5,86
	Not registered with ICCAT	EC-Italy	N/A	04RC00959	MARIA SS DELLE GRAZIE	N/A	N/A	2,39
	Not registered with ICCAT	EC-Italy	N/A	02CR00289	NICODEMO SESSO	N/A	N/A	0,65
	Not registered with ICCAT	EC-Italy	N/A	02CR00270	ORIZZONTE	N/A	N/A	2,26
	Not registered with ICCAT	EC-Italy	N/A	02CR00320	S. GIUSEPPE	N/A	N/A	0,40
	Not registered with ICCAT	EC-Italy	N/A	00VM00573	S. VINCENZO	N/A	N/A	1,91
	Not registered with ICCAT	EC-Italy	N/A	00PC01366	SANTA ROSALIA	N/A	N/A	10,55
	Not registered with ICCAT	EC-Italy	N/A	00SA02585	VERGINE DEL ROSARIO	N/A	N/A	1,86

[13] *Vessels marked in dark grey are categorized ISSCFV & ISSCFG by ICCAT as Trawlers/Trawl Nets. Source: MINISTERO DELLE POLITICHE AGRICOLE E FORESTALI. DECRETO 7 aprile 2005. Ripartizione della quota nazionale di cattura del tonno rosso tra i sistemi di pesca e criteri di attribuzione e ripartizione delle quote individuali per la campagna di pesca 2005 & ICCAT.*

Table 005 bis.-. (Cont. Table: 005)[14]

Fishing Cooperative	ICCAT List Number	Current & Reporting Flag	IRCS	Registry Number	Vessel Name	Length	GRT	BlueFin Tuna Assigned Quota
Associazione Produttori Tonnieri del Tirreno di Salerno	ATECOITA00020	EC-Italy	IPCV	ITA000013796	ALFONSO PADRE	41,8	233,24	139,63
	ATECOITA00635	EC-Italy	IPND	ITA000026347	ANGELA MADRE	38,72	105	64,24
	ATECOITA00636	EC-Italy	IKJS	ITA000024580	ANGELO CATANIA	43,18	190,08	113,79
	ATECOITA00030	EC-Italy	IVIE	ITA000015271	ANGELO PADRE II	24,03	70,78	42,37
	ATECOITA00065	EC-Italy	IZJQ	ITA000025543	ATLANTE	36,75	199,95	84,66
	ATECOITA00085	EC-Italy	ILGX	ITA000008898	BEATRICE	43,78	254,78	152,53
	ATECOITA00143	EC-Italy	IFVD	ITA000024907	CRISTOFARO PRIMO	30,28	58,29	34,90
	ATECOITA00645	EC-Italy	IPNE	ITA000026339	DOMENICO PAPPALARDO	40,76	115	50,83
	ATECOITA00188	EC-Italy	IQTM	ITA000017891	ENZA MADRE	42,3	194,56	116,48
	ATECOITA00235	EC-Italy	ILZT	ITA000013807	FULVIA	41,1	236,93	141,84
	ATECOITA00237	EC-Italy	ILFD	ITA000013593	GAETANO	49,3	275,56	164,97
	ATECOITA00654	EC-Italy	IKAP	ITA000026063	GENEVIEVE PRIMA	40,5	109,92	60,72
	ATECOITA00288	EC-Italy	IQRL	ITA000018203	GIUSEPPE PADRE	27,5	84,94	35,87
	ATECOITA00289	EC-Italy	IZJZ	ITA000025551	GIUSEPPE PADRE IIº	33,98	59,91	50,86
	ATECOITA00331	EC-Italy	ISWJ	ITA000017674	LIGNY PRIMO	37,85	153,81	94,43
	ATECOITA00338	EC-Italy	IZKA	ITA000025562	LUIGI PADRE	50,98	155	92,79
	ATECOITA00348	EC-Italy	IKJW	ITA000013581	MADONNA DI FATIMA	42,21	199,4	119,37
	ATECOITA00367	EC-Italy	IQFK	ITA000015476	MARIA ALFONSO	26,3	59,87	35,84
	ATECOITA00368	EC-Italy	ILSA	ITA000008914	MARIA ANTONIETTA	45	243,62	140,79
	ATECOITA00694	EC-Italy	IPVQ	ITA000026549	MARIA GRAZIA	42,35	120	26,15
	ATECOITA00673	EC-Italy	IKIN	ITA000026098	MINUCCIO	41,98	113,63	46,95
	ATECOITA00470	EC-Italy	IFFN	ITA000025009	PADRE PIO P.	38,2	87,63	26,23
	ATECOITA00516	EC-Italy	IVUK	ITA000008872	ROSA MARIA	40	271,36	162,45
	ATECOITA00526	EC-Italy	ILLA	ITA000019870	S. MARIA CARMELA MADRE	34,08	58,13	34,80
	ATECOITA00528	EC-Italy	INJU	ITA000013795	S. RAFFAELE	42,77	247,48	148,16
	ATECOITA00543	EC-Italy	IMUS	ITA000013791	SAN PIETRO UNO	39,22	197,37	118,16
	ATECOITA00583	EC-Italy	IPOB	ITA000003449	TENACE SECONDO	43,78	209,37	120,81
	ATECOITA00612	EC-Italy	ILFT	ITA000013589	VALERIA	49,3	269,22	161,50
	ATECOITA00617	EC-Italy	INFM	ITA000013797	VERGINE DEL ROSARIO	44,32	255,36	152,87
	ATECOITA00562	EC-Italy	IUSS	ITA000007941	SIRIO*	27,05	100,32	7,89
	Not registered with ICCAT	EC-Italy	N/A	00SA00068M	SACRO CUORE DI GESU	N/A	N/A	71,26
	Not registered with ICCAT	EC-Italy	N/A	00SA00066M	SPARVIERO UNO	N/A	N/A	144,74

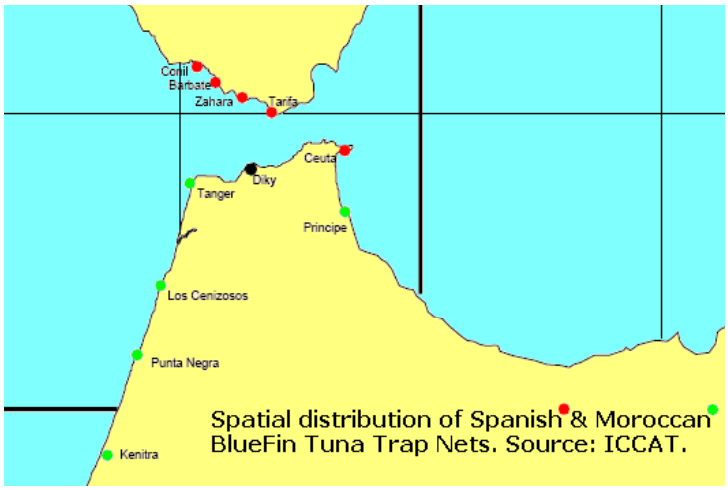
[14] ** Vessels marked in dark grey are categorized ISSCFV & ISSCFG by ICCAT as Trawlers/Trawl Nets. Source: MINISTERO DELLE POLITICHE AGRICOLE E FORESTALI. DECRETO 7 aprile 2005. Ripartizione della quota nazionale di cattura del tonno rosso tra i sistemi di pesca e criteri di attribuzione e ripartizione delle quote individuali per la campagna di pesca 2005 & ICCAT.*

*** The total 2005 assigned BlueFin Tuna quota to non-ICCAT-Registered Italian Purse Seiners (presumably <24m) amounted to 351,28 Metric Tonnes.*

*** The total 2005 assigned BlueFin Tuna quota to ICCAT-Registered Italian Trawlers under the Purse Seine quota amounted to 182,66 Metric Tonnes.

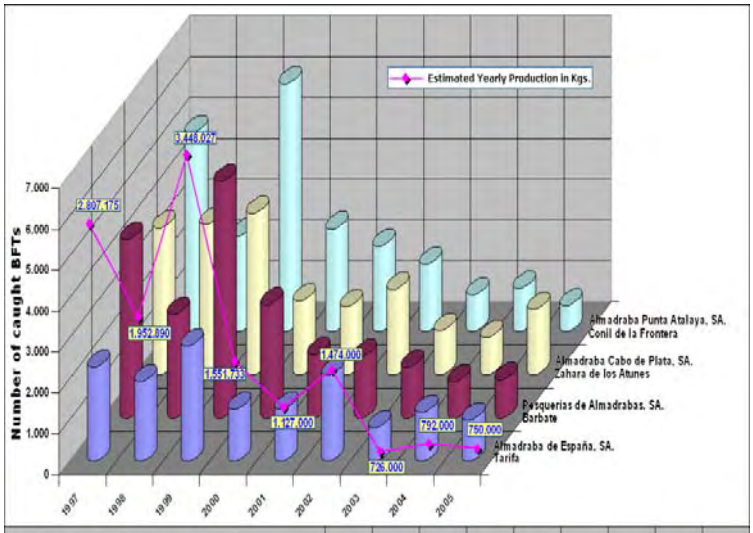
BlueFin Tuna (*Thunnus thynnus*)[15] is more vulnerable to over-fishing than other tuna species. Its population dynamics is complex and analyses of historical data indicate the occurrence of long-term abundance and/or availability fluctuations, therefore questioning some of the current fishery management rules.

Figure 002



One initial indicator of BlueFin Tuna's vulnerability to over-fishing can be extracted from the 1997-2005 catches by the four Spanish Atlantic traditional Trap-Nets in Tarifa, Barbate, Zahara de los Atunes and Conil, clearly in tune with an 80% drop trend in catches during the past seven years. [16]

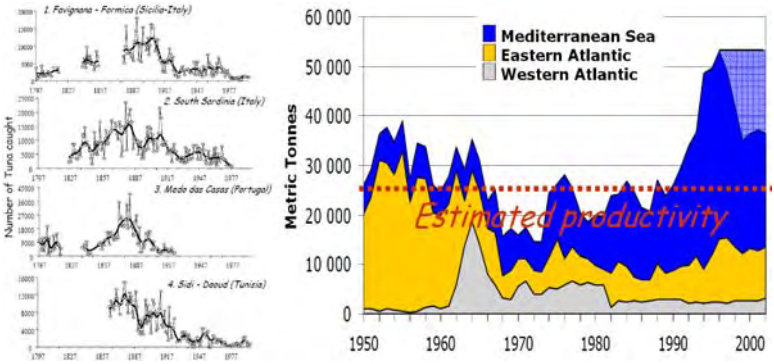
Figure 003



Spanish Atlantic Tuna Trap Net's Production in number of caught BFTs	1997	1998	1999	2000	2001	2002	2003	2004	2005
Almadraba de España, SA. Tarifa	2.324	1.949	2.822	1.278	1.283	2.124	818	1.214	1.020
Pesquerías de Almadrabas, SA. Barbate	4.384	2.556	5.795	2.773	1.547	1.509	1.254	900	940
Almadraba Cabo de Plata, SA. Zahara de los Atunes	3.601	3.695	3.949	1.821	1.675	2.098	1.095	916	1.600
Almadraba Punta Atalaya, SA. Conil de la Frontera	4.869	2.359	6.077	2.518	2.094	1.640	900	1.069	630

Some authors attribute the Mediterranean Tuna Traps' general downward production trend as seen on the following figure, to the likely hypothesis of changes in BFT migration patterns.[17]

Figure 004.- As seen in Data from European program STROMBOLI – Collection of 110 series of trap catches. Jean Marc Fromentin – IFREMER, Atlantic BlueFin Tuna Brief overview, current status & research perspectives, Rome 2005.



The same authors nevertheless state that BFT may be strongly over-fished and overexploited because of the likelihood of unprecedented fishing pressure and strong spatial expansion of the fisheries: Highest catches on record, strong overcapacity and overcapitalisation and long live species fragility.

Another clear indicator of BlueFin Tuna's vulnerability to over-fishing can be extracted from data and trends reflecting total Sport Fishing catches of over 100 kg BFT caught in the Mediterranean from 1992 to 2005.

Sport Fishing catches of over 100 kg BFT caught in the Mediterranean from 1992 to 2005			
Years	Number of catches of BFT (over 100 kg) in the Mediterranean	Weights of BFT (over 100 kg) caught in the Mediterranean	Average weight (in kg) of caught BFT
1992	104	14.929	144
1993	131	21.975	168
1994	94	15.884	169
1995	110	16.913	154
1996	290	44.277	153
1997	273	34.161	125
1998	162	22.444	139
1999	17	2.921	172
2000	98	13.985	143
2001	299	47.790	160
2002	153	21.705	142
2003	98	9.808	100
2004	27	2.067	77
2005	3	405	135

Table 006[18]

[15] *For more on BFT, see: Ref. 078.*
[16] *Sources: Junta de Andalucía, Consejería de Agricultura y Pesca. Análisis de la Producción Pesquera Regional & Organización de Productores Pesqueros de Almadraba (OPP51). Ref. 010.*
[17] *Source: Data from European program STROMBOLI – Collection of 110 series of trap catches. Jean Marc Fromentin – IFREMER, Atlantic BlueFin Tuna Brief overview, current status & research perspectives, Rome 2005. Ref. 011. & Ref. 012. See also Ref. 026.*
[18] *Source: Statement by the Observer of the International Confederation of Sport Fishers (CIPS) to Panel 2 -*

A number of minimum size regulations have been in place since 1975.

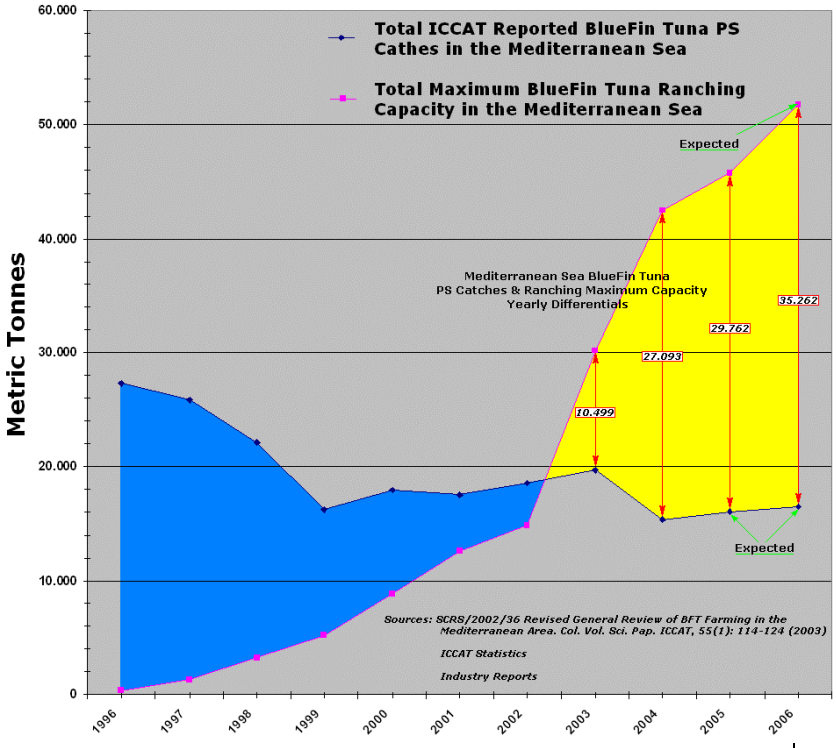
High catch of small individuals still have occurred in recent years in non-compliance with previous measures on size limit of 6.4 kg [Rec. 02-08] and current [Rec. 04-07] size limit regulations at 6.4 Kgs and 10 Kgs, without tolerance, in the East Atlantic and Mediterranean, respectively. Reduction of fishing on juveniles would no doubt contribute to increase in both biomass and yield. The enforcement of [Rec. 04-06] would also allow recovery of the size composition of fish caught by Mediterranean purse seine fleets and transferred into cages.

BFT PS catches account for over 75%[19] of total BFT catches in the Mediterranean Sea.

The time closure of the whole Mediterranean Sea from 16 July through 15 August for purse seine catches and from 1 June through 31 July long-line catches [Rec. 02-08] is widely adhered to.

Recent implementation of Total Allowable Catches (TACs) has nevertheless induced increasing uncertainties in the catch and effort data and made the standard stock assessment almost inoperative.

Figure 005



An initial comparison between ICCAT's reported BlueFin Tuna PS catches in the Mediterranean Sea (1996-2005) and the progression as of 2002 of the Mediterranean Sea maximum BFT ranching capacity, initially suffices to conclude that TAC and national quotas have been overly exceeded and that indeed Illegal, Unregulated and/or Unreported (IUU) BFT PS fishing has and is currently taking place in such area. (See Figure: 005)

Indeed, should an average observer concede that 100% of all BFT PS catches between 2003 and 2005 were unlikely but effectively transferred live into tuna ranching cages, he would then have to conclude that the entire Mediterranean Sea tuna ranching sector worked at 65,25% of its maximum ranching capacity in 2003, 36,18% of its maximum ranching capacity in 2004, 34,96% of its maximum ranching capacity in 2005 and is expected to work at 31,85% of its maximum ranching capacity in 2006.

Such sophistic conclusion is of course irreconcilable with tuna ranching business break-even asset's management standards and would also be in contradiction with the spiralling amount of HDPP gravity tuna pens having been deployed in the region since 2002 by companies such as Corelsa (Spain), Quinta & Quintas (Portugal), Sea Nostromo (Spain), PolarCirkel (Norway), Fusion Marine (UK) and Proteus SA (Greece), among others.

Furthermore, such a comparative exercise does not take into account BlueFin Tuna having been directly landed or frozen on board Reefer vessels in international waters.

Vast BlueFin Tuna I/U/U over-fishing in the Mediterranean Sea is therefore a reality.

[20]Contrary to ICCAT's view that only 1% of the reported catch is to be considered as I/U/U (Restrepo, 2004) *there continue to be reports that there is considerable I/U/U activity in the Mediterranean, with more than 50% of the catch being unreported* (Butterworth, pers.comm.) so much, that though reported landings for 2003 and 2004 (28.205 and 28.961 MT, respectively) were clearly below the 32,000 MT level, ICCAT's Standing Committee on Research and Statistics strongly believes, based on the knowledge of the fisheries and caging system, that substantial under-reporting is in fact occurring.[21] [22]

Proceedings 19th Regular Meeting of the Commission (Seville, Spain, -November 14 to 20, 2005) Provisional January 2006. Ref. 013.

[19] *Source: Fishing in Europe magazine No 23 September 2004. Published by the Directorate-General for Fisheries of the European Commission.* Ref. 014.

[20] *Source: I/U/U Fishing on the High Seas: Impacts on Ecosystems and Future Science Needs FINAL REPORT August 2005. Published by The Marine Resources Assessment Group Ltd. 18 Queen Street, London, United Kingdom.* Ref. 015. & Ref. 016.

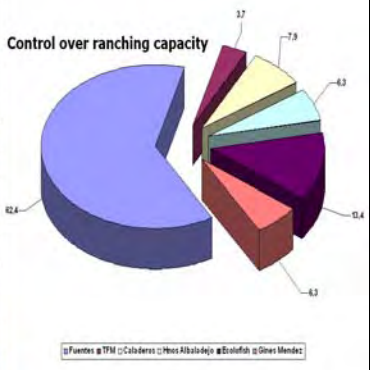
[21] *Source: ICCAT SCRS Report 2004-2005 (III).* Ref. 017.

BlueFin Tuna IUU catching in the Mediterranean Sea has directly impacted the entire fishing-ranching-exporting sector's profitability margins for the past three years; so much that even the Ricardo Fuentes Group from Spain would indeed support dramatic measures such as raising minimum allowed caught BFT weight up to 25-30Kgs and closing the BFT fishery in the entire Mediterranean Sea from July 16th up to March 31st on a yearly basis.[23]

According to industry reports, the Ricardo Fuentes Group from Cartagena, Murcia, operates the World-leading conglomerate of BFT fishing and ranching companies. Grupo Ricardo Fuentes accounts for some 60% of total ranched BFT in the Mediterranean Sea and over 50% of Spain's BFT ranching capacity off the SE coast of the Region of Murcia.

Figure 006

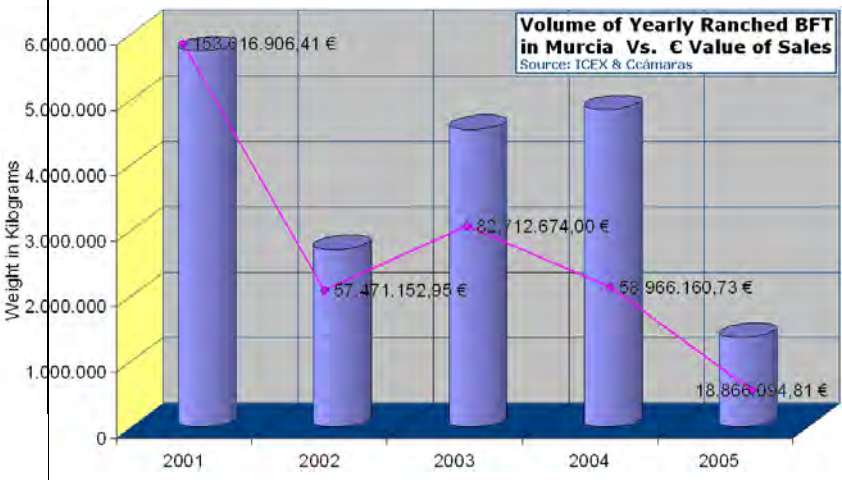
Distribution of Tuna Ranches offshore Murcia, Spain.			
Tuna Ranch	Operator	M2	%
Viver atún Cartagena	Fuentes	640.000	13,4
Atunes de Levante	Fuentes	640.000	13,4
Viver. Mar. Hijos Albadalejo Garcia	Fuentes	640.000	13,4
Servicios Atuneros del Mediterraneo	Ecolofish	640.000	13,4
Viver atún Cartagena	Fuentes	325.000	6,8
Tuna Graso	Fuentes	325.000	6,8
Tuna Farms Grosa (TFM)	Fuentes	412.515	8,6
Tuna Farms of Mediterraneo	TFM	176.400	3,7
Caladeros Mediterraneo	Caladeros	375.000	7,9
Piscifactorias de Levante	Hnos Albaladejo	300.000	6,3
Atunes de Mazarrón	Gines Mendez	300.000	6,3
Totals:		4.773.915	100



The Spanish Tuna Ranching Industry is by far the largest one in the Mediterranean Sea.

It also has been the hardest hit by the sector's crisis since 2004.

Figure 007



Two Tuna Ranching operations, Atunes de Mazarrón and Piscifactorías de Levante, have ceased operations.

Medium-size operations such as Nature Pesca, Ecolo Fish and Caladeros del Mediterráneo, have dramatically cut on costs and have, in some cases, merged/integrated business operational costs and profits with BFT PS owners fishing for them.

Finally, latest Spanish tuna ranching industry reports would confirm such BFT ranching concentration/integration trend during 2006.

According such reports, Grupo Ricardo Fuentes e Hijos would have chartered for some €1,5 million Grupo Antalba's tuna ranching site and infrastructures in San Pedro del Pinatar, Murcia. Grupo Ricardo Fuentes e Hijos is also eying Nature Pesca's tuna ranching operation offshore Vera, Almeria.

Both charter/buy-outs, if confirmed, would not increase Grupo Ricardo Fuentes e Hijos' tuna ranching capacity in Spain since both sites would be used by Fuentes to farm sea-bream and sea-bass in a bid to diversify the group's aquaculture production.

Both major tuna ranching companies, Grupo Ricardo Fuentes e Hijos and Grupo Antalba have continued to delocalise their BFT ranching production to third countries such as Turkey, Cyprus, Croatia, Malta, Libya and Tunisia in a bid to cut down on cage-towing, labour and fuel costs.

In this sense and according to Figure: 008, more and more live-BlueFin Tuna caught by Spanish PS

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[22] "A global failure of BlueFin tuna statistics and Research.

1. A global weakness of scientific investigations by ICCAT countries: most research recommended for BlueFin by SCRS are still waiting to be funded in order to evaluate its real status and prospects: most ICCAT countries do not want to sponsor this much needed research, and they prefer to subsidize their fleet over-capacity (already clear).

2. Nearly a complete lack of fishery statistics (catch, effort or sizes), necessarily the basis of all BlueFin stock assessments. The EU money invested on the daily collection of VMS fishing positions was a large, but useless investment.

3. This lack of statistics is against the EU statistical regulations and laws.

4. A recent lack of stock assessment by the ICCAT/SCRS: due to the lack of basic catch and effort data and due to the structural complexity of the BlueFin assessment, the ICCAT/SCRS has abandoned its responsibility to do a BlueFin stock assessment upon which management recommendations can be established by the ICCAT.

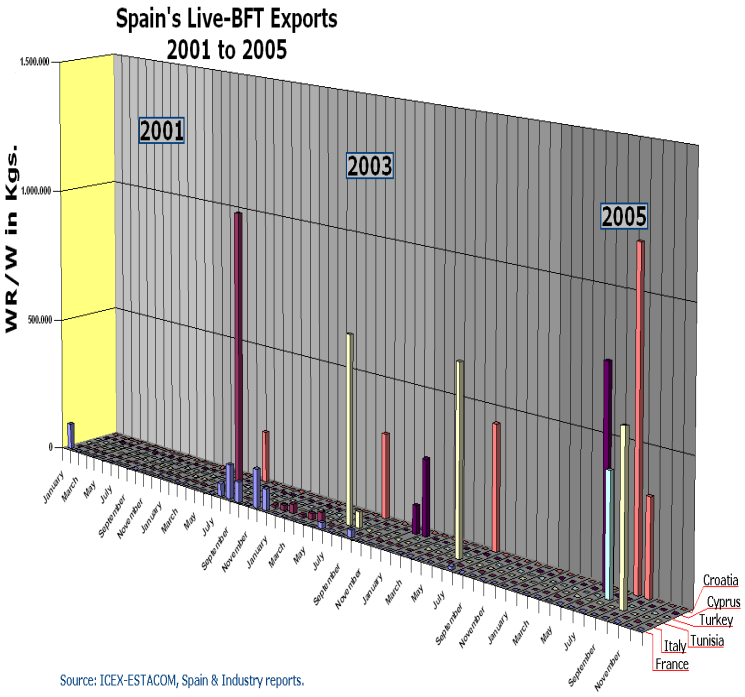
5. There is no hope to see any such assessment by the ICCAT, next year (2006) or soon, as these problems are structural.

Source: BlueFin Tuna management and conservation issues. Save BlueFin tuna! By Alain Fonteneau, IRD tropical tuna expert. Rome 2005." Ref. 018.

[23] Source: Artículo del Mes, www.rutapesquera.com January/February 2006. Nº: 54, Year X. Ref. 081.

vessels in Central and Eastern Mediterranean is being exported to and ranched in those regions.

Figure 008



Fewer BFT transport cages are making the Sicily Channel crossing back to Murcia or Almeria (SE Spain) currently being operated with almost only BlueFin Tuna caught in the Balearic Island fishing ground and off the coast of Morocco or Algeria.

Italian BFT ranching operations almost exclusively feed-on BFT caught in the Tyrrhenian Sea, off the coast of Sardinia and in some cases (New Euro-Fish, from Castellamare del Golfo) on BFT caught off the Libyan coast or the Aegean Sea.

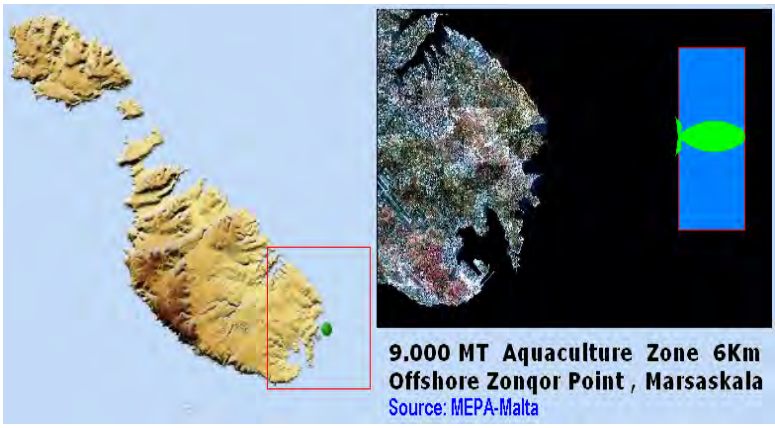
Industry reports point-out that in 2005, Grupo Ricardo Fuentes had to tow four Ø50m cages with some 500MT of live-BFT, to one of its tuna ranches in Spain due to Tunisian live-BFT import restrictions and Malta's incapacity/refusal to take the live-fish for fattening during that year.

BFT ranching production delocalization by major Western Mediterranean tuna ranching companies has been indeed clearly pondered by the Maltese Government.

With a reported national 2005 Wild Round Weight (WR/W) input of some 3.575 Metric Tonnes[24] of live BFT for six ICCAT registered tuna ranching operations, two of them not being operational (Maximum output capacity: 6.350MT)[25] Malta is clearly becoming a magnet for tuna ranching operators interested by the newly EU-adhered island's geo-strategic position in the Central Mediterranean.

In 2006 Malta will house the single largest aquaculture zone in the entire Mediterranean Sea with an estimated 9.000 Metric Tonnes of ranched BFT maximum output.[26] (See Figure: 009)

Figure 009



Though the project has been substantially criticized by Maltese stakeholders at large[27], MEPA's project of ranching no less than 9.000 MT will no doubt benefit from Spanish, French and Italian capital investors and tuna ranchers, interested in balancing their Central Mediterranean production between non EU countries such as Tunisia or Libya and safe/stable EU Malta.

The mega six kilometres offshore Maltese tuna ranching project could nevertheless encounter some serious legal and operational difficulties.

A planned comprehensive campaign against such project, including taking the issue before the European Parliament, is been spearheaded by opponents such as the Malta Chamber for Small and Medium Enterprise or the Malta Aquaculture Producers Association. [28]

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[24] *Source: Non-Technical Critical Analysis Report, compiled for PA 00087/04, Development of an aquaculture zone to the south-east of Malta, off Zonqor Point, Marsascala. 30.11.05. Ref. 019.*

[25] *Source: ICCAT Record of Farming Facilities for BlueFin Tuna (FFB Record) The Recommendations by ICCAT concerning BlueFin tuna farming (Recs. 03-09, 04-06 and 05-4) require the establishment and maintenance of a record of facilities authorized to operate for farming of BlueFin tuna caught in the Convention area (FFBs).*

[26] *Sources: Project Description Statement. Application Number: PA 00087/04. Report prepared by Joseph V. Camilleri B.A. (Gen) B.E.& A. (Hons) A&CE, March 2004. Development o fan aquaculture zone to the SE of Malta off Zonqor Point, Marsaskala, Environment Impact Statement by adi Associates Environmental Consultants, June 2005. Ref. 020.*

[27] *Source: MEPA's Public Hearings, December 1st to 2nd 2005. Ref. 021.*

[28] *Source: An independent Evaluation of the EIS regarding the proposed Development of an Aquaculture*

According to Maltese economist Edward Scicluna and biologist Carmelo Agius, EU policy in this area determines that *"an EIS is reserved for the evaluation of a particular site; specific environmental impacts arising from a particular development project. Where the evaluation is required to examine a project of major strategic significance, both on the industry and on the national economic, social and environmental well-being, the proper tool for the purpose is a Strategic Environmental Assessment (SEA)."*

They furthermore add that: *"The attempt by the consultants to apply the EIS tool to such a comprehensive development having important strategic significance, has meant that major parameters in the area of risk assessment and risk management were accepted as unknowns, thus leading to findings which are in effect completely of no value to the stakeholders and the regulatory authorities.*

One major deficiency is the lack of consultation with major insurers of tuna projects in order to gauge their own independent assessment of the risk related to a project of this magnitude. The other significant deficiency is the lack of consultation with the Japanese purchasers (who hold monopolistic power in the market, being the sole consumers of Blue Fin tuna), about the viability of this project. Their independent view, other than the individual one of the Malta Department of Fisheries, or of the local or any other Mediterranean operators, is crucial to understanding whether the proposal for Malta to be vying to farm up to 65% of Mediterranean tuna ICCAT catches, would upset the delicate balance of diversification known to be practised so far by the Japanese.

Another significant deficiency is the absence of an approved government's national policy on aquaculture relevant to tuna farming. And last but not the least is the EIS' lack of reference to the Maltese Government's considerations vis-à-vis the significance of the proposed zone to the issue of the unilaterally declared "conservation fishing zones" by Libya and Tunisia to the detriment of Maltese tuna fishermen who have been excluded from their traditional wild tuna fishing grounds."

Such harsh criticisms have nevertheless been noted by Grupo Ricardo Fuentes e Hijos who, according to industry reports, is currently preparing to triple tuna ranching capacity in Cyprus as BFT catching predictions for May-July 2006 in the South and inside Egypt's coastal waters is close to 6.000 Metric Tonnes. Half of such production is expected to be ranched in Cyprus; the other half would be directly exported to Turkey tuna ranches.

Furthermore and quite predictably, Turkish tuna ranchers and BFT PS vessel owners will be purchasing live-BFT from French BFT PS vessels in order to maximise Turkey's newly ICCAT declared maximum BFT ranching capacity of 9.460 Metric Tonnes of input Wild Round Weight live BFT.

According to the latest update of ICCAT's Positive List of Tuna Ranching Facilities[29], Turkey has increased its tuna ranching capacity by some 3.160 Metric Tonnes in 2006.

Turkey's 2005 maximum BFT ranching capacity was 6.300 Metric Tonnes of input Wild Round Weight live BFT.

Such increase in BFT ranching capacity has been explained by Turkish Industry sources as corresponding to the 3.000 Metric Tonnes capacity Dardanel Tuna Ranch in Northern Cyprus being relocated in Turkey, due to the political impossibility of having the Dardanel Cyprus, Ltd./Tohto Suisan Co. Ltd. Koma Tou Yialou (Famagusta Bay) joint-venture recognised by ICCAT.

Table 007.-Turkey's Tuna Ranching Facilities. Ranches marked in light blue correspond to new BFT Ranches being inaugurated in 2006.

Name of Tuna Ranching Facility	Location	Maximum declared capacity	Registration or License Number	Name of operator/s
Ak-Tuna Orkinos Besiciligi Projesi	Gazipaþa Antalya	1.000	07.02.30(3).65.901	Ak-Tuna Gemicilik Balikçilik turizm Ve dis Tic Ltd. Sti
Akua-Dem Orkinos Besiciligi Projesi	Gerence Körfezi Area, South East of Çiftlik	800	35.02.30(1).60.856	Akua-Dem Deniz Mahsülleri Paz Ihr. Ltd. Sti
Akua-Kocaman Orkinos Besiciligi Projesi	Ildir area, West of Karabag Island	800	35.02.30(2).68.931	Akua-Kocaman Su Ürünleri Üretim Ltd. Sti
Başaranlar Orkinos Besiciligi Projesi	Gazipaþa Antalya	1.000	07.02.30(4).66.903	Başaranlar Su Ürünleri Yetiştiriciliği Ltd. Şti.
Dardanel Orkinos Besiciligi Projesi	Gazipaþa Antalya	1.700	07.02.30(1).61.852	Dardanel su Ürünleri Üretim A.S.
Sagun Orkinos Besiciligi Projesi	Kemer, Havuz, Antalya	500	B.07.07.0047	Kemal Balikçilik A.S.
Sagun Orkinos Besiciligi Projesi	Kemer, Havuz, Antalya	1.000	B.07.07.0020	Kemal Balikçilik A.S.
Akua-Dem Orkinos Besiciligi Projesi	Çanakkale	400	B.17.07.0010	Akua-Dem Deniz Mahsülleri Paz Ihr. Ltd. Sti
Dardanel Orkinos Besiciligi Projesi	Izmir	840	B.35.07.0075	Dardanel su Ürünleri Üretim A.S.
Mavi Tuna Orkinos Besiciligi Projesi	Izmir	120	B.17.07.0011	Kemal Balikçilik A.S.
Sagun Orkinos Besiciligi Projesi	Izmir	1.000	B.35.07.0076	Kemal Balikçilik A.S.
Sagun Orkinos Besiciligi Projesi	Çanakkale	300	B.17.07.0012	Kemal Balikçilik A.S.

Zone South-East of Malta off Zonqor Point, Marsaskala by: Applied Economics Consulting, Ltd. Commissioned by the Malta Aquaculture Producers Association (MAPA) Report compiled by economist Edward Scicluna and biologist Carmelo Agius. 2006. Ref. 022.

[29] Source: www.iccat.int (Management-ICCAT Record of BFT Farming Facilities) April 19th 2006.

According to the same Turkish Industry sources, Dardanel Cyprus Ltd.'s 2005 production was transferred to Turkish waters in the middle of the fattening season. The Famagusta Bay BFT ranch had a declared maximum input BFT capacity of 3.000 Metric Tonnes.

Not surprisingly, September 2nd 2005, Syria's President Bashar Al-Asad, deposited an Instrument of Adherence to ICCAT, in a clear move by the Syrian Government to benefit from the expected BFT fishing and ranching "big-bang" in the region.[30]

[30] Source: ICCAT. Ref. 047.

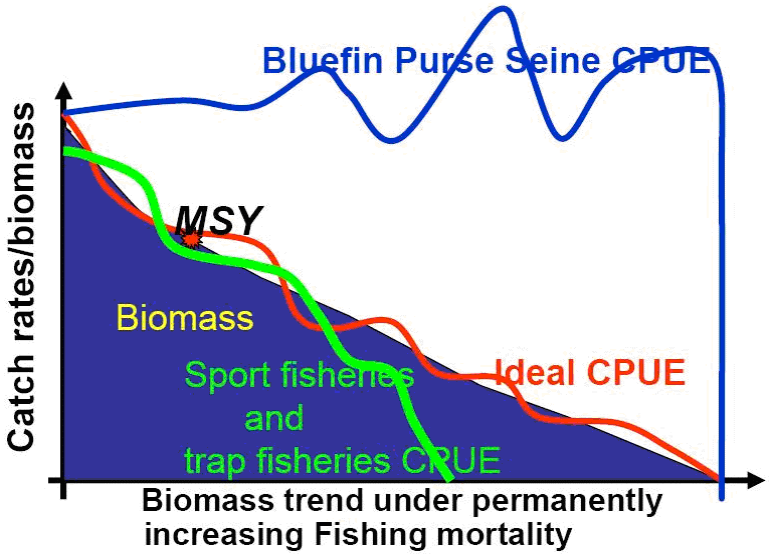
Chapter I.- Major factors, directly impacting the entire fishing-ranching-exporting sector's profitability margins.

A. The modernization of most of the EU Mediterranean Sea tuna purse seine fishing vessel fleets

All[31] EU PS fleets dedicated to BFT in the Mediterranean Sea have heavily invested in renovation and/or new building of ships for the past six years. New vessel hull design, sonar and radar technology coupled with chlorophyll and zooplankton satellite telemetry are directly linked to a dramatic fishing efficiency upward-trend in the area.

This latest generation of Hi-Tech purse seiners has indeed increased CPUEs because of its powerful fishing technology and its geographical flexibility even at very low stock biomass. Yet such fleets' present fishing capacity does not necessarily follow their CPUs' upward trends.

Figure 010.- As seen in BlueFin Tuna management and conservation issues. Save BlueFin tuna! By Alain Fonteneau, IRD tropical tuna expert. Rome 2005.



[31] *Today, there is clearly a wide overcapacity of BlueFin fishing fleets: large increases of fishing efforts have been observed until today, Often, this increase of the fleets, for instance the present fleet of about 200 purse seiners, has been widely supported by various types of subsidies. Most of these vessels cannot move to another target species, being highly specialized in the BlueFin fishery (French purse seiners). This situation of overcapacity has been created despite of the serious over-fishing risks that were already well identified by BlueFin tuna scientists. Present tuna fleets can easily catch 2 or 3 times the yearly quotas recommended by ICCAT. Source: BlueFin Tuna management and conservation issues. Save BlueFin tuna! By Alain Fonteneau, IRD tropical tuna expert. Rome 2005.* Ref. 018.

As Prof. Makoto Miyake opportunely points out: "*…the term "fishing capacity" is often misunderstood, even by the fisheries scientists. Fishing capacity is the potential of catching tunas. Therefore, the term not only includes the vessel's carrying capacity or number and/or size of fishing vessels but socio-economic aspects as well. For example, the fishing capacity of a fishing fleet may decline by fish price, and soaring labour cost while increase by improvements in fishing gears and efficiency.*"[32]

[33]CPUE values, calculated as catch per vessel and day at sea on board 43 previous generation PS vessels during a Mediterranean Sea Summer fishing season, were Spanish PS: ≈ 3,46 MT, Greek PS:≈ 0,22 MT, Italian PS:≈ 2,50 MT and Turkish PS:≈ 3,22.

According to Alain Fonteneau, IRD tropical tuna expert, "*simulation models show that the BlueFin CPUE of mobile & modern purse seiners should tend to remain stable, even at very low stock biomass. On the opposite, CPUs of fixed coastal fisheries tend to over-estimate the decline of total biomass… Atlantic BlueFin tuna stock, fisheries and market show all the characteristics of an inevitable disaster, even if the calendar of this disaster is still unknown. There is little doubt for most scientists that the BlueFin stock is now facing a danger of recruitment over fishing, and possibly of a collapse.*"

All six previously active Spanish Mediterranean BFT PS were scraped and re-built thanks to some €3,5 million soft financial funding through FIFG.

Almost 100% of the French Mediterranean Tuna purse seiner fleet has been re-built.

Contrary to Spain, some of these vessels have not been scraped but re-flagged under Libyan, Cypriot and/or Maltese flag.

[32] *Source: OPRT Newsletter Nº: 10, March 2006.* Ref. 003.

[33] *Source: Project Nº 94/050: Investigations on abundance indices of Purse Seine BlueFin Tuna in the Mediterranean Sea by observers on board and Ciheam.* Ref. 023.

It is reported that the Languedoc-Roussillon Region has destined some €2,5 million in subsidies to modernise such fleet.

Two French shipyards: CN Martinez SARL (St. Cyprien) and Piriou (Concarneau), one Spanish shipyard: Astilleros Armon, SA and one Italian shipyard: Ortona Navi, have excelled with a new generation of faster and cost effective vessels that are currently some of the best performing units in the Mediterranean.

Picture 001.-. Mediterranean type Spanish PS tuna fishing vessel "Nuevo Panchilleta" built by CN Piriou, Concarneau, France. (*Picture courtesy InfoMarine, Spain*)

Picture 002.- Mediterranean type Italian PS tuna fishing vessel "Genevieve" built by CN Ortona Navi. Bureau MAURIC (Length: 42m, Beam: 9m, Max. draught:3,60m, Speed:17 knots, building: Steel hull, Alu. Superstructures, Holds capacity: 175m³ & 58 m³) (*Picture Courtesy by: Architecte Bureau d'Etude Mauric-Marseille*)

Picture 003.- Mediterranean type French PS tuna fishing vessel "Jean Marie Christian VII" built by CN Martinez SARL. Bureau MAURIC, Length: 40m, Beam: 10 m, Max. draught:3,70 m, Speed:17 knots, building: glass/resin composite, Holds capacity: 244 m³, G.O: 70 m³. (*Picture Courtesy by: Architecte Bureau d'Etude Mauric-Marseille*)

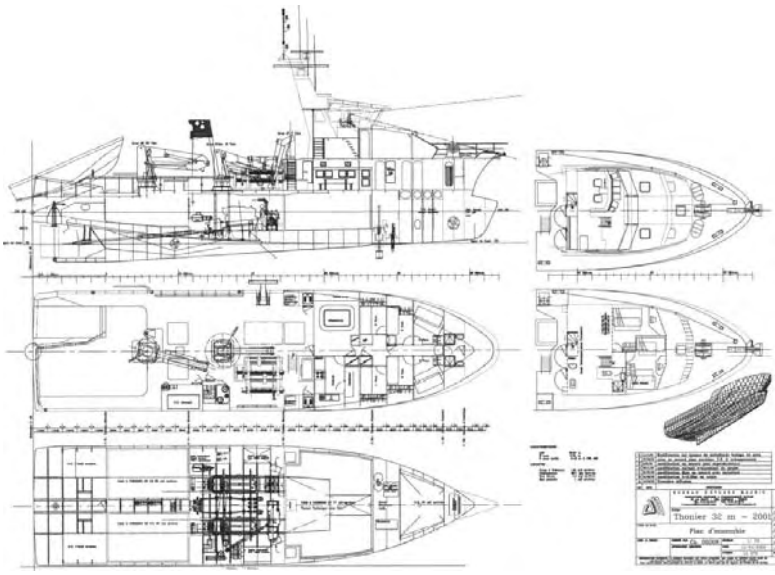


Figure 011.- Mediterranean type French PS tuna fishing vessel Cisberlande V built by Astilleros Armon, SA (Length: 32m, Beam: 8,25m, Max. draught: 3,25m, building: Steel hull, Alu. Superstructures, Holds capacity: 70m³ & x2 29m³)

French, Spanish and Italian purse seine vessels before 1995 were concentrated on small pelagic fisheries.

As of 1995 all three fleets started to modernise vessels and fishing gears as a result of first tuna ranches starting operations both in Croatia and Spain.

Mediterranean BFT PS vessels today, have specialised their activity around the following:

- Caught BFT onboard storage capacity no longer being a priority since almost all catches are transferred-live into gravity transport pens,

reaching BFT resources as fast as possible has become a must in a cut-throat competitive fishery.
Maximum steaming speed has increased as far as up to 19 knots. Both main engines' HP and hull lengths have dramatically soared. In 1992 all Mediterranean BFT PS vessels were below 27m length. As of 2001, the latest generation of hyper-specialized BFT PS vessels is average 35m long.

- Capital investments by BFT PS vessel owners, previously directed to onboard freezing equipment have shifted to:
- More sophisticated onboard quality facilities, (Improving security, communication, comfort: desalinisation systems, security systems, etc.)
- Increased detection efficiency (sonar, tuna-spotter planes),
- Implementing live-BFT capture efficiency by:
- Increasing the number of skiffs,
- Introducing the use of fast water-jet bikes,
- Platforms to lift the skiffs onboard,
- More efficient, bigger and faster sinking nets, in order to secure bigger live-BFT schools before their transfer into gravity transport pens.[34]

BFT PS fleets have also dramatically concentrated, regardless of vessels' nationality, as competition between them is fierce.

France and Spain account for two tri-national BFT PS fleets and four Franco-Libyan BFT PS fleets. Individual boat owners have also developed shared companies allowing tuna ranchers to participate in their boats' capital

B. A declining Japanese ¥ Vs. €.

Figure 012

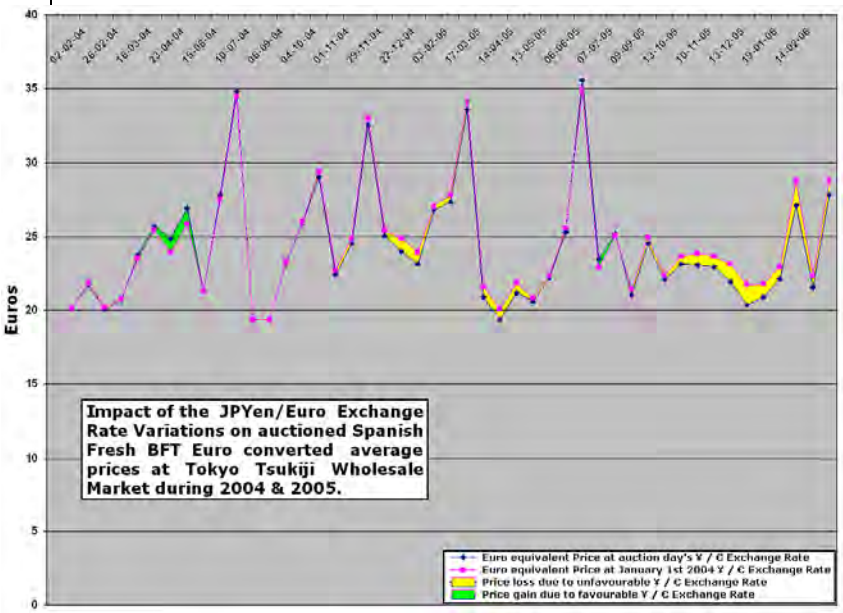
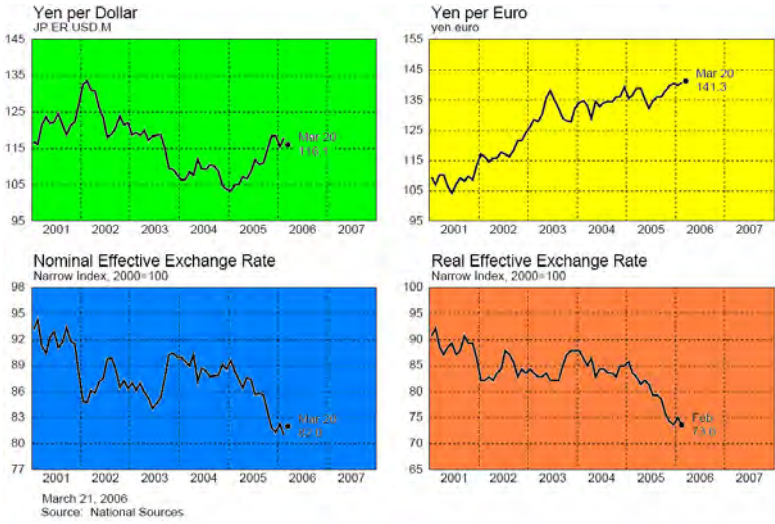


Figure 013.- Cross Rate Effect:



The USD/JPY exchange rate is sometimes impacted by movements in cross exchange rates (non-dollar exchange rates) such as EUR/JPY. To illustrate: A rising USD/JPY (rising US Dollar & a falling Yen) could be a result of an appreciating EUR/JPY, rather than direct strength in the US Dollar. This rise in the cross rate could be highlighted due to contrasting sentiment between Japan and the Euro-zone. Another example: Both EUR/JPY and EUR/USD rally because of a general strengthening in the Euro. For some particular factors (such as better prospects in Japan), this could have a larger impact on the US Dollar than it does on the Yen. As a result, USD/JPY weakens since the Yen is relatively less hurt by the appreciating Euro.

[34] *Note: Caught live BFT can sometimes be secured inside a purse seine net for over 48 hours before a tugboat arrives to the spot and transferring of the fish inside the gravity transport pen is initiated.*

C. Lower JPN¥ average prices per kilogram of ranched BFT.

Figure 014

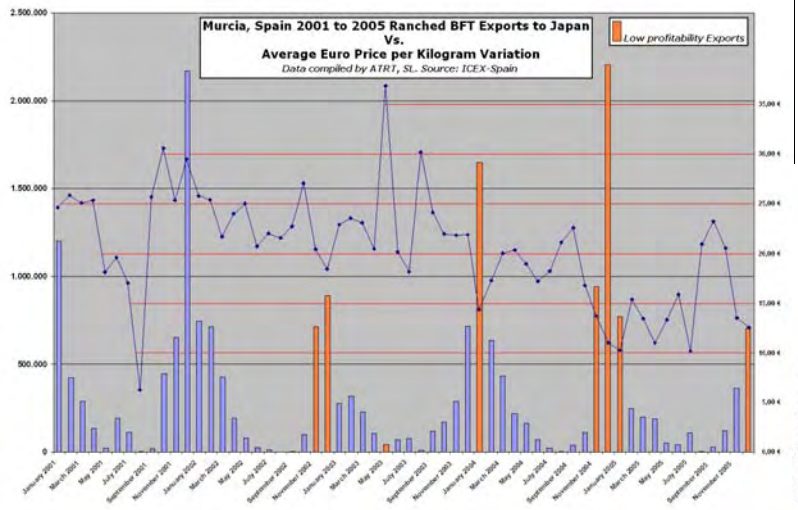


Figure 015

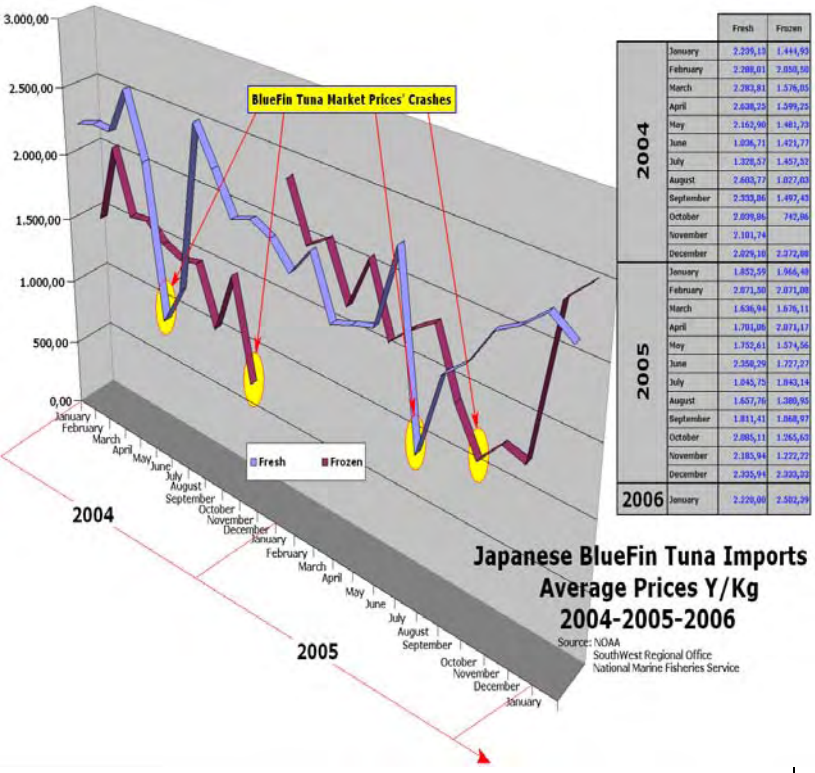


Figure 016

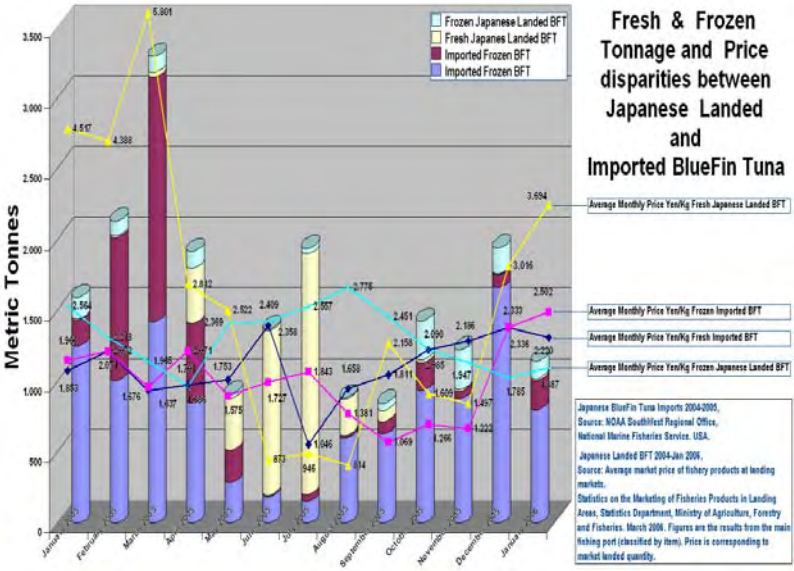
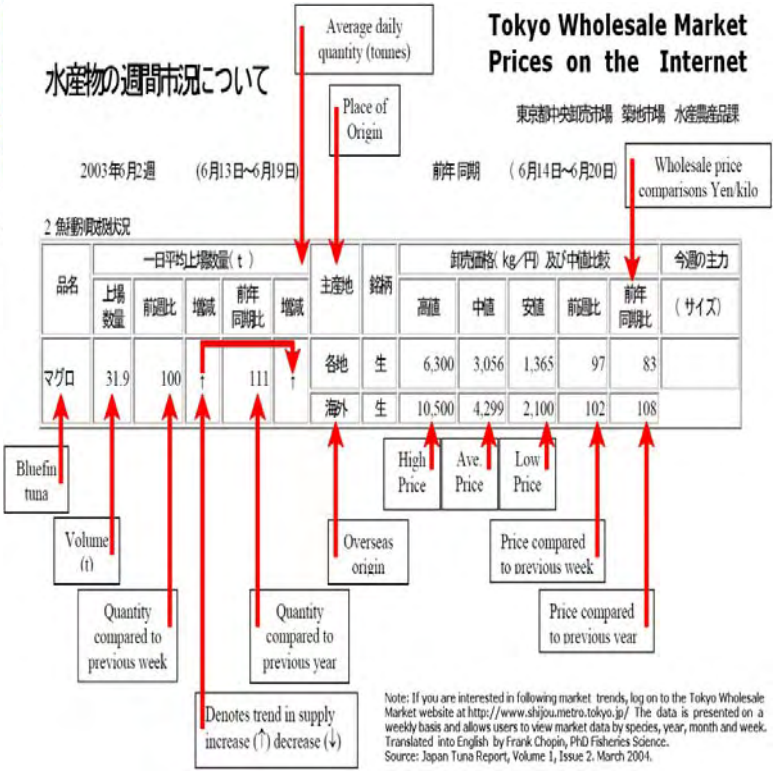


Figure 017



The costs of sending BFT to Japan

Commissions and costs paid in Japan and Origin	Through Tokyo wholesaler	
	Sold in Tokyo	Sold in Osaka
Fish weight (Re-weight in the market) in kg	215	215
Example Original price Yen / kg	3.800	3.800
Auction Price = Weight x Price	817.000	817.000
Auction Price in Euro based on 1Euro = Yen 142	5.753,52 €	5.753,52 €
Japan Consumption Tax (5%)	40.850	40.850
Selling Price (Tax paid)	857.850	857.850
Tokyo auction commission (5.5%)	47.182	
or Tokyo commission on local market (2.0%)		17.157
and Local market commissions (5.5%)		47.182
Customs clearance broker fees	19.248	19.248
Trucking fee in Japan	3.990	22.050
Icing Fee in Japan	4.725	4.725
Bank remittance fee	1.500	1.500
Other fees (Market expenses)	921	921
Duties (WTO) 3.5%	25.130	23.996
Consumption Tax 5%	37.156	35.479
Value after all fees deducted in Japan (yen)	717.998	685.592
Total fees removed by Japanese company and Japan Government in Euros	697,20 €	925,41 €
Money deposited to European Bank account based on 1Euro = Yen 142	5.056,32 €	4.828,11 €
Plant charge Euro 1,46 per Kg	313,90 €	313,90 €
Monitor	14,28 €	14,28 €
Packing material	102,85 €	102,85 €
Ice/labour/trucking	142,85 €	142,85 €
(Freight forwarding)	914,28 €	914,28 €
Total Origin expenses (Deduction)	1.488,16 €	1.488,16 €
Total Deductions by Japan and Origin	2.185,36 €	2.413,57 €
Net Payable to Origin Exporter	3.568,16 €	3.339,95 €
As a % of Japan sale price	62.3%	58.4%

Notes:

1. These commissions are based on dealing directly with a large wholesaler in Japan

2. No additional middlemen involved and no "finders fee paid by Japanese side

3. A Euro/Yen exchange rate based on a spot rate of 142 Yen

Source: Japan Tuna Report. By Frank Chopin. 03/2004.

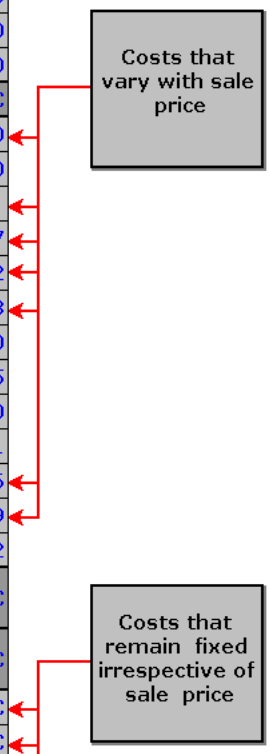


Figure 018

D. Cross-board rising fuel prices

The profitability of almost every BlueFin Tuna Purse Seining fishing fleet and BlueFin Tuna ranch in the Mediterranean Sea has been undermined by the spikes in their running costs, such as for fuel.

Operating profits have been negative for some of them.

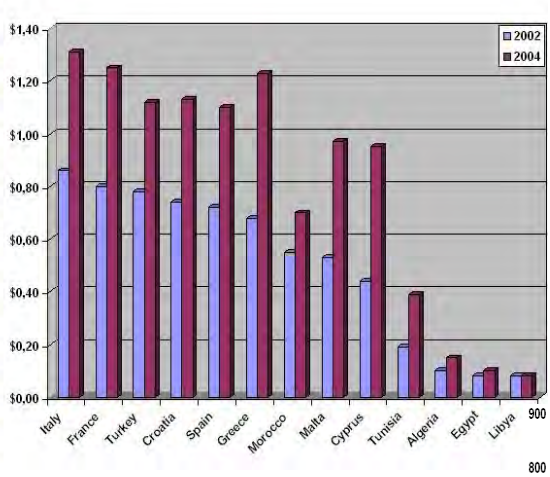
Between January 2003 and December 2005, fuel costs rose from approximately 18% to 36% of the value of landings.[35]

Rising fuel prices have had a serious impact on crew wages, which are a share of the income after deduction of all operating costs, including fuel.

Estimates are that the loss of earnings to crew members may be as high as 25% in some cases.

Figure 019: Time Series of Retail Diesel Fuel Prices in US $ per litre (Last survey 17-20 Nov 2004)[36] Diesel Fuel Prices for EU fishing fleets is heavily subsidized. [37]

Country	2002	2004
Italy	$0,86	$1,31
France	$0,80	$1,25
Turkey	$0,78	$1,12
Croatia	$0,74	$1,13
Spain	$0,72	$1,10
Greece	$0,68	$1,23
Morocco	$0,55	$0,70
Malta	$0,53	$0,97
Cyprus	$0,44	$0,95
Tunisia	$0,19	$0,39
Algeria	$0,10	$0,15
Egypt	$0,08	$0,10
Libya	$0,08	$0,08



Rising fuel prices and related consequences on other operating profits have had a lesser impact on those EU BlueFin Tuna Purse Seining Fleets that have access to the Cypriot, Tunisian, Algerian and Egyptian waters, as well as and especially, the newly declared 60NM *Libyan conservation zone for marine life*.

Such fleets have also access to much cheaper Libyan fuel, bunkered at port or at sea during the summer fishing season, thus creating a competitive prejudice for those fleets operating in the Balearic Island fishing grounds and/or not having access to cheap fuel.

Japanese Imports of Fresh BlueFin by Air Cargo
March 2005 and 2004 in quantities of pieces. Source: Japan Customs

Origin	Nº of farmed pieces		Var. (%)	Nº of wild pieces		Var. (%)	Total Nº of pieces		Var. (%)
	mar-05	mar-04		mar-05	mar-04		mar-05	mar-04	
Spain	1.647	3.409	-52	6	40	-85	1.653	3.449	-52
Italy	0	521	-100	0	20	-100	0	541	-100
Malta	0	24	-100	0	0	0	0	24	-100
Greece	0	0	0	14	3	367	14	3	367
Croatia	0	591	-100	0	0	0	0	591	-100
Turkey	157	625	-75	0	125	-100	157	750	-79
Cyprus	0	10	-100	0	7	-100	0	17	-100
Tunisia	0	178	-100	967	717	35	967	895	8
Totals:	1.804	5.358		987	912		2.791	6.270	

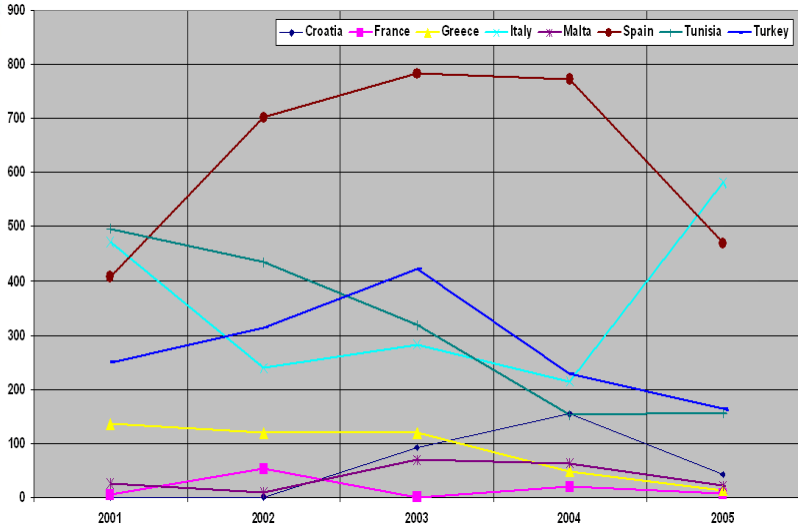
Table 008

Rising fuel prices have also directly impacted fresh BFT air-freighted exports to Japan from almost every single Mediterranean tuna ranching nation, as can be deduced from the downward trend showed on the following Table: 008 and Figure: 020.

However, a number of elements beyond the increase in fuel costs have also had an impact.

Thus, wholesale prices for fresh, chilled and frozen BlueFin Tuna have stagnated in recent years, and in some cases have even declined.

Figure 020. Variation of number of fresh BFTs air-freighted for auction at Tokyo Tsukiji Central Wholesale Market. 2001-2005. [38]



[35] *Source: Communication from the Commission to the Council & the European Parliament on improving the economic situation in the fishing industry. COM(2006) 103 final. Brussels, 09.03.2006. Ref. 080.*

[36] *Source: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH. International Fuel Prices 2005. 4th Edition. Ref. 039.*

[37] *Rescue aid will be financed by EU Member States from their own budgets.*

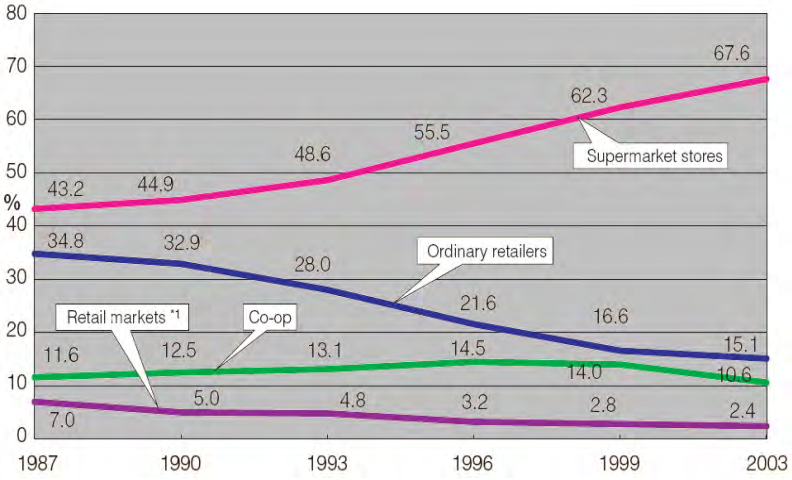
[38] *Source: Tokyo Tsukiji Central Wholesale Market*

E. The exponentially growing sushi-sashimi consumer market and transformation of Japan's BFT market/distribution

Japan's fishery product distribution and consumption habits have changed over the past ten years. A breakdown in family food consumption by food type shows that Japanese families and consumers have increased their consumption of and dependence on cooked meals as more Japanese women have been integrated into Japan's labour force and single-person households have increased.

Spending on fish and meat products for cooking use has tended to decline according to the price drops. Spending on eating out has shifted from slow growth to zero and even negative growth in 2003.

Figure 021.- Breakdown of Food Consumption by Food Pattern.[39]



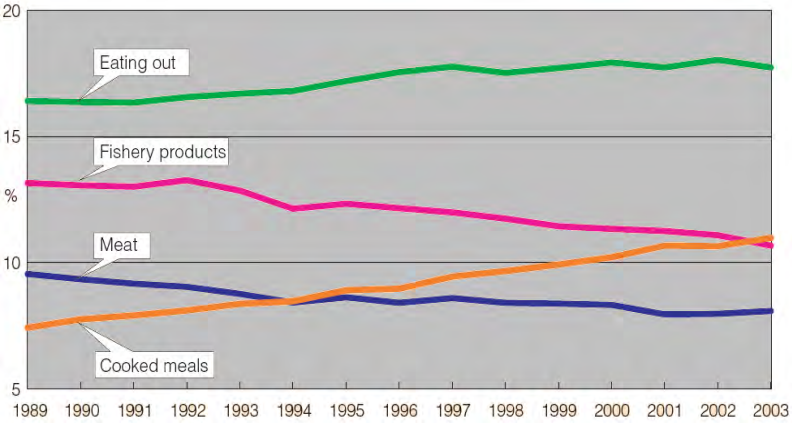


Figure 022.- Historical Changes in Fresh Fish Sales by Retailer Category.[40]

Supermarket stores such as Ito-Yokado, Aeon or Daiei, which lead the so-called convenience-food sector, have expanded their share of fresh fish retail sales to some 70%. As supermarket stores and restaurants have become main demand source for fishery products, direct purchases and bargaining with producers have increased.

Japan's Household Consumption Expenditure and Purchase of Fresh Fish

Year	Household members	Expenditures (yen)			Purchase of Fresh Fish		
		Total	Food	Fish	Amount (g)	Value (yen)	100g unit
1975	3,89	1.895.786	649.887	90.392	60,436	54,569	90,29
1980	3,82	2.766.812	867.393	121.515	55,938	72,324	129,29
1985	3,71	3.277.373	957.528	130.100	52,564	75,481	143,60
1990	3,56	3.734.084	1.030.125	134.482	47,304	77,979	164,85
1995	2,42	3.948.741	1.024.518	126.332	47,841	76,086	159,04
2000	3,24	3.805.600	972.424	110.147	43,634	67,367	154,39
2001	3,22	3.704.298	943.313	106.101	42,508	64,339	151,36
2002	3,19	3.673.550	940.040	104.141	43,889	64,158	146,18
2003	3,21	3.631.473	923.295	98.475	42,327	60,239	142,32
2004	3,19	3.650.436	919.970	94.809	40,918	57,487	140,49
2005	3,14	3.612.567	907.337	92.382	39,642	55,527	140,07

** The 2005 figures represent cumulative total for Jan-Oct plus values for Nov-Dec 2004.*

Table 009[41]

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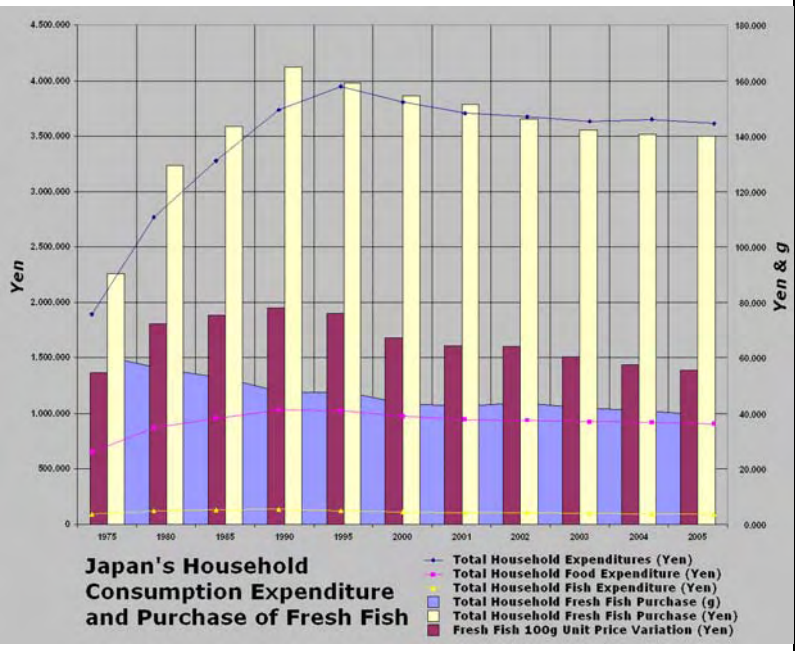
[39] *Source: "Annual Family Income and Expenditure Survey Report" (2-or-moreperson households excluding agriculture, forestry and fisheries households), Ministry of Internal Affairs and Communications. Ref. 042.*

[40] *Source: "Food-Purchasing Behaviours (3rd Regular Monitoring Survey on Food Consumption in FY 2003)," Ministry of Agriculture, Forestry and Fisheries. Ref. 042. *1 Retail markets: A group of retail stores which share the same building. It is also called "market".*

[41] *Demand for fresh fish for household use in Japan has been on a continuous decline, very likely hitting the record low level in 2006. According to an estimate based on a survey on household finances conducted by the Ministry of Internal Affairs & Communications, the amount of fresh fish purchased per household is likely to fall bellow 40kgs a year, the lowest level since the survey started in 1975. In the course of this time, a decrease in the birth rate and a decline in the number of extended family households has led to a record low of 3,14 persons per household in October 2005. This pushed fresh fish demand per household member down to the lowest level. According to analysts, this downward trend reflects the increasing number of people who do not bother to cook fresh fish at their homes... If this trend persists, the scale of the market for fish for cooking could dwindle even further. In contrast to a continued shrinkage of demand for fresh fish for household use, demand for fish for the so-called "home-meal-replacement" HMR), such as prepared foods and home-delivered sushi, is increasing. Also demand for the restaurant industry remains firm, helped by the spread of family-type restaurants serving Japanese foods as well as fast-food sushi restaurant chains. Some industry observers argue that increases in demand for HMR and the restaurant industry are offsetting the decline in household demand. However, the shift in demand from household cooking to HMR and restaurants could, in the long range, lead to a decline in demand for fishery products as a whole because home cooking skills and the techniques to judge the quality of fish at the time of purchase are not handed down to the next generation. Source: Ministry of Internal Affairs & Communications, Japan Fisheries Association-Isaribi Nº 49. March 2006. Ref. 024.*

Figure 023



Supermarket stores' fish sales have therefore "*increased conspicuously because single-person households do not proportionately save much by cooking at home. While the increase in eating-out was triggered by the increase in single-person households, it has also spread among two-person or two-generation households as the restaurant industry itself has developed markedly.*

Table 010[4243]

Retail prices variation of Yen/100g of Tuna Fish by cities (January 2004 to 2006)

Year	Sapporo	Sendai	Ku-area	Yokohama	Niigata	Nagoya	Kyoto	Osaka	Kobe	Hiroshima	Matsuyama	Fukuoka	Kagoshima
2006	295	363	404	433	236	509	527	370	414	343	370	325	500
2004	294	391	396	403	275	470	511	333	428	346	384	338	551

Large retailers, such as supermarkets and convenience store chains are stepping up sales of ready-to-eat fish products targeting single-person and other households.

As a result, these large-lot buyers of fish have come to take the initiative in the marketing of marine products in Japan. They have reduced their sales costs by merchandizing cooking & preparation processes and are pressing producers for price reductions against the backdrop of their powerful purchasing capabilities. At present, intense competition for this new market is causing fish prices to continue to fall annually.

The fisheries industry is feeling threatened by this development. Some industry analysts term this trend as a deflationary spiral. It is apparently caused by the fact that large-lot buyers, such as supermarkets, convenience store chains and the restaurant industry, which have taken the lead in the market, do not have sales know-how for fishery products and are trying to compete only through price dumping. The concern of the fisheries industry is that they face the risk of broad confusion in the market unless they develop a demand for higher-quality and higher-value-added products." [44]

Further to the above-mentioned deflationary spiral "*many retailers streamlined the wholesaler base through disintermediation. As a result, thousands of wholesalers have disappeared. Remaining wholesalers have increased reliance on large retailers. This harsh business environment influenced many SMEs engaged in fish wholesaling to consider new market channels like e-commerce.*" [45]

The recent explosion of the sushi-sashimi market in [46]Japan where +33% of tuna served amongst others at over 2,700 Genroku conveyor-belt sushi restaurants[47] is ranched[48], the emergence of an over

[42] *All prices in JP Yen. Source: Ministry of Internal Affairs & Communications, Statistics Bureau, Japan.*

[43] *On Feb.24, 2006 the Japanese Organization for the Promotion of Responsible Tuna Fisheries: OPRT held a seminar on tuna farming in Tokyo in response to the consumers' concern over the rapid increase of farmed tuna imported to the Japanese market in recent years. Producers, traders, and administrators etc. explained about the current status of tuna farming. Consumers expressed a concern about the safety of farmed tuna and the impact to the resource management caused by rapid expansion of the product. Japan is the de-facto sole market of farmed tuna, importing more than 30,000 tons of farmed tuna in 2004.*

[44] *Source: Isaribi No. 50. March 2006. Ref. 060.*

[45] *The Impact of e-Commerce on the Japanese Raw Fish Supply Chain by: Kazunari Watanabe, North-western University, Chicago, Illinois & Edmund W. Schuster‡ MIT Auto-ID Centre. Ref. 061.*

[46] *Japanese consumers can afford to eat "toro" (oily BlueFin Tuna meat) at "kaiten" conveyor-belt sushi bars or buy it at supermarkets due to tuna ranching. Japan imported about 3,000 Metric Tonnes of ranched BlueFin Tuna some 10 years ago. The volume in 2005 may have totalled about 35,000 Metric Tonnes. The increase in the import has helped reduce prices of high-grade tuna from more than ¥5,000 per kilogram during the period of Japan's bubble economy to the range of ¥800 to ¥3,200 per kilogram (Source: OPRT). Ref. 025.*

[47] *Source: How sushi ate the world by Alex Renton. Published by The Observer-Observer Food Monthly (UK) 26/02/2006. Ref. 027.*

[48] *Source: Offshore Non-Salmon Aquaculture: Tuna Culture as a Demonstration of Commercial Scale Production. Don Kent, Hubbs-Sea World Research Institute, San Diego, CA. USA. Ref. 028.*

100 million potential sushi-sashimi consumers market in [49]urban Asia, especially urban mainland China[50], the expanding European ready-to-eat sushi platter industry and therefore the need for cheaper and more abundant commodity, has also negatively impacted the BlueFin Tuna *Thunnus thynnus* (Linnaeus, 1758) stock in the Northern Atlantic and Mediterranean Sea.

As Australia's Tuna Boat Owners Association President Brian Jeffriess points-out "*what farmed tuna has done is open up the Japanese market and made sashimi tuna accessible to the average Japanese consumer*." [51]

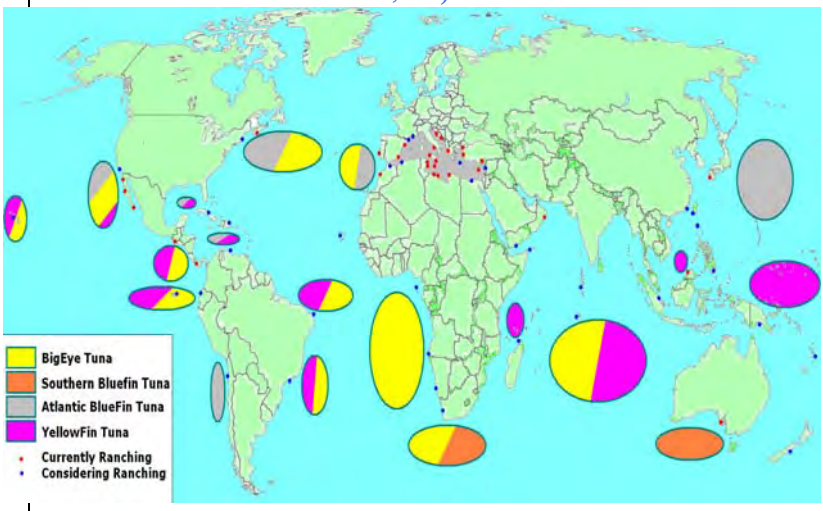
Tuna ranching has also mushroomed worldwide for the past four years. Almost 95% of ranched tuna ends up in the Asian market. Most tuna stocks around the world will reach their maximum sustainable yield. In some regions over-exploitation levels will be reach within the coming 2 to 3 years. Even skipjack stocks might reach their MSY within the next 2 years.[52]

Major Japanese and European Tuna traders and distributors have furthermore initiated delocalizing their frozen-ready-to-eat sushi production to third countries such as Mainland China, Thailand, Philippines, etc… in an obvious attempt to lower down production costs.

Mitsubishi Corporation operates directly or through its subsidiary (Mar 2004 $US1.49 billion Net Sales) Toyo Reizo Co. Ltd.[53] with raw tuna for sashimi as its principal product.

With a $US.6,947.30 million 2005 Revenue, the Maruha Group[54] gets over half of its sales from fish and shellfish. The company also provides canned, frozen, and other processed convenience foods. Maruha has joint ventures in 15 countries to obtain and process fish. Maruha Group operates directly or through its subsidiaries: Daito Gyorui Co. Ltd, Shinco Gyorui Co. Ltd, Taiyo A&F Co. Ltd. (TAFCO), Westward Seafoods, Inc, or Kingfisher Holdings Ltd. among others.

Figure 024.- Countries Ranching Tuna. (*Map compiled by ATRT, SL.*)



Trading house Sojitz Holdings Corp, the 2003 merger between Nichimen and Nissho Iwai Corporations, imports from a diverse number of countries including Turkey, Australia and Mexico, to ensure a stable supply of high quality tuna.

Sojitz Holding has contracted with TRY, Inc., a wholesaler of tuna in Shimizu City, Shizuoka Prefecture, to process and market raw frozen tuna. Moreover, Sojitz Holding has established a company in Dalian China, Shuang Ri Food Co., Ltd with a local fishery firm, engaged in the storage, processing and sales of deep-frozen sashimi tuna, to address robust overseas demand.

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[49] *"Japanese food is in vogue in urban Asia and demand for sashimi and sushi products is on the rise. This has created opportunities for selling sashimi grade tuna particularly in urban Asian cities such as Shanghai, Guandong, Beijing, Dhalian (in China), Hong Kong, Taipei (in Taiwan), Singapore, Kuala Lumpur (Malaysia), Bangkok (Thailand) and Ho Chi Minh City (Vietnam). Many holiday resorts in the Asian Far East have also added sashimi tuna in their buffet lunch and dinner menus. Fresh tuna loins treated with carbon monoxide are exported to Hong Kong and Taiwan regularly which are used for sashimi and sushi products. Lately supermarkets in Singapore and Malaysia have also introduced fresh tuna loins in the seafood section. Fresh sashimi is also an item offered in many upmarket hotels and restaurants in the Asia Far East. China, housing the largest population in the world, is potentially a big market for sashimi as well as canned tuna. Nowadays, Chinese tuna fleets operating in the Pacific Ocean are selling part of their catches on the mainland. Last year, the leading Japanese conglomerate Nissho Iwai launched a promotional campaign for sashimi tuna in China. Canned tuna consumption in China is still very small. However, considering the market potential, Dongwon of South Korea has set up a joint venture tuna canning facility in China. Canners in Thailand are now waiting for lower tariffs on canned tuna. Raw fresh tuna is now used for preparing the auspicious "Yee Sang" or prosperity dish served during the Chinese New Year festival. Traditionally, freshwater carp has been used to prepare "Yee Sang". However, salmon and, more recently, tuna have been increasingly used due to the colour factor. Red and orange are popular and auspicious colours among oriental Chinese." (Source: Globefish-Infofish-Tuna Market Report-Asia-March 2005)*

[50] *See Pacific BlueFin Tuna: Treasure box for scientific studies or Pandra's Box? By: Ziro Suzuki, National Research Institute of Far Seas Fisheries, Shimizu, Japan. PFRP Research Priorities WS (Nov. 16-18, 2005)* Ref. 095.

[51] *Source: Port Lincoln Times. 4 May 2006.*

[52] *Source: "Where is our Tuna Business Heading? (Part 1) by Henk Brus, January 21, 2005.*

[53] *Source GAIN Report-JA5704.* Ref. 029.

[54] *Source: Maruha Group Inc. New Wave 21. Maruha Group Mid-Term Management Plan. 2005-2007.* Ref. 030.

Japan's BFT Cold Storage Holdings 2004-2005 *	Metric Tonnes
January 2004	17.463
February 2004	18.700
March 2004	17.985
April 2004	18.511
May 2004	17.962
June 2004	16.728
July 2004	16.912
August 2004	17.027
September 2004	20.558
October 2004	19.712
November 2004	20.709
December 2004	16.571
January 2005	17.487
February 2005	18.863
March 2005	19.961
April 2005	18.968
May 2005	18.414
June 2005	17.864
July 2005	18.135
August 2005	15.990
September 2005	17.992
October 2005	18.955
November 2005	17.827
December 2005	15.557

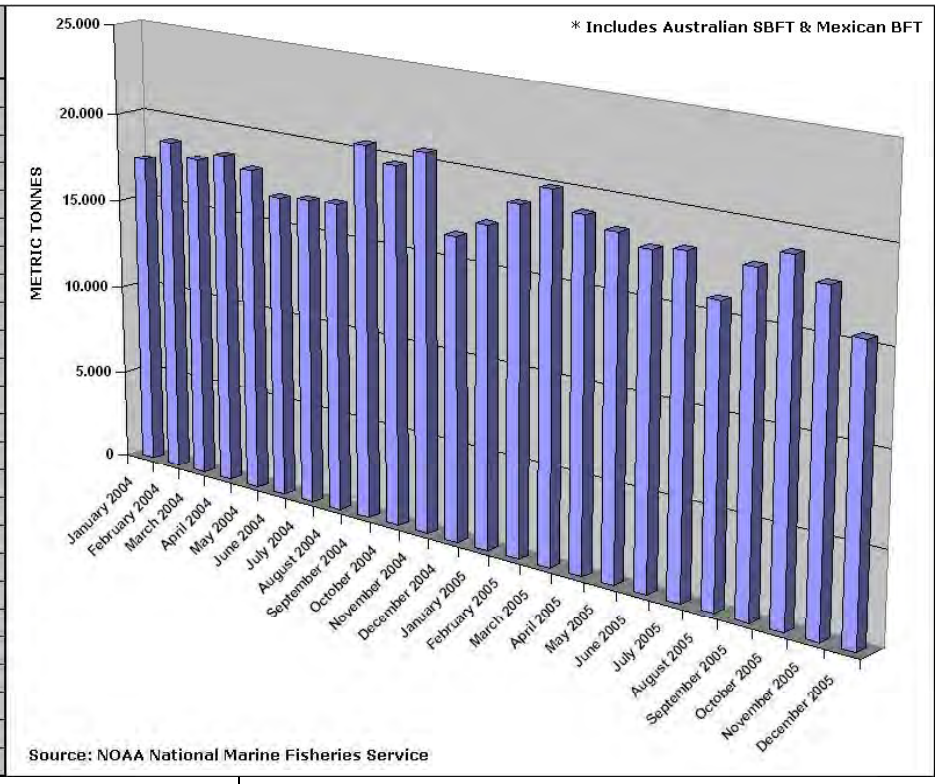


Figure 025.- Japan's Frozen BFT strategic reserve.

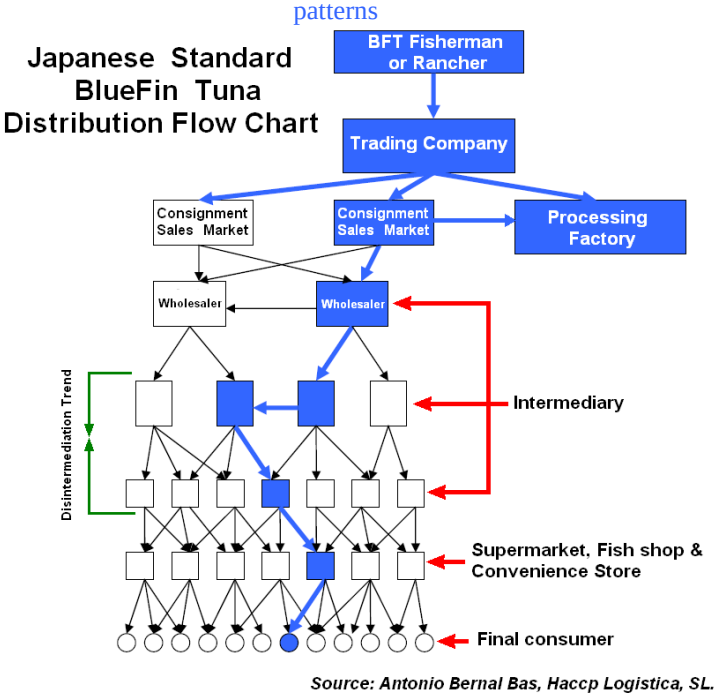
The Itochu Corporation is also active in tuna ranching in Spain and Malta through its subsidiary Itochu Fresh Co. It also sources tuna from Indonesia through its joint venture with Hagoromo Foods Corp. P.T. Aneka Tuna. Sourcing of Southern Blue Fin from Australia is done through its Australian branch. Itochu Fresh Co. was closely involved with Spanish-based Atunes de Mazarrón owned by Ginés Méndez. Itochu is considered to be one of the three worldwide frozen tuna traders along with US Tri-Marine and FCF.

Mitsui & Co., Ltd. operates directly or through its subsidiary Mitsui Food's Inc. tuna ranching joint ventures in Spain, Tuna Graso, SA (Europe's first raw sashimi processing plant) and in Italy through New Eurofish srl.

In April 2005, Kyokuyo Co., Ltd. (A 2005 ¥152,638 million consolidated Net Sales fisheries and food Tokyo-based company) entered into an agreement with the Union Frozen Products Co., Ltd. in Thailand to establish K&U Enterprise Co., Ltd.

This joint venture is constructing a state-of-the-art factory for producing and selling safe and high-quality frozen sushi products to the European and U.S. markets and sushi topping materials and sashimi raw fish to the Japanese, European and U.S. markets. The products will be manufactured on the advanced production lines for processed marine products. The factory is scheduled for completion in May 2006. Annual production of 8,000 tons and annual net sales of approximately ¥9.0 billion are planned for the full-year period from January to December 2007.[55]

Figure 025bis.- Changing wholesale and retail distribution patterns



Source: Antonio Bernal Bas, Haccp Logistica, SL.

Kyokuyo Co. Ltd. has also partnered with True World Foods, Inc. established in 1975 in Brooklyn, New York, to introduce its new frozen sushi product Polar Seas Frozen Sushi into the US market.

True World Foods, Inc., is the largest US seafood distributor with over 20 separate, independent

[55] *Source: Kyokuyo Co., Ltd.'s 82nd Fiscal Term Business Report.* Ref. 030.

offices and more than 2,000 restaurant, hotel, and grocery store clients throughout the United States.
Nippon Suisan Kaisha's fishing operations account for more than 45% of its sales. Nippon Suisan Kaisha also processes frozen foods and distributes them. The company recently bought a 50% stake in Sealord, New Zealand's largest marine products company. It also has acquired Unilever's North American seafood businesses (the Gorton's brand in the US and BlueWater in Canada). Nippon Suisan Kaisha also has operations in Argentina, Chile, China, Indonesia, the Netherlands, Russia, Singapore, and Vietnam.

Nichiro Fishery Company, which operates through about 30 subsidiaries, is Japan's third seafood producer. Canned and frozen foods account for about 60% of sales. Beyond seafood, the company emphasizes frozen convenience foods. Nichiro has expanded exports to China and the US.

Finally, the construction of a large scale ultra-cold storage facility for sashimi in Kaohsiung-Taiwan will start July 2006. Under the agreement between Taiwan and Japanese tuna industries, the 1.300 MT of tuna capacity project will contribute to further develop an increasing tuna sashimi market in Taiwan

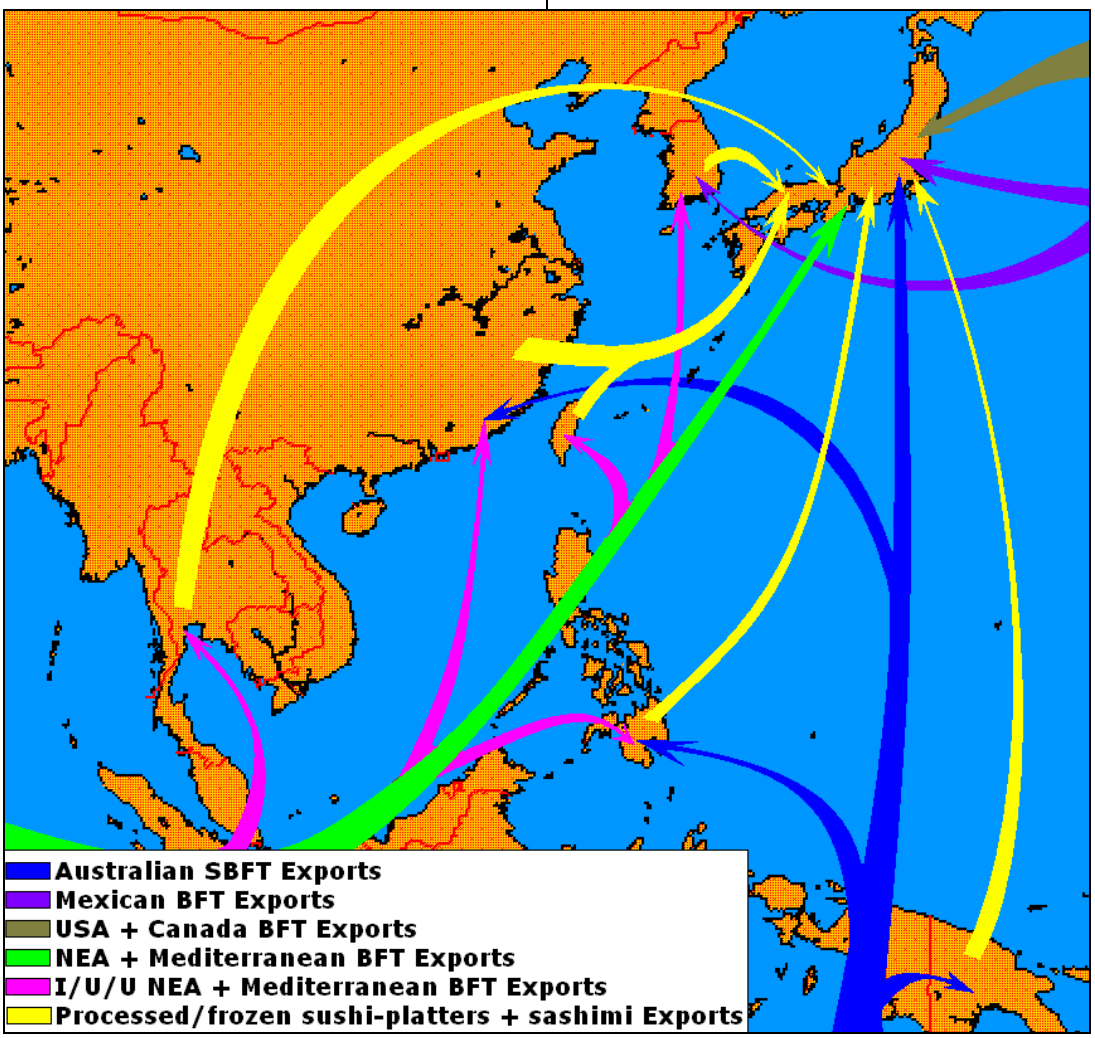


Figure 025ter.- BFT import/export routes into Japan. (*Source: ATRT, SL.*™®©)

Chapter II.- Studies

Study I: Fresh & Frozen NEA + MED Ranched & Wild BFT International Trade. (2004-2005) A statistical Analysis.

A. Methodology

Recorded legitimate exports of fresh & frozen BFT from Mediterranean countries to Japan, the USA, the EU, Korea and other destinations, have been analysed in an attempt to pinpoint the amount of legal, regulated and/or reported wild BFT having been caught in NEA + MED from January 2004 to February 2006.

We assume that all exports referred to in this chapter, were therefore backed by pertinent mandatory national and international documentation and permits, namely but not restricted to:

- Valid Highly Migratory Species International Trade Permits,
- Completed and submitted statistical documents or statistical document/re-export certificates,
- Sets for each shipment of the named specie,
- Completed and submitted summary reports of trade activity for the named specie,
- Compliance with all applicable record-keeping and reporting requirements.

Where appropriate, possible and/or necessary, values expressed in this chapter relate to and only to Mediterranean Sea BFT exports, regardless the way in which it was caught or if the fish was priory fattened in tuna ranches.

References to WR/W correspond to Wild Round Weight.

Trade (import & export flows) between Mediterranean Countries and final destination importing countries, were obtained from a number of official sources, namely:

- Eurostat. (European Union)
- Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
- Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
- French Customs-Douannes Françaises (France)
- OFIMER-Division Observatoire Economique Entreprise. (France)
- ISTAT – CoeWeb (Italy)
- NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
- National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
- National bi-annual reports of BFT statistical document program (ICCAT)
- Gain Reports from the USDA Foreign Agricultural Service. (USA)
- Japan Customs Services Trade Statistical Data. (Japan)
- NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
- United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
- Korea Customs Service. (Republic of Korea)
- Institut National de la Statistique (Tunisia)
- Direct proven industry reports.

Statistical cross-checks between two or more statistical data sources have been performed where appropriate, possible and/or necessary. Such cross-checks have been noted for ease of reference.

Where appropriate, possible and/or necessary, TARIC statistical codes used for statistical analysis and calculation are at Table 011

In order to avoid double counting, re-exports have been discarded for general calculation purposes.

In order to further avoid double counting, live-BFT exports inside the Mediterranean Sea under TARIC Code number: 0301999060, have been discarded for general calculation purposes.

Live BFT exports inside the Mediterranean Sea under TARIC Code number: 0301999060, will be analysed in following chapters of this report.

Where appropriate, possible and/or necessary, Conversion Factors[56] used to calculate BFT Round Weight used for statistical analysis and calculation are:

Belly Meat:	x10.28
Dressed Weight	x 1.25
Fillets	x 1.67
Loins	x 1.67
Gilled & Gutted	x 1.16
Others	x 2.00

[56] *Source: Estimation of Unreported Catches by ICCAT, Victor Retrepo (ICCAT, Madrid) OECD I/U/U Workshop, Paris, 19-20 April, 2004. Ref. 016. For further information see: Ref. 036. Ref. 037. & Ref. 038.*

In all cases, immediately inferior Conversion Factor is applied in case of doubt between two possibilities.

To all purposes average Conversion Factor from ranched BFT weight to BFT WR/W used in this report is ≈ /1,20 to /1,25. [57]

Table 011[58]

Fresh or chilled excluding fillets and other meat of heading 0304.	**03023500**
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604.	**03023510**
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation.	**03023590**
Frozen, excluding fillets and other meat of heading 0304.	**03034500**
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	**03034511**
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	**03034513**
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	**03034519**
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	**03034590**
Fillets, Fresh or Chilled.	**0304103860**
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	**0304109850**
Fillets, Frozen.	**0304204510**
Loins, Belly-meat &/or Saku-blocks, Frozen.	**0304909770**

According to industry sources, belly meat of 8% of wild long-lined and purse-seined BFT is exported on its own, since the rest of the meat is generally not suitable for the Japanese market.

Applying a x10,28 Conversion Factor to such product would therefore be safe, though a double counting may occur in the case that such belly meat is exported to Japan and the rest is exported or distributed to lesser choosier markets.

According to Industry Sources, the amount of ranched BFT belly meat exported to Japan has been historically minimal (less than 2%).

Applying a x10,28 Conversion Factor to farmed BFT belly meat would again be misleading in that there is no effective method to identify whether or not such product is accompanied by loins or fillets belonging to the same fish. (Ranched BFT belly meat and loins may be exported separately thus possibly creating a double-count or over-estimation when converted into RR/W and/or WR/W)

Accordingly, we have chosen to compute BFT Belly Meat in most of our calculations as if Whole with a x 1 Conversion Factor, thus providing to our final results a conservative degree of statistical comfort.

We choose to include all available 2006 data, in some cases up to Feb-2006. Though we understand that such fish was caught and ranched during 2005 we have not computed it with 2005 values.

Where appropriate, possible and/or necessary, monetary exchange rates used to calculate "Wild Round Weight" used for statistical analysis and calculation are:

- Euro/JPN Yen[59]
  - 2004 €1 = ¥130
  - 2005 €1 = ¥135
  - 2006 €1 = ¥141
- Euro/US. Dollar[60]
  - 2004 €1 = US.$1,2179
  - 2005 €1 = US.$1,2098
  - 2006 €1 = US.$1,2106

Readers are welcomed to compare our methodology and calculation approach with those used by other authors, fisheries consultants and analysts.[61]

[57] *For more on BFT WR/W Vs. Mediterranean inbound WR/W, see: Ref. 079.*

[58] *Source:* http://europa.eu.int/comm/taxation_customs/dds/en/tarhome.htm

[59] *Source: Japan Exchange Rates. Japan National Sources. Ref. 033.*

[60] *See: Ref. 034.*

[61] *The World Tuna Industry. An analysis of imports and prices, and their combined impact on catches and tuna fishing capacity, by: Camillo Catarci, Consultant-FAO Fisheries Department, Rome. Ref. 041.*

B. [62]Japan's 2004-2005-2006 NEA + MED BlueFin Tuna imports & catches.

Japan continues to be the world's largest market for fresh and frozen BlueFin Tuna[63]

Total reported 2004 imports of fresh & frozen BFT and frozen BFT fillets amounted to 24.711.000 Metric Tonnes, worth some ¥53.176 million (Some €393.896.296,30 at an average 2004 exchange rate of €1,00=¥135).

Japan's Reported BFT Imports 2004-2005-2006

	Fresh		Frozen		Frozen Fillet	
	Kgs	¥ JPN	Kgs	¥ JPN	Kgs	¥ JPN
January 2004	1.196.000	2.678.000.000	227.000	328.000.000	280.000	809.000.000
February 2004	1.184.000	2.709.000.000	1.109.000	2.274.000.000	1.873.000	4.334.000.000
March 2004	1.198.000	2.736.000.000	2.347.000	3.699.000.000	1.194.000	4.625.000.000
April 2004	434.000	1.145.000.000	534.000	854.000.000	802.000	1.831.000.000
May 2004	442.000	956.000.000	602.000	892.000.000	539.000	1.460.000.000
June 2004	572.000	593.000.000	294.000	418.000.000	450.000	1.131.000.000
July 2004	70.000	93.000.000	153.000	223.000.000	817.000	1.962.000.000
August 2004	159.000	414.000.000	37.000	38.000.000	271.000	573.000.000
September 2004	635.000	1.482.000.000	1.168.000	1.749.000.000	885.000	1.882.000.000
October 2004	1.154.000	2.354.000.000	35.000	26.000.000	226.000	294.000.000
November 2004	1.032.000	2.169.000.000	0	0	4.000	10.000.000
December 2004	1.890.000	3.835.000.000	118.000	280.000.000	780.000	2.320.000.000
Totals	**9.966.000**	**21.164.000.000**	**6.624.000**	**10.781.000.000**	**8.121.000**	**21.231.000.000**
January 2005	1.255.000	2.325.000.000	179.000	352.000.000	984.000	2.556.000.000
February 2005	1.007.000	2.086.000.000	1.013.000	2.098.000.000	2.806.000	7.174.000.000
March 2005	1.424.000	2.331.000.000	1.729.000	2.898.000.000	2.674.000	7.181.000.000
April 2005	853.000	1.451.000.000	562.000	1.164.000.000	1.050.000	2.620.000.000
May 2005	287.000	503.000.000	228.000	359.000.000	164.000	246.000.000
June 2005	187.000	441.000.000	11.000	19.000.000	188.000	369.000.000
July 2005	153.000	160.000.000	51.000	94.000.000	1.208.000	2.368.000.000
August 2005	599.000	993.000.000	21.000	29.000.000	80.000	127.000.000
September 2005	631.000	1.143.000.000	87.000	93.000.000	99.000	154.000.000
October 2005	940.000	1.960.000.000	192.000	243.000.000	84.000	118.000.000
November 2005	882.000	1.928.000.000	54.000	66.000.000	145.000	294.000.000
December 2005	1.664.000	3.887.000.000	93.000	217.000.000	984.000	2.479.000.000
Totals	**9.882.000**	**19.208.000.000**	**4.220.000**	**7.632.000.000**	**10.466.000**	**25.686.000.000**
January 2006	800.000	1.776.000.000	209.000	523.000.000	1.993.000	4.999.000.000
February 2006	625.000	1.543.000.000	885.000	1.763.000.000	2.136.000	5.427.000.000
Totals	**1.425.000**	**3.319.000.000**	**1.094.000**	**2.286.000.000**	**4.129.000**	**10.426.000.000**

Source: NOAA SouthWest Regional Office, National Marine Fisheries Service. USA.

Table 012.- Japan's reported BFT imports 2004-2006. (*Source: NOAA Southwest Regional Office, National Marine Fisheries Service, USA*)

[62] For the last few years, the average consumption trend for sashimi tuna in Japan has shown a 'stale growth'. The pattern is distinctly visible in its imports of fresh and frozen tuna that totalled 290 755 MT at US$ 1.49 billion during January-September 2005 compared to 301 375 MT and US$ 1.57 billion the year before. In terms of value, Japanese fishery imports increased during this time but in quantity it declined marginally (-1.19%) against the same period in 2004. The stagnating and sometimes falling demand for whole frozen fishery products is the main reason behind such trend. The tuna group usually falls under this category. During the period under review, the market also imported 21 378 MT of frozen tuna loins and fillets; nearly 50% of that was the red meat quality products. (Source InfoFish Tuna Market Report – January 2006. Japan)

[63] Source: NOAA SouthWest Regional Office, National Marine Fisheries Service, USA. Ref. 032.

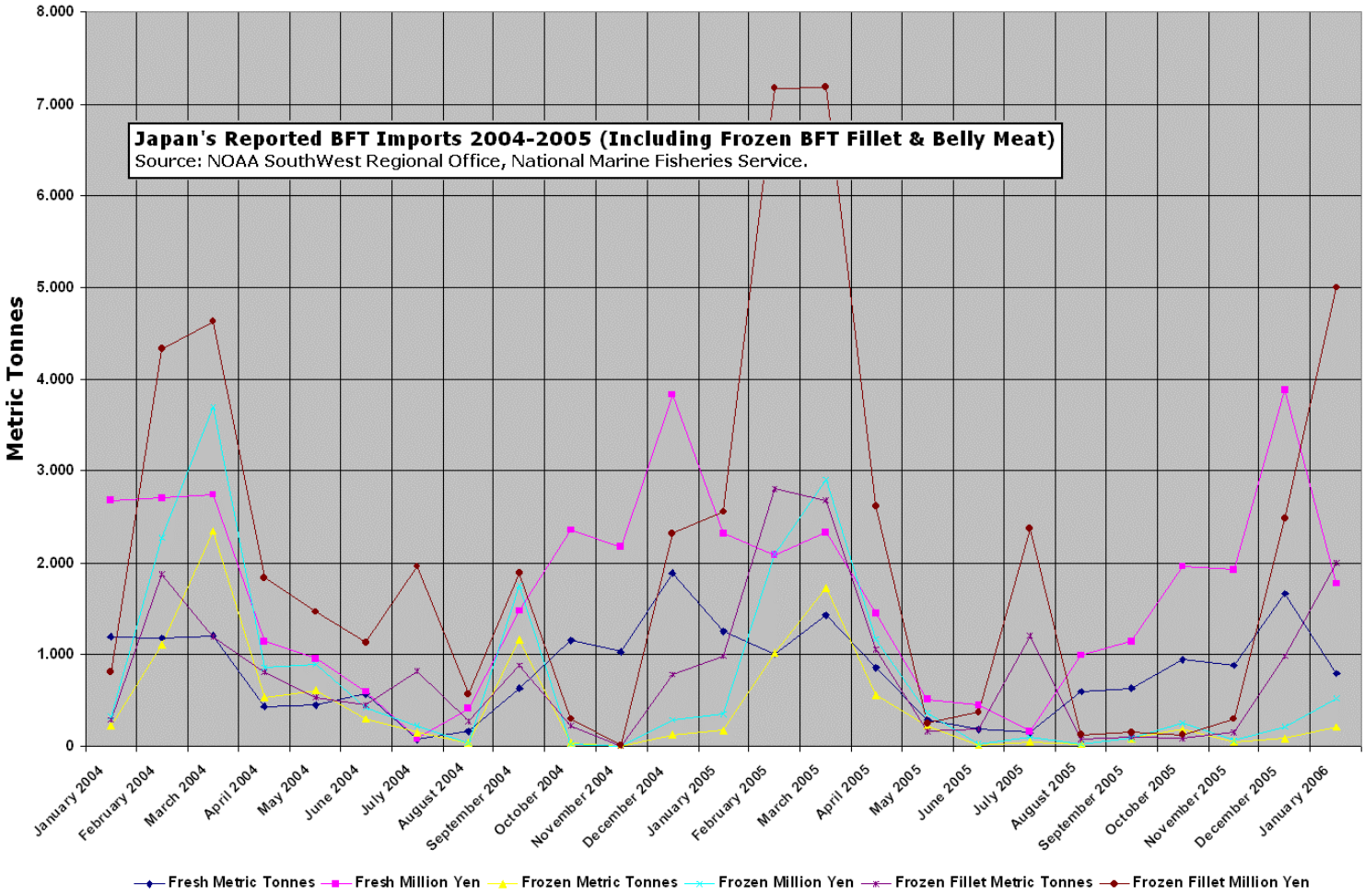


Figure 026

Again and according to NOAA's SouthWest Regional Office, National Marine Fisheries Service, USA, total reported 2005 imports of processed fresh & frozen BFT and frozen BFT fillets amounted to 24.568 Metric Tonnes, worth some ¥52.526 million (Some €375.185.714,29 at an average 2005 exchange rate of €1,00=¥140)

Total reported January and February 2006 imports of processed fresh & frozen BFT and frozen BFT fillets amounted to 6.648 Metric Tonnes, worth some ¥16.031 million (Some €113.453.644,73 at an average March 20th 2006 exchange rate of €1,00=¥141,3)

We believe such above-mentioned figures are nevertheless incomplete since according to Japanese Official Sources, total reported 2005 imports of processed fresh & frozen BFT amounted to 25.079.743 Kgs, worth some ¥52.709,78 million (Some €376.498.429,00 at an average 2005 exchange rate of €1,00=¥140)[64]

Imports of fresh & frozen BFT from the NEA + MED continue to be second to none both in tonnage and value, though Mexico has gradually increased its market share for the past two years.[65]

According to our cross-check between Eurostat, ICEX-Estacom and Japan's Custom Service Commodity Import Data Bases, Japan imported a total of 20.099.804 Kgs of registered processed fresh and frozen BFT from the Mediterranean in 2004. See Table: 013.

[64] *Source: Statistics Department, Ministry of Agriculture, Forestry and Fisheries. Japan. Monthly Statistics March 2006. Pages: 86 & 87. Ref. 045.*

[65] *For detailed Processed BFT imports by Japan, consult Ref. 043.*

Table 013[66]

Japan's Imports of Mediterranean Fresh & Frozen BlueFin Tuna 2004-2005-2006							
Origin	Product by TARIC Code Nº.	2004		2005		2006	
		Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
Morocco	030235 & 030345	3.327.600,00 €	295.932	13.801.496,30 €	994.402	12.929,08 €	815
Tunisia	030235 & 030345	13.143.600,00 €	792.648	23.347.837,04 €	1.336.656	6.315.652,48 €	346.384
Libya	030235 & 030345	6.215.238,46 €	702.761	3.099.266,67 €	330.900		
Turkey	030235 & 030345	47.949.676,92 €	2.804.591	49.648.896,30 €	2.827.432	19.008.602,84 €	1.144.660
Cyprus	03023590		2.500	13.759.866,67 €	667.987	12.774.226,95 €	682.929
	03034513		957.900				
Greece	03023590	657.630,77 €	43.776		607.000		
France	03023590	991.000,00 €	116.000	92.000,00 €	43.400		
	03034590	427.000,00 €	44.000		43.700		
	0304103860	77.677,00 €	3.100	6.198,00 €	600		
	0304109850	81.931,00 €	3.600				
	0304204510			113.865,00 €	9.900		
	0304909770	17.418,00 €	2.400	119.132,00 €	20.300		
Croatia	03023590	45.976.238,46 €	3.631.804	34.537.237,04 €	2.479.045	19.402.120,57 €	1.202.920
Malta	03023590	36.435.461,54 €	252.400	42.288.762,96 €	889.032	14.311.368,79 €	801.278
	03034511		1.232.282		629.132		
	03034590		244.100		656.532		
Italy	03023510	10.823.930,77 €	235.100	21.269.666,67 €	1.014.341	22.869.893,62 €	1.261.446
	03023590		32.382		165.300		
	03034590		45.988		112.800		
	03034500		270.531				
	0304103860			2.009,00 €	100		
	0304109850	3.074,00 €	300	9.846,00 €	1.300		
	0304204510	1.381.804,00 €	70.300	492.926,00 €	40.700		
	0304909770	71.486,00 €	15.200				
Spain	03023590	107.223.290,18 €	8.109.352		4.421.735	15.458.177,30 €	861.076
	03034519	82.876,31 €	7.019				
	03034590	3.742,31 €	210	67.504,23 €	11.458		
	0304103860	1.518.988,61 €	78.553	950.329,03 €	52.468	180.174,00 €	8.800
	0304109850	2.759,95 €	107				
	0304204510	833.364,88 €	49.211	4.010.932,26 €	344.659	188.444,00 €	19.000
	0304909770	782.239,07 €	55.758	22.332,20 €	2.281	555.670,00 €	54.200
Total Mediterranean			20.099.804		17.703.160		6.383.508
Sources: BFT Import-Export Data Cross-Check between Eurostat Trade Statistics, ESTACOM (Spain) & Japan's Custom Service Commodity Import Statistics up to Jan-2006.							

[66] *BFT Trade Cross Check Statistics & Sources can be seen at: Ref. 043.*

Once average conservative cross-board Conversion Factors are applied to processed fresh & frozen BFT import figures (Table: 013) it would appear that Japan imported the equivalent of 24.972.213 Kgs (Weight at Slaughter) of BFT from the Mediterranean Sea in 2004.

Japan's Imports of Mediterranean Fresh & Frozen BlueFin Tuna 2004-2005-2006

Product by TARIC Code Nº.	Single or Average Conversion Factor to Weight at slaughter	2004		2005		2006	
		Final Processed Weight in Kgs.	Weight at slaughter in Kgs.	Final Processed Weight in Kgs.	Weight at slaughter in Kgs.	Final Processed Weight in Kgs.	Weight at slaughter in Kgs.
030235 & 030345	1,49	4.595.932	6.847.939	5.489.390	8.179.191	1.491.859	2.222.870
03023510	1,16	235.100	272.716	1.014.341	1.176.636	1.261.446	1.463.277
03023590	1,16	12.185.714	14.135.428	8.605.512	9.982.394	3.548.203	4.115.915
03034500	1,16	270.531	313.816				
03034511	1,16	1.232.282	1.429.447	629.132	729.793		
03034513	1,16	957.900	1.111.164				
03034519	1,25	7.019	8.774				
03034590	1,16	334.298	387.786	824.490	956.408		
0304103860	1,67	81.653	136.361	53.168	88.791	8.800	14.696
0304109850	1,67	4.007	6.692	1.300	2.171		
0304204510	1,67	119.511	199.583	395.259	660.083	19.000	31.730
0304909770	1,67	73.358	122.508	22.581	37.710	54.200	90.514
Others	1,16	2.499	2.899	667.987	774.865		
TOTALS:		20.099.804	24.972.213	17.703.160	21.813.176	6.383.508	7.939.003

Sources: BFT Import-Export Data Cross-Check between Eurostat Trade Statistics, ESTACOM (Spain) & Japan's Custom Service Commodity Import Statistics up to Jan-2006.

Table 014

It would also appear that Japan's total 2005 imports of processed fresh and frozen BFT from the Mediterranean would be equivalent to 21.813.176 Kgs (RD at Slaughter) of BFT.

Japan's combined imports of processed fresh and frozen BFT from Spain, France and Morocco may include some BFT caught in the North-East Atlantic façade of these three countries. We nevertheless sustain that such BFT percentage is negligible and if so, has been computed to all calculation purposes as being Mediterranean.

Both figures for 2004 and 2005 do nevertheless not include Japan's reported catches under its 2004 and 2005 ICCAT quotas. While some supplies of BFT come from Japan's coastal waters which are marketed locally in fresh form, the bulk share of fresh and frozen BFT is supplied by the Japanese distant water tuna vessels fishing inside the Mediterranean Sea and the North-East Atlantic Ocean under specific ICCAT quota.[67] According to ICCAT's recommendation concerning a multi-year conservation and management plan for BFT in the East Atlantic and Mediterranean (Rec: 02-08)[68]

Japan's distant water tuna vessels fishing inside the Mediterranean Sea and the North-East Atlantic Ocean would have been allocated a 2004 BFT quota of 2.930MT and a 2005 BFT quota of 2.890MT.

Japan's initial 2004 reported catches in North-eastern Atlantic and Mediterranean Sea amounted to 2.624 MT of which 638 MT were officially reported as

[67] *The Japanese fishery in the Mediterranean Sea entirely targets BlueFin tuna using long-line gear. In this fishery, a small amount of swordfish is caught incidentally. BlueFin catch in the Mediterranean Sea decreased, from about 800 t in 1995 to less than 150 t in 2000, although fishing effort has been maintained at a relatively high level. There has been no significant change in fishing area and season. Large adult fish migrating for spawning are predominant in the catch. Japan prohibited its long-line fleet from fishing in this area during the spawning season, which is currently June and July. The number of boats is also limited to 35 annually. Japanese catches in the East Atlantic and Mediterranean in 2001 were 2.221 MT. Source: REPORT OF THE 2002 ATLANTIC BLUEFIN TUNA STOCK ASSESSMENT SESSION (Madrid, Spain – July 22 to 30, 2002)*

[68] *Entered into force: June 3, 2003.* Ref. 035.

having been caught inside the Mediterranean Sea.(See Table: 042)

No official 2005 BFT catch reporting for such area is yet available though all initial indications are that a minimum of 3.000MT have been caught and will be officially reported.

Japanese Long Liners operating inside & from Algerian Waters 2004-2005

Registry Nº	Name	Length	Authorization	Duration of Charter	Date at Algiers	Bound for
MG1-1923	CHIYO MARU 28	49,99	30/07/2002 31/07/2007	-	-	-
MG1-1675	FUKUJU MARU 75	50,59	30/07/2002 31/07/2007	19/04/2004 31/05/2013	?	?
IT1-327	KINEI MARU 53	51,20	30/07/2002 31/07/2007	19/04/2004 31/05/2014	18/04/2005	Gibraltar-Las Palmas-Galway
-	KORYO MARU 5	49,90	30/07/2002 31/07/2007	19/04/2004 31/05/2009	?	?
-	KORYO MARU 8	51,20	30/07/2002 31/07/2007	19/04/2004 31/05/2010	?	?
-	KORYO MARU 32	51,30	30/07/2002 31/07/2007	19/04/2004 31/05/2011	?	?
TY-175	KORYO MARU 68	52,60	30/07/2002 31/07/2007	19/04/2004 31/05/2012	18/04/2005	Tarifa-Las Palmas
MG1-1966	KOYO MARU 7	49,90	01/06/2004 31/07/2007	19/04/2004 31/05/2015	?	?
-	SHOEI MARU 1	49,99	01/06/2004 31/07/2007	19/04/2004 31/05/2007	?	?
MG1-2002	SHOEI MARU 7	46,15	30/07/2002 31/07/2007	19/04/2004 31/05/2008	?	?
-	SHOSHIN MARU 80	49,39	01/06/2004 31/07/2007	19/04/2004 31/05/2004	?	?
AM1-635	SHOSHIN MARU 82	49,32	02/06/2003 31/07/2007	19/04/2004 31/05/2005	20/04/2005	Gibraltar-Galway
AM1-694	SHOSHIN MARU 83	49,99	06/08/2003 31/07/2007	19/04/2004 31/05/2006	20/04/2005	Malta-Suez-Shimizu
IT1-304	KINEI MARU 18	49,90	30/07/2002 31/07/2007	-	19/04/2005	Las Palmas-Galway
TY-177	KORYO MARU 15	52,60	30/07/2002 31/07/2007	-	18/04/2005	Gibraltar-Las Palmas-
TY-113	KORYO MARU 38	52,60	02/06/2003 31/07/2007	-	18/04/2005	Tarifa-Las Palmas-
TY-183	KORYO MARU 81	52,60	30/07/2002 31/07/2007	-	18/04/2005	Las Palmas

Table 015

BFT fishing industry sources furthermore report that in 2004-2005, 8 to 12 chartered Japanese long-liners have caught BFT in the Mediterranean undercover of an Algerian fishing charter quota of 700 MT.[69]

The names of the said chartered vessels are listed in the ICCAT record of vessels larger than 24m (see Table: 015). Average fishing capacity of each of such vessel for an area such as the Algerian coast and adjacent waters should be no less than 100 MT per fishing season. We may therefore comfortably presume that some 1.000 MT of BFT were caught during both 2004 and 2005 by such fleet.

Japan has nevertheless reported only 334 MT of BFT having been caught undercover of such charter agreement with Algeria, during 2004.

Japan's second 2004 BFT catch reporting for NEA + MED at the 2005 Meeting of the Standing Committee on Research & Statistics (SCRS -Madrid, Spain- October 3 to 7, 2005) was accordingly elevated to 2.958 MT of which 638 MT + 334 MT = 972 MT would have therefore been caught inside the Mediterranean Sea.

Japan's third and latest 2004 BFT catch reporting for NEA + MED at the 2006 ICCAT Palma's Regional Workshop (BFT-007/2006 - From COC-025 presented in November 2005) accounted for 3.020 MT.

Though we believe such 2004 BFT catch reporting by Japan is still incomplete, we choose to retain such reported values for calculation purposes.

By adding Japan's reported or estimated 2004 & 2005 catches to its reported imports of fresh and frozen processed BFT from the Mediterranean Sea for the same years, it would appear that:

- Total estimated Japan's BFT consumption (Equivalent Weight at Slaughter) from NEA + MED for 2004 would have been:

24.972.213 Kg (Equivalent Weight at Slaughter of 2004 total imports of fresh & frozen BFT from the Mediterranean. Table: 014)

+

3.020.000 Kg (Japan's 2004 third report of catches in NEA + MED)

=

27.992.213 Kg. (Total equivalent Weight at Slaughter) That would be 87,48% of the total ICCAT 32.000.000 Kgs yearly quota for the NEA + MED

- Total estimated Japan's BFT consumption (Equivalent Weight at Slaughter) from NEA + MED for 2005 would have been:

21.813.176 Kg (Equivalent Weight at Slaughter of 2005 total imports of fresh & frozen BFT from the Mediterranean. Table: 014)

+

3.000.000 Kg (Japan's 2005 probable reported catches for NEA + MED)

=

24.813.176 Kg (Total equivalent Weight at Slaughter) That would be 77,54% of the total ICCAT 32.000.000 Kg yearly quota for the NEA + MED.

[69] *In 2003, Algeria reported to have chartered some 12 Japanese 45m long-liners.*

ORIGIN	Gear Code	Product Type		Product Weight (Kgs.)	Conversion Factor to Weight at slaughter (x by)	Weight at slaughter (Kgs.)	Ranched or Wild Conversion Factor to WR/W (÷ by)	Wild Round Weight WR/W (Kgs.)
		F/FR	RD/GG/ DR/FL/ OT/BM					
Croatia	HAND	F	DR	1.717	1,25	2.146,25	1	2.146,25
Croatia	UNCL	F	DR	639	1,25	798,75	1	798,75
Croatia (Farmed Tuna)	PS	F	BM	743	10,28	7.638,04	1,25	6.110,43
Croatia (Farmed Tuna)	PS	F	DR	120	1,25	150,00	1,25	120,00
Croatia (Farmed Tuna)	PS	F	DR	251.331	1,25	314.163,75	1,25	251.331,00
Croatia (Farmed Tuna)	PS	F	GG	25	1,16	29,00	1,25	23,20
Croatia (Farmed Tuna)	PS	FR	OT	64	2,00	128,00	1,25	102,40
Cyprus (Farmed Tuna)	PS	FR	RD	329.372	1,00	329.372,00	1,25	263.497,60
Cyprus (Farmed Tuna)	UNCL	FR	RD	702.114	1,00	702.114,00	1,25	561.691,20
France	PS	F	BM	3.697	10,28	38.005,16	1	38.005,16
France	PS	F	DR	1.781	1,25	2.226,25	1	2.226,25
France	PS	F	DR	1.169	1,25	1.461,25	1	1.461,25
France	PS	FR	FL	9.905	1,67	16.541,35	1	16.541,35
France	PS	FR	GG	69	1,16	80,04	1	80,04
Greece	HAND	F	RD	7.576	1,00	7.576,00	1	7.576,00
Greece	HAND	F	RD	154	1,00	154,00	1	154,00
Greece	HAND	F	RD	492	1,00	492,00	1	492,00
Italy	LL	F	BM	104	10,28	1.069,12	1	1.069,12
Italy	LL	F	DR	282	1,25	352,50	1	352,50
Italy	LL	F	DR	1.586	1,25	1.982,50	1	1.982,50
Italy	LL	F	DR	884	1,25	1.105,00	1	1.105,00
Italy	LL	F	FL	50	1,67	83,50	1	83,50
Italy	LL	FR	FL	35.649	1,67	59.533,83	1	59.533,83
Italy	UNCL	FR	FL	4.850	1,67	8.099,50	1	8.099,50
Italy	LL	F	GG	400	1,16	464,00	1	464,00
Italy	UNCL	FR	OT	800	2,00	1.600,00	1	1.600,00
Italy	LL	F	RD	354	1,00	354,00	1	354,00
Italy (Farmed Tuna)	OT	F	BM	50	10,28	514,00	1,25	411,20
Italy (Farmed Tuna)	OT	F	DR	1.391	1,25	1.738,75	1,25	1.391,00
Italy (Farmed Tuna)	PS	F	DR	106.107	1,25	132.633,75	1,25	106.107,00
Italy (Farmed Tuna)	PS	F	DR	1.975	1,25	2.468,75	1,25	1.975,00
Italy (Farmed Tuna)	PS	F	DR	44.072	1,25	55.090,00	1,25	44.072,00
Italy (Farmed Tuna)	OT	F	GG	955	1,16	1.107,80	1,25	886,24
Italy (Farmed Tuna)	OT	FR	RD	185.602	1,00	185.602,00	1,25	148.481,60
Italy (Farmed Tuna)	PS	FR	RD	367.709	1,00	367.709,00	1,25	294.167,20
Italy (Farmed Tuna)	PS	F	RD	784.426	1,00	784.426,00	1,25	627.540,80
Libya	TRAP	FR	DR	18.561	1,25	23.201,25	1	23.201,25
Libya	TRAP	FR	FL	8.497	1,67	14.189,99	1	14.189,99
Libya	LL	FR	FL	29.520	1,67	49.298,40	1	49.298,40
Libya	LL	FR	GG	58.000	1,16	67.280,00	1	67.280,00
Libya	LL	FR	GG	176.000	1,16	204.160,00	1	204.160,00
Malta	LL	F	BM	209	10,28	2.148,52	1	2.148,52
Malta	LL	F	DR	2.415	1,25	3.018,75	1	3.018,75
Malta	LL	F	OT	391	2,00	782,00	1	782,00
Malta (Farmed Tuna)	PS	F	BM	16	10,28	164,48	1,25	131,58
Malta (Farmed Tuna)	PS	FR	BM	2.066	10,28	21.238,48	1,25	16.990,78
Malta (Farmed Tuna)	OT	F	BM	368	10,28	3.783,04	1,25	3.026,43
Malta (Farmed Tuna)	PS	F	BM	1.178	10,28	12.109,84	1,25	9.687,87
Malta (Farmed Tuna)	PS	F	BM	754	10,28	7.751,12	1,25	6.200,90
Malta (Farmed Tuna)	PS	F	DR	108.523	1,25	135.653,75	1,25	108.523,00
Malta (Farmed Tuna)	PS	FR	DR	7.721	1,25	9.651,25	1,25	7.721,00
Malta (Farmed Tuna)	OT	F	DR	13.543	1,25	16.928,75	1,25	13.543,00
Malta (Farmed Tuna)	PS	F	DR	13.829	1,25	17.286,25	1,25	13.829,00
Malta (Farmed Tuna)	PS	F	DR	210	1,25	262,50	1,25	210,00
Malta (Farmed Tuna)	PS	FR	FL	803.168	1,67	1.341.290,56	1,25	1.073.032,45
Malta (Farmed Tuna)	PS	FR	FL	87.790	1,67	146.609,30	1,25	117.287,44
Malta (Farmed Tuna)	PS	F	GG	678	1,16	786,48	1,25	629,18
Malta (Farmed Tuna)	PS	FR	OT	38.303	2,00	76.606,00	1,25	61.284,80
Malta (Farmed Tuna)	PS	F	OT	45	2,00	90,00	1,25	72,00
Malta (Farmed Tuna)	PS	FR	OT	7.430	2,00	14.860,00	1,25	11.888,00

Table 016

On April 11th 2006, Japan submitted its Bi-annual BlueFin Tuna Import Statistical Document Report from July 1st 2005 to December 31st 2005.[70]

From such document and for the above mentioned period, it appears that Japan imported in just six months, 8.015.898 Kgs of processed fresh and frozen BFT from the Mediterranean Sea. A minimal amount of BFT from Trap Nets in the SW of Spain and the Moroccan Atlantic Coast have been computed.

Once all conversion factors applied, it appears that Japan would have imported the equivalent of 8.299.043 Kgs (WR/W) of BFT. (See Table: 016 & 016bis)

[70] *Source: ICCAT Circular Nº: 760/06. Ref. 048.*

We have, in this case, retained a x 10,28 Conversion Factor for Ranched Tuna Belly Meat since we can comfortably believe we have not incurred in any double counting by doing so.

Ranched tuna is hardly exported to Japan under Belly Meat presentation. It is done so when the rest of the fish is not fit for the Japanese market and therefore exported to other markets, sent for canning or destroyed

ORIGIN	Gear Code	Product Type		Product Weight (Kgs.)	Conversion Factor to Weight at slaughter (x by)	Weight at slaughter (Kgs.)	Ranched or Wild Conversion Factor to WR/W (÷ by)	Wild Round Weight WR/W (Kgs.)
		F/FR	RD/GG/DR/FL/OT/BM					
Morocco (EA)	TRAP	FR	FL	45.000	1,67	75.150,00	1	75.150,00
Morocco (EA)	TRAP	FR	FL	305.000	1,67	509.350,00	1	509.350,00
Morocco (EA)	TRAP	FR	OT	55.000	2,00	110.000,00	1	110.000,00
Morocco (EA)	TRAP	FR	RD	6.810	1,00	6.810,00	1	6.810,00
Morocco (EA)	TRAP	FR	RD	118.755	1,00	118.755,00	1	118.755,00
Spain	LL	F	BM	421	10,28	4.327,88	1	4.327,88
Spain	LL	F	DR	1.229	1,25	1.536,25	1	1.536,25
Spain	LL	F	DR	876	1,25	1.095,00	1	1.095,00
Spain	LL	F	DR	734	1,25	917,50	1	917,50
Spain	PS	FR	DR	11.458	1,25	14.322,50	1	14.322,50
Spain	PS	FR	FL	97.446	1,67	162.734,82	1	162.734,82
Spain (EA)	TRAP	FR	RD	21.767	1,00	21.767,00	1	21.767,00
Spain (EA)	TRAP	FR	RD	10.790	1,00	10.790,00	1	10.790,00
Spain (Farmed Tuna)	PS	F	BM	229	10,28	2.354,12	1,25	1.883,30
Spain (Farmed Tuna)	PS	F	DR	379.768	1,25	474.710,00	1,25	379.768,00
Spain (Farmed Tuna)	PS	F	DR	4.332	1,25	5.415,00	1,25	4.332,00
Spain (Farmed Tuna)	PS	F	DR	54.095	1,25	67.618,75	1,25	54.095,00
Spain (Farmed Tuna)	UNCL	F	DR	62.451	1,25	78.063,75	1,25	62.451,00
Spain (Farmed Tuna)	UNCL	F	DR	175.480	1,25	219.350,00	1,25	175.480,00
Spain (Farmed Tuna)	UNCL	F	DR	6.857	1,25	8.571,25	1,25	6.857,00
Spain (Farmed Tuna)	PS	F	DR	2.167	1,25	2.708,75	1,25	2.167,00
Spain (Farmed Tuna)	PS	F	DR	236.692	1,25	295.865,00	1,25	236.692,00
Spain (Farmed Tuna)	PS	F	FL	103	1,67	172,01	1,25	137,61
Spain (Farmed Tuna)	PS	F	GG	187.521	1,16	217.524,36	1,25	174.019,49
Spain (Farmed Tuna)	PS	F	OT	35.461	2,00	70.922,00	1,25	56.737,60
Taiwan	LL	FR	FL	8.500	1,67	14.195,00	1	14.195,00
Taiwan	LL	FR	GG	13.982	1,16	16.219,12	1	16.219,12
Taiwan	LL	FR	GG	8.137	1,16	9.438,92	1	9.438,92
Taiwan	LL	FR	GG	42.314	1,16	49.084,24	1	49.084,24
Taiwan	LL	FR	OT	5.933	2,00	11.866,00	1	11.866,00
Tunisia	PS	F	BM	1.456	10,28	14.967,68	1	14.967,68
Tunisia	PS	F	DR	909	1,25	1.136,25	1	1.136,25
Tunisia	PS	F	DR	647	1,25	808,75	1	808,75
Tunisia (Farmed Tuna)	OT	F	DR	73.072	1,25	91.340,00	1,25	73.072,00
Tunisia (Farmed Tuna)	PS	F	DR	791	1,25	988,75	1,25	791,00
Tunisia (Farmed Tuna)	UNCL	F	DR	5.277	1,25	6.596,25	1,25	5.277,00
Tunisia (Farmed Tuna)	UNCL	F	DR	6.526	1,25	8.157,50	1,25	6.526,00
Tunisia (Farmed Tuna)	PS	F	DR	3.493	1,25	4.366,25	1,25	3.493,00
Turkey	PS	F	BM	626	10,28	6.435,28	1	6.435,28
Turkey	PS	F	DR	2.194	1,25	2.742,50	1	2.742,50
Turkey (Farmed Tuna)	OT	F	BM	1.129	10,28	11.606,12	1,25	9.284,90
Turkey (Farmed Tuna)	OT	F	BM	201	10,28	2.066,28	1,25	1.653,02
Turkey (Farmed Tuna)	PS	F	BM	2.915	10,28	29.966,20	1,25	23.972,96
Turkey (Farmed Tuna)	PS	F	DR	126.672	1,25	158.340,00	1,25	126.672,00
Turkey (Farmed Tuna)	PS	F	DR	13.351	1,25	16.688,75	1,25	13.351,00
Turkey (Farmed Tuna)	PS	F	DR	240.193	1,25	300.241,25	1,25	240.193,00
Turkey (Farmed Tuna)	UNCL	FR	DR	1.939	1,25	2.423,75	1,25	1.939,00
Turkey (Farmed Tuna)	PS	F	FL	59	1,67	98,53	1,25	78,82
Turkey (Farmed Tuna)	UNCL	FR	FL	83.518	1,67	139.475,06	1,25	111.580,05
Turkey (Farmed Tuna)	PS	F	GG	5.783	1,16	6.708,28	1,25	5.366,62
Turkey (Farmed Tuna)	PS	F	OT	332	2,00	664,00	1,25	531,20
Turkey (Farmed Tuna)	PS	F	OT	647	2,00	1.294,00	1,25	1.035,20
Turkey (Farmed Tuna)	UNCL	FR	OT	51.304	2,00	102.608,00	1,25	82.086,40
Turkey (Farmed Tuna)	PS	FR	RD	425.216	1,00	425.216,00	1,25	340.172,80
Turkey (Farmed Tuna)	PS	F	RD	4.286	1,00	4.286,00	1,25	3.428,80
Turkey (Farmed Tuna)	PS	FR	RD	136.208	1,00	136.208,00	1,25	108.966,40
Turkey (Farmed Tuna)	PS	FR	RD	313.775	1,00	313.775,00	1,25	251.020,00
Turkey (Farmed Tuna)	PS	FR	RD	386.642	1,00	386.642,00	1,25	309.313,60
TOTALS:				8.015.898,00		9.955.641,20		8.299.043,68

Table 016bis

C. The US's 2004-2005-2006 Mediterranean Sea BlueFin Tuna imports

The United States of America (USA) tuna market has shown phenomenal growth during the past four years.

Apart from the expanding USA market for sashimi tuna, the casual dining family restaurant sector (e.g. Outback Steakhouse and Red Lobster chains) has indicated a desire to develop new menu programs featuring fresh tuna.

The inconsistent supply and quality variables associated with wild caught tuna, however, do not meet their requirements in terms of standardized systems.

U.S. Fresh tuna sales for 2003 were 12,3 million kilograms, or about 12% that of farmed salmon, quite impressive when considering that farmed salmon fillets are available 52 weeks a year at steady pricing of about $7,26/Kg. while chilled tuna loin supply is uneven, with factors like the phase of the moon determining availability, and prices ranging from $13,20 to $33.00 per Kg.

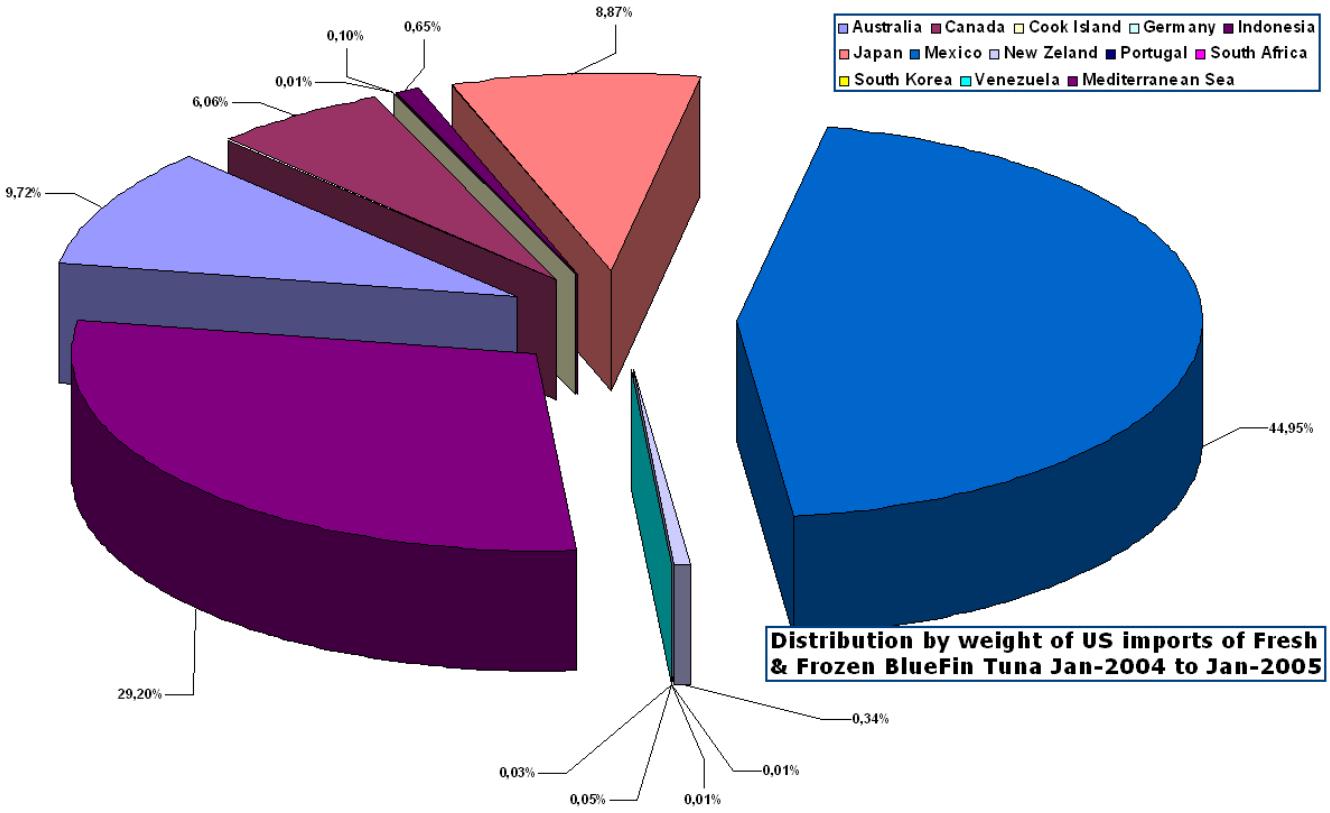
Costco Wholesale recorded fresh-farmed salmon fillet sales of over 14 million kilograms in 2002 while fresh tuna sales were 354,545 kilograms (2.5% of farmed salmon sales).

This disparity stands as clear evidence of the difficulty retailers have selling fresh tuna – while still wholesome, it begins to turn brown very quickly at store level and therefore does not sell. And it is expensive.

The best customers for fresh tuna are the upscale and white tablecloth dining sectors, where the chef buys daily from a local distributor, need not feature it daily, and can charge hefty prices for "Sesame Grilled Tuna" and like signature dishes.

The chain casual dining sector, having experienced the positive uplift provided by farmed salmon, and understanding the appeal of tuna, would like very much to feature it, but has thus far been unable to participate; the products uneven and high pricing along with the necessity for daily evaluation of incoming quality simply doesn't work in a sector dedicated to standardized systems.

Figure 027



The U.S. based Hilo Group pioneered and continues to lead the filtered smoke seafood category, providing both retail and foodservice with frozen tuna product that presents itself as bright red in its thawed, raw form and that can be served seared and red in the centre. From the introduction of filtered smoke tuna to the U.S. market in 1996 through 2001, the Hilo Group enjoyed margins averaging 30%, enviable in any business.

Recent and more clearly stated acceptance of the process by the Food & Drug Administration along with theapproval of a less costly method of achieving like results has crowded the field, however, and margins have grown significantly thinner.

The United States of America is the third largest export destination for Mediterranean wild and ranched BlueFin Tuna after Japan and the EU domestic market.

The US nevertheless comes second for high-quality fatty ranched BlueFin Tuna exports from the Mediterranean Sea.

Regular demand for high quality fatty ranched BFT in the US has been on the increase due to the mushrooming of high quality sushi restaurants, mainly in the North-Eastern Coast, California and Florida.

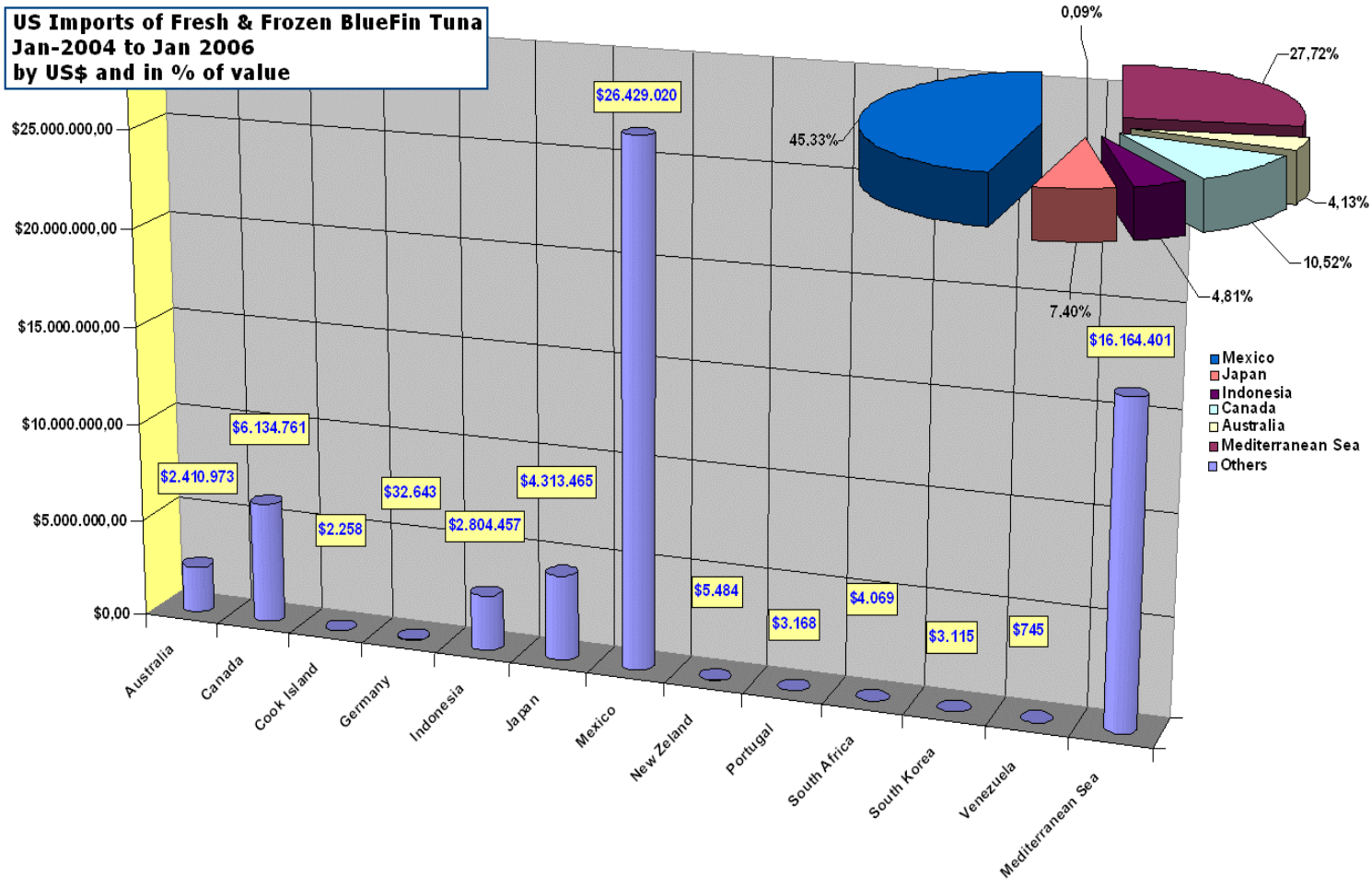


Figure 028

During the period Jan/2004 to Jan/2006 (included) the US imported 2.688.345 kilograms of BlueFin Tuna (Fresh & Frozen) of which some 29,23% (785.814 kilograms worth $US. 16 million) was exported from the Mediterranean.[71]

[71] *National Marine Fisheries Service, Fisheries Statistics and Economics Division. USA.*

In 2004, the US imported a total 261.155 kilograms of fresh processed Mediterranean Sea BFT, worth some €4,79 million. [72]

In 2004, the US imported a total 66.937 kilograms of frozen processed Mediterranean Sea BFT, worth €602.660,32. [74]

US Fresh BlueFin Tuna Imports from the Mediterranean Sea						
Origin	2004		2005		Jan 2006	
	Kgs.	Value in Euros	Kgs.	Value in Euros	Kgs.	Value in Euros
Cyprus	4.969	80.394,94 €				
France	319	11.535,43 €	12.318			
Greece	585	4,11 €	1.364	15.023,14 €		
Italy	5.957	779.516,38 €	24.838	360.040,50 €		
Malta	1.423	17.245,26 €	16.965	287.908,75 €		
Spain	200.121	3.147.454,64 €	264.661	4.715.066,95 €	51.497	753.924,50 €
Tunisia	11.093	128.177,19 €	35.941	520.836,50 €		
Turkey	36.688	630.550,13 €	8.172	136.856,51 €		
Total Mediterranean	261.155	4.794.878,07 €	364.259	6.035.732,35 €	51.497	753.924,50 €

US Frozen BlueFin Tuna Imports from the Mediterranean Sea						
Origin	2004		2005		Jan 2006	
	Kgs.	Value in Euros	Kgs.	Value in Euros	Kgs.	Value in Euros
Croatia	34.300	171.395,02 €	14.929	260.392,63 €		
Cyprus			5.588	69.280,87 €		
Greece	586	5.718,86 €				
Italy	188	159.910,50 €	4.691	143.235,25 €		
Malta	103	3.636,59 €				
Spain	12.757	91.940,22 €	24.237	412.937,68 €	7.032	88.506,53 €
Tunisia	2.061	16.480,83 €	4.030			
Turkey	14.942	153.578,29 €	7.547			
Total Mediterranean	64.937	602.660,32 €	61.022	885.846,42 €	7.032	88.506,53 €

Table 017

2005 and January 2006 figures show a net increase both in volume and value as imports in 2005 amounted to 364.259 kilograms of fresh processed Mediterranean Sea BFT worth €6 million. January 2006 imports amounted to 51.497 kilograms worth €753.924,50. Spain remains by far the principal Mediterranean exporter of fresh BFT.

The same export trend for fresh processed Mediterranean Sea BFT cannot be noted for frozen processed Mediterranean BFT.[73]

[72] Cross Check Eurostat Trade Statistics & National Marine Fisheries Service, Fisheries Statistics and Economics Division. USA.

[73] Reports published by the Chicago Tribune early 2006 about U.S. Food and Drug Administration (FDA) tests having proved that some canned light tuna would be high in mercury, have not impacted the niche Fresh & Frozen BFT market as they have the Yellowfin/Skipjack canned tuna market.

Consumption of canned tuna in the USA was reportedly lower during January 2006 than during the same period in 2005.

U.S. tuna industry lobby the Tuna Foundation, has challenged such reports stating that mercury levels in canned light tuna are well below FDA limits.

[74] Cross Check Eurostat Trade Statistics & National Marine Fisheries Service, Fisheries Statistics and Economics Division. USA.

2005 and January 2006 figures show a net decrease in volume but a value surge as imports in 2005 amounted to 61.022 kilograms of frozen processed Mediterranean Sea BFT worth €885.846,42. January 2006 imports amounted to 7.032 kilograms worth €88.506,53. Croatia, Spain and Turkey are the principal Mediterranean exporters of fresh BFT to the USA.

In order to acquire a conservative assessment of what US fresh and frozen processed Mediterranean BFT imports amount to in terms of Weight at Slaughter, we have chosen to apply to all US Mediterranean processed BFT import values in Kgs. a minimal Conversion Factor of x 1,16, as if all such imports corresponded to Gilled & Gutted fresh and/or frozen Mediterranean Sea BFT.

Total estimated US's Mediterranean BFT minimal consumption (Equivalent Weight at Slaughter) for 2004 would have therefore been: 378.267 Kgs.

Total estimated US's Mediterranean BFT minimal consumption (Equivalent Weight at Slaughter) for 2005 would have therefore been: 493.325 Kgs.

As in the case of Japan, US's combined imports of processed fresh and frozen BFT from Spain, France and Morocco may include some BFT caught in the North-East Atlantic façade of these three countries. We nevertheless sustain that such BFT percentage is negligible and if so, has been computed to all calculation purposes as being Mediterranean.

D. The US + Japan's 2004-2005-2006 Mediterranean Sea BlueFin Tuna imports.

Total estimated aggregated (Japan + USA) consumption (Equivalent Weight at Slaughter) of NEA + MED (Total imports + reported catches in NEA + MED) fresh and frozen BFT, for 2004 would have therefore been:

Japan:	27.992.213 Kg.
USA:	378.267 Kg.
Total (WR/W)	**28.370.480 Kg.**

Total estimated aggregated (Japan + USA) consumption (Equivalent Weight at Slaughter) of NEA + MED (Total imports + reported catches in NEA + MED) fresh and frozen BFT, for 2005 would have therefore been:

Japan:	24.813.176 Kgs.
USA:	493.325 Kgs.
Total (WR/W)	**25.306.501 Kgs.**

In both cases, that is 2004 and 2005, it is clear that ICCAT 32.000 MT yearly total quota for NEA + MED has been surpassed: Estimated aggregated (Japan + USA) consumption (Equivalent Weight at Slaughter) of NEA + MED (Total imports + reported catches in NEA + MED) fresh and frozen BFT, for 2004 and 2005 would represent 88,66% and 79,08% of ICCAT's yearly 32.000 MT quota.

As will be further pointed out, Europe is the second largest BFT market in the world accounting for some 18.230.147 Kgs and 16.152.865 Kgs net imports during 2004 and 2005 respectively. (See Table: 018)

Imports of Processed Fresh & Frozen Mediterranean Sea BFT by European Countries				
Importing Country	2004		2005	
	Value in Euros	Kilos	Value in Euros	Kilos
Austria	419.768,62 €	61.027	384.691,15 €	47.699
Belgium	4.340.999,98 €	712.754	4.459.678,64 €	688.000
Bulgaria	20.434,00 €	20.434		
Croatia	336.980,05 €	130.825	31.268,90 €	12.938
Cyprus	23.291,00 €	6.300	6.809,00 €	700
Czech Rep.	49.416,56 €	8.767	48.095,40 €	3.270
Denmark	762.152,56 €	213.155	1.113.600,42 €	231.800
Finland	20.045,67 €	1.553	108.905,68 €	6.916
France	12.744.486,28 €	3.007.474	12.344.991,24 €	3.236.710
Germany	3.432.231,56 €	472.609	3.354.083,91 €	534.769
Gibraltar	1.555,76 €	534	838,10 €	252
Great Britain	6.566.938,53 €	974.540	5.859.426,07 €	638.928
Greece	458.307,90 €	60.758	253.660,52 €	664.500
Holland	2.153.178,59 €	286.279	2.099.760,18 €	385.575
Hungary	62.012,02 €	13.140	82.640,50 €	11.700
Italy	9.966.035,30 €	2.259.549	18.009.474,01 €	2.733.303
Malta	109.073,00 €	463.500	15.011,00 €	5.700
Poland	10.124,91 €	818	90,00 €	52
Portugal	399.078,72 €	104.969	583.752,91 €	146.912
Russia	231.911,72 €	97.288	142.799,14 €	66.227
Slovenia	406.497,00 €	78.747	185.849,00 €	42.200
Spain	23.462.911,88 €	8.421.681	22.962.672,64 €	5.952.811
Sweeden	9.105,00 €	4.600	1.456,10 €	144
Switzerland	1.756.215,36 €	222.544	1.374.406,00 €	184.600
Other EU25 Imports	5.176.371,11 €	606.304	6.017.910,77 €	557.160
Totals	72.919.123,08 €	18.230.147	79.441.871,28 €	16.152.865

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)

Table 018

E. The Mediterranean Sea 2004-2005 BlueFin Tuna exports.

Though statistical Mediterranean BFT trade values, produced so far, clearly indicates that over fishing of BFT has in effect been taking place inside the Mediterranean Sea during 2004 and 2005, such data does not take into account fresh and frozen Mediterranean BFT trade (Exports) from Mediterranean BFT fishing countries into the EU and/or to other countries.

Europe (European countries, including Russia) is the second largest wholesale market for Mediterranean fresh and frozen BFT.

As seen on Table: 018, imports of processed Mediterranean fresh & frozen BFT are substantial.

The case of Great Britain (A 100% net importer of Mediterranean BFT) is paradigmatic, with total 2004-2005 imports of Mediterranean processed fresh & frozen BFT amounting to 1.613.468 Kgs. worth some €12.426.364,60.

Recent years' Mediterranean Sea processed fresh & frozen BFT wholesale-market development in European countries responds to three major factors:

- The meteoric expansion of fresh & frozen BFT e-commerce and retail sales by major European retail-convenience-stores and hyper/super/market chains such as France's Carrefour, Auchan and InterMarché; Spain's Mercadona, Eroski and Hypercor; Italy's Despar, Famiglia Cooperativa, Standa, Supermercati Emiliani, Panorama and Unisuper; Germany's Spar; UK's Tesco, Sainsbury's and Asda; Switzerland's Migros, to name a few.
- The mushrooming of conveyor-belt "fast-sushi-bars" in European non BFT fishing countries such as Great Britain, Germany, Holland, Austria, Switzerland, etc… coupled with a young affluent customer base highly influenced by the relatively recent "healthy-food" culture.
- The development of an upscale white-tablecloth dining sector, where celebrity chefs that buy fresh BFT daily from local distributors, are increasingly becoming prime targets as environmental campaigners step up efforts to promote sustainable seafood.

A first quantitative approximation of the real extent of such Mediterranean BFT over-fishing is exposed in the following pages.[75]

Mediterranean Sea BFT fishing and ranching country's FoB exports are used to estimate BFT Wild Round Weight having been caught during 2004 and 2005.

Re-exports values for processed fresh & frozen BFT between Mediterranean BFT producing countries are assumed to be at least matched by those same countries' national domestic consumption, though we intuitively believe aggregated domestic consumption for those countries, comfortably exceeds aggregated re-export values.

According to the November 2005 report: The European Tuna Sector, Economic Situation, Prospects and Analysis of the impact of the liberalisation of trade[76]: "*…the principal countries for which fresh tuna is intended are Spain (with approximately 50% of imports of tuna for direct consumption in 2003) and Italy (with approximately 33% of imports)… In total, it can be estimated that the market for tuna intended for direct consumption is probably in the region of 40.000 tonnes, accounted for by approximately 50% by community production (albacore and BlueFin tuna). This market is growing steadily. The species for which there is most demand are YellowFin, BlueFin tuna and Albacore. The market of tuna for direct consumption in the EU is concentrated on the Mediterranean (BlueFin tuna) and in the principal urban centres*."

We may therefore assume all FoB export values in Tables: 018 to 029, as being re-export-free.

Table 019

Spain's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023510	276.337,20 €	79.311	596.844,48 €	76.196	753.924,50 €	51.497
03023590	119.153.710,79 €	9.925.826	13.277.692,82 €	6.570.037	15.546.683,83 €	868.108
03034511	37.505,59 €	14.368	165.474,27 €	90.863	0,00 €	0
03034513		15.400		9.500	0,00 €	0
03034519	1.656.086,43 €	153.798	1.865.895,67 €	112.672	0,00 €	0
03034590	133.091,79 €	153.607	934.092,49 €	311.096	0,00 €	0
0304103860	3.122.435,68 €	218.339	1.914.519,48 €	105.980	180.174,00 €	8.800
0304109850	5.519,90 €	214	0,00 €	0	0,00 €	0
0304204510	1.729.221,54 €	102.436	8.041.790,92 €	694.400	188.444,00 €	19.000
0304909770	1.801.825,10 €	135.620	81.348,42 €	10.540	555.670,00 €	54.200
TOTALS	127.915.734,02 €	10.798.919	26.877.658,55 €	7.981.284	17.224.896,33 €	1.001.605

Sources: Statistic Cross-Check between:
* **Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)**
* **Base de Datos de Comercio Exterior de CS Cámaras. (Spain)**
* **French Customs-Douannes Françaises (France)**
* **OFIMER-Division Observatoire Economique Entreprise. (France)**
* **ISTAT – CoeWeb (Italy)**
* **NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)**
* **National bi-annual reports of BFT statistical document program (ICCAT)**
* **Eurostat. (European Union)**
* **National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)**
* **National bi-annual reports of BFT statistical document program (ICCAT)**
* **Gain Reports from the USDA Foreign Agricultural Service. (USA)**
* **Japan Customs Services Trade Statistical Data. (Japan)**
* **NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)**
* **United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.**
* **Korea Customs Service. (Republic of Korea)**
* **Institut National de la Statistique (Tunisia)**

[75] *Reader may consult at all times cross-checked BFT trade statistical data by consulting xls file: Ref. 043.*

[76] *Source: The European Tuna Sector, Economic Situation, Prospects and Analysis of the impact of the liberalisation of trade. Final Report by: Oceanic Developpement, Poseidon Aquatic Resource Management, Ltd. & Megapesca. November 2005. Ref. 040. Page: 122.*

France's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023510	893.000,00 €	157.300	601.858,21 €	125.131	0,00 €	0
03023590	13.707.718,88 €	3.756.298	4.990.813,61 €	1.191.400	0,00 €	0
03034511	235.474,30 €	61.538	977.145,68 €	480.542	0,00 €	0
03034513	13.200,00 €	3.300	0,00 €	0	0,00 €	0
03034590	493.000,00 €	85.700	101.000,00 €	70.700	0,00 €	0
0304103860	20.580.034,00 €	2.647.200	24.012.045,00 €	3.098.200	0,00 €	0
0304109850	3.700.394,00 €	457.200	4.632.259,00 €	588.300	0,00 €	0
0304204510	1.769.422,00 €	484.900	981.865,00 €	235.500	0,00 €	0
0304909770	820.477,00 €	401.500	891.221,00 €	311.300	0,00 €	0
TOTALS	42.212.720,18 €	8.054.936	37.188.207,50 €	6.101.073	0,00 €	0

Sources: Statistic Cross-Check between:
* Estadísticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 020

Italy's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023510	10.824.460,77 €	319.389	21.269.666,67 €	1.422.741	0,00 €	0
03023590	8.203.525,17 €	1.818.469	13.042.942,90 €	3.119.321	22.869.893,62 €	1.261.446
03034500	4.713.818,08 €	481.531	0,00 €	0	0,00 €	0
03034511	254,52 €	26	0,00 €	0	0,00 €	0
03034519	97.000,00 €	26.000	5.288,00 €	554	0,00 €	0
03034590	779.516,38 €	254.545	143.235,25 €	311.191	0,00 €	0
0304103860	9.046.941,00 €	1.787.800	9.595.687,00 €	1.875.100	0,00 €	0
0304109850	246.912,00 €	38.100	131.086,00 €	28.000	0,00 €	0
0304204510	1.437.556,00 €	78.300	517.343,00 €	51.900	0,00 €	0
0304909770	747.285,00 €	243.300	452.044,00 €	80.900	0,00 €	0
TOTALS	36.097.268,92 €	5.047.460	45.157.292,82 €	6.889.707	22.869.893,62 €	1.261.446

Sources: Statistic Cross-Check between:
* Estadísticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 021

Malta's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023510	0,00 €	0	774.398,67 €	51.800	0,00 €	0
03023590	36.705.604,80 €	330.095	42.428.762,96 €	954.032	14.311.368,79 €	801.278
03034511	12.063.092,87 €	1.232.282	12.374.879,87 €	1.264.132	0,00 €	0
03034513	0,00 €	0	35.533,00 €	9.502	0,00 €	0
03034519	52.213,00 €	3.533	197.721,78 €	14.914	0,00 €	0
03034590	351.174,34 €	303.600	1.273.135,39 €	1.100.661	0,00 €	0
Other	3.964.593,52 €	416.518	3.999.534,13 €	544.802	0,00 €	0
TOTALS	53.136.678,53 €	2.286.028	61.083.965,80 €	3.939.843	14.311.368,79 €	801.278

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 022

Croatia's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023510	171.395,02 €	29.821	0,00 €	0	0,00 €	0
03023590	45.986.283,46 €	3.732.652	34.797.629,66 €	2.569.374	19.402.120,57 €	1.202.920
TOTALS	46.157.678,48 €	3.762.473	34.797.629,66 €	2.569.374	19.402.120,57 €	1.202.920

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 023

Greece's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023510	5.718,86 €	3.097.086	1.044.989,71 €	69.900	0,00 €	0
03023590	697.918,57 €	75.993	273.682,11 €	697.018	0,00 €	0
03034511	2.936,77 €	300	0,00 €	0	0,00 €	0
03034519	20.262,50 €	2.267	85.583,20 €	11.076	0,00 €	0
0304909770	20.666,00 €	8.400	1.500,00 €	500	0,00 €	0
TOTALS	747.502,70 €	3.184.046	1.405.755,02 €	778.494	0,00 €	0

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 024

Cyprus's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023590	60.000,00 €	412.000	13.829.147,54 €	673.575	12.774.226,95 €	682.929
03034513	3.831.600,00 €	957.900	0,00 €	0	0,00 €	0
03023510	80.394,94 €	4.969	0,00 €	0	0,00 €	0
TOTALS	3.971.994,94 €	1.374.869	13.829.147,54 €	673.575	12.774.226,95 €	682.929

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 025

Tunisia's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023500	128.177,19 €	11.093	520.836,50 €	35.941	0,00 €	0
03023590	1.806.377,00 €	372.600	934.623,00 €	147.200	0,00 €	0
03034500	16.480,83 €	2.061	53.402,54 €	4.030	0,00 €	0
0304103860	1.347,00 €	400	36.043.400,00 €	27.200	0,00 €	0
0304204510	18.525,00 €	2.900	2.268,00 €	121.000	0,00 €	0
0304909770	12.130,00 €	9.000	15.971,00 €	10.900	0,00 €	0
30235 & 30345	13.143.600,00 €	792.648	23.347.837,04 €	1.336.656	6.315.652,48 €	346.384
TOTALS	15.126.637,02 €	1.190.702	60.918.338,08 €	1.682.927	6.315.652,48 €	346.384

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 026

Turkey's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
03023500	590.728,46 €	36.688	127.360,77 €	8.172	0,00 €	0
03023590	40.493,00 €	5.400	35.552,00 €	3.700	0,00 €	0
03034500	187.043,00 €	14.942	98.583,00 €	7.547	0,00 €	0
03034511	0,00 €	0	10.601,00 €	800	0,00 €	0
0304103860	251.757,00 €	24.900	650.975,00 €	72.100	0,00 €	0
0304109850	0,00 €	0	25.401,00 €	5.600	0,00 €	0
0304909770	0,00 €	0	29.228,00 €	5.600	0,00 €	0
30235 & 30345	47.949.676,92 €	2.804.591	49.648.896,30 €	2.827.432	19.008.602,84 €	1.144.660
Others		1.158.409	21.645,00 €	4.301		1.427.936
TOTALS	49.019.698,38 €	4.044.930	50.648.242,07 €	2.935.252	19.008.602,84 €	2.572.596

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* French Customs-Douannes Françaises (France)
* OFIMER-Division Observatoire Economique Entreprise. (France)
* ISTAT – CoeWeb (Italy)
* NSO National Statistics Office & Ministry of Agriculture and Fisheries. (Malta)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Gain Reports from the USDA Foreign Agricultural Service. (USA)
* Japan Customs Services Trade Statistical Data. (Japan)
* NOAA SouthWest Regional Office, National Marine Fisheries Service. (USA)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.
* Korea Customs Service. (Republic of Korea)
* Institut National de la Statistique (Tunisia)

Table 027

Morocco's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
30235 & 30345	3.327.600,00 €	295.932	13.801.496,30 €	994.402	12.929,08 €	815
0304103860	147.780,00 €	67.800	204.831,00 €	60.500	0,00 €	0
0304109850	3.097,00 €	900	5.120,00 €	1.700	0,00 €	0
0304909770	72.427,00 €	50.800	0,00 €	0	0,00 €	0
TOTALS	3.550.904,00 €	415.432	14.011.447,30 €	1.056.602	12.929,08 €	815

Sources: Statistic Cross-Check between:
* Estadisticas de Comercio Exterior de España, Agencia Tributaria. (Spain)
* Base de Datos de Comercio Exterior de CS Cámaras. (Spain)
* Eurostat. (European Union)
* National Marine Fisheries Service, Fisheries Statistics and Economics Division. (USA)
* National bi-annual reports of BFT statistical document program (ICCAT)
* Japan Customs Services Trade Statistical Data. (Japan)
* United States Department of Agriculture – Foreign Agriculture Service – U.S. Trade Imports by HS 10 digit codes.

Table 028

Libya's Reported Total Processed Fresh & Frozen BFT Exports FoB

Product by TARIC Code Nº.	2004		2005		2006	
	Value in Euros	Kilos	Value in Euros	Kilos	Value in Euros	Kilos
30235 & 30345	6.215.238,46 €	702.761	3.099.266,67 €	330.900		
030236				83.823		
TOTALS	6.215.238,46 €	702.761	3.099.266,67 €	414.723	0,00 €	0

Sources: Statistic Cross-Check between:
* Korea's national bi-annual report of BFT statistical document program (ICCAT)
* Japan Customs Services Trade Statistical Data. (Japan)
* Korea Customs Service. (Republic of Korea)

Table 029

Tables: 018 to 029 recapitulate total reported processed fresh & frozen BFT exports from Mediterranean BFT fishing countries, except for Algeria.

No reliable data for this country was made available by Algerian fishing and/or foreign trade authorities. No BFT imports from Algeria are recorded with Eurostat or any national foreign trade statistics institute in any of the above mentioned countries.

Algeria is nevertheless a BFT fishing Mediterranean nation. Some of its catches have been reported to ICCAT.[77]

From Tables 019 to 029 it can be concluded that total reported processed fresh & frozen BFT exports from Mediterranean BFT fishing countries in 2004, amounted to:

40.862.555 Kg.

Total reported processed fresh & frozen BFT exports from Mediterranean BFT fishing countries during 2005, amounted to:

42.892.827 Kg.

In order to estimate the total amount of BFT having been caught during 2004 and 2005 by all Mediterranean BFT fishing nations, we submit the following five scenarios per year (Tables 030 to 039) the major variable for each scenario, being the percentage of ranched BFT versus the percentage of wild caught BFT.

As explained in the methodological introduction to this chapter, were possible, the most conservative Conversion Factors have been retained and applied.

[77] *In 2004 and 2005, Algeria has chartered French BFT PS to catch inside its EEZ some 850.000 Kgs of BFT per year. Ref. 044.*

In 2004, Algeria reported to ICCAT a total catch of 1.208 MT of BFT, of which 753 MT were purse-seined by such French BFT PS.

FIRST SCENARIO 60 % OF RANCHED BFT (CF to WRW = /1,25) 40 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2004				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304. (Normally Dressed)	03023500	47.781	1,25	59.726	52.559
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604. (Normally Dressed)	03023510	3.687.876	1,25	4.609.845	4.056.664
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation. (Normally Dressed)	03023590	20.429.333	1,25	25.536.666	22.472.266
Frozen, excluding fillets and other meat of heading 0304.	03034500	498.534	1,05	523.461	460.645
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1308514	1,00	1.308.514	1.151.492
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	976.600	1,16	1.132.856	996.913
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	185.597	1,20	222.716	195.990
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	797.452	1,20	956.942	842.109
Fillets, Fresh or Chilled.	0304103860	4.746.439	1,67	7.926.553	6.975.367
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	496.414	1,67	829.011	729.530
Fillets, Frozen.	0304204510	668.536	1,67	1.116.455	982.481
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	848.620	1,67	1.417.195	1.247.132
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.170.859	1,16	7.158.196	6.299.213
Total Estimated Wild Round Weight:					**46.462.362**

Table 030

SECOND SCENARIO 65 % OF RANCHED BFT (CF to WRW = /1,25) 35 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2004				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304. (Normally Dressed)	03023500	47.781	1,25	59.726	51.962
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604. (Normally Dressed)	03023510	3.687.876	1,25	4.609.845	4.010.565
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation. (Normally Dressed)	03023590	20.429.333	1,25	25.536.666	22.216.900
Frozen, excluding fillets and other meat of heading 0304.	03034500	498.534	1,05	523.461	455.411
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1308514	1,00	1.308.514	1.138.407
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	976.600	1,16	1.132.856	985.585
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	185.597	1,20	222.716	193.763
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	797.452	1,20	956.942	832.540
Fillets, Fresh or Chilled.	0304103860	4.746.439	1,67	7.926.553	6.896.101
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	496.414	1,67	829.011	721.240
Fillets, Frozen.	0304204510	668.536	1,67	1.116.455	971.316
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	848.620	1,67	1.417.195	1.232.960
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.170.859	1,16	7.158.196	6.227.631
Total Estimated Wild Round Weight:					**45.934.380**

Table 031

THIRD SCENARIO 70 % OF RANCHED BFT (CF to WRW = /1,25) 30 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2004				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304. (Normally Dressed)	03023500	47.781	1,25	59.726	51.365
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604. (Normally Dressed)	03023510	3.687.876	1,25	4.609.845	3.964.467
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation. (Normally Dressed)	03023590	20.429.333	1,25	25.536.666	21.961.533
Frozen, excluding fillets and other meat of heading 0304.	03034500	498.534	1,05	523.461	450.176
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1308514	1,00	1.308.514	1.125.322
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	976.600	1,16	1.132.856	974.256
Frozen, excluding fillets and other meat of heading 0304, Heads Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	185.597	1,20	222.716	191.536
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	797.452	1,20	956.942	822.970
Fillets, Fresh or Chilled.	0304103860	4.746.439	1,67	7.926.553	6.816.836
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	496.414	1,67	829.011	712.950
Fillets, Frozen.	0304204510	668.536	1,67	1.116.455	960.151
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	848.620	1,67	1.417.195	1.218.788
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.170.859	1,16	7.158.196	6.156.049
Total Estimated Wild Round Weight:					**45.406.399**

Table 032

FOURTH SCENARIO 75 % OF RANCHED BFT (CF to WRW = /1,25) 25 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2004				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304. (Normally Dressed)	03023500	47.781	1,25	59.726	50.767
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604. (Normally Dressed)	03023510	3.687.876	1,25	4.609.845	3.918.368
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation. (Normally Dressed)	03023590	20.429.333	1,25	25.536.666	21.706.166
Frozen, excluding fillets and other meat of heading 0304.	03034500	498.534	1,05	523.461	444.942
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1308514	1,00	1.308.514	1.112.237
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	976.600	1,16	1.132.856	962.928
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	185.597	1,20	222.716	189.309
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	797.452	1,20	956.942	813.401
Fillets, Fresh or Chilled.	0304103860	4.746.439	1,67	7.926.553	6.737.570
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	496.414	1,67	829.011	704.660
Fillets, Frozen.	0304204510	668.536	1,67	1.116.455	948.987
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	848.620	1,67	1.417.195	1.204.616
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.170.859	1,16	7.158.196	6.084.467
Total Estimated Wild Round Weight:					**44.878.418**

Table 033

FIFTH SCENARIO 80 % OF RANCHED BFT (CF to WRW = /1,25) 20 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2004				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304. (Normally Dressed)	03023500	47.781	1,25	59.726	50.170
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604. (Normally Dressed)	03023510	3.687.876	1,25	4.609.845	3.872.270
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation. (Normally Dressed)	03023590	20.429.333	1,25	25.536.666	21.450.800
Frozen, excluding fillets and other meat of heading 0304.	03034500	498.534	1,05	523.461	439.707
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1308514	1,00	1.308.514	1.099.152
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	976.600	1,16	1.132.856	951.599
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	185.597	1,20	222.716	187.082
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	797.452	1,20	956.942	803.832
Fillets, Fresh or Chilled.	0304103860	4.746.439	1,67	7.926.553	6.658.305
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	496.414	1,67	829.011	696.370
Fillets, Frozen.	0304204510	668.536	1,67	1.116.455	937.822
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	848.620	1,67	1.417.195	1.190.444
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.170.859	1,16	7.158.196	6.012.885
Total Estimated Wild Round Weight:					**44.350.436**

Table 034

FIRST SCENARIO 60 % OF RANCHED BFT (CF to WRW = /1,25) 40 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2005				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304.	03023500	44.113	1,25	55.141	48.524
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604.	03023510	1.745.768	1,25	2.182.210	1.920.345
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation.	03023590	15.925.657	1,25	19.907.071	17.518.223
Frozen, excluding fillets and other meat of heading 0304.	03034500	11.577	1,05	12.156	10.697
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1.836.337	1,00	1.836.337	1.615.977
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	19.002	1,16	22.042	19.397
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	139.216	1,20	167.059	147.012
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	1.793.648	1,20	2.152.378	1.894.092
Fillets, Fresh or Chilled.	0304103860	5.239.080	1,67	8.749.264	7.699.352
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	623.600	1,67	1.041.412	916.443
Fillets, Frozen.	0304204510	1.102.800	1,67	1.841.676	1.620.675
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	419.740	1,67	700.966	616.850
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.122.316	1,16	7.101.887	6.249.660
Total Estimated Wild Round Weight:					**40.277.247**

Table 035

SECOND SCENARIO 65 % OF RANCHED BFT (CF to WRW = /1,25) 35 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2005				
	Processed BFT by TARIC Code N°	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304.	03023500	44.113	1,25	55.141	47.973
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604.	03023510	1.745.768	1,25	2.182.210	1.898.523
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation.	03023590	15.925.657	1,25	19.907.071	17.319.152
Frozen, excluding fillets and other meat of heading 0304.	03034500	11.577	1,05	12.156	10.576
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1.836.337	1,00	1.836.337	1.597.613
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	19.002	1,16	22.042	19.177
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	139.216	1,20	167.059	145.342
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	1.793.648	1,20	2.152.378	1.872.569
Fillets, Fresh or Chilled.	0304103860	5.239.080	1,67	8.749.264	7.611.859
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	623.600	1,67	1.041.412	906.028
Fillets, Frozen.	0304204510	1.102.800	1,67	1.841.676	1.602.258
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	419.740	1,67	700.966	609.840
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.122.316	1,16	7.101.887	6.178.641
Total Estimated Wild Round Weight:					**39.819.551**

Table 036

THIRD SCENARIO 70 % OF RANCHED BFT (CF to WRW = /1,25) 30 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2005				
	Processed BFT by TARIC Code N°	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304.	03023500	44.113	1,25	55.141	47.421
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604.	03023510	1.745.768	1,25	2.182.210	1.876.701
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation.	03023590	15.925.657	1,25	19.907.071	17.120.081
Frozen, excluding fillets and other meat of heading 0304.	03034500	11.577	1,05	12.156	10.454
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1.836.337	1,00	1.836.337	1.579.250
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	19.002	1,16	22.042	18.956
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	139.216	1,20	167.059	143.671
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	1.793.648	1,20	2.152.378	1.851.045
Fillets, Fresh or Chilled.	0304103860	5.239.080	1,67	8.749.264	7.524.367
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	623.600	1,67	1.041.412	895.614
Fillets, Frozen.	0304204510	1.102.800	1,67	1.841.676	1.583.841
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	419.740	1,67	700.966	602.831
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.122.316	1,16	7.101.887	6.107.622
Total Estimated Wild Round Weight:					**39.361.855**

Table:037

FOURTH SCENARIO 75 % OF RANCHED BFT (CF to WRW = /1,25) 25 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2005				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304.	03023500	44.113	1,25	55.141	46.870
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604.	03023510	1.745.768	1,25	2.182.210	1.854.879
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation.	03023590	15.925.657	1,25	19.907.071	16.921.011
Frozen, excluding fillets and other meat of heading 0304.	03034500	11.577	1,05	12.156	10.332
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1.836.337	1,00	1.836.337	1.560.886
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	19.002	1,16	22.042	18.736
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	139.216	1,20	167.059	142.000
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	1.793.648	1,20	2.152.378	1.829.521
Fillets, Fresh or Chilled.	0304103860	5.239.080	1,67	8.749.264	7.436.874
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	623.600	1,67	1.041.412	885.200
Fillets, Frozen.	0304204510	1.102.800	1,67	1.841.676	1.565.425
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	419.740	1,67	700.966	595.821
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.122.316	1,16	7.101.887	6.036.604
Total Estimated Wild Round Weight:					**38.904.159**

Table 038

FIFTH SCENARIO 80 % OF RANCHED BFT (CF to WRW = /1,25) 20 % OF WILD CAUGHT BFT (CF to WRW = 1:1)	2005				
	Processed BFT by TARIC Code Nº	Total Processed BFT Weight (Kgs.)	Average Conversion Factor	Estimated Weight at slaughter	Estimated Wild Round Weight
Fresh or chilled excluding fillets and other meat of heading 0304.	03023500	44.113	1,25	55.141	46.319
Fresh or chilled excluding fillets and other meat of heading 0304, for the industrial manufacture of products falling within heading No 1604.	03023510	1.745.768	1,25	2.182.210	1.833.056
Fresh or chilled excluding fillets and other meat of heading 0304, for other industrial processing or preservation.	03023590	15.925.657	1,25	19.907.071	16.721.940
Frozen, excluding fillets and other meat of heading 0304.	03034500	11.577	1,05	12.156	10.211
Frozen, excluding fillets and other meat of heading 0304, whole, for the industrial manufacture of products falling within heading No 1604.	03034511	1.836.337	1,00	1.836.337	1.542.523
Frozen, excluding fillets and other meat of heading 0304, Gilled and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034513	19.002	1,16	22.042	18.516
Frozen, excluding fillets and other meat of heading 0304, Heads-Off and Gutted, for the industrial manufacture of products falling within heading No 1604.	03034519	139.216	1,20	167.059	140.330
Frozen, excluding fillets and other meat of heading 0304, Other Presentations, for the industrial manufacture of products falling within heading No 1604.	03034590	1.793.648	1,20	2.152.378	1.807.997
Fillets, Fresh or Chilled.	0304103860	5.239.080	1,67	8.749.264	7.349.381
Loins, Belly-meat &/or Saku-blocks, Fresh or Chilled.	0304109850	623.600	1,67	1.041.412	874.786
Fillets, Frozen.	0304204510	1.102.800	1,67	1.841.676	1.547.008
Loins, Belly-meat &/or Saku-blocks, Frozen.	0304909770	419.740	1,67	700.966	588.811
BlueFin Tuna (Thunnus thynnus) non specified.	Fresh &/or Frozen	6.122.316	1,16	7.101.887	5.965.585
Total Estimated Wild Round Weight:					**38.446.463**

Table 039

F. Preliminary conclusions.

It appears that depending on the percentage distribution between ranched and wild caught BFT (60-40% to 80-20%) the total estimated BFT having possibly been caught in 2004 by Mediterranean BFT fishing nations, would vary between:

44.350.436 Kgs. ≤ WR/W ≤ 46.462.362 Kgs.

Estimated values for 2005's total BFT having possibly been caught by Mediterranean BFT fishing nations would vary between:

38.446.463 Kgs. ≤ WR/W ≤ 40.277.247 Kgs.

Since we have not been able to substantiate whether Turkey's 2004 and 2005 total reported processed fresh & frozen BFT exports include or not 700 MT and 971,3 MT having been imported/caught in 2004 and 2005 respectively and undercover of a charter arrangement with Korea, we choose to conservatively include such catches as being aggregated to Turkey's 2004 and 2005 total reported processed fresh & frozen BFT exports. (See Table: 027)

As stated previously, Japan has reported BFT catches of 3.020 MT for 2004 and we estimate Japan's 2005 BFT catches as not being below 3.000 MT. Such fish is not computed as exports by Mediterranean BFT fishing nations but must nevertheless be computed in order to ascertain the total estimated BFT having possibly been caught during 2004 and 2005.

By doing so, it appears that:

- Estimated values for 2004's total BFT having possibly been caught in NEA + MED would vary between:
  47.370.436 Kgs. ≤ WR/W ≤ 49.482.362 Kgs.

- Estimated values for 2005's total BFT having possibly been caught in NEA + MED would vary between:
  41.446.463 Kgs. ≤ WR/W ≤ 43.277.247 Kgs.

In any event, ICCAT's 2004 and 2005 (32.000MT WR/W) yearly quotas have been overly surpassed as in past years.

Estimated values for 2004 and 2005 BFT catches, seem to be in tune with 2002's ≈WR/W 59.238 MT reported tuna landings in the Mediterranean Sea.[78]

Based on the previous multiple scenarios for 2004 and 2005 (Tables 030 to 039) and on Japan's 2004 and 2005 reported/estimated BFT catches, the following (Table: 040) summarises estimated total BFT WR/W input into Mediterranean Sea tuna ranches and estimated output of such ranches for 2004 and 2005 Vs. estimated total BFT WR/W catch (Including Japan).[79]

Such results are not to be taken as definitive. They are to be considered for the time being, as a first indication to be corroborated when juxtaposing them with estimations or definitive data coming from different sources for calculation.

In next chapters we will estimate total BFT WR/W input into Mediterranean Sea tuna ranches and estimated output of such ranches for 2004 and 2005 using different data and sources other than foreign trade statistics from official databases. **Table 040**[80]

Variable Scenario Estimation of BFT Ranched in the Mediterranean Sea, based on 2004-Jan 2006 Foreign Trade processed Fresh & Frozen BFT statistics.	2004			2005		
	Estimated Total BFT WR/W Catch (Including Japan)	Estimated Total BFT WR/W input into ranches	Estimated Total Ranched BFT Weight at Slaughter	Estimated Total BFT WR/W Catch (Including Japan)	Estimated Total BFT WR/W input into ranches	Estimated Total Ranched BFT Weight at Slaughter
First Scenario: 60% of all total caught Mediterranean Sea BFT ranched.	49.482.362	25.343.106	31.678.883	43.277.247	21.969.407	27.461.759
Second Scenario: 65% of all total caught Mediterranean Sea BFT ranched.	48.954.380	27.455.032	34.318.790	42.819.551	23.800.191	29.750.239
Third Scenario: 70% of all total caught Mediterranean Sea BFT ranched.	48.426.399	29.566.958	36.958.697	42.361.855	25.630.975	32.038.719
Fourth Scenario: 75% of all total caught Mediterranean Sea BFT ranched.	47.898.418	31.678.883	39.598.604	41.904.159	27.461.759	34.327.199
Fifth Scenario: 80% of all total caught Mediterranean Sea BFT ranched.	47.370.436	33.790.809	42.238.511	41.446.463	29.292.543	36.615.679
Note: According to ICCAT's BlueFin Tuna Ranching Facilities' Positive List, the total reported maximum ranching input capacity in the Mediterranean Sea in 2005 amounted to 40.012 Metric Tonnes.						

[78] *Source: Agri.Med Annual Report 2005. CIHEAM. Page: 190. Ref. 046.*

[79] *Tuna Ranches' estimated outputs include fish mortality during transportation, fish total loss because of accident at sea and fish mortality during fattening season.*

[80] *Fifth scenario for both 2004 & 2005 though superior to ICCAT's reported maximum BFT WRW input capacity, are not to be discarded since ICCAT's BFT Ranching Facilities' Positive List does not take into account several tuna ranching activities, namely Northern Cyprus' Dardanel unreported and unregistered 3.000 MT capacity tuna ranch and Korean/Maltese/Libyan unreported "Tuna-Hotel" joint venture inside Libya's EEZ. Industry reports for 2005 account for some 1.800 MT (WRW) of BFT having been ranched in Northern Cyprus and some 1.750 MT (WRW) of BFT having been transferred live, Slaughtered and processed at sea inside Libya's EEZ by three Korean vessels chartered by Nour-Al-Hayat Fishing Co. (Tripoli-Libya) and Aquaculture Developments Limited (Valletta-Malta)*

Studio II: BlueFin Tuna PS Catches/Landings in the Mediterranean Sea during 2004 and 2005

A. [81]Major BlueFin Tuna Purse Seine Fleets in the Mediterranean Sea

According to ICCAT's Record of Vessels over 24 m Authorized to Operate in the Convention Area the total number of recorded tuna purse seine vessels operating in the Mediterranean Sea amounts to 279 vessels.

Our survey of national Mediterranean Sea BFT PS Vessel Fleets[82], slightly contradicts ICCAT's Record of BFT PS Vessels over 24m Authorized to Operate in the Convention Area in the sense that, according to our recount, the total number of legally and duly authorised tuna purse seine vessels operating in the Mediterranean Sea amounts to 244 vessels.

Algeria:	**0 Tuna Purse Seine Vessels.**
Croatia:	**31 Tuna Purse Seine Vessels.**
[83]Cyprus:	**0 Tuna Purse Seine Vessels.**
France:	**31 Tuna Purse Seine Vessels.**
Greece:	**17 Tuna Purse Seine Vessels.**
Italy:	**45 Tuna Purse Seine Vessels.**
[84]Malta:	**0 Tuna Purse Seine Vessels.**
Spain:	**6 Tuna Purse Seine Vessels.**
[85]Morocco:	**0 Tuna Purse Seine Vessels.**
Turkey:	**68 Tuna Purse Seine Vessels.**
Algeria:	**0 Tuna Purse Seine Vessels.**
[86]Tunisia:	**29 Tuna Purse Seine Vessels.**
[87]Libya:	**17 Tuna Purse Seine Vessels.**

[88]CPU values, calculated as catch per day at sea on board previous generation PS vessels during several Mediterranean Sea Summer fishing seasons, were Spanish PS: ≈ 3,46 MT, Greek PS: ≈ 0,22 MT, Italian PS: ≈ 2,50 MT and Turkish PS: ≈ 3,22 MT.[89]

According to pre and 2004 values compiled for this report, a clear upward trend in CPUs can be noted for those national BFT PS Fleets that have modernised their vessels, namely Spain and France.

Picture 004.- Italian BFT PS vessel fishing in the Aegean Sea.

[81] *Source: ICCAT Record of Vessels. The Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 m Authorized to Operate in the Convention Area requires that each ICCAT Contracting Party, Cooperating non-Contracting Party, Entity or Fishing Entity submit the list of its large-scale fishing vessels that are authorized to operate in the Convention Area*

[82] *See: Ref. 049.*

[83] *Cyprus had one fully operational BFT PS vessel during 2004: the former French Jean Marie Christian II. Such vessel was re-flagged in Libya and renamed AOEA.*

[84] *In 2004, Malta reported the flagging of BFT PS vessel Nawras. Such vessel was and is currently operational under Libyan flag. (Owner: Nour Al Hayat Fishing Co. Tripoli, Libya)*

[85] *The only operational Moroccan BFT PS vessel we have been able to monitor is the Tan-Tan-based LOA-24,41m Essadyines (Reg. Nº: 11-071. ICCAT Ref: AT000MAR00041.). Such vessel reported 2002 catches of 129.600 Kgs. (BFT: 2.300 Kgs; BET: 60.000Kgs; ALB: 46.000 Kgs; Others: 21.300 Kgs.) in the framework of a Moroccan-Japanese fishing agreement. Such vessel does not operate inside the Mediterranean Sea.*

[86] *During 2003, Tunisian purse seine vessels' catches rose to only 740 Metric Tonnes due to stiff fishing competition from EU BFT PS fleets operating in the Tunisian traditional BFT fishing grounds. According to Abdallah Hattour, total Tunisian PS BFT catches in 1999, 2000 and 2001, amounted to 2,263MT, 2,132MT and 2,260MT, respectively. This dramatic situation forced all four Tunisian tuna ranching firms to import live BlueFin tuna. 745 tons were repatriated inside Tunisian cages from Libyan waters. According to the report of services concerned by this activity 1,332 tons passed in the Tunisian cages. Abdallah Hattour, SCRS/2004/084, Col.Vol.Sci.Pap.ICCAT, 58(2): 606-614 (2005). Ref. 051.*

[87] *Libya BFT PS vessel fleet is composed by 12 formerly French BFT PS vessels, re-flagged in Libya and 5 national steel-hull BFT PS vessels built by Dammen Shipyard in Holland under the former Libyan-Spanish fishing Agreement.*

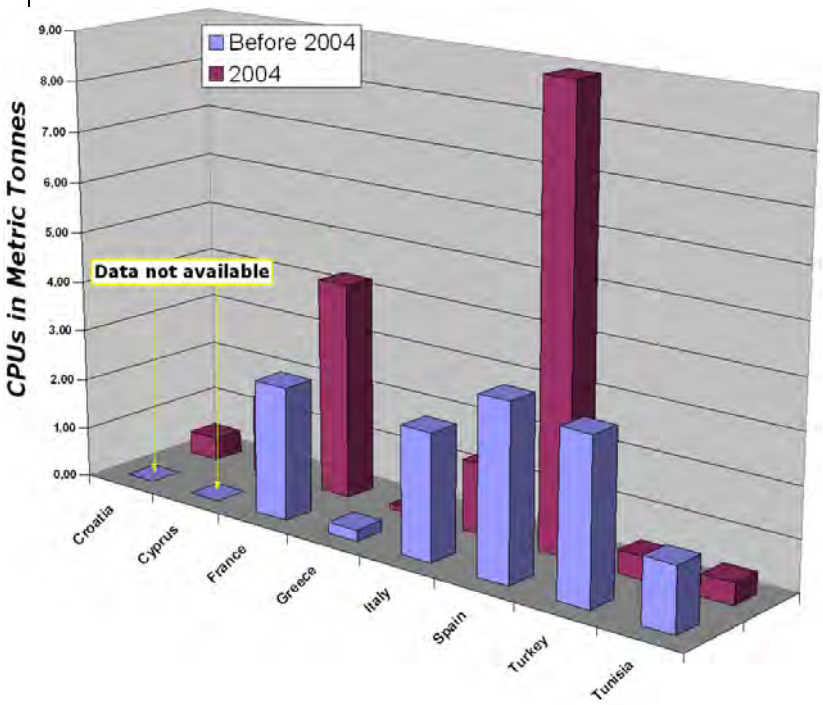
[88] *Source: Project Nº 94/050: Investigations on abundance indices of Purse Seine BlueFin Tuna in the Mediterranean Sea by observers on board. Ref. 052.*

[89] *Source: Catch and effort of the BlueFin Tuna purse seine fishing in Turkish waters, by F.S. Karakulak, Istanbul University, Faculty of Fisheries, Ordu cad. No. 200, 34470-Laleli, Istanbul, Turkey. Ref.053.*

Country	Number of flagged BFT PS Vessels	[91] Pre 2004 reported BFT PS CPUs (WR/W in MT)	[92] 2004 reported PS BFT catches (WR/W in MT)	[93] 2004 average calculated PS BFT CPUs (WR/W in MT)	2004 Ranched BFT in the Mediterranean Sea [94] (WR/W in MT)	2004 Average BFT PS Med Fleet CPU
Croatia	31		827	0,44	1.900	
Cyprus	1		94	1,57	1.300	
France	31	2,08	[95] 7.947	4,27	0	
Greece	17	0,22	107	0,10	1.000	
Italy	45	2,50	3.751	1,39	2.000	
Spain	6	3,46	3.216	8,93	9.000	
Turkey	68	3,22	[96] 1.775	0,44	3.600	
Tunisia	29	[97] 1,27	740	0,43	1.480	
Libya	19				850	
Malta	0				4.000	
Totals:			18.457	1,35	25.130	1,70

Table 041.[90] [91] [92] [93] [94] [95] [96]

Figure 029.- Pre and 2004 values compiled by ATRT, SL.



[90] *Source: CPU values, calculated as catch per day at sea on board previous generation PS vessels during several Mediterranean Sea Summer fishing seasons. Project Nº 94/050: Investigations on abundance indices of Purse Seine BlueFin Tuna in the Mediterranean Sea by observers on board. Catch and effort of the BlueFin Tuna purse seine fishing in Turkish waters, by F.S. Karakulak, Istanbul University, Faculty of Fisheries, Ordu cad. No. 200, 34470-Laleli, Istanbul, Turkey. Ref. 052 & Ref. 053.*

[91] *Source: REPORT OF THE 2005 MEETING OF THE STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) (Madrid, Spain - October 3 to 7, 2005) October 2005 PLE-013 / 2005. Ref. 054.*

[92] *CPUs calculated on a 60 days Summer BFT fishing season basis and for reported BFT PS catches.*

[93] *Source: Industry reports published in the Tuna Ranching Intelligence Unit 2004. Spain: Includes 2.500 tonnes of transferred live-tuna slaughtered in cages at sea during the fishing season. Libya: All tunas were transferred alive and slaughtered during the fishing season. Turkey: Includes tuna farm in Northern Cyprus. Ref. 058.*

[94] *Includes catches by French BFT PS under Charter Agreement in Algerian (753MT) and Moroccan (855MT) waters against Algerian and Moroccan ICCAT quota respectively.*

[95] *Includes catches by Turkish BFT PS under Charter Agreement in Turkish Waters and Korean ICCAT quota. Ref. 057.*

[96] *Pre 2004 Tunisian BFT PS CPU calculated on the basis of reported catches. According to Abdallah Hattour, total Tunisian PS BFT catches in 1999, 2000 and 2001, amounted to 2,263MT, 2,132MT and 2,260MT, respectively. Ref. 051.*

B. Study II: 2004 BlueFin Tuna Catches/Landings in the Mediterranean Sea, based on reported catches

According[97] to ICCAT, 2004 total initially reported catches/landings of BlueFin Tunas by major Mediterranean coastal countries and major BFT fishing foreign countries (NE Atlantic + Med.) amounted to 26,961 Metric Tonnes, of which Purse Seined BlueFin Tunas amounted to 12,277 Metric Tonnes. Libya did not report its 2004 catches.

[98]Croatia:	827 Metric Tonnes.
Cyprus:	105 Metric Tonnes.
France:	7.030 Metric Tonnes.
Greece:	389 Metric Tonnes.
[99]Italy:	4.686 Metric Tonnes.
Malta:	264 Metric Tonnes.
[100]Spain:	5.154 Metric Tonnes.
Morocco:	2.780 Metric Tonnes.
[101]Turkey:	1.075 Metric Tonnes.
Algeria:	1.208 Metric Tonnes.
Tunisia:	791 Metric Tonnes.
Libya:	0 Metric Tonnes.
Others:	2.652 Metric Tonnes.

According to FAO Fishstat, 2004 total reported catches/landings of BlueFin Tunas by major Mediterranean coastal countries and major BFT fishing foreign countries (NE Atlantic + Med.) amounted to 27.853 Metric Tonnes.

Algeria	1.208 Metric Tonnes.
China	41 Metric Tonnes.
Croatia	827 Metric Tonnes.
Cyprus	105 Metric Tonnes.
France	7.030 Metric Tonnes.
Greece	389 Metric Tonnes.
Ireland	1 Metric Tonnes.
Italy	4.686 Metric Tonnes.
Japan	2.572 Metric Tonnes.
Korea	700 Metric Tonnes.
Malta	264 Metric Tonnes.
Morocco	819 Metric Tonnes.
Netherlands	1 Metric Tonnes.
Portugal	25 Metric Tonnes.
Serbia and Montenegro	7 Metric Tonnes.
Spain	5.149 Metric Tonnes.
Syria	263 Metric Tonnes.
Taiwan	51 Metric Tonnes.
Tunisia	2.639 Metric Tonnes.
Turkey	1.075 Metric Tonnes.

[97] Source: REPORT OF THE 2005 MEETING OF THE STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) (Madrid, Spain - October 3 to 7, 2005) October 2005 PLE-013 / 2005. Ref. 054. Italy reported 4.686 MT to ICCAT though according to the Servizio Contabilità Nazionale ISTAT Italy. Tavola 1.2. Produzione della pesca marittima e lagunare effettuata nel Mediterraneo per gruppo di specie, total BFT landings amounted to 4.555.600 Kgs. Ref. 062.

[98] The total Croatian catch of tuna and tuna like fishes in 2004 was 827 metric tons (t). 100% of the catch is BlueFin tuna. Almost the total catch was caught by purse seine, with only 450 kg have been reported as caught by sport fishing. Additionally, 447 t of large BlueFin tuna were imported in Croatia from France and Spain for growing purposes. The number of licensed vessels actively fishing for tuna and tuna like species in 2004 was 31, while 15 of these have been reported as licensed large- scale vessels. All catch and farming data are reported to the National Fisheries Information System. All the conservation and management measures regarding BlueFin tuna fisheries and farming are incorporated in national legislation. Ref. 054.

[99] Italy's FARM and UNCL Gear reports are considered as PS.

[100] Spain's UNCL Gear reports are considered as PS.

[101] BlueFin tuna were harvested in Turkish waters from May to July in the eastern Mediterranean Sea. In October-November BlueFin tuna were targeted in the Aegean Sea.

The total BlueFin tuna catch in 2004 was 1,075 metric tons (t). Almost all of the catch was caught by purse seiners. The number of licensed vessels to fish BlueFin tuna was 68. Almost all of the total purse seine catch was transferred to floating cages for on-growing. Ref. 054.

BFT Catches in MT reported to ICCAT in 2004. (NE Atlantic & Mediterranean Sea)				
Flag	**Fishing Area**	**Gear**	**Reported Catches in MT**	**Total**
Algeria	Mediterranean Sea	Longline: Bottom or Deep longliners	167	1.208
	Mediterranean Sea	Gillnet: Drift net	186	
	Mediterranean Sea	Handline	39	
	Mediterranean Sea	Purse seine	753	
	Mediterranean Sea	Trap	5	
	Mediterranean Sea	Unclassified: Gears not reported	58	
Croatia	Mediterranean Sea	Purse seine	827	827
China PR	Northeast Atlantic	Longline	41	41
Chinese Taipei	Mediterranean Sea	Longline: Foreign-based	51	51
Cyprus	Mediterranean Sea	Longline	11	105
	Mediterranean Sea	Purse seine	94	
Spain	Mediterranean Sea	Unclassified: Gears not reported	3.216	5.150
	Northeast Atlantic	Longline: Home-Based	4	
	Northeast Atlantic	Unclassified: Gears not reported	112	
	Northeast Atlantic	Baitboat	374	
	Northeast Atlantic	Handline	87	
	Northeast Atlantic	Baitboat	1.357	
France	Mediterranean Sea	Purse seine	6.339	7.030
	Mediterranean Sea	Unclassified: Gears not reported	130	
	Northeast Atlantic	Baitboat	47	
	Northeast Atlantic	Longline	2	
	Northeast Atlantic	Trawl: Mid-water pelagic trawl	26	
	Northeast Atlantic	Purse seine	223	
	Northeast Atlantic	Unclassified: Gears not reported	263	
Greece	Mediterranean Sea	Handline	73	389
	Mediterranean Sea	Longline	209	
	Mediterranean Sea	Purse seine	107	
Italy	Mediterranean Sea	FARM: Artificial cages	1.474	4.685
	Mediterranean Sea	Longline	169	
	Mediterranean Sea	Purse seine	650	
	Mediterranean Sea	Rod and Reel	0	
	Mediterranean Sea	SPORT: Recreational fisheries	110	
	Mediterranean Sea	Trap	119	
	Mediterranean Sea	Unclassified: Gears not reported	13	
	Adriatic Sea	FARM: Artificial cages	1.042	
	Adriatic Sea	Longline	36	
	Adriatic Sea	Purse seine	116	
	Adriatic Sea	SPORT: Recreational fisheries	91	
	North Ionian Sea	Longline	9	
	North Ionian Sea	SPORT: Recreational fisheries	35	
	South Ionian Sea	FARM: Artificial cages	31	
	South Ionian Sea	Longline	41	
	South Ionian Sea	Purse seine	83	
	South Ionian Sea	SPORT: Recreational fisheries	33	
	Ligurian Sea	Longline	6	
	Ligurian Sea	Purse seine	14	
	Ligurian Sea	SPORT: Recreational fisheries	21	
	Sardinia	Longline	29	
	Sardinia	SPORT: Recreational fisheries	58	
	Tyrrenean Sea	FARM: Artificial cages	122	
	Tyrrenean Sea	Longline	12	
	Tyrrenean Sea	Purse seine	219	
	Tyrrenean Sea	SPORT: Recreational fisheries	152	
Malta	Mediterranean Sea	Longline	264	264
Japan	Mediterranean Sea	Longline	638	2.624
	Northeast Atlantic	Longline	1.986	
Korea	Mediterranean Sea	Purse seine	700	700
Libya	Mediterranean Sea			0
Morocco	Mediterranean Sea	Handline	597	2.780
	Mediterranean Sea	Purse seine	222	
	Northeast Atlantic	Longline	8	
	Northeast Atlantic	Purse seine	855	
	Northeast Atlantic	Trap	1.098	
Tunisia	Mediterranean Sea		791	791
Turkey	Mediterranean Sea	Purse seine: Catching large fish	1.075	1.075

Table 042[102]

[102] *Source: ICCAT. See detail: Ref. 055.*

2004 BFT Catches Comparative and Cumulative Results (NEA + MED) in MT

Country	ICCAT General Quota or EU General TAC (NEA + MED)	Specific ICCAT or National Quota for the Mediterranean Sea	[104] BFT reported catches/landings Mediterranean Source: Eurostat	[105] BFT reported catches/landings Northeast Atlantic Source: Eurostat	[106] BFT reported catches/landings (NEA + MED) Source: ICCAT	Maximum Eurostat/ICCAT Combined Results (NEA + MED)	IUU and/or Unreported Catches (MED)	Maximum Eurostat/ICCAT + IUU Catches Combined Results	Maximum over-fishing by country
Algeria	1.550	1.550	0	0	1.541	1.541	[107] 960	2.501	951
China (PR)	74	0	0	0	41	41	0	41	-33
Croatia	935	935	0	0	827	827	0	827	-108
Greece	326	326	832	0	389	832	0	832	506
Spain	6.317	0	2.412	2.289	5.150	5.150	0	5.150	-1.167
France	6.233	5.609	8.338	1.120	7.030	9.458	0	9.458	3.225
Italy	4.920	4.920	5.467	0	4.685	5.467	0	5.467	547
Cyprus	*	*	105	0	105	105	0	105	0
Malta	*	*	228	0	264	264	[108] 191,5	455,5	191,5
Japan	2.930	0	0	0	3.020	3.020	0	3.020	90
Korea	Pm*	0	0	0	700	700	0	700	0
Chinese Taipei	Pm*	0	0	0	51	51	0	51	0
Turkey	*	*	0	0	1.075	1.075	0	1.075	1.075
N. Cyprus	0	0	0	0	0	0	[109] 2.800	2.800	2.800
Morocco	3.078	0	0	0	2.780	2.780	0	2.780	-298
Tunisia	2.543	2.543	0	0	2.639	2.639	0	2.639	96
Libya	1.300	1.300	0	0	0	0	[110] 3.800	3.800	2.500
Ireland	*	*	0	0	1	1	0	1	0
Netherlands	*	*	0	0	1	1	0	1	0
Portugal	*	*	0	0	25	25	0	25	0
Serbia & M.N.	0	0	0	0	7	7	0	7	7
Syria	0	0	0	0	263	263	0	263	263
Totals	[111] 32.000	17.183	17.382	3.409	30.594	34.247	7.751,5	41.998,5	

Table 043[103] [104] [105] [106] [107] [108] [109] [110]

Such figures (ICCAT initial and FAO Fishstat) do not match some of Eurostat figures or latter ICCAT figures for the same period and the exact same areas, as can be clearly seen in the following Table: 043.

As seen on Table: 043, BFT over-fishing in the North-east Atlantic + Mediterranean Sea area in 2004, amounted to some 9.998,5 Metric Tonnes above ICCAT's 2004 quota for the region of 32,000 Metric Tonnes.

BFT fishing by EU fleets amounted to 21.467,5 MT (3.017,5 MT above EU's 2004 initial catch limit / quota of 18.450 MT).

France's BFT over-fishing was the highest of all with 3.225 MT above its 2004 EU total BFT TAC (NEA + MED) of 6.233 MT. Our estimate for France's BFT catches and over-fishing is consistent with France's OFIMER BFT-fishing data for 2004.

According to OFIMER-DPMA total fresh BFT sales by French fishing vessels during 2004 amounted to €35 million for WR/W ≈ 9.456 MT. (85% of 2004's production was destined to export, 15% to national consumption)[111]

Médi-Pêche from Sète clearly stands out as the largest French BFT exporter and national wholesaler with yearly sales of over 2.000 MT of BFT.[112]

IUU catches amounted to some 7.751,5 MT.

[103] *Source: Eurostat. Catches - Mediterranean and Black Sea. Date of extraction: Sat, 18 Mar 06 03:37:07. Last update: Mon Mar 13 15:31:51 MET 2006. BFT Atlantic BlueFin tuna - Thunnus thynnus (tonnes). r37 Mediterranean and Black Sea.*

[104] *Source: Eurostat. Catches – North-east Atlantic. Date of extraction: Sun, 19 Mar 06 11:23:08. Last update: Thu Mar 16 21:48:34 MET 2006. BFT Atlantic BlueFin tuna - Thunnus thynnus (tonnes). r27 North-east Atlantic.*

[105] *Source: REPORT OF THE 2005 MEETING OF THE STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) (Madrid, Spain - October 3 to 7, 2005) October 2005 PLE-013 / 2005.East Atlantic BFT Compliance Table for 2005. Ref. 054.*

[106] *Unreported Algerian catches by 12 chartered Japanese long-liners under €1,500/MT charter arrangement, being unloaded at Gibraltar. Source: Industry reports, ATRT estimate.*

[107] *According to Maltese Official sources, total 2004 BFT landings by Maltese fishing vessels amounted to 455.548 Kgs. Source: Malta's National Statistics Office. NSO. Ref. 073.*

[108] *Unreported Turkish catches farmed at Tuna Ranch in Northern Cyprus. Source: Industry reports, ATRT estimate. Ref. 058.*

[109] *I/U/U BFT Fishing inside Libya's newly 60NM EEZ. Ref. 058.*

[110] *Includes Others ICCAT Quota of 1.100 MT.*

[111] *Source: OFIMER. Conseil de Direction. Séance du 21 Septembre 2005. Le Point sur le marché du thon germon. Ref. 100.*

[112] *Source: Médi-Pêche. Ref. 101.*

Korea declared 700 Metric Tonnes of purse seined BFT in the Mediterranean undercover of Turkish PS vessel charter agreements. All 700 Metric Tonnes were ranched in Turkey.

Algeria initially declared 753 Metric Tonnes of purse seined BFT in 2004. Total BFT reported catches for 2004 have amounted to 1.541.

This country has no PS vessel fleet that would allow it to catch such amounts.

The nationality of the PS vessels involved in such catches is French.

Morocco declared 222 Metric Tonnes and 855 Metric Tonnes of purse seined BFT, caught inside Mediterranean and Northeast Atlantic waters respectively.

This country has no PS vessel fleet that would allow it to catch such amounts.

The nationality of the PS vessels involved in such catches is thought to be French.[113]

Libya did not report any of its catches in 2004 against its 2004 ICCAT quota of 1,300 Metric Tonnes and important BFT PS vessel fleet.

Table: 043 total estimated result of ≈ WR/W 41.998,5 MT (Eurostat/ICCAT + I/U/U Catches Combined) is consistent with those previously noted in Table: 040, based on yearly variable scenarios on processed fresh & frozen BFT recorded exports:

47.370.436 Kgs. ≤ WR/W ≤ 49.482.362 Kgs.

The ≈ 5.371,9 MT ≤ WR/W ≤ 7.483,8 MT range between Table: 043 and Table: 040, could be attributable to I/U and/or U with respect to Table: 043 total estimated result of WR/W ≈ 41.998,5 MT.

The reader will notice large disparities between 2004 national BFT estimated catches values and 2004 national values for FoB exports of fresh & frozen BFT.

This is normal, since live-BFT imports and exports between Mediterranean BFT fishing and ranching countries as well as BFT ranching output, have not been computed yet.

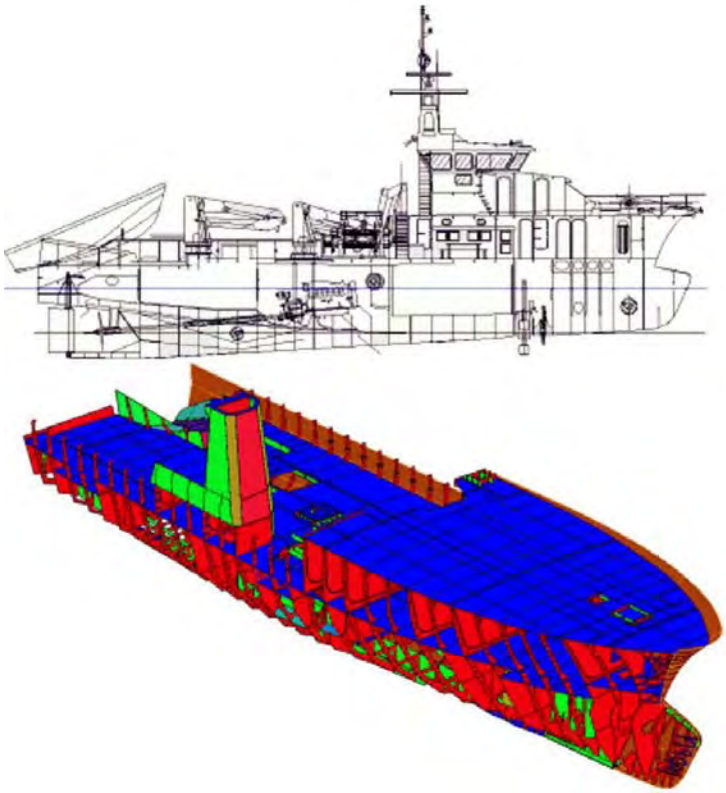
[113] *For more on Moroccan fisheries statistical information, see: Ref. 083 & Ref. 084.*

Study III: 2005 BlueFin Tuna Catches/Landings in the Mediterranean Sea, based on Industry reports.

CPUs for Spain and France national BFT PS fleets in the Mediterranean Sea have dramatically sore, during the last five years, due to five main factors:

1. New vessels with better hull hydrodynamics and more efficient main engines and screws,

Figure 030.-. Typical Spanish & French Mediterranean Sea BFT PS General Setting and Hull design 3D CAD rendering.



2. The massive use of tuna spotting airplanes,

Picture 007.- Typical tuna spotting airplanes used in the Mediterranean Sea by BFT PS fleets: Left: Cessna "Push Pull"; Right: Partenavia P-68.

3. Use of latest generation sonar and radar technology,
4. Use of satellite telemetry,
5. New BFT fishing grounds off the coasts of Cyprus, Syria, Egypt and Libya.

The combined effect of all five factors on CPUs for Spain and France national BFT PS fleets in the Mediterranean can be deduced from the following Table: 044. The exceptionally high catches of the fleet operating South of Cyprus off the coast of Egypt are mainly due to the fact that this was the only operational BFT PS fleet in the area and that such fishing grounds had never been exploited by hi-tech BFT PS vessels before. The CPUs for the second fleet of BFT PS vessels operating in the Balearic Islands fishing ground corresponds to lower than average CPUs for such area and such type of vessels.[114]

[114] *All live-BFT was transferred and fattened at the only 100% input-output traceability-proof tuna ranch in the entire Mediterranean Sea, located at San Pedro del Pinatar, Murcia, Spain and operated by France's EcoloFish/SudMarée from Sète. Ref. 056. EcoloFish/SudMarée have focused on high-quality ranched BFT; BFT origin and end product full-traceability being a value-added-product must.*

Comparative CPU values (MT) for French & Spanis BFT Purse Seine Fishing Fleets in the Balearic Islands and the Eastern Mediterranean (Between Cyprus and Egypt)

Cyprus-Egypt May June 2005 (30 Days)

Jean Marie Christian V		Nuevo Elorz		Nuevo Panchilleta		Supplementary Fleet's catches & Exports to Turkey		Supplementary Fleet's catches & Exports to Greece	Unreported Dead BFTs during transfer &/or transport
				21/05/2005	198,00		167,00 *	-	
		23/05/2005	225,00						
26/05/2005	72,00						**	**	
		27/05/2005	30,00			05/07/2005			200,00
		28/05/2005	165,00				430,00	635,00	
30/05/2005	118,00								
				01/06/2005	150,00				
02/06/2005	155,00			Unreported	347,00				

Total Fleet	**2.892,00 MT**
CPU Fleet	**96,40 MT**
Average CPUE	**32,13 MT**

Note:
*Corresponding to Spanish BFT PS vessels.
**Corresponding to French BFT PS vessel.

Balearic Islands June July 2005 (60 Days)

Golfe du Lion 6		Golfe du Lion 5		St Antoine Marie 2		Roger-Christian IV		St Antoine-Marie		Gepus	
16/06/2005	20,00	13/07/2005	18,00	24/06/2005	80,00	16/06/2005	50,00	20/06/2005	30,00		200,00
19/06/2005	40,00			27/06/2005	80,00						
20/06/2005	70,00			12/07/2005	30,00						
11/07/2005	35,00			14/07/2005	13,20						
CPUE	TOTAL	CPUE	TOTAL	CPUE	TOTAL	CPUE	TOTAL	CPUE	TOTAL	CPUE	TOTAL
2,75	165,00	0,30	18,00	3,39	203,20	0,83	50,00	0,50	30,00	3,33	200,00

Total Fleet	**666,20 MT**
CPU Fleet	**11,10 MT**
Average CPUE	**1,85 MT**

Note: Dead BFTs during transfer &/or transport included

Table 044

No complete independent in-situ recorded CPUs for other French, Italian and Spanish BFT PS vessels operating in the Western Mediterranean, Tyrrhenian and Aegean Seas or inside Libyan waters are yet available.

French BFT fishing industry sources acknowledge that the entire French BFT PS fleet (Including Spanish and Libyan BFT PS vessels fishing in partnership with French fleets) would have caught some WR/W 17.500 MT of BFT. (Including dead tuna during transfer and transport).

Figure 031. New Mediterranean BFT Fishing Grounds and Routes of Live Transferred BFT back to Offshore Tuna Ranches.

1. French-Spanish &/or Libyan BFT PS combined and aggregated 2005 BFT PS fishing results.

The following is a recollection of estimated catches by BFT PS fleets and fishing grounds, based on direct industry reports. (See also Chapter on the Mediterranean Sea BFT ranching sector.).

Table 045

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	ST ANTOINE MARIE II					30				
France	ROGER CHRISTIAN IV					50				
Spain	GEPUS					200				
France	SAINT ANTOINE MARIE					203			300	
France	GOLFE DU LION VI					165				
France	GOLFE DU LION V					18				
TOTAL:										966

Table 046

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
Spain	LA FRAU DOS					1.007				
France	JANVIER GIORDANO									
Spain	TIO GEL SEGON									
TOTAL:										1.007

Table 047

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	LOUIS FRAINCOISE 2					40				
France	VILLE D'ARZEW 2									
TOTAL:										40

Table 048

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
Spain	LEONARDO BRULL SEGON						1.050			
Libya	Alssafa I									
France	ANNE AINTOINE 2									
France	JANVIER LOUIS RAPHAEL									
France	JEAN LOUIS RAPHAEL 2									
TOTAL:										1.050

Table 049

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	GERARD LUC 3					700				
France	GERARD LUC IV									
France	ERIC MARIN									
France	GERALD JEAN III									
France	CAP HORIZON									
TOTAL:										700

Table 050.-*BFT ranched in Croatia

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	JEAN MARIE CHRISTIAN 5	345	347	167	635		896	530		1.504 *
Spain	NUEVO ELORZ	420		430						
Spain	NUEVO PANCHILLETA	348								
France	JEAN MARIE CHRISTIAN 3							710		1.504 *
France	JEAN MARIE CHRISTIAN 4									
France	JEAN MARIE CHRISTIAN 6									
France	JEAN MARIECHRISTIAN 7									
France	VENT DU NORD									
Libya	Alhilal									
Libya	Dila									
Libya	AOEA									
TOTAL:										7.836

Table 051

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	CISBERLAINDE 5					583	2.450			
France	MARC AL									
France	PROVENCE COTE D'AZUR									
France	ROSINE ARTHUR									
Libya	Jarjaruma									
Libya	Tuna Libya									
Libya	RAS ETIN									
TOTAL:										3.033

Table 052

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	ST SOPHIE FRAINCOIS 2						1.100			
France	ST SOPHIE FRAINCOIS 3									
Libya	Alhader II									
TOTAL:										1.100

Table 053

Estimated BFT catches in 2005 (WR/W in MT)		Cyprus	Cyprus Unreported	Turkey	Greece	Balearic Islands	Libya	Tunisia	Algeria	Unknown Fishing Ground
France	CHRISDERIC II						1.500			
France	RAYMOND ELISE III									
France	VILLE D'AGDE 3									
Libya	OZU-2									
Libya	Khaleej Eltahadi									
Libya	El-Aghile									
Libya	Al-Rabta									
Libya	Tagreft									
Libya	Nawras									
TOTAL:										1.500

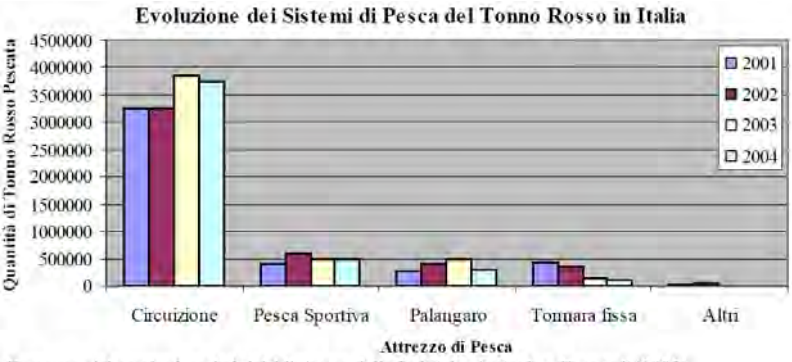
Estimated total catches by these fleets would amount to some WR/W 17.232 MT of PS BFT. Such figure is consistent with Spain and France's combined 2005 ≈ 14.082 MT reported total processed fresh & frozen BFT exports for 2005 (Tables: 019 & 20).

2. Italy's aggregated 2005 BFT PS fishing results.

Industry reports stated average seasonal CPUs of 130 MT for all three major Italian BFT PS vessel fleets: (Associazione Produttori Tonnieri del Tirreno di Salerno, Armatori Operatori della Pesca di Cesenatico and Organizzazione Produttori Tonieri Siciliani di Messina) totalling 45 fully operational BFT PS vessels and therefore an estimated aggregated WR/W tonnage of 5.850 MT. According to Italian Official Sources[115], 80% of Italian 2004 BFT catches were purse-seined.

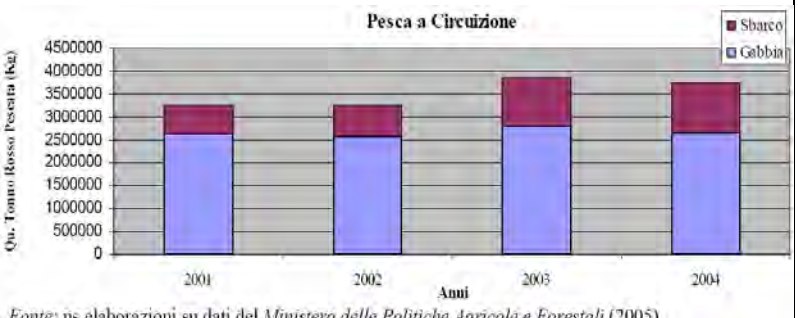
Estimated WR/W 5.850 MT of PS BFT (Well in excess of some 962 MT of Italy's total BFT EU BFT TAC) are consistent with Italy's 2005 ≈ 6.889 MT reported total processed fresh & frozen BFT exports for 2005. (Table: 021)

Figure 032.- La filiera del Tonno Rosso Mediterraneo: Problematiche e Prospettive del comparto in Campania, by Debora Scarpato & Mariarosaria Simeone. Universita degli Studi di Napoli "PARTHENOPE". Istituto di Studi Economici. Working Paper nº: 4.2005. May 2005.



Fonte: ns elaborazioni su dati del *Ministero delle Politiche Agricole e Forestali* (2005)

Figure 033.- As seen in La filiera del Tonno Rosso Mediterraneo: Problematiche e Prospettive del comparto in Campania, by Debora Scarpato & Mariarosaria Simeone. Universita degli Studi di Napoli "PARTHENOPE". Istituto di Studi Economici. Working Paper nº: 4.2005. May 2005.



Fonte: ns elaborazioni su dati del *Ministero delle Politiche Agricole e Forestali* (2005)

[115] *Source: La filiera del Tonno Rosso Mediterraneo: Problematiche e Prospettive del comparto in Campania, by Debora Scarpato & Mariarosaria Simeone. Universita degli Studi di Napoli "PARTHENOPE". Istituto di Studi Economici. Working Paper nº: 4.2005. May 2005.* Ref. 063.

3. Libya's aggregated 2005 BFT PS fishing results.

Libya's only recorded exports of processed fresh and frozen BFT amount to some 414 MT (Table: 029) during 2005, though according to Japan's July-December 2005 BFT Biannual Report to ICCAT[116], Japan directly purchased and imported only 58.000 Kgs of Libyan LL GG frozen BFT in Las Palmas, Canary Island.

No Libyan long-liners operating in the Atlantic Ocean have been reported so far, which raises the issue of how did such reported commodity turned-up at Las Palmas, how much more of it was available at Las Palmas and if so were did it go from there, since neither Japan, Korea, Singapore, Taiwan, the EU, the USA or any other country has reported directly importing Libyan BFT from the Canary Islands.

Libya has failed since 2004, to comply with basic ICCAT BFT catches and export reporting obligations, the only sources of information being some end-importers' reporting such as:

- Tunisia and Turkey having reported respectively WR/W 228 MT and 285 MT of live-tuna imports caught by Libyan BFT PS. Japan has incidentally reported the import of RD 313.775 Kgs of Libyan BFT having been ranched in Antalya, Turkey. We may therefore assume for further calculations that Turkish ranched BFT conversion factor to WR/W could be around ≈ /1, 1 and not the unrealistic /1,506 being purported by Turkish BFT ranchers.
- Japan's Custom Service having reported the import of 330.900 Kgs of frozen BFT from Libya during 2005. (Table: 013) ≈ WR/W 383.844 Kgs if converted by applying minimal GG conversion factor (x1,16)
- Japan's April 11th 2006 Bi-annual BlueFin Tuna Import Statistical Document Report from July 1st 2005 to December 31st 2005[117] having reported the import of 261.058 Kgs (≈ WR/W 302.827 Kgs) of frozen BFT from Libya. (Table: 016)
- Japan's April 11th 2006 Bi-annual BlueFin Tuna Import Statistical Document Report from July 1st 2005 to December 31st 2005[118] having reported the import of 95.220 Kgs of frozen Libyan BFT ranched in Malta. (Table: 016)

Industry reports account for some extra WR/W ≈ 910 MT having been purse-seined and slaughtered at sea by Libyan BFT PS vessels, extra-fishing

[116] *Source: ICCAT. Circular Nº: 760/06.* Ref. 048.

[117] *Source: ICCAT. Circular Nº: 760/06.* Ref. 048.

[118] *Source: ICCAT. Circular Nº: 760/06.* Ref. 048.

partnerships with French BFT PS vessels. Such catches have not been reported so far to ICCAT.

Furthermore, same industry sources have reported I/U/U activity by a Korean/Maltese/Libyan "Tuna-Hotel" joint-venture inside Libya's EEZ during 2005, accounting for some WR/W ≈ 1.750 MT of PS BFT having been transferred live, slaughtered and processed at sea by three Korean vessels chartered by Nour-Al-Hayat Fishing Co. (Tripoli-Libya) and/or Aquaculture Developments Limited (Valletta-Malta) Korea has not reported such activity so far.

The aggregated estimated total catches by Libya (Extra fishing-partnerships with French BFT PS fleets in order to avoid double-counting) would have therefore been WR/W ≈ 3.556 MT, some 2.126 MT in excess of its 2005 ICCAT quota.

Picture 006.- Partial view of VMT's Ø90m pens BFT ranch offshore the Port of Hergla, Gulf of Hammamet, Tunisia. *(Picture:Ccourtesy of VMT-Hergla)*

4. Tunisia's aggregated 2005 BFT PS fishing results.

Tunisia's 2005 total BFT ICCAT quota amounts to 2.583 MT. According to ICCAT's BlueFin Tuna Ranching Facilities' Positive List, Tunisia has a maximum BFT ranching WR/W input capacity that amounts to 2.400 Metric Tonnes. According to industry reports, all four operational tuna ranches in Hergla, Mehdia and La-Chebba were fully packed with live BFT by the end of the PS fishing season July 15th 2005.

According to ICCAT, Tunisia imported[119] 228 MT of live-BFT from Libya and 710 MT of live-BFT from France. According again to ICCAT, Tunisia exported [120] 800 MT of live-BFT to Turkey.

According to Spanish official Foreign Trade sources [121] Tunisia imported 530 MT of live-BFT from Spain. Such import has been unreported to ICCAT so far by Tunisia.

Surprisingly enough and according to the EU Fisheries Directorship, Spain imported 530 MT of live BFT from Tunisia[122], that is the exact same amount Tunisia imported from Spain according to Spanish official Foreign Trade sources. Since Tunisia has not declared such import and the EU has declared it, the question is under which ICCAT quota will the fish be recorded: Tunisia or Spain?

Based on above-stated imports and exports of live-BFT, estimated Tunisian 2005 BFT PS catches should therefore have amounted to ≈ 2.262 MT. Though logical, such figure is inconsistent with Tunisia's 2005 recorded exports of processed fresh & frozen BFT which amounted to ≈ 1.683 MT according to Table: 026. Such inconsistency is furthermore substantiated when juxtaposing Tunisia's 2005 recorded exports of processed fresh & frozen BFT ≈ 1.683 MT and maximum estimated Tunisian BFT ranches' output of ≈ 3.000 MT.

[119] *Source: ICCAT Circular Nº: 300/06. Ref. 064.*

[120] *Source: ICCAT Circular Nº: 558/06. Ref. 065.*

[121] *Source ICEX-ESTACOM, Spain. Ref. 066.*

[122] *Source: Rapport semestriel sur le document statistique CICTA thon rouge du 1er juillet au 31 décembre 2005: Communauté européenne. Etat member d'importation: Espagne. P:\FISH-B\JPV\iccat-half year reports\rapport CE-2005-02-thon rouge-préparation. Ref. 098.*

5. Turkey's aggregated 2005 BFT PS fishing results.

Turkey has no specific BFT ICCAT quota. According to the latest update of ICCAT's Positive List of Tuna Ranching Facilities[123], Turkey has increased its tuna ranching capacity by some 3.160 Metric Tonnes in 2006. (See Table: 007)

Turkey's 2005 maximum BFT input ranching capacity was WR/W ≈ 6.300 MT.

Turkey's BFT ICCAT live-imports and catches reporting[124] can be summarized as follows (Tables 055 & 056).

Table 054.-.[125]

Turkey's 2005 ICCAT reported imports of live-BFT			
ICCAT SD NO.	EXPORTING COUNTRY	ICCAT SD. DATE	AMOUNT (Kg.)
520/05-A	SPAIN	05/07/2005	110.000
521/05-A	SPAIN	05/07/2005	13.000
522/05-A	SPAIN	05/07/2005	140.000
2005-025	FRANCE	06/07/2005	167.000
04/05	LIBYA	30/06/2005	114.000
02/2005	LIBYA	30/06/2005	57.000
21/2005	LIBYA	30/06/2005	114.000
SF 188/2005	TUNIS	02/05/2005	100.000
SF 196/2005	TUNIS	03/05/2005	125.000
SF 203/2005	TUNIS	04/05/2005	100.000
SF 207/2005	TUNIS	06/05/2005	100.000
SF 208/2005	TUNIS	03/06/2005	75.000
SF 210/2005	TUNIS	03/06/2005	100.000
SF 211/2005	TUNIS	05/06/2005	125.000
SF 214/2005	TUNIS	05/07/2005	75.000
B-242	KOREA(CHARTER)	09/08/2005	165.200
B-243	KOREA(CHARTER)	09/08/2005	148.000
B-244	KOREA(CHARTER)	09/08/2005	152.600
B-245	KOREA(CHARTER)	09/08/2005	169.200
B-246	KOREA(CHARTER)	09/08/2005	149.000
B-310	KOREA(CHARTER)	29/09/2005	58.000
B-311	KOREA(CHARTER)	29/09/2005	53.800
B-312	KOREA(CHARTER)	29/09/2005	47.000
B-313	KOREA(CHARTER)	29/09/2005	28.500
TOTAL			**2.486.300**

Table 055.[126]

CATCH, IMPORT, FARMING AND EXPORTS BY TURKEY (in MT)								
YEAR	CATCH (WR/W)	IMPORT (WR/W)	CARRY OVER	GROWTH	EXPECTED OUTPUTS OF FARMS	LOST FISH	ALLOWABLE MAX. EXPORT	REALISED EXPORT
2003	3.300	0	0	1.650	4.950	500	4.450	4.250
2004	1.075	1.590	170	1.460	4.295	225	4.070	3.963
2005	990	2.486	100	1.813	5.389	0	5.389	

1. Carry overs are from previous year and the ICCAT Secretariat was informed accordingly.
2. Growth rates: 6-8 month growth is 50% and annual growth is 75%
3. Figures are in MT.

According to Spanish official Foreign Trade source[127] Turkey imported 430 MT of live-BFT from Spain. 167 MT of live BFT import remains unreported to ICCAT so far.

Figures of expected growth of fattened BFT in Turkish BFT ranches, reported to ICCAT, are simply impossible.[128]

BFT's metabolism cannot withstand a x1,506 fattening ratio. The needed fattening diet to achieve such ratio would simply induce direct massive embolic related mortality as reported by tuna ranching industry operators in Spain during the late 90's. It is commonly accepted that maximum/critical fattening ratio for ranched BFT is x1,25.[129]

Furthermore and since 2004, tuna ranchers across the Mediterranean have cut on bait/chum costs as they all had to face lower prices for their fresh & frozen end-product.

Picture 008.- Akua-Dem's' BFT ranch located between Izmir and Cesme, Turkey. *(Picture: Courtesy of Akua-Dem Group)*

[123] *Source:* www.iccat.int *(Management-ICCAT Record of BFT Farming Facilities) April 19th 2006.*

[124] *Source ICCAT Circular Nº: 558/06. Ref. 065. & Proceedings. 19th Regular Meeting of the Commission. (Seville, Spain, November 14 to 20, 2005) Provisional. January 2006. Ref. 067.*

[125] *Source: Turkish BFT Farmers' Association.*

[126] *Source: Turkish BFT Farmers' Association.*

[127] *Source ICEX-ESTACOM, Spain. Ref. 068.*

[128] *For more on BFT's biology, see: Ref. 076.*

[129] *For more information on BFT fattening, see: Risk on local fish populations and ecosystems posed by the use of imported feed fish by the tuna farming industry in the Mediterranean, WWF, April 2005. Ref: 074.*

As a direct consequence fat-content of purchased/imported bait/chum for ranched BFT, has been lower during 2004/2005 than during previous years.

As pointed-out previously, Japan has reported the import of RD 313,775 MT of Libyan BFT having been ranched in Antalya, Turkey.

The WR/W of such Libyan imported live-BFT, according to Turkish official reports, was 285 MT. Growth after fattening must have therefore been: 28,775 MT.

We therefore assume that Turkish ranched BFT conversion factor to WR/W could be around ≈ /1,1 and not the unrealistic /1,506 being purported by Turkish BFT ranchers.

According to Turkish 2005 official BFT reporting to ICCAT, WR/W ≈ 971,30 MT of BFT where fished and transferred live by Turkish BFT PS vessels under Korean ICCAT quota.

According to industry sources, Dardanel Cyprus, Ltd./Tohto Suisan Co. Ltd. BFT ranch in Northern Cyprus[130] 2005 tuna ranching input, was transported live back to Turkey in the middle of the fattening season, due to the political impossibility of having such production recognised by ICCAT.

Industry reports for 2005 account for some 1.800 MT (WR/W) of BFT having been partially ranched in Northern Cyprus and then transferred to Turkey.

Based on the above mention data, we submit the following 2005 BFT fishing & ranching scenario for Turkey. (Table: 056)

We finally note that 2005 was the second year in a row that Korea, through Turkey, has violated the letter and the spirit of its ICCAT pm allocated quota. BFT fishing possibilities attributed to Korea, based on its traditional share of 1,5% will only be activated in a given year when Korea has fished its current level of underages. [131]

Undercover of export and/or charter agreements with Turkey, Korea has accounted for WR/W ≈ 700 MT of PS caught BFT during 2004. The same manoeuvre was performed during 2005 accounting for WR/W ≈ 971 MT.

We note that according to ICCAT's Record of Vessels over 24m Authorized to Operate in the Convention Area, none of Korea's 202 recorded vessels is a PS vessel: None of Korea's oceanic tuna PS vessels would even be allowed to fish inside the Mediterranean Sea for that matter.

Furthermore Korea has not reported a single BFT LL catch for NEA + MED during 2004, which could raise legitimate doubts as to Korean long-liners' ruthless fishing reputation.

Finally and as stated before, industry sources have reported I/U/U activity by a Korean/Maltese/Libyan "Tuna-Hotel" joint-venture inside Libya's EEZ during 2005, accounting for some WR/W ≈ 1.750 MT of PS BFT having been transferred live, slaughtered and processed at sea by three Korean vessels.

Korea has yet to confirm or deny such activity, having failed so far to confirm other BFT catches than those chartered through Turkey.

Table 056[132]

2005 CATCH, IMPORT, RANCHING & EXPORTS BY TURKEY (in MT) Revised Scenario				
CATCH (WR/W)	IMPORT (WR/W) [132]	CARRY OVER (WR/W)	GROWTH	EXPECTED OUTPUTS OF FARMS (RR/W)
3.761,30	1.681,70	100,00	554,30	6.097,30

[130] *Dardanel Cyprus, Ltd./Tohto Suisan Co. Ltd. BFT ranch in Northern Cyprus was located at Koma Tou Yialou-Famagusta Bay. Maximum input capacity ≈ WR/W 3.000 MT.* Ref. 069.

[131] *Source: ICCAT [Rec. 02-08].* Ref. 035.

[132] *BFT catches under Korean ICCAT quota have been computed as Turkish catches and not as live-BFT imports. Dardanel's Northern Cyprus 1.800 MT have been computed as Turkish BFT catches. Unreported import of 167 MT of live-BFT from Spain has been computed into imports.*

6. Croatia's aggregated 2005 BFT PS fishing results.

Croatia's 2005 total BFT ICCAT quota amounts to 945 MT.

Its 2004 BFT ICCAT quota was 935 MT. Croatia officially reported for that same year BFT catches amounting to 827 MT almost all of which were purse-seined and transferred live into Croatian tuna ranches.

According to ICEX-ESTACOM and the REPORT OF THE 2005 MEETING OF THE STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) (Madrid, Spain - October 3 to 7, 2005) October 2005 PLE-013 / 2005, 447 MT of large BlueFin tuna were imported by Croatia from France and Spain for growing purposes during 2004.

According to Croatian official sources[133], 636 MT were imported into Croatian BFT ranches that same year.

According to ICCAT's BlueFin Tuna Ranching Facilities' Positive List, Croatia has a 2004/2005 maximum BFT ranching WR/W input capacity that amounts to 6.410 Metric Tonnes.

According to ICCAT's Report 2004-2005 (II) Croatia ranched some 1.274 MT of BFT in 2004.

Again according to same Croatian official sources Croatia ranched some 4.604 MT of BFT in 2004.

Some 3.330 MT of ranched BFT during 2004 have therefore been unreported to ICCAT so far.

According to Croatian official sources, purse seine-caught BFT were fattened over a period of 4–6 months before being harvested and exported to the Japanese market.

Recently, an entirely new concept has developed: Small- to medium-sized fish are being fattened for over 2 or even 3 years, before being shipped.

This practice is aimed at improving the limited fishing quota, by increasing the BFT products biomass without increase of fishing mortality, and at raising the value of the product, thus obtaining a better market price. [134]

Though true, such new ranching trend cannot explain a 3.330 MT range nor can we conclude that some 3.968 MT of BFT catches during 2004 by Croatian PS vessels have also been unreported to ICCAT so far.

Yet the magnitude of such reporting/under-reporting discrepancies is not only consistent with Croatia's reported 2.013 MT exports to Japan of processed fresh & frozen BFT during the period January-June 2005[135]; but also raises the question about Croatia's 2005 BFT reporting reliability.

According to Japan's Bi-annual BlueFin Tuna Import Statistical Document Report from July 1st 2005 to December 31st 2005[136] (See Table: 016 bis) Croatia exported to Japan the WR/W equivalent of 260,63 MT of BFT, which added to a conservative WR/W equivalent of 2.335 MT (Cross-board x1,16 conversion factor applied) corresponding to Croatia's reported 2.013 MT exports to Japan of processed fresh & frozen BFT during the period January-June 2005, would mean that Japan imported a total WR/W ≈ 2.595 MT of BFT from Croatia during 2005.

According to Croatia's bi-annual BFT import report for July 1st to December 31st 2005[137], Croatia imported some 1.504.700 Kgs. of live BFT from France.

According to Spain's ICEX-ESTACOM Foreign Trade database, Spain exported the same amount of live BFT to Croatia, during August and September 2005.[138]

Such 3.009 MT live-imported fish was almost exclusively fattened at Drvenik Tuna BFT ranching facilities at the Islands of Drvenik and Kluda.

Industry reports point out that Croatia ranched some WR/W ≈ 4.800 MT during 2005, which would mean that Croatian BFT PS vessels could have caught some WR/W ≈ 1.594 MT, almost WR/W ≈ 650 MT in excess of its 2005 945 MT ICCAT quota.[139]

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[133] *CBS, compiled by CCE-Agriculture, Food Industry & Forestry Department/Hrvatska Gospodarska Komora, Fishery & Fish Processing Report 2004. (Figure for catch and additional fattening).* Ref. 070.

[134] *Source: 3rd Meeting of the ad-hoc GFCM/ICCAT Working Group on sustainable BFT farming/fattening practices in the Mediterranean. General Fisheries Commission for the Mediterranean, Rome, 16-18 March 2005.* Ref. 089.

[135] *Source: Globefish Tuna Market Report, October 2005. Asia.* www.globefish.org

[136] *Source: ICCAT Circular Nº: 760/06.* Ref. 048.

[137] *Source: ICCAT. Circular 504/06.* Ref. 071.

[138] *Source ICEX-ESTACOM, Spain, Foreign Trade Database.* Ref. 072.

[139] *To read more about BFT ranching in Croatia, see Farming northern BlueFin tuna in the Adriatic Sea by: V. Ticina, I. Katavic, L. Grubišic, N. Skakelja2 & V. Franicevic.* Ref. 075.

7. Greece's aggregated 2005 BFT PS fishing results.

According to Greek industry reports[140], Greece caught some WR/W ≈ 150 MT of BFT, all of which were transferred live to tuna transport and ranching gravity pens.

Table 057

Tunas, Bonitos & Billfishes landings by Greece (in MT)														
Presentation	2004												2005	
	January	February	March	April	May	June	July	August	September	October	November	December	January	February
Fresh Whole	89	125	246	280	611	540	196	180	173	170	148	117	101	219
Frozen Whole	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Cumulative Totals	89	214	460	740	1.351	1.891	2.087	2.267	2.440	2.611	2.759	2.876	101	320

No data for dead BFT landings by Greece during 2005 are yet available, though we choose to reproduce Eurostat's 2004-Feb 2005 statistics for Greek Tunas, Bonitos and Billfishes' landings.[141] (Table: 057) as a mean of comparative source.

WR/W ≈ 635 MT of live BFT were imported from France. Reported ranched BFT by Greece during 2005 was WR/W ≈ 785 MT, all of which at BlueFin Tuna Hellas's BFT ranch.

Picture 09.-. BlueFin Tuna Hellas' BFT ranch located at Grava-Astakos, Echinades islands, Prefecture of Kefallonia–Ithaki islands. *(Picture courtesy of BlueFin Tuna Hellas)*

[140] *Source: BlueFin Tuna Hellas, SA, Greece.*

[141] *Greek tunas, bonitos & billfishes landings. Source: Eurostat. Date of extraction: Tue, 21 Mar 06 08:10:22. Last update: Wed Mar 15 16:26:03 MET 2006.*

8. Malta's aggregated 2005 BFT fishing results.

Malta does not operate a national BFT Purse Seine vessel fleet. Almost 100% of total catches of BlueFin Tuna are LL.

According to Maltese Official sources, total 2004 BFT landings by Maltese fishing vessels amounted to 455.548 Kgs.

According to ICCAT, 2004 total reported catches/landings of BlueFin Tunas Malta's reported BFT landings amounted to 264 MT. [142]

According to Maltese Official sources, total 2005 BFT landings by Maltese fishing vessels amounted to 602.888 Kgs. [143]

Picture 010.- Italian BFT PS vessels at the Port of Valletta, Malta. *(Picture courtesy Associazione Produttori Tonnieri del Tirreno di Salerno)*

[142] *Source: REPORT OF THE 2005 MEETING OF THE STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) (Madrid, Spain - October 3 to 7, 2005) October 2005 PLE-013 / 2005. Ref. 054.*

[143] *Source: Malta's National Statistics Office. NSO. Ref. 073.*

D. Discussion and preliminary conclusions.

Based on previously referred BFT catch estimates for 2005, we submit the following aggregated total BFT catch estimates for 2005. (Table: 058)

Table 058

All Data compiled by ATRT, SL. April, 2006.	2004	2005				
Country	Maximum Eurostat ICCAT + I/U/U Catches Combined Results (See Table: 043)	ICCAT or EU Total Quota or TAC (WR/W in MT)	National Specific Mediterranean BFT PS Quota (WR/W in MT)	Estimated BFT PS catches in 2005 (WR/W in MT)	Estimated BFT catches with other gear (WR/W in MT)	Estimated BFT catches with other gear based on 2004 reports (WR/W in MT)
France *	9.458	6.192	5.272	12.636		468
Spain * & **	5.150	6.276		4.599	3.426	
Italy	5.467	4.888	3.764	5.850		934
Croatia	827	945		1.594		
Turkey	1.075	Others		3.761		
N. Cyprus	2.800	No Quota		0		
Tunisia	2.639	2.583		2.262		
Greece	832	323		150		682
Libya	3.800	1.400		3.570		
Japan	3.020	2.890			3.000	
Malta	455	Others			603	
Morocco	2.780	3.127		1.100	616	1.000
Algeria	2.501	1.600				2.500
Taiwan	51	pm			91	
China PR	41	74				41
Cyprus	105	Others				11
Ireland	1	Others EU				1
Netherlands	1	Others EU				1
Portugal	25	590				25
Serbia & MN.	7	No Quota				7
Syria	263	No Quota				263
Korea ***	700	pm			0	
Totals:	41.998	32.000	9.036	35.522		13.669
2005 Total Estimated BFT Caught (Med + NEA):						49.191

* See Tables: 045 to 053.

** Spain's 2005 Estimated BFT catches with other gears correspond to Trap Nets: 750 MT & BB: 2.676 MT.

Sources: Organización de Productores Pesqueros de Almadraba OPP-51 & Gipuzkoako Arrantzaleen Kofradien Elkartea.

*** Korea's 2005 MED PS BFT catches are computed with Turkey.

2005 total estimated BFT catch values expressed in Table: 058 are consistent with those for 2005 expressed in Table: 040, where total estimated BFT WR/W was calculated in five different scenarios (Variable being % of ranched BFT) by converting reported exports of processed fresh & frozen BFT into WR/W and by adding Japan's estimated 2005 BFT catches:

41.446.463 Kgs. ≤ WR/W ≤ 43.277.247 Kgs.

The reader will again notice large disparities between 2005 national BFT estimated catches values and 2005 national values for FoB exports of fresh & frozen BFT.

This is again normal, since live-BFT imports and exports between Mediterranean BFT fishing and ranching countries as well as BFT ranching output for 2005, have not been computed yet.

2004 and 2005 Atlantic BlueFin Tuna EU TACs for France, Spain and Italy are assigned by COUNCIL REGULATION (EC) No 2287/2003 of 19 December 2003 & COUNCIL REGULATION (EC) No 27/2005 of 22 December 2004.

France assigns a specific quota for its thirty-one recorded national Mediterranean Sea BFT PS Vessels, out of its 2005 – 6.192 MT EU BFT TAC.

It appears that total 2005 Mediterranean French BFT PS Fleets' catches would have been well in excess above their specific BFT Mediterranean Sea 2005 – 5.272 MT quota [144] as well as its national total 2005 EU TAC of 6.192 MT.

Italy assigns a specific quota for its recorded national Mediterranean Sea BFT PS Vessels, out of its 2005 – 4.888 MT EU BFT TAC.

It also appears that total 2005 Mediterranean Italian BFT PS Fleets' catches would have been way in excess above their specific BFT Mediterranean Sea 2005 – 3.763 MT quota[145] as well as its national total 2005 EU TAC of 4.888 MT.

Spain does not assign a specific quota for its six recorded national BFT PS Vessels.

Spain has an EU 2005 BFT TAC of 6.276 MT.

It appears that total 2005 Mediterranean Spanish BFT PS Fleets' catches would have not been in

[144] *J.O. n° 121 du 26 mai 2005. Arrêté du 16 mai 2005 portant répartition du quota de thon rouge (Thunnus thynnus) accordé à la France, pour l'année 2005, pour la Méditerranée*

J..O n° 154 du 3 juillet 2005. Arrêté du 23 juin 2005 portant répartition du quota de thon rouge (Thunnus thynnus) accordé à la France pour l'année 2005 pour l'océan Atlantique.

J.O. nº 240 du 14 octobre 2005. Arrêté du 6 octobre 2005 portant fermeture du quota de thon rouge (Thunnus thynnus) attribué à la France pour l'année 2005 pour l'océan Atlantique, à l'est de la longitude 45° Ouest, et la Méditerranée.

[145] *DECRETO 21 aprile 2004. Ripartizione della quota nazionale di cattura del tonno rosso tra sistemi di pesca e criteri di attribuzione, nonchè ripartizione delle quote individuali per la campagna di pesca 2004.*

DECRETO 7 aprile 2005. Ripartizione della quota nazionale di cattura del tonno rosso tra i sistemi di pesca e criteri di attribuzione e ripartizione delle quote individuali per la campagna di pesca 2005.

excess above Spain's total 2005 – 6.276 MT BFT EU TAC.

Yet, Spain's combined (MED + NEA) PS + Trap + BB BFT catches for 2005 would be in excess of 1.749 MT above its national total 2005 EU TAC of 6.276 MT.

Croatia and Libya also appear to have largely surpassed their respective ICCAT quotas.

Turkey continues to catch BFT though it does not have a specific national ICCAT quota.

This situation of Turkey is both surprising and alarming. Turkey certainly should benefit from such a national specific quota based on its more than documented BFT fishing historics.

On the other hand, an official ICCAT quota for Turkey would certainly facilitate more accurate and efficient BFT fishing compliance implementation. countries such as Morocco, Tunisia or Algeria, having reported lower catches than their actual quotas both in 2004 and 2005, could certainly cede some of their allowed tonnages.

Such reallocation of quotas should nevertheless take place within the framework of a more sustainable and fair total ICCAT quota, as well as a stringent application of BFT fishing compliance rules by the EU and EU national fishing Authorities.

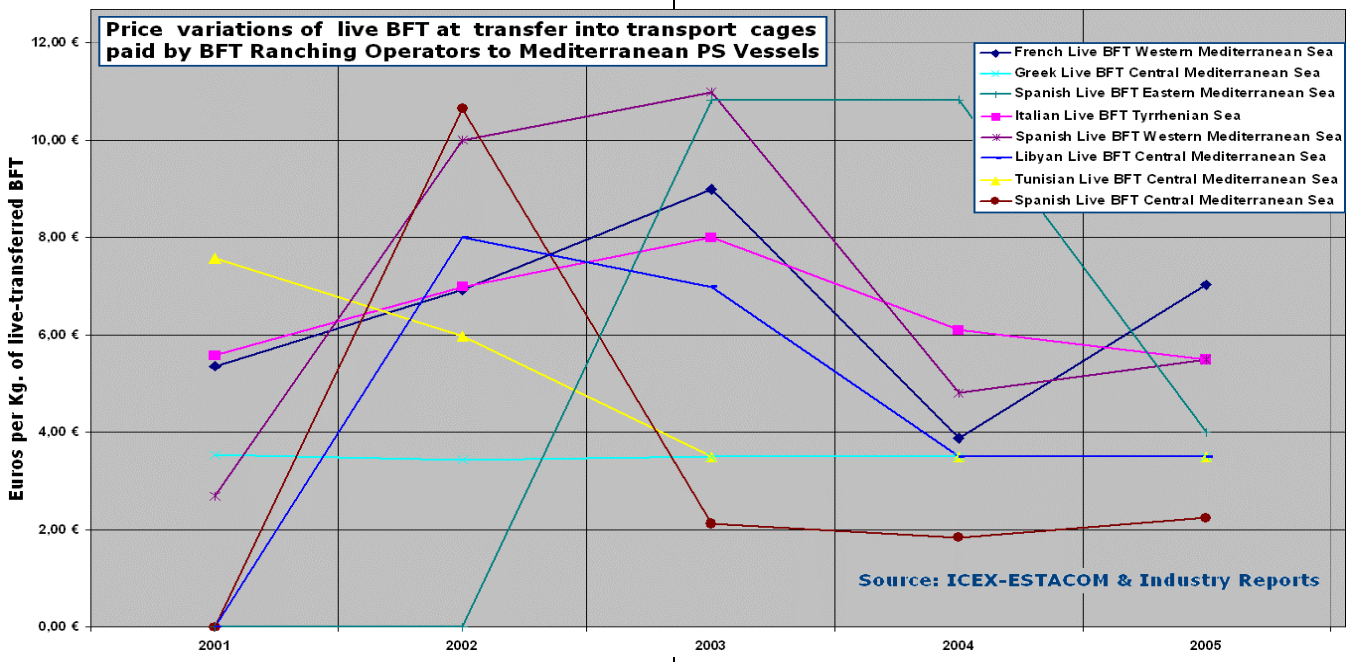
The case of France's BFT over-fishing[146] is dramatic and should call for tough sanctioning.

Though certainly fishermen have their part of responsibility, tuna ranchers across the Mediterranean and tuna traders in main purchasing countries, are also to blame for what is, in our humble opinion, a *spiralling blasphemy* both from a business point of view and a BFT stock's sustainability point of view.

As a direct consequence of such BFT over-fishing and therefore Japan's BFT market saturation-driven price downfall and stagnation, average prices of live-BFT at transfer, paid by BFT Ranching Operators in the Mediterranean Sea to Purse Seine Vessels have dramatically dropped over the past three years. (Figure: 034)

Since no alternative fishery or fishing grounds for Mediterranean EU BFT PS fleets seem viable due to the high degree of fishing/specie specialisation of such vessels, vessel owners/operators have no other choice but to maximize their BFT catching potential in order to amortise heavy financial investments as well as to rationalise running costs and overheads.

Figure 034



[146] *On March 1st 2006 France was already fined €57,76 million for failing to comply with a 1991 European Court of Justice ruling on failings in its fisheries enforcement policies. France faces paying a similar fine every six months to the European Commission if it continues to fail to address weaknesses in the monitoring and control of fishing and landing activities and ineffective sanctions against fishermen breaking European Union rules.*

As a direct collateral consequence, French BFT PS fishing fleets have re-flagged some 10 old French Purse Seine vessels (Almost 70% of the Libyan BFT PS fleet is composed by former French BFT PS vessels[147]) and are catching BFT in third countries such as Libya, Morocco or Algeria under charter agreements and foreign ICCAT quotas.
The EU is also to be blamed for the actual *Darwin-nightmarish* state of affairs.

In the case of Libya, the entire re-flagging scheme of old French BFT PS vessels has been indirectly heavily supported by the EU through its FIFG's fleet renewal and modernisation structural grants.

Furthermore and according to a January 2004 report on the Libyan fisheries sector and impact analysis on a potential fisheries partnership agreement, Libya and the European Community, after exploratory talks back in 2003, agreed to explore the possibility of entering into a fisheries partnership agreement.[148]

Picture 011.- Libyan re-flagged BFT PS vessel Dila, seen at the Port of Sète, France. (*Picture by ATRT*)

The Economic and Financial Affairs Committee of EU Ministers (ECOFIN), October 21st 2004, authorised EC to open negotiations with Libya such Fisheries Partnership Agreement. Such agreement nevertheless failed to materialise.

Early 2005, Libya declared a newly claimed 62 miles exclusive fishing zone.

July 2005, Tunisia joined Libya in creating its own exclusive fishing zone. The decision was set to pave the way for a stronger alliance than ever between the two North African countries, Spanish BFT ranchers, French BFT PS fishing companies and Japanese BFT traders.

The decision to declare a so-called exclusive economic zone was adopted by the Tunisian parliament on June 21st 2005 and widely publicised in the Arabic press in the wake of Libya's previous unilateral declaration of a 62-mile fishing conservation zone.

Just like with Libya, the coordinates of the newly claimed Tunisian exclusive zone comprises key areas of prime tuna cages' towing routes linked to Blue Fin tuna catching areas.

A bilateral fisheries agreement between Libya and Tunisia signed in May 2005 already settled the backdrop for private partnerships in the BFT fisheries and ranching industries.

Couched between the fishing conservation rhetoric of the two countries' declarations lies the reality of over 9.000 MT of BlueFin Tuna having being caught inside Libyan and Tunisian waters during 2005.

The failed fisheries partnership agreement between Libya and the European Community has ended up creating a semi-monopolistic environment controlled by influential Tunisian and Libyan individuals through BFT fishing, ranching and trading direct partnerships and/or joint ventures, all of which are directly tied to the Ricardo Fuentes e Hijos Group from Spain and major Japanese BFT importers & traders.

It is through such direct partnerships that the Ricardo Fuentes e Hijos Group (Accounting for reported 2003 sales of over €144 million) has direct access to exclusive Libyan waters and to similarly exclusive Tunisian territorial waters, considered to be one of the last refuge of Mediterranean BFT.[149]

2005 industry reports accounted for some 52 Ø50m BFT transport gravity pens being operated inside Libya's declared 62 miles exclusive fishing zone and some 20 tuna-spotting airplanes illegally flying during June's prohibition period inside Libyan airspace overlapping the said 62 miles exclusive fishing zone.

[147] *See Ref. 049.*
[148] *Source: Evaluation du Secteur de la pêche en Libye et Analyse d'impact d'un potentiel accord de partenariat dans le domaine de la pêche. FISH/2003/03. Rapport Final. Janvier 2004. by: Oceanic Developpement. Ref. 077.*

[149] *For more on Libyan re-flagged BFT PS vessels see: Ref. 049.*

Illegal tuna-spotting flights during June 2005 have also been reported from Malta and Lampedusa Island.

International press coverage regarding BFT over-fishing during 2005[150] has clearly pointed-out such illegalities but drastic policing action by ICCAT and/or EU member states has been virtually non-existent.

Picture 012: Libyan re-flagged BFT PS vessel AOEA, seen at the Port of Sète, France. (*Picture by ATRT*)

Figure 035.- Libya's 62 miles exclusive fishing zone

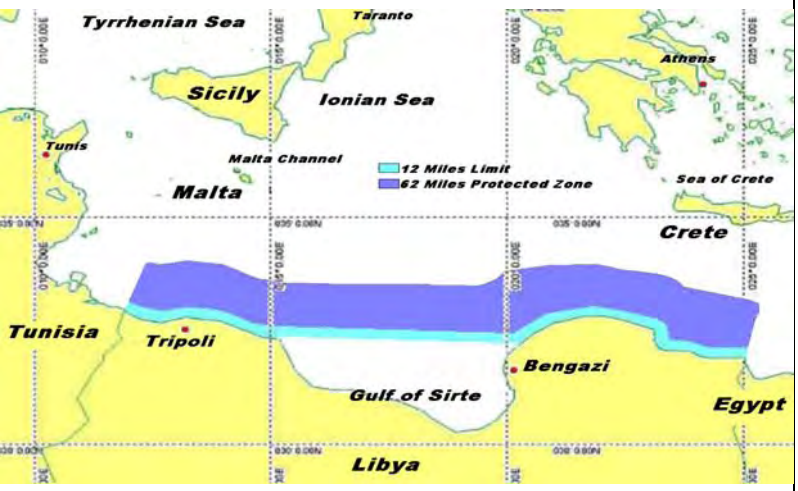
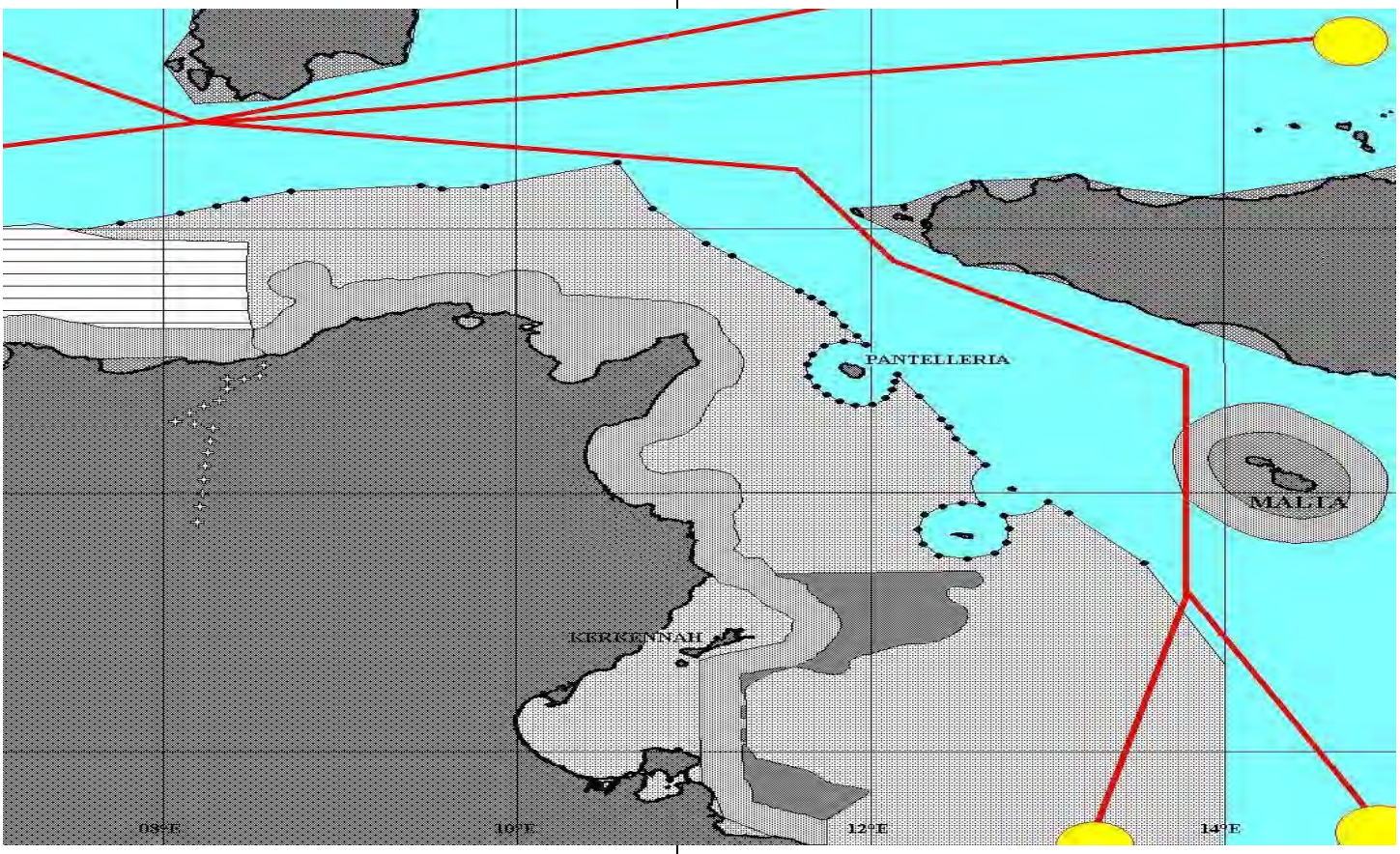


Figure 036.- Tunisia's exclusive fishing zone. Red lines correspond to BFT transport gravity pens' routes to Western Mediterranean ranches



[150] See: Press Review. Ref. 082.

Study IV: The BlueFin Tuna Ranching in the Mediterranean Sea

A. The 2004-2005 BlueFin Tuna Ranching Maximum Capacity in the Mediterranean Sea.[151]

According to ICCAT's BlueFin Tuna Ranching Facilities' Positive List, the total 2004 and 2005 reported maximum ranching input capacity in the Mediterranean Sea amounted to 40,012 MT.

Croatia:	6.410 MT. (Farms' Maximum WR/W Input)
Cyprus:	1.000 MT. (Farms' Maximum WR/W Input)
France:	0 MT
Greece:	1.000 MT. (Farms' Maximum WR/W Input)
Italy:	4.700 MT. (Farms' Maximum WR/W Input)
Malta:	6.350 MT. (Farms' Maximum WR/W Input)
Spain:	11.852 MT. (Farms' Maximum WR/W Input)
Morocco:	1.000 MT. (Farms' Maximum WR/W Input)
Turkey:	6.300 MT. (Farms' Maximum WR/W Input)
Algeria:	0 MT
Tunisia:	2.400 MT. (Farms' Maximum WR/W Input)
Libya:	1.000 MT. (Farms' Maximum WR/W Input)

Some BFT ranching facilities have or currently are unaccounted for as can be seen on Figure: 037.Turkey increased its BFT ranching input capacity up to WR/W 9.460 MT in early 2006.

Malta has planned to increase it BFT ranching input capacity up to WR/W 9.000 MT in 2006. According to industry reports, Cyprus would be increasing its BFT ranching input capacity up to WR/W 3.000 MT for 2006.

[151] *Source: ICCAT Record of Farming Facilities for BlueFin Tuna (FFB Record) The Recommendations by ICCAT concerning BlueFin tuna farming (Recs. 03-09, 04-06 and 05-4) require the establishment and maintenance of a record of facilities authorized to operate for farming of BlueFin tuna caught in the Convention area (FFBs).*

B. The 2004 BlueFin Tuna Ranching Estimated Production in the Mediterranean Sea.

[152]Croatia:	4.604 MT	(Output RR/W).[153]
[154]Cyprus:	1.300 MT	(Output RR/W)
[155]Greece:	586 MT	(Output RR/W)
[156]Italy:	2.500 MT	(Input WR/W)
[157]Malta:	3.575 MT	(Output RR/W
[158]Turkey:	4.520 MT	(Output RR/W)
[159]Northern Cyprus	2.800 MT	(Output RR/W)
[160]Tunisia:	1.480 MT	(Input WR/W)
[161]Libya:	3.107 MT	(Input WR/W)
Total estimated WR/W input:	**29.677 MT[162])[163]**	

[152] *According to Croatian BFT reporting to ICCAT, the total Croatian catch of tuna and tuna like fishes in 2004 was 827 metric tons (t). 100% of the catch was BlueFin Tuna. Almost the total catch was caught by purse seine, with only 450 kg having been reported as caught by sport fishers. Additionally, 447 MT of large BlueFin Tuna were imported into Croatia from France and Spain for growing purposes. Source: ICCAT Report 2004-2005 (II) Total reported ranched BFT would have been: 1.274 MT.*

[153] *CBS, compiled by CCE-Agriculture, Food Industry & Forestry Department/Hrvatska Gospodarska Komora, Fishery & Fish Processing Report 2004. (Figure for catch and additional fattening). Ref. 070.*

[154] *Source: Industry reported estimations & The Tuna Ranching Intelligence Unit November 2004. See also Cyprus' Department of Fisheries & Marine Research 2004 Annual Report. Ref. 085. According to ICEX-ESTACOM, Spain, 275 MT of live BFT were imported from Spain. Ref. 086. 563 MT of live-BFT caught by French BFT PS vessels Jean Marie Christian III & VI and Vent du Nord were also exported live to Cyprus in 2004.*

[155] *Source: BlueFin Tuna Hellas, SA. Total 2004 live-BFT WR/W input was 472,9 MT. 313 MT were imported from France. 53,3 MT were imported from Libya. 106,6 were caught by Greek BFT PS vessels.*

[156] *Source: Industry reported estimations & The Tuna Ranching Intelligence Unit November 2004. Total caged live-BFT by Italian PS during 2004 amounted to WR/W ≈ 2.700 MT. Source: Ministero delle Politiche Agricole e Forestali (2005) Ref. 063. Italy exported 212,8 MT of live-BFT to Spain during 2004.*

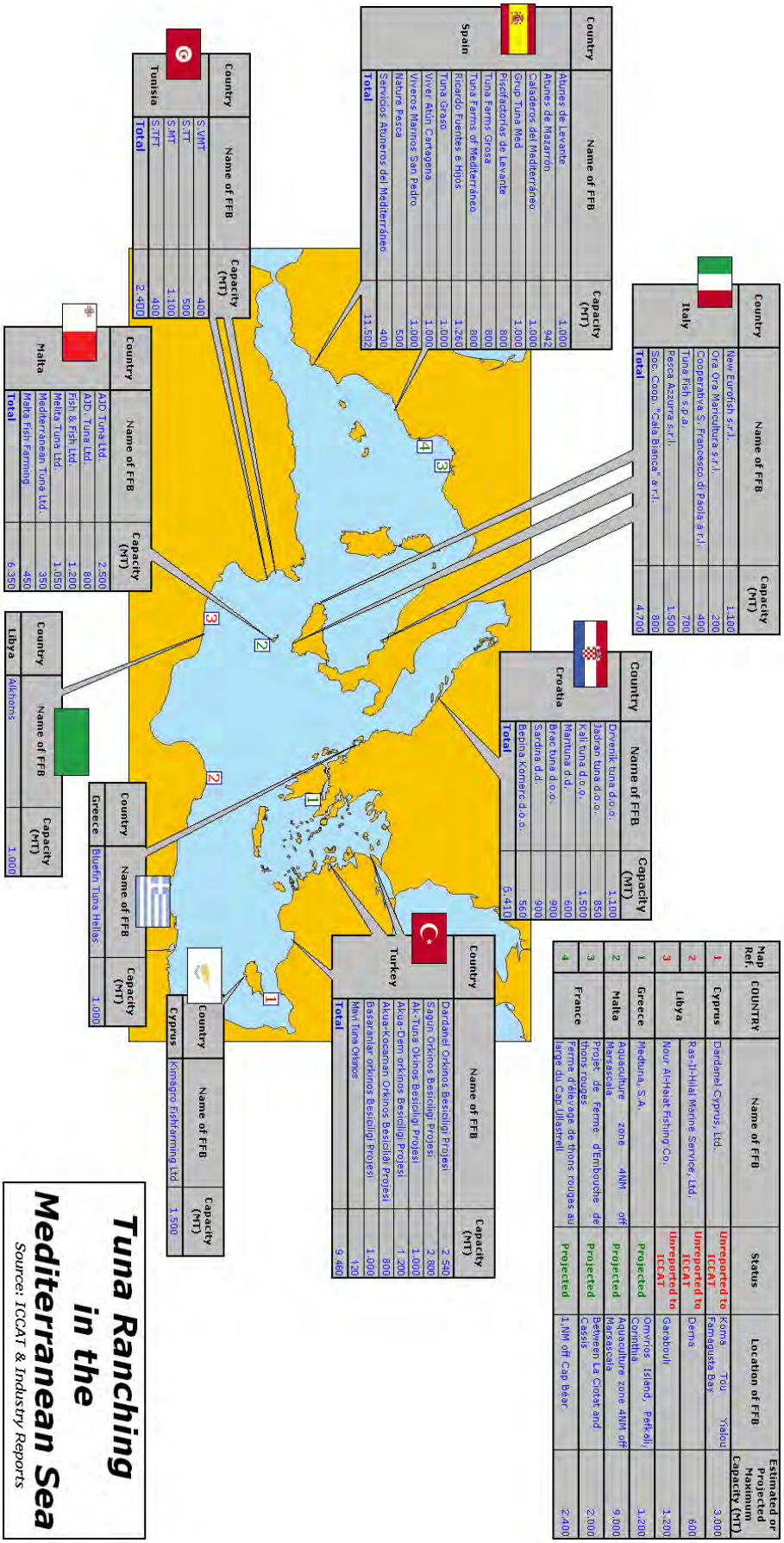
[157] *Source: Industry reported estimations & The Tuna Ranching Intelligence Unit November 2004. Malta does not have a national BFT PS vessel fleet. 100% of ranched BFT in Malta is imported from Italy, France, Libya and Tunisia.*

[158] *Source: Turkey Tuna Farmers Association. This figure includes a 2003 carry-over of 170MT of fattened BFT and 225 MT of lost BFT during 2004. Turkey caught 700 MT of live-BFT under Korean ICCAT quota charter and imported 640 MT from Libya + 250 MT from Tunisia. Source: ICCAT Circular 558/06 & Turkish Tuna Farmers Association.*

[159] *Source: Industry reported estimations. Includes some 400 MT of lost BFT.*

[160] *Source: Tunisian BFT Ranching Industry reports. Tunisia imported some 880 MT of live-BFT from Spain (Source ICEX-ESTACOM, Spain) Includes loss of some 350 MT due to charging of tuna ranch offshore Hergla, Gulf of Hammamet, by MV/Martina, February 9th, 2005.*

[161] *All tunas were transferred alive and slaughtered during the fishing season. Source: Industry Reports.*



Map Ref.	COUNTRY	Name of FFB	Status	Location of FFB	Estimated or Projected Maximum Capacity (MT)
1	Cyprus	Dardanel Cyprus, Ltd.	Unreported to ICCAT	Koma Tou Yialou Famagusta Bay	3,000
2	Libya	Ras-Il-Hilal Marine Service, Ltd.	Unreported to ICCAT	Derna	600
3	Libya	Nour Al-Haiat Fishing Co.	Unreported to ICCAT	Garabouli	1,200
1	Greece	Medtuna, S.A.	Projected	Omvrios Island, Perkali Corinthia	1,200
2	Malta	Aquaculture zone 4NM off Marsascala	Projected	Aquaculture zone 4NM off Marsascala	9,000
3	France	Projet de Ferme d'Embouche de thons rouges	Projected	Between La Ciotat and Cassis	2,000
4	France	Ferme d'elevage de thons rouges au large du Cap Ullastrell	Projected	1 NM off Cap Bear	2,400

Country	Name of FFB	Capacity (MT)
Italy	New Eurofish s.r.l.	1,100
	Ora Ora Mariculture s.r.l.	200
	Cooperativa S. Francesco di Paola a r.l.	400
	Tuna Fish s.p.a.	700
	Pesca Azzurra s.r.l.	1,500
	Soc. Coop. "Cala Bianca" a r.l.	800
	Total	4,700

Country	Name of FFB	Capacity (MT)
Spain	Atunes de Levante	1,000
	Atunes de Mazarron	942
	Caladeros del Mediterráneo	1,000
	Grup Tuna Med	1,000
	Piscifactorías de Levante	800
	Tuna Farms Grosa	800
	Tuna Farms of Mediterráneo	800
	Ricardo Fuentes e Hijos	1,260
	Tuna Graso	1,000
	Viveri Atun Cartagena	1,000
	Viveros Marinos San Pedro	1,000
	Nature Pesca	500
	Servicios Atuneros del Mediterráneo	400
	Total	11,502

Country	Name of FFB	Capacity (MT)
Tunisia	S.VMT	400
	S.TT	500
	S.MT	1,100
	S.TFT	400
	Total	2,400

Country	Name of FFB	Capacity (MT)
Malta	AJD Tuna Ltd.	2,500
	AJD - Tuna Ltd.	800
	Fish & Fish Ltd.	1,200
	Melita Tuna Ltd.	1,050
	Mediterranean Tuna Ltd.	350
	Malta Fish Farming	450
	Total	6,350

Country	Name of FFB	Capacity (MT)
Libya	Alkhoms	1,000

Country	Name of FFB	Capacity (MT)
Greece	Bluefin Tuna Hellas	1,000

Country	Name of FFB	Capacity (MT)
Cyprus	Kimagro Fishfarming Ltd	1,500

Country	Name of FFB	Capacity (MT)
Croatia	Drvenik tuna d.o.o.	1,100
	Jadran tuna d.o.o.	850
	Kali tuna d.o.o.	1,500
	Martuna d.d.	600
	Brac tuna d.o.o.	900
	Sardina d.d.	900
	Bepina Komerc d.o.o.	560
	Total	6,410

Country	Name of FFB	Capacity (MT)
Turkey	Dardanel Orkinos Besicilgi Projesi	2,540
	Sagun Orkinos Besicilgi Projesi	2,800
	Ak-Tuna Orkinos Besicilgi Projesi	1,000
	Aksa-Dem orkinos Besicilgi Projesi	1,200
	Aksa-Kocaman Orkinos Besicilgi Projesi	800
	Basaranlar orkinos Besicilgi Projesi	1,000
	Mavi Tuna Orkinos	120
	Total	9,460

Figure 037.- The Mediterranean Sea BFT ranching capacity. (Updated April 2006)

[162] *Where needed ranched output RR/W was converted into WR/W by applying a cross-board conversion factor = /1,20.*

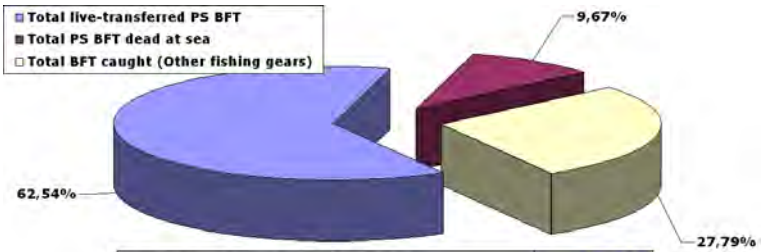
[163] *Source: Non-Technical Critical Analysis Report, compiled for PA 00087/04, Development of an aquaculture zone to the south-east of Malta, off Zonqor Point, Marsascala. 30.11.05. Ref. 019.*

C. The 2005 BlueFin Tuna Ranching Estimated Production in the Mediterranean Sea.[164]

Croatia:	4.800 MT	(Input WR/W)
[165]Cyprus:	1.480 MT	(Input WR/W)
[166]Greece:	785 MT	(Input WR/W)
[167]Italy:	4.250 MT	(Input WR/W)
Malta:	5.000 MT	(Input WR/W)
[168]Spain:	4.150 MT	(Input WR/W)
[169]Turkey:	5.443 MT	(Input WR/W)
Tunisia:	2.400 MT	(Input WR/W)
[170]Libya:	≈ 2.457 MT	(Input WR/W)
Total estimated Input WR/W	**30.765 MT[171]**	

Based on 2005 BFT PS catches' estimates, as seen on Table: 058, we may suggest the following general 2005 fishing & ranching scenario showed in Figure: 038.

Figure 038



Total live-transferred PS BFT	30.765
Total PS BFT dead at sea	4.757
Total BFT caught (Other fishing gears)	13.669
Total 2005 BFT Catches (NEA + MED)	49.191

Live-BFT exports Vs. estimated BFT national catches and ranching inputs & outputs are showed in following Tables: 059 to 067.

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[164] Amount of BlueFin tuna caged for ranching, based on industry information (as of August 1st 2005), in MT. Information submitted by Japanese Delegation to the 19th Regular Meeting of ICCAT (Seville, Spain, - November 14 to 20, 2005. Source: Draft/Provisional January 2006 Proceedings, p. 129.

[165] Source: Department of Fisheries and Marine Research, Cyprus. Annual Report 2005. Ref. 087.

[166] Greece imported 635 MT of live-BFT from France in 2005. Greek live-BFT transferred into transport gravity pens during 2005, amounted to 150 MT. Source: BlueFin Tuna Hellas, SA.

[167] Includes RR/W 126 MT of ranched BFT at C.I.R.S.P.E.'s research BFT fattening experiment at Coop. S. Francesco di Paola tuna ranch located at Vibo Marina, Italy. Ref. 088.

[168] According to CCámaras (Instituto de Fomento de la Región de Murcia 01/04/2005, Spain) Trade/production data-base, Murcia's Tuna Ranches' 2005 May-December 2005 processed fresh & frozen BFT production, corresponding to ≈ 50% of total live-BFT having been transferred into those farms during 2005, amounted to some 1.426.307 Kgs. (Worth ≈ € 19,5 million). WR/W equivalent for such production would amount to some 1.486. MT. Total aggregated BFT input into Tuna Ranches located in L'Ametlla de Mar (Grup Tuna Med S.A./Norcomatún, SL Tarragona) and Vera (Nature-Pesca Almería) during 2005, amounted to WR/W ≈ 1.200 MT. Nature-Pesca has declared a 2005 292 MT BFT net ranch output. Such figure does not take into account massive fish mortality during transport and at the ranch during the fattening season.

[169] Source: Turkey Tuna Farmers Association. This figure includes a 2004 carry-over of 100MT of fattened BFT. Includes BFT partially ranched in Northern Cyprus and then transferred to Turkey.

[170] Source: Industry Reports. Includes 1.750 MT (Tuna Hotel Korean-Maltese-Libyan joint venture)

[171] Where needed ranched output RR/W was converted into WR/W by applying conversion factors ranging from 1:1 to /1,25.

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Spain	4.599.000	768.016	Cyprus						Kimagro Fishfarming Ltd.
		693.000	Turkey						Datos Comercio Exterior España & ICCAT Circular 558/06
		1.504.700	Croatia						ICEX-ESTACOM
		530.000	Tunisia						ICEX-ESTACOM
				1.579.662	France				Datos Comercio Exterior España, ICEX-ESTACOM & Direction Régionale de Affaires Maritimes - Languedoc-Roussillon.
				398.915	Italy				ICEX-ESTACOM
						11.852.000			ICCAT Record of FFB
							4.150.000	5.187.500	Estimation ATRT, SL.

Table 059

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Croatia	1.594.000			1.504.700	France				Source ICCAT Circular 504/06
				1.504.700	Spain				ICEX-ESTACOM
						6.410.000			ICCAT Record of FFB
							4.800.000	6.000.000	Estimation ATRT, SL.

Table 060

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Cyprus	0			768.016	Spain				Kimagro Fishfarming Ltd.
				345.000	France				Kimagro Fishfarming Ltd. (Jean Marie Christian V: x3 catches-72+118+155=345MT)
				347.000	France				Industry Reports.
						1.000.000			ICCAT Record of FFB
							1.480.000	1.850.000	Cyprus Department of Fisheries & Marine Research, Annual report 2005.

Table: 061

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Tunisia	2.262.000	800.000	Turkey						ICCAT Circular 558/06 & Turkish Tuna Farmers Association
				710.000	France				Source ICCAT Circular 300/06
				228.000	Libya				Source ICCAT Circular 300/06
				530.000	Spain				ICEX-ESTACOM
						2.400.000			ICCAT Record of FFB
							2.400.000	3.000.000	Industry reports & ATRT, SL estimate.

Table 062

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Greece	150.000			635.000	France				BlueFin Tuna Hellas, SA.
						1.000.000			ICCAT Record of FFB
							785.000	981.250	BlueFin Tuna Hellas, SA. & ATRT, SL estimate.

Table: 063

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Turkey	3.761.300			167.000	France				Source ICCAT Circular 558/06
				430.000	Spain				ICEX-ESTACOM
				800.000	Tunisia				ICCAT Circular 558/06 & Turkish Tuna Farmers Association
				285.000	Libya				Source ICCAT Circular 558/06 & Turkish Tuna Farmers Association
						6.300.000			ICCAT Record of FFB
							5.443.300	6.097.300	Turkish Tuna Farmers Association & ATRT, SL estimate.

Table: 064

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Malta	0			3.200.000	France				Industry reports & ATRT, SL estimate.
				600.000	Libya				Industry reports & ATRT, SL estimate.
				1.200.000	Italy				Industry reports & ATRT, SL estimate.
						6.350.000			ICCAT Record of FFB
							5.000.000	6.250.000	Industry reports & ATRT, SL estimate.

Table: 065

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Libya	3.570.000	228.000	Tunisia						Source ICCAT Circular 300/06
		285.000	Turkey						Source ICCAT Circular 558/06 & Turkish Tuna Farmers Association
		600.000	Malta						Industry reports & ATRT, SL estimate.
						1.000.000			ICCAT Record of FFB
							2.457.000	2.457.000	Industry reports & ATRT, SL estimate.

Table: 066

Estimated total PS BFT catches		Live BFT Exports	Destination	Live BFT Imports	Origin	BFT Ranching Maximum Input Capacity	BFT Ranching Input	BFT Ranching Output	Source
Italy	5.850.000	398.915	Spain						ICEX-ESTACOM
		1.200.000	Malta						Industry reports & ATRT, SL estimate.
				1.200.750	France				Industry reports & ATRT, SL estimate.
						4.700.000			ICCAT Record of FFB
							4.250.000	5.100.000	Industry reports & ATRT, SL estimate.

Table: 067

Study V: Reefer Vessels & RSW-Well-boats.

A. Introduction and calculation methodology

During the Summer BFT PS fishing season, some 2% to 10% of live-transferred fish dies during transfer from seine to cage and during transport as the cages are towed back to the ranches. According to Figure: 038, such percentage for 2005 would have been 7%.

Variability in fish mortality depends on fishing master, tuna cages' operators and tugboat masters' professional skills.

Sea conditions, essentially thermocline and currents, are also important factors to be considered in terms of transported live-BFT.

Finally, collisions with merchant vessels, red tides, oil spills or shark predation inside the towed cages have been reported but account for a minimal percentage of fish loss.

Picture 014.- Top: Standard Corelsa ®™Ø50m tuna transport cage being towed. Bottom: BFT PS vessel transhipping dead tuna onto a well-boat at sea. (*Pictures by ATRT*)

Whatever dead BFT can be recuperated is generally done so by tuna ranching operators and/or fishermen themselves.

The meat quality of such dead tuna almost never matches the required quality standards for the Japanese market. High sea-surface water temperature and live-transfer related stress, are some of the reasons why meat might be slightly or totally browned by "Yake niku".

Such fish is nevertheless fit for the domestic EU fresh &/or frozen market.

Sometimes belly meat can be exported as such to Japan. Some other times, fish is not even fit for canning. Major tuna ranching operators in the Mediterranean Sea, have heavily invested in RSW-Well-boats in order to take care of such volume of fish.

Picture: 015.- Top: Viver Atún Dos RSW well-vessel. Bottom: SeaNostromo V RSW well-vessel seen at Cartagena harbour. (*Picture by Jose María Casanova*).

During the fattening season back at the ranches, these vessels are used for harvesting and BFT chilling purposes.

Because of cage mooring space availability or in a bid to cut on running costs such as fuel, personnel and feeding chum/bait, tuna ranching operators are more and more slaughtering BFT at sea during the fishing season, before the transport cages even reach the ranches. The fish is calmed inside the pens for a short period of time and then harvested, processed and blast frozen at sea onboard tuna reefer vessels.

It is difficult at this point in time to accurately evaluate the total percentage of BFT being harvested in such way. All that can be said, is that such fish is normally deep-frozen on board either special tuna reefer vessels or Japanese-type long-liners with -50ºC/-60ºC blast-freezing capability on-board.

These are the same vessels that will directly load and process ranched BFT onboard during the harvesting season, at the BFT ranches

BFT is generally processed onboard Tuna Reefers or at on-shore liquid nitrogen freezing facilities according to its individual size, as follows:

- 20 to 60 Kg BFTs are Gilled & Gutted (GG)
- 60 to 120 Kg BFTs are filleted,
- +120 Kgs. BFTs are butchered into loins

Smaller Japanese-type long-line vessels do generally blast-freeze all BFTs in GG format.

Though part of the tuna ranches' yearly frozen BFT production is shipped or air freighted to destination in special -20ºC to -60ºC Reefer-type containers, shipping or air-freight costs of such containers is expensive.

40' Tuna Reefer type containers can carry a maximum amount of 24 MT of frozen BFT loins and/or fillets.

According to Industry reports, total shipment price per Metric Tonne of frozen BFT amounts to some ≈ €650.

Such figure includes CAF, BAF, ISPF, documentation, road haulage, load manipulation and other expenses from origin to shipment port.

Shipment to Japan of one 40' Tuna Reefer type container with 24 MT of frozen BlueFin Tuna (Loins, Filets or GG) can amount to some ≈€15.600.

According to same Industry reports, during 2005, 230 x 40' Tuna Reefer type containers were loaded at the Port of Algeciras, Spain, with ≈ 5.520 MTprocessed frozen Spanish, Moroccan and Portuguese BFT and shipped out of the Mediterranean Sea.

Once a x 1,16 conservative conversion factor is applied, total equivalent RD of such shipments would have amounted to ≈ 6.403 Metric Tonnes.

The bulk of processed frozen BFT nevertheless leaves the Mediterranean Sea onboard Reefer Freezing Vessels (RFV) or smaller long-line type of boats (FV), either directly to Japan or to transhipment ports such as Las Palmas-Canary Islands, where processed deep-frozen tuna is trans-shipped onto bigger and faster reefer vessels.

In order to estimate the amount of frozen BFT having being shipped out of the Mediterranean Sea by RFV and FV during 2004 and 2005, we have monitored the activity of the following 19 RFV and FV vessels during such years:

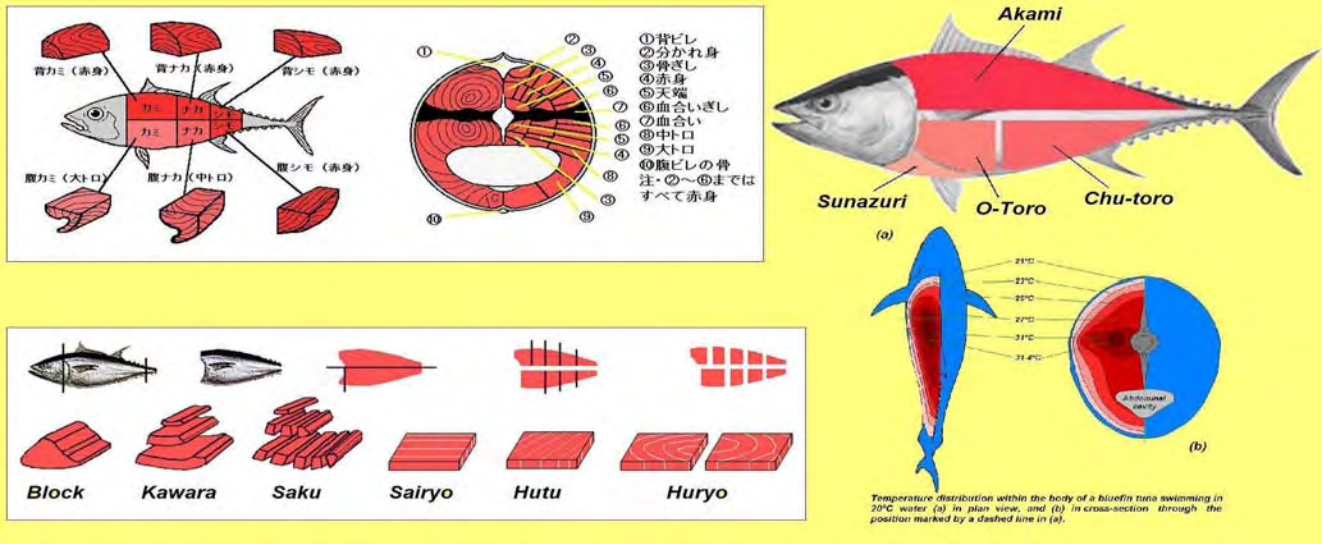


Figure 039. Processed BFT flow-chart.

Picture 015.- [172]Toei Reefer Line's Houta Maru, Panama (RFV) & Futagami, Panama (RFV) (*Source: Toei Reefer Line Japan*)

Picture 016.-. Toei Reefer Line's Meita Maru, Panama (RFV) & Shinryuta Maru, Panama (RFV) (*Source: www.tunaqueen.com Japan*)

[172] *Toei Reefer Line is by far the single Japanese most important tuna reefer company. Five of its blast-freezer vessels regularly visit the Mediterranean to load BFT destined to the Asian frozen BFT Market. Ref. 090.*

Picture 017.- Torei/Tuna Queen's Suruga 1, Panama (RFV), Tuna Princess, Singapore (RFV) & Tuna Queen, Panama (RFV).[173] (*Source: www.tunaqueen.com Japan*)

Picture 018.- Corona Reefer, Japan (RFV) & Seiko Maru 16, Panama (RFV). (*Above: Picture by: Hans Rosenkranz, Billigheim, Bottom: Picture by: Jose María Casanova. (www.navymar.com)*)

[173] *Source:* www.tunaqueen.com

Picture 019.- Reina Cristina, Panama (RFV) & Remora I, Panama (RFV) (*Picture courtesy by Emilio Mesa (www.navegando.info)*)

Picture 020. Hai Feng 895, Panama (RFV) & Paloma Reefer, Panama (RFV) (*Above: Picture: courtesy by: © C.E.A. van Boeckel. Bottom: Picture by ATRT*)

Picture 021.- Daniela, Panama (FV) & Tokyo Seafood, Ltd.'s Astraea 102, Panama (FV) (*Above: Picture by ATRT Bottom: Picture by José María Casanova. (www.navymar.com)*)

Other monitored Reefer and Freezing vessels are: Astraea 101, Panama (FV), Graciela, Panama (FV), Harima 2, Panama (RFV) and Haru, Panama (RFV). None of the smaller long-line type of vessels (FV) included in the preceding list, are registered on ICCAT's Record of Vessels over 24 m Authorized to Operate in the Convention Area.

We therefore may assume with a certain degree of comfort that, not being able to legally operate in the Mediterranean or in the North East Atlantic, such vessels are permanently dedicated to the activity of processing, deep-freezing and transporting semi-processed GG BFT. Such assumption is backed by the fact that the EU recognises such vessels as Freezer Vessels (FV) and has for most of them, delivered appropriate EU authorisation/recognition to load and unload in EU ports.[174]

In order to estimate the amount of frozen BFT having being shipped out of the Mediterranean Sea by RFV and FV during 2004 and 2005, we have retained the following data and methodological approach.

[174] *Source: Consolidated List of approved vessels. Ref. D4 D(06)440051 RM/agm, published on 20/02/2006, in force from 06/03/2006. Ref. 091.*

According to BFT ranching industry reports, BFT RFVs charged an average flat-rate of ¥150 (≈€1,1) per processed-deep frozen and transported to Japan kilogram of BFT. (That is ≈€0,45/Kg more than the cost per kilogram of a containerised shipment to Japan, since onboard butchering and processing costs are included)

In order to calculate aggregated costs per FVR and/or FV trip, we have retained the following values, as seen on Table: 068.[175]

Vessel	Estimated or Declared Suez Canal SCNRT	Gross	Dwt	Estimated One-Way Suez Canal Transit and Compulsory Pilotage Fees	Estimated or Declared HP (kp m/s)	Estimated or Declared Fuel Oil Tank Capacity (m³)	Estimated or Declared Fuel Oil Consumption at Sea (Litres/day)	Estimated or Declared Fuel Oil Consumption at Port (KL/day)	Estimated or Declared Vessel Manning	Estimated Cost of Vessel/Day (In € - excluding fuel-oil)	Average € 0,2 / Gross / Day Anchoring or Mooring Fees
Astraea 101	264,50	299	400	1.589,29 €	100.000	698,17	5.010	790	16	1.200,00 €	59,80 €
Daniela	311,18	349	471	1.869,75 €	100.000	698,17	5.010	790	16	1.200,00 €	69,80 €
Graciela	330,47	403	500	1.985,68 €	100.000	698,17	5.010	790	16	1.200,00 €	80,60 €
Astraea 102	464,90	952	704	2.793,41 €	100.000	698,17	5.010	790	16	1.200,00 €	190,40 €
Reina Cristina	634,18	1.176	954	3.810,56 €	150.000	1.047,25	7.520	1.180	24	1.800,00 €	235,20 €
Paloma Reefer	644,14	1.267	975	3.870,39 €	150.000	1.047,25	7.520	1.180	24	1.800,00 €	253,40 €
Corona Reefer	868,81	1.415	1.314	5.220,35 €	150.000	1.047,25	7.520	1.180	24	1.800,00 €	283,00 €
Seiko Maru 16	1.485,56	979	2.235	8.926,21 €	150.000	1.047,25	7.520	1.180	24	1.800,00 €	195,80 €
Suruga 1	1.680,81	2.596	2.166	10.099,37 €	150.000	1.047,25	7.520	1.180	24	1.800,00 €	519,20 €
Futagami	3.046,16	2.581	2.396	18.303,27 €	150.000	1.047,25	7.520	1.180	18	1.350,00 €	516,20 €
Remora I	3.220,06	3.025	3.987	19.348,13 €	150.000	1.047,25	7.520	1.180	18	1.350,00 €	605,00 €
Shinryuta Maru	3.232,15	2.716	3.043	19.420,82 €	245.250	1.712,25	12.300	1.930	24	1.800,00 €	543,20 €
Houta Maru	3.343,29	3.508	4.167	20.088,62 €	300.000	1.361,26	15.040	2.360	24	1.800,00 €	701,60 €
Hai Feng 895	3.377,32	3.503	4.183	20.293,05 €	300.000	1.361,26	15.040	2.360	24	1.800,00 €	700,60 €
Meita Maru	3.399,24	3.791	4.211	20.424,79 €	300.000	1.361,26	15.040	2.360	24	1.800,00 €	758,20 €
Tuna Princess	3.939,75	4.499	4.940	23.672,50 €	305.250	1.385,08	15.300	2.400	25	1.875,00 €	899,80 €
Tuna Queen	3.764,60	4.499	4.940	22.621,38 €	305.250	1.384,29	15.300	2.400	36	2.700,00 €	899,80 €
Haru	6.041,92	4.521	5.035	36.305,70 €	305.250	1.384,29	15.300	2.400	25	1.875,00 €	904,20 €
Harima 2	6.096,15	4.490	5.080	36.631,62 €	305.250	1.384,29	15.300	2.400	25	1.875,00 €	898,00 €

Table 068

Vessel	Estimated or Declared Capacity of Hold (m³)	Estimated maximum frozen BFT stowage capacity (Kgs)
Astraea 101	425	151.287
Daniela	500	177.985
Graciela	531	189.020
Astraea 102	747	265.910
Reina Cristina	1.019	362.733
Paloma Reefer	1.035	368.429
Corona Reefer	1.396	496.934
Seiko Maru 16	2.387	849.700
Suruga 1	2.701	961.375
Futagami	4.029	1.434.203
Remora I	4.259	1.516.076
Shinryuta Maru	4.275	1.521.772
Houta Maru	4.422	1.574.099
Hai Feng 895	4.467	1.590.118
Meita Maru	4.496	1.600.441
Tuna Princess	5.211	1.854.924
Tuna Queen	5.275	1.877.742
Haru	8.466	3.013.642
Harima 2	8.542	3.040.696

Table 069

For practical and calculation purposes we have retained a same stowage rate of ≈355,97Kgs/m³ both for bulked frozen GG BFT and shelved frozen BFT loins/fillets. Estimated maximum frozen BFT stowage capacity per FRV and FV is showed in Table: 069.

According to BFT ranching industry reports (Spain, Tunisia & Turkey):

- The average weight (AWR/W) of ≈ 30% to 40% of caught and ranched BFT in the Mediterranean Sea during 2004 and 2005, varies between 40Kgs. ≤ (AWR/W) ≥ 60Kgs.
- The average weight (AWR/W) of ≈ 5% to 7% of caught and ranched BFT in the Mediterranean Sea during 2004 and 2005, varies between 60Kgs. ≤ (AWR/W) ≥ 120Kgs.
- The average weight (AWR/W) of ≈ 53% to 65% of caught and ranched BFT in the Mediterranean Sea during 2004 and 2005, (AWR/W) > 120Kgs.

Though there are numerous possibilities and presentations of both fresh and frozen processed BFT, we retain that it is widely accepted in the industry and for general calculation purposes only, that slaughtered BFT is generally processed as follows:

- 20 to 60 Kg. BFTs are Gilled & Gutted (GG) fresh & frozen,
- 60 to 120 Kg BFTs are Filleted if frozen,
  BFTs are Dressed if fresh,
- +120 Kg BFTs are butchered into loins if frozen,
  BFTs are Dressed if fresh,

[175] *For general technical reference on standard Japanese type BFT deep-freezer vessel, see Ref. 092.*

We therefore may assume for calculation and/or estimation purposes that:

- ≈ 30% to 40% of all frozen BFT in the Mediterranean Sea during 2004 and 2005 was done so in GG presentation.
- ≈ 5% to 7% of all frozen BFT in the Mediterranean Sea during 2004 and 2005 was done so in filet presentation.
- ≈ 53% to 65% of all frozen BFT in the Mediterranean Sea during 2004 and 2005 was done so in loin presentation.

According to ICCAT, 91,10% of commercial BFT catches (PS, LL & Trap) in the Mediterranean Sea during 2004, were purse-seined. [176]

It is nevertheless impossible to ascertain:

- The percentage of BFT having been ranched and then processed and frozen onboard FVR/FV,
- The percentage of BFT having been ranched and then processed and frozen at liquid nitrogen onshore freezing facilities and then loaded onboard FVR/FV,

Converted round weight values will therefore express weight of BFT at the time of their slaughter.

Where appropriate, possible and/or necessary, Conversion Factors[177] [178] used to calculate estimated Round Weight at Slaughter used for statistical analysis and calculation are:

❑ Belly Meat:	x10.28
❑ Dressed Weight	x 1.25
❑ Fillets	x 1.67
❑ Loins	x 1.67
❑ Gilled & Gutted	x 1.16
❑ Others	x 2.00

We have assumed a 2004 cross-board average Diesel Oil Fuel Bunker Price of $US. 175/MT, that is ≈ € 0,13650546 / Litre if DOF δ ≈ 0,95 and at an average 2004 exchange rate[179] of €1 = US.$1,2179.

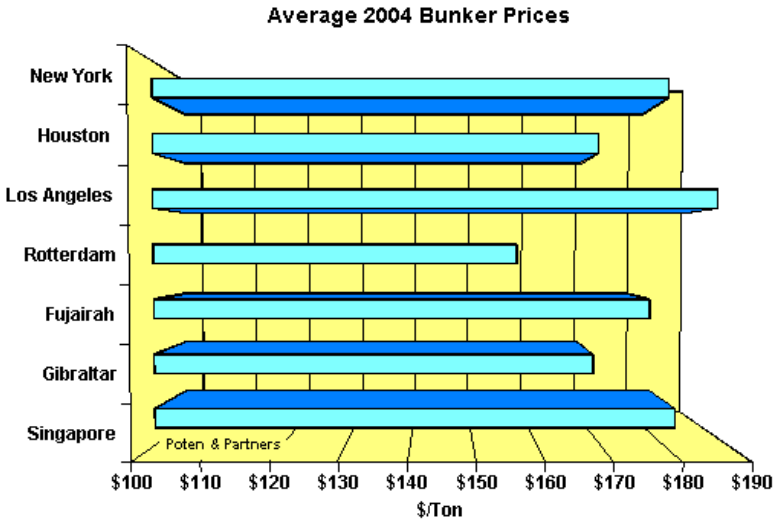


Figure 040.[180]

We have assumed a 2005 cross-board average Diesel Oil Fuel Bunker Price of $US. 210/MT, that is ≈ € 0,16490329 / Litre if DOF δ ≈ 0,95 and at an average 2005 exchange rate of €1 = US.$1,2098.

We finally note that our 2004 and 2005 figures correspond to monitored FVR and FV.

We have been unable to monitor the activity of the following reefer vessels: Melina and Diosa Isabella to name a few.

Industry reports nevertheless confirm that large quantities of processed frozen BFT have been shipped to South Korea by FVRs and FVs chartered by Daehyun Fisheries Co. amongst others.

Minimum estimated values for weight at slaughter of processed frozen BFT shipped out of the Mediterranean Sea by monitored FVRs and FVs are to be therefore considered as conclusively irrelevant since in any event shipped volumes of processed frozen BFT comfortably exceeds such figures corresponding to a theoretical breakeven minimum threshold.

[176] *Source: REPORT OF THE 2005 MEETING OF THE STANDING COMMITTEE ON RESEARCH & STATISTICS (SCRS) (Madrid, Spain - October 3 to 7, 2005) October 2005 PLE-013 / 2005.*

[177] *Source: Estimation of Unreported Catches by ICCAT, Victor Retrepo (ICCAT, Madrid) OECD I/U/U Workshop, Paris, 19-20 April, 2004. Ref. 016. For further information see: Ref. 036. Ref. 037. & Ref. 038.*

[178] *Updated estimates of conversion factors for BlueFin Tuna from product weight t olive weight, SCRS/2001/124, Col. Vol.Sci.Pap.ICCAT. 54(2): 527-530. (2002)*

[179] *See: Ref. 034.*

[180] *Source: Poten & Partners.*

B. BFT Reefer vessel activity in the Mediterranean Sea during 2004.

The activity of 13 FRV and/or FV during 2004, was monitored by using Lloyd's Sea Searcher's Web page as well as thanks to industry reports.[181]

Figure: 041.- FV Astraea-101's 2004 activity.

Figure 042.- FV Astraea-102's 2004 activity.

Figure 043.- FRV Corona Reefer's 2004 activity.

Figure 044.- FV Daniela's 2004 activity.

Figure 045.- FRV Graciela's 2004 activity.

Figure 046.- FRV Hai-Feng-895's 2004 activity.

[181] *See detailed vessels' 2004 schedules at Ref. 093.*

Figure 047.- FRV Meita Maru's 2004 activity

Figure 048.- FRV Paloma Reefer's 2004 activity

Figure 049.- FRV Reina Cristina's 2004 activity

Figure 050.- FRV Seiko Maru-16's 2004 activity

Figure 051.- FRV Shinryuta Maru's 2004 activity

Figure 052.- FRV Suruga-1's 2004 activity.

Figure 053.- FRV Tuna Queen's 2004 activity

Once all variable parameters for each of monitored FVR and FV have been inputted it appears that a minimum breakeven threshold of 8.413.337 Kgs of processed frozen BFT must have been shipped out of the Mediterranean Sea by all thirteen monitored FVR and FV during 2004. See Table: 070.

Estimated maximum amount of processed frozen BFT shipped out of the Mediterranean Sea by all thirteen monitored FVR and FV during 2004, would amount to 16.487.975 Kgs.

Maximum amount of GG processed frozen BFT shipped out of the Mediterranean Sea by all thirteen monitored FVR and FV during 2004, would amount to 6.595.190 Kgs.

Maximum amount of FL processed frozen BFT shipped out of the Mediterranean Sea by all thirteen monitored FVR and FV during 2004, would amount to 1.154.158 Kgs.

Maximum amount of loin-processed frozen BFT shipped out of the Mediterranean Sea by all thirteen monitored FVR and FV during 2004, would amount to 10.717.184 Kgs.

Maximum equivalent weight at slaughter of processed frozen BFT shipped out of the Mediterranean Sea by all thirteen monitored FVR and FV during 2004, would amount to 25.012.258 Kgs. Such case would be for GG ≈ 30%.

Table 070

Vessel	Estimated maximum frozen BFT stowage capacity (Kgs)	Number of trips	Estimated days at Sea	Estimated days at Port	Estimated Canal Transit & Compulsory Pilot Fees	Estimated Cost Fuel Oil per Days at Sea	Estimated Cost Fuel Oil per Days at Port	Estimated Cost of Vessel (Excluding fuel-oil)	Estimated Anchoring or Mooring Fees	Estimated Total Operational Costs	Estimated minimum break-even frozen BFT shipped during 2004 (Kgs)	Estimated maximum frozen BFT shipped during 2004 (Kgs)
Astraea 101	151.287	2	191	51	6.357,17 €	130.623,44 €	5.499,80 €	290.400,00 €	3.049,80 €	435.930,21 €	396.300	302.575
Daniela	177.985	1	75	14	3.739,51 €	51.291,93 €	1.509,75 €	106.800,00 €	977,20 €	164.318,39 €	149.380	177.985
Graciela	189.020	1	75	138	3.971,36 €	51.291,93 €	14.881,83 €	255.600,00 €	11.122,80 €	336.867,91 €	306.244	189.020
Astraea 102	265.910	2	169	123	11.173,65 €	115.577,81 €	13.264,24 €	350.400,00 €	23.419,20 €	513.834,90 €	467.123	531.819
Reina Cristina	362.733	2	193	149	15.242,24 €	198.118,56 €	24.000,39 €	615.600,00 €	35.044,80 €	888.005,99 €	807.278	725.467
Paloma Reefer	368.429	2	169	122	15.481,57 €	173.482,06 €	19.651,33 €	523.800,00 €	30.914,80 €	763.329,75 €	693.936	736.858
Corona Reefer	496.934	2	192	153	20.881,42 €	197.092,04 €	24.644,70 €	621.000,00 €	43.299,00 €	906.917,16 €	824.470	993.868
Seiko Maru 16	849.700	1	33	88	17.852,42 €	33.875,19 €	14.174,73 €	217.800,00 €	17.230,40 €	300.932,74 €	273.575	849.700
Suruga 1	961.375	2	202	118	40.397,47 €	207.357,25 €	19.007,02 €	576.000,00 €	61.265,60 €	904.027,34 €	821.843	1.922.751
Shinryuta Maru	1.521.772	1	105	56	38.841,63 €	176.296,80 €	14.753,51 €	289.800,00 €	30.419,20 €	550.111,15 €	500.101	1.521.772
Hai Feng 895	1.590.118	2	234	88	81.172,20 €	480.411,86 €	28.349,45 €	579.600,00 €	61.652,80 €	1.231.186,31 €	1.119.260	3.180.236
Meita Maru	1.600.441	1	179	29	40.849,59 €	367.494,54 €	9.342,43 €	374.400,00 €	21.987,80 €	814.074,36 €	740.068	1.600.441
Tuna Queen	1.877.742	2	214	84	90.485,50 €	446.946,18 €	27.519,50 €	804.600,00 €	75.583,20 €	1.445.134,38 €	1.313.759	3.755.484

C. Reefer vessel activity in the Mediterranean Sea during 2005.

The activity of 18 FRV and/or FV during 2005, was monitored by using Lloyd's Sea Searcher's Web page as well as thanks to industry reports.[182]

Figure 054.- FV Astraea-101's 2005 activity

Figure 055.- FV Astraea-102's 2005 activity

Figure 056.- FRV Corona Reefer's 2005 activity.

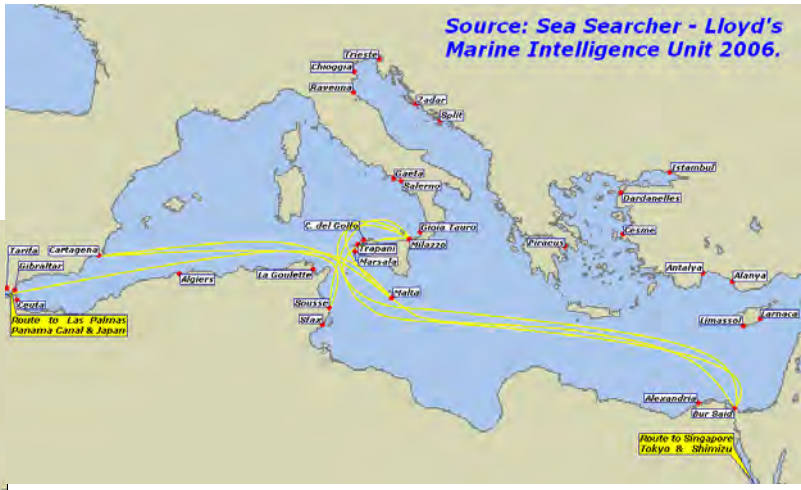


Figure 057.- FV Daniela's 2005 activity

Figure 058.- FRV Futagami's 2005 activity

Figure 059.- FRV Graciela's 2005 activity

[182] *See detailed vessels' 2005 schedules at Ref. 094.*

Figure 060.- FRV Hai-Feng-895's 2005 activity

Figure 061.- FRV Harima's 2005 activity

Figure 062.- FRV Haru's 2005 activity

Figure 063.- FRV Houta Maru's 2005 activity.

Figure: 064. FRV Meita Maru's 2005 activity.

Figure 065.- FRV Paloma Reefer's 2005 activity

Figure 066.- FRV Reina Cristina's 2005 activity

Figure 067.-FRV Remora-1's 2005 activity.

Figure 068.- FRV Seiko Maru-16's 2005 activity.

Figure 069.- FRV Suruga-1's 2005 activity.

Figure 070.- FRV Tuna Princess' 2005 activity.

Figure 071.- FRV Tuna Queen's 2005 activity

Once all variable parameters for each of monitored FVR and FV have been inputted it appears that a minimum breakeven threshold of 10.132.886 Kg of processed frozen BFT must have been shipped out of the Mediterranean Sea by all eighteen monitored FVR and FV during 2005. See Table: 071.

Estimated maximum amount of processed frozen BFT shipped out of the Mediterranean Sea by all eighteen monitored FVR and FV during 2005, would amount to 27.397.452 Kg.

Maximum amount of GG processed frozen BFT shipped out of the Mediterranean Sea by all eighteen monitored FVR and FV during 2005, would amount to 10.958.981 Kg.

Maximum amount of FL processed frozen BFT shipped out of the Mediterranean Sea by all eighteen monitored FVR and FV during 2005, would amount to 1.917.822 Kg.

Maximum amount of loin-processed frozen BFT shipped out of the Mediterranean Sea by all eighteen monitored FVR and FV during 2005, would amount to 17.808.344 Kg.

Maximum equivalent weight at slaughter of processed frozen BFT shipped out of the Mediterranean Sea by all eighteen monitored FVR and FV during 2005, would amount to 41.561.934 Kg. Such case would be for GG ≈ 30%.

Table 071

Vessel	Estimated maximum frozen BFT stowage capacity (Kgs)	Number of trips	Estimated days at Sea	Estimated days at Port	Estimated Canal Transit & Compulsory Pilot Fees	Estimated Cost Fuel Oil per Days at Sea	Estimated Cost Fuel Oil per Days at Port	Estimated Cost of Vessel (Excluding fuel-oil)	Estimated Anchoring or Mooring Fees	Estimated Total Operational Costs	Estimated minimum break-even frozen BFT shipped during 2004 (Kgs)	Estimated maximum frozen BFT shipped during 2004 (Kgs)
Astraea 101	151.287	2	191	51	6.357,17 €	157.797,61 €	6.643,95 €	290.400,00 €	3.049,80 €	464.248,53 €	422.044	302.575
Daniela	177.985	3	59	142	11.218,53 €	48.743,76 €	18.498,85 €	241.200,00 €	9.911,60 €	329.572,74 €	299.612	533.955
Graciela	189.020	2	201	116	7.942,72 €	166.059,26 €	15.111,74 €	380.400,00 €	9.349,60 €	578.863,32 €	526.239	378.040
Astraea 102	265.910	2	120	95	11.173,65 €	99.139,86 €	12.375,99 €	258.000,00 €	18.088,00 €	398.777,50 €	362.525	531.819
Reina Cristina	362.733	2	215	105	15.242,24 €	266.615,64 €	20.431,52 €	576.000,00 €	24.696,00 €	902.985,40 €	820.896	725.467
Paloma Reefer	368.429	2	155	186	15.481,57 €	192.211,27 €	36.192,97 €	613.800,00 €	47.132,40 €	904.818,22 €	822.562	736.858
Corona Reefer	496.934	2	238	65	20.881,42 €	295.137,31 €	12.648,08 €	545.400,00 €	18.395,00 €	892.461,81 €	811.329	993.868
Seiko Maru 16	849.700	2	237	75	35.704,83 €	293.897,24 €	14.593,94 €	561.600,00 €	14.685,00 €	920.481,01 €	836.801	1.699.401
Suruga 1	961.375	1	90	101	20.198,73 €	111.606,55 €	19.653,17 €	343.800,00 €	52.439,20 €	547.697,65 €	497.907	961.375
Futagami	1.434.203	1	87	20	36.606,54 €	107.886,33 €	3.891,72 €	144.450,00 €	10.324,00 €	303.158,58 €	275.599	1.434.203
Remora I	1.516.076	3	125	191	116.088,79 €	155.009,09 €	37.165,90 €	426.600,00 €	115.555,00 €	850.418,78 €	773.108	4.548.229
Houta Maru	1.574.099	1	104	56	40.177,24 €	257.935,13 €	21.793,62 €	288.000,00 €	39.289,60 €	647.195,59 €	588.360	1.574.099
Hai Feng 895	1.590.118	1	150		40.586,10 €	372.021,82 €	0,00 €	270.000,00 €	0,00 €	682.607,92 €	620.553	1.590.118
Meita Maru	1.600.441	1	91	7	40.849,59 €	225.693,24 €	2.724,20 €	176.400,00 €	5.307,40 €	450.974,43 €	409.977	1.600.441
Tuna Princess	1.854.924	1	65	94	47.345,00 €	163.996,32 €	37.202,18 €	298.125,00 €	84.581,20 €	631.249,70 €	573.863	1.854.924
Tuna Queen	1.877.742	1	72	70	45.242,75 €	181.657,46 €	27.703,75 €	383.400,00 €	62.986,00 €	700.989,97 €	637.264	1.877.742
Haru	3.013.642	1	94	4	72.611,40 €	237.163,91 €	1.583,07 €	183.750,00 €	3.616,80 €	498.725,18 €	453.387	3.013.642
Harima 2	3.040.696	1	80	5	73.263,24 €	201.841,63 €	1.978,84 €	159.375,00 €	4.490,00 €	440.948,70 €	400.862	3.040.696

Chapter III.- Final Conclusions

Table 072 summarizes our findings and estimations for the years 2004 and 2005, through Studies I to V.

BFT WR/W Catch Estimations (In Kgs)		2004	2005
Total ICCAT quota (NEA + MED)		32.000.000	32.000.000
Total WR/W Catch Estimation based on Processed Fresh & Frozen BFT exports (Including Japan's reported & estimated BFT catches) Table: 040. Study: I	Third Scenario	48.426.399	-
	Fourth Scenario	47.898.418	41.904.159
	Fifth Scenario	-	41.446.463
Total Estimated WR/W Catch Estimation based on Tables: 043 - Study: II & Table: 058 - Study III.		41.998.500	49.191.000
Total Estimated WR/W BFT Input into Mediterranean Tuna Ranches. Study IV.		29.677.000	30.765.000
Maximum equivalent weight at slaughter of processed Frozen BFT shipped out of the Mediterranean Sea by monitored FVR and FV based on Tables: 070 & 071 - Study V.*		25.012.258	47.964.934
Note: * 2005 figure includes 6.403 MT of processed frozen BFT having been shipped by 40' reefer containers from Algeciras, Spain.			

Table: 072

Though some of our specific findings may seem conflicting and/or somewhat over-conservative, we submit the following final two scenarios for 2004 and 2005.
Each one of such scenarios assumes consistent raw-data from studies I to V in order to puzzle-up a credible final description.

It is our very best and conservative estimation that during 2004, the total estimated amount of BFT having been caught both in the North East Atlantic and the Mediterranean Sea would have amounted to:

41.998.500 Kgs [183] ≤ WR/W ≤ 47.898.418 Kgs [184].

Total 2004 estimated amount of input BFT having been ranched inside the Mediterranean Sea would have amounted to:

29.677.000 Kgs [185] ≤ WR/W ≤ 31.678.883 Kgs [186]

Total 2004 estimated amount of BFT not having been ranched because caught with other gear than PS or slaughtered at sea even if purse-seined, would have amounted to:

12.321.500 Kg ≤ WR/W ≤ 16.219.535 Kg.

BFT over-fishing in both NEA and MED would have exceeded ICCAT's 2004 total NEA + MED quota by:

9.998.500 Kg ≤ WR/W ≤ 15.898.418 Kg,

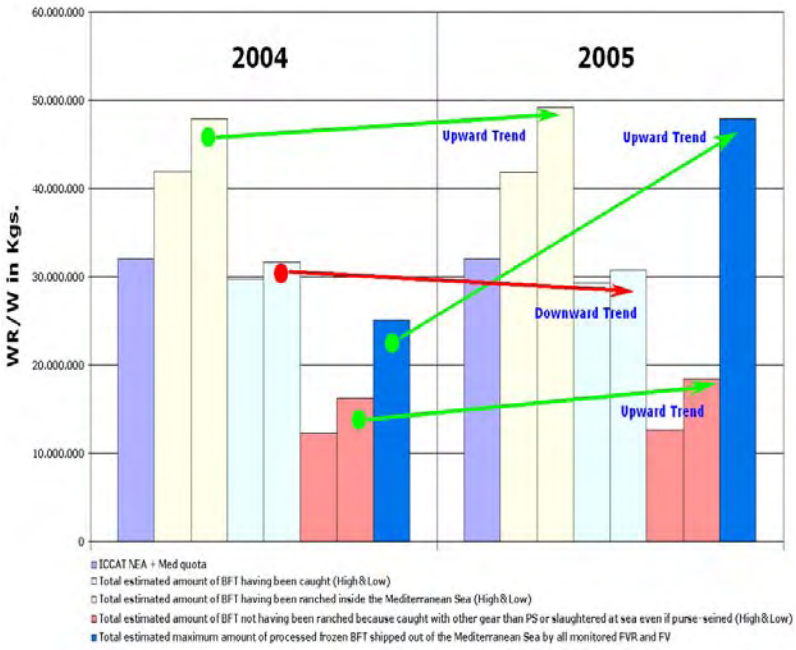
The 2005 total estimated amount of BFT having been caught both in the North East Atlantic and the Mediterranean Sea would have amounted to:

41.904.159 Kg[187] ≤ WR/W ≤ 49.191.000 Kg[188].

Total 2005 estimated amount of input BFT having been ranched inside the Mediterranean Sea would have amounted to:

29.292.543 Kg[189] ≤ WR/W ≤ 30.765.000 Kg[190]

Figure 072



[183] *Total Estimated BFT WR/W Catches NEA+Med (Study II - Table: 043)*

[184] *Total Estimated WR/W by Fresh & Frozen BFT Conversion (Table: 040 – Fourth 2004 Scenario)*

[185] *Total Estimated BFT WR/W Input into Tuna Ranches (Study IV - 2004)*

[186] *Total Estimated BFT WR/W Input into Tuna Ranches (Table: 040 – Fourth 2004 Scenario)*

[187] *Total Estimated WR/W by Fresh & Frozen BFT Conversion (Study III - Table: 058)*

[188] *Total Estimated BFT WR/W Catches NEA+Med (Study I - Table: 040 - Fourth 2005 Scenario)*

[189] *Total Estimated BFT WR/W Input into Tuna Ranches (Study I - Table: 040 - Fifth 2005 Scenario)*

[190] *Total Estimated BFT WR/W Input into Tuna Ranches (Study IV - 2005)*

Total 2005 estimated amount of BFT not having been ranched because caught with other gear than PS or slaughtered at sea even if purse-seined, would have amounted to:

12.611.616 Kg ≤ WR/W ≤ 18.426.000 Kg.

BFT over-fishing in both NEA and MED would have exceeded ICCAT's 2005 total NEA + MED quota by:

9.904.159 Kg ≤ WR/W ≤ 17.191.000 Kg.

Total estimated maximum amount of processed frozen BFT shipped out of the Mediterranean Sea by all monitored FVR and FV during 2004, would have amounted to:

RD (at slaughter) ≈ 25.012.258 Kg.

Total estimated maximum amount of processed frozen BFT shipped out of the Mediterranean Sea by all monitored FVR, FV and 40' reefer containers during 2005, would have amounted to:

RD (at slaughter) ≈ 47.964.934 Kg.

The 2005 WR/W ≈ 7.286.841 Kg estimation range for total amount of BFT having been caught both in the North East Atlantic and the Mediterranean Sea is ≈ x 1,235 wider than that for 2004: WR/W ≈ 5.899.918 Kg.

Values in Table: 072 and Figure: 072 for both 2004 and 2005 based on recorded foreign trade processed BFT exports by all Mediterranean Sea BFT producing countries indicate a general drop of recorded processed BFT exports by all Mediterranean Sea BFT producing countries. Such drop would have amounted to:

6.451.955 Kg ≤ WR/W ≤ 6.522.240 Kg

Values of processed frozen BFT shipped out of the Mediterranean Sea by all monitored FVRs and FVs during 2005 being much higher than for 2004, would therefore suggest that an increasing significant amount of processed frozen BFT was exported out of the Mediterranean Sea without having been officially recorded/reported to proper and/or competent customs authorities.

The WR/W ≈ 6.500 MT drop of recorded processed BFT exports between 2004 and 2005 also seems to be consistent with the increasing production trend of BFT having been transferred-live into gravity transport pens, slaughtered at sea and processed/blast frozen on board FVRs and FVs without having been ranched (Full fattening cycle).

Such activity has been described in this report as "Tuna Hotel".[191]

Previous assertions are consistent when matched against FVR and FV activity during 2004 and 2005, characterised by:

- An increasing number of these vessels operating inside the Mediterranean Sea (13 in 2004 and 18 during 2005)
- An increasing number of in/out the Mediterranean Sea trips (19 in 2004 and 29 during 2005)
- A higher number of days at sea inside the Mediterranean Sea for all monitored FVR and FV during 2005.[192]

The previously mentioned drop of recorded processed BFT exports between 2004 and 2005 is clearly applicable to the Spanish case, as seen in Spain's latest 2004-2005 export/import figures published by ANFACO.[193]

Table: 073 summarises Spain's processed BFT fresh & frozen 2004-2005 exports.

Figures and values published by ANFACO almost match those available from Spain's ESTACOM Foreign Trade Data-Base.

[191] *Though never reaching fat-content percentages of ranched BFT, such fish is nevertheless calmed-down for a short period of time inside transport gravity pens then harvested with minimum "yake" levels.*

Such fish cannot be considered as having been ranched but nevertheless outclasses LL wild BFT meat quality-wise because it has not suffered half as much during its slaughtering as any hooked LL caught BFT would have.

[192] *See: Ref. 093 & 094.*

[193] *Asociación Nacional de Fabricantes de Conservas de Pescados y Mariscos. Ref. 096. Presentación de los datos correspondientes al año 2005 del "el Sector Industrial Transformador de Productos del Mar" – Anfaco-Vigo, March 31st 2006.*

Spain's 2004-2005 BFT Imports & Exports						
BFT Imports & Exports by Source of information	In Metric Tonnes			Value in Euros		
	2004	2005	%2005s/2004	2004	2005	%2005s/2004
Fresh BFT Exports according to ANFACO	8.605	6.440	-25,16% to -33,32%	109.874.000 €	63.870.000 €	-41,87% to -46,02%
Fresh BFT Exports according to ESTACOM	9.658	6.440		118.322.280 €	63.869.616 €	
Fresh BFT Imports according to ANFACO	3.932	3.172	-9,63% to -19,33%	17.209.000 €	13.762.000 €	-20,03% to -20,22%
Fresh BFT Imports according to ESTACOM	3.510	3.172		17.250.349 €	13.761.730 €	
Frozen BFT Exports according to ANFACO	274	299	-4,91% to +9,12%	1.837.000 €	2.387.000 €	+ 25,49% to +29,94%
Frozen BFT Exports according to ESTACOM	274	260		1.837.467 €	2.305.804 €	
Frozen BFT Imports according to ANFACO	152	935	+515,13%	1.020.000 €	2.260.000 €	+121,57%
Frozen BFT Imports according to ESTACOM	152	935		1.020.070 €	2.260.041 €	

Table 073

Spanish frozen processed BFT exports between 2004 and 2005 have dropped 25 MT while fresh processed BFT exports have plummeted some 3.218 MT.

Such drop is attributable and consistent with Spain's lower BFT ranches 2005 ≈ 4.150/5187 MT input/output[194], versus 2004 figures: ≈ 5.763/6.915. MT input/output.[195]

The issue of increasing significant amounts of onboard FRV / FV processed frozen BFT being exported out of the Mediterranean Sea without having been officially recorded/reported to proper and/or competent customs authorities raises the question about the final destination of such fish and/or the reliability of onboard inspections at destination.

According to Japan's Department of Food Safety, Pharmaceutical & Food Safety Bureau (Ministry of Health, Labour & Welfare, out of 55.938 Bonito, Tuna and mackerel import declarations for 2004 (Amounting to 549.998 Metric Tonnes of imported fish) only 91 inspections were carried-out on 1.518 MT of imported fish. No violations were recorded during 2004.[196]

[194] *See Table: 059.*

[195] *See Page: 105.*

[196] *Source: Statistics of Imported Foods Monitoring for FY2004, June 2005. Department of Food Safety, Pharmaceutical & Food Safety Bureau (Ministry of Health, Labour & Welfare. Ref. 097.*

Picture 023.- Column before: BFT harvesting at sea, Above: FVR moored at Kimagro Cyprus BFT ranch, Bottom: Japanese FVR onboard personnel butchering BFT prior to blast-freezing. (*Pictures: Tuna Queen – Japan*)

The Japanese Fisheries Agency will start requiring importers of BlueFin Tuna ranched in the Mediterranean Sea to submit a document to confirm that sampling requirements are satisfied for the fish as of February 20th 2006.

The Japan National Research Institute of Far Seas Fisheries has performed some 25 DNA tests on imported tuna during this year, as to certify its origin and prevent "tuna laundering" that is landing BFT from the Mediterranean Sea undercover of a false origin and/or specie declaration.

Japanese Fisheries inspectors have also monitored during 2005, BFT processing on board Toei Reefer Line and Tuna Queen FVRs while at port, in the Mediterranean Sea.

It is unclear whether or not such inspectors were onboard those FVRs at sea, whether inside the Mediterranean Sea or on-route to final destination.

Finally, we believe China P.R., Korea and Taiwan BFT catch and import reporting is inconsistent and unreliable, so much that we have chosen not to use such data other than for reference purposes.

Taiwan has reported to ICCAT 2004 BFT catches of 51 MT. [197]

[197] *For more on Taiwan's BFT statistics, see Ref. 102.*

Taiwan's 2005 2nd half exports to China P.R., Korea and Japan of processed BFT caught inside the Mediterranean Sea amounted to 190.988 Kgs ≈ WR/W 230 MT.

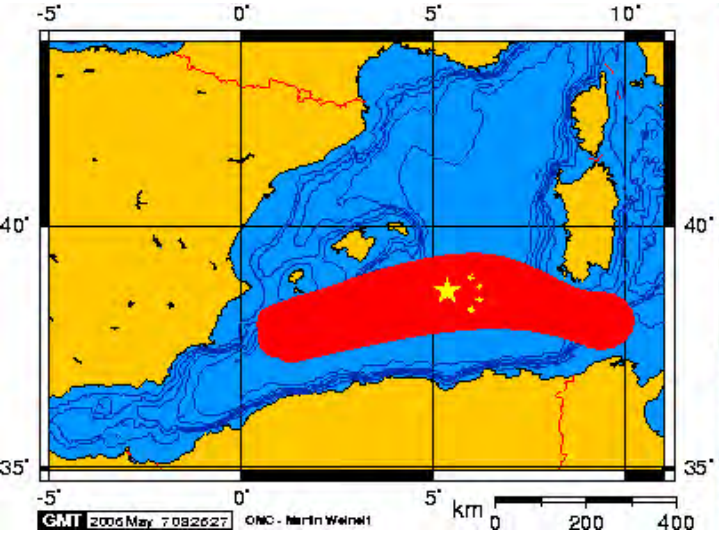
China P.R.'s processed fresh and frozen BFT import reporting is virtually inexistent. [198]

The issue raises the legitimate question about the origin and import routes of BFT being processed by:

- Japan Sojitz's deep frozen tuna subsidiary Shuang Ri Food Co in Dalian, China,
- Japan Maruha's Zhoushan Industrial Co. Ltd. fish & seafood production facility, also in Mainland China,
-
- Japan Kyokuyo Co. Ltd. frozen sushi sales unit in Shandong, China,
- China Yantai Jingang Aquatic Products Co., Ltd.'s 6.000m² processing workshop and -60ºC super low temperature cold storage warehouse constructed specially for the storage of tuna with a capacity of 3.000 metric tonnes.[199]

all of which are engaged in the storage, processing and sales of deep-frozen sashimi tuna, to address robust overseas and local demand. As Professor Li Xiaochuan rightly puts-it: "*Chinese people love to eat seafood and tuna is already on the menu in restaurants in Shanghai and Beijing.*" [200]

Figure 073.- Left: Fishing grounds for Chinese long liners in the Mediterranean Sea during 1995 and 1996 BFT fishing season.[201] Right: Typical Chinese Long line vessel



[198] *Source: Chinese Customs Statistical Data.* Ref. 099.

[199] *Source: China Agriculture For Trade and Economy.* Ref. 104.

[200] *Source: Port Lincoln Times, 20/09/2005. Li Xiaochuan is the Chairman of the National Standards Technical Committee on Fish and Fish Products and China's representative to the Food and Agriculture Organisation (FAO) on Fisheries.*

[201] *Source: A REVIEW OF AVAILABLE BLUEFIN TUNA INFORMATION FOR CHINA: 1994-2001. By: Dai Xiaojie, Zhao Living & Xu Liuxiong 1SCRS/2002/130. Col. Vol. Sci. Pap. ICCAT, 55(3): 1233-1241 (2003)* Ref. 103.

List of acronyms

ATRT, SL	Advanced Tuna Ranching Technologies, SL
BAF	Bunker adjustment factor
BB	Bait-Boat
BFT	BlueFin Tuna
BM	Belly meat
CAF	Cost and freight
C&F	Cost and freight
CPUE	Catch per vessel and day at sea
DR	Dressed
EIS	Environmental Impact Study
EU	European Union
F	Fresh
FIFG	Financial Instrument for Fisheries Guidance
FL	Fillet
FoB	Free on board
FR	Frozen
FV	Freezer Vessel
FVR	Freezer Reefer Vessel
GG	Gilled & Gutted
ICCAT	International Commission for the Conservation of Atlantic Tunas
IUU	Illegal, Unregulated and/or Unreported
JPY	Japanese Yen
LL	Long-line
MED	Mediterranean Sea
MSY	Maximum Sustainable Yield
MT	Metric Tonne
NEA	North East Atlantic
NM	Nautical Mile
NOAA	National Oceanographic & Atmospheric Administration
PS	Purse-seine
USD	US. Dollar
RD	Round Weight
RSW	Refrigerated Sea Water
TAC	Total Allowable Catch
TARIC	Integrated Tariff of the Community
WR/W	Wild Round Weight
Yake niku	Burnt tuna flesh

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