## PART II

## COMPILING THE EVIDENCE

*This session sought to elicit empirical information on IUU fishing, with the key objective of quantifying IUU fishing activities. Discussions focused on the various ways of gathering information and data and assessed their relative efficacy. The session also sought to establish the impact of IUU fishing on resources.*

# CHAPTER 5

# USING TRADE AND MARKET INFORMATION TO ASSESS IUU FISHING ACTIVITIES

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## Introduction

Fisheries commodities generally represent around 25% of the total value of wildlife products in world trade and, after timber, are the most valuable. In the year 2000, fisheries products were estimated to have an export value of USD 55.2 billion (Anon., 2002a). Due to the nature of the activity, reliable global estimates of the value of fisheries products in trade derived from IUU fishing activity are difficult to obtain. However, in relation to general wildlife trade, globally, wildlife smuggling is estimated to be worth USD 6 billion to 10 billion a year, ranking third behind narcotics and arms smuggling (Anon., 2003a).

Analysis of the trade in wildlife products, and in some cases the control of that trade, has long been recognised as a valuable tool contributing to the sustainable use of such resources. The most widely known and well-established regime for the regulation of international trade in wildlife is the Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES), which entered into force in July 1975. With 164 current Parties and over 30 000 species listed in the three Appendices to the Convention, CITES represents the most broadly co-ordinated attempt to use international trade as a complement to other management efforts to ensure the sustainability of wildlife. While there are several commercially exploited aquatic species of significance in international trade currently listed in the CITES Appendices, no marine species taken in a large-scale, industrial commercial fishery have yet been listed.

There is also a growing number of documentation and labelling laws and schemes seeking to control and/or identify the source of marine fisheries products in trade, including those concerned with food safety and quarantine. In addition, there has been a growth in eco-labelling schemes underpinned by private organisations, such as the Marine Stewardship Council (MSC), that are designed to enable consumers to identify products from well-managed and sustainable fisheries in the market place. In the case of the MSC, the extent of IUU fishing activity in a fishery seeking certification is recognised as a factor impacting on the health of stocks and taken account of in the decision whether or not to grant certification.

In this respect, moves by regional fisheries management organisations (RFMOs) to implement catch certification and documentation schemes as a complement to other management controls to

combat IUU fishing are particularly important in relation to the growth in trade and market-related interventions in fisheries. For the most part, these measures are a response to the inability of traditional management measures and international law to effectively deal with sustainability issues and, in particular, the threat to sustainability of stocks posed by IUU fishing. Trade-related measures introduced by RFMOs are broadly aimed at either gathering information on the source, extent and parties to trade as the basis for other actions to be taken (*e.g.*, the International Commission for the Conservation of Atlantic Tunas' catch certification scheme) or as a direct attempt to prevent product derived from IUU fishing activities from entering trade (*e.g.*, Commission for the Conservation of Antarctic Living Marine Resources' catch documentation scheme).

Given the extent to which fisheries products are present in international trade, knowledge of the trade and the market for those products is almost a prerequisite to good management, with the ability to shed light on issues such as the source of products, extent and nature of demand, and substitute products. In this respect, regardless of whether used as a direct regulatory measure or as a means of gathering information on trade in a fisheries product, trade and market analyses have the potential to make a significant contribution to reducing the threat posed by IUU fishing.

TRAFFIC is the world's largest international wildlife trade monitoring organisation with eight regional offices and 22 national offices. TRAFFIC has carried out a number of analyses of the international trade in and markets for various fisheries products, which have provided valuable information that can be used by governments, nationally, regionally and/or internationally, in developing measures to combat IUU fishing.

This paper:

a) briefly outlines the different methods used to undertake analyses of trade and market information;

b) identifies the range of information on IUU fishing that may arise from trade and market analyses;

c) discusses the key ingredients for trade and market analyses to be able to contribute to assessing IUU fishing activity;

d) provides a number of issues for further consideration including recommendations designed to increase the utility of these forms of analysis in assessing IUU fishing activity.

**Methods used in analyses of trade and market information**

There are a number of different methods used in the analyses undertaken by TRAFFIC, the main ones being analysis of trade data, market surveys and field research. Such methods must be combined with extensive literature searches and research into any regulatory measures and policies in order to ensure that data derived from trade and market research is placed in its correct context. In applying these methods, some activities may be undertaken that are beyond the normal scope of government, for example, covert market surveys in other countries. Both informal and formal sources of information may be obtained; however, if interventions are to be subsequently made by governments on the basis of these analyses, they must have a strong and objective factual underpinning.

It is extremely important to have the best available information so that certain interpretive decisions can be taken when checking trade data. TRAFFIC is very careful to give a conservative figure when estimating overall trade as there are always inconsistencies when cross-checking export,

import and re-export data. For example, when comparing data from different sources it is important to verify that comparisons are being made between the same types of products. Some countries' codes may reflect fish quantities that have been converted to live weight, whereas other sources of data may be for such products as head and gutted, gutted, and fillets. Such data cannot be compared unless this information is known and unless reliable conversion factors are used to convert processed products to live weight equivalents.

In general, statistics, such as those from FAO, underestimate the amount of trade occurring, the quality of this data being dependent on the quality of data its members provide. There are, however, examples where trade statistics at a country or global level may overestimate trade. For example, this occurred in the past with the trade data available for Hong Kong on shark fin imports (Anon., 1996). As shark fins were being imported in to Hong Kong and then re-exported to mainland China for further processing and then re-imported back into Hong Kong, the overall effect was for fins derived from the same animal to be counted twice in imports into Hong Kong. Legitimate industry is often an extremely important advisor in the interpretation of trade information.

Further, even where a country has customs codes for a species it may still be reported under a variety of names – particularly where there may be tariff or tax incentives to do so – therefore care needs to be taken to either use pricing information or intelligence from legitimate industry to correctly identify the species in question or otherwise omit that data from the analyses. When done properly, these forms of analyses will more often provide a minimum estimate of the level of international trade in a species and, in most cases, will be an underestimate.

**What useful information can be derived from trade and market analyses?**

In providing assessments of a range of different IUU activities, trade and market information can assist in establishing the potential basis for intervention across this range.

***Comparison between estimated catch and level of trade***

Collating national import, export and re-export data can provide an estimate of the total volume of a particular species in international trade. This may then be compared with the global reported, or estimated, catch of that species. Where the volume of a species in international trade is higher, one of the explanations is that this product has been derived from illegal or unreported fishing activities. Knowledge of the fishery is then likely to indicate whether this is likely to be the case. In situations where a species may be actively managed throughout only part of its range, gaps between trade volume and reported catch may indicate that part of the product comes from an unregulated fishery. While this arguably does not fall within the definition of IUU fishing under the FAO International Plan of Action, it may identify areas where harvest is a matter of concern and so require active management, or where unregulated harvest may undermine trade-related measures for that part of a stock or species that is managed.

The assessment of the international trade in Patagonian Toothfish *Dissostichus eleginoides* undertaken by TRAFFIC in 2001 (Lack and Sant, 2001) is an example of this type of trade analysis. International trade data for Patagonian Toothfish was analysed to determine whether it was possible to use this data to verify the extent of IUU fishing for toothfish and, if so, how the level of international trade compared with estimates of total catch. This analysis, undertaken prior to the implementation of the Commission for the Conservation of Antarctic Marine Living Resources' catch documentation scheme (CDS), showed that IUU fishing may have accounted for half the toothfish in international trade in the year 2000. Comparison of international trade data also indicated that the level of IUU catch may have been four times that estimated by CCAMLR.

In the case of the Patagonian Toothfish trade analysis, catch estimates were available from CCAMLR for other species, however, particularly those harvested from high seas areas not under the mandate of an RFMO; FAO catch estimates may provide the main point of comparison with trade data. For example, in relation to orange roughy *Hoplostethus atlanticus*, a comparison of available international trade information and FAO estimates of global catch indicated that the FAO substantially underestimated the actual global catch of orange roughy (Lack *et al*., 2003). The FAO has itself recognised that its database underestimates the actual catch of orange roughy (Anon., 2003b), with the trade analysis then confirming that this was indeed likely to be the case and that the underestimate may be as high as 30% in some years. While not solely indicative of the level of IUU fishing activity for orange roughy, such comparisons of global catch and trade provide valuable insights into the potential level of harvest of species and add weight to calls for such stocks to be brought under management arrangements.

***Identify discrepancies between export and import figures for a product***

Discrepancies between export figures and import data may indicate that fish products are circumventing official trade routes in the country of origin. One of the reasons for this circumvention may be that the product has been illegally obtained.

For example, in the case of the sea cucumber species *Isostichopus fuscus*, harvested mainly in the waters surrounding Ecuador's Galapagos Islands, a comparison between export data from Ecuador and import data from the major import destinations was undertaken. This analysis revealed that the level of exports was likely to significantly underestimate the actual level of trade, with imports of dried sea cucumbers from Ecuador into Hong Kong and Chinese Taipei over the period 1998 to 2002 exceeding the reported exports by at least 10% and in some years by 25% (Willock *et al*., in press). Of further interest in the trade analyses of *I. fuscus* is the fact that exports from Ecuador were reported during years when the fishery was closed to all commercial harvest. Illegal harvest of the species from the Galapagos is widely recognised by the Ecuadorian Government as the major threat to sustainability of the fishery and the trade comparison contributes data on the extent of the illegal harvest and the need for greater co-ordination between fisheries management and customs authorities as well as with importing countries.

***Identify countries engaged in trade in a certain product***

Trade analysis can assist in identifying those countries that are engaged in the international trade of a fisheries product and the level of that engagement. RFMOs or national governments can use this information to identify trade flows in a particular fisheries product (and potential IUU products) and ascertain which countries' co-operation is required to effectively manage a species.

CCAMLR, ICCAT and the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) have all used information gathered through trade and market analyses to pinpoint countries from which co-operation is required. In most cases, countries trading in a fisheries product that are not members of the relevant RFMO will be unaware of any issues relating to IUU fishing activity. Therefore, by identifying countries engaged in trading a species where IUU fishing is a problem, it would then be possible to liaise with those countries and seek their co-operation in limiting market access for IUU-caught fish. Invitations to become a party to the relevant RFMO or co-operate in trade-related measures as a co-operating non-party are two types of action that can be taken on the strength of this information. Both ICCAT and CCSBT have also used information on the source of products in trade to identify countries from which their members should not accept imports.

### *Identify routes/avenues for disposal of IUU products*

Gathering information on the export, import and re-export of a particular species can provide information on the routes IUU products take in order to circumvent national management measures, including those relating to trade. This information may provide evidence of the avenues for disposal of products, identify 'hot-spots' (such as porous borders) through which illegally obtained products pass, and provide information on the role of other states in illicit trade as a step towards securing their co-operation to prevent such trade.

The case of the abalone species *Haliotis midae* illustrates this point. *H. midae* is one of three species of abalone endemic to South Africa and is the only species commercially harvested within the country, with over 90% of the catch exported. The main threat to the species, and the future of the fishery based on it, is illegal harvesting (Hauck and Sweijd, 1999). A recent analysis of import data from the major importer, Hong Kong, revealed that imports of the South African endemic abalone came from four other states, including a land-locked country (Willock *et al*., in press). Given that there is no export of the species into these countries from South Africa, exports from these four countries are likely to consist of abalone smuggled across borders. The South African government is reportedly considering avenues to secure the co-operation of importing countries to stop this illicit trade (Willock *et al*., in press).

### *Evidence of adherence to regulatory measures*

Market surveys can be useful in obtaining a snapshot of the trade in fisheries products and allow an assessment of the presence or absence of certain forms of IUU product. More detailed surveys over a period of time can provide a more robust assessment of the extent to which IUU products occur in the market place. For example, surveys of major European markets for Swordfish *Xiphias gladius* and Atlantic Bluefin Tuna *Thunnus thynnus* revealed the presence of substantial quantities of undersized specimens of both species, in contravention of ICCAT management measures (Raymakers and Lynham, 1999).

Assessment of information from market surveys can provide independent verification of an enforcement problem and the extent of that problem. Measures can then be developed to respond to these issues.

## Main ingredients of robust trade and market analyses

Two factors are essential in ensuring that analyses of trade and market information are sufficiently robust to be used to assess IUU fishing activity, and indeed to be useful in fisheries management in general. These two ingredients, access to data and ability to interpret the data, are similar to other crucial areas of fisheries management, particularly stock assessment. Issues relating to each factor are discussed below.

### *Access to data*

Access to reliable data for analysis is the main barrier to using trade and market information to assess IUU fishing activity. In most cases, species-specific and product-specific customs codes will not be available for the species of interest, with many grouped into generic categories such as 'crustaceans' or 'shark'. Another common practice is to identify certain species, such as 'Bigeye Tuna' and 'Yellowfin Tuna', and then classify all other tuna species under a category 'Other – not Bigeye or Yellowfin'.

Where customs codes are available for a species, these are often only in place in a limited number of the countries potentially engaged in its trade. Fortunately, those countries with detailed customs codes in place are most likely to be the ones most heavily engaged in trade, both as exporters and importers. For example, New Zealand is the major exporter of Antarctic Toothfish *Dissostichus eleginoides* and is one of only two countries with separate export codes for this species and Patagonian Toothfish. The only other country with separate customs codes for the two toothfish species is the U.S., a major importer of these species (Lack, 2001). Under such circumstances, information on trade between the major trading partners can provide at least a minimum estimate of the global trade in a species.

Limited transparency and public availability of trade information and access to markets can also reduce the potential of these tools in assessing IUU fishing activity. Of particular concern is the fact that some of the world's largest importers, exporters and re-exporters have little transparency in their trade figures. For example, China advised CCAMLR that in the first nine months of 2002 it had processed and re-exported nearly 15% of the total global catch of toothfish (Anon., 2003c), yet no official trade data is publicly available.

Although there is reasonable transparency with regard to products in international trade, it is often difficult to access reliable information on domestic trade and consumption. Where IUU-caught fish is traded and consumed domestically, information on which to assess the level of IUU fishing activity may be difficult to obtain. In such cases, market surveys may provide some indications of domestic trade. Where a product is consumed in high volumes and available from a range of sources, however, surveys may not be feasible. In cases where part of the catch landed in a country is consumed locally and the rest exported, trade data will only be available for the exported component, which may assist in providing estimates of local consumption where data on landings is also available.

***Ability to interpret data***

Access to reliable data is clearly a crucial element in assessing IUU fishing activity. Equally crucial is the ability to correctly interpret that data.

It is essential to marry good information about the relevant fishery from which the product has been derived with trade or market data, as otherwise there is significant potential to misinterpret that data. Factors such as the dynamics of the industry, levels of catch, transhipment and processing practices, and the management measures in place will all potentially affect the interpretation of trade and market data.

IUU fishing activity is often very dynamic, moving areas of operation, points of landing and transit countries, and levels of at-sea transhipment in response to management interventions. Therefore the trade routes for a product may change considerably with little warning. However, the markets for products are less likely to vary in the short-term, particularly high value species (often the target of IUU fishing), which often have limited or specialist market niches. Unless the product is landed directly into the consumer country, import data is likely to exist that will then enable identification of the exporting state.

In this regard, the most effective contributions from trade and market analyses are often achieved where there are strong links with governments, relevant RFMOs and legitimate fishing industry. As noted, close liaison with the latter is particularly useful in assisting in the interpretation of processed product and trade routes.

Another aspect of interpreting trade data in particular is the presence of perverse incentives that may result in illegal trade in a product that does not result from IUU fishing. Many countries have complex import and export taxes and tariffs that do not apply uniformly across all fisheries products, so that some products may be highly taxed while others are not taxed at all. This provides incentives to mis-report trade in certain fisheries products. For example, in relation to the shark-fin trade between Hong Kong and mainland China, although Hong Kong is a duty-free port, mainland China imposes high tariffs on imported shark fins. This resulted in a close match between import and export data on the trade in fins from mainland China to Hong Kong, but large discrepancies in data for trade from Hong Kong to mainland China, with one explanation being that traders sought to under-report imports to mainland China to avoid tariffs (Clarke, in press).

**Issues for further consideration**

***Adoption of species-specific and product-specific customs codes***

The Harmonised Commodity Description and Coding System (HS) seeks to co-ordinate customs codes internationally. In relation to fisheries products, an argument often raised against the introduction of detailed codes is that this would be overly cumbersome for national customs authorities given the range of species and products in trade. However, where the sustainability of a species in international trade is threatened by IUU fishing, the introduction of customs codes enabling more accurate assessment of trade could be treated as a priority for action. In the case of orange roughy, for example, concerns about the sustainability of catches from unmanaged stocks, particularly those taken in unregulated high seas areas, have been held for a number of years. With management regimes for unmanaged high seas areas likely to be some years away, the introduction of trade codes for orange roughy by the major trading countries would serve to complement catch reporting to FAO and assist in providing a more accurate estimate of catch.

Improved co-ordination of product-specific codes between countries engaged in the trade of a species would greatly assist in reducing the scope for errors in converting processed weights to live weight. In the case of toothfish, for example, the major exporting country, Chile, has very detailed product codes, whereas its major trading partner, the U.S., has much less detailed codes. While co-ordination of customs codes through the HS is preferable, there is scope for countries to choose to implement more detailed codes for certain products where these do not exist through the HS. Where relevant, RFMOs could provide a useful point of co-ordination for species under their mandate.

***Greater transparency in national trade data and that collected under RFMO schemes***

As noted, some official trade and market data is difficult or, in some cases, even impossible to obtain. Where such data concerns major trading nations, this significantly limits the value of trade and market information in efforts to assess IUU fishing activity.

Greater transparency is required with regard to trade data and market information, including that collated by RFMOs under catch certification and documentation schemes. Furthermore, such information needs to be made available in sufficient detail to enable comparisons with data compiled from customs agencies.

***Increased awareness of trade dynamics by fisheries management agencies especially where IUU fishing is considered to be a threat***

For many fisheries, harvest for international trade is the primary driver. This is particularly true for many developing countries where higher valued fish species, such as the larger pelagic tunas, are

exported to earn valuable foreign revenue. Despite the importance of trade as a driver for harvest, including by IUU operators, fisheries management agencies usually have poor understanding of the trade demand for fisheries products, with efforts commonly directed at managing the resource from the point of harvest to the wharf. This is because the agency responsible for fisheries management at the national level is almost separate from the agency that manages national exports, imports and re-exports, with limited communication between the two.

Increased awareness of the trade and market dynamics for products from a fishery can assist national authorities in better targeting management resources and may result in the identification of areas where complementary trade-related measures can add value to existing management efforts.

***Increased engagement by RFMOs and governments in global fisheries trade issues especially when using trade-related measures as part of their management strategy***

Despite the increasing use of trade-related measures in the conservation and management of fisheries, specifically in combating IUU activity, moves to co-ordinate the application of such measures have occurred only recently, through a series of FAO expert consultations. Increased co-ordination and, where appropriate, a higher degree of standardisation between the different schemes is to be encouraged.

Of particular relevance is the interpretation of World Trade Organisation (WTO) rules in respect to fisheries trade-related measures. This is a sensitive issue and one that remains open to debate, with "…interaction between trade measures adopted by RFMOs and WTO rules containing possibilities for both conflict and compatibility" (Tarasofsky, 2003). More concerted efforts should be directed towards ensuring that trade measures implemented in support of the sustainable development and exploitation of fisheries resources are recognised and supported under the WTO.

***Increased engagement by legitimate industry***

As noted, engagement by legitimate industry greatly contributes to trade and market analyses as it strengthens ability to interpret data and gather intelligence on product movement as well insight into IUU operations. This engagement strengthens the ability of government and other organisations to monitor trade, interpret data and gather reliable data on trade routes, prices and sources of product, which in turn should benefit legitimate industry if such information can be used to reduce or eliminate the threat posed by IUU fishing.

***The potential for increased co-ordination between fisheries agencies and CITES***

CITES, as the international instrument with the mandate to monitor and regulate international trade in wildlife products, has well-established processes that may readily complement and strengthen broader fisheries management objectives. CITES may provide a range of conservation benefits to marine fish species that are or may be threatened by demand for international trade, particularly where this threat arises from IUU fishing. In broad terms, such benefits can include:

- providing support to national, bilateral and multilateral fisheries management measures;
- providing a tool to combat IUU fishing, where this targets fish that primarily enter international trade;
- providing a standardised global monitoring system for the application of trade-related measures to marine fish (Anon., 2002b).

A number of countries have already sought to use the provisions available under CITES to assist in combating IUU fishing for a particular species. The most recent example is the listing of the sea cucumber species *I. fuscus* in Appendix III of CITES by Ecuador in order to gain international support for its national efforts to combat illegal harvest for international trade.

The increased consideration of trade-related measures also highlights the need for strengthened co-operation between CITES and the FAO, as well as, potentially, between CITES and individual RFMOs.

***Limitations of trade and market analyses***

While trade and market analyses can contribute to the assessment of IUU fishing, there are a number of limitations to this contribution.

One obvious limitation is that trade and market analyses, by their very nature, only provide data on the valued and retained component of the catch. Therefore the impact of IUU fishing on non-target species and the broader marine environment cannot be directly assessed through trade and market data. Another limitation is that this data does not indicate where the catch was taken and so sheds little light on, for example, particular stocks that may be subject to more intensive IUU fishing activity.

Trade and market information cannot, of itself, identify products derived from IUU fishing unless analysed in conjunction with other information; for example, the presence of products in trade during periods when the corresponding fishery is closed.

**Conclusions**

Analysis of the trade in wildlife products has long been recognised as a valuable source of information contributing to the sustainable use of natural resources. Such analysis can provide a direct point of intervention as well as guide interventions at other points of the management system.

In the context of IUU fishing, analysis of trade and market information is a potentially powerful tool to assess these activities and so assist efforts to combat them. In broad terms, contributions from trade and market analyses may include:

- increasing the understanding of the nature, scope and extent of IUU activity;
- providing independent verification of the extent of a known IUU problem;
- assessing the effectiveness of an existing trade- and/or market-related measure;
- revealing the existence of a problem that may not have been previously documented, or showing that demand for a species in international trade is a key driver for IUU activity.

As with other data and statistics, including those relating to estimates of catch and fishing effort for example, trade and market information is unlikely to provide absolute results in terms of quantities of a fisheries product in international trade. However, with care taken in its interpretation, such data may form a valuable source of information to assist in assessing IUU fishing and thereby contribute to reducing and eliminating this global threat to sustainable fisheries.

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## CHAPTER 6

# FLAGS OF CONVENIENCE, TRANSHIPMENT, RE-SUPPLY AND AT-SEA INFRASTRUCTURE IN RELATION TO IUU FISHING

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### Executive summary

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

In addressing these issues, the focus of this paper is to:

- review recent trends in the numbers of fishing vessels flying Flags of Convenience;
- focus on a key aspect of IUU fishing: the at-sea transhipment and re-supply fleets:
- recommend specific measures to manage at-sea transhipment and re-supply; and,
- place these recommendations within the context of international actions necessary to implement the UN FAO International Plan of Action on IUU Fishing.

The case study approach was chosen to enable a focused assessment of one of the key components of IUU fishing, the infrastructure facilitating at-sea transhipment and re-supply. This report contains specific information on the character of this infrastructure and recommendations to manage at-sea transhipment and re-supply, particularly in high seas tuna fisheries. If effectively implemented, these would provide a significant deterrent to IUU fishing for high valued tuna species. Other key components of IUU fishing include the ports used by IUU vessels, markets for IUU-caught fish, other businesses supporting IUU fishing operations, and loopholes in the international legal

regime which allow for the continuance of the flag of convenience system in fisheries. It is hoped that future, collaborative reports containing similarly specific recommendations on these issues will follow.

## Introduction

This paper reviews the general trend in the numbers of fishing vessels flying Flags of Convenience (FOC), then focuses on one of the main aspects of the IUU fishing problem – the at-sea transhipment and re-supply fleets. The information on general trends is based primarily on analysis and comparison of information obtained from Lloyd's Register of Shipping. The character and extent of the at-sea transhipment and re-supply fleets is based on a variety of sources of information and a number of assumptions outlined in the paper. At-sea transhipment and re-supply fleets provide an important service to high seas fishing vessels, both legal and IUU, and are an essential component of the global infrastructure associated with high seas fishing. A better understanding of the specific character of this industry will provide governments, regional fisheries management organisations, legitimate fishers and other interested parties a much clearer picture of what can and should be done to prevent, deter and eliminate IUU fishing through regulating this aspect of high seas fisheries.

It must be emphasised that the effective management of high seas fisheries will never be possible until the problem of IUU fishing is largely eliminated. However, the elimination of IUU fishing alone will not guarantee effective fisheries conservation and management. Much more needs to be done, consistent with the conservation provisions of the 1995 UN Fish Stocks Agreement, various provisions of the UN FAO Code of Conduct for Responsible Fisheries and related agreements to put high seas fisheries on a 'sustainable' track.

## Recent trends in flags of convenience fisheries

An analysis of information available from Lloyd's Register of Shipping provides some indication of trends in relation to fishing vessels and the flag of convenience system. The data analysed were for the periods 1999, 2001 and 2003. These years were chosen to coincide with the two years preceding and following the adoption of the UN FAO International Plan of Action to Prevent, Deter and Eliminate IUU Fishing. This paper analyses information available on the Lloyd's database on fishing vessels ("fishing vessels", "trawlers" and "fish factory ships") registered to the fourteen countries with open registries listed on Table 5.1.

**Table 6.1. Numbers, Average tonnage and Average Age of Fishing Vessels Registered to 14 Countries with Open Registries 1999-2003**

| Year | Flag State | Total Vessels | Total Tonnage | Average Tonnage | Average Age |
|---|---|---|---|---|---|
| 1999 | Belize | 409 | 348 892 | 853 | 23.4 |
| | Bolivia | 1 | 232 | 232 | 52 |
| | Cambodia | 6 | 6 547 | 1 091.2 | 22.3 |
| | Cyprus | 46 | 103 573 | 2 251.6 | 19.1 |
| | Equatorial Guinea | 56 | 30 984 | 553.3 | 18.8 |
| | Georgia | 29 | 10 792 | 372.1 | 20.9 |
| | Honduras | 416 | 175 387 | 421.6 | 25.9 |
| | Marshall Islands | 11 | 18 701 | 1 700.1 | 20.2 |
| | Mauritius | 22 | 7591 | 345 | 30 |
| | Netherlands Antilles | 18 | 17 481 | 971.2 | 25.4 |
| | Panama | 224 | 169 679 | 757.5 | 31.6 |
| | St. Vincent | 110 | 81 956 | 745.1 | 23.7 |
| | Sierra Leone | 34 | 9 750 | 286.8 | 28.7 |
| | Vanuatu | 34 | 50 609 | 1 488.5 | 21.9 |
| 2001 | Belize | 455 | 349 381 | 767.9 | 22.8 |
| | Bolivia | 11 | 7 935 | 721.4 | 16 |
| | Cambodia | 16 | 17 336 | 1 083.5 | 22.6 |
| | Cyprus | 51 | 108 826 | 2 133.8 | 19.6 |
| | Equatorial Guinea | 51 | 28 088 | 550.7 | 18.4 |
| | Georgia | 39 | 25 338 | 649.7 | 23.3 |
| | Honduras | 313 | 125 975 | 402.5 | 26.2 |
| | Marshall Islands | 11 | 13 289 | 1 208.1 | 19.4 |
| | Mauritius | 23 | 7 860 | 341.7 | 30.1 |
| | Netherlands Antilles | 24 | 28 131 | 1 172.1 | 20.6 |
| | Panama | 198 | 149 070 | 752.9 | 30 |
| | St. Vincent | 101 | 154 787 | 1 532.5 | 23.8 |
| | Sierra Leone | 30 | 8953 | 298.4 | 28.7 |
| | Vanuatu | 46 | 116 870 | 2 540.7 | 15 |
| 2003 | Belize | 279 | 258 681 | 933.9 | 22 |
| | Bolivia | 24 | 21 399 | 891.6 | 20 |
| | Cambodia | 43 | 39 224 | 912.2 | 20 |
| | Cyprus | 41 | 92 405 | 2 253.8 | 18.2 |
| | Equatorial Guinea | 41 | 24 351 | 593.9 | 18.5 |
| | Georgia | 53 | 24 080 | 454.3 | 18.8 |
| | Honduras | 507 | 178 802 | 352.7 | 23.2 |
| | Marshall Islands | 14 | 16 081 | 1 148.6 | 13.6 |
| | Mauritius | 26 | 10 676 | 410.6 | 28 |
| | Netherlands Antilles | 21 | 18 100 | 861.9 | 20.5 |
| | Panama | 205 | 130 512 | 636.6 | 27.9 |
| | St. Vincent | 86 | 117 161 | 1 362.3 | 23.7 |
| | Sierra Leone | 35 | 10 185 | 291 | 26.2 |
| | Vanuatu | 64 | 93 380 | 1 459.1 | 7.5 |

*Source:* Lloyd's Register of Shipping

The fourteen countries listed on Table 6.1 were chosen on the basis of several factors. Four of the countries – Panama, Belize, Honduras and St Vincent and the Grenadines – consistently top lists of

FOC countries in terms of numbers of registered fishing vessels. They are also the countries most widely identified by regional fisheries management organisations as being the flag states of particular concern in relation to IUU fishing in a survey conducted in 2002.[1] In addition to these four, Bolivia, Georgia, Equatorial Guinea, Sierra Leone, and Cambodia have been subject to import sanctions at one time or another by the International Commission for the Conservation of Atlantic Tunas (ICCAT) because of IUU fishing for tuna in the Atlantic Ocean by vessels flying their flags. The remaining five were chosen from the list of FOC countries identified by the International Transport Workers' Federation (ITF) and the report of the UN Secretary General's Consultative Group on Flag State Implementation[2] as having the highest number of fishing vessels on their registries in addition to the nine countries mentioned above.

In fact the list of countries on Table 6.1 could be much longer. The International Transport Workers' Federation identifies 28 countries as operating flags of convenience, including fishing and merchant vessels.[3] A UN FAO report published in 2002 lists 32 states as operating flags of convenience or open registries and having registered fishing vessels within recent years.[4]

To be clear, not every vessel flagged to the 14 countries listed above is necessarily engaged in IUU fishing. Twenty-one vessels flagged to Panama, for example, are listed on the ICCAT 'white list' of fishing vessels as authorised by Panama to fish in the Atlantic Ocean. The ICCAT list of 3 176 vessels authorised by contracting or co-operating parties to fish for tunas and tuna like species in the Atlantic, Caribbean, and Mediterranean Sea, also contains another twenty vessels combined flagged to Panama, St Vincent and the Grenadines, Honduras, and Belize as well as Bolivia, Vanuatu, and Sierra Leone. Most of these vessels are authorised to fish by Brazil.[5] The Indian Ocean Tuna Commission (IOTC) does not list any vessels flagged to these 14 countries as being amongst the 2 030 vessels authorised by contracting or co-operating parties to fish tuna and tuna-like species in the Indian

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1 Swann, J., "Fishing Vessels Operating under Open Registers and the Exercise of Flag State Responsibilities: Information and Options", FAO Fisheries Circular No. 980, Rome 2002.

2 Consultative Group on Flag State Implementation, Advance, unedited text, Oceans and the law of the sea. United Nations, 5 March 2004.

3 Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Bolivia, Burma/Myanmar, Cambodia, Cayman Islands, Comoros, Cyprus, Equatorial Guinea, Germany (second register), Gibraltar, Honduras, Jamaica, Lebanon, Liberia, Malta, Marshall Islands, Mauritius, Netherlands Antilles, Panama, Sao Tome e Principe, Sri Lanka, St Vincent and the Grenadines, Tonga, Vanuatu. The primary criteria the ITF uses in making such a designation is the extent to which there is a genuine link between the flag state and the owners of the vessels on its registry; that is, the extent to which vessels on the registry are foreign-owned. In classifying states as flag of convenience countries, the ITF also takes into consideration a state's ability and/or willingness to enforce international minimum social standards on its vessels, including respect for basic human and trade union rights, freedom of association and the right to collective bargaining with *bona fide* trade unions; its social record as determined by the degree of ratification and enforcement of ILO Conventions and Recommendations; and safety and environmental record as revealed by the ratification and enforcement of IMO Conventions and revealed by port state control inspections, deficiencies and detentions. *Source:* International Transport Workers' Federation *Steering the Right Course: Towards an era of responsible flag states and effective international governance of oceans and seas.* June 2003. http://www.itf.org.uk/english/fisheries/pdfs/steeringrightcourse.pdf.

4 Swann, J., "Fishing Vessels Operating under Open Registers and the Exercise of Flag State Responsibilities: Information and Options", FAO Fisheries Circular No. 980, Rome 2002. Appendix I.

5 ICCAT record of vessels as per the 2002 Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 m Authorised to Operate in the Convention Area. http://www.iccat.org/vessel2/vessels.aspx (accessed 29 March 2004).

Ocean.[6] The Inter-American Tropical Tuna Commission (IATTC) lists fifty-two Panamanian-flagged longline vessels and nineteen purse seiners (the flag and status of two are under dispute) authorised by Panama to fish in the Eastern Pacific Ocean. Honduras, Belize, Bolivia, and Vanuatu combined have an additional 18 vessels on the IATTC list of purse seine vessels.[7] Unfortunately, the authors were unable to review the South Pacific Forum Fisheries Agency's Regional Register of Fishing Vessels to determine whether vessels flagged to these fourteen countries are on the list of vessels in good standing.

Given that many of the vessels flagged to the fourteen countries on Table 6.1 are longline vessels targeting tuna and other highly migratory species, this begs an important question: aside from the relatively small percentage authorised to fish as indicated above, where do these vessels fish? Taking Honduras as an example, it had 507 vessels over 24 metres registered in 2003. The website for the Honduras ships Registry states that, as a condition for obtaining the Honduran flag, "…fishing vessels have to submit an affidavit which states, according to the Resolution issued by the International Commission for the Conservation of Atlantic Tunas, that there is to be no tuna fishing. If this document is not presented, a clause which prohibits such activity will be placed on the back of the Certificate of Registration."[8]

On the ICCAT list, there are four Honduran-flagged vessels authorised by Brazil to fish in the ICCAT area under charter arrangements with Brazilian companies. An additional two tuna purse-seine vessels are authorised to fish in the Eastern Pacific in the IATTC area. No Honduran-flagged vessels are listed as authorised to fish for tuna in the Indian Ocean. Of the remaining 501 large-scale fishing vessels on the Honduran registry, many, if not most, are likely to be tuna fishing vessels. If not the Atlantic, Indian Ocean or Eastern Pacific tuna fisheries, where are the remaining longline vessels authorised to fish?

In addition to the vessels registered to the fourteen countries listed on Table 1, the unknown category contains at least some vessels registered to flags of convenience as well. For example, in a random selection of thirty vessels on the 2003 Lloyd's database listed as flag "unknown", the authors determined the flags of thirteen of these by using data from other sources including Lloyds Marine Information Group, the International Telecommunications Union, INMARSAT and various national agencies responsible for the IMO programme of Port State Control. Of these thirteen, eight were flagged to one of the 14 FOC countries, another 4 were flagged in countries not listed on Table 1, and one vessel was found to have been scrapped.

***Trends***

With these caveats in mind, a number of interesting trends emerge from the information on the Lloyd's database.

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6 IOTC Record of vessels over 24 metres authorised to operate in the IOTC area (updated 2004-03-29). http://www.iotc.org/English/record/search.php

7 List of authorised large longline vessels, IATTC Vessel database. Inter-American Tropical Tuna Commission. http://www.iattc.org/vessellistopen/ALLLVList.aspx (accessed 1 April 2004). Active purse-seine capacity lists, IATTC Vessel database. 1 March 2004. http://www.iattc.org/PDFFiles2/ActivePurseSeineCapacityList03012004.pdf

8 http://www.marinamercante.hn/registry2.html fishing.

*Top four flag of convenience countries*

Belize, Panama, Honduras, and St Vincent and the Grenadines collectively have had over 1100 fishing vessels registered to fly their flags in each of the three years. Over the period 1999-2003, although the number of vessels flagged to Belize declined by approximately 30% while the number flagged to Honduras increased by some 20%, all four countries remained at the top of the list of FOC countries in terms of the numbers of fishing vessels on their registries.

A number of measures have been adopted over the past several years by ICCAT, CCAMLR, IOTC and other regional fisheries management organisations, including, in some cases, trade measures and import bans directed specifically at all four countries. While these measures apparently have resulted in some deregistration of fishing vessels from the registries of one or more countries (*e.g.* Panama) they have not prevented any of these states from continuing to maintain large numbers of fishing vessels on their registries if the Lloyd's information is at all correct. Nor have the measures adopted by the regional fisheries management organisations discouraged large numbers of ship owners interested in flying FOCs from continuing to register their ships to Panama, Belize, Honduras, and St. Vincent and the Grenadines.

*Up and coming FOCs/others*

Amongst the other countries on the list, Georgia, Cambodia, Vanuatu and Bolivia appear to be 'up and coming' flags of convenience for fishing vessels. The number of fishing vessels flagged to each of these four countries rose markedly between 1999 and 2003, with an increase from 70 to 184 fishing vessels registered to all four countries combined. Of the 64 vessels flagged to Vanuatu, twenty have been built in the last three years.

Cyprus continues to maintain over 40 fishing vessels on its registry despite becoming a member of the European Union in May 2004 and the commitments made by the European Union to crack down on IUU fishing. Finally, while the number of vessels flagged to Honduras declined between 1999 and 2001, the number jumped from 313 vessels to over 500 vessels in 2003. In general terms, this dramatic change in the numbers of fishing vessels on the Honduran registry would appear to be an ongoing indication of the relative ease with which fishing vessels are able to 'hop' from flag to flag.

*Effectiveness of UN FAO IPOA*

One of the most obvious trends is that the number of fishing vessels on the Lloyd's Register database registered to these fourteen flag of convenience countries combined has declined only slightly, even two years after the adoption of the UN FAO IPOA on IUU fishing. Moreover, the number of vessels listed as flag "unknown" on the database has increased over the same period. As indicated earlier, eight vessels of a random sample of 30 vessels listed as flag "unknown" on the Lloyd's database were found to be registered to FOC countries, suggesting that substantial numbers of vessels on this list may in fact be registered to FOC countries. Further investigation into the vessels registered to flags of convenience in the "unknown" category, and the reasons why these and others vessels are listed as such on the Lloyd's database, would be useful in providing a clearer picture of trends in the flagging of fishing vessels over the past several years. Nonetheless, assuming the information on the Lloyd's database is reasonably indicative of overall trends in the flag of convenience registries, from a global perspective the adoption of the UN FAO IPOA on IUU fishing and the efforts of regional fisheries management organisations and some states to combat IUU fishing have so far had limited effect.

**Table 6.2. Summary of trends, average tonnage and average length of fishing vessels**

(Fishing Vessels, Trawlers and Fish Factory Ships) registered to the 14 countries listed in Table 6.1, 1999-2003, compared to all fishing vessels ≥ 24 metres in length)

| | Country of Registration | Number of Vessels | % of total Vessels | Average Length | Average Gross Tonnage | Total Gross Tonnage | % of Total G. T. | Average Age |
|---|---|---|---|---|---|---|---|---|
| 1999 | All | 19 581 | | 42.13 | 546.4 | 10 698 619 | | 25.3 |
| | FOC (14 countries) | 1 449 | 7.4% | 50.41 | 780.8 | 1 131 449 | 10.6% | 25.2 |
| | Unknown | 1 108 | 5.7% | 42.17 | 353.5 | 391 732 | 3.7% | 33 |
| 2001 | All Countries | 19 206 | | 42.38 | 543.6 | 10 441 289 | | 25 |
| | FOC (14 countries) | 1 340 | 7.0% | 50.35 | 845.1 | 1 132 447 | 10.8% | 24.4 |
| | Unknown | 1 248 | 6.5% | 43.46 | 429.4 | 535 878 | 5.1% | 30.1 |
| 2003 | All | 19 905 | | 42.40 | 548.7 | 10 922 794 | | 24 |
| | FOC (14 countries) | 1 279 | 6.4% | 48.51 | 806 | 1 030 883 | 9.4% | 22.4 |
| | Unknown | 1 485 | 7.5% | 42.66 | 416.5 | 618 490 | 5.7% | 28.4 |

*Source:* Lloyd's Maritime Service

*New vessel construction*

Another trend that emerges is the fact that some 14% of large-scale fishing vessels built within the past three years were flying flags of convenience by the end of 2003. This represents a real problem in that a significant portion of new vessels appear to be built with a view to engaging in IUU fishing.

Most of these vessels are built in Chinese Taipei (see Table 6.4). In fact, of the 51 fishing vessels over 24 metres built in Chinese Taipei over the past three years, 50 were flagged in FOC countries by the end of 2003, while only one was flagged in Chinese Taipei. It would be worth further investigation to determine whether any of the companies in Chinese Taipei involved in building new vessels have benefited from funds for the joint Japan/Chinese Taipei programme designed to decommission large-scale tuna longline vessels. Further, given the status of Chinese Taipei as a "Co-operating Party, Entity or Fishing Entity" of ICCAT, the government should be encouraged to ensure that no vessels built in Chinese Taipei shipyards are allowed to register to flag of convenience countries.

**Table 6.3. Summary: New Fishing Vessel Construction 2001, 2002, 2003**

| | Fishing Vessels > 24m built in 2001, 2002, 2003 | |
|---|---|---|
| | **Number of Vessels Built** | **Total Gross Tonnage** |
| Registered in All Countries | 478 | 263 354 |
| Registered FOC or Unknown | 58 | 36 985 |
| FOC and Unknown Vessels as a Percentage of Total Tonnage | 12% | |
| FOC Flag | | |
| Belize | 11 | 3 644 |
| Bolivia | 5 | 4 159 |
| Cambodia | 1 | 2 495 |
| Cyprus | 0 | 0 |
| Equatorial Guinea | 0 | 0 |
| Georgia | 6 | 3 289 |
| Honduras | 0 | 0 |
| Marshall Islands | 1 | 1 152 |
| Mauritius | 0 | 0 |
| Netherlands Antilles | 1 | 393 |
| Panama | 9 | 2 744 |
| St. Vincent | 1 | 635 |
| Sierra Leone | 0 | 0 |
| Vanuatu | 20 | 17 631 |
| Unknown | 3 | 843 |

**Table 6.4. Names of Fishing Vessels Flagged to FOCs and Unknown, built in 2001, 2002 and 2003**

| Vessel Name | Registered Owner | Residence of Registered Owner | Nationality of Builder | Length | Gross Tonnage |
|---|---|---|---|---|---|
| **Belize** | | | | | |
| Ruey Tay | Ruey Yih Fishery | Belize | Chinese Taipei | 29.9 | 119 |
| San Jose | Sedamanos Arevalo | Ecuador | Ecuador | 29.9 | 131 |
| Southern Star No. 888 | Grace Marine | Chinese Taipei | Chinese Taipei | 56.5 | 520 |
| Wang Jia Men | Owner Unknown | Unknown | Chinese Taipei | 29.8 | 140 |
| Yu Long | Owner Unknown | Unknown | Chinese Taipei | 29.9 | 125 |
| Yu Long No. 10 | Owner Unknown | Unknown | Chinese Taipei | 29.9 | 125 |
| Yu Long No. 2 | Owner Unknown | Unknown | Chinese Taipei | 29.9 | 125 |
| Yu Long No. 6 | Owner Unknown | Unknown | Chinese Taipei | 29.9 | 125 |
| Zee Chun Tsai No. 22 | Wu Lai Ming | Chinese Taipei | Chinese Taipei | 29.9 | 119 |
| Zee Chun Tsai No. 23 | Owner Unknown | Unknown | Chinese Taipei | 29.9 | 119 |
| Zhou Shan 18 | Zhoushan Putuo | China | China | 86.2 | 1 996 |
| **Average** | | | | **37.4** | **331.3** |
| **Bolivia** | | | | | |
| Champion | Sun Hope Investment | Chinese Taipei | Chinese Taipei | 54.6 | 647 |
| Georgia | Georgia Fishery | Chinese Taipei | Chinese Taipei | 62.6 | 878 |
| Hunter | Hunter Fishery | Chinese Taipei | Chinese Taipei | 62.6 | 878 |
| Isabel | Isabel Fishery | Chinese Taipei | Chinese Taipei | 62.6 | 878 |
| Jackson | Jackson Fishery | Chinese Taipei | Chinese Taipei | 62.6 | 878 |
| **Average** | | | | **60.99** | **831.8** |
| **Cambodia** | | | | | |
| Shin Ho Chun No. 102 | Lubmain Shipping | | Chinese Taipei | **85.2** | **2 495** |
| **Georgia** | | | | | |
| Chen Chieh No. 31 | Pi Ching Fishery | Chinese Taipei | Chinese Taipei | 24.0 | 101 |
| Chen Chieh No. 32 | Pi Ching Fishery | Chinese Taipei | Chinese Taipei | 24.0 | 101 |
| Kiev | Kiev Fishery | Chinese Taipei | Chinese Taipei | 54.6 | 647 |
| Monas | Monas Fishery | Chinese Taipei | Chinese Taipei | 63.2 | 1 105 |
| Nantai | Nantai Fishery | Chinese Taipei | Chinese Taipei | 63.2 | 1 105 |
| Shang Jyi | Shine-Year Maritime | Singapore | Chinese Taipei | 24.0 | 230 |
| **Average** | | | | **42.1** | **548.2** |
| **Netherlands Antilles** | | | | | |
| Patudo | Overseas Tuna | Spain | Spain | **44.5** | **393** |

**Table 6.4. (cont.) Names of Fishing Vessels Flagged to FOCs and Unknown, built in 2001, 2002 and 2003**

| Vessel Name | Registered Owner | Residence of Registered Owner | Nationality of Builder | Length | Gross Tonnage |
|---|---|---|---|---|---|
| **Panama** | | | | | |
| Chung Kuo No. 81 | Genesis Ocean | Panama | Chinese Taipei | 32.0 | 179 |
| Chung Kuo No. 85 | Genesis Ocean | Panama | Chinese Taipei | 32.0 | 179 |
| Chung Kuo No. 86 | Genesis Ocean | Panama | Chinese Taipei | 32.0 | 179 |
| Chung Kuo No. 91 | Genesis Ocean | Panama | Chinese Taipei | 32.0 | 179 |
| Chung Kuo No. 95 | Genesis Ocean | Panama | Chinese Taipei | 32.0 | 179 |
| Chung Kuo No. 96 | Gilontas Ocean | Panama | Chinese Taipei | 32.0 | 179 |
| Marine 303 | Tuna Globe | Chinese Taipei | Chinese Taipei | 50.8 | 420 |
| Pesca Rica No. 2 | Rica Panama | Chinese Taipei | Chinese Taipei | 59.2 | 625 |
| Pesca Rica No. 6 | Grande Panama | Chinese Taipei | Chinese Taipei | 59.2 | 625 |
| **Average** | | | | **40.1** | **304.9** |
| **St. Vincent & The Grenadines** | | | | | |
| Tuna Bras No. 216 | Tunabras Int. | British Virgin Isl. | China | **57.4** | **635** |
| **Vanuatu** | | | | | |
| Chin Chun No. 12 | Sheng Sheng Fishery | Vanuatu | Chinese Taipei | 61.0 | 637 |
| Fair Victory 707 | Fair Victory International | Vanuatu | Chinese Taipei | 70.6 | 1,180 |
| Fong Seong 168 | Trans-Global Int. | Vanuatu | Chinese Taipei | 90.0 | 2,380 |
| Fong Seong 196 | Trans-Global Int. | Vanuatu | Chinese Taipei | 90.0 | 2,386 |
| Fu Chun No. 126 | Fu Chun Fishery | Vanuatu | Chinese Taipei | 61.0 | 637 |
| Heng Chang No. 168 | Ever Fortune Fishery | Vanuatu | Chinese Taipei | 61.0 | 637 |
| Hf No. 88 | Hf Fishery | Vanuatu | Chinese Taipei | 69.0 | 1,150 |
| Hsiang Sheng No. 6 | Hsiang Sheng Fishery | Vanuatu | Chinese Taipei | 70.6 | 1,280 |
| Hsiang Shun | Hsiang Chan Fishery | Vanuatu | China | 52.7 | 560 |
| Jin Hong No. 308 | Jin Hong Ocean Ent. | Vanuatu | Chinese Taipei | 60.1 | 625 |
| Jui Der No. 36 | Jui Fu Fishery | Vanuatu | China | 61.5 | 558 |
| Jupiter No. 1 | Jupiter Fishery | Vanuatu | Chinese Taipei | 61.5 | 699 |
| Ming Man No. 2 | Ming Shun Fishery | Chinese Taipei | Chinese Taipei | 61.5 | 660 |
| Mitra No. 888 | Ryh Chun Fishery | Vanuatu | Chinese Taipei | 61.5 | 660 |
| More Rich | Sun Rise Fishery | Vanuatu | Chinese Taipei | 59.2 | 625 |
| Ocean Harvest | Ocean Harvest Fishery | Vanuatu | Chinese Taipei | 50.1 | 490 |
| Pacific Tracker No. 116 | Melanesia Marine | Vanuatu | Chinese Taipei | 40.0 | 327 |
| Shun Fa No. 8 | Shun Fa Fishery | Vanuatu | Chinese Taipei | 69.0 | 1,150 |
| To Chan No. 2 | Sun Rise Fishery | Vanuatu | China | 45.0 | 492 |
| Tunago No. 62 | Tunago Fishery | Vanuatu | Chinese Taipei | 45.0 | 498 |
| **Average** | | | | **62.0** | **881.6** |
| **Unknown** | | | | | |
| Brave | Bravotime | Hong Kong | Chinese Taipei | 33.0 | 227 |
| Great Ocean I | Southern Cross | Vanuatu | Chinese Taipei | 34.6 | 296 |
| Seta 70 | Owner Unknown | | Chinese Taipei | 46.0 | 320 |
| | | | **Average** | **37.9** | **281.0** |

*Average size of FOC flagged vessels:*

Finally, it is worth noting that the average length and tonnage of the vessels registered to the fourteen countries listed are substantially higher than the averages for all fishing vessels combined (flying all flags) greater than or equal to 24 metres on the Lloyd's database (Table 6.2). For 2003, while the number of fishing vessels flying the flag of one of the fourteen FOC countries is only about 6.4% of the total, this fleet represents close to 10% of the capacity of all 'large-scale' fishing vessels on the Lloyd's database as measured in Gross Tonnage.

**At-sea transhipment, tankers and re-supply fleets**

The viability of IUU fishing, like legal fishing, requires infrastructure and support services as well as access to market. A number of the provisions of the UN FAO International Plan of Action on IUU fishing recognise this fact. Paragraphs 73 and 74 of the IPOA call upon states to deter importers, transhippers, buyers, consumers, equipment suppliers, bankers, insurers and other services suppliers within their jurisdiction from doing business with vessels engaged in IUU fishing, including adopting laws to make such business illegal.

One of the major elements of the supporting infrastructure for distant water fleet fishing on the high seas consists of at-sea transhipment and re-supply vessels. Many high seas distant water fishing vessels stay at sea for long periods of time, transhipping their catches, refuelling, rotating crews, and re-supplying bait, food, and water through transhipment and re-supply vessels servicing the fishing fleets at sea. Aware of the essential role played by at-sea transhipment and re-supply vessels in the operation of IUU fleets, the IPOA further elaborates on the subject of transhipment and re-supply at sea and, in paragraphs 48 and 49 states:

> *"48. Flag States should ensure that their fishing, transport and support vessels do not support or engage in IUU fishing. To this end, flag States should ensure that none of their vessels re-supply fishing vessels engaged in such activities or tranship fish to or from these vessels. This paragraph is without prejudice to the taking of appropriate action, as necessary, for humanitarian purposes, including the safety of crew members.*
>
> *49. Flag States should ensure that, to the greatest extent possible, all of their fishing, transport and support vessels involved in transhipment at sea have a prior authorisation to tranship issued by the flag State…"*

***Transhipment: Fish transport vessels ("Reefers")***

At-sea transhipment of the catch of fishing fleets targeting high value species of tuna such as Bigeye and Bluefin tuna operating in the Atlantic and Indian Oceans is a major component of the infrastructure supporting longline tuna fishing on the high seas. While there is no published list of transhipment vessels as far as the authors are aware, Table 6.5 contains a sample list of refrigerated cargo vessels that are likely to be transhipping high-grade tuna in the Atlantic, Indian Ocean and Pacific Oceans.

**Table 6.5. Sample List of Refrigerated Cargo Vessels Delivering Sashimi Grade Tuna to Japan**

| Vessel Name | Flag | Owner/Manager | Nationality of Owner/ Manager | Country of Financial Benefit | Principal Areas of Operation |
|---|---|---|---|---|---|
| Amagi | Panama | Kyoei Kaiun Kaisha | Japan | Japan | Pacific-Indian |
| Asian Rex | Panama | Azia Sekki | Japan | Japan | Atlantic-Indian |
| Chikuma | Panama | Hakko Marine | Japan | Japan | Med-Indian-Atlantic |
| Corona Reefer | Japan | Tachibana Kaiun | Japan | Japan | Atlantic-Indian-Med. |
| Eita Maru | Panama | Toei Reefer Line | Japan | Japan | Atlantic |
| Fortuna Reefer | St. Vincent | Habitat International | Chinese Taipei | Chinese Taipei | Pacific |
| Fuji | Bahamas | Kasuga Kaiun | Japan | Japan | Indian - Atlantic |
| Golden Express | Panama | Dongwon Industries | Korea | Korea | Pacific-Indian |
| Gouta | Panama | Chin Fu Fishery | Chinese Taipei | Japan | Atlantic |
| Harima 2 | Panama | Hakko Marine | Japan | Japan | Atlantic-Indian |
| Haru | Panama | Chuo Kisen | Japan | Japan | Atlantic-Indian |
| Hatsukari | Panama | Atlas Marine | Japan | Japan | Atlantic-Pacific |
| Honai Maru | Panama | Kyoei Kaiun Kaisha | Japan | Japan | Pacific-Indian |
| Kyung Il No.7 | Korea | Yung Il Shipping | Korea | Korea | Pacific |
| Luo Hua | St. Vincent | Luoda Shipping | China | China | Pacific-Indian |
| Meita Maru | Panama | Toei Reefer Line | Japan | Japan | Atlantic-Pacific |
| New Prosperity | Panama | Nisshin Kisen | Japan | Japan | Indian-Pacific-Atlantic |
| Reifu | Liberia | Korea Marine | Korea | Japan | Atlantic-Indian-Pacific |
| Ryoma | Panama | Chuo Kisen | Japan | Japan | Atlantic-Indian |
| Sagami 1 | Panama | Wakoh Kisen | Japan | Japan | Indian-Pacific-Atlantic |
| Satsuma 1 | Panama | Tachibana Kaiun | Japan | Japan | Pacific-Indian-Atlantic |
| Seita Maru | Panama | Toei Reefer Line | Japan | Japan | Indian-Pacific |
| Shin Izu | Panama | Kyoei Kaiun Kaisha | Japan | Japan | Indian-Pacific |
| Shofu | Liberia | Korea Marine | Korea | Korea | Atlantic-Pacific |
| Tenho Maru | Panama | Hayama Senpaku | Japan | Japan | Indian-Atlantic-Pacific |
| Tuna Queen | Panama | Alavanca | Japan | Japan | Mediterranean |
| Tunabridge | Japan | Shinko Senpaku | Japan | Japan | Atlantic-Indian-Pacific |
| Tunastates | Panama | Shinko Senpaku | Japan | Japan | Indian-Atlantic |
| Yamato 2 | Panama | Wakoh Kisen | Japan | Japan | Atlantic-Indian |
| Yurishima | Panama | Alavanca | Japan | Japan | Pacific |

*Methodology*

This list was compiled on the basis of the following method and criteria: The major market for sashimi grade tuna is Japan, and the major ports of entry for transhipped tuna into Japan were

determined to be Shimizu and Yokosuka. Using the Lloyds Seasearcher database, a list of reefers regularly unloading in these ports was drawn up. The voyages of each of these reefers was then analysed, looking for frequent transits through known tuna fishing areas and to ports known to be transhipment points for tuna, and for ships that spent significantly longer at sea in the tuna fishing areas than would normally be required for a typical transit. Once a likely candidate was identified, we then looked at other vessels owned or managed by the same company to see if any followed a similar trading pattern. This research yielded a list of over 150 reefers. We then investigated each vessel using the internet and various databases held by government and commercial organisations to narrow down the list to those most likely to be transhipping tuna at sea. The results of this procedure gave a provisional list of 66 reefers likely to be regularly picking up tuna from fishing vessels and delivering it to market in Japan. However, more research would be needed to determine the level of accuracy of the list. A representative sample of these vessels is listed in Table 6.4. Annex 6.A. lays out the port visits and itineraries of several of these vessels over the period 2001-2003.

**Table 6.6. Numbers and Frequency of Reefers Likely to be Delivering Transhipped Tuna to Shimizu and Yokosuka Ports in Japan**

| **Ship Port Visits** | **2001** | **2002** | **2003** | **Average Visits per Year** |
|---|---|---|---|---|
| Shimizu | 285 | 346 | 329 | 320 |
| Yokosuka | 38 | 145 | 139 | 141 |
| **Different Ships** | **2001** | **2002** | **2003** | **Average Ships per Year** |
| Shimizu | 64 | 69 | 65 | 66 |
| Yokosuka | 50 | 8 | 45 | 48 |

The case of the M/V Hatsukari, a vessel documented by Greenpeace International as transhipping sashimi grade tuna in the South Atlantic from both IUU and legal longline vessels in May 2000 in the international waters in the South Atlantic, provides a practical illustration of the typical operation of a vessel involved in at-sea transhipment of high grade tuna destined for market in Japan (see Box 6.1).[9]

[9] Bours H., M. Gianni, D. Mather, *Pirate Fishing Plundering the Oceans*, Greenpeace International February 2001.

**Box 6.1. Case Study: M/V Hatsukari**

On the 3rd of March, 2000, the M/V Hatsukari sailed from her home port of Shimizu in Japan. The Hatsukari is a Japanese-owned and Panama-flagged refrigerated cargo ship, 94 metres long, displacing 3,029 tons, with a crew of Japanese officers and Filipino sailors. After stopping in Busan, South Korea on the 12th and 13th of March and in Kaoshiong, Chinese Taipei on the 16th and 17th of March where she most likely took on supplies for Korean and Chinese Taipei fishing vessels to add to those already on board for the Japanese fleet, she sailed toward Singapore to take on fuel.

The Hatsukari departed Singapore on the 24th of March for the 5,700 mile voyage to Cape Town. This voyage would normally take about 18 days, but the Hatsukari arrived in Cape Town on the 26th of April, 33 days after leaving Singapore. Given this passage time, it is likely that she made several rendezvous with vessels fishing in the western Indian Ocean to take on board their catch of frozen tuna. After servicing this fleet, the Hatsukari proceeded on to Cape Town where more supplies and spare parts were loaded for the longline fleets fishing for Bigeye tuna in the Atlantic Ocean off the African coast.

Companies that own or manage the longline tuna fishing vessels working the Eastern Atlantic Ocean had pre-arranged with the owners of the Hatsukari to have their catch picked up at sea and delivered to markets in Japan. Contact by radio was made between the Hatsukari and the fishing vessels, and a position and time for the rendezvous was arranged. As the Hatsukari entered the area, the longline fishing vessels pulled up their gear and one by one came alongside the Hatsukari to discharge their cargo of frozen tuna and to pick up food, supplies and spare parts.

On the 6th of May near position 9° 00 S - 5° 00 W, several hundred kilometres off the coast of Angola, the Greenpeace vessel M/V Greenpeace encountered the Hatsukari. The Hatsukari was observed meeting the Chien Chun No. 8, a Belize flag longliner, and began transferring bait and receiving frozen tuna from the longline vessel. Soon afterward, two more Belize flagged vessels, the Jeffrey 816 and Jackie 11 came alongside the Hatsukari. Later the same day, the Cambodian flagged Benny No. 87 and two Chinese Taipei vessels, Yu I Hsiang and Jiln Horng 206, also took their turns.

Almost a month after leaving Cape Town, on the 25th of May, the Hatsukari made a brief stop at St. Vincent in the Cape Verde Islands. The Hatsukari arrived back in Cape Town on the 20th of June where it reportedly offloaded seventy-two tons of tuna of indeterminate species. She departed Cape Town on the 21st of June for the return voyage to Japan via Singapore. Again, this voyage, which would normally take approximately 18 days, took over a month due most likely to stops to service fishing vessels at-sea in the Indian Ocean. The Hatsukari arrived in Singapore on the 26th of July, departing the 29th to sail back to Japan. The Hatsukari arrived in Shimuzu on the 8th August where the transhipped cargo of high grade tuna was offloaded for market.

The M/V Hatsukari is one of a fleet of refrigerated cargo vessels or "reefers" that regularly travel from the ports of Shimuzu and Yokosuka in Japan, stopping at Busan, South Korea, Kaoshiong, Chinese Taipei and Singapore, then continuing to the Indian and Atlantic Oceans, with stops at Cape Town, South Africa, Las Palmas in the Canary Islands of Spain and occasionally other Atlantic or Indian Ocean ports. These vessels spend relatively long periods of time at sea, transhipping sashimi grade tuna and re-supplying high seas tuna longline fleets. The sample of reefers and their itineraries in Annex I follow similar patterns.

The Hatsukari was transhipping fish on the high seas from IUU fishing vessels as well as legal vessels fishing for tuna. Similarly, Greenpeace documented an attempted transhipment from a Belize flagged tuna longline vessel to the reefer M/V Toyou in the same area on 12 May 2000.[10] Like the

[10] *Ibid* Greenpeace.

Hatsukari, at least some portion of the transhipment fleet is likely to be servicing both IUU and legal tuna longline fishing vessels operating on the high seas. Although not impossible, it seems unlikely that a fleet of transhipment vessels would service IUU fishing vessels only.

*Observers aboard transhipment vessels*

In the same way that ICCAT, IOTC and the IATTC have developed lists of vessels authorised to fish in their respective areas of competence, the authors would argue that these and other RFMOs should require that all transhipment vessels operating in the area of competence of the organisation have an authorisation to tranship at sea and that a list be compiled of such vessels. Furthermore, we would argue that relevant Regional Fisheries Management Organisations should agree to establish an observer programme on board all transhipment vessels to monitor and report on all transhipments in fisheries regulated by the RFMO at sea. The programme should be operated under the authority or auspices of the RFMO, in co-operation with, but independent of, the flag states of the transhipment vessels (similar to the observer programme on fishing vessels run by the IATTC). The failure of a tuna transhipment vessel to co-operate in the programme should be made grounds for denial of port access (in other than emergency situations) and the imposition of other sanctions by the member countries of the RFMO, and others where possible.

Some of the practicalities of establishing an observer programme emerge in reviewing the information on this list. All but seven of the sixty-six vessels on the provisional list of reefers we identified as being involved in at-sea transhipping of high grade tuna are flagged to contracting parties of ICCAT, with most flagged to Panama and Japan. All but a handful are owned or managed by companies based in Japan and Korea. The co-operation of these three states: the flag states, market states and and/or countries of beneficial ownership of most of the transhipment fleet should be relatively straightforward – all are contracting parties of ICCAT and have committed to the IPOA on IUU fishing as well as similar resolutions on transhipment adopted by ICCAT.[11]

A similar situation applies for the fisheries in the IATTC area. Assuming that either or both ICCAT and the IATTC were to establish such an observer programme involving Panamanian-flagged transhipment vessels and others, it should not be difficult to do the same for the Indian Ocean fisheries. Both Japan and Korea are members of the IOTC and it would be reasonable to assume that Panama could be persuaded to co-operate in such a programme even though it is not currently a member of the IOTC. However, in addition to establishing observer programmes, RFMOS should adopt measures to require that all transhipment vessels should be flagged to contracting parties or co-operating parties/entities of the RFMO, with sanctions applied to vessels (*e.g.* denial of port access) and countries (import restriction/bans) in contravention of the measures.

***Tankers and re-supply vessels***

Fleets of vessels that refuel and re-supply high seas fishing vessels are also an essential element of the infrastructure necessary to maintain IUU fishing as well as fishing by legal operators. In Table

[11] For example Recommendation 02-23 adopted by ICCAT in 2002: Recommendation by ICCAT to Establish a List of Vessels presumed to have carried out Illegal, Unreported and Unregulated Fishing Activities in the ICCAT Convention Area - Paragraph 9 "Contracting Parties and Co-operating non-Contracting Parties, Entities or Fishing Entities shall take all necessary measures, under their applicable legislation: e) To prohibit the imports, or landing and/or transhipment, of tuna and tuna-like species from vessels included in the IUU list". See also ICCAT Resolution 01-18: Scope of IUU Fishing. Adopted by ICCAT in 2001.

6.6, the authors attempted to put together a sample list of vessels most likely to be servicing distant water fishing vessels operating on the high seas and, in some cases within other countries' EEZs.

*Methodology*

The methodology used in this case was as follows:

- an internet search yielding several companies that specialise in refuelling (bunkering) vessels at sea,
- investigating tankers belonging to these companies, producing a profile of the vessels engaged in this type of work,
- finding tankers fitting this profile using the Lloyds Register database,
- reviewing the voyage history of each tanker to find those making regular voyages into areas known to be frequented by tuna fishing vessels and spending significantly longer at sea than would have been required for a routine transit.

This research produced a list of over 100 tankers, which was then narrowed down to 54 that, for at least part of the year, are engaged in refuelling and re-supplying fishing vessels at sea. Again, this list is provisional and would require further research to verify that all of these vessels are involved, or highly likely to be involved, in refuelling and reprovisioning distant water fishing vessels at sea. A sample of 30 of these vessels is included in Table 6.7.

While the ownership and registered flags of these vessels involves a greater number of countries than do the high value tuna transhipment fleets, at least some the companies that own or manage tanker vessels are involved in a variety of other at-sea services. For example, ADDAX Bunkering Services owns or charters a fleet of 10-12 tankers that re-supply fishing vessels in the Atlantic and Indian Oceans. This fleet also supplies offshore mining operations, oil platforms and seismic survey vessels. Amongst the services it supplies are fuel, provisions and fresh water. ADDAX is a subsidiary of the Geneva based transnational, ADDAX & ORYX group.[12] Another company, SK Shipping operates a fleet of over 20 tankers supplying fuel and supplies to fishing fleets, worldwide. According to their website, SK provides "…port bunkering and bunker-trading services in the North and South Pacific, the Atlantic Ocean, the Indian Ocean, PNG, Guam, and the Arafura Sea. We have also diversified our business to offer comprehensive fishing-vessel services that include crew repatriation, spare parts, and bait. In addition, we bring integrated logistics services to the fishing industry, including reefer service and fish trading". SK is a subsidiary of SK Group, the 3rd largest conglomerate in Korea.[13]

12 http://www.addax-oryx.com/media/pdf/bunkers.pdf

13 http://www.skshipping.com/jsp/eng/company/overview.jsp

**Table 6.7. Tankers and Re-supply Vessels Servicing Fishing Vessels at Sea - Provisional List**

| Tanker Name | Flag | Owner/Manager | Nationality of Owner/Manager | Principal Area of Operation |
|---|---|---|---|---|
| Arsenyev | Russia | Primorsk Shipping | Russia | Atlantic |
| Atom 7 | Panama | Sekwang Shipping | Korea | Pacific |
| B.Cupid | Singapore | Aceline Ship Mngt. | Singapore | Atlantic |
| Dae Yong | Korea | Cosmos Shipping | Korea | Pacific |
| Dalnerechensk | Cyprus | Primorsk Shipping | Russia | Atlantic |
| Hai Gong You 302 | China | China National Fisheries | China | Atlantic |
| Hai Soon 16 | Singapore | Hai Soon | Singapore | Indian |
| Hai Soon Ii | Singapore | Hai Soon | Singapore | Indian |
| Hai Soon Ix | Singapore | Hai Soon | Singapore | Pacific |
| Hai Soon Xv | Singapore | Hai Soon | Singapore | Atlantic |
| Hl Tauras | Singapore | Hong Lam Marine | Singapore | Pacific |
| Hobi Maru | Ecuador | Toko Kaiun | Japan | Pacific |
| Hosei Maru | Japan | Toko Kaiun | Japan | Indian |
| Hozen Maru | Japan | Toko Kaiun | Japan | Pacific |
| Japan Tuna No.3 | Panama | Japan Tuna Co-Op | Japan | Pacific-Indian |
| Katie | Liberia | Aquasips | Latvia | Atlantic |
| Kosiam | Singapore | Kosiam Trading | Singapore | Pacific |
| L. Star | Singapore | Sekwang Shipping | Singapore | Indian |
| Sea Pearl | Seychelles | Al Dawood | | Atlantic |
| Mighty 7 | Panama | Sekwang Shipping | Korea | Ind-Pacific |
| Nagayevo | Cyprus | Primorsk Shipping Corp. | Russia | Atlantic |
| New Kopex | Korea | Sekwang Shipping | Korea | Pacific |
| Nipayia | Panama | Lotus Shipping | Greece | Indian |
| Oriental Bluebird | Panama | New Shipping Kaisha | Japan | Pacific |
| Shin Co-Op Maru | Panama | Kumazawa | Japan | Pacific |
| Smile No.3 | Korea | Sekwang Shipping | Korea | Pacific |
| Soyang | Korea | Sekwang Shipping | Korea | Pacific |
| Star Tuna | Panama | Korea Ship Managers | Korea | Pacific |
| Starry | Singapore | Honglam Shipping | Singapore | Pacific-Indian |
| Vesta 7 | Panama | Sekwang Shipping | Korea | Pacific |

Finally, some companies are involved in both transhipment of fish and re-supply. Sunmar Shipping, for example, services international fleets operating in the Russian Far East. According to its website, the company operates 20 vessels which tranship “frozen fish and fish meal products” at sea

and delivers the fish to markets in Europe, the United States, China, Korea, Japan and elsewhere. Sunmar also delivers provisions and supplies directly to the fishing fleets.[14]

It is difficult to understate the importance of tankers and re-supply vessels to the operations of high seas IUU fishing fleets. Given the size, scope, visibility and the diversity of the operations of major companies involved in the business, RFMOs should engage these companies as they may be amenable to co-operating in international efforts to prevent, deter and eliminate IUU fishing, whether through observer programmes, bringing company policies and business practices into line with RFMO recommendations, and/or by other means. Integrating tankers and re-supply vessels and the companies that own, manage or charter these vessels into regional efforts to ensure effective compliance with RFMO measures are a necessary and potentially very effective means of combating IUU fishing.

**Recommendations/discussion**

The following recommendations are drawn from the above research into recent trends in the use of flags of convenience fisheries and the role and character of the at-sea transhipment, refuelling and re-supply fleets in supporting the operations of high value tuna longline fleets and other fishing fleets on the high seas.

The recommendations are as follows:

1. Further investigation into the numbers of vessels registered to flags of convenience in the "unknown" category, and the reasons why these and others vessels are listed as such on the Lloyd's database, would be useful in providing a clearer picture of trends in the flagging of fishing vessels over the past several years.
2. It would be worth further investigation to determine whether any of the companies in Chinese Taipei involved in building new fishing vessels over the past three years, virtually all of which have been flagged to FOC countries, have benefited from funds for the joint Japan/Chinese Taipei programme designed to decommission large-scale tuna longline vessels.
3. Given the status of Chinese Taipei as a "Co-operating Party, Entity or Fishing Entity" of ICCAT, the government should be encouraged to ensure that no vessels built in Chinese Taipei shipyards are allowed to register to flag of convenience countries.
4. RFMOs should require that all transhipment vessels operating in the area of competence of the organisation have an authorisation to tranship at sea and that a list be compiled of such vessels.
5. RFMOs should agree to establish an observer programme on board all transhipment vessels to monitor and report on all transhipment at sea. The programme should be operated under the authority or auspices of the RFMO, in co-operation with, but independent of, the flag states of the transhipment vessels concerned.
6. RFMOS should adopt measures to require that all transhipment vessels should be flagged to contracting parties or co-operating parties/entities of the RFMO, with sanctions applied to vessels (*e.g.* denial of port access) and countries (import restriction/bans) in contravention of the measures.
7. RFMOs should engage companies that own, manage or charter tankers and re-supply vessels servicing fishing vessels on the high seas to co-operate in international efforts to prevent,

[14] http://www.sunmar.com/ssi/default.htm

deter and eliminate IUU fishing, whether through observer programmes, bringing company policies and business practices into line with RFMO recommendations, and/or by other means.

As mentioned in the executive summary, in addition to the above, a number of other aspects of the infrastructure support and facilitate IUU fisheries worldwide. It is clear from the Lloyd's data that the number of fishing vessels flying flags of convenience remains high in spite of the adoption of the UN FAO International Plan of Action on IUU fishing and the many efforts of regional fisheries management organisations over the past several years.

In the absence of (or, in effect, as a substitute for) effective flag state control, responsible nations will continue to incur the cost of deterring IUU fishing. These costs are essentially twofold: one, the cost of monitoring control and enforcement, whether at sea, in port, regulating imports or investigating and prosecuting nationals or companies within their jurisdiction involved in IUU fishing; two, the cost to responsible fishing nations in terms of research, conservation and management, and the loss of actual or potential revenue to IUU fishing.

As was discussed in a paper prepared by Gianni for WWF for the June 2003 meeting Ministerial level OECD Round Table on Sustainable Development related to fisheries, the financial benefit derived by Flag of Convenience states in registering fishing vessels are relatively small. By some estimates, the top four flag of convenience countries may derive only a few million US dollars per year in revenues from the flagging of over 1000 fishing vessels combined. By comparison, the cost to the international community of the failure of these states to exercise control over the activities of their fishing vessels is likely to be far greater.

It would be well worth considering a means or method to document and/or reasonably estimate the types of costs incurred by responsible flag states as a result of FOC fishing. Then, on this basis, seek compensation through international arbitration mechanisms available from specific states operating open registries whose vessels are fishing in a region in contravention of the measures established by a relevant fisheries management organisation to the detriment of responsible flag states' fleets. Whether or not there is a genuine economic link between the flag state and the IUU fishing vessels or fleets flying its flag, the flag state bears the ultimate responsibility for the activities of the vessels. If an FOC state is faced with the prospect of paying substantial sums in compensation to other states for its failure to regulate its fishing fleets, this could prove a significant and cost-effective deterrent to IUU fishing in ways which port state controls, market restrictions, and enhanced monitoring, control and surveillance have so far been unable to accomplish.

The authors hope to further develop this line of inquiry as part of a larger project involving further research into the variety of components of the international infrastructure supporting IUU fishing on the high seas.

## ANNEX 6.A.

**Table 6.A1.1. Sample of Port Visits and Itineraries of Refrigerated Cargo Vessels Transhipping High Value Tuna At Sea for Delivery to Japan, 2001-2003**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M/V ASIAN REX** | | | | | | | | | | | | |
| 2001 | CP - JPN | SH YK - SH - KA | | SI-CP | **E & W. ATL. LA - ALG - COL** | | PC - JPN | YK - TO - SH - YK - KA | | SI-CP | **E. & W. ATLANTIC** | PC - YK |
| 2002 | | YK - SH - YK - SH - KA | | SI-CP | **EAST ATLANTIC (CP)** | CP-SI | SH - YK - SH - YK - KA | | SI-CP | **EAST ATLANTIC (LAS PALMAS)** | | CP-SI |
| 2003 | SH - BU - SU - KA | | | SI-CP | **E. ATLANTIC (LAS PALMAS)** | CP-SI | SH - YK - SH - SU - KA | | | **EAST ATLANTIC (CAPE VERDE, ISLANDS)** | | CP-SI |
| **M/V CHIKUMA** | | | | | | | | | | | | |
| 2001 | **MED.** | MED-JPN | SH - TO - YK | JPN - ESP | **MEDITERRANEAN** | | MED-AUS | **PL** | AUS-JPN | TO - SH - BU - KA | SI-CP | **MEDITERRANEAN** |
| 2002 | **MED (CRO)** | MED - JPN | TO - SH | SI - SZC | **MEDITERRANEAN** | | | SZC - SI | TO - SH - BU | KOR-MED | **MEDITERRANEAN** | |
| 2003 | | MED-JPN | TO - SH | JPN -MED | **MEDITERRANEAN** | | MED-JPN | SH - TO - SH - KA | | JPN- MED | **MEDITERRANEAN** | |
| **M/V EITA MARU** | | | | | | | | | | | | |
| 2001 | SH - YK - SH - YK - SH - YK - KA | | | **INDIAN OCEAN** | | IO - JPN | SH - YK - SH - YK - SH - KA | | | JPN - IO | **INDIAN OCEAN** | IO - JPN |
| 2002 | | SH KA | | SI-CP | **E. - W. ATLANTIC** | PC - JPN | SH - YK - SH - YK - KA | | JPN - TRN | **WEST - EAST ATLANTIC** | | CP-SI |
| 2003 | SH - YK - SH - YK - KA | | | SI-CP | **EAST ATLANTIC** | CP-SI | **S.E.A.** | SH - YK - SH - YK - SH - YK - KA | | | | |

**Table 6.A1.1. Sample of Port Visits and Itineraries of Refrigerated Cargo Vessels Transhipping High Value Tuna At Sea for Delivery to Japan, 2001-2003 (cont.)**

| | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **M/V HARIMA 2** | | | | | | | | | | | | |
| 2001 | **EAST ATLANTIC** | | | CP - SH | SH - YK - SH - YK – KA - BU | | **SOUTH CHINA SEA - INDONESIA** | | SH - YK - SH - YK - KA - BU | | | **S. CHINA S. - IND** |
| 2002 | | SH BU - KA | | **S. CHINA SEA - IND** | | SH BU - KA | | **SOUTH CHINA SEA - INDONESIA** | | YK - SH - YK - SH - BU - KA | | **W. PAC** |
| 2003 | **WEST PAC.(PA)** | | SH - YK - SH - YK - KA | | TAI - PC | **W. - E. ATLANTIC (LAS)** | CP-SI | SH - YK - SH - YK - SH - YK - KA | | **S. CHINA SEA - IND.** | | SH |
| **M/V HARU** | | | | | | | | | | | | |
| 2001 | | KA - BU - KA - BU – SH | | JPN - PC | **W. - E ATLANTIC. (TRN - CP)** | CP-SI | SH - YK - SH - YK - BU - KA | | | **S. CHINA SEA - IND.** | | SH |
| 2002 | YK - SH - KA | | **INDIAN OCEAN (MA)** | | SH - YK - TO - KA | | **INDIAN O. (SYCHELLES)** | SH - YK - KA | | **MEDITERRANEAN** | | SH - KA |
| 2003 | SI-CP | **EAST - WEST ATLANTIC (CP-LA)** | | CP-SI | SH - YK - SH - BU - KA | SI-CP | **EAST ATLANTIC** | CP-SI | SH - TO - TO - KA | SI -SY | **INDIAN OCEAN** | |
| **M/V HATSUKARI** | | | | | | | | | | | | |
| 2001 | | SH - YK - SH - YK - KA - SH | | | **WEST PACIFIC (PA)** | | BU - SH - YK - KA - BU | | **WEST PACIFIC** | | SH - BU - SH - YK - SH - HA | |
| 2002 | | JPN - PC | **WEST ATLANTIC (LA - CVI)** | | PC - JPN | BU - SH | | SI-CP | **EAST ATLANTIC (CP - SVI)** | | CP-SI | SH - YK |
| 2003 | SH - YK | | **WEST - EAST PACIFIC** | | SH - YK - TO - SH - BU - KA | | | **EAST PACIFIC (CA)** | | YK - SH - TO - BU - KA | | |
| **M/V MEITA MARU** | | | | | | | | | | | | |
| 2001 | SH - HA | SI-CP | **EAST ATLANTIC (LAS PALMAS)** | | CP-SI | SH - YK - SH - YK - SH - YK | | JPN - PER | **W. & E. PACIFIC (CA)** | | PER - JPN | SH - BU - SH - HA - BU |
| 2002 | | SI-CP | **E. ATL. (LAS PALMAS)** | CP-SI | SH - BU - SH – KA | | SI-CP | **EAST ATLANTIC (CAPE VERDE)** | CP-SI | SH - YK - SH - SU - KA | | SI-CP |
| 2003 | **EAST ATLANTIC (LAS PALMAS)** | | CP-SI | SH YK - HA - KA | | SI-CP | **E. & W. ATLANTIC - LA - PC - E. PAC** | | | PC - JPN | SH - YK - SH - TO - SH | |

**Table 6.A1.1. Sample of Port Visits and Itineraries of Refrigerated Cargo Vessels Transhipping High Value Tuna At Sea for Delivery to Japan, 2001-2003 (cont.)**

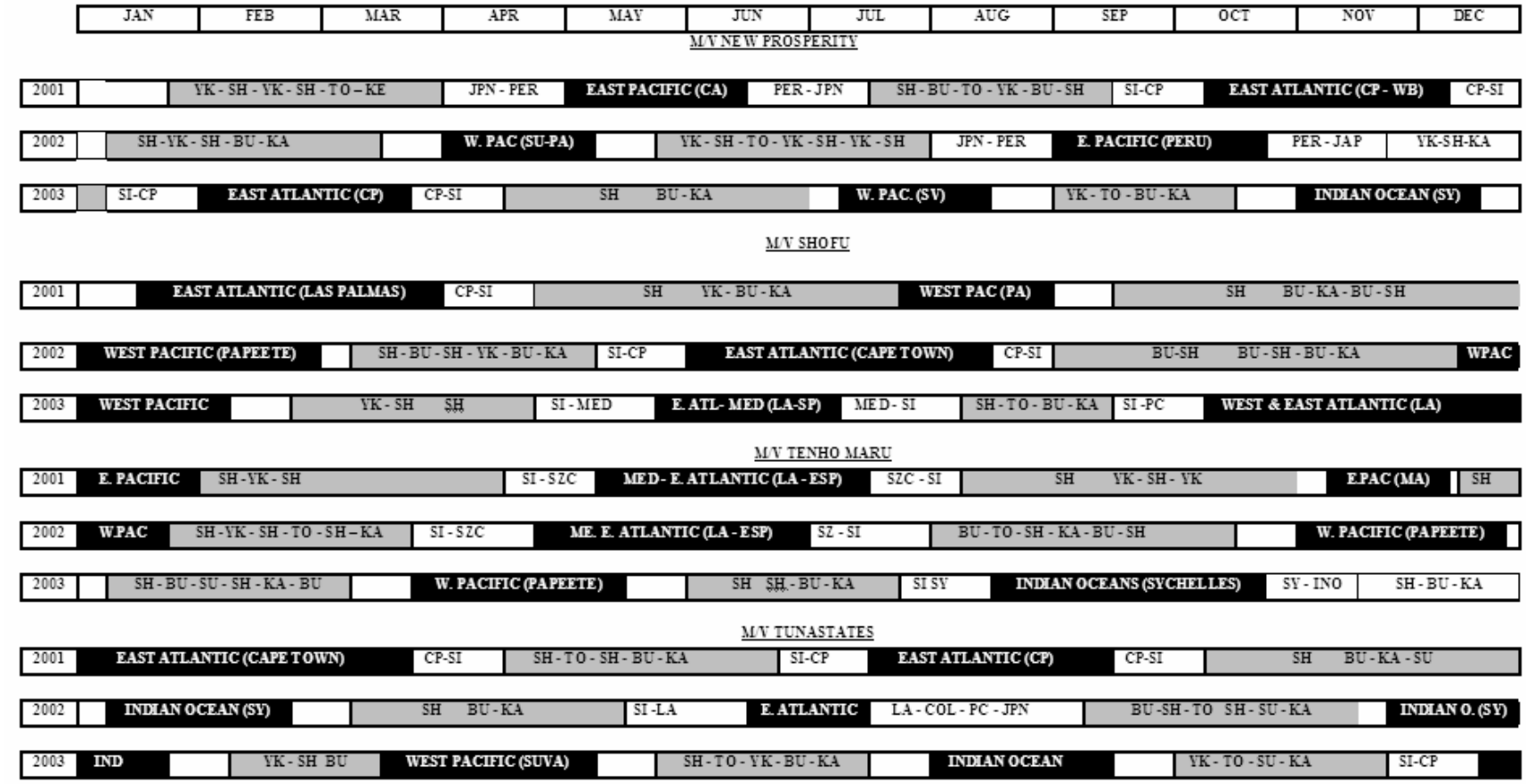
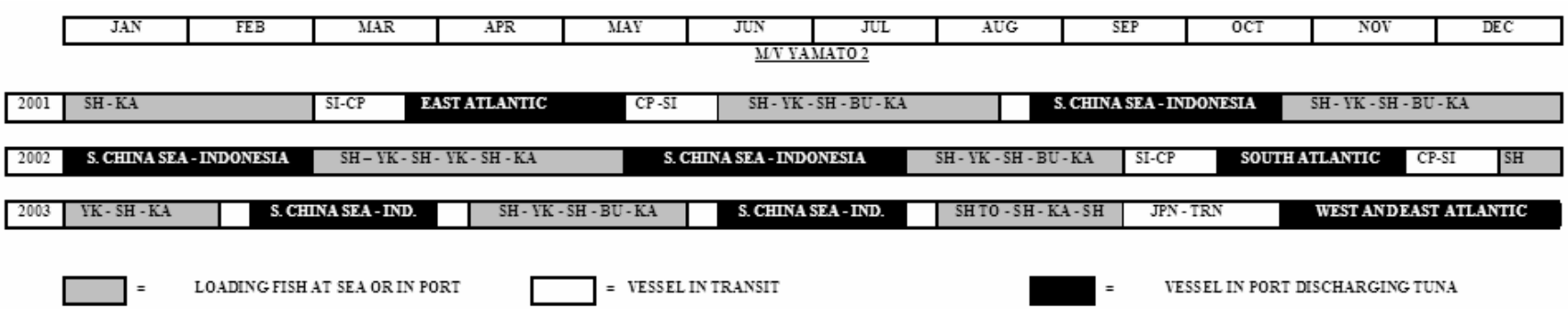


**Table 6.A1.1. Sample of Port Visits and Itineraries of Refrigerated Cargo Vessels Transhipping High Value Tuna At Sea for Delivery to Japan, 2001-2003 (cont.)**




| | | | | | |
|---|---|---|---|---|---|
| ATL | - | ATLANTIC OCEAN | | | |
| KA | - | KAOSHUING, CHINESE TAIPEI | MED | - | MEDITERRANEAN |
| SH | - | SHIMUZU, JAPAN | TAI | - | CHINESE TAIPEI |
| BU | - | BUSAN, S. KOREA | DU | - | DURBAN, SOUTH AFRICA |
| KE | - | KESENNUMA, JAPAN | MN | - | MANTA, ECUADOR |
| SI | - | SINGAPORE | TO | - | TOKYO, JAPAN |
| CA | - | CALLAO, PERU | ESP | - | SPAIN |
| KOR | - | KOREA | PA | - | PAPEETE, TAHITI |
| SU | - | SUAO, CHINESE TAIPEI | TUN | - | TUNESIA |
| CO | - | COLUMBIA | FR | - | FREMANTLE, AUSTRALIA |
| LA | - | LAS PALMAS, CANARY ISLANDS | PAC | - | PACIFIC OCEAN |
| SV | - | SUVA, FIJI | WB | - | WALVIS BAY, NAMIBIA |
| CP | - | CAPE TOWN, SOUTH AFRICA | HA | - | HAHINOHE, JAPAN |
| MA | - | MAURITIUS | PC | - | PANAMA CANAL |
| SY | - | SEYCHELLES | YK | - | YOKOSUKA, JAPAN |
| CRO | - | CROATIA | IN | - | INDONESIA |
| MAL | - | MALTA | PER | - | PERU |
| SZC | - | SUEZ CANAL | INO | - | INDIAN OCEAN |
| CVI | - | CAPE VERDE ISLANDS | PL | - | PORT LINCOLN, AUSTRALIA |

**Table 6.A1.2. Sample Itineraries of Tankers Refuelling Fishing Vessels At Sea, 2001-2003**

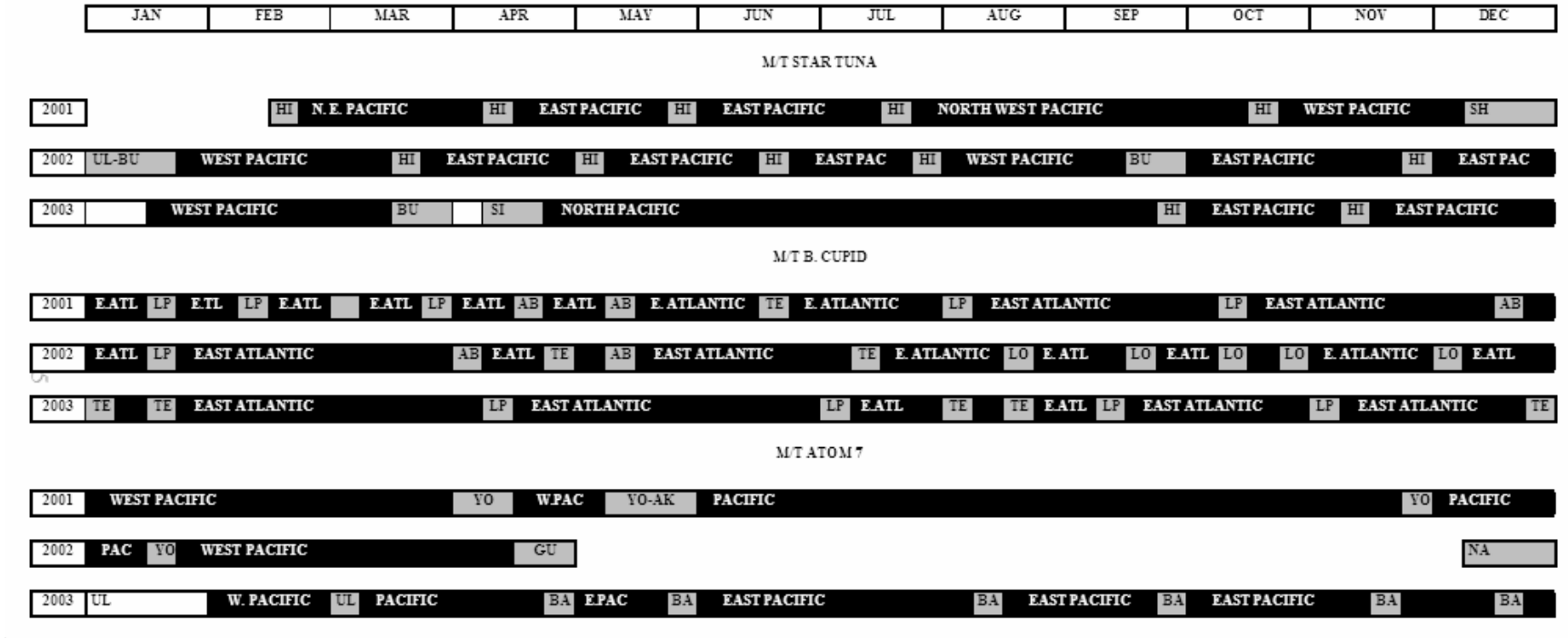


**Table 6.A1.2. Sample Itineraries of Tankers Refuelling Fishing Vessels At Sea, 2001-2003 (cont.)**

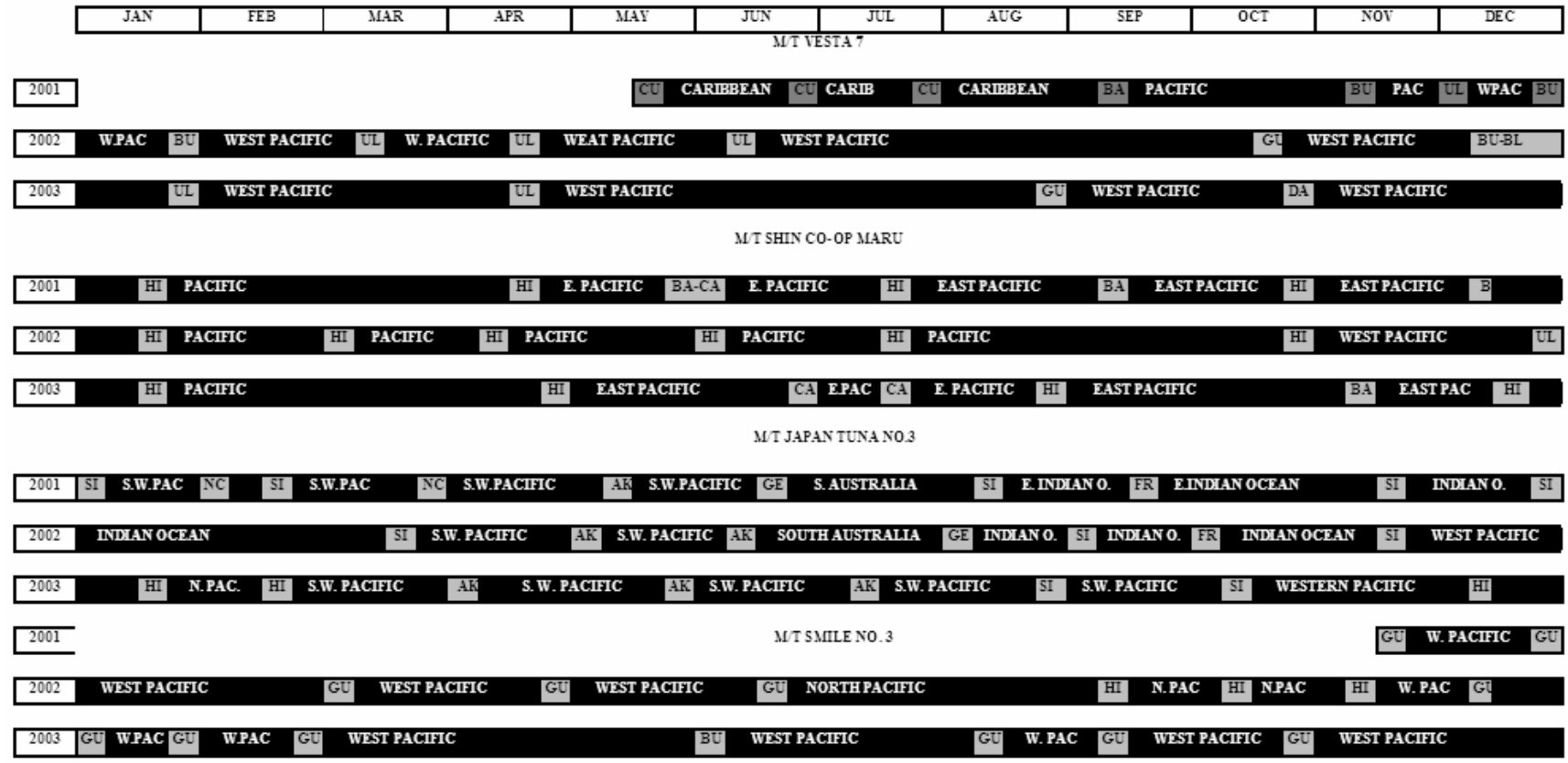
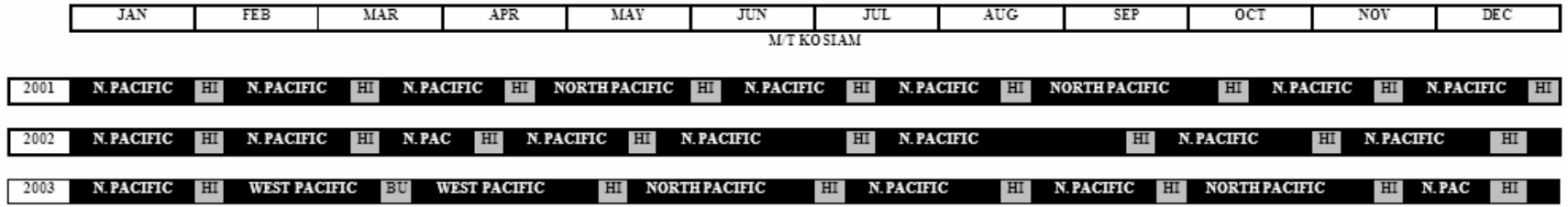


**Table 6.A1.2. Sample Itineraries of Tankers Refuelling Fishing Vessels At Sea, 2001-2003 (cont.)**




= TANKERS AT SEA - IN TRANSIT, OR SERVICING FISHING VESSELS.

= TANKERS IN PORT REFUELING AND LOADING SUPPLIES

| | |
|---|---|
| AB | ABIDJAN |
| AK | ALASKA |
| BA | BALBOA |
| BU | BUSAN |
| CU | CURACAO |
| GU | GUAM, |
| HI - | HAWAII |
| LO | LOME |
| LP | LAS PALMAS |
| NA | NAGOYA |
| SI | SIAPAN |
| TE | TEMA |
| UL | ULSAN |
| YO | YOKOHAMA |

## CHAPTER 7

# PATAGONIAN TOOTHFISH - THE STORM GATHERS

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**Abstract**

This paper documents the experiences of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in managing marine living resources in the waters (*i.e*. south of about 45°S) for which it is responsible. Emphasis is given to legal and institutional aspects, particularly sovereignty issues and jurisdictional controls. Recent high levels of Illegal, Unreported and Unregulated (IUU) fishing for Toothfish (Dissostichus sp.) in the CCAMLR area are used to illustrate the management and enforcement measures taken by this particular organisation to combat such fishing. While it is concluded that these measures have relied heavily on national (particularly coastal state) enforcement to be effective, their clear affinity with other recent fisheries agreements is highlighted. Various factors are identified for further consideration.

## Introduction

It has been stated that:

> "An old spectre haunts fisheries management today: governance without government".[2]

Although provocative, this statement clearly demonstrates that much appears to have gone horribly wrong with humankind's efforts to manage fishing on the high seas. These efforts are perceived to have failed miserably despite expectations to the contrary flowing from general customary international law. Such expectations, first outlined in Principle 21 of the 1972 Stockholm

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1 Email: denzil@ccamlr.org. The opinions expressed in this paper are those of the author and do not reflect the collective, or official, views of CCAMLR.

2 See p. 157 in O.S. Stokke, "Governance of high seas fisheries: The role of regime linkages", in D. Vidas and W. Østreng (eds.), *Order for the Oceans at the Turn of the Century.* (Kluwer Law International, The Hague, 1999), pp. 157-172.

Declaration[3] and embodied in the 1982 United Nations Convention on the Law of the Sea (LOSC)[4] were subsumed into Principle 2 of the 1992 Rio Declaration.[5] They clearly intimate that there is a general obligation on all states to ensure that "activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction".

In substantiating the Rio interpretation, Freestone[6] asserts that the above obligation, although minimal, assumes generality when applied to the global commons of the high seas. However, he maintains that the extent to which it represents a clear invocation to avoid environmental damage not only applies to activities confined within state territory, "but also to activities under State jurisdiction (including State registered vessels)". Arguably, therefore, the Rio interpretation is relevant to the extent that protection of the environment and certain activities are linked in the context of being subject to state jurisdiction [including over nationals (*i.e*. legal and natural individuals)].

The dichotomy between the opening quotation's "realism" and Freestone's "idealism" has become alarmingly evident over the past decade. As more and more fisheries are affected by heavy exploitation, the search for new resources increases.[7] Irresponsible operators have taken advantage of prevailing circumstances to optimise their own economic advantages, often to the detriment of the stocks concerned and at the expense of their more responsible competitors. While the serious consequences of such behaviour have been clearly recognised by the international community[8,9,10,11,12,13,14], the extent of fishing activity violating applicable laws and regulations

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3 Declaration of the United Nations Conference on the Human Environment. (United Nations Environment Programme, 1972). 5 pp.

4 *United Nations Convention on the Law of the Sea, 1982*. (United Nations, New York, 1983). 224 pp.

5 *Rio Declaration on Environment and Development.* (United Nations Environment Programme, 1992). 4 pp.

6 See p. 104 in D. Freestone, "The Conservation of Marine Ecosystems under International Law", in C Redgewell and M. Bowman (eds.), *International Law and the Conservation of Biodiversity*. (Kluwer Law International, 1995), p. 91-107.

7 *The State of World Fisheries and Aquaculture, 2002*. (Food and Agriculture Organization of the United Nations, Rome, 2002), 150 pp.

8 There are a number of international instruments that set out provisions to address irresponsible fishing practices. These include the *LOSC*[4], the *1993 Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas*[9] (the "*FAO Compliance Agreement*"), the *1995 Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks*[10] (the "*United Nations Fish Stocks Agreement - UNFSA*") and the *1995 Code of Conduct for Responsible Fisheries*[11] (the "*FAO Code of Conduct*"). It must be emphasised that the *Code* was formulated as a practical framework to be applied in conformity with the other instruments listed and in light of, *inter alia*, the *1992 Declaration of Cancun*[12] and the *1992 Rio Declaration on Environment and Development*[13], in particular Chapter 17 of Agenda 21.[14]

9 *Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, 1993*. (Food and Agricultural Organization of the United Nations, Division for Ocean Affairs and the Law of the Sea, United Nations, New York, 1998), p. 41-49. The *Agreement* entered into force on 4 April 2003.

10 *Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, 1995*. (Food and Agricultural Organization of the United Nations, Division

continues to increase dramatically. Such activity is essentially “irresponsible”, as it fails the acceptable standards of most international measures aimed at improving ocean governance and at ensuring sustainable management of living resources contained therein.

The Food and Agricultural Organization of the United Nations (FAO)[15] has emphasised that irresponsible harvesting directly undermines effective management of marine fisheries. It impedes efforts to ensure stock sustainability and is "unfair", carrying, as it does, a heightened risk for lost economic and social opportunities. The potential for such losses has serious implications, in both the long- and short-term, since it increases the risk of diminishing future food security.

Consequently, the recent proliferation of pernicious and potentially environmentally damaging fishing practices globally, particularly on the high seas, has come to preoccupy many regional fishery management organisations (RFMOs). This concern has prompted the development of new terminology to describe fishing activities carried out in such a way as to circumvent regulatory controls. Having applied the term in the early 1990s, in 1997 the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)[16] became the first RFMO to formally designate these activities as "Illegal, Unreported and Unregulated" (IUU) fishing.[17]

Soon thereafter, the FAO Committee on Fisheries (COFI) took up the matter[18] in 1999. COFI initiated a process to formally define the terminology (Box 7.1) and to combat the problem through an International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated

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for Ocean Affairs and the Law of the Sea, United Nations, New York, 1998), p. 7-40. The *Agreement* entered into force on 11 December 2001.

11 *Code of Conduct for Responsible Fisheries, 1995*. (Food and Agricultural Organization of the United Nations, Division for Ocean Affairs and the Law of the Sea, United Nations, New York, 1998), p. 56-78.

12 *Cancun Declaration on Responsible Fishing, 1992*. http:/www.oceanlaw.net/txts/summaries/cancun/htm.

13 See *Rio Declaration on Environment and Development, 1992, op.cit*, n. 5.

14 “Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and their protection, rational use and development of their living resources", in *Report of the United Nations Conference on Environment and Development, Chapter 17*, (United Nations, New York, A/CONF. 151/26 Vol. II, 1992).

1515 FAO, *Implementation of the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing. FAO Technical Guidelines for Responsible Fisheries No. 9*, (Food and Agriculture Organization of the United Nations, Rome, 2002), 122 pp.

16 The Commission established under Article VII of the *Convention for the Conservation of Antarctic Marine Living Resources, 1980* (*CAMLR Convention*). p. 7 of the *Basic Documents*, (CCAMLR, Hobart Australia, 2002), 129 pp. Some *Contracting Parties* (often termed "*Acceding States*") are not *Commission Members* as they do not qualify for such under the conditions outlined in Article VII. These States do not take part in the *Commission's* decision-making under Article XII.

17 Letter from the Executive Secretary of *CCAMLR* to *FAO* [Ref. 4.2.1.(l)] as cited by G. Lutgen, *A review of measures taken by Regional Marine Fishery Bodies to address contemporary fishery issues*, Footnote 135 on p. 35, *FAO Fisheries Circular No. 940*, (Food and Agriculture Organization of the United Nations, Rome, 1999), 97 pp.

18 COFI, *Report of the Twenty-Third Meeting of the Committee on Fisheries. FAO Fisheries Report No. 595*, (Food and Agriculture Organization of the United Nations, Rome, 1999), 70 pp.

Fishing (IPOA-IUU).[19] The attached Implementation Plan[20] provided various practical suggestions on actions aimed at ensuring the IPOA-IUU's overall success. Nevertheless, and notwithstanding the definitions in Box 7.1, some unregulated fishing may still occur without violating international law and/or may not require application of measures envisaged under the IPOA-IUU. This fishing would be apart from that addressed by the final provision in Box 7.1.

Like many regional bodies responsible for fisheries management (amongst other responsibilities[21]), CCAMLR has been particularly affected by IUU fishing for Patagonian Toothfish (Dissostichus eleginoides) since the mid-1990s. In this paper, I use CCAMLR's experiences to illustrate some of the organisation's successes, and failures, in combating IUU Toothfish fishing. A brief history of the Toothfish IUU problem is provided. Some of CCAMLR's measures to combat the problem are documented, as are the organisation's efforts to develop, and ascribe to, international "best practice". Possible future action(s) are suggested.

**The CCAMLR Convention**

The boundaries of the CAMLR Convention Area (Figure 7.1) are confined within the Antarctic Polar Front[22] (APF) to the north and the Antarctic continental margin to the south (*i.e.* a major part of the "Southern Ocean"). Assignation of the APF as the Convention's northern boundary confines CCAMLR's area of responsibility within a hydrographic domain on which the underlying biogeography of the many marine species confined therein depends. For instance, the presence of deep-ocean basins south of the APF induces a high degree of species endemism, particularly for fish that inhabit the shallower Antarctic Continental shelf or areas close to the many oceanic islands that are a common feature of the Southern Ocean.[23] As highlighted by Fischer and Hureau,[24] endemism is comparably less for species inhabiting deeper water, although they still may be encountered in areas of high hydrographic variability such as immediately north and south of the APF.

With its entry into force on 7 April 1982, the CAMLR Convention was, and remains, one of the first, and only, regional marine agreements to explicitly balance conservation with rational (*i.e.* "sustainable") use. This is achieved through the implementation of a precautionary and holistic

19 FAO, *International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing*, (Food and Agriculture Organization of the United Nations, Rome, 2001), 24 pp.

20 FAO, *op cit.*, n. 15.

21 Currently, there is considerable debate concerning *CCAMLR's* exact mandate and role. This is attributable to the fact that Article II of the *Convention* requires *CCAMLR* to manage *both* harvested species and the Antarctic marine ecosystem as a whole. Nevertheless, *CCAMLR's* fishery regulation functions do not differ from those of many other marine fishery bodies with competency to manage fishing in the areas for which they are responsible. Therefore, for the purposes of this paper *CCAMLR* will be regarded as a *RFMO*.

22 The Antarctic Polar Front (*APF*) is the zone where colder, less saline waters flowing north from the Antarctic meet warmer, more saline waters flowing south in the Atlantic, Indian and Pacific Oceans. The term has effectively replaced that previously in common use - "the Antarctic Convergence". The latter term was used during negotiation of the *CAMLR Convention* and is referred to in Article I of the *Convention* (*op. cit.* n. 16). The mean position of the *APF* is between 45 and 60$^{o}$S depending on longitude.

23 K.-H. Kock, "*Antarctic Fish and Fisheries*". (Cambridge University Press, Cambridge, 1992), 359 pp.

24 W. Fischer and J.-C. Hureau (eds.), "*FAO Species Identification Sheets for Fishery Purposes, Southern Ocean (CCAMLR Convention Fishing Areas 48, 58 and 88), Vol. II*", (Food and Agriculture Organization of the United Nations, Rome, 1985), 232 pp.

approach based on managing exploitation from an ecosystem[25] perspective (Box 7.2). In jurisdictional terms, CCAMLR has had to account for mixed sovereignty, and jurisdictional, imperatives,[26] to ensure that regulation, monitoring, reporting and enforcement of fishing regulatory measures are coherent within the whole Convention Area. The Area itself comprises the high seas as well as areas under some form of national jurisdiction. South of 60°S, application of the Convention is subject to the sovereignty considerations of the Antarctic Treaty.[27]

Article IX of the CAMLR Convention outlines CCAMLR's functions.[28] Paragraph 1 empowers the Commission to collect data, facilitate research and develop measures necessary to ensure effective management of Antarctic marine living resources and the attached ecosystem. Such activities include the need to establish scientific procedures to estimate the yield of harvested stock(s). Article IX, paragraph 2 comprehensively lists management ("conservation") measures that could be applied. These include, *inter alia*, the setting of catch limits, designation of fishing areas and season, designation of protected species and various other input/output controls (*e.g.* effort limits, size limits etc.).

CCAMLR builds on the provisions of Article IX, paragraph 1 through the activities of its Scientific Committee[29] and associated specialist groups. It has instituted model-based procedures to estimate the sustainable yield of harvested stocks along with associated catch limits. The procedures themselves attempt to account for the life history characteristics, as well as the age/size distribution, of the species being harvested so as to provide realistic projections of stock status. They also attempt to allow for uncertainty in either the input data or estimation procedures.[30]

Like LOSC Article 63, the CCAMLR Convention also applies to the management of so-called "transboundary stocks".[31] Patagonian Toothfish is perceived as such a stock since it is distributed throughout, and occurs within, most of the waters falling under national jurisdiction inside the Convention Area. The species also occurs to the north of the APF on the high seas and in the maritime zones of a number of coastal states adjacent to the area, particularly around the southern tip of South America. CCAMLR has been long aware of the difficulties associated with managing transboundary stocks. In 1993, a Resolution was adopted to address management of stocks occurring both within and

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25 For example see E.J. Molenaar, "CCAMLR and Southern Ocean Fisheries" (2001), *International Journal of Marine and Coastal Law* 16.(3): 465-499.

26 See discussion in C. Joyner, "Maritime zones in the Southern Ocean: Problems concerning correspondence of natural and legal regimes" (1990), *Applied Geography* 10: 307-325, and the *Chairman's Statement* attached to the *CAMLR Convention* (CCAMLR *op. cit.*, n. 16, p. 23-24).

27 See Article III of the *CAMLR Convention* in CCAMLR, *op. cit.*, n. 16, p. 5.

28 See Article IX of the *CAMLR Convention* in CCAMLR, *op. cit.*, n. 16, p. 8-10.

29 Articles XIV and XV of the *CAMLR Convention* respectively establish a *Scientific Committee* to advise the *Commission* and outline the kinds of activities which the *Committee* will conduct at the direction of the *Commission* pursuant to the *Convention's* objectives (CCAMLR, *op. cit.*, n. 16, p. 12-14).

30 See A.J. Constable, W.K. de la Mare, D.J. Agnew, I. Everson and D.G.M Miller, "Managing fisheries to conserve the Antarctic marine ecosystem: Practical implementation of the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR)" (2000), *ICES Journal of Marine Science* 57: 778-791.

31 The *FAO Fisheries Glossary* defines "transboundary stocks" as those "stocks of fish that migrate across international borders", (Food and Agriculture Organization of the United Nations, Rome, 2002). From the *FAO* Website:http://www.fao.org/fi/glossary/default.asp; LOSC, *op. cit.*, n. 4.

outside the Convention Area.[32] Interestingly, this Resolution foreshadowed many similar UNFSA provisions.

**The Patagonian toothfish fishery**

Exploratory fishing for Patagonian toothfish began north of the APF in about 1955.[33] The development of deepwater longlining in the early 1980s allowed a commercial fishery for the species to develop in Chilean waters, where annual catches between 5 000 and 10 000 tonnes have been taken since about 1985.[34] During the same period, and until the early 1990s, toothfish catches were trawled in Argentine and Falkland (Malvinas) Island waters. Thereafter, both trawling and longlining were employed.[35]

In both the CCAMLR Area and closely adjacent waters, toothfish have been the target of a trawl fishery around the French Kerguelen Islands since the mid-1980s.[36] The species has also been taken as a by-catch around South Georgia since the late 1970s.[37] However, it was not until the Soviet Union developed a longline fishery in the South Georgia region in 1988/89, followed by Chile in 1991/92, that large-scale commercial harvesting of toothfish in CCAMLR waters developed. The fishery expanded in 1996/97 with nationally sanctioned fisheries in the South African Exclusive Economic Zone (EEZ) at the Prince Edward Islands and in the Australian Fishing Zone (FZ) around Heard and McDonald Islands. Toothfish catches at various locations within the Convention Area are illustrated in Figure 7.2.

**History of IUU fishing for toothfish**

The emergence and development of IUU fishing for toothfish has been well documented[38] for the Southern Ocean in general, and for the CCAMLR Area in particular (Figure 7.3). Consequently, I

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32 *CCAMLR Resolution 10/XII* (adopted in 1993) addresses "Harvesting of Stocks Occurring both within and outside the Convention Area". p. 121 of *CCAMLR Schedule of Conservation Measures in Force 2000/04*, (*CCAMLR*, Hobart Australia, 2003), 156 pp. The *Resolution* "reaffirms that *Members* should ensure that their flag vessels conduct harvesting of any stock or stocks of associated species to which the *Convention* applies in areas adjacent to the *Convention Area* responsibly and with due respect for *Conservation Measures* adopted under the *Convention*". It also pre-dated more detailed *UNFSA* provisions (especially Article 19) (*op. cit.* n. 8 and 9).

33 D.J. Agnew, "The illegal and unregulated fishery for toothfish in the Southern Ocean, and the CCAMLR catch documentation scheme" (2000), *Marine Policy* 24: 361-374.

34 Table 1 in D.J. Agnew, *op. cit.* n. 33.

35 From "*FIFD, Fishery Department Fishery Statistics, Vol. 3 (1989-1998)*. (Falkland Islands Government, Stanley, Falkland Islands, 1999) and "*Report of the Workshop on Methods for the Assessment of Dissostichus eleginoides*", SC-CAMLR-XIV, (*CCAMLR*, Hobart, Australia, 1995), Annex. 5, Appendix E: 387-417.

36 G. Duhamel, "Biologie et exploitation de *Dissostichus eleginoides* autour des Iles Kerguelen (Division 58.5.1)", *CCAMLR Selected Scientific Papers, Vol. SC-CAMLR-SSP/8*, (*CCAMLR*, Hobart, Australia, 1991), p. 85-106.

37 *CCAMLR Statistical Bulletin, Vols 1 and 2 (1970-1979 and 1980-1989)*, (*CCAMLR*, Hobart, Australia, 1990).

38 Various publications deal with toothfish *IUU*. Reference is limited to: D.J. Agnew, *op. cit.* n. 33; K. Dodds, "Geopolitics, Patagonian Toothfish and living resource regulation in the Southern Ocean" (2000), *Third World Quarterly* 21.(2): 229-246.; J.A. Green and D.J. Agnew, "Catch Documentation Schemes to combat Illegal, Unreported and Unregulated fishing: CCAMLR's experience with the

have only provided a brief summary here with focus being given to CCAMLR estimates of IUU catch levels.

Prior to 1996, CCAMLR used sightings of unlicensed fishing vessels in the Convention Area to determine IUU activities and attendant catch levels. However, with the expansion of legitimate fishing activities alluded to above, along with the simultaneous expansion of the IUU fleet, CCAMLR developed a standard methodology to assess IUU catches based on a variety of information (Box 7.3). Essentially, and as explained by Sabourenkov and Miller,[39] CCAMLR calculates the IUU catch per vessel as a function of daily catch rate for the days fished per fishing voyage summed over the number of voyages per year. The calculation uses catch rate information from the geographically closest legitimate fishery. The total IUU catch per year is then summed over all the vessels identified.

Toothfish IUU catch estimates are reviewed annually by the CCAMLR Working Group on Fish Stock Assessment (WG-FSA) to estimate total removals for stock assessment purposes. Account is taken of any new information on IUU fishing derived from both catch and trade data. This information usually comes from the CCAMLR Toothfish Catch Documentation Scheme (CDS)[40] (see following section, CCAMLR's management of toothfish IUU fishing). Figure 7.4 illustrates CCAMLR's estimates of annual IUU catch compared with legitimate catches during the period 1996/97 to 2002/03. The estimated value of these catches is illustrated in Figure 7.5. It can be seen that cumulative financial losses arising from IUU fishing (USD 518 million) in the Convention Area are likely to be substantive, and at least in the order of benefits enjoyed by legitimate operators (USD 486 million).

Nevertheless, many recent publications on IUU fishing in the Convention Area have emphasised the high levels of uncertainty attached to such estimates when these are compared with regulated catch levels. The situation is complicated by the fact that CCAMLR estimates have undergone many revisions in light of new information at hand. As Sabourenkov and Miller[41] indicate, estimates derived from trade statistics are often noticeably higher than direct CCAMLR estimates[42] using the procedures outlined in Box 7.3. This is probably attributable to "double accounting" where reported trade levels for some countries may include both fish imported for processing and exported quantities of processed product(s). Further bias may arise from transhipments in port areas being recorded as imports or

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Southern Ocean Toothfish", (2002), *Ocean Yearbook* 16: 171-194.; G.P. Kirkwood and D.J. Agnew, "Deterring IUU Fishing" in A.I.L Payne, C.M. O'Brien and S.I. Rogers (eds.), *Management of Shared Fish Stocks.* (Blackwell, Oxford, 2004): 1-22; G. Lutgen, "The Rise and Fall of the Patagonian Toothfish - Food for Thought" (1997), *Environmental Policy and Law* 27 (5): 401-407, and E.N. Sabourenkov and D.G.M. Miller, "The Management of Transboundary Stocks of Toothfish, *Dissostichus* spp., under the Convention on the Conservation of Antarctic Marine Living Resources" in A.I.L Payne, C.M. O'Brien and S.I. Rogers (eds.), *Management of Shared Fish Stocks.* (Blackwell, Oxford, 2004): 68-94.

39 Derived from E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

40 Table 2 in SC-CAMLR, "*Report of the Twenty-First Meeting of the Scientific Committee for the Conservation of Antarctic Marine Living Resources - SC-CAMLR XXI*". (CCAMLR, Hobart, Australia, 2002), 524 pp. It should also be noted that the statistics compiled by *CCAMLR* on IUU Toothfish catches pool catches of both toothfish species (*Dissostichus eleginoides* and *D. mawsoni*) found in the Convention Area, especially when these are compiled from *CDS* information [see Section 5.(b)].

41 E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

42 M. Lack and G. Sant, "Patagonian Toothfish: Are conservation and trade measures working?" (2001), *TRAFFIC Bulletin*, 19(1): 18 pp; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

exports. Finally, there may be misclassification of other fish species (*i.e.* bass or sea bass) that resemble toothfish or carry similar trade classifications.

The catch figures derived *via* the above procedures are likely to be incomplete as they are heavily dependent on the assumptions underlying the supporting analyses. Consequently, CCAMLR has recognised that estimates of IUU-caught toothfish in the Convention Area are both coarse and probably only represent a crude limit approximation on the potential extent of such catches.[43]

Compared with initial levels, there has been a noticeable decrease in the overall estimated IUU toothfish catch over the past four seasons (Figure 7.4). Although the underlying reasons for this trend are not entirely clear,[44] there is some suggestion that any decrease in the level of IUU catch could be attributed to CCAMLR's introduction of measures to better identify fishing location(s) and to monitor toothfish trade (see below). Thus the combined effects of CCAMLR measures with those of individual states, particularly coastal states, may have worked in concert to deter IUU fishing through increasing costs attached to "doing business" in the face of more effective enforcement action and/or improved intelligence on IUU operations as a whole.[45] In particular, the latter has allowed CCAMLR and its Members to focus better, and more directly, on the most persistent IUU vessels, their flags and their beneficial owners.

Based on CCAMLR's experience, the task of effectively bringing IUU fishing in one area under control has been complicated greatly by the fishery's ability to relocate elsewhere. Translocation is often accompanied by a change of flag, vessel name and/or ownership. The potential for obfuscation is compounded by the eastward progression of IUU fishing from the Atlantic Ocean sector of the Convention Area (CCAMLR Statistical Area 48) into the Indian Ocean (Area 58) since 1996/97. The fishery moved initially from the South African Prince Edward Islands to the French Crozets and Kerguelen Islands, and finally to the Australian Heard and McDonald Islands[46] (Figure 7.3). A similar trend is evident from CCAMLR area estimates of IUU catch over the past six seasons (Figure 7.6). Since about 2000, the IUU fishery has probably penetrated into the higher latitudes of the Indian Ocean, most notably around Ob and Lena Banks (see Figure 7.3), and possibly farther south into Prydz Bay.

**CCAMLR's management of toothfish IUU fishing**

***General***

CCAMLR has long endorsed the notion that IUU fishing compromises sustainability of toothfish stocks in the Convention Area. In turn, this seriously undermines the effectiveness of the organisation's management measures.[47] There is deep concern that continued high levels of IUU fishing would also compromise CCAMLR's long-standing objective to reduce incidental seabird by-catch during longlining operations [Section 5(b)]. In CCAMLR's view, the catching of seabirds by

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43 SC-CAMLR, "*Report of the Eighteenth Meeting of the Scientific Committee for the Conservation of Antarctic Marine Living Resources - SC-CAMLR XVIII*", (CCAMLR, Hobart, Australia, 1999), p. 1-107.

44 D.J. Agnew, *op. cit.* n. 33; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

45 G.P. Kirkwood and D.J. Agnew, *op cit.* n. 38; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

46 D.J. Agnew, *op. cit.* n. 33.

47 CCAMLR, "*Report of the Sixteenth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR XVI*", (CCAMLR, Hobart, Australia, 1997), p. 8-12 and 24-28.

IUU longliners exerts an unacceptable and negative effect on many threatened seabird species of conservation concern.[48]

Let us now look at the tools that CCAMLR has in its armoury, or has employed, to combat toothfish IUU fishing in the Convention Area as a whole.

*System of Inspection*

CCAMLR's progressive development of fishery control measures provided for the collection of standard fisheries data as well as information on fish biology, ecology, demography and productivity. Such information is crucial to monitoring fishing activity and in assessing the status of various stocks.

In 1989, CCAMLR implemented a system of inspection to formalise procedures for the at-sea inspection of Contracting Party vessels fishing in the Convention Area by designated inspectors from CCAMLR Member States. Details of the CCAMLR System of Inspection are provided in the CCAMLR Basic Documents.[49] The System is nationally operated with inspectors being appointed by national authorities that in turn report *via* the Member State concerned to CCAMLR. Inspections may be carried out from vessels of the designating Member, or from on board vessels being inspected.[50] Arrangements for scheduling inspections are a matter between the Flag and Designating State.[51] However, inspectors are permitted to board fishing, or fisheries research, vessels in the Convention Area at will on the proviso that such vessels are flagged to CCAMLR Contracting Parties.[52] The System also provides for reporting sightings of Non Contracting Party (NCP) flagged vessels fishing in the CCAMLR Area. While the total number of at-sea inspections undertaken annually in the CCAMLR Area is relatively small, inspection efforts have tended to concentrate on areas of most intensive fishing activity. The outcomes of such inspections have been comprehensively summarised elsewhere.[53]

*Scheme of International Scientific Observation*

In 1992, the CCAMLR Scheme of International Scientific Observation augmented the System of Inspection.[54] Under this Scheme, observers are taken aboard vessels engaged in fisheries research or

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48 K.-H. Kock, "The direct influence of fishing and fishery-related activities on non-target species in the Southern Ocean with particular emphasis on longline fishing and its impacts on albatrosses and petrels - A review", (2001), *Reviews in Fish Biology and Fisheries*, 11: 31-56; CCAMLR, "*Report of the Twentieth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR XX.”*, (CCAMLR, Hobart, Australia, 2001), p. 1-69.

49 CCAMLR, "System of Inspection", *op. cit.* n. 16, p. 105-112; *CCAMLR Basic Documents*, CCAMLR, *op. cit.* n. 16.

50 Article III of the *CCAMLR* System of Inspection, *op. cit.* n. 49.

51 Article III (c) of the *CCAMLR* System of Inspection, *op. cit.* n. 49.

52 CCAMLR, "*Report of the Fourteenth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR XIV”*, (CCAMLR, Hobart, Australia, 1995), paragraph 7.25, p. 25. This particular paragraph should be read in conjunction with paragraph 7.26 which provides for the addition of a new Article (Article IX) to be added to the System of Inspection to provide a definition of activities assumed to comprise scienific research on, or harvesting of, marine living resources in the *Convention Area*.

53 D.J. Agnew, *op. cit.* n. 33; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

54 See p. 115-119 ("CCAMLR Scheme of International Scientific Observation"), CCAMLR *op. cit.* n. 16.

commercial fishing in the Convention Area. This is arranged bilaterally between the Designating Member (i.e. the Member wishing to place an observer aboard a vessel) and the Receiving Member (i.e. the Flag State of the vessel concerned).[55] The observer's primary task is to collect essential scientific data and to promote the Convention's objectives. To ensure scientific impartiality, observers designated under the Scheme are confined to the nationals of a CCAMLR Member other than the Flag State of the vessel on which the observer serves. A recent requirement has directed observers to provide factual data on sightings of activities by vessels other than those on which they are deployed.[56] Application of the CCAMLR Observation Scheme is mandated for all CCAMLR-sanctioned toothfish fisheries, particularly in areas outside national jurisdiction.

*Management ("Conservation") measures*

As indicated, the initial increase in IUU fishing for toothfish in the Convention Area coincided with the expansion of legitimate fishing activity sanctioned either by CCAMLR or by coastal states in the Indian Ocean. The level of IUU fishing was unprecedented, with more than 40 IUU fishing vessels being sighted within the South African EEZ at the Prince Edward Islands[57] alone during the 1997/98 season. Since then, CCAMLR has been constantly developing and revising its management ("conservation") measures[58] in an effort to eliminate IUU fishing (Box 7.4). Briefly, these measures promote co-operation between CCAMLR Contracting Parties to improve compliance, implement at-sea inspections of Contracting Party vessels, ensure marking of all vessels and fishing gear, and introduce satellite-based vessel monitoring systems (VMS) to verify catch location. Additional measures address mandatory Port State inspections by Contracting Parties of their vessels licensed to fish in the Convention Area and further aim to develop ties with NCPs involved in toothfish fishing or trade. As already highlighted, scientific observers have been tasked with collecting and reporting factual information on fishing vessel sightings. Most recently, CCAMLR has established a vessel database to facilitate information exchange between Members on vessels known to have fished in contravention of the organisation's Conservation Measures These Measures (Conservation Measures 10-06, 10-07 and Resolution 19/XXI) respectively set in place procedures to list Contracting Party and NCP vessels that have engaged in IUU fishing in the CCAMLR Area as well to take measures against vessels flying the flags of states deemed not to be complying with such measures.[59]

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55 Section B of the *CCAMLR* Scheme of International Scientific Observation, *op. cit.* n. 54.

56 CCAMLR, "*Report of the Seventeenth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR XVII*". (CCAMLR, Hobart, Australia, 1998), p. 12-22.

57 D.J. Agnew, *op. cit.* n. 33.

58 CCAMLR ("*Schedule of Conservation Measures in Force, 2003/04*"), *op. cit.* n. 32. *Conservation Measures* are binding on all *Commission Members* (*op. cit.* n. 28). While one body of opinion does not accept that *Conservation Measures* are binding on all *CCAMLR Contracting Parties*, *Convention* Article XXI (1) mandates *each Contracting Party* to take appropriate measures within its competence to ensure compliance with the *Convention's* provisions and with *Conservation Measures* adopted by the Commission to which the *Party* is bound under Articles IX. In contrast to *Conservation Measures*, *CCAMLR Resolutions* are not legally binding. The *Schedule* may be found on the CCAMLR Website: http://www.ccamlr.org/pu/e/pubs/cm.drt.htm.

59 See also E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.; CCAMLR, *op. cit.* n. 32 and 58. It should be noted that, unlike the numbering system for *CCAMLR Conservation Measures* that for *Resolutions* was *not* changed in 2002.

***CCAMLR Toothfish Catch Documentation Scheme (CDS)***

Toothfish IUU fishing not only undermines CCAMLR's Conservation Measures, it also violates the principles of UNFSA Articles addressing Flag State duties (Article 18), the obligations of Non-Members, or Non-Participants, in regional fisheries arrangements (Article 17) and LOSC Articles 116-119. Given its relatively high economic value, the demand for toothfish continues to attract significant prices internationally. As fishable stocks occur both within and outside the CCAMLR Area, IUU-caught fish in the Area have been difficult to trace through the trade cycle. This has resulted in a level of undetermined and non-restricted access to international markets by IUU fishing operators.[60]

In 1998, CCAMLR began developing trade-based measures to monitor landings, and the access to international markets, of toothfish caught in the Convention Area by its Members, as well as in waters under their jurisdiction.[61] At the time, other international initiatives to trace trade in specific fish species had been negotiated, or were being refined. The most prominent of these was the Bluefin Tuna Statistical Document (BTSD) introduced by the International Commission for the Conservation of Atlantic Tuna (ICCAT) in 1992.[62] The BTSD monitors trade in fresh and frozen tuna. A subsequent measure requires that ICCAT Members deny landings in their ports of tuna caught outside ICCAT measures or in the absence of a BTSD.

In contrast to ICCAT-type systems, CCAMLR toothfish trade-related measures introduce a number of new and important elements. Agnew[63] has considered CCAMLR's development of the CDS in some detail. He, and others,[64] stress that the design, adoption and implementation of the Scheme by far constitutes CCAMLR's most significant attempt to combat IUU fishing in the Convention Area.

While a number of unique principles underpin the CDS (Box 7.5), it must be stressed that the CDS was never seen as a stand-alone measure but rather as an integral component in a suite of CCAMLR measures to combat IUU fishing. Thus, its two main objectives are best summarised as:

- To track global landings of, and trade in, toothfish caught both within and outside the Convention Area, and

- To restrict access to international markets for toothfish from IUU fishing in the Convention Area.

As a CCAMLR Conservation Measure, the CDS tracks toothfish landings and requires both identification and verification of catch origin. This enables CCAMLR, through either landing or transhipment records, to identify the origin of toothfish entering the markets of all CDS Parties. It also facilitates determination of whether toothfish in the Convention Area have been caught in a manner consistent with CCAMLR Conservation Measures.

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60 D.J. Agnew, *op. cit.* n. 33; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

61 D.J. Agnew, *op. cit.* n. 33; J. A. Green and D.J. Agnew, *op. cit.* n. 38.

62 ICCAT, "Recommendations Adopted by the Commission at its Eighth Meeting -Report for Biennial Period, 1992-1993, Part 1", (ICCAT, Madrid, Spain, 1993). Resolutions 92-1 and 92-3.

63 D.J. Agnew, *op. cit.* n. 33.

64 E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

With the CDS' entry into force on 7 May 2000, CCAMLR was able to implement a comparatively robust mechanism to collect toothfish data from areas both within, and adjacent to, the Convention Area. Such data are vital for estimating "total" toothfish removals; a key input parameter to improve stock assessment and provide clearer insights into global catch levels and associated market forces.[65]

***Other considerations***

The various measures outlined in Section 5(a)(iii) are fully consistent with the provisions of LOSC[66] Articles 116 to 119, UNFSA[67] Articles 21 to 23 and Articles III to VIII of the Compliance Agreement.[68] In reaction to UNFSA Articles 8 (particularly paragraphs 3 and 4) and 17, CCAMLR encourages its Members to accept and promote the entry into force of UNFSA[69] as well as the Compliance Agreement. Acceptance of the FAO Code of Conduct[70] has also been encouraged. Furthermore, CCAMLR has frequently acknowledged that both the UNFSA's and the Compliance Agreement's recent entries into force are likely to contribute significantly to the reduction, and ultimately elimination, of IUU fishing in the Convention Area.[71]

Many CCAMLR Members actively contribute to the FAO's work in implementing the above agreements. Most notably, both CCAMLR and its Members promoted development of the 1999 FAO International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries[72] and the IPOA-IUU.[73] CCAMLR participates as an institutional observer at the biennial meetings of COFI and its attached sub-committees.

Institutionally, CCAMLR also co-operates with various other regional fisheries organisations, especially those managing fisheries in waters adjacent to the Convention Area (*e.g.* ICCAT, the Indian Ocean Tuna Commission [IOTC], the Commission for the Conservation of Southern Bluefin Tuna [CCSBT] and the recently formed South East Atlantic Fisheries Commission).[74] This includes, *inter alia,* the exchange of information on IUU fishing on the high seas and efforts to combat such fishing.

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65 E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

66 LOSC, *op. cit.* n. 4.

67 UNFSA, *op. cit.* n. 8.

68 Compliance Agreement, *op. cit.* n. 8.

69 *UNFSA* entered into force when the necessary 30 ratifications had been deposited (*op. cit.* n. 10). CCAMLR, *op.cit.* n. 47.

70 FAO Code of Conduct, *op. cit.* n. 8 and 11; CCAMLR, *op. cit.* n. 47.

71 CCAMLR, *op. cit.* n. 47.

72 FAO, *International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries*. (Food and Agriculture Organization of the United Nations, Rome, 1999), 26 pp.

73 IPOA-IUU, *op. cit.* n. 19.

74 The annual *CCAMLR* meeting considers its co-operation with other international organisations as a standing agenda item. It also considers such co-operation under other agenda items where appropriate, including during various discussions by the *Commission's* subsidiary bodies, particularly the *Scientific Committee*.

**CCAMLR and the IPOA-IUU**

The IPOA-IUU's major purpose is to provide a comprehensive and integrated global approach to combat IUU fishing through prevention, deterrence and elimination.[75] In so doing, the IPOA-IUU strives to address various key principles and strategies (Box 7.6).

The various steps already, or to be, taken by CCAMLR to address IUU fishing for toothfish (previous section entitled CCAMLR's management of toothfish IUU fishing) are assessible in the context of the following statement:[76]

- Providing all CCAMLR Contracting Parties with comprehensive, effective and transparent measures to combat IUU fishing within the Convention Area and for fish stocks for which CCAMLR is responsible.

Pursuant to the IPOA-IUU's general principles shown in Box 7.6, as well as the more practical steps outlined in the IUU Implementation Plan,[77] CCAMLR has already implemented most of the Plan's necessary steps through its various Conservation Measures. From available information, it is clear that CCAMLR has developed a cohesive framework of measures to combat IUU toothfish fishing that is fully compatible with international "best practice" as identified by the IPOA-IUU.[78] To illustrate the point, it is worth working through an example.

The IPOA-IUU Implementation Plan prescribes 14 items to deal with - "Actions to Prevent, Deter and Eliminate IUU Fishing". All 14 have been directly addressed by CCAMLR. For example a suite of CCAMLR measures have focused on developing, implementing and maintaining records of vessels fishing in the Convention Area. These are clearly subject to Convention Articles XX and XXI[79] and provide specifically for the marking of vessels in the Convention Area (CCAMLR Conservation Measure 10-01), a requirement to license fishing vessels (Conservation Measure 10-02), the promotion of compliance with measures by Contracting Party vessels (Conservation Measure 10-06), the promotion of compliance with measures by NCP vessels (Conservation Measure 10-07) and the taking of measures in relation to flags of non-compliance (Resolution 19/XXI). Space does not permit the inclusion here of similar details for other CCAMLR measures consistent with the activity categories addressed by the Implementation Plan. However, based on information presented elsewhere,[80] these measures are equally comprehensive and substantive.

However, a possible CCAMLR failing has been that its measures to combat IUU fishing have evolved piecemeal and consequently have not necessarily been developed according to any plan or determined timetable. This shortcoming has been recognised by the Commission, which has recently

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75 See paragraphs 8 and 9 of the *IPOA-IUU*, *op. cit.* n. 19.

76 D.G.M. Miller, E. Sabourenkov and N. Slicer, "Unregulated Fishing and the Toothfish Experience" in D. Vidas (ed.), *Antarctica 2000 and Beyond.* (Kluwer, In Press).

77 IPOA-IUU, *op. cit.* n. 15.

78 D.G.M. Miller, E. Sabourenkov and N. Slicer, *op. cit.* n. 76.

79 CCAMLR, *op. cit.* n. 16.

80 D.G.M. Miller, E. Sabourenkov and N. Slicer, *op. cit.* n. 76.

initiated development of an organisational IUU implementation plan[81] within the prescriptions of the IPOA-IUU Implementation Plan.[82]

**Some ancillary thoughts**

When illustrating CCAMLR's effectiveness in combating IUU fishing in the Convention Area, it is necessary to highlight a few additional considerations. These relate as much to the organisation's successes as they do to its shortcomings.

***International***

CCAMLR Article IV specifically binds its Parties to the sovereignty provisions of Antarctic Treaty Articles IV and VI. There is an added complication, however. By including all waters south of the APF, CCAMLR raises sovereignty issues that cannot be dealt with directly by the Treaty. As a result, a special statement made by the Chairman of the Conference on the Conservation of Antarctic Marine Living Resources was attached to the Convention.[83] This sets out the conditions for the Convention's application in waters adjacent to any land (*i.e.* islands) where existence of sovereignty is recognised by all CCAMLR Contracting Parties.

The above arrangement provides for coastal state enforcement within national waters inside the Convention Area in conformity with CCAMLR's needs. On balance, this has been the case[84] with most affected CCAMLR Members having endeavoured to ensure harmonisation between national and CCAMLR measures. In this context, it is interesting to note that no CCAMLR Member has ever voiced a reservation under the Chairman's Statement to significant measures aimed at combating IUU fishing.[85] These include Conservation Measures 10-04 [mandating deployment of Vessel monitoring systems (VMS), 10-05 (the CDS), 10-06 (promoting compliance by Contracting Party vessels) and 10-07 (promoting compliance by NCP vessels)].

By implication, therefore, it could be argued that the CCAMLR Members most likely to be affected by application of the Chairman's Statement view IUU fishing not only as a CCAMLR issue, but also as a priority concern for coastal states with sovereign waters in the Convention Area. With the exception of South Africa (largely for technical reasons associated with a lack of enforcement capability[86]), the depth of this concern has been visibly manifest for the CCAMLR coastal states most affected. France and Australia, in particular, have devoted considerable time, effort and money to protect their waters from IUU activities. Despite their efforts, IUU fishing has impacted toothfish

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81 CCAMLR, "*Report of the Twenty-First Meeting of the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR XXI*", (CCAMLR, Hobart, Australia, 2002), paragraph 8.15, p. 32.

82 See particularly paragraphs 80-82 in FAO, *op. cit.* n. 15, p. 101-102.

83 CCAMLR, *op. cit.* n. 16.

84 D.G. M. Miller, "The International Framework for the Management of Fishing in the Southern Ocean". *Paper Presented at the Outlook 2004 Conference*, (ABARE, Canberra, Australia – 2-3 March 2004)

85 D.G. M. Miller, *op. cit.* n. 84.

86 A.D. Brandao, A., D.S. Butterworth, B.P. Watkins and D.G.M. Miller, "A first attempt at an assessment of the Patagonian Toothfish (*Dissostichus eleginoides*) resource in the Prince Edward Islands EEZ". (2004), *CCAMLR Science*. 9: 11-32.

stocks in the Indian Ocean,[87] most notably around the Prince Edward Islands, where the future sustainability of D. eleginoides has been seriously compromised.[88]

An ancillary consideration is the extent to which the Convention's provisions (particularly Conservation Measures) can be effectively applied on the high seas within the CCAMLR Area.[89] The situation is exacerbated by the Area's geographic extent (*ca.* 35 x $10^6$ sq. km) and by the remoteness of many fishing grounds.[90] This tends to favour fishing outside CCAMLR's regulatory control, particularly by vessels flying the flags of CCAMLR NCPs.[91] While the list of specific Conservation Measures dealing with CCAMLR NCPs systematically grows, there is still a need to balance the implied regulatory provisions of such Measures with the rights of *all* States (CCAMLR Contracting and NCPs alike) to fish the high seas under LOSC Article 116.[92]

However, it needs to be recognised that when LOSC Article 116 is read in conjunction with Articles 117 to 119,[93] there is a clear obligation on *all* states to co-operate in the conservation and management of marine living resources on the high seas and to take appropriate measures to ensure that this occurs. Together with the FAO Compliance Agreement[94] and UNFSA Articles 8, 19 to 23,[95] these general provisions obligate states fishing on the high seas in the CCAMLR Convention Area to do so in cognisance of measures aimed at ensuring stock sustainability and in a manner not discharging them from co-operating with CCAMLR in the conservation and management of relevant fisheries resources.

Despite these positive associations and inferences, there is still scope to explore how effectively LOSC provisions, and especially those of UNFSA, can be aligned with CCAMLR's efforts to combat toothfish IUU fishing[96] in the Convention Area and closely adjacent areas. The development of a

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87 See discussion in paragraph 5.4 of CCAMLR, "*Report of the Eighteenth Meeting of the Commission for the Conservation of Antarctic Marine Living Resources - CCAMLR XVIII*", (CCAMLR, Hobart, Australia, 1999). This states - "The Scientific Committee drew the attention of the Commission to the potential similarities between the implications for future sustainability of *Dissostichus* spp. stocks as a consequence of *IUU* fishing and the collapse of *Notothenia rossii* stocks due to overfishing in the late 1970s".

88 A.D. Brandao, A., D.S. Butterworth, B.P. Watkins and D.G.M. Miller, *op cit.* n. 86.

89 See C.C. Joyner, "The Antarctic Treaty System and the Law of the Sea: Competing regimes in the Southern Ocean" (1995), *International Journal of Marine and Coastal Law,* 10(2):301-331 and M. Levy "The enforcement of Antarctic marine living resources claims" (1997), *Duke Development Clinic/Adcock.* 155 pp.

90 G. P. Kirkwood and D. J. Agnew *op. cit.* n. 38

91 D. J. Agnew *op. cit.* n. 33

92 LOSC, *op. cit.* n. 4.

93 LOSC, *op. cit.* n. 4.

94 FAO, *op. cit.* n. 9.

95 UNFSA, *op. cit.* n. 10.

96 K. Dodds, *op. cit.* n. 38.

CCAMLR institutional plan to provide regional focus for the IPOA-IUU[97] is obviously a step in the right direction to address this particular problem.[98]

***The toothfish saga revisited***

Like whaling, finfish fishing in the Southern Ocean has been characterised by "boom and bust" cycles,[99] with successive discovery, exploitation and depletion of each new target stock taking place over progressively shorter time scales. In this context, we have seen that the cumulative value (Figure 7.5) of the IUU fishery for toothfish in the CCAMLR Area over the past eight years is close to that for the legitimate fishery. Figure 7.5 also illustrates that the profits enjoyed by IUU operators were nearly twice those of the legitimate fishery until about 1998/99, when a drop-off in IUU catches is observable. While considerable uncertainties are associated with estimating early IUU-catch levels,[100] Kirkwood and Agnew[101] suggest that a decline in IUU operations in 1998/99 may have occurred as a result of the CDS negotiations nearing finality. It is therefore difficult to say whether the observed reduction in IUU activities resulted from operators reducing fishing or whether they made efforts to legitimise their operations. Equally, stocks may have become so depleted as to defy profitable exploitation, even for IUU operators.

In contrast to its more modest success in combating the IUU problem directly, CCAMLR has had considerable success (Figure 7.7) in reducing bird mortality associated with toothfish longlining in the Convention Area through promulgation of measures specifically aimed at minimising incidental by-catch.[102] However, the take of seabirds by the IUU fishery in the CCAMLR Area and by longline vessels fishing on the feeding grounds of particular bird species farther north still raises considerable cause for concern[103] and is likely to be unsustainable for most of the species affected[104] despite CCAMLR's efforts to the contrary.

***The CDS***

Initial evaluation of the CDS is encouraging.[105] Not only is the Scheme unique in its scope and application, but it also became fully operational relatively quickly (within less than two years). It has also drawn in a number of CCAMLR NCPs and its overall coverage extends to more than 90% of the global world trade in toothfish (Figure 7.8).

The advent of the CDS has led to the Scheme's Parties denying toothfish landings and/or shipments in the absence of the required documents. The absence of such documentation provides a

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97 See FAO, *op. cit.* n. 15 and the preceding section.

98 See Paragraph 8.15 in CCAMLR, "*Report of the Twenty-First Meeting of the Commission for the Conservation of Antarctic Marine Living Resources – CCAMLR-XXI*", (CCAMLR, Hobart, Australia, 2002), 205 pp.

99 K.-H. Kock, *op. cit* n. 23.

100 E. N. Sabourenkov and D. G. M. Miller, *op. cit.* n. 38.

101 G.P. Kirkwood and D.J. Agnew, *op. cit.* n. 38.

102 K.-H. Kock, *op. cit.* n. 48; IFF, "Second International Fishers Forum" (2002), *SPC Fisheries Newsletter,* No. 103: 32 pp.; D.G. Miller *et al. op. cit.* n. 76;

103 K.-H. Kock, *op. cit.* n. 48

104 *Conservation Measure* 25-02 in CCAMLR, *op. cit.* n. 32 and 98.

105 E.N. Sabourenkov and D. G. M. Miller, *op. cit.* n. 38.

rebuttable presumption that triggers enforcement action. It has also improved appreciation of toothfish global catch levels and focused on incidents of malpractice or fraud. With evidence that the introduction of the CDS has made trading in IUU-caught fish less profitable, it is notable that the Scheme also seems to restrict unfettered market access to IUU-caught products.[106] While some of the improvements to the CDS suggested by Sabourenkov and Miller[107] are likely to make it even more effective in combating IUU fishing in the Convention Area, it is still worth asking:

"What would the consequences have been in the absence of the CDS?"

Based on current levels of IUU fishing for toothfish in the CCAMLR and closely adjacent areas, the answer appears obvious – the situation would have been much worse, because the CDS has had a noticeable impact on accessibility to global markets (particularly in the United States and Japan) thereby deterring IUU operators.[108] A key illustration of such deterrence is the fact that IUU-caught fish fetch a significantly lower price (±20%) than fish with attached CDS accreditation.[109]

With the CDS as a significant step, CCAMLR is able to promote multilateral co-operation to combat toothfish IUU fishing. In contrast to other CCAMLR Conservation Measures that are limited to the Convention Area and to CCAMLR Members, the CDS is applicable globally. Furthermore, its implementation remains consistent with many of the provisions of UNFSA Articles 7, 8 and 17.[110] As the CDS is generally aimed at minimising any national bias,[111] there is every expectation that its effectiveness will benefit from enhanced international co-operation. In this respect, and following a 2002 proposal to list toothfish under Appendix II of the Convention on Trade of Endangered Species (CITES), the recent decisions by both CCAMLR and the Twelfth Conference of CITES Parties (COP-12)[112] to improve co-operation and the exchange of information between the two organisations is a gratifying development. It should also broaden the CDS' application globally. As highlighted by Miller *et al*.,[113] this should serve to reduce possible World Trade Organization (WTO) scrutiny arising from the perception that relatively few parties participate in the Scheme. Consequently, the CDS would better qualify as a "multilateral solution based on international co-operation and consensus" aimed at combating a transboundary environmental problem, or one of a global nature – a status favoured by the WTO's Committee on Trade and Environment (CTE).

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106 G. P. Kirkwood and D. J. Agnew, *op. cit.* n. 38.

107 E.N. Sabourenkov and D. G. M. Miller, *op. cit.* n. 38.

108 E.N. Sabourenkov and D. G. M. Miller, *op. cit.* n. 38.

109 E.N. Sabourenkov and D. G. M. Miller, *op. cit.* n. 38.

110 UNFSA, *op. cit.* n. 10.

111 K. Larson, "Fishing for a compatible solution: Toothfish conservation and the World Trade Organization" (2000), *The Enivronmental Lawyer,* 7(3): 123-158.

112 Need for co-operation between *CCAMLR* and *CITES* was addressed in paras 10.72 to 10.75 of CCAMLR, *op. cit.* n. 98 and by *CITES COP-12* Conference Resolution 12.4 and Decisions 12.57 to 12.59 CITES, "*Report of the Twelfth Conference of Parties*", (CITES, Geneva), Website: http://www.cites.org.

113 D. G. M. Miller, E. N. Sabourenkov and D. Ramm, "*CCAMLR's* approach to managing Antarctic Marine Living Resources, (In Press), *Deep Sea 2003 Conference Proceedings.* (Food and Agriculture Organization of the United Nations, Rome).

Finally, it is notable that Article 30 of the Vienna Convention on the Law of Treaties[114] addresses the application of successive treaties relating to the same, or similar, subject matter. In these terms the competency of relevant international law arrangements such as LOSC, UNFSA and CCAMLR need to be carefully considered in relation to the potential, and added, involvement of such instruments as CITES in their day-to-day affairs. Every effort needs to be made to ensure that essential provisions/competencies are not undermined or overridden. This clearly implies that initiatives to harmonise the application of more than one international instrument (say in response to IUU fishing) must not violate the rights, obligations and duties of any Party under any other instrument to which it is specifically contracted.

***National enforcement***

Apart from the CDS, it is probably true to say that deterrence of toothfish IUU fishing in the Convention Area has been most effectively addressed by coastal state action rather than by the direct application of specific CCAMLR Conservation Measures alone.[115] There appear to be two primary reasons for this. First, the levels of punitive fines imposed (in some cases in excess of USD 1 million) for IUU fishing within sovereign waters inside the CCAMLR Area (combined with the seizure of vessels, and/or catch and increased risk of apprehension) by coastal states have undoubtedly contributed to enhancing deterrence. A clear example of this is the recent ruling by the International Tribunal for the Law of the Sea (ITLOS)[116] on Australia's prosecution of the Russian flagged Volga for fishing in its FZ around Heard and McDonald Islands[117] (Table 7.1). Second, combined with recent strong statements by the Australian government on deployment of armed patrols, enhanced co-operation between Australia, South Africa and France, and the building of specially-designated patrol vessels by both South Africa and Australia, there appears to be growing political will to combat IUU fishing in the CCAMLR Area. Such developments are clearly evident in a number of recent, and successful, prosecutions of IUU fishing vessels in the CCAMLR Area, particularly by coastal states in the Indian Ocean (Table 7.1).

The comparability or equivalence of imposed sanctions[118] is another issue closely linked to effective deterrence. This is a complex matter that depends on factors such as the equivalence of judicial, or regulatory, procedures between states as well as currency exchange conversion rates. In its broadest interpretation, Article XI of the CAMLR Convention may be seen as implying that any harmonisation of conservation measures for species occurring in both the Convention Area and in adjacent areas under national jurisdiction could also include consideration of equivalence in the imposition of sanctions. However, CCAMLR has never specifically discussed the matter and there may be some merit in pursuing a similar course of action to that outlined in Article 8.4.(b) of the Southern African Development Community (SADC) Protocol on Fisheries where SADC Parties are urged to co-operate in:

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114 Vienna Convention on the Law of Treaties, (1969). Website: http://www.un.org/law/ilc/texts/treaties.

115 G. P. Kirkwood and D. J. Agnew, *op. cit.* n. 38.

116 *ITLOS* ruled on 23 December 2002 that Australia should release the *Lena* on the posting of a bond of AUD 1 920 000. For details, see Website - http://www.itlos.org.

117 G. P. Kirkwood and D. J. Agnew, *op. cit.* n. 38.

118 C.C. Joyner, "Compliance and enforcement in new fisheries law" (1998), *Temple International and Comparative Law Journal* 10(2): 301-331.

"Establishing region-wide comparable levels of penalties imposed for illegal fishing by non-SADC vessels and with respect to illegal fishing by SADC vessels in the waters of other State Parties".[119]

It is not difficult to envisage the potential benefits of such an approach being applied consistently by CCAMLR Contracting Parties.

From this discussion, it should be clear that any significant reduction in (*i.e.* deterrence of) IUU fishing is the key to assessing the effectiveness of any attached enforcement action.[120] Clearly, the absence of severe penalties, combined with limited enforcement (for whatever reason) only serves to enhance the lucrative rewards of IUU fishing with profits outweighing penalties. Fishing thus becomes more cost-effective.[121] It follows, therefore, that effective enforcement action must take account of where, and by whom, IUU fishing benefits are being enjoyed. However, as highlighted by Rayfuse,[122] certain potential shortcomings inherent in flag state enforcement need to be effectively addressed as a first step, particularly the use of "flags of convenience".[123] Inadequate flag state enforcement is compounded by the apparent unwillingness, or inability, of many national authorities to focus enforcement action on individuals (*i.e.* nationals) or companies[124] that benefit from the proceeds of IUU fishing. Such considerations become even more important in the face of general reluctance to extend state jurisdiction through additional application of coastal state rights to the high seas.[125] Given that RFMOs like CCAMLR are generally recognised as being responsible for fisheries governance at a regional level, then establishing specific multilateral arrangements to boost enforcement certainly appears worthy of consideration, This would have implications not only for the daily business of RFMOs, but also for exploring the application of non-flag state enforcement powers in the event that the primacy of flag state responsibilities are not being fulfilled.

While it may be argued that references to "nationals" in the LOSC[126] are perfunctory rather than obligatory, there is growing appreciation that some control is necessary over natural and legal persons to facilitate fulfilment by states of their obligations to co-operate in taking the necessary measures for the conservation of high seas living resources. Clear evidence of this intent can be found in LOSC Articles 117-118, UNFSA Article 10.(l)[127] and in various initiatives by states to exert direct control

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119 SADC Fisheries Protocol, Website: http://www.sadc.int/english/protocol.

120 G. P. Kirkwood and D. J. Agnew, *op. cit.* n. 38.

121 M. Levy, *op. cit.* n. 89.

122 R. Rayfuse, "Enforcement of high seas fisheries agreements: Observation and inspection under the Convention on the Conservation of Antarctic Marine Living Resources" (1998), *International Journal of Marine and Coastal Law* 13(4): 579-605.

123 B. Vukas and D. Vidas, "Flags of Convenience and High Seas Fishing: The Emergence of a Legal Framework", in O.S. Stokke (ed.), *Governing High Seas Fisheries: The Interplay of Regional Regimes.* (Oxford University Press, Oxford, 2001). 53-90.

124 D. G. M. Miller, E. N. Sabourenkov and D. Ramm, *op. cit.* n. 113.

125 G. P. Kirkwood and D. J. Agnew, *op. cit.* n. 38.

126 Various *LOSC* Articles make reference to the obligations of "nationals" to comply with, or co-operate in, the implementation of conservation measures governing marine living resource utilisation. The most prescriptive of these include Articles 62.(4) and 117. LOSC, *op. cit.* n. 3.

127 See *UNFSA* Article 11.(l) which states - "ensure the full cooperation of their relevant national agencies and industries on implementing the recommendations and decisions of the organization of arrangement". UNFSA, *op. cit.* n. 10.

over the activities of their nationals to enhance compliance with third party and international fisheries management measures.[128]

Bearing these considerations in mind, there is little doubt that control of "nationals" is a question worth exploring in any agenda or global effort to combat IUU fishing. Furthermore, and following 11 September 2001, globally heightened sensitivity to transnational crime provides an opportunity to address contrary behaviour by natural persons in the international arena. In these terms, the environmentally, as well as economically, damaging practice of IUU fishing is likely to be viewed as contrary behaviour, even if the generally perceived criminal intent is often seen as relatively minor compared with other criminal acts.

**Discussion**

***General***

Apart from the CAMLR Convention, other international agreements outside the Antarctic Treaty System are relevant to the ongoing, and environmentally sustainable, management of Antarctic marine living resources. The most recent and noticable of these is the 1992 Convention on Biological Diversity (CBD).[129] With its attached 1994 Jakarta Mandate, the CBD may be linked to relevant marine management institutions. However, the details of its potential interactions with CCAMLR in particular, remain unclear.

Probably more relevant, Article XIII of the recent Agreement on the Conservation of Albatrosses and Petrels[130] explicitly references the rights and obligations of its Parties under the CAMLR Convention. This clearly, and directly, links the common subject matter of the two agreements insofar that the species subject to the former are also directly of concern to the latter (particularly in terms of their incidental mortality in the toothfish longline fishery).

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128 Various States have introduced regulatory provisions to ensure that their nationals comply with international conservation and management measures inside or outside national waters. Notable examples include Australia under the *Fisheries Management Act, 1991* (Act No. 162 of 1991); New Zealand subject to Part 6A of the *New Zealand Fisheries Act, 1996*; Norway in application of *Article 6* of the *Regulations Relating to Fishing and Hunting Operations by Foreign Nationals in the Economic Zone of Norway, 1977*; South Africa in application of the *Marine Living Resources Act, 1998* (Act. No. 18 of 1988 - *South Government Gazette Notice No. 189630 of 27 May 1998*) and Spain under *Directive 1134/2001 of 31 October 2002*. A recent and interesting development has been the indictment by United States authorities of a number of South African citizens and joint South African-United States nationals under the United States *Lacey Act* on 21 counts for various offences, including alleged illegal harvesting of South Coast Rock Lobster and Patagonian Toothfish, in defiance of South African statutes and *CCAMLR Conservation Measures*. See "*Conspiracy to Violate the Lacey Act and to Commit Smuggling*" (2003), United States District Court, Southern District of New York. *Indictment S1 03 Crim. 308 (LAK)*: 36 pp. The principals charged in this case have recently pleaded guilty and stand to forfeit at least USD 5 million worth of assets.

129 CBD, "Convention on Biodiversity, 1992", Website: http://www.biodiv.org/default.aspx. The *Convention* aims to develop and implement strategies for the sustainable use, and protection, of biodiversity. The *Jakarta Mandate* specifically applies this objective to marine and coastal biodiversity. Article 22 of the *Convention* makes general reference to, and recognises, "rights and obligations" under other international agreements. The *CBD* entered into force on 29 December 1993.

130 "Agreement on the Conservation of Albatrosses and Petrels, 2001". The *Agreement* entered into force on 1st February 2004, Website: http://www.aad.gov.au/default.asp?casid=13504.

On a different matter, it is premature to assess the extent to which, in combination with other related CCAMLR measures, the CDS - *a)* will prove indispensable in the battle against toothfish IUU fishing, or whether *b)* it is particularly effective in managing the exploitation of transboundary stocks within, and outside, the Convention Area. For this to be so, all international toothfish trade should be limited only to fish taken legally, or in a regulated manner compatible with CCAMLR's approach. Consequently, IUU-taken fish should not enter world markets. This is something with which the CDS has had considerable circumstantial success, but which remains to be universally realised.[131] In these terms, the question arises of how effectively RFMOs like CCAMLR uphold the long-held legal precedent of 'flag state control'. As the issue presents itself, it provides motivation to consider how such control could be enhanced by utilising more widely focused and/or trade-based agreements, such as CITES, and associated measures under the WTO. Given the interesting ancillary questions proposed, and as already highlighted, the issue is unlikely to be easily, or quickly, resolved. A key consideration remains the definition of boundaries between organisational competencies in terms of designating common standards across organisations addressing similar matters but subject to different international arrangements.

Equally, CCAMLR should continue to expand the role of 'Port' and 'Market' States to discourage IUU-caught toothfish trade. Without diminishing flag state responsibilities, CCAMLR's recent efforts have brought into focus the need for NCPs to take more responsibility for discouraging the trade of toothfish caught in a manner that undermines CCAMLR Conservation Measures. The question of NCP co-operation remains at the heart of improving CCAMLR's ability to combat IUU fishing. To be effective, such co-operation needs to be fully consistent with the obligations set out in UNFSA Articles 20, 21 and 23.

Any trade-based regime like the CDS should remain dynamic, so that it can respond appropriately to changing circumstances. Thus, the CDS must undergo periodic and regular review. Consequently, every effort should be applied to the comparable tightening of associated measures to ensure the successful realisation of CCAMLR's overall objectives in, and approach to, combating IUU fishing.[132] Not only should such review be transparent, it is essential that worthwhile incentives are provided to economically-disempowered developing states, where these may perceive greater economic benefits from being linked to IUU operations, either as flags, or ports, of convenience. In particular, there is a need for future, and further, consideration of the attendant economic insecurities experienced by some developing countries (such as Kenya, Mozambique and Mauritius[133]) that have become involved in the trade of IUU-caught toothfish. Therefore, any effort to improve the application of relevant LOSC Article 140 and UNFSA Articles 24-26 should be boosted, with the particular aim of providing these countries with alternative incentives to counteract the economic benefits accrued from IUU fishing and to enhance their commitment to responsible fishing practices.

While there is little doubt that the CDS is a vital component in CCAMLR's "toolbox" of regulatory measures, it cannot be implemented and evaluated in isolation.[134] This is clearly recognised by CCAMLR through its development of a wide variety of Conservation Measures (*e.g.* Measures 10-

131 Larson, *op. cit.* n. 111; G. P. Kirkwood and D. J. Agnew, *op. cit.* n. 38.

132 M. Lack and G. Sant, *op. cit.* n. 42.

133 G. Mills, "Insecurity and the Developing World", in G. Mills (ed.), *Maritime Policy for Developing Nations.* (SAIIA, Johannesburg, 1995), pp. 12-37.

134 D. G. M. Miller, E. N. Sabourenkov and D. Ramm, *op. cit.* n. 113.

02, 10-03, 10-04, 10-06, 10-07) and Resolutions (14/XIX, 15/XXIII, 16/XIX and 17/XX) augmenting the CDS's application and efficacy.[135]

It is noticeable that, in keeping with the Antarctic Treaty's key provisions, international co-operation has been carried over to the CAMLR Convention.[136] In practice, CCAMLR has done much to advance co-operation, again in the form of the CDS and its growing involvement with various organs of the FAO. Furthermore, various CCAMLR Conservation Measures are dependent on institutionalising international co-operation at a global level[137] to combat IUU fishing in the Convention Area. Therefore, with UNFSA's recent entry into force,[138] there is every expectation that CCAMLR will benefit from enhanced international co-operation and that its capacity to meet the Convention's objectives will be improved.[139]

CCAMLR has frequently acknowledged that both UNFSA and the FAO Compliance Agreement[140] are likely to contribute significantly to the Commission's work in general and to reducing, and hopefully eliminating, IUU fishing in the Convention Area in particular.[141] Again involvement of both CCAMLR and its Members in the FAO's work is important and should be encouraged.

To summarise, and as matters now stand, in common with many other fisheries-related instruments, the effective application of the CAMLR Convention on the high seas (*i.e.* outside national territorial jurisdiction) is confounded by insufficient flag state control (UNFSA Articles 18 and 19)[142] over IUU vessels. The situation is further compounded by the deliberate use of flags of convenience to circumvent fisheries management measures.[143]

***Conclusions***

With the exception of the CDS, we have seen that the enforcement of CCAMLR Toothfish Conservation Measures has generally met with limited success outside areas where national jurisdiction is vigorously applied. Consequently, much still needs to be done to ensure compatibility

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135 CCAMLR, *op. cit.* n. 32.

136 Article XXII of the *CAMLR Convention* (CCAMLR, *op. cit.* n. 16) strives to build co-operative relationships between *CCAMLR* and relevant inter-governmental and non-governmental organisations. Article XXIII specifically mandates co-operation with other elements of the *Antarctic Treaty System* and the Scientific Committee for Antarctic Research (*SCAR*). F.O. Vicuna, "Antarctic conflict and international cooperation," in *Antarctic Treaty System: An Assessment*. (Polar Research Board, National Academy of Press, Washington, 1986). 55-64.

137 G. Lutgen, "A review of measures taken by Regional Fishery Bodies to address contemporary issues" (1999), *FAO Fisheries Circular* 940: 97 pp; G. Lutgen, "Cooperation and regional fisheries management" (2000), *Environmental Policy and Law* 30/5: 251-257.

138 *UNFSA* Part III (Articles 8 to 16) (UNFSA, *op. cit.* n. 10) outlines various mechanisms for international co-operation in the management of the resources concerned. These complement similar sentiments implicit in *LOSC* Articles 61, 63, 64 and 117-119 (LOSC *op. cit.* n. 4).

139 K. Dodds, *op. cit.* n. 38.

140 FAO, *op. cit.* n. 9.

141 For example see Paragraphs 5.11 and 5.32 in CCAMLR *op. cit*. n. 47.

142 R. Rayfuse, *op. cit.* n. 122.

143 B. Vukas and D. Vidas, *op. cit.* n. 123.

between various relevant legal instruments in order to provide for more effective management of Antarctic marine living resources in the broadest sense. Obvious topics for consideration include:

- Improving the enforcement of regulatory measures to protect the environment in which Antarctic marine living resources are found (*i.e.* facilitate effective implementation of the CAMLR Convention Article II elements in particular).

- Developing legal mechanisms to ensure compatibility between national and international instruments applicable to Antarctic marine living resources issues *(e.g.* sovereignty/jurisdictional disputes must be resolved to minimise potential political, legal and administrative conflicts). Steps should also be taken to harmonise the application of regulatory measures in areas under national jurisdiction and on the high seas.

- Improving co-operation on issues related to enforcement and the sanction of perceived transgressions. This implies a need to reinforce international co-operation and information exchange to promote responsible fishing activity. Instruments such as the FAO Code of Conduct and the Compliance Agreement[144] go some way to formalising these responsibilities. Implementation of the FAO IPOA-IUU should be particularly encouraged, and it appears worthwhile exploring how the provisions of instruments like CITES and the CBD may be used to augment current CCAMLR management initiatives such as the CDS.

- Giving additional, and serious, consideration to the role of NCPs in RFMO arrangements. In this regard the CDS is an especially welcome initiative, as is the UNFSA's entry into force (especially the provisions of Article 17 which do not discharge non-RFMO participants from their obligations to co-operate in the conservation and management of relevant straddling fish stocks and highly migratory fish stocks).

- Elaborating operational definitions, and practical application, of certain key LOSC provisions. Particular attention should be given to further developing co-operative management and conservation regimes on the high seas in accordance with LOSC Article 116-119 and to improving flag state controls through the establishment of genuine links between fishing vessels and their flags.[145] The responsibilities/obligations of nationals may be best suited for examination in this light.

Taken together, the above considerations imply a need for a robust, and collective, political will aimed at promoting:[146]

- A steadfast commitment to combating IUU fishing;

- International engagement to take strong action in all relevant forums;

- Continued strengthening and testing of international law;

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144 FAO, *op. cit.* n. 11 and 9.

145 B. Vukas and D. Vidas, *op. cit.* n. 123.

146 From Senator the Hon. Ian Macdonald (Australian Minister for Fisheries, Forestry and Conservation), "Statement to the Australian Press Club", (Canberra, 19 August 2003). Website:

http://www.affa.gov.au/ministers/macdonald/speeches/2003/pressclubfishing.html.

- Building co-operative alliances between “like-minded” countries; and

- Maintaining effective on-the-water patrols.

Mills[147] has emphasised that the co-operative elements of “political will” are the key to promoting economically fair and sustainable use of any resource, insofar as they reduce regional economic insecurity arising from irresponsible fishing practices.[148] In Freestone’s words,[149] the CAMLR Convention has been described as “a model of the ecological approach”. While this paper, on balance, judges CCAMLR to have notably faced up to its obligations, only time will show how successful and effective it has been.

**Acknowledgements**

I wish to thank the organisers of the OECD Workshop on Illegal, Unreported and Unregulated Fishing Activities for inviting and sponsoring me to attend this important event. I also thank my colleague, Dr. Eugene Sabourenkov, for his assistance with the figures and his sage advice. This paper is dedicated to all responsible fishers.

147 G. Mills, *op. cit.* n. 132.

148 G. Mills, *op. cit.* n. 132.

149 D. Freestone, *op. cit.* n. 6.

## ANNEX 7.A.

**Box 7.1. FAO IPOA-IUU[150] Definition of Illegal, Unreported and Unregulated Fishing**

- **ILLEGAL FISHING**

Activities conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;

Activities conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or

Activities conducted in violation of national laws or international obligations, including those undertaken by co-operating States to a relevant regional fisheries management organization.

- **UNREPORTED FISHING**

Fishing activities that have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or

Fishing activities undertaken in the area of competence of a relevant regional fisheries management organization that have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

- **UNREGULATED FISHING**

Fishing activities carried out in area of application of a relevant regional fisheries management organization by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or

Fishing activities carried out in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

[150] Paragraph 3 of the IPOA-IUU – FAO, *op. cit.*. n. 19.

**Box 7.2. Summary of the General Provisions of CAMLR Convention Article II**[1]

- **CONVENTION OBJECTIVE**

Conserve Antarctic Marine Living Resources

- **CONSERVATION AND RATIONAL USE**

Conservation includes rational use

- **CONSERVATION PRINCIPLES**

Harvesting and associated activities according to conservation principles below:

- **HARVESTED SPECIES**

Prevent decrease of harvested population to levels below those ensuring stable recruitment (*i.e.* not below level close to that ensuring greatest net annual increment)

- **ECOSYSTEM CONSIDERATIONS**

Maintain ecological relationships between harvested, dependent and related species restore depleted populations

- **PRECAUTIONARY APPROACH**

Minimise risks of change not reversible in 20-30yrs

- **Take Account Of**

Harvesting Effects (Direct/Indirect)
Alien Introduction
Effects of Associated Activities
Effects of Environmental Change

[1] See Article II of the *CAMLR Convention* in CCAMLR, *op. cit.*, n. 16, p. 4-5.

**Box 7.3. Information Used by CCAMLR to Estimate IUU Toothfish Fishing Activities**[2]

- **CCAMLR LICENSED VESSELS**

Type, size, catch, fishing effort and fishing trip duration

- **IUU VESSELS SIGHTED FISHING**

Number, type and size

- **RECOVERED LONGLINE GEAR FROM ILLEGAL FISHING**

- **TOOTHFISH LANDINGS**

CCAMLR Members' Ports
Other States' Ports (where known)

- **CATCH & EFFORT INFORMATION**

Vessels apprehended for IUU Fishing by Coastal States in Convention Area

- **VERIFIED INFORMATION FROM THE INTERNATIONAL MEDIA**

- **CATCH & TRADE STATISTICS**

Various sources (e.g. Published Trade Information, Customs Declarations)

[2] D.J. Agnew, *op. cit.* n. 33 and E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38 in particular.

**Box 7.4. CCAMLR Toothfish Conservation Measures (CM) Aimed at Eliminating IUU Fishing in the Convention Area**

Measures have been developed since 1996/97 and are referenced as CMs currently in force[3]

| **Measure** | **Conservation Measure** |
|---|---|
| *Fishery Regulatory Measures* | |
| Prohibition of directed toothfish fishing in the Convention Area except in accordance with CMs | CM 32-09 |
| Advance notification of new fisheries. | CM 21-01 |
| Advance notification and conduct of exploratory toothfish fisheries, including data collection and research plans | CMs 21-02 & 41-01 |
| Reporting catch and effort, and biological data, including reporting of fine-scale data | CMs 23-01, 23-02, 23-03, 23-04 & 23-05 |
| Placement of international scientific observers on vessels targeting toothfish | CM 41-01<br>Various area-specific measures |
| Reducing seabird mortality during longline and trawl fishing | CMs 25-02 & 25-03 |
| *Flag State Measures* | |
| *Contracting Party* licensing and inspection obligations for fishing vessels under their flag operating in the Convention Area | CM 10-02 |
| At-sea inspections of Contracting Party fishing vessels | System of Inspection |
| Marking of fishing vessels and fishing gear | CM 10-01 |
| Compulsory deployment of satellite-based VMS on all vessels (except the krill fishery) licensed by CCAMLR Members to fish in the Convention Area | CM 10-04 |
| Toothfish Catch Documentation Scheme | CM 10-05 |
| *Port State Measures* | |
| Port inspections of vessels intending to land toothfish to ensure compliance with CCAMLR conservation measures | CM 10-03 |
| Scheme to promote compliance by Contracting Party vessels with CCAMLR conservation measures | CM 10-06 |
| Scheme to promote compliance by Non-Contracting Party vessels with CCAMLR conservation measures | CM-10-07 |

[3] CCAMLR, *op. cit.* n. 32 & 58; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

**Box 7.4. CCAMLR Toothfish Conservation Measures (CM) aimed at eliminating IUU Fishing in the Convention Area. (Cont.)**

| Measure | Conservation Measure |
|---|---|
| *Resolutions* | |
| Harvesting stocks occurring both within, and outside, the Convention Area, paying due respect to CCAMLR CMs | Resolution 10/XII |
| Implementation of the Catch Documentation Scheme by Acceding States and Non-Contracting Parties | Resolution 14/XIX |
| Use of ports not implementing Toothfish Catch Documentation Scheme | Resolution 15/XIX |
| Application of VMS in Catch Documentation Scheme | Resolution 16/XIX |
| Use of VMS and other measures to verify CDS catch data outside the Convention Area, especially in FAO Statistical Area 51 | Resolution 17/XX |
| Harvesting of Patagonian toothfish outside areas of Coastal State jurisdiction adjacent to the Convention Area in FAO Statistical Areas 51 and 57 | Resolution 18/XXI |
| Flags of Non-Compliance | Resolution 19/XXI |

**Box 7.5. Key Principles Underpinning the Toothfish CDS**[4]

- Ascertain Catch Origin for all Toothfish Transhipped/Landed/Imported/Exported
- Require Authorization to Fish for Toothfish
- Apply to IUU Fishing by both CCAMLR Contracting and Non-Contracting Parties
- Aim to Prohibit Toothfish Entering World Markets without Valid/Verified Catch Documents
- Non-Discriminatory, Fair and Transparent
- Practical and Capable of Easy/Rapid Implementation
- Applies to fishing within and outside the CCAMLR Area (*e.g*. Recognition Given to "Transboundary" Nature of Toothfish Distribution)
- Conducive to CCAMLR Non-Contracting Party Participation
- Includes Validation & Verification Procedures to Ensure Confidence in Information Produced
- Indicates Responsibilities and/or Obligation of All Participants

[4] G.P. Kirkwood and D.J. Agnew, *op cit.* n. 38; K. Larson, *op. cit.* n. 111; E.N. Sabourenkov and D.G.M Miller, *op. cit.* n. 38.

**Box 7.6. FAO IPOA-IUU's Key Principles and Strategies**[5]

- *PARTICIPATION & CO-ORDINATION*

IPOA-IUU implemented directly by all states or in co-operation with other states, or indirectly through RFMOs or through FAO/other appropriate international organisations. Close co-operation and full stakeholder participation (*e.g.* by the fishing industry, non-governmental organisations and other interested parties) are important to the plan's successful implementation.

- *PHASED IMPLEMENTATION*

Measures to prevent, deter and eliminate IUU fishing to be based on urgent and phased approach taking account of national as well as regional and global actions in accordance with IPOA-IUU.

- *COMPREHENSIVE AND INTEGRATED APPROACH*

Measures to prevent, deter and eliminate IUU fishing should address factors affecting all capture fisheries. Approach taken should build on flag state responsibility and use all available jurisdiction consistent with international law. Latter includes port state measures, coastal state measures, market-related measures and measures to ensure nationals do not support, or engage in, IUU fishing.

States encouraged to use all IUU-directed measures where appropriate and to co-operate to ensure that these are applied in coherent and integrated manner. IPOA-IUU should address all economic, social and environmental impacts of IUU Fishing.

- *CONSERVATION*

Measures to prevent, deter and eliminate IUU fishing to be consistent with conservation and long-term sustainable use of fish stocks and protection of the environment.

- *TRANSPARENCY*

IPOA-IUU to be implemented in transparent manner in accordance with Article 6.13 of Code of Conduct.

- *NON-DISCRIMINATION*

IPOA-IUU to be developed and applied without discrimination in form or in fact against any State or its fishing vessels.

[5] See paragraphs 9.1 to 9.6 of the *IPOA-IUU, op. cit.* n. 19.

**Table 7.1. Recent Action Against IUU Toothfish Fishing**

(HIMI - Heard and McDonald Islands; FZ – Fishing Zone; ITLOS – International Tribunal for the Law of the Sea; t - tonnes; RSA – Republic of South Africa; AFMA – Australian Fisheries Management Act, 1991; MLRA – South African Marine Living Resources Act, 1998; UK – United Kingdom; USA – United States)[6]

| VESSEL/ COMPANY | FLAG/ NATIONALITY | ACTION | OUTCOME(S) |
|---|---|---|---|
| SouthTomi | Togo | *March 2001*<br>Illegal Fishing HIMI FZ<br>>100t Toothfish<br>Australian Arrest off RSA Coast RSA Assistance | AUD 136 000 Fined under AFMA<br>Largest Fine to Date<br>Catch/Vessel Confiscated<br>Failure Secure Release Bond<br>Vessel to be Sunk Winter 2004 |
| Volga | Russian Federation | *February 2002*<br>Illegal Fishing HIMI FZ<br>126t Toothfish<br>Australian Arrest in FZ | Prosecuted under AFMA<br>Vessel/Catch Confiscated<br>ITLOS Bond AUD2 million<br>Bond Close Commercial Value<br>Bond not Paid<br>Vessel Dispatched for Scuttling 14/4/2003 |
| Lena | Russian Federation | *February 2002*<br>Illegal Fishing HIMI FZ/CCAMLR<br>80t Toothfish<br>Previously Sighted HIMI Area<br>Australian Arrest | Prosecuted under AFMA<br>3 Crew Fined AUD 100 000 each<br>Catch/Vessel Confiscated<br>Vessel Scuttled 19/11/2003 |
| Viarsa | Uruguay | *August 2003*<br>Illegal Fishing HIMI FZ<br>85t Toothfish<br>Australian Arrest Mid-Atlantic<br>3900 n. ml. (21-day) Hot Pursuit<br>RSA/UK Assistance | Catch/Vessel Confiscated<br>AUD 5 m Bond<br>All Crew Charged<br>Legal Process Ongoing |
| Maya V | Uruguay | *January 2004*<br>Illegal Fishing HIMI FZ<br>202t Toothfish<br>Australian Arrest | Charged under AFMA<br>Legal Action Pending<br>AUD 550 k Charge<br>All Crew Charged<br>Catch/Vessel Confiscated |

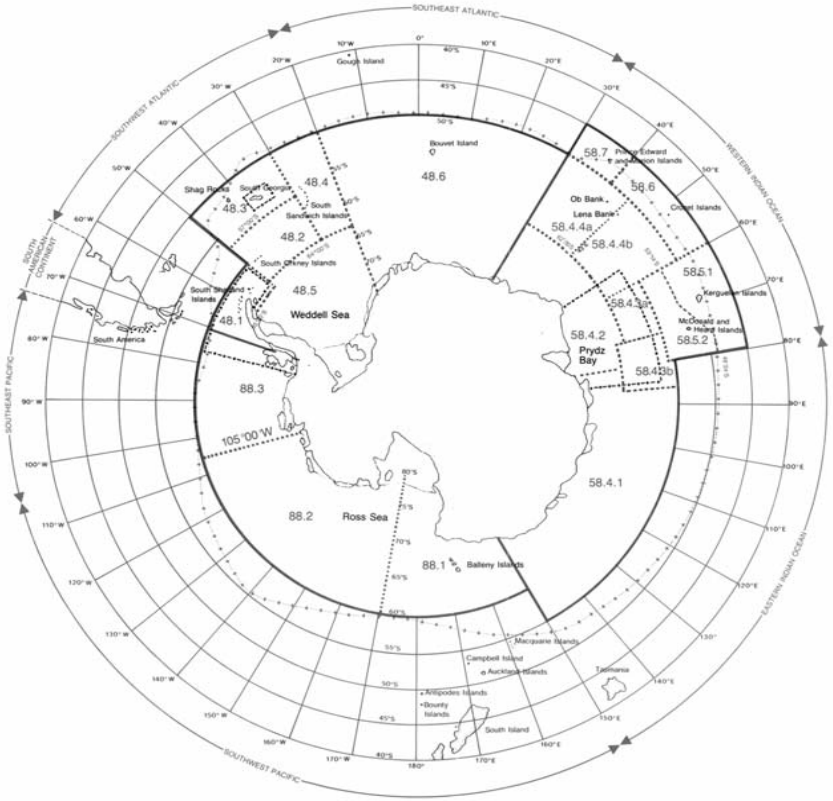
[6] From various sources.

**Table 7.1. Recent Action Against IUU Toothfish Fishing (cont.)**

| VESSEL/ COMPANY | FLAG/ NATIONALITY | ACTION | OUTCOME(S) |
|---|---|---|---|
| Hout Bay Fishing | South Africa | *June 2001*<br>Illegal/Possession/Trade Toothfish<br>RSA<br><br>*June 2003*<br>Smuggling Conspiracy<br>USA | Prosecuted under MLRA<br>Fined R 40 m (AUD 8 m)<br>Licenses Revoked<br>Closed down<br><br>Indicted US Lacey Act<br>21 Counts<br>Charges pending<br>Fines to USD 250 k /Count<br>Asset Forfeiture USD 11.5 mil<br>Possible Jail Time 5 Years/Count<br>*March 2004*<br>Key Defendants Plead Guilty<br>USD 5 m Asset Forfeiture |

**Figure 7.1. The CCAMLR Area**

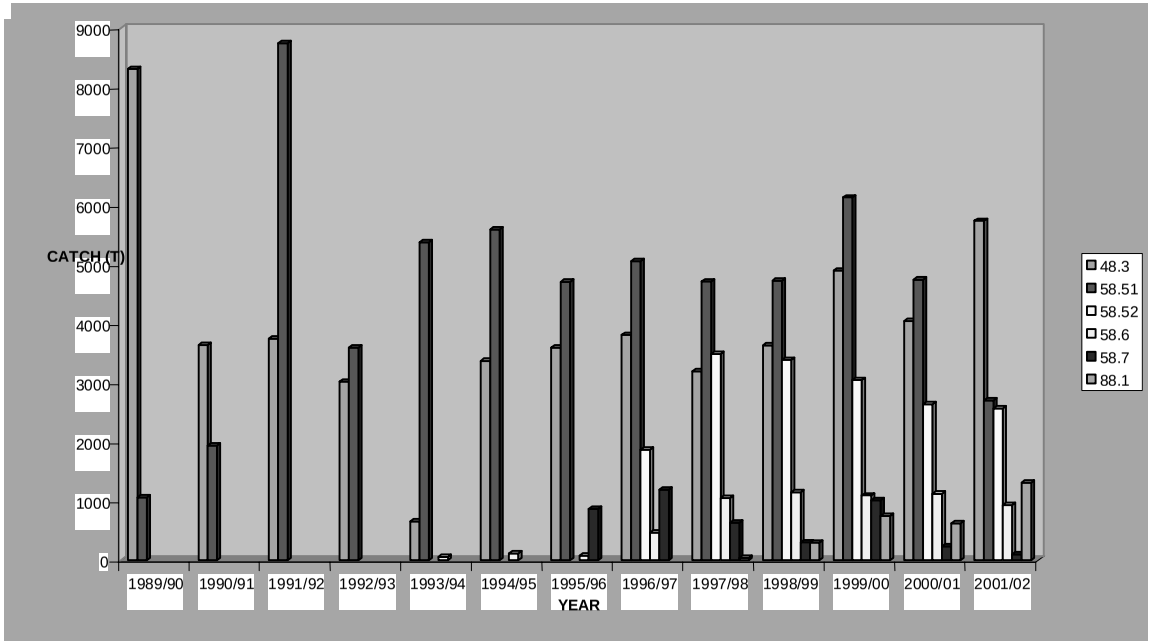
Statistical Areas, Sub-areas and Divisions are shown




*Source:* http://www.ccamlr.org

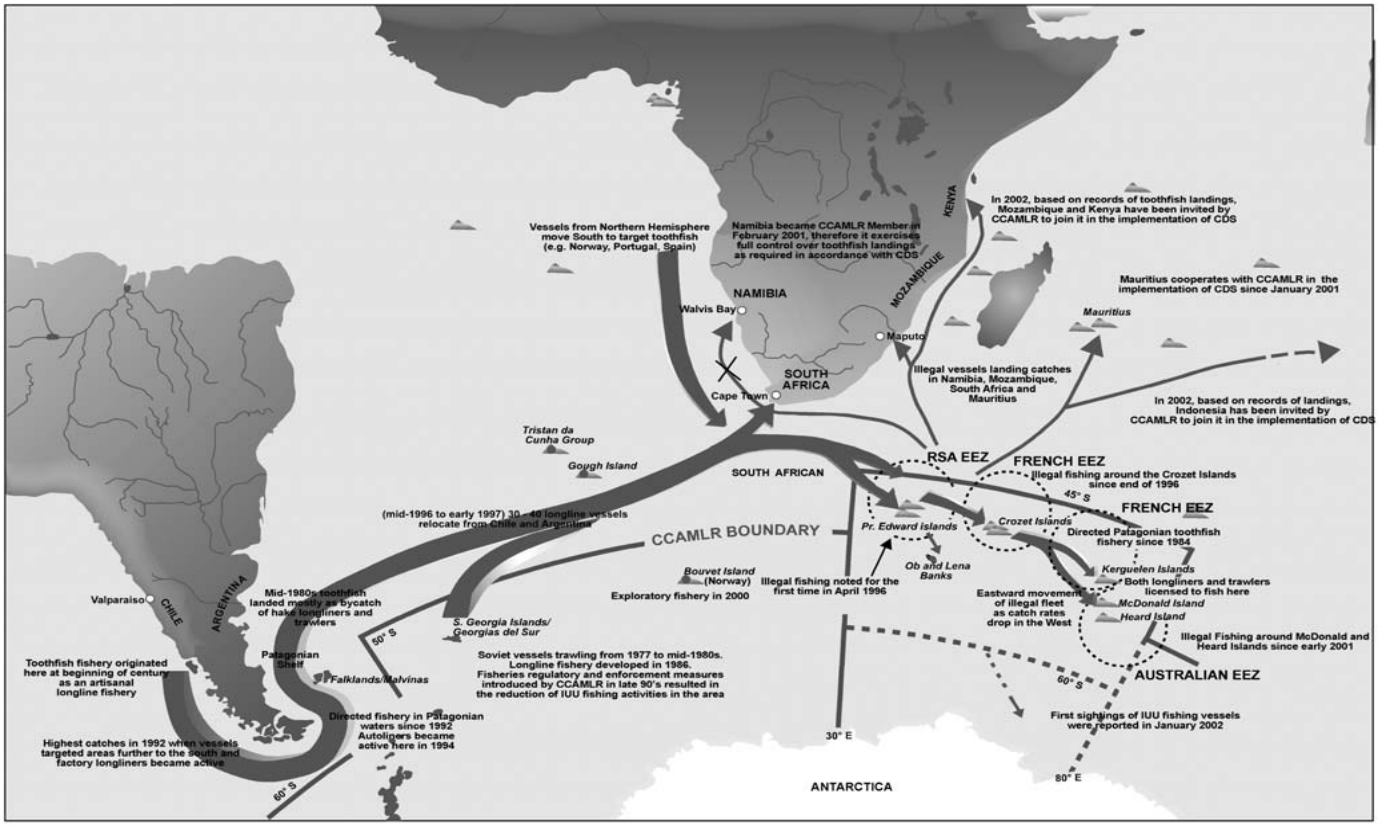
**Figure 7.2. Toothfish (Dissostichus spp.) Catches in CCAMLR Statistical Subarea Divisions.**

Catches reported by split-year, beginning 1 July one year and ending 30 June the next (*e.g.* 1988/89 split year). Statistical Areas are "48" – Southwest Atlantic Ocean; "58" – Indian Ocean; "88" – Pacific Ocean – Ross Sea (Predominantly *D. mawsoni* catches).



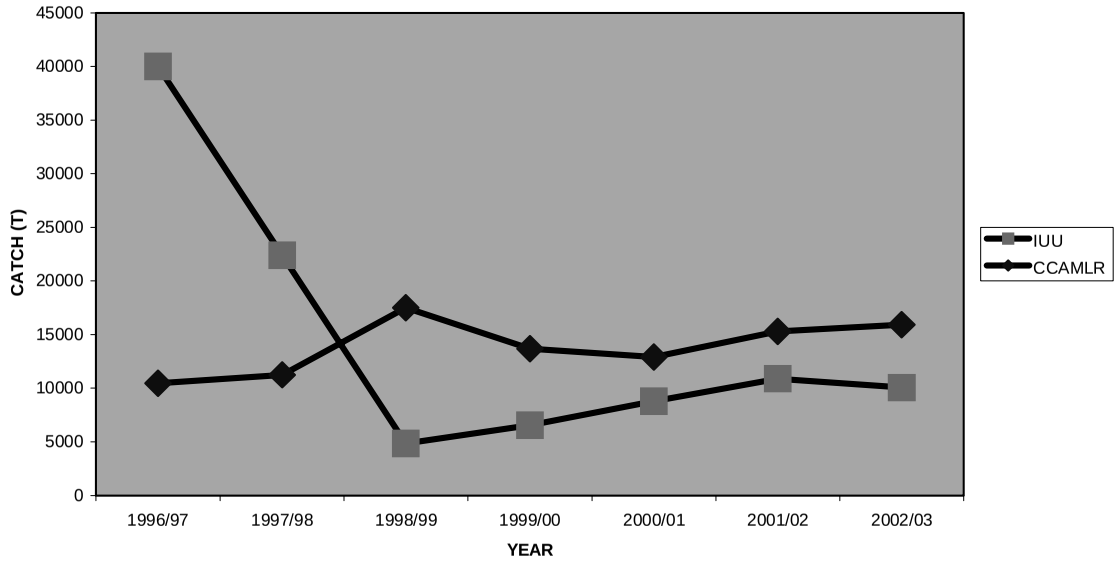

*Source:* All data from CCAMLR Statistical Bulletins 1990-2003 (http://www.ccamlr.org)

**Figure 7.3. Progressive development and location of IUU fishing for Patagonian Toothfish in the CCAMLR Convention Area and other adjacent areas**




*Source:* From Sabourenkov and Miller, op. cit n. 38

**Figure 7.4. Catches (Tonnes "T") of Toothfish (Dissostichus) in Regulated ("CCAMLR") and Unregulated ("IUU") Fisheries in the CCAMLR Area**




*Source:* Data from CCAMLR Commission Reports 1997-2003 (http://www.ccamlr.org)

**Figure 7.5. Estimated Cumulative financial values (USD million) of "CCAMLR" and "IUU" based Toothfish (Dissostichus spp.) fisheries.**

Estimates are based on a landed value of USD 5 000/tonne of H&G product.

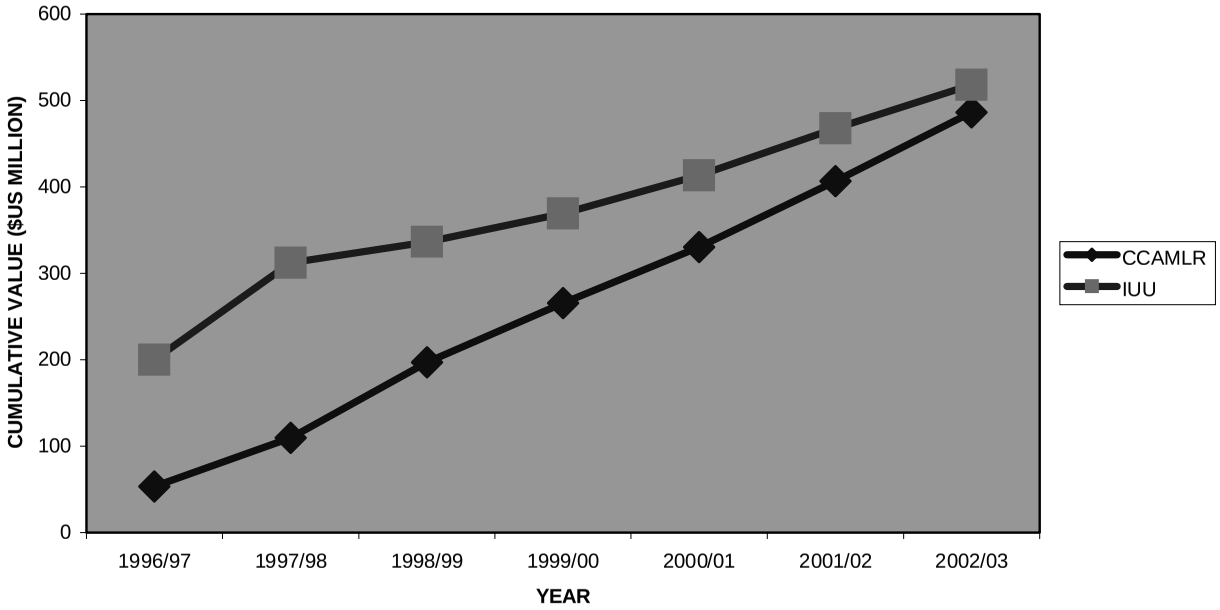
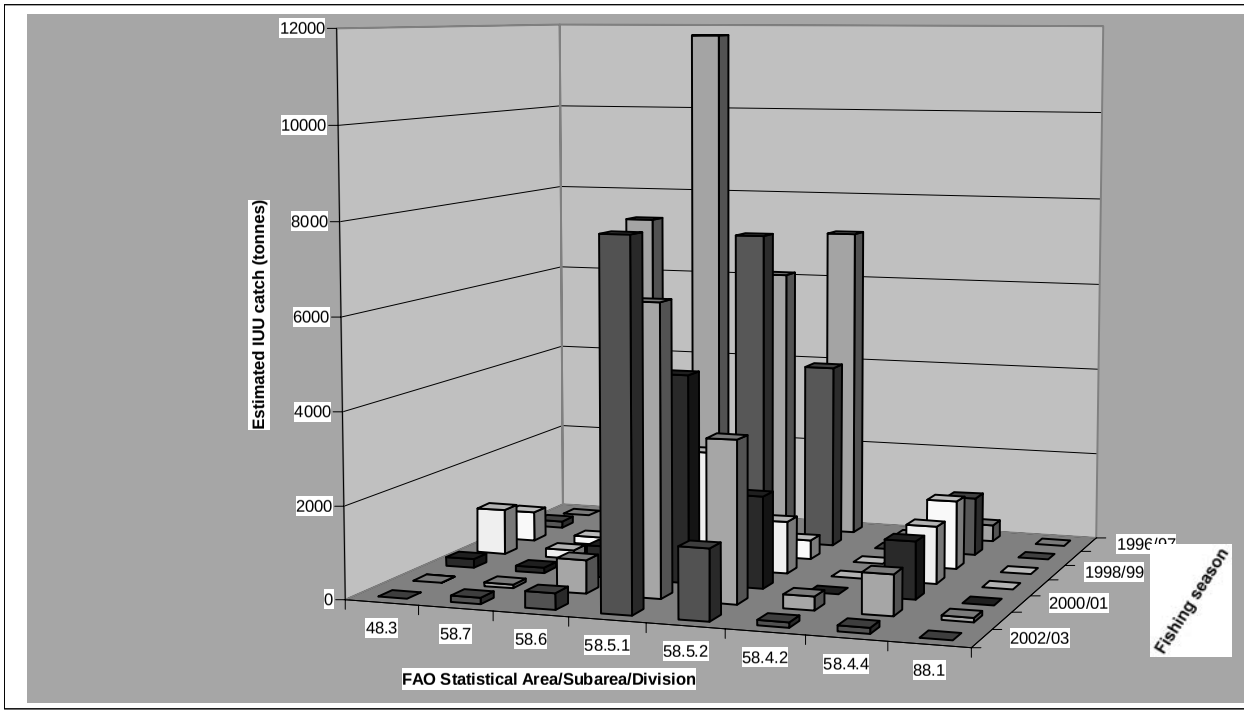


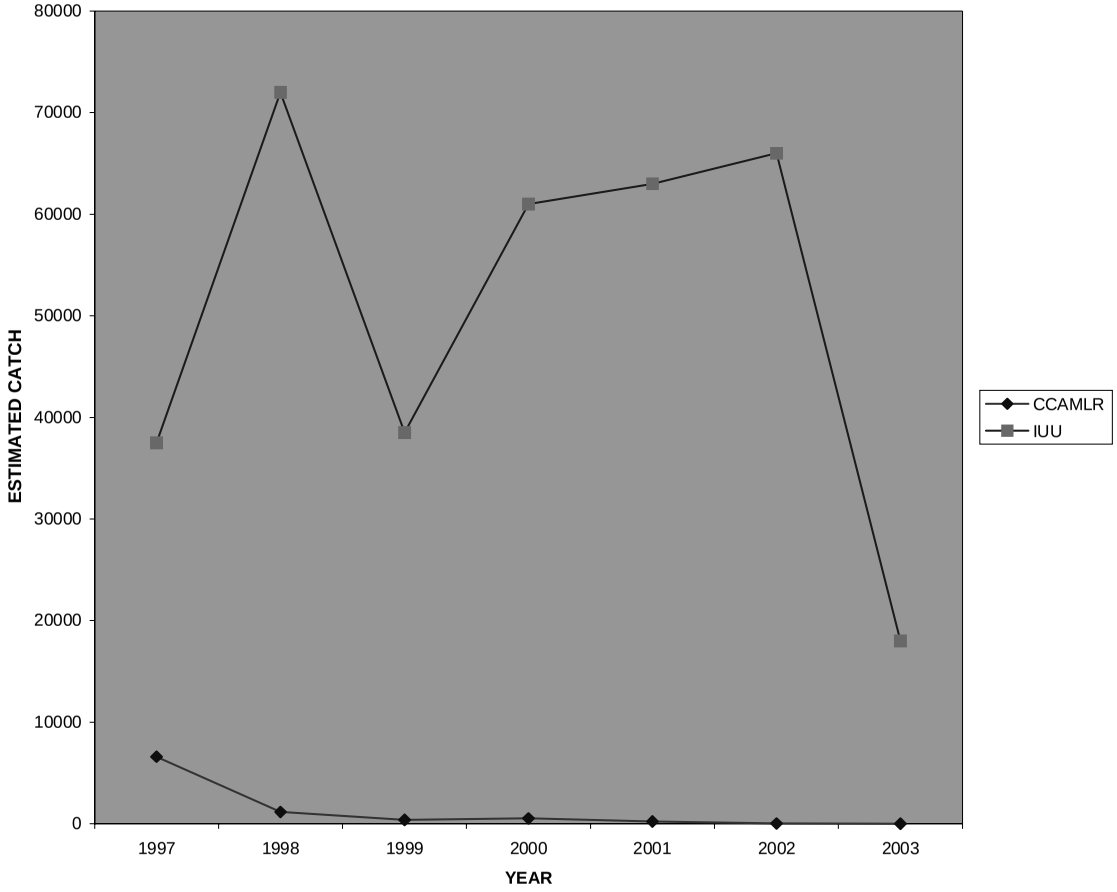
**Figure 7.6. IUU Toothfish Catches in CCAMLR Statistical Sub-areas/Divisions**

Catches reported by split-year, beginning 1 July one year and ending 30 June the next (*e.g.* 1988/89 split year). Statistical Areas are "48" – Southwest Atlantic Ocean; "58" – Indian Ocean; "88" – Pacific Ocean – Ross Sea (Predominantly D. mawsoni catches).




*Source:* All data from CCAMLR Statistical Bulletins 1990-2003 (http://www.ccamlr.org)

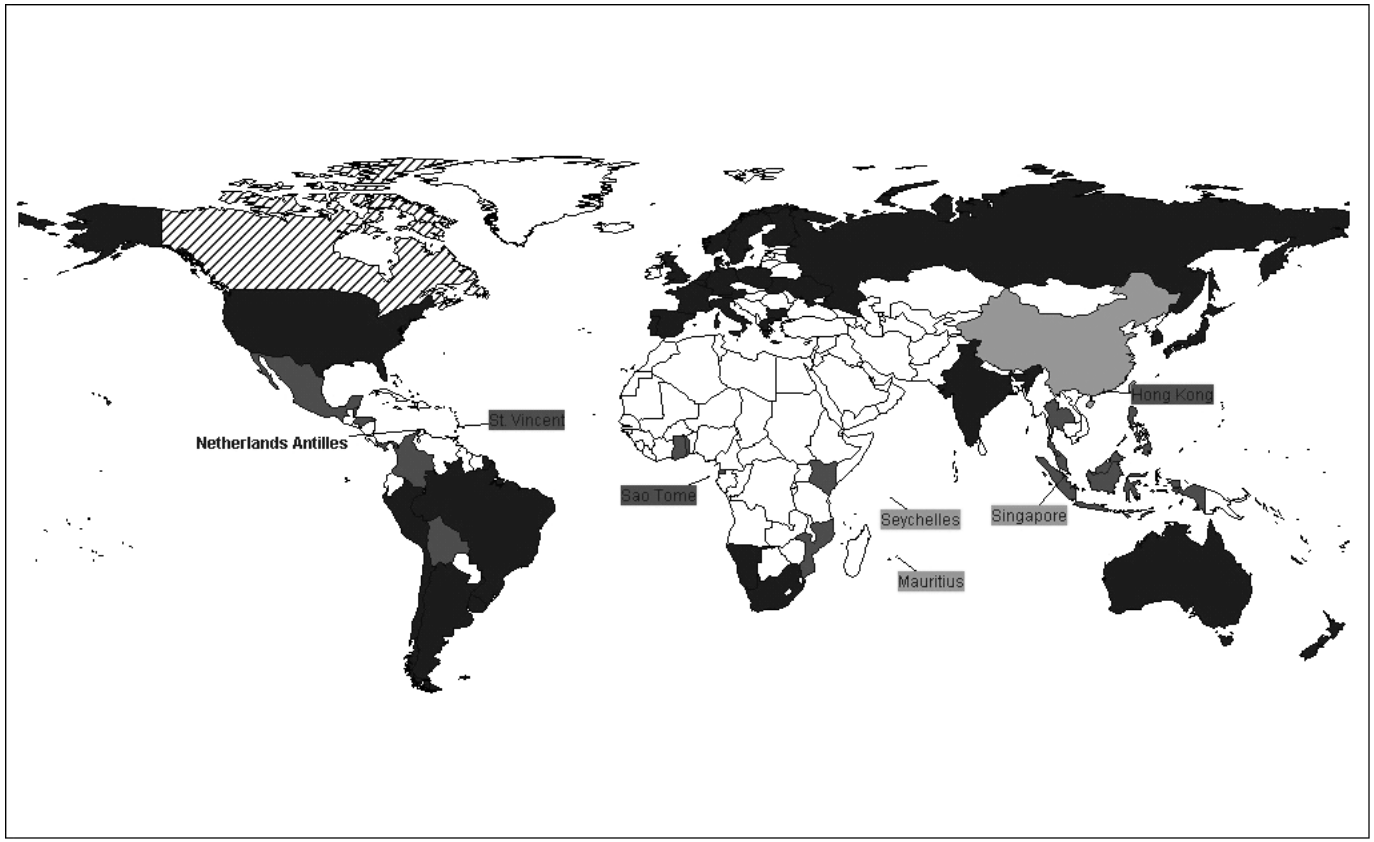
**Figure 7.7. CCAMLR Estimated Seabird by-Catch as a consequence of IUU Fishing in the Convention Area**




*Source:* From Miller, Sabourenkov and Ramm op. cit. n. 113).

**Figure 7.8. Geographic area of application of the CCAMLR CDS**

[Black –CCAMLR Parties; Pale grey – CDS Users; Dark grey – Exporters outside CDS]




*Source:* From Miller, Sabourenkov and Ramm (op. cit. n. 113)

## CHAPTER 8

# GATHERING DATA ON UNREPORTED ACTIVITIES IN INDIAN OCEAN TUNA FISHERIES

*Alejandro Anganuzzi, IOTC Secretariat*[1]

### Background

The Indian Ocean is the basin with the most recent history of industrial exploitation of all the major tuna fishing areas in the world. Although it provided fertile fishing grounds for many of the early residents in the area, it was not until 1952 that longline fleets first entered the eastern Indian Ocean. In what is now a familiar pattern of development for these fisheries worldwide, the first longline vessels enjoyed very high catch rates in the first years of the fishery, yields that quickly turned into more stable catch rates for a number of decades before declining in recent years.

The other major industrial fishery in the region has been the purse-seine fishery, mostly of European origin, which only entered the Indian Ocean as a major player in the early 1980s, and even then was mainly restricted to the western side of the Indian Ocean. Since that time, this fishery has been upgrading its fishing capacity and its production until reaching record levels in very recent years.

The Indian Ocean now ranks second, in terms of productivity, after the much larger central and western Pacific, with perhaps the best economic conditions in terms of access to resources from base ports.

Given these favourable conditions, it was probably only a matter of time before the field of players expanded to incorporate fleets operating at the fringes of the international tuna fishing community, attracted by the large profit margins and a not-yet-developed regulatory framework.

Until the very recent establishment of the Indian Ocean Tuna Commission (IOTC), there was no firm basis for deciding what constituted illegal or unregulated tuna fishing in the high seas of the Indian Ocean. However, it could be argued that unreported fishing activities would undermine any efforts oriented towards achieving long-term sustainability in these fisheries. This document

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summarises the efforts to gather information on unreported activities and the development of a regulatory framework along the guidelines of the major instruments of international law.

**The early history**

The potential of the tuna fisheries was quickly recognised after the arrival of the first purse-seiners in the region in the early 1980s, with catches increasing year after year. The concern to provide rational management of these resources materialised quickly in the establishment of a regional UNDP project, the Indo-Pacific Tuna Management and Development Programme in 1982. From its base in Sri Lanka, the role of IPTP was to develop a centralised data collection point to build the databases that would be necessary to manage these fisheries on a scientific basis.

As IPTP started its work to recover existing data and assist countries in developing new programmes for monitoring their catches, the countries with interests in tuna fisheries in the region began negotiations, with FAO acting as a facilitator, on a new agreement that would institutionalise a regional fisheries body to deal with tuna and tuna-like species in the Indian Ocean, the Indian Ocean Tuna Commission (IOTC).

Negotiations for the establishment of this new Commission, modelled on its sister organisation in the Atlantic, ICCAT, were lengthy, taking most of the following ten years.

During this period, experts working at IPTP painstakingly began to put together a picture of the different fleets operating in the Indian Ocean. Before long, it was clear that some fleets were less than forthcoming in providing information concerning their activities. Efforts then concentrated on establishing the identity, constitution and the *modus operandi* of these fleets. These efforts marked the first period of the fight against non-reported catches in the Indian Ocean.

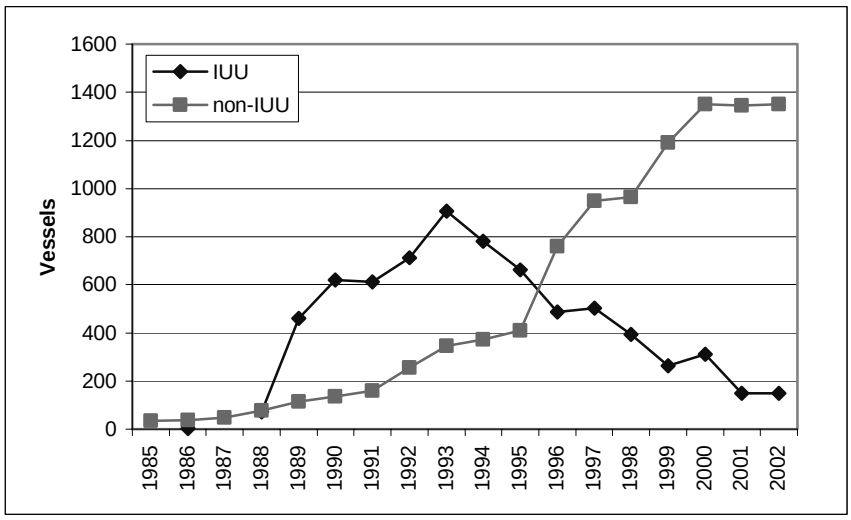
**Identifying the culprits - before a formal definition of IUU fishing**

The term “IUU” had not yet been coined or become popular in the forums concerned with the proper management of this incipient fishery. In the absence of a formal management structure to define IUU fishing in the region, the focus was primarily directed on vessels flying various flags that were not reporting data on their activities to IPTP or to any of their responsible governments.

The main objective was to measure the impact of these fleets on the status and productivity of Indian Ocean tuna stocks. IPTP officials compiled reports of activities from port authorities around the Indian Ocean, using data provided by dedicated sampling programmes or, more commonly, based on data from licensing authorities in coastal countries who produced estimates of the number of vessels involved in these activities as well as the catch by species of these fleets.

But the size of the problem, together with a chronic lack of sufficient human resources, means that the picture for those early years is fragmentary at best.

**Figure 8.1. Number of Fresh-Tuna Longliners (IUU vs non-IUU) Estimated to be Operating in the Indian Ocean**




Nevertheless, by the late 1980s it was clear that a large number of deep-freezing longline vessels were operating in the Indian Ocean under various flags of convenience. In some cases, these vessels were originally fishing for southern bluefin tuna, a species that is much more vulnerable to excessive exploitation than its tropical counterparts.

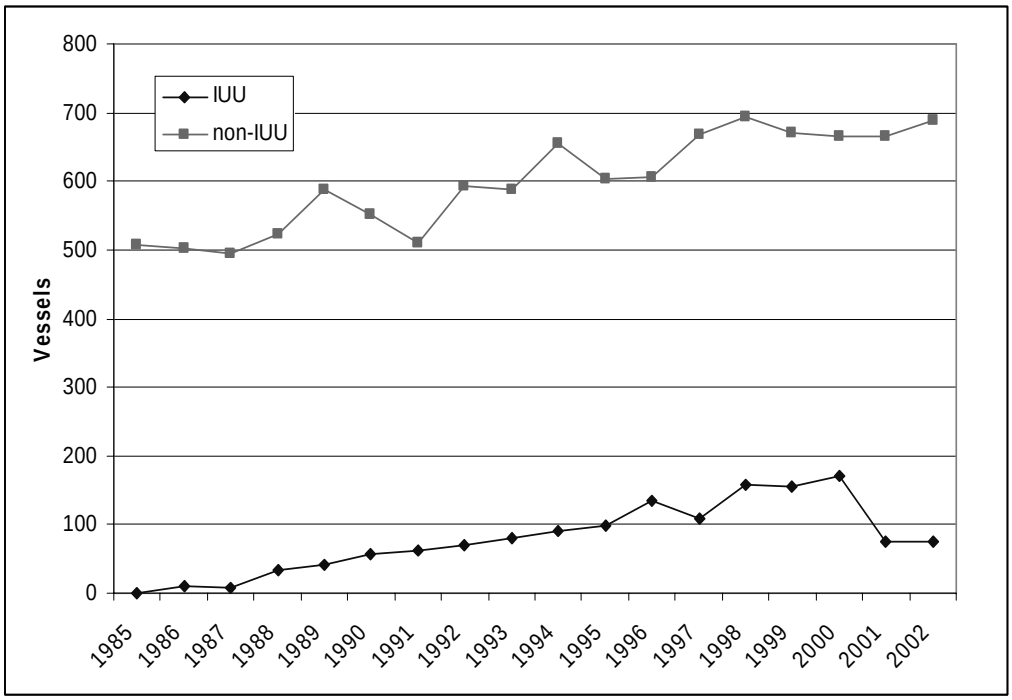
As the catch rates for southern bluefin tuna declined along with the size of the stock, vessels started tapping other species in the Indian Ocean. Soon a profitable operation began with a switch to deeper longlines, a fishing strategy that increased access to the deeper-dwelling stocks of bigeye tuna. Although less appreciated than bluefin tuna as a sashimi species, there was a solid market for bigeye tuna and much higher availability of this species throughout most of the year.

The first non-reporting vessels made their appearance in this fishery. Their area of operations was basically the whole of the Indian Ocean with unloading in Mauritius, Pakistan, Singapore, South Africa and other ports in the region. A significant number of transhipments at sea were also mentioned. Informal reports from Chinese Taipei operators placed the proportion of the catch transhipped at sea at about 50% during the mid-1990s.

Two distinct categories were beginning to emerge from the limited information that was coming to light. The first category was a fleet of large-scale, deep-freezing vessels under various flags of convenience essentially reporting to no government. Important information for assessment purposes – such as catch and fishing effort by area and size of fish caught – was never reported or collected.

An estimated 100 such vessels were operating in these conditions in the area of the south-western Indian Ocean, primarily from Port Louis and Durban (Figure 8.2.). Many of these vessels (but not all) carried licenses for fishing in the EEZs of various countries in the region, and by collecting and comparing license information it was possible to obtain this estimate of the numbers of vessels.

**Figure 8.2. Number of deep-freezing tuna longliners (IUU vs non-IUU) estimated to be operating per year in the Indian Ocean**




The second component of the longline fleet operating outside any monitoring system was the fleet of small (< 150GRT) fresh-tuna longline vessels (Figure 8.1.). Smaller in size and preserving the fish in ice rather than deep-freezing it, this fleet has a limited range of operation when compared to the larger vessels discussed earlier. Originally this fleet was mobile, coming to the Indian Ocean only at the end of the season for the Pacific bluefin tuna (not to be confused with southern bluefin tuna) in the South China Sea. During its stay in the Indian Ocean, the fleet was based in various ports of the eastern basin, but primarily in the Indonesian ports of Benoa (Bali) and Muara Baru (Jakarta) and, to a lesser extent, in Penang (Malaysia) and Phuket (Thailand).

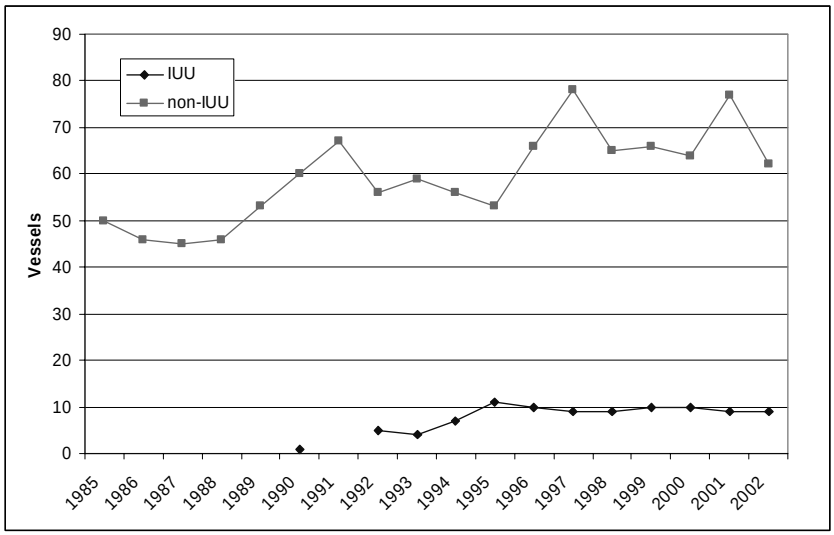
The total number of vessels was very poorly estimated until recent years, but consistent reports placed the size of the fleet at between 600 to 800 vessels at the time. The major problem with this fleet is that they very rarely reported to the authorities of their original flag and reports to the Indonesian authorities were unreliable or inexistent.

The list of non-reporting vessels was not limited to eastern longline fleets. Purse-seine and longline vessels of then-Soviet origin were operating primarily in the western fishing grounds. Although originally operating under the Soviet flag, by the mid-1980s purse-seiners had moved to various flags of convenience. The estimated number of vessels involved was about 11 purse-seiners (Figure 8.3.). These vessels were rarely seen in Indian Ocean ports and most of their transhipments were carried out at sea.

This was the situation by the mid-1990s, when non-reporting fleets were considered as the main problem in the sound management of these resources, although a formal framework in which to adopt joint actions to ensure sustainability of the tuna fisheries was also lacking.

The big breakthrough would come in 1996, when the Indian Ocean Tuna Commission Agreement entered into effect after the accession of the tenth signatory to the Agreement. Now there was a foundation upon which to build a mechanism to rationalise exploitation.

**Figure 8.3. Number of purse-seine vessels (IUU vs non-IUU) estimated to be operating in the Indian Ocean**



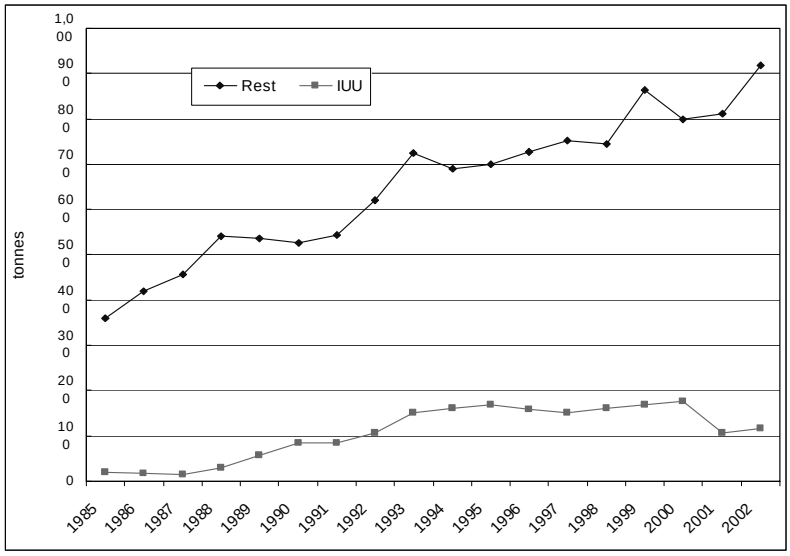

## The IOTC years: moving into action

The IOTC took over the responsibility, previously vested in the IPTP, of compiling information on tuna fisheries activity in the Indian Ocean. Its Secretariat, now based in the Seychelles, quickly took steps to find out more about the activities of tuna fleets. In 1999, the Commission approved the establishment of sampling programmes in Thailand and Malaysia, with the co-operation of local authorities, to monitor the activities of small-scale vessels operating in their ports. These programmes provided badly-needed information on average catch rates, essential to estimating the catches of all small-scale non-reporting longliners.

In 1998, the Commission also passed a resolution requesting member countries to provide data on the activities of foreign vessels landing catches in their home ports. This information further improved estimations on the number of vessels in the region.

In 2001, the IOTC, the Overseas Fishery Cooperation Foundation (OFCF) of Japan, Indonesian and Australian officials combined forces to establish sampling programmes in the three main unloading ports of Indonesia, thus closing the information gap in the activities of the fresh-tuna longline fleet.

**Figure 8.4. Catches of Tropical Tuna and Billfish for Reporting and Non-reporting Fleets**




Incorporating this information, the IOTC Secretariat has been able to improve its estimation of IUU fleet catches over the last five years which in turn improves the quality of the data available for the assessment of the main tuna and billfish stocks (Figure 8.4.). This estimation has been facilitated by the fact that, in many cases, the non-reporting fleets operate in a similar way to fleets that are reporting data, reducing the risk of bias.

Concerns about the activities of large-scale longline vessels under flags of convenience prompted the Commission to encourage its Members to take preventive action against vessels suspected of undermining the effectiveness of IOTC management measures.

By 2001 the FAO International Plan of Action on IUU fishing had become a reality, resulting in a concerted plan to take the necessary steps to control non-reporting fleets. In the context of IOTC, this translated into a major initiative taken by the Commission in 2001 with the adoption of an Inspection and Control Scheme at a special session in Yaizu, Japan. The Scheme provided a framework to ensure that IUU fleets, *i.e.,* those whose actions would undermine the conservation measures adopted by IOTC, would be prevented from operating freely in the area.

The Scheme has been implemented in subsequent years through the adoption of various resolutions on an enforcing structure. The major resolutions passed in this respect are listed in Table 8.1.

In addition, the Commission has supported bilateral negotiations between its Members and fishing entities and nations with vessels under flags of convenience, to regularize the situation of those vessels.

Over the last two years, steady progress has been made, and the first results are becoming evident. In the past few months, shipments of fish caught by IUU vessels have been refused entry in the main markets. In Indonesia, an extensive revision of the licensing system that followed a strict policy of re-flagging for fresh-tuna longliners has improved control over the activities of that fleet.

The challenge is now to maintain these encouraging advances in the long term.

**The years to come: the new challenges**

Agreeing to take a number of concerted actions, as the 22 Members of the IOTC have done in recent years, although an important first step, is not enough. Resolutions are of limited use if they are not accompanied by a strong commitment and efforts to implement them effectively.

This is perhaps the most difficult challenge ahead. Port control measures require that governments are prepared to forfeit sometimes lucrative benefits in favour of fulfilling their international obligations. Control of the markets will work to the extent that markets are concentrated and access to markets is easy to control. The Statistical Document Programme is the main enforcing tool of this basic regulation, working at the level of port control and access to markets.

Programmes such as the Statistical Document Programme, essentially a trade certificate, can serve as a tool for certifying the origin of catches moving across boundaries, if loopholes are eliminated. The effectiveness of such programmes will increase as officials from all countries trading in tuna become more familiar with the mechanics of the programme.

But there is also a need to streamline co-ordination between tuna agencies across the various oceans, to harmonise actions to combat IUU fishing. In the case of highly mobile fleets, stringent measures applied in one ocean encourage the displacement of these fleets to a neighbouring area, unless similar constraints are applied there too.

**Table 8.1. Summary of Recent IOTC Resolutions Oriented to Prevent, Eliminate and Deter IUU Fishing**

| Resolution | Title | Comments |
|---|---|---|
| 98/04 | Concerning Registration and Exchange of Information on Vessels, Including Flag of Convenience Vessels, Fishing for Tropical Tunas in the IOTC Area of Competence | Establishes a record of activities for all vessels fishing for tropical tunas. CPCs should send lists of vessels that have fished for tropical tunas in the previous year. |
| 99/02 | Calling for Actions against Fishing Activities by Large-Scale Flag of Convenience Longline Vessels | Urges CPCs to take action (and suggests a number of actions) against longline vessels engaged in IUU fishing activities. |
| 01/01 | Control on Fishing activities | CPCs have responsibility for the action of vessels that they authorise, should communicate vessels that are authorised and ensure that they are properly marked, and with documentation in order |
| 01/03 | Establishing a Scheme to promote compliance by Non-Contracting Party vessels with resolutions established by IOTC | Establishes actions to be taken by Members in the case of identifying illegal fishing activities in the IOTC Area. |
| 01/05 | Mandatory Statistical requirements for CPCs | Establishes the data requirements that constitute proper reporting. |
| 01/06 | Concerning the IOTC bigeye tuna statistical document programme | Establishes a trade certification scheme that allows identification of the source of tuna imports. |
| 01/07 | Concerning the Support of the IPOA-IUU Plan | Declares IOTC's support for the IPOA-IUU adopted by the Committee on Fisheries of the FAO. |
| 02/01 | Relating to the establishment of an IOTC programme of inspection in port | Defines principles that port inspection schemes by CPCs should follow. |
| 02/03 | Terms of Reference for the IOTC Compliance Committee | Establishes a Compliance Committee which will review, *inter alia*, information concerning IUU activities by non-Members |
| 02/03 | Terms of Reference for the IOTC Compliance Committee | Establishes a Compliance Committee which will review, *inter alia*, information concerning IUU activities by non-Members |
| 02/04 | On Establishing a List of Vessels presumed to have carried out Illegal, Unregulated and Unreported Fishing in the IOTC Area | Defines IUU activities in paragraph 1;<br>Establishes a course of action in reviewing information on IUU fishing; defines actions to be taken against those vessels confirmed as IUU. |
| 02/05 | Concerning the Establishment of an IOTC Record of Vessels over 24 metres Authorised to Operate in the IOTC Area | Establishes the 'positive list' of vessels authorised by CPCs to fish in the IOTC Area.<br>Defines actions to be taken by CPCs to prevent vessels not in the IOTC Record from fishing in the Area. |
| 02/07 | Concerning measures to prevent the laundering of catches by IUU large-scale tuna longline fishing vessels | Defines steps by CPCs to prevent transfer of catches from IUU vessels under the name of authorised vessels. |

## CHAPTER 9

# ESTIMATION OF UNREPORTED CATCHES BY ICCAT

*Victor R. Restrepo, ICCAT, Spain* [1]

## Introduction

The objective of this contribution is to provide a brief overview of the process used currently by the International Commission for the Conservation of Atlantic Tunas (ICCAT) to estimate "unreported" catches. Because the presentation is given at a workshop on Illegal, Unreported and Unregulated fishing, it is useful to emphasise that the scope of the presentation is limited to the first "u" in the acronym (*i.e.*, unreported). ICCAT's scientific body, the Standing Committee on Research and Statistics (SCRS) carries out the estimation of unreported catches referred to in this presentation. It is up to the Commission itself to decide if any particular unreported catch is evidence of IUU fishing or not.

The estimation of unreported catches at ICCAT during the last decade has been closely associated with international trade data. For some species like bigeye tuna (BET), trade data have been reported directly to ICCAT by some Contracting Parties. For bluefin tuna (BFT), which is the basic case study in this presentation, the trade data have been collected through a system known as the BFT Statistical Document Programme (SDP).

## The statistical document programmes

The SDP at ICCAT started in 1992 when it was established for frozen bluefin products (the dates in this paragraph refer to the year when the measures[2] were adopted; they generally went into force the following year). In 1993 the bluefin SDP was extended to fresh products, and in 1997 it was amended to also keep track of re-exports. More recently, in 2003, the bluefin SDP was amended again to add information about farmed products and to link the catch information to ICCAT's list of large-scale vessels authorised to fish in the Convention Area (the list is one of the multiple tools used by ICCAT to combat IUU fishing). In 2001, SDPs were also established to track imports and re-exports for bigeye and swordfish. In addition to the above, ICCAT has adopted several other measures related to the validation, interpretation and implementation of SDPs.

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[2] ICCAT Recommendations and Resolutions can be downloaded from http://www.iccat.es or can be requested from the ICCAT Secretariat.

The ICCAT SDPs collect information on the flag and characteristics of the capture vessel, the area or Ocean of catch and the type and amount of product being traded. They are validated by authorised government officials. Customs officials from Contracting Parties should not authorize the importation of the relevant products (bluefin, bigeye or swordfish) unless they are accompanied by a properly validated statistical document. Twice a year, Contracting Parties should submit summary reports to the ICCAT Secretariat informing about the imports that occurred during the preceding 6-month period.

**Case study: Atlantic bluefin tuna**

According to the SDP data received by the Secretariat, 50% to 60% of the catch of Atlantic bluefin is traded internationally. Considering that not all importing countries may report back to the Secretariat, the actual proportion of the catch that is traded is probably higher. Most of the international trade in bluefin tuna goes to Japan.

The ICCAT catch database contains a special code called NEI (for "not elsewhere included") which, for the purpose of this contribution, represents unreported catches. NEI codes may be assigned to individual flags by adding a numeric code (*e.g.*, NEI-105); this procedure distinguishes between the unreported catch that is attributed to a country and the catch that is reported by that country.

The calculation of NEI (unreported) bluefin tuna catch follows the formulation:

$$NEI = A - B - C - 0.8\ D$$

where

A = Catch reported to ICCAT

B = Imports to USA

C = Imports to Japan from wild fish

D = Imports to Japan from farming

When the NEI values thus calculated are negative, they are taken as estimates of unreported catch.

A factor of 0.8 is applied to farmed products to allow for a 25% gain in weight from fattening in the farms (1/1.25=0.8). In addition, all product types are converted into round weight (live weight) using the following factors:

Belly meat from wild tuna X 10.28 = round weight

Dressed weight X 1.25 = round weight

Fillets X 1.67 = round weight

Gilled and gutted weight X 1.16 = round weight

Other products X 2.0 = round weight

A conversion factor is not applied to belly meat products from farmed bluefin in order to diminish the possibility of double counting, as bellies are usually shipped separately from other products from the same fish.

The application of the above formula is not fixed over time; it is adapted to current practices. For example, when applied to estimate NEI catches from individual countries, the data are often aggregated among gears or among areas because the biannual SDP summary reports are not very accurate with respect to gear or area specifications. Another example of adaptability is the calculation of "NEI-combined" catches in which data from nine Mediterranean and east Atlantic countries are pooled together in order to reflect current practices of "fishing for farming" and fattening.

The result of the procedure described above to data from 1994 to 2002 suggests that 1% to 5% of Atlantic bluefin catches may go unreported. These estimates are uncertain, however, due to several factors such as: 1) the application of average conversion factors that may be imprecise, 2) the possibility of double-counting through the application of conversion factors to different products from the same fish, 3) the possibility that the SDP for bluefin has not been fully implemented by all importing countries, and 4) the use of highly aggregated data from the biannual reports which does not allow for the validation of details by contrasting individual statistical documents. Despite these uncertainties, the use of SDP data to infer unreported bluefin tuna catches is seen as a very a useful tool.

**Other species**

The ICCAT statistical document programmes for bigeye and swordfish are at relatively early stages of implementation and have not been used for estimating unreported catches of these species. However, it is likely that the SDP data will be used for this purpose in the near future.

In the past, the SCRS has obtained NEI catch estimates for bigeye tuna based on trade information provided by Japan, following a similar approach to that described above for bluefin. The estimates so obtained suggest that unreported catches were in the order of 5%-10% in the early 1990s, rose to over 20% of the total catch in the late 1990s, and then declined to reach levels of around 5% today. This recent decline in the magnitude of unreported Atlantic bigeye catches is attributed to the effectiveness of various tools used by the Commission to combat IUU fishing, such as positive and negative vessel lists, trade sanctions, etc.

**Concluding remarks**

ICCAT has used trade data, especially from its statistical document programmes, to estimate unreported catches for bluefin tuna and other species. Although these estimates cannot be exact, due to the multiple assumptions and levels of aggregation that are necessary during computation, they have been very useful in identifying countries that have not properly reported catches to the Commission.

The statistical document programmes at ICCAT do not operate in a vacuum. They are part of a "toolbox" used by the Commission to document IUU fishing activities. This toolbox includes a range of regulations such as vessel lists, transhipment sighting reports and trade sanctions. The interpretation and application of this toolbox has adapted to changes in the fishery and reporting practices, as is evidenced by the many amendments made to the SDPs.

## CHAPTER 10

# IUU FISHING IN THE NEAFC AREA
# HOW BIG IS THE PROBLEM AND WHAT HAVE WE DONE?[160]

*Kjartan Hoydal, Secretary, NEAFC*

### Introduction

Discussions on IUU fishing started in the North-East Atlantic Fisheries Commission (NEAFC) immediately after the FAO had agreed on the IPOA on IUU fishing in February 2001. The first exchanges of view dealt with:

1) Port State Control.

2) The exchange of information on IUU activity between NARFMOs (North Atlantic Regional Fisheries Management Organisations).

3) A fair and equitable treatment of new entrants according to international law.

It was realised at an early stage that it would not be necessary to implement all parts of the IPOA on IUU in the North Atlantic area. In applying the IPOA, the particular situation in the North Atlantic should be kept in mind and form the basis for moving forward. Those elements relevant to the North Atlantic should be selected.

IUU fishing has been on the agenda of the NEAFC Commission ever since, and some aspects have been delegated to NEAFC's Permanent Committee on Enforcement and Control and the Working Group on the Future of NEAFC, which prepares policy proposals to the NEAFC Commission. In the process, NEACF has introduced guidelines for new entrants, discussed lists of IUU vessels and states of flags of convenience and, at the 22nd Annual Meeting in November 2003, adopted the following resolution:

[160] This paper was prepared as a background document for the Workshop.

**Resolution**

***Actions Against Non-Contracting Parties Engaged in Illegal, Unregulated and Unreported (IUU) Fishing in the Regulatory Area***

*The Commission,*

***Concerned** that illegal, unregulated and unreported (IUU) fishing compromises the primary objectives of the Convention,*

***Aware** that a significant number of vessels registered to non-Contracting Parties engaged in fishing operations in the Regulatory Area in a manner which diminishes the effectiveness of NEAFC management measures,*

***Recalling** that the states are required to co-operate in taking appropriate action to deter any fishing activities which are not consistent with the objective of the Convention,*

*urges Contracting Parties to take steps towards States identified to have vessels flying their flags being engaged in IUU-fishing in the Regulatory Area by approaching the flag States concerned requesting them to take all appropriate steps to halt the undermining of NEAFC management measures.*

The FAO IPOA refers to three separate issues with respect to IUU fishing,

1. § 3.1 Illegal fishing

3.1.1 conducted by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations;

3.1.2 conducted by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law; or

3.1.3 in violation of national laws or international obligations, including those undertaken by co-operating States to a relevant regional fisheries management organization.

2. § 3.2 Unreported fishing

3.2.1 which have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations; or

3.2.2 undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

3. § 3.3 Unregulated fishing

3.3.1 in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or

3.3.2 in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

NEAFC has so far only discussed the IUU activity of non-Contracting Parties. Possible unreported catches, quota overshooting or other activities by Contracting Parties have not been discussed. Some fisheries in the Regulatory area are still not regulated satisfactorily, especially fisheries for deep sea species.

At its meeting in mid-May 2004, the Working Group on the Future of NEAFC will discuss other aspects of the IPOA. *i.e.*, the need for applying IUU measures symmetrically with respect to Contracting and non-Contracting Parties. An overview of NEAFC measures implemented up to now, compared with the measures in the FAO IPOA, is given below.

| IPOA § | IPOA Measures | NEAFC Measures |
|---|---|---|
| 80 | States, acting through relevant regional fisheries management organisations, should take action to strengthen and develop innovative ways, in conformity with international law, to prevent, deter, and eliminate IUU fishing. Consideration should be given to include the following measures: | |
| 80.1 | Institutional strengthening, as appropriate, of relevant regional fisheries management organizations with a view of enhancing their capacity to prevent, deter and eliminate IUU fishing; | Permanent Secretariat established in 1999 |
| 80.2 | Development of compliance measures in conformity with international law; | |
| 80.3 | Development and implementation of comprehensive arrangements for mandatory reporting; | Scheme 1999 |
| 80.4 | Establishment of and cooperation in the exchange of information on vessels engaged in or supporting IUU fishing; | Reports from 1999 |
| 80.5 | Development and maintenance of records of vessels fishing in the area of competence of a relevant regional fisheries management organisation, including both those authorised to fish and those engaged in or supporting IUU fishing; | Yes |
| 80.6 | Development of methods of compiling and using trade information to monitor IUU fishing | Not considered |
| 80.7 | Development of MCS, including promoting for implementation by its members in their respective jurisdictions, unless otherwise provided for in an international agreement, real time catch and vessel monitoring systems, other new technologies, monitoring of landings, port control, and inspections and regulation of transhipment, as appropriate; | Scheme 1999 |
| 80.8 | Development within a regional fisheries management organization, where appropriate, of boarding and inspection regimes consistent with international law, recognising the rights and obligations of masters and inspection officers; | Scheme 1999 |
| 80.9 | Development of observer programmes; | n.a. |
| 80.10 | Where appropriate, market-related measures in accordance with the IPOA; | Not considered |
| 80.11 | Definition of circumstances in which vessels will be presumed to have engaged in or to have supported IUU fishing; | NCP Scheme 2003 |
| 80.12 | Development of education and public awareness programmes; | Not considered |
| 80.13 | Development of action plans; and | Future WG |
| 80.14 | Where agreed by their members, examination of chartering arrangements, if there is concern that these may result in IUU fishing. | Not considered |

Every year, the NEAFC Secretariat reports on IUU fishing in the NEAFC Regulatory Area. The latest report is presented below. The main problem in the Regulatory Area is IUU fishing for Oceanic redfish. In 2001, 20% of the catches of redfish in the Regulatory Area were taken by one non-Contracting Party, and this figure rose to 27% in 2002. In addition, a handful of vessels of flags of convenience have been spotted targeting redfish in the Regulatory Area.

**IUU fishing in the NEAFC regulatory area: non-contracting parties' activities**

The Scheme of Control and Enforcement currently establishes five Regulated Resources in the Regulatory Area (Oceanic redfish, herring, mackerel, blue whiting, Rockall haddock).

Recommended total allowable catches (TACs) for 2002 included co-operation quotas for redfish (1,175 MT) and mackerel (600 MT) for vessels flying the flag of co-operating non-Contracting Parties. For 2003 these co-operation quotas were reduced to 500 MT for redfish and 511 MT for mackerel.

In 2002 and 2003 Estonia authorised two vessels to operate in the Regulatory Area targeting non-Regulated Resources. The declared redfish and mackerel catches were reduced. Vessels are fully complying with the Scheme of Control and Enforcement and Estonian authorities report catches monthly.

In 2002 Japan has authorised one vessel to conduct fisheries in the Irminger Sea and, as in the previous year, the quantities were reduced (9 tonnes of redfish).

In 2002 Latvia has returned to the Regulatory Area with one vessel (formerly German) operating in the Irminger Sea and therefore the likely target is redfish. In 2003 the Latvian vessel has again been observed fishing for redfish. The Secretariat has no information concerning catches.

Six vessels from Lithuania have been observed in the Regulatory Area both in 2002 and 2003. At the 21st Annual Meeting, Lithuania reported catches ten times the allocated "co-operation quota" for 2002 (14,656 MT – these are not final figures).

NEAFC inspectors boarded a Panamanian cargo vessel operating in the Regulatory Area, receiving fish and fish offal (herring, blue whiting) from vessels flying the flag of Contracting Parties.

In 2002 five Belize registered vessels (ex-Russian) were observed targeting redfish in the Regulatory Area. In 2003 three of those vessels were re-flagged in the Dominican Republic. The Secretariat has no information on the catches of these fishing vessels.

**Landings in contracting parties' ports by non-contracting parties' vessels**

In 2002 a Latvian vessel (DORADO) requested to land catches in a German port. The German authorities refused to authorise landing of redfish based on the fact that the vessel has been observed fishing in the Regulatory Area (point 10 and 11 of the NCP Scheme). Because the vessel also detained onboard catches of redfish allegedly caught in the NAFO Regulatory Area, the German authorities authorised the landing of the NAFO catches.

In 2002 four Lithuanian vessels (RADVILA, ZUNDA, MAIRONIS, NERINGA) also attempted to land redfish in The Netherlands and were only authorised to land redfish allegedly caught in the NAFO Regulatory Area and then proceeded to Lithuania to land the NEAFC catches. It would be interesting to NAFO Contracting Parties to compare these landings with the quotas available for the Baltic States.

Finally, also in 2002, the Danish authorities refused the landing of redfish from a Russian (STARLET 3 - cargo) vessel because according to documents the fish had been caught by Belize fishing vessels (OSTROVETS, OKHOTINO). The same vessel then tried to land such catches in Germany but German authorities refused the landing.

## Table 10.1. Observation of NCP fishing vessels in the Regulatory Area

| | Observations | | | | NCP Individual Fishing Vessels | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Total** | **EU** | **ISL** | **NOR** | **Total** | **EST*** | **LTU** | **BLZ** | **PAN** | **LVA** | **DOM** |
| 2001-2002 | 222 | 52 | 157 | 13 | 14 | 1 | 6 | 6 | | 1 | |
| 2002-2003** | 75 | 46 | 29 | | 13 | | 5 | 3 | 1 | 1 | 3 |

Notes:

* After October 2001 Estonia started automatically transmitting VMS messages to the Secretariat.

** Up to and including April 2003.

## Table 10.2. Catches of Regulated Resources (Redfish)

**Redfish 2001**

| | NEAFC RA | EU | FRO | GRL | ISL | NOR | RUS | Total |
|---|---|---|---|---|---|---|---|---|
| **European Union * **** | 10,029.0 | | 334.0 | 4,994.0 | 1,904.0 | 595.0 | | 17,856.0 |
| **Faroe Islands** | 3,636.0 | | | 4,441.0 | | | | 8,077.0 |
| **Greenland **** | 498.0 | | | 1,350.0 | 1,460.0 | | | 3,308.0 |
| **Iceland** | 2,318.0 | | | 14,374.0 | 25,782.0 | | | 42,474.0 |
| **Norway** | 3,853.0 | | | 1,217.0 | | | | 5,070.0 |
| **Poland** | | | | | | 6.0 | | 6.0 |
| **Russian Federation *** | 24,310.0 | | 54.0 | 4,050.0 | | | | 28,414.0 |
| **Estonia *** | 599.0 | | | | | | | 599.0 |
| **Japan *** | 11.0 | | | | | | | 11.0 |
| **Lithuania** | 11,389.0 | | | | | | | 11,389.0 |
| **Total** | 56,643.0 | 0.0 | 388.0 | 30,426.0 | 29,146.0 | 601.0 | 0.0 | 117,204.0 |

* - Reported as RED ** - Catches include NAFO 1F

**Redfish - 2002**

| | NEAFC RA | EU | FRO | GRL | ISL | NOR | XJM | XSV | RUS | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| **European Union *** | 8,479.0 | 22.0 | 251.0 | 7,481.0 | 998.0 | 142.0 | | | | 17,373.0 |
| **Faroe Islands **** | 3,227.7 | | | 1,019.8 | | | | | | 4,247.5 |
| **Greenland **** | 243.0 | | | 1,022.0 | 3,323.0 | | | | | 4,588.0 |
| **Iceland** | 3,331.0 | | | 5,995.0 | 35,106.0 | | | | | 44,432.0 |
| **Norway** | 1,094.0 | | | 4,198.0 | | | | | | 5,292.0 |
| **Poland** | 1.4 | | | | | | | 7.6 | | 9.0 |
| **Russian Federation *** | 23,411.0 | | | 2,811.0 | | | | | | 26,222.0 |
| **Estonia** | 15.0 | | | | | | | | | |
| **Lithuania***** | 14,656.0 | | | | | | | | | 14,656.0 |
| **Total** | 54,458.1 | 22.0 | 251.0 | 22,526.8 | 39,427.0 | 142.0 | 0.0 | 7.6 | 0.0 | 116,819.5 |

* - Redfish reported as RED ** - Catches include NAFO 1 F

**Table 10.3. Catches of Regulated Resources (Mackerel)**

| Mackerel 2001 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **NEAFC RA** | **EU** | **FRO** | **GRL** | **ISL** | **NOR** | **RUS** | **Total** |
| **European Union** | | 352,683.0 | 523.0 | | | 22,107.0 | | 375,313.0 |
| **Faroe Islands** | | 8,829.0 | 5,888.0 | | | 8,967.0 | | 23,684.0 |
| **Greenland** | | | | | | | | 0.0 |
| **Iceland** | | | | | | | | 0.0 |
| **Norway** | 10.0 | 386.0 | 5.0 | | | 178,911.0 | | 179,312.0 |
| **Poland** | | | | | | | | 0.0 |
| **Russian Federation** | 39,742.0 | | 2,963.0 | | | 87.0 | | 42,792.0 |
| **Estonia** | 218.0 | | | | | | | 218.0 |
| **Lithuania** | 1,949.0 | | | | | | | 1,949.0 |
| **Total** | 41,919.0 | 361,898.0 | 9,379.0 | 0.0 | 0.0 | 210,072.0 | 0.0 | 623,268.0 |

| Mackerel -2002 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | **NEAFC RA** | **EU** | **FRO** | **GRL** | **ISL** | **NOR** | **XJM** | **XSV** | **RUS** | **Total** |
| **European Union** | 78.0 | 272,412.0 | 56,799.0 | | | 25,739.0 | | | | 355,028.0 |
| **Faroe Islands** | | 5,108.0 | 5,307.0 | | | 9,542.2 | | | | 19,957.2 |
| **Greenland** | | | | | | | | | | 0.0 |
| **Iceland** | | | 53.0 | | | | | | | 53.0 |
| **Norway** | | 10,431.0 | | | | 173,478.0 | | | | 183,909.0 |
| **Poland** | | | | | | | | | | 0.0 |
| **Russian Federation** | 31,783.0 | | 6,123.0 | | | | | | | 37,906.0 |
| **Estonia** | | | | | | | | | | 0.0 |
| **Total** | 31,861.0 | 287,951.0 | 68,282.0 | 0.0 | 0.0 | 208,759.2 | 0.0 | 0.0 | 0.0 | 596,853.2 |

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