

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

**MANAGEMENT IMPLICATIONS AND RECOMMENDATIONS FOR INTERNATIONAL  
ACTION ARISING FROM A CASE STUDY PREPARED FOR WWF<sup>1</sup>**

**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 organizations may, in some cases, need to be reformed to ensure that all parties agree to and effectively implement the conservation and management measures adopted by the regional organization.

The following paper has been prepared 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 transshipment and resupply fleets,
- recommend specific measures to manage at-sea transshipment and resupply 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 transshipment and re-supply. This report contains specific information on the character of this infrastructure and recommendations to manage at-sea transshipment 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

---

<sup>1</sup> This paper has been prepared by Matthew Gianni and Walt Simpson, International Oceans Network for WWF.

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 be possible.

## **1. Introduction**

1. The following 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 transshipment and resupply fleets. The information on general trends is based primarily on analyses and comparison of information obtained from Lloyd’s Register of Shipping. The character and extent of the at-sea transshipment and resupply fleets is based on a variety of sources of information and a number of assumptions outlined in the paper. The paper focuses on the latter as they 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 the at-sea transshipment and resupply industry will provide governments, regional fisheries management organizations, 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.

2. It must be emphasized that the effective management of high seas fisheries will never be possible where IUU fishing takes place, 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.

## **2. Recent trends in Flags of Convenience fisheries**

3. 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 (FOC) system. The data analyzed 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 analyzes 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 1.

**Table 1. Numbers, average tonnage and average age of fishing vessels registered to 14 countries with open registries 1999-2003. Source Lloyd's Register of Shipping**

Year	Flag State	Total Vessels	Total Tonnage	Average Tonnage	Average Age
<b>1999</b>	BELIZE	409	348892	853	23.4
	BOLIVIA	1	232	232	52
	CAMBODIA	6	6547	1091.2	22.3
	CYPRUS	46	103573	2251.6	19.1
	EQUATORIAL GUINEA	56	30984	553.3	18.8
	GEORGIA	29	10792	372.1	20.9
	HONDURAS	416	175387	421.6	25.9
	MARSHALL ISLANDS	11	18701	1700.1	20.2
	MAURITIUS	22	7591	345	30
	NETHERLANDS ANTILLES	18	17481	971.2	25.4
	PANAMA	224	169679	757.5	31.6
	ST. VINCENT	110	81956	745.1	23.7
	SIERRA LEONE	34	9750	286.8	28.7
	VANUATU	34	50609	1488.5	21.9
<b>2001</b>	BELIZE	455	349381	767.9	22.8
	BOLIVIA	11	7935	721.4	16
	CAMBODIA	16	17336	1083.5	22.6
	CYPRUS	51	108826	2133.8	19.6
	EQUATORIAL GUINEA	51	28088	550.7	18.4
	GEORGIA	39	25338	649.7	23.3
	HONDURAS	313	125975	402.5	26.2
	MARSHALL ISLANDS	11	13289	1208.1	19.4
	MAURITIUS	23	7860	341.7	30.1
	NETHERLANDS ANTILLES	24	28131	1172.1	20.6
	PANAMA	198	149070	752.9	30
	ST. VINCENT	101	154787	1532.5	23.8
	SIERRA LEONE	30	8953	298.4	28.7
	VANUATU	46	116870	2540.7	15
<b>2003</b>	BELIZE	279	258681	933.9	22
	BOLIVIA	24	21399	891.6	20
	CAMBODIA	43	39224	912.2	20
	CYPRUS	41	92405	2253.8	18.2
	EQUATORIAL GUINEA	41	24351	593.9	18.5
	GEORGIA	53	24080	454.3	18.8
	HONDURAS	507	178802	352.7	23.2
	MARSHALL ISLANDS	14	16081	1148.6	13.6
	MAURITIUS	26	10676	410.6	28
	NETHERLANDS ANTILLES	21	18100	861.9	20.5
	PANAMA	205	130512	636.6	27.9
	ST. VINCENT	86	117161	1362.3	23.7
	SIERRA LEONE	35	10185	291	26.2
	VANUATU	64	93380	1459.1	7.5

4.

The fourteen countries listed on Table 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 organizations as being the flag states of particular concern in relation to IUU fishing in a survey conducted in 2002.<sup>2</sup> 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 Transportworkers Federation and the report of the UN Secretary General's Consultative Group on Flag State Implementation<sup>3</sup> as having the highest number of fishing vessels on their registries in addition to the nine countries mentioned above.

5. In fact the list of countries on Table 1 could be much longer. The International Transportworkers (ITF) Federation identifies 28 countries as operating flags of convenience, including fishing and merchant vessels.<sup>4</sup> 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.<sup>5</sup>

6. To be clear, not every vessel flagged to the 14 countries listed above are necessarily engaged in IUU fishing. Twenty-one vessels flagged to Panama, for example, are listed on the ICCAT 'white list' of fishing vessels as authorized by Panama to fish in the Atlantic Ocean. The ICCAT list of 3,176 vessels authorized by contracting or cooperating 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 authorized to fish by Brazil.<sup>6</sup> The Indian Ocean Tuna Commission (IOTC) does not list any vessels flagged to these 14 countries as being amongst the 2,030 vessels authorized by contracting or cooperating parties to fish tunas and tuna like species in the Indian Ocean.<sup>7</sup> The Inter-American Tropical Tuna Commission (IATTC) lists fifty-two Panamanian flagged longline vessels and nineteen purse seiners

<sup>2</sup> 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.

<sup>3</sup> Consultative Group on Flag State Implementation. Advance, unedited text. Oceans and the law of the sea. United Nations, 5 March 2004

<sup>4</sup> 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 Transportworkers 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>

<sup>5</sup> 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

<sup>6</sup> ICCAT record of vessels as per the 2002 Recommendation by ICCAT Concerning the Establishment of an ICCAT Record of Vessels over 24 m Authorized to Operate in the Convention Area. <http://www.iccat.org/vessel2/vessels.aspx> (accessed 29 March 2004).

<sup>7</sup> IOTC Record of vessels over 24 metres authorized to operate in the IOTC area (updated 2004-03-29). <http://www.iotc.org/English/record/search.php>

(the flag and status of two are under dispute) authorized by Panama to fish in the Eastern Pacific Ocean. Honduras, Belize, Bolivia, and Vanuatu have an additional 18 vessels combined on the IATTC list of purse seine vessels.<sup>8</sup> Unfortunately, the authors were unable to review the South Pacific Forum Fisheries Agency's Regional Register of Fishing Vessels to determine the extent, if any, that vessels flagged to the fourteen countries are on the list of vessels in good standing.

7. Given that many of the vessels flagged to the fourteen countries on Table 1 are longline vessels targeting tuna and other highly migratory species, this begs an important question: aside from the relatively small percentage authorized to fish as indicated above, where do these vessels fish? Taking Honduras as an example, it had 507 vessels over 24 meters 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."<sup>9</sup>

8. On the ICCAT list, there are four Honduran flagged vessels authorized by Brazil to fish in the ICCAT area under charter arrangements with Brazilian companies. An additional two tuna purse-seine vessels are authorized to fish in the Eastern Pacific in the IATTC area. No Honduran flagged vessels are listed as authorized 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 authorized to fish?

9. 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 program 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***

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

#### ***i. Top four flag of convenience countries:***

11. 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.

<sup>8</sup> List of authorized 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>

<sup>9</sup> <http://www.marinamercante.hn/registry2.html> fishing.

12. There have been a number of measures adopted over the past several years by ICCAT, CCAMLR, IOTC and other regional fisheries management organizations, 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 organizations 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.

*ii. Up and coming FOCs/others:*

13. 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 numbers of fishing vessels flagged to each of these four countries rose markedly between 1999-2003 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.

14. Cyprus continues to maintain over 40 fishing vessels on its registry in spite of the fact that it will join 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.

*iii. Effectiveness of UN FAO IPOA:*

15. 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 organizations and some states to combat IUU fishing to date have had limited effect.

**Table 2. Summary of trends in numbers, average tonnage and average length of fishing vessels (Fishing Vessels, Trawlers and Fish Factory Ships) registered to the 14 countries listed on Table 1, 1999-2003, compared to all fishing vessels  $\geq 24$  meters in length. Source Lloyd's Maritime Service**

	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	19581		42.13	546.4	10,698,6190		25.3
	FOC (14 countries)	1449	7.4 %	50.41	780.8	1,131,4490	10.6 %	25.2
	Unknown	1108	5.7 %	42.17	353.5	391,7320	3.7 %	33
2001	All Countries	19206		42.38	543.6	10,441,2890		25
	FOC (14 countries)	1340	7.0 %	50.35	845.1	1,132,4470	10.8 %	24.4
	Unknown	1248	6.5 %	43.46	429.4	535,8780	5.1 %	30.1
2003	All	19905		42.40	548.7	10,922,7940		24
	FOC (14 countries)	1279	6.4 %	48.51	806	1,030,8830	9.4 %	22.4
	Unknown	1485	7.5 %	42.66	416.5	618,4900	5.7 %	28.4

*iv. New vessel construction:*

16. 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.

17. Most of these vessels are built in Taiwan (see Table 3.2). In fact, of the 51 fishing vessels over 24 meters built in Taiwan over the past three years, 50 were flagged in FOC countries by the end of 2003 – only one was flagged in Taiwan. It would be worth further investigation to determine whether any of the companies in Taiwan involved in building new vessels have benefited from funds for the joint Japan/Taiwan program designed to decommission large-scale tuna longline vessels. Further, given the status of Taiwan as a “Cooperating Party, Entity or Fishing Entity” of ICCAT, the government should be encouraged to ensure that no vessels built in Taiwanese shipyards are allowed to register to flag of convenience countries.

**Table 3.1 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. Vincents	1	635
Sierra Leone	0	0
Vanuatu	20	17,631
Unknown	3	843



Table 3.2 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
<b>Belize</b>					
Ruey Tay	Ruey Yih Fishery	Belize	Taiwan	29.9	119
San Jose	Sedamanos Arevalo	Ecuador	Ecuador	29.9	131
Southern Star No. 888	Grace Marine	Taiwan	Taiwan	56.5	520
Wang Jia Men	Owner Unknown	Unknown	Taiwan	29.8	140
Yu Long	Owner Unknown	Unknown	Taiwan	29.9	125
Yu Long No. 10	Owner Unknown	Unknown	Taiwan	29.9	125
Yu Long No. 2	Owner Unknown	Unknown	Taiwan	29.9	125
Yu Long No. 6	Owner Unknown	Unknown	Taiwan	29.9	125
Zee Chun Tsai No. 22	Wu Lai Ming	Taiwan	Taiwan	29.9	119
Zee Chun Tsai No. 23	Owner Unknown	Unknown	Taiwan	29.9	119
Zhou Shan 18	Zhoushan Putuo	China	China	86.2	1,996
			<b>Average</b>	<b>37.4</b>	<b>331.3</b>
<b>Bolivia</b>					
Champion	Sun Hope Investment	Taiwan	Taiwan	54.6	647
Georgia	Georgia Fishery	Taiwan	Taiwan	62.6	878
Hunter	Hunter Fishery	Taiwan	Taiwan	62.6	878
Isabel	Isabel Fishery	Taiwan	Taiwan	62.6	878
Jackson	Jackson Fishery	Taiwan	Taiwan	62.6	878
			<b>Average</b>	<b>60.99</b>	<b>831.8</b>
<b>Cambodia</b>					
Shin Ho Chun No. 102	Lubmain Shipping		Taiwan	<b>85.2</b>	<b>2,495</b>
<b>Georgia</b>					
Chen Chieh No. 31	Pi Ching Fishery	Taiwan	Taiwan	24.0	101
Chen Chieh No. 32	Pi Ching Fishery	Taiwan	Taiwan	24.0	101
Kiev	Kiev Fishery	Taiwan	Taiwan	54.6	647
Monas	Monas Fishery	Taiwan	Taiwan	63.2	1,105
Nantai	Nantai Fishery	Taiwan	Taiwan	63.2	1,105
Shang Jyi	Shine-Year Maritime	Singapore	Taiwan	24.0	230
			<b>Average</b>	<b>42.1</b>	<b>548.2</b>
<b>Netherlands Antilles</b>					
Patudo	Overseas Tuna	Spain	Spain	<b>44.5</b>	<b>393</b>

**Panama**

Chung Kuo No. 81	Genesis Ocean	Panama	Taiwan	32.0	179
Chung Kuo No. 85	Genesis Ocean	Panama	Taiwan	32.0	179
Chung Kuo No. 86	Genesis Ocean	Panama	Taiwan	32.0	179
Chung Kuo No. 91	Genesis Ocean	Panama	Taiwan	32.0	179
Chung Kuo No. 95	Genesis Ocean	Panama	Taiwan	32.0	179
Chung Kuo No. 96	Gilontas Ocean	Panama	Taiwan	32.0	179
Marine 303	Tuna Globe	Taiwan	Taiwan	50.8	420
Pesca Rica No. 2	Rica Panama	Taiwan	Taiwan	59.2	625
Pesca Rica No. 6	Grande Panama	Taiwan	Taiwan	59.2	625

<b>Average</b>				<b>40.1</b>	<b>304.9</b>
----------------	--	--	--	-------------	--------------

**St. Vincents And  
The Grenadines**

Tuna Bras No. 216	Tunabras Int.	British Virgin Isl.	China	57.4	635
-------------------	---------------	---------------------	-------	------	-----

**Vanuatu**

Chin Chun No. 12	Sheng Sheng Fishery	Vanuatu	Taiwan	61.0	637
Fair Victory 707	Fair Victory International	Vanuatu	Taiwan	70.6	1,180
Fong Seong 168	Trans-Global Int.	Vanuatu	Taiwan	90.0	2,380
Fong Seong 196	Trans-Global Int.	Vanuatu	Taiwan	90.0	2,386
Fu Chun No. 126	Fu Chun Fishery	Vanuatu	Taiwan	61.0	637
Heng Chang No. 168	Ever Fortune Fishery	Vanuatu	Taiwan	61.0	637
Hf No. 88	Hf Fishery	Vanuatu	Taiwan	69.0	1,150
Hsiang Sheng No. 6	Hsiang Sheng Fishery	Vanuatu	Taiwan	70.6	1,280
Hsiang Shun	Hsiang Chan Fishery	Vanuatu	China	52.7	560
Jin Hong No. 308	Jin Hong Ocean Ent.	Vanuatu	Taiwan	60.1	625
Jui Der No. 36	Jui Fu Fishery	Vanuatu	China	61.5	558
Jupiter No. 1	Jupiter Fishery	Vanuatu	Taiwan	61.5	699
Ming Man No. 2	Ming Shun Fishery	Taiwan	Taiwan	61.5	660
Mitra No. 888	Ryh Chun Fishery	Vanuatu	Taiwan	61.5	660
More Rich	Sun Rise Fishery	Vanuatu	Taiwan	59.2	625
Ocean Harvest	Ocean Harvest Fishery	Vanuatu	Taiwan	50.1	490
Pacific Tracker No. 116	Melanesia Marine	Vanuatu	Taiwan	40.0	327
Shun Fa No. 8	Shun Fa Fishery	Vanuatu	Taiwan	69.0	1,150
To Chan No. 2	Sun Rise Fishery	Vanuatu	China	45.0	492
Tunago No. 62	Tunago Fishery	Vanuatu	Taiwan	45.0	498

<b>Average</b>				<b>62.0</b>	<b>881.6</b>
----------------	--	--	--	-------------	--------------

**Unknown**

Brave	Bravotime	Hong Kong	Taiwan	33.0	227
Great Ocean I	Southern Cross	Vanuatu	Taiwan	34.6	296
Seta 70	Owner Unknown		Taiwan	46.0	320
				<b>Average</b>	<b>37.9</b>
					<b>281.0</b>

v. *Average size of FOC flagged vessels:*

18. Finally, it is worth noting that the average length and tonnage of the vessels registered to the 14 countries listed are substantially higher than the averages for all fishing vessels combined (flying all flags) greater than or equal to 24 meters on the Lloyd's database (Table 2). For 2003, while the number of fishing vessels flying the flag of one of the fourteen FOC countries is only about 6.4 percent of the total, this fleet represents close to ten percent of the capacity of all 'large-scale' fishing vessels on the Lloyd's database as measured in Gross Tonnage.

**3. At-sea transshipment, tankers and resupply fleets**

19. 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 recognize this fact. Paragraphs 73 and 74 of the IPOA call upon states to deter importers, transshippers, 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.

20. A major element of the supporting infrastructure for distant water fleet fishing on the high seas consists of at-sea transshipment and resupply vessels. Many high seas distant water fishing vessels stay at sea for long periods of time, transshipping their catches, refueling, rotating crews, and resupplying bait, food, and water through transshipment and resupply vessels servicing the fishing fleets at sea. In recognition of the essential role played by at-sea transshipment and resupply vessels to the operation of IUU fleets, the IPOA further elaborates on the subject of transshipment and resupply 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 transship 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 transshipment at sea have a prior authorization to transship issued by the flag State...

**3.1 Transshipment: Fish transport vessels ("Reefers")**

21. At-sea transshipment 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 transshipment vessels as far as the authors are aware, Table 4 contains a sample list of refrigerated cargo vessels that are likely to be transshipping high-grade tuna in the Atlantic, Indian Ocean and Pacific Oceans.

*Methodology*

22. 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 transshipped 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. Then, the voyages of each of these Reefers was analyzed looking for frequent transits through known tuna fishing areas and to ports known to be transshipment 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 organizations to narrow down the list to those most likely to be transshipping 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 4. Annex I lays out the port visits and itineraries of several of these vessels over the period 2001-2003.

Table 4. 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	Taiwan	Taiwan	Pacific
Fuji	Bahamas	Kasuga Kaiun	Japan	Japan	Indian - Atlantic
Golden Express	Panama	Dongwon Industries	Korea	Korea	Pacific-Indian
Gouta	Panama	Chin Fu Fishery	Taiwan	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

**Table 5. Numbers and frequency of reefers likely to be delivering transshipped tuna to Shimizu and Yokosuka ports in Japan.**

<b>Ship Port Visits</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>Average Visits Per Year</b>
Shimizu	285	346	329	320
Yokosuka	38	145	139	141

<b>Different Ships</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>Average Ships Per Year</b>
Shimizu	64	69	65	66
Yokosuka	50	8	45	48

23. The case of the M/V Hatsukari, a vessel documented by Greenpeace International transshipping 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 transshipment of high grade tuna destined for market in Japan.<sup>10</sup>

*Case Study: M/V Hatsukari*

**M/V Hatsukari**

On the 3rd of March, 2000, the M/V Hatsukari sailed from her homeport of Shimizu in Japan. The Hatsukari is a Japanese owned and Panama flagged refrigerated cargo ship, 94 meters long, displacing 3029 tons, with a crew of Japanese officers and Philippine sailors. After stopping in Busan, South Korea on the 12<sup>th</sup> and 13<sup>th</sup> of March and in Kaoshiong, Taiwan on the 16<sup>th</sup> and 17<sup>th</sup> of March where she most likely took on supplies for Korean and Taiwanese 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 24<sup>th</sup> 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 26<sup>th</sup> 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 long line fleets fishing for Big Eye tuna in the Atlantic Ocean off the African coast.

Companies that own or manage the long line tuna fishing vessels working the Eastern Atlantic Ocean had prearranged 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 long line fishing vessels pulled up their gear and one by one came along side the Hatsukari to discharge their cargo of frozen tuna and to pick up the food, supplies and spare parts.

<sup>10</sup> Bours H., Gianni M., Mather D., Pirate Fishing Plundering the Oceans. Greenpeace International February 2001.

On the 6<sup>th</sup> of May near position 9° 00 S - 5° 00 W, several hundred kilometers 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 Taiwanese vessels, Yu I Hsiang and Jiln Horng 206, also took their turns.

Almost a month after leaving Cape Town, on the 25<sup>th</sup> of May, the Hatsukari made a brief stop at St. Vincents in the Cape Verde Islands. The Hatsukari arrived back in Cape Town on the 20<sup>th</sup> of June where it reportedly offloaded seventy-two tons of tuna of indeterminate species. She departed Cape Town on the 21<sup>st</sup> 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 26<sup>th</sup> of July, departing the 29<sup>th</sup> to sail back to Japan. The Hatsukari arrived in Shimuzu on the 8<sup>th</sup> August where the transshipped cargo of high grade tuna was offloaded for market.

24. 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, Taiwan 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, transshipping sashimi grade tuna and resupplying high seas tuna longline fleets. The sample of reefers and their itineraries in Annex I follow similar patterns.

25. The Hatsukari was transshipping fish on the high seas from IUU fishing vessels as well as legal vessels fishing for tuna. Similarly, Greenpeace documented an attempted transshipment from a Belize flagged tuna longline vessel to the reefer M/V Toyou in the same area on 12 May 2000.<sup>11</sup> Like the Hatsukari, at least some portion of the transshipment 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 transshipment vessels would service IUU fishing vessels only.

#### *Observers aboard transshipment vessels*

26. In the same way that ICCAT, IOTC and the IATTC have developed lists of vessels authorized to fish in their respective areas of competence, the authors would argue that these and other RFMOs should require that all transshipment vessels operating in the area of competence of the organization have an authorization to transship at sea and that a list be compiled of such vessels. Furthermore, we would argue that relevant Regional Fisheries Management Organizations should agree to establish an observer program onboard all transshipment vessels to monitor and report on all transshipments in fisheries regulated by the RFMO at sea. The program should be operated under the authority or auspices of the RFMO, in cooperation with, but independent of, the flag states of the transshipment vessels (similar to the observer program on fishing vessels run by the IATTC). The failure of a tuna transshipment vessel to cooperate in the program 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.

27. Some of the practicalities of establishing an observer program 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 transshipping of high grade tuna are flagged to contracting parties of ICCAT,

<sup>11</sup> Ibid Greenpeace

with most flagged to Panama and Japan. All but a handful are owned or managed by companies based in Japan and Korea. The cooperation of these three states: the flag states, market states and and/or countries of beneficial ownership of most of the transshipment 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 transshipment adopted by ICCAT.<sup>12</sup>

28. 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 program, involving Panamanian flagged transshipment 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 cooperate in such a program even though it is not currently a member of the IOTC. However, in addition to establishing observer programs, RFMOs should adopt measures to require that all transshipment vessels should be flagged to contracting parties or cooperating 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.

### 3.2 *Tankers and Resupply vessels*

29. Fleets of vessels that refuel and resupply high seas fishing vessels are also an essential element of the infrastructure necessary to maintain IUU fishing as well as fishing by legal operators. 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, in Table 6.

#### *Methodology*

30. The methodology used in this case was as follows:

- an internet search yielding several companies that specialize in refueling (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.

31. 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 refueling and resupplying 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 refueling and reprovisioning distant water fishing vessels at sea. A sample of 30 of these vessels is included in Table 6.

---

<sup>12</sup> 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 Cooperating 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 transshipment, 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.



**Table 6. Tankers and resupply vessels servicing fishing vessels at sea. Provisional list.**

Tanker Name	Flag	Owner/Manager	Nationality of Owner/Manager	Principle 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 Taurus	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

32.

While the ownership and registered flags of these vessels involves a greater number of countries than do the high value tuna transshipment 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 resupply 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.<sup>13</sup> Another company, SK Shipping operates a fleet of over 20 tankers supplying fuel and supplies to fishing fleets, world wide. 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.<sup>14</sup>

33. Finally, some companies are involved in both transshipment of fish and resupply. Sunmar Shipping, for example services international fleets operating in the Russian Far East. According to its website, the company operates 20 vessels which transship "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.<sup>15</sup>

34. It is difficult to understate the importance of tankers and resupply 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 cooperating in international efforts to prevent, deter and eliminate IUU fishing, whether through observer programs, bringing company policies and business practices in line with RFMO recommendations, and/or by other means. Integrating tankers and resupply 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.

#### **4. Recommendations/discussion**

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

36. 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 Taiwan involved in building new fishing vessels over the past three years, virtually all of which have

---

<sup>13</sup> <http://www.addax-oryx.com/media/pdf/bunkers.pdf>

<sup>14</sup> <http://www.skshipping.com/jsp/eng/company/overview.jsp>

<sup>15</sup> <http://www.sunmar.com/ssi/default.htm>

been flagged to FOC countries, have benefited from funds for the joint Japan/Taiwan program designed to decommission large-scale tuna longline vessels.

3. Given the status of Taiwan as a “Cooperating Party, Entity or Fishing Entity” of ICCAT, the government should be encouraged to ensure that no vessels built in Taiwanese shipyards are allowed to register to flag of convenience countries.
4. RFMOs should require that all transshipment vessels operating in the area of competence of the organization have an authorization to transship at sea and that a list be compiled of such vessels.
5. RFMOs should agree to establish an observer program onboard all transshipment vessels to monitor and report on all transshipment at sea. The program should be operated under the authority or auspices of the RFMO, in cooperation with, but independent of, the flag states of the transshipment vessels concerned.
6. RFMOs should adopt measures to require that all transshipment vessels should be flagged to contracting parties or cooperating 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 resupply vessels servicing fishing vessels on the high seas to cooperate in international efforts to prevent, deter and eliminate IUU fishing, whether through observer programs, bringing company policies and business practices in line with RFMO recommendations, and/or by other means.

37. In addition to the above, as mentioned in executive summary there are a number of other aspects of the infrastructure worldwide that support and facilitate IUU fisheries. 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 organizations over the past several years.

38. 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.

39. As was discussed in a paper prepared by Gianni for WWF for the June 2003 meeting OECD Ministerial level 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 larger.

40. 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 organization 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 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 be unable to accomplish.

41. 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 I.

SAMPLE OF PORT VISITS AND ITINERARIES OF REFRIGERATED CARGO VESSELS TRANSSHIPPING 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 (GRO)	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					

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
------	----------------------------	-------	----	--------------	-------	-------------------------------------	----------	------------------------

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

M/V NEW PROSPERITY

2001	YK - SH - YK - SH - TO - KE	JPN - PER	EAST PACIFIC (CA)	PER - JPN	SH - BU - TO - YK - BU - SH	SI-CP	EAST ATLANTIC (CP - WB)	CP-SI
2002	SH - YK - SH - BU - KA	W. PAC (SU-PA)	YK - SH - TO - YK - SH - YK - SH	JPN - PER	E. PACIFIC (PERU)	PER - JAP	YK-SH-KA	
2003	SI-CP	EAST ATLANTIC (CP)	CP-SI	SH	BU - KA	W. PAC. (SV)	YK - TO - BU - KA	INDIAN OCEAN (SY)

M/V SHOFU

2001	EAST ATLANTIC (LAS PALMAS)	CP-SI	SH	YK - BU - KA	WEST PAC (PA)	SH	BU - KA - BU - SH		
2002	WEST PACIFIC (PAPEETE)	SH - BU - SH - YK - BU - KA	SI-CP	EAST ATLANTIC (CAPE TOWN)	CP-SI	BU-SH	BU - SH - BU - KA	WPAC	
2003	WEST PACIFIC	YK - SH	SH	SI - MED	E. ATL - MED (LA-SP)	MED - SI	SH - TO - BU - KA	SI-PC	WEST & EAST ATLANTIC (LA)

M/V TENHO MARU

2001	E. PACIFIC	SH - YK - SH	SI - SZC	MED - E. ATLANTIC (LA - ESP)	SZC - SI	SH	YK - SH - YK	E.PAC (MA)	SH
2002	W.PAC	SH - YK - SH - TO - SH - KA	SI - SZC	ME. E. ATLANTIC (LA - ESP)	SZ - SI	BU - TO - SH - KA - BU - SH	W. PACIFIC (PAPEETE)		
2003	SH - BU - SU - SH - KA - BU	W. PACIFIC (PAPEETE)	SH	SH - BU - KA	SI SY	INDIAN OCEANS (SYCHELLES)	SY - INO	SH - BU - KA	

M/V TUNASTATES

2001	EAST ATLANTIC (CAPE TOWN)	CP-SI	SH - TO - SH - BU - KA	SI-CP	EAST ATLANTIC (CP)	CP-SI	SH	BU - KA - SU	
2002	INDIAN OCEAN (SY)	SH	BU - KA	SI - LA	E. ATLANTIC	LA - COL - PC - JPN	BU - SH - TO	SH - SU - KA	INDIAN O. (SY)
2003	IND	YK - SH	BU	WEST PACIFIC (SUVA)	SH - TO - YK - BU - KA	INDIAN OCEAN	YK - TO - SU - KA	SI-CP	

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

M/V YAMATO 2

2001	SH - KA	SI-CP	EAST ATLANTIC	CP-SI	SH - YK - SH - BU - KA	S. CHINA SEA - INDONESIA	SH - YK - SH - BU - KA	SH - YK - SH - BU - KA	SH - YK - SH - BU - KA	SH
------	---------	-------	---------------	-------	------------------------	--------------------------	------------------------	------------------------	------------------------	----

2002	S. CHINA SEA - INDONESIA	SH - YK - SH - YK - SH - KA	S. CHINA SEA - INDONESIA	SH - YK - SH - BU - KA	SI-CP	SOUTH ATLANTIC	CP-SI	SH
------	--------------------------	-----------------------------	--------------------------	------------------------	-------	----------------	-------	----

2003	YK - SH - KA	S. CHINA SEA - IND.	SH - YK - SH - BU - KA	S. CHINA SEA - IND.	SH TO - SH - KA - SH	JPN - TRN	WEST AND EAST ATLANTIC
------	--------------	---------------------	------------------------	---------------------	----------------------	-----------	------------------------

= LOADING FISH AT SEA OR IN PORT       = VESSEL IN TRANSIT       = VESSEL IN PORT DISCHARGING  
 TUNA

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



ANNEX II. SAMPLE ITINERARIES OF TANKERS REFUELING FISHING VESSELS AT SEA. 2001-2003

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

M/T STAR TUNA

2001	HI	N.E.PACIFIC	HI	EAST PACIFIC	HI	EAST PACIFIC	HI	NORTH WEST PACIFIC	HI	WEST PACIFIC	SH
------	----	-------------	----	--------------	----	--------------	----	--------------------	----	--------------	----

2002	UL-BU	WEST PACIFIC	HI	EAST PACIFIC	HI	EAST PAC	HI	WEST PACIFIC	BU	EAST PACIFIC	HI	EAST PAC
------	-------	--------------	----	--------------	----	----------	----	--------------	----	--------------	----	----------

2003		WEST PACIFIC	BU	SI	NORTH PACIFIC	HI	EAST PACIFIC	HI	EAST PACIFIC	HI	EAST PACIFIC
------	--	--------------	----	----	---------------	----	--------------	----	--------------	----	--------------

M/T B. CUPID

2001	E-ATL	LP	E-ATL	LP	E-ATL	AB	E-ATL	AB	E-ATL	TE	E-ATL	LP	EAST ATLANTIC	LP	EAST ATLANTIC	AB
------	-------	----	-------	----	-------	----	-------	----	-------	----	-------	----	---------------	----	---------------	----

2002	E-ATL	LP	EAST ATLANTIC	AB	E-ATL	TE	AB	EAST ATLANTIC	TE	E-ATL	LO	E-ATL	LO	E-ATL	LO	E-ATL	LO	E-ATL
------	-------	----	---------------	----	-------	----	----	---------------	----	-------	----	-------	----	-------	----	-------	----	-------

2003	TE	TE	EAST ATLANTIC	LP	EAST ATLANTIC	LP	EAST ATLANTIC	LP	E-ATL	TE	TE	E-ATL	LP	EAST ATLANTIC	LP	EAST ATLANTIC	TE
------	----	----	---------------	----	---------------	----	---------------	----	-------	----	----	-------	----	---------------	----	---------------	----

M/T ATOM 7

2001	WEST PACIFIC	YO	W.PAC	YO-AK	PACIFIC	YO	PACIFIC	YO	PACIFIC	YO	PACIFIC
------	--------------	----	-------	-------	---------	----	---------	----	---------	----	---------

2002	PAC	YO	WEST PACIFIC	GU	NA
------	-----	----	--------------	----	----

2003	UL	W.PACIFIC	UL	PACIFIC	BA	E-PAC	BA	EAST PACIFIC	BA	EAST PACIFIC	BA	EAST PACIFIC	BA
------	----	-----------	----	---------	----	-------	----	--------------	----	--------------	----	--------------	----

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

M/T VESTA 7

2001					CU	CARIBBEAN	CU	CARIB	CU	CARIBBEAN	BA	PACIFIC				BU	PAC	UL	WPAC	BU	
2002	W.PAC	BU	WEST PACIFIC	UL	W. PACIFIC	UL	WEAT PACIFIC	UL	WEST PACIFIC					GU	WEST PACIFIC						BU-BL
2003		UL	WEST PACIFIC			UL	WEST PACIFIC			GU	WEST PACIFIC			DA	WEST PACIFIC						

M/T SHIN CO-OP MARU

2001	HI	PACIFIC			HI	E. PACIFIC	BA-CA	E. PACIFIC	HI	EAST PACIFIC	BA	EAST PACIFIC	HI	EAST PACIFIC	BA	EAST PACIFIC	HI	EAST PACIFIC	BA	EAST PACIFIC	B
2002	HI	PACIFIC		HI	PACIFIC		HI	PACIFIC	HI	PACIFIC				HI	WEST PACIFIC						UL
2003	HI	PACIFIC			HI	EAST PACIFIC		CA	E-PAC	CA	E. PACIFIC	HI	EAST PACIFIC	HI	EAST PACIFIC	BA	EAST PACIFIC	HI	EAST PACIFIC	BA	HI

M/T JAPAN TUNA NO.3

2001	SI	S.W.PAC	NC	SI	S.W.PAC	NC	S.W.PACIFIC	AK	S.W.PACIFIC	GE	S. AUSTRALIA	SI	E. INDIAN O.	FR	E.INDIAN OCEAN	SI	INDIAN O.	SI	INDIAN O.	SI		
2002	INDIAN OCEAN			SI	S.W. PACIFIC	AK	S.W. PACIFIC	AK	S.W. PACIFIC	AK	SOUTH AUSTRALIA	GE	INDIAN O.	FR	INDIAN OCEAN	SI	INDIAN O.	SI	WEST PACIFIC			
2003	HI	N. PAC.	HI	S.W. PACIFIC	AK	S.W. PACIFIC	AK	S.W. PACIFIC	AK	S.W. PACIFIC	AK	S.W. PACIFIC	SI	S.W. PACIFIC	SI	WESTERN PACIFIC	HI	WESTERN PACIFIC	HI	HI		
2001																				GU	W. PACIFIC	GU

M/T SMILE NO.3

2002	WEST PACIFIC			GU	WEST PACIFIC				GU	NORTH PACIFIC			HI	N. PAC	HI	N.PAC	HI	N. PAC	HI	W. PAC	GU
2003	GU	W.PAC	GU	WEST PACIFIC					GU	WEST PACIFIC			GU	W. PAC	GU	WEST PACIFIC	GU	WEST PACIFIC	GU	WEST PACIFIC	

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

M/T KOSIAM

2001	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	NORTH PACIFIC	HI	N. PACIFIC	HI	NORTH PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI
2002	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI
2003	N. PACIFIC	HI	WEST PACIFIC	BU	WEST PACIFIC	HI	NORTH PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI	NORTH PACIFIC	HI	N. PACIFIC	HI	N. PACIFIC	HI

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

- AB ABIDJAN
- AK ALASKA
- BA BALBOA
- BU BUSAN
- CU CURACAO
- GU GUAM,
- HI - HAWAII
- LO LOME

 = TANKERS IN PORT REFUELING AND LOADING SUPPLIES

- LP LAS PALMAS
- NA NAGOYA
- SI SIAPAN
- TE TEMA
- UL ULSAN
- YO YOKOHAMA