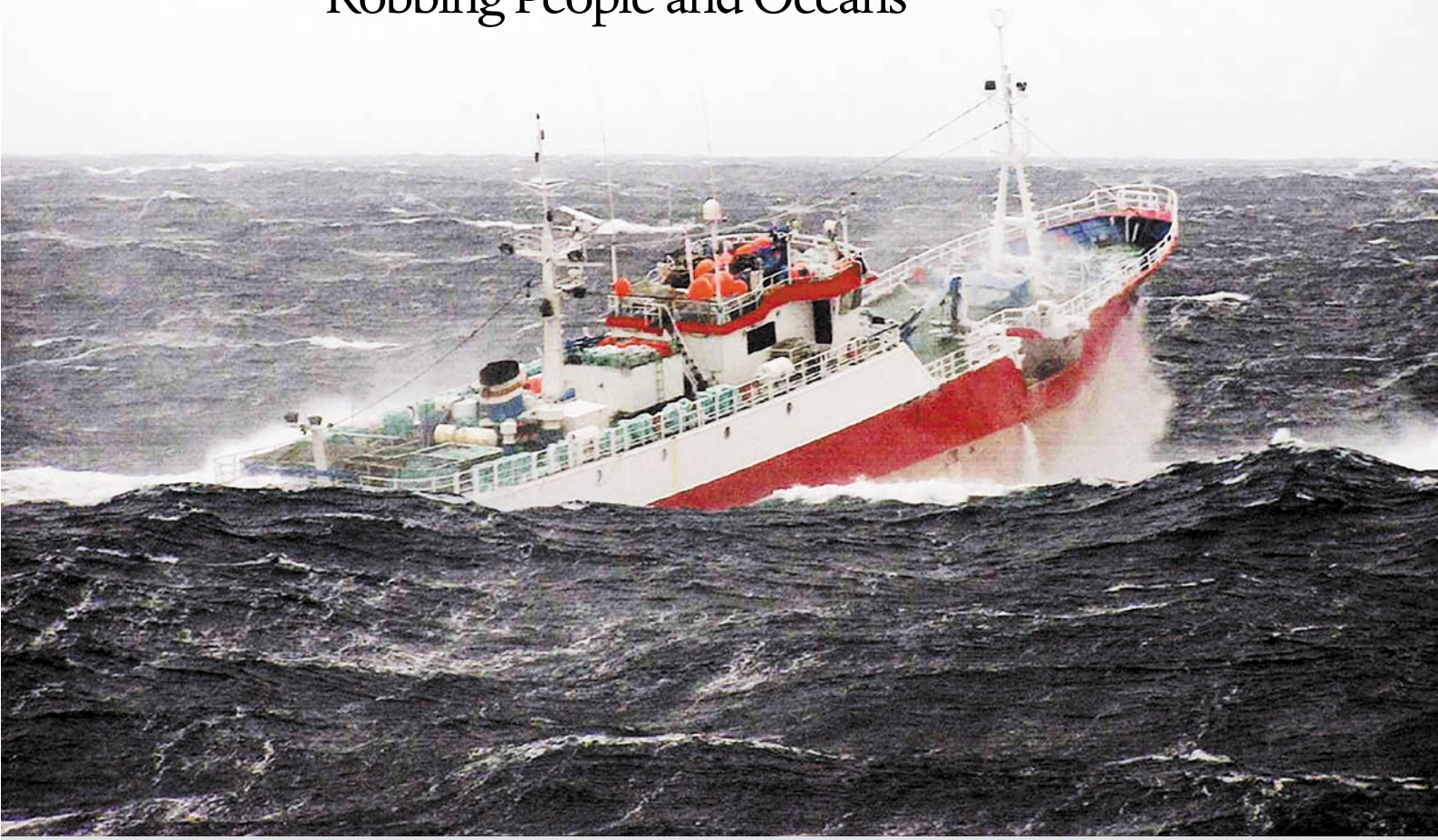
PIRATES & PROFITEERS

How Pirate Fishing Fleets are Robbing People and Oceans



A report by the

Environmental Justice Foundation

Acknowledgements

This report was researched, written and produced by the **Environmental Justice Foundation Charitable Trust** (**Steve Trent**, **Juliette Williams** and **Louis Buckley**).

Design **Dan Brown** (dan.brown@ukf.net)

Cover photo © AFMA

Printed on 100% post-consumer waste paper.

Thanks to **Brian Emmerson** and all at **Emmerson Press** for continued support.
www.emmersonpress.co.uk

EJF would like to thank the following people and their organisations for the invaluable time and assistance with information, ideas and visual materials used in this report:

Australian Fisheries Management Authority (**AFMA**), **Helen Bours**, **Dr Kevin Bray**, **Coalition of Legal Toothfish Operators** (**COLTO**), **Bertrand Le Gallic**, **Beatrice Gorez**, **Greenpeace International**, **Michele Kuruc**, **Frank Meere**, **Dr Graham Richardson**, **SADC-MCS Programme**, **Natasha Slicer** (**CCAMLR**), **TRAFFIC**.

In thanking these individuals, we in no way imply that they or their organisations endorse the report's content.

EJF's marine campaign is generously supported by the **Rufford Maurice Laing Foundation**

The Rufford Maurice Laing Foundation

COVER PHOTO: *The Uruguayan-flagged Viarsa 1, suspected of fishing illegally for Patagonian Toothfish in Australian Antarctic waters, was apprehended in October 2003 after a marathon hot pursuit across the Southern Ocean. The chase by Australian authorities lasted a record 21 days and 3,900 nautical miles. The confiscated illegal catch of toothfish from Viarsa 1 was sold for over AUD $1 million and the crew faced charges under the Australian Fisheries Management Act.*

© AFMA

EJFct

5 St Peter's St, London N1 8JD, UK
Tel 44 (0) 20 7359 0440
Fax 44 (0) 20 7359 7123
info@ejfoundation.org
www.ejfoundation.org

The **Environmental Justice Foundation** is a UK-based non-governmental organisation working internationally. More information about EJF's work and pdf versions of this report can be found at www.ejfoundation.org. Comments on the report, requests for further copies or specific queries about EJF should be directed to info@ejfoundation.org.

This document should be cited as: EJF. 2005. *Pirates and Profiteers: How Pirate Fishing Fleets are Robbing People and Oceans*. Environmental Justice Foundation, London, UK.

ISBN No. 1-904523-06-4

EJF is working internationally with its campaign partner

WildAid

www.wildaid.org

PIRATES & PROFITEERS

How Pirate Fishing Fleets are Robbing People and Oceans

CONTENTS

ABOVE: *Illegal shark fin catch. Efforts to sustainably manage fisheries are severely undermined by IUU fishing.*
© AFMA

EXECUTIVE SUMMARY

This report explores the global nature of illegal, unreported and unregulated (IUU) fishing: one of the most serious threats to the future of world fisheries. It identifies possible solutions and action that can be taken by governments and the international community to prevent, deter, and eliminate this pervasive problem.

- Seventy-five percent of the world's fish stocks are fully exploited, over-exploited or depleted according to the UN Food and Agriculture Organization. Some governments and international organizations have therefore put in place a range of conservation and management measures. As restrictions on fishing and consumer demand both increase, incentives exist for fishers to resort to clandestine means in order to circumvent conservation measures.
- IUU fishing incorporates a wide range of activities. Domestically, fishing without a licence or out of season, harvesting prohibited species, using banned types of fishing gear, catching more fish than is allowed, and not reporting or misreporting catch weights are all examples of fraudulent behaviour and IUU. Internationally, fishing contrary to the fisheries conservation and management measures of a regional fisheries management organization (RFMO), or fishing in a State's jurisdictional waters without authorization, are further examples of IUU fishing.
- The clandestine nature of IUU fishing makes it extremely difficult to develop accurate assessments of the scope and scale, though it is widely believed to account for a significant proportion of global catches. In some important fisheries IUU fishing is estimated to account for almost a third of total catches, and one regional fisheries management organisation has indicated that IUU catches probably amount to three times the permitted catch level.
- Efforts to sustainably manage fisheries are severely undermined by IUU fishing, and in extreme circumstances it can lead to the collapse of fish stocks – such as those of the Patagonian toothfish – or seriously impair efforts to rebuild depleted stocks.
- The impacts of IUU fishing go beyond the target fish stocks and can have a detrimental effect on the wider marine ecosystem, and the food security and livelihoods of coastal populations in developing countries. IUU fishing may represent an overall cost to developing countries of between US$2 – US$15 billion a year[1].
- Strong economic incentives exist to encourage IUU fishing that are not effectively addressed by current national or international controls.
- As unscrupulous fishing operations disregard rules designed to protect the marine environment they inflict significant damage: high levels of bycatch of both juvenile fish, and non-target species including seabirds, marine mammals, and sea turtles are associated with IUU fishing.

- The shallow seas off the coast of West Africa are fed by nutrient rich, deep ocean currents, which support one of the world's most productive marine ecosystems, upon which millions of local people are dependent for protein and employment. Countries in this region lack the resources to properly police their territorial waters, which extend 200 miles out to sea. IUU operators exploit this weakness and in so doing, steal food from some of the poorest people in the world and ruin the livelihoods of legitimate fishermen. These same fish can end up on the plates of consumers in the EU, USA, Japan and other developed countries. IUU fishing operators are taking advantage of the poverty in developing countries to secure the lowest possible running costs for their operations.
- The seriousness of the threat posed to the future sustainability of global fisheries is now widely recognized, and it has become a prominent international issue in recent years.
- This report demonstrates that despite commitments and some laudable activities by national governments and the international community, there is still much to be done if IUU fishing is to be eradicated. Regulations and controls are frequently not enforced or are unenforceable without new, additional measures.
- A number of targeted measures are identified including the enhancement of monitoring, control and surveillance capabilities; control of at-sea transshipment; strengthening of port restrictions; and the use of market-led initiatives.
- EJF contends that commitments must be turned into action if marine biodiversity, livelihoods and food security in some of the world's poorest nations are to be protected.

Ideas into Action?

- Throughout the 1990s a variety of laws and regulations against IUU fishing were drawn up by the United Nations, and in 2001, some 110 nations endorsed a FAO-brokered International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU). Under the IPOA, contracting States were required – on a voluntary basis – to implement National Plans of Action by June 2004. However, a recent progress report on the implementation of the IPOA found that only 6 member States had National Plans of Action finalized by the deadline, and NPOAs had not even begun to be formulated by 31% of members responding to the survey[2].
- At the World Summit on Sustainable Development in Johannesburg (2002) world leaders made a commitment to implement the FAO International Plan of Action to Eliminate IUU fishing by 2004, and to eliminate subsidies that contribute to IUU fishing and to overcapacity.
- In 2003, the G8 nations committed to the urgent development and implementation of the FAO International Plan of Action to Eliminate IUU fishing, and to *inter alia* "address the lack of effective Flag State control of fishing vessels, in particular those flying Flags of Convenience".
- On 1 December 2003, a high-level task force on Illegal, Unreported and Unregulated (IUU) fishing on the high seas was launched by Elliot Morley, the Minister for Environment of the UK. The 'High Seas Task Force' was set up by the Organization for Economic Cooperation and Development (OECD), and its members include fisheries ministers from the UK, New Zealand, Australia, Chile, and Namibia. The Task Force aims to use expert panels to produce an action plan to combat IUU fishing on the high seas that is both analytically sound and politically feasible. It is expected that the Task Force will complete its work by February 2006.
- At the FAO Ministerial Meeting on Fisheries in March 2005 Ministers again reaffirmed their commitment to eliminate IUU fishing and to the development of national and regional plans of action.

A small price to pay for environmental justice

£5 / $6 per month could help kids get out of the cotton fields, end pirate fishing, protect farmers from deadly pesticide exposure, guarantee a place for climate refugees

This report has been researched, written and published by the Environmental Justice Foundation (EJF), a UK Registered charity working internationally to protect the natural environment and human rights.

Our campaigns include action to resolve abuses and create ethical practice and environmental sustainability in cotton production, shrimp farming & aquaculture. We work to stop the devastating impacts of pirate fishing operators, prevent the use of unnecessary and dangerous pesticides and to secure vital international support for climate refugees.

EJF have provided training to grassroots groups in Cambodia, Vietnam, Guatemala, Indonesia and Brazil to help them stop the exploitation of their natural environment. Through our work EJF has learnt that even a small amount of training can make a massive difference to the capacity and attitudes of local campaigners and thus the effectiveness of their campaigns for change.

If you have found this free report valuable we ask you to make a donation to support our work. For less than the price of a cup of coffee you can make a real difference helping us to continue our work investigating, documenting and peacefully exposing environmental injustices and developing real solutions to the problems.

It's simple to make your donation today:

www.ejfoundation.org/donate

and we and our partners around the world will be very grateful.

ENVIRONMENTAL JUSTICE FOUNDATION

Protecting People and Planet

INTRODUCTION

© AFMA

Today, Illegal, Unreported and Unregulated (IUU) fishing has become a global phenomenon that represents one of the most serious threats to the future of world fisheries[4,5,6]. Occurring in virtually all fishing grounds, from shallow coastal waters to the deep oceans, it is widely believed to account for a significant proportion of global catches[4,5,6].

Seventy-five percent of the world's fish stocks are fully exploited, over-exploited or depleted according to the United Nations Food and Agriculture Organization (FAO)[7]. In an attempt to ensure that fish stocks are harvested in a sustainable manner, some governments and international organizations have implemented a range of conservation and management measures to restrict unsustainable practices. Restrictions placed on fishing do not however eliminate the economic incentives to ignore such controls: driven by these lucrative short-term gains IUU fishing is nevertheless carried out at great cost to longer-term social, economic and environmental objectives.

Being essentially a clandestine activity, the global extent of IUU fishing is extremely difficult to accurately assess[4,8]; estimates rely on the basis of reports by regional fisheries management organisations (RFMOs), which are extrapolated to arrive at global figures[9]. In some important fisheries IUU fishing is estimated to account for 30% of total catches, and one RFMO has indicated that IUU catches probably amount to three times the permitted catch level[4]. Landings of fish caught by IUU vessels account for 50% of total landings in some ports[4].

The economic incentives for IUU fishing are compelling. IUU fishing substantially minimises the operating costs for vessel owners who can avoid paying for licences, observers, vessel monitoring systems or catch documentation systems[10]. Vessels that are 'pushed out' from managed fisheries often re-flag and move to fisheries that are poorly managed or not managed at all[4,11]. Overcapacity also drives down the price of vessels, especially second hand ones, and reduces the overall cost of IUU fishing[12].

IUU operators take advantage of more than just developing countries lack of resources to police fishing grounds, they also exploit the financial and human misery that prevails in many of these same countries to run their activities at the lowest possible cost[13]. Wages make up a high proportion of running costs, so IUU crews tend to be recruited in low-income countries where lack of alternative employment opportunities, largely unregulated labour markets and minimal controls on working conditions exist – thereby ensuring a supply of cheap labour[14]. These crews are forced to work in dangerous conditions and are subject to a catalogue of abuse[14,15].

Fish caught by both IUU and legitimate fishers are sold on the same markets, but legitimate fishers pay the higher operating costs supporting fisheries con-

servation and management measures. IUU fishers are free riders who benefit unfairly from the sacrifices made by others, thereby undermining legitimate fishers and encouraging them to disregard the rules as well, thereby creating a destructive downward cycle[16].

Considering that Patagonian toothfish and tuna can sell for up to US$1000 and US$50 000 per fish respectively, the allure of IUU fishing is evident[10,17]. However, IUU fishing can also decimate far less lucrative stocks, but ones that nevertheless provide very important food sources and littoral employment opportunities for people in developing countries[18].

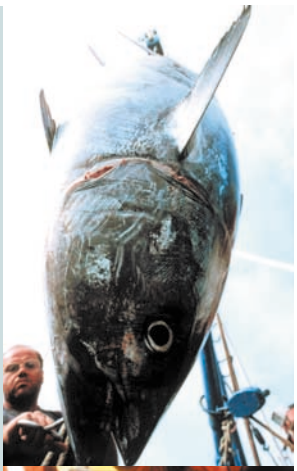
Alongside the obvious economic incentives IUU activities are facilitated by a number of well-documented shortcomings in national and international controls, including: Flags of Convenience, insufficient monitoring, control and surveillance (MCS) in the Exclusive Economic Zones (EEZs) and on the high seas; inadequate penalties and deterrents for those caught; the existence of tax havens, which provide many IUU operators with low tax; the confidentiality of banking systems in some territories, facilitating the operation of "shell companies"; the prevalence of corruption and bribery in some national regulatory bodies; the general lack of assistance developed countries give to developing countries to implement measures such as the International Plan of Action on IUU.

Put simply, laws and regulations for the conservation of both national and our collective marine resources are commonly either not enforced or are currently unenforceable.

However, several near-term, cost-effective and "real-world" solutions are available to the international community. For example, closing the loophole in international law that allows States to issue Flags of Convenience would be the single most effective step in eradicating IUU fishing[10,19] – what is needed now is determined international political leadership to turn these opportunities into action.

The extent of IUU fishing

- The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) estimates that IUU fishing accounted for some 16.5% of the total catch of toothfish in 2003/04. This level is significantly lower than the estimate for the 1996/97 fishing season that 72.4% of toothfish were caught by IUU vessels. Although this decrease must in part be due to CCAMLR measures to reduce IUU fishing, and increased monitoring of the world trade in toothfish, other factors, such as the shifting of IUU activity to fishing grounds outside of the Convention Area, and the depleted state of toothfish stocks, will undoubtedly have been an influence[21].
- The International Commission for the Conservation of Atlantic Tuna (ICCAT) was advised by Japan that some 25,000 tonnes or around 18% of all fishing activity for tuna over the 2001/2002 season could be attributed to IUU activity[9,14].
- The North East Atlantic Fisheries Commission (NEAFC) report that up to 27% of redfish landed in 2002 was caught by IUU fishing vessels[22].



PICTURED FROM TOP: *Tuna; Patagonian toothfish.*

From top © NOAA; © Greenpeace / Grace

ABOVE: *Tens of thousands of endangered albatrosses are killed each year by illegal long-line vessels in the Southern Ocean.*

© Dr Graham Robertson

A definition of IUU fishing[20]

Illegal fishing – where vessels operate in violation of the laws of a fishery. This can entail fishing with no licence at all, or fishing in contravention of the terms of the licence, for example by using outlawed fishing gear. This definition is used both for fisheries that are under the jurisdiction of a coastal State, and for those that are regulated by regional fisheries management organisations (RFMOs).

Unreported fishing – fishing that has been unreported or misreported to the relevant national authority or regional fisheries management organisation, in contravention of national and international laws and regulations.

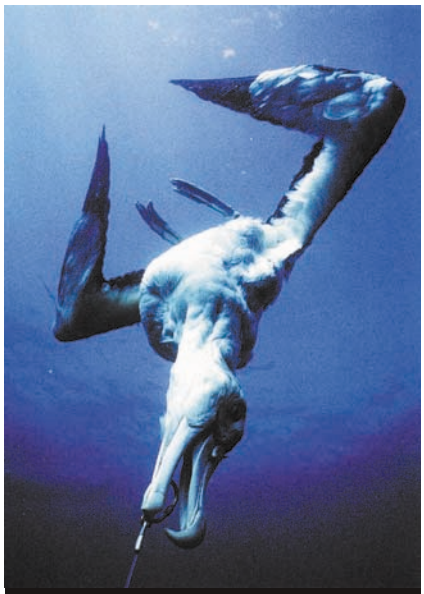
Unregulated fishing – this generally refers to fishing that is conducted by vessels without nationality, or vessels flying the flag of a State not party to the regional organization governing the particular fishing region or species. Unregulated fishing can also relate to fishing in areas or for fish stocks where there is a lack of detailed knowledge of the resource, and therefore no conservation or management measures in place.

In both these cases vessels must be fishing in a manner that violates the conservation and management measures of the regional organization, and/or international law, to warrant inclusion under the term 'unregulated fishing'.

IMPACTS AT SEA... AND ON LAND

'Globally, IUU fishing is seriously undermining international efforts to conserve and manage fish stocks in a sustainable manner. All responsible countries must work together to put an end to IUU fishing.'

Ichiro Nomura, FAO Assistant Director-General for Fisheries[23]



ABOVE: *IUU fishing inflicts damage on seabirds, marine mammals, sea turtles, and marine biodiversity as a whole.*

The economic cost of IUU fishing

- IUU fishing may represent an overall cost to developing countries of between US$2-15 billion a year, according to a preliminary estimate from a UK Department for International Development (DfID) study[1].
- In 2002, Dr Rokhmin Dahuri, the Indonesian Minister of Marine Affairs and Fisheries estimated that the nation loses some US$2 billion worth of fish every year because of illegal fishing[28].
- A report by TRAFFIC in 2001, found that widespread poaching in the Bering Sea is costing Russia up to US$5 billion each year and placing numerous marine species at risk[29].

IUU fishing has many detrimental economic, social and environmental consequences, a fact which has led the international community to consider it a serious threat to world fisheries[8,14].

Underreporting of catches by authorised fishers, and unreported illegal catches, mean that the catch data collected by fisheries managers is incomplete and likely to give a more optimistic assessment of the status of fish stocks than is actually the case. Moreover, if catch figures are flawed then the management decisions made are likely to be inadequate, and will fail to conserve stocks as intended[5]. In extreme circumstances this can lead to the collapse of a fishery, or serious impairment of efforts to rebuild stocks that are already depleted[5].

Patagonian toothfish stocks in the Southern Ocean provide possibly the most notorious example of a fishery that has been driven close to commercial extinction due to IUU fishing[24]. The decline in fish stocks world-wide, and the high market value of Patagonian toothfish led industrial fleets to begin exploiting the fishery in the early 1990s[25]. A large Flag of Convenience fleet, attracted by big potential profits soon followed. The remoteness of the main fishing grounds and the resulting difficulties and high cost associated with effective surveillance provided the ideal circumstances for IUU fishing[25]. Even conservative estimates indicate that around one-third of catch in the CCAMLR area in the late 1990s was IUU catch[25]. An estimate based on trade analysis suggests that the global IUU catch of Patagonian toothfish in 2000 could have been up to four times that estimated by CCAMLR, and may account for up to half of the total trade estimated for that year[25].

Impacts on non-target species

IUU fishing not only affects the status of target species: it has a detrimental effect on the wider marine ecosystem. IUU fishermen flout rules designed to protect the marine environment, including restrictions on the harvest of juveniles, closed spawning grounds, and gear modifications designed to minimise the bycatch of non-target species. In so doing, IUU fishing inflicts damage on seabirds, marine mammals, sea turtles, and marine biodiversity as a whole[8,14,16] – deaths which go unreported[26]. For example, in tropical tuna fisheries there are significant problems with bycatch of sharks, and in long-line fisheries with sharks and orcas. These incidental catches are largely unreported by legitimate fishermen, let alone those fishing illegally[26]. There is even anecdotal evidence of IUU fishermen shooting orcas in order to reduce competition for fish[26].

An estimated 100,000 seabirds, including tens of thousands of endangered albatrosses, are being killed each year by illegal long-line vessels in the Southern Ocean. Many of these boats target Patagonian toothfish[27].

By contrast, authorised fishers in some fisheries have adopted fishing methods – such as the way in which they set their long-lines – to minimise the by-catch of non-target species and sea-birds. The costs of doing so put them at a competitive disadvantage relative to IUU fishers[18].

ABOVE: *IUU operators use unfair competition and make the most of other people's poverty.*

Food security and livelihoods in Africa

IUU fishing is rampant in the coastal waters of many developing States and the seas off the coast of West Africa are particularly susceptible to illegal fishing. These seas support one of the world's most productive marine ecosystems, upon which millions of people depend. Marine and freshwater fish are the primary source of animal protein consumed, and the fisheries sector directly accounts for up to a quarter of the workforce in the region[30]. However, when countries lack the resources to properly police their territorial waters – extending 200 miles out to sea – IUU fishermen are quick to exploit the situation[12]. In doing so they steal an invaluable protein source from some of the world's poorest people and damage or ruin the livelihoods of legitimate fishermen[16,26]. Incursions by trawlers into the inshore areas reserved for artisanal fishing can result in collisions with local fishing boats, the destruction of fishing gear, and the deaths of fishermen[31].

The extent of IUU fishing in some West African territorial waters is phenomenal. In 2001, an aerial survey of Guinea's territorial waters found that 60% of the 2,313 vessels spotted were committing offences. Surveys of Sierra Leone and Guinea Bissau in the same year found levels of illegal fishing at 29% (of 947 vessels) and 23% (of 926 vessels) respectively[32].

Modern-day piracy: IUU fishing in Somalia

Somalia offers perhaps the most striking and extreme example of IUU fishing. For over a decade, hundreds of foreign vessels have been operating illicitly and with impunity.

Somalia has the longest coast in continental Africa – 3,300 km – and with it, abundant marine resources thanks to an annual upwelling of cool, nutrient rich water off the Horn of Africa[43,44,45].

A lack of infrastructure and the remoteness of the major administrative ports, together with the inability of the navy to monitor and patrol the whole coastline, have meant that some illegal fishing has always occurred in Somali waters[43]. However, following the collapse of the central government in 1991, the country descended into civil war, and for the past 14 years power has been split between many different heavily armed militias and clans[46]. One of the consequences is that there is now no effective authority to control Somalia's territorial waters. Foreign vessels have been quick to take advantage and have flooded in from the EU, Middle East, Japan and other countries in the Far East[43,44].

Today, it is estimated that some 700 foreign-owned vessels are fully engaged in unlicensed fishing in Somali waters, exploiting high value species such as tuna, shark, lobster and deep-water shrimp[47,48]. The status of these target stocks is unknown[47], but it is highly unlikely that they are being fished sustainably. By flagrantly ignoring conservation measures, there are significant concerns that the foreign trawlers are catching high numbers of endangered sea turtles, dolphins, and dugongs, and are also responsible for the destruction of important coral reefs[44].

The foreign vessels compete with artisanal fishermen: by coming close inshore they destroy stationary fishing nets and traps and this has resulted in confrontations and loss of life[47]. Foreign vessels may be heavily armed with anti-aircraft cannon, mortars and machine guns to defend themselves against Somali militiamen who patrol the coast, seizing vessels and kidnapping crews, for which they demand ransoms[43,49]. However, as they use this weaponry to sink *any* Somali boat that approaches too closely, the local fishing fleet has been hemmed in to restricted (safer) waters, which are consequently being overfished[48].

Somalia is clearly in desperate need of international assistance to monitor and protect its coastal resources. The food security and livelihoods of coastal communities is being seriously compromised, and a valuable resource – which in the future could aid the recovery of the Somali economy – is being recklessly plundered.

The United Nations Convention on the Law of the Sea (UNCLOS) specifies that the country whose flag a vessel flies is responsible for controlling its activities. Therefore, the Flag States to which the foreign vessels fishing illegally in Somalia belong, should, under international law, be controlling their nationals and thus preventing the unlawful exploitation of Somali waters[18].

RIGHT: *The FAO estimate that 700 foreign-owned vessels are fishing illegally in Somali waters.*

'The invading ships, as they are locally known, are so crowded off some stretches of the Puntland (northeast) coast that the glow that emanates from their combined lights at night can be mistaken for a well-lit metropolitan city.'

A.J. KULMIYE, 'MILITIA VS TRAWLERS: WHO IS THE VILLAIN?', 2001[43]

ABOVE: *West African waters are plagued by illegal fishing vessels that deplete local fish stocks, ruining livelihoods and jeopardising food security in the region.*

Left to right © FAO/17106/M. Marzot; © FAO/18767/I. Balderi; © FAO/17114/M. Marzot

IUU fishing in African coastal waters: Angola

Angola's fisheries sector is the third most important industry after oil and diamond mining. It provides nearly half of the animal protein for the country, and is an important source of employment and food to coastal populations, where it is often the only source of livelihood for the poorest[33]. Consumption of fish, – an estimated 17.3 kg per person p.a. – is the highest in the region[33]. Depletion of fish stocks would be catastrophic for a country where 40% of the population is undernourished[34], and almost 2 million people continue to rely on UN food aid[35], despite the existence of the rich South Atlantic fisheries.

Angola's coastal waters are fed by diverging currents that create a strong upwelling of nutrient rich water, in which sardines, horse mackerel, tuna, hake and shrimp all thrive. Approximately 50,000 Angolans rely on these stocks to make a living, mostly working as part of the large artisanal fleet[36].

Foreign fleets – from the EU, China, Russia, Japan, Namibia and elsewhere – also fish in Angolan waters[36]. Some foreign vessels operate under formal access agreements but many lack any permission to fish and the granting of licences is hampered by corruption[37]. Foreign vessels that manage to obtain a licence can therefore harvest Angola's valuable marine resources unsustainably, whilst being shielded from prosecution.

Fisheries surveillance is virtually non-existent[36]. Just three government patrol boats guard a 1,650km coastline and an Economic Exclusion Zone (EEZ) of 330,000-sq km[5]. The patrol boats are often docked due to lack of fuel and maintenance and in any case their range is limited[37,38]. In the absence of fisheries surveillance, there are effectively no restrictions on what industrial vessels, both Angolan and foreign, can catch[36,39]. Under Angolan law the 12-mile coastal strip is reserved for artisanal fishing, but local fishermen claim that trawlers fish secretly at night between three to seven kilometres from shore[36,39].

Angolan fisheries authorities have reportedly had their boats rammed and sunk by illegal trawlers, whilst other pirates have hurled buckets of boiling water on Angolan boarding parties. In one case, a foreign ship ran down and killed an irate Angolan fisherman who was trying to block its way with his vessel, and at least two Angolan inspectors have 'disappeared' whilst on observer duty aboard large industrial trawlers[37].

'There are lots of rules about fishing, but we have no infrastructure to control it. There are no ships, no satellites to control people who are fishing in this zone or fishing where it's prohibited.'

AMARO RICARDO, ECONOMIC ADVISOR TO THE PROVINCIAL GOVERNOR OF BENGUELA[40]

'To really check up on what's going on, the government needs several helicopters and lots of radars and equipment, which they simply can't afford. At the moment they rely on small motor boats, which cannot go very far into the ocean before they have to come back and refuel.'

TOZE DE SOUSA, VESSEL OWNER, BENGUELA[40]

Hope on the horizon?

In May 2004, a new, purpose-built patrol vessel made her first trip in Angolan waters as part of a joint mission between the Angolan and Namibian Ministries of Fisheries, and the SADC-EU Monitoring, Control and Surveillance Programme (MCS programme). During that first patrol 19 vessels were boarded and six of them were impounded for serious infringements of SADC fisheries legislation, including fishing in a closed area, using illegal fishing methods, illegal mesh sizes and fishing without a license[41].

Several air patrols have also been undertaken as a component of this programme. Over 25 days, 198 industrial vessels were sighted of which 29 (all Chinese vessels) were committing serious infringements of fishing regulations, including fishing in areas reserved for artisanal fishing, and during closed seasons. Fines totaling US$ 638, 000 were issued by the Ministry of Fisheries – when this amount is set against the operational costs of the patrols – US$ 199, 923 – the cost effectiveness of such aerial patrols is clearly demonstrated[42].

A Vessel Monitoring System has also been set up and applied to 70 trawlers, which helps to address the key issue of frequent encroachments by industrial vessels into artisanal areas, and a database of registered vessels has been developed[38].

© SADC MCS Programme

HOW PIRACY WORKS...

IUU fishing is a dynamic and multi-faceted issue, with no easy single solution[8]. It is also worth noting that there are some differences between illegal activities, unreported activities and unregulated activities. Consequently, some possible solutions, for example increasing penalties, may be effective in addressing illegal activities, but without having much effect on unregulated activities[13].

IUU fishing is increasing worldwide by exploiting a number of weaknesses and loopholes, including:

1. *Flags of Convenience*, which allow unscrupulous fishermen to legally circumvent management and conservation measures, and provide a perfect cover for IUU activities. A very large proportion of IUU fishing could be eliminated if the loophole in international law that allows States to issue Flags of Convenience was closed. All attempts to eliminate the FOC system have been unsuccessful.

2. *Monitoring, control and surveillance* (MCS) activities are often insufficient in many developing States, due to a lack of available resources, large areas to police, remoteness and high costs of effective enforcement. The likelihood of being caught partaking in IUU fishing is therefore low in many areas.

Furthermore, when vessels are caught engaging in IUU activities, the penalties faced by the crew, captain and vessel owner are often too small to act as an effective disincentive, especially when compared with the huge potential profits on offer. Consequently, existing financial penalties are seen simply as a cost of doing business.

3. *Ports of convenience* permit IUU vessels access to essential services, such as taking on supplies and re-fuelling, and allow them to transship or land their illegally caught fish, which then enters the international market. Las Palmas de Gran Canaria (Spain) fulfils this function for Atlantic fishing fleets. Las Palmas is one of the major Ports of Convenience, providing services to IUU fleets, and hosting a number of companies that operate illegal vessels[10,50]. It also serves as a gateway for FOC-caught fish to the huge EU market[50].

The absence of port controls in some coastal States is seen as one of the main reasons that IUU fishing continues to occur[23], despite the fact that the use of port State controls to combat IUU fishing does not necessarily entail significant resources, and are much more cost-efficient than enforcement at sea[12,19].

4. *Transshipment* and re-supply at sea means that vessels can remain at sea for months at a time, refuelling, re-supplying and rotating their crews. By transferring their catches onto transport ships (reefers) IUU fishing vessels never need enter ports with their illegally caught fish. Moreover, the illegally caught fish are laundered by mixing with legally caught fish onboard transport vessels.

Ports States – Las Palmas, A Case Study

It is inexcusable that the Spanish Government and the wider European authorities have failed to close Las Palmas, a notorious home to IUU fishing, especially considering the numerous pledges the EU has made to combat IUU fishing. Defining port State rights and responsibilities was a key point in the EU's Community Action Plan to eradicate IUU fishing (2002)[51], the justification being that:

The rights and responsibilities of States on this matter are not defined in any international convention. This legal vacuum encourages the existence of Ports of Convenience just as Flags of Convenience exist. The absence of international rules governing access to and controls at ports does not foster the development of international cooperation in this area. It serves, furthermore, as an alibi for countries which do not wish to be too rigorous to avoid checking the origin of products that sustain their port operations.

1. Flags of convenience

'Flags of convenience are the scourge of today's maritime world. This practice affects both fisheries and transport, although oil spills, given their spectacular dimension, mobilise public opinion more easily than the pernicious damage done to the marine environment by fishing vessels.'

Franz Fischler, European Commissioner for Fisheries, 2004[52]

Flagging a problem

A review of recent trends in the numbers of fishing vessels flying Flags of Convenience (FOC)[53] for the years before and after the adoption of the FAO IPOA-IUU, found that the IPOA had secured a limited effect. The number of fishing vessels registered to Flag of Convenience countries declined only slightly, even two years after the adoption of the IPOA, and despite numerous efforts by RFMOs. Moreover, the number of vessels listed as flag "unknown" has increased over the same period – and it is likely that a significant number of these are flagged to FOC countries.

Some estimates indicate that 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. The financial benefit derived by Flag of Convenience States is therefore actually relatively small. In comparison, the cost to the international community of the failure of these States to exercise control over the activities of their fishing vessels is far larger[53].

One common way in which fishermen can circumvent management and conservation measures and avoid penalties for illegal fishing, is by registering under a 'Flag of Convenience' (FOC). Although international law specifies that the country whose flag a vessel flies is responsible for controlling its activities, certain countries allow vessels to fly their flag for a few hundred or thousand dollars, and then ignore any offences committed. These so-called FOC, or open registry, countries are often developing States, and so lack the resources (or the will) to monitor and control vessels flying their flag, especially when the fisheries being plundered do not belong to them. Belize, Panama, Honduras and St Vincent and the Grenadines are the worst offenders of the FOC countries[17,53].

Registering under a Flag of Convenience is quick, easy and cheap, and can be performed over the internet (for example, see www.flagsofconvenience.com). They provide the perfect cover for IUU fishing as vessels can re-flag several times in a season to confuse management and surveillance authorities, a practise known as "flag hopping"[19]. Backed by shell companies, joint-ventures and hidden owners, FOC are considerable constraints to combating IUU fishing as they make it extremely difficult to locate and penalise the real owners of FOC vessels that fish illegally[19,26]. (See *The case of the Condor* for a good example of this). A key aspect of combating IUU fisheries is therefore to ensure greater transparency in the flagging and ownership information of vessels engaged in high seas fishing[54].

The "shell companies" owning IUU vessels strongly benefit from the confidentiality of banking systems in place in some territories (e.g. tax havens)[13]. This is clearly illustrated by the correlation between the 28 countries declared FOC by the International Transport Workers' Federation (ITF) in July 2003, and the list produced by the OECD in 2001 of tax havens. 12 of the FOC countries (i.e. 43%) appear on the OECD's list: Antigua and Barbuda, Bahamas, Barbados, Belize, Gibraltar, Liberia, Marshall Islands, Netherlands Antilles, Panama, St Vincent and the Grenadines, Tonga and Vanuatu[55].

In addition, out of the 28 jurisdictions declared FOC by the ITF, 54 % are members of the Commonwealth: Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Cayman Islands, Cyprus, Gibraltar, Jamaica, Malta, Mauritius, Sri Lanka, St Vincent and the Grenadines, Tonga, and Vanuatu. This means that almost 25% of the Commonwealth Countries are listed as FOC[13]. If the

The case of the Condor[57,58]

This 53m vessel, which was built in 1968, has gone under several previous names: *Arosa Cuarto* (1989), *Pescamex III* (1998), *Cisne Azul* (1999), *Viking* (2001), *Inca* (2003), and *Condor* (2005).

In 2000, as *Cisne Azul*, she unloaded toothfish in Port Louis, Mauritius, over several months, and in April 2000 was refused entry to the Western Australian Port of Fremantle on suspicion of unregulated harvesting of toothfish.

According to Lloyds Register Supplement of September 2000, *Cisne Azul* was owned by Arcosmar Fisheries Corp. But by the time the Lloyds 2003/04 Register was published, the vessel had changed names (becoming the *Viking*) and owners, to Jose Manuel Sangueiro Lopez, who is also known as the Vice-President of Alcimar SA. Alcimar SA share an office in Montevideo with another Uruguayan company Navalmar SA. It is alleged that Alcimar chartered the *Maya V*, which was arrested in Australian waters in January 2004 on suspicion of illegal fishing.

Both Navalmar and Alcimar have links to the so-called Galician syndicate of illegal toothfish operators based in Spain, which also includes companies such as Viarsa Catera SA and Viarsa Fishing Co., based in Mauritius; a group of Panamanian companies, Pac Fish Inc; Ocean King, based in Seattle, USA; and Thalasa SA, another Uruguayan-owned company based in Mauritius.

In 2001/2, renamed *Viking* and flagged to the Seychelles, the vessel unloaded toothfish in Port Louis, Mauritius. The Seychelles reported to the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) in April 2003 that they had cancelled the flag and fishing permits of the *Viking*. Nevertheless, the vessel was seen in Port Louis (named *Viking*) in June 2003 receiving provisions, fuel and bait, and then again in October 2003 and September 2004 (renamed *Inca*).

In March 2005, the vessel was renamed *Condor* and flagged to Togo. She was seen fishing with five other vessels, flagged to Togo and Georgia, on the Banzare Bank, an area which had been closed to fishing by CCAMLR. An armed Australian vessel requested them to leave, but because the Flag States of these vessels are not members of CCAMLR, international law does not allow any additional action to be taken.

ABOVE: *The Inca (now Condor) in Port Louis, Mauritius, in September 2004.*
© COLTO

governments of the UK and other Commonwealth countries seriously wish to eradicate IUU fishing, then they surely must exert pressure on the 15 Commonwealth members who are failing to control vessels flying their flag, so that they behave as responsible Flag States.

In 2001, Lloyd's Maritime Information Service listed over 1300 fishing vessels greater than 24 metres in length flying Flags of Convenience[17,56]. It therefore appears that fishing vessels operating under open registers represent only a small proportion of the world fishing fleet – less than 10%. However, despite their relatively small number, these vessels have a disproportionately large negative impact[56] as they ignore and therefore undermine fisheries conservation and management measures, resulting in the depletion of fish stocks and causing wider damage to the marine environment.

In international waters, measures to regulate fishing only apply to countries that are members of regional fisheries management organisations (RFMOs). Therefore, if a vessel re-flags to a State that is not a party to these agreements – and most FOC countries are not members of RFMOs or other fishing agreements[26] – then it is free to fish with total disregard for regionally agreed management measures[53]. FOC vessels are generally considered to be beyond the reach of international law.

FOC registration greatly reduces operating costs for vessel owners. They do not have to pay for licences, observers, vessel monitoring systems or catch documentation systems[10]. In addition vessel owners can avoid regulations and laws on aspects of life at sea such as insurance, training of crew, and purchasing safety gear, all of which cost money. Crewmembers employed on FOC vessels are often subject to abuses, including very low wages, poor on-board conditions, inadequate food and clean drinking water, and long periods of work without proper rest leading to stress and fatigue[15].

A very large proportion of IUU fishing could be eliminated if all States exercised effective Flag State control over fishing vessels. Closing the loophole in international law that allows States to issue Flags of Convenience would be the single most effective step in eradicating IUU fishing[10,19], yet up to now, all attempts to eliminate the FOC system have been unsuccessful and FOC vessels have proliferated over the past 20 years[59]. Until the loophole is closed a series of secondary measures will continue to be necessary in order to prevent, deter and eliminate IUU fishing[4,10].

2. Monitoring, Control and Surveillance (MCS)

'If fisheries laws cannot be enforced then they are worthless.'

High Seas Task Force, 2005[60]

ABOVE: *Monitoring, control and surveillance (MCS) activities are often insufficient in many developing States, due to a lack of available resources, large areas to police, remoteness and high costs of effective enforcement.*

All photos © SADC-MCS Programme

IUU fishing is generally enabled by the absence of enforcement capacity. Much IUU fishing within the EEZs of coastal States is poaching by vessels with no permission to be there[19,61]; whilst on the high seas it is primarily a result of States not exercising control over vessels flagged to them. The vastness of international waters creates favourable conditions for IUU fishing to flourish, as effective surveillance is very costly and extremely difficult[10].

MCS conventionally includes a range of activities.

- Patrol vessels: used to monitor the activity of fishing vessels under their jurisdiction; transport fisheries inspectors to fishing grounds; and arrest and escort boats that have flouted laws and regulations. In some cases patrol vessels have to use force in order to make fishing vessels comply with instructions[62]. For example, in July 2004 Australia launched a fisheries patrol vessel fitted with twin deck-mounted .50 calibre machine guns, and carrying an armed customs boarding party to patrol the country's territorial waters in the Southern Ocean[63].
- Aerial patrols: a very effective way of detecting unlicenced fishing vessels, and those that are fishing in prohibited areas. They require fewer personnel than a patrol vessel and can cover a greater area in a given time. However, aerial patrols cannot take direct action against vessels committing infringements and so need to be backed up by patrol vessels[62].
- Onboard observers: stationed onboard (larger) fishing boats to monitor compliance. This is a highly effective way of ensuring compliance with fishery regulations[64]. Shore-based controls, including verifying landings against logbook data and checking vessel and gear characteristics, are also a key component of MCS. These MCS measures can, however, apply only if the Flag State agrees, which is unlikely in the case of vessels engaged in IUU fishing[18].

However, both surface and aerial surveillance of fishing grounds is expensive and many developing States lack the means for efforts of this kind to be effective[12,64]. The overall cost of monitoring fishing activities in the EU and its Member States amounts to some € 300 million, which is about 5% of the total value of production (landings)[65]. In the specific case of the North Atlantic Fisheries Organization (NAFO), the cost of monitoring EU vessels amounts to some € 4 million for a total of € 55 million in landings (in 2002), i.e. over 7% of the value of production[65].

As well as the high cost of "traditional" MCS activities, such measures have in the past had only a limited success in deterring IUU fishing. Moreover, such measures can be quite easily circumvented and corruption and bribery can further limit their success[13].

Effective MCS also depends on States having comprehensive and enforceable domestic fisheries laws. Developing countries in particular need assistance in capacity building in these areas[18].

Vessel Monitoring Systems

Installing satellite vessel monitoring systems (also known as VMS) onboard fishing vessels represents a relatively inexpensive method of monitoring fishing activities. VMS systems are automatic and send information, at regular intervals, to a Central Monitoring Centre where the position and identity of the vessel is displayed on a monitor[66]. However, as VMS only monitors the activities of vessels fitted with the equipment, countries must also rely on patrols to find and arrest IUU vessels not fitted with VMS. Nevertheless, VMS does reduce the time that needs to be spent on surveillance, freeing up time and resources to be spent on inspection. As VMS has been shown to be highly effective at tracking vessels, increasing the chance of IUU fishers being caught, its use makes such unscrupulous behaviour less attractive[67].

However, some unscrupulous operators have learnt to manipulate VMS systems so that they can transmit false positions whilst fishing out of season, or in prohibited areas. This can be achieved by tampering with the onboard "blue box", which transmits the signal, cloning the onboard communications terminal so that a surrogate gives out false information, and interfering with the outgoing signal from the blue box or the incoming positioning signal from the GPS[68]. VMS systems therefore need to be improved so that they cannot be manipulated in this way.

The EU have been testing a remote-sensing vessel detection system (VDS) that uses satellite surveillance to track vessels that are not fitted with VMS systems, and plan to introduce it alongside VMS and electronic logbooks[68]. In comparison to conventional at-sea monitoring or quayside-inspection techniques all of these new high-tech MCS options are cost effective[65].

Cooperation is key

As IUU vessels can move between territorial waters and operate on the high seas, cooperation between States is a necessity and recommended under the IPOA[20]. Coordination of surveillance and apprehension capabilities, exchange of information, and enforcement rights such as the right of hot pursuit (chasing the perpetrators of IUU fishing across national boundaries), are beginning to be implemented. For example, in West Africa a group of coastal States comprising the Sub-Regional Fisheries Commission (SRFC)* have created a Surveillance Operations Coordinating Unit (SOCU) to coordinate MCS activities. Protocols on hot pursuit have been developed and joint air and sea surveillance activities established between States[62].

An MCS Programme set up by the Southern African Development Community (SADC) and the European Union provides training and technical assistance to the government agencies that monitor and control fishing activity in five SADC nations: Angola, Mozambique, Namibia, South Africa and Tanzania. Joint air and sea patrols have also been launched[69].

Many developing States do not possess the resources or the knowledge available to effectively tackle IUU fishing in their coastal waters, or to develop National Plans of Action, facts that are recognised in the IPOA-IUU. It therefore calls upon other States to provide them with both financial and technical assistance so that they can implement their commitments in tackling IUU fishing, and participate effectively in the development and implementation of fishery conservation and management measures by RFMOs[20]. In adopting the Rome Declaration on

A black and white solution?

Regional Fisheries Management Organisations (RFMOs), created under international agreements, are responsible for the management of high seas fisheries, and fish stocks that migrate through the waters of multiple States. Some RFMOs have reported that IUU fishing is a serious problem in their jurisdictional waters, and is handicapping their efforts to sustainably manage fisheries[4]. As a result, many RFMOs have taken action to combat IUU fishing, and they play a crucial role in the fight against IUU high seas fishing[4].

A number of RFMOs have recently developed both white lists (of vessels permitted to fish within the RFMO area) and black lists of vessels that are not[71]. The IPOA recommends that RFMOs share these vessel lists (and other information on IUU) with other RFMOs and the international community at large. Without cooperation and the exchange of information, IUU vessels can move between RFMO areas to pursue their activities in regions with the least effective control[71]. Therefore, unless all RFMOs cooperate in combating IUU fishing, the problem is never eradicated, it is merely displaced elsewhere.

However, many regional records of fishing vessels (RFMO white/black lists) hold incomplete, incompatible and inconsistent pieces of information, and it is therefore very difficult to track movements of vessels between registers or regions[57]. None of the current registers provides a comprehensive, publicly available, and definitive source of information on particular vessels, including registration history, records of previous port inspections and RFMO blacklisting, and their beneficial owners. Moreover, as RFMO vessel lists rely on information provided by the Flag State of the vessel concerned, information is in some cases likely to be false[57].

On 24 April 2003, the FAO Compliance Agreement[72] came into force, following its ratification by 25 countries. The agreement requires, *inter alia*, parties to make information on vessels (over 24m in length) authorised to fish on the high seas available to the FAO, which is responsible for periodically circulating this information. Furthermore, Parties are required to promptly update the FAO with additions and deletions to their register, and provide any information on IUU activities by vessels flying their flag. However, as the compliance agreement only applies to the 25 States that have ratified it, the FAO's list of vessels authorized to fish the high seas is incomplete. Further weaknesses include the fact that the information on the list is not publicly available, and that there is no independent validation of the data submitted by Flag States, all of which make the current formulation of FAO register of very limited value[1].

The lack of a single, complete global database of high seas fishing vessels creates obvious opportunities for IUU vessels to escape detection[19,57]. When combined with stringent MCS, the development of such a database – either using the current FAO list as a basis and institutional home, or developing a new independent facility – could act as a powerful disincentive to the practise of renaming and re-flagging IUU vessels, because the vessel and the real company behind it would be easier to trace[57].

'Many of us are now able to obtain credit at the Rural Credit Bank because they now believe that we will be able to repay the loans by catching and selling fish.' 'Fishing families have started sending their children to school again.'

SEKHOUNA SYLLA, COMMUNITY ELDER, BONGOLON[73].

Self help

A different approach to fisheries surveillance has been successfully trialled in the West African State of Guinea. In 2000, a 2-year project was initiated with funding support from the UK Department for International Development (DfID), in which staff from the national centre for fisheries surveillance and protection (CNSP) trained fishermen from three artisanal fishing communities to monitor their fishing grounds.

In 2000, prior to the start of the project, industrial boats made 450 illegal incursions injuring 12 fishers in collisions with their canoes[73]. 30,000 Guinean small-scale fishermen are dependent on the marine resource[74] and fish is also an extremely important food source, providing 51% of all animal protein consumed[75]. However, the country is particularly under threat because its Exclusive Economic Zone (EEZ) has the widest continental plateau on the West African coast, and this makes trawling in the coastal zone to depths of 5 metres quite possible[74]. Incursions into the restricted inshore zone by industrial vessels have caused stock depletions, the destruction and loss of fishing gear and artisanal fishing boats, and has resulted in loss of life[74]. In Bongolon, one of the 3 project villages, conflict with industrial boats had reached crisis proportions: five men had died when their boat was destroyed by a trawler, and small-scale fishermen were becoming afraid to put to sea[73].

The project equipped fishermen with surveillance materials – portable radios, GPS units, life jackets, waterproof torches and waterproof outfits – and they took turns patrolling the 12 mile coastal zone reserved exclusively for artisanal fishing. When a boat was spotted fishing illegally in the zone, the fishermen contacted the nearest CNSP surveillance station, who then sent out a patrol boat to apprehend the offending vessel[76,77].

Despite obvious limitations – patrol boats cannot go out at night when most incursions occur – the project has had a significant effect. By 2002, illegal incursions by industrial trawlers into the inshore fishing grounds covered by the project dropped by 60%[77]. Additionally, the project resulted in more efficient searches at sea, as the CNSP can launch its boats for targeted missions; the CNSP can only afford to make 6 or 7 patrols a month, so this is highly significant[77].

As is the case in many developing States, fisheries monitoring and enforcement authorities lack the resources to properly defend Guinea's 300-mile coastline from IUU fishing. But by cooperating with local fishermen, positive results have been achieved and for a relatively small cost – the budget for the entire project was only $20,000[77]. This kind of initiative could, if implemented in other parts of Guinea, Africa and beyond, present an effective way for developing States to combat IUU fishing. Encouragingly, in June 2005, a new project is expected involving Guinea, Mauritania, Gabon and the Congo[78].

Such highly focussed and effective development aid projects – specifically involving the participation of local fisher communities – deserve international recognition and their replication should be strongly encouraged.

IUU Fishing (FAO, 2005)[70], ministers reiterated this commitment.

However, with the exception of a handful of projects in Africa, which are highlighted in this report, there has been relatively little to show for this rhetoric. Many developing States are still unable to effectively combat IUU fishing because of a lack of assets; the two major constraints in developing a NPOA were reported in 2004 to be a lack of both financial and human resources[2]. Clearly, much more still needs to be done to assist developing States.

The International MCS Network[60]

An international MCS network was set up in 2001, to provide a forum for cooperation and coordination of national efforts, and for the sharing of intelligence and databases.

The network now has some 40 members, including the EU, US and Japan, and has had some notable successes; recently, the apprehension of several IUU vessels, including the *Viarsa 1* (see cover), was facilitated by links between enforcement officers developed through the network.

Despite these successes, the MCS network is a voluntary, informal body, which lacks adequate resources to carry out all of the tasks expected of it – currently the network has no full-time, dedicated members of staff. Given the potential benefits of developing an effective international body to both collate and widely distribute data on IUU fishing, and provide training and technical support to fisheries enforcement personnel, there should be no excuse for not investing in a new, revamped MCS Network.

* The Subregional Fisheries Commission of Northwest Africa (SRFC) was established by Convention in 1985 and is made up of six Northwest African States (Cape Verde, Gambia, Guinea, Guinea-Bissau, Mauritania, Senegal) plus Sierra Leone, which participates actively in the work of the Commission but has not yet officially adhered to the Convention.

BELOW: *Selected fishers in Bongolon, Guinea use a satellite-positioning receiver (in fisher's left hand) and radio to report the position of illegal vessels to the coast guard.*

3. Ports of convenience

All IUU fishing vessels must at some point visit a port in order to land or transship their catch, refuel and buy provisions. Under international law, port States are entitled to deny, or specify conditions of access for foreign vessels[79] and some limit and regulate access to their ports as a means to control IUU fishing[19]. The absence of port controls in some coastal States however, is seen as one of the main reasons that IUU fishing continues[23]. The IPOA calls for landing of IUU-caught fish to be prohibited by all States, and access to ports and port facilities denied for known IUU fishing and support vessels, which should be detained or arrested should they enter the port. Chile, for example, requires, among other things, all foreign fishing vessels to fully comply with applicable conservation and management measures and to use a vessel monitoring system[79]. Similarly South Africa is tackling the problem by prohibiting offloading in its ports by FOC vessels, using vessel black lists drawn up by ICCAT (Cape Town is one of the most important harbours in the South Atlantic for fishing vessels and their transport and resupply vessels)[17].

Some States require vessels to provide advance notice if they wish to enter port, and provide port authorities with a copy of their authorization to fish, details of their fishing trip, and catches on board (a practice recommended in the IPOA). From this information it can be ascertained whether a vessel has been involved in IUU fishing, resulting in landing or transshipment being denied[12,20]. Re-directing a vessel may add to the financial burden for the IUU operator, so this approach is worth considering for global implementation[12].

Port inspection measures are well established and standardized on a global scale, and represent the leading way in which IUU fishing is being tackled by States. However, inspection results are in most cases not passed on to the relevant RFMOs or Flag States[2]. This is important because any meaningful port State control must be based on coordinated efforts, resulting in compatible measures, as IUU fishing responds to unilaterally implemented port State control measures by shifting to other ports with less stringent measures in place[12,79].

BELOW: *Super trawler in Las Palmas harbour. Once fish – legal or illegal – is unloaded in Las Palmas, Spain, it undergoes no further scrutiny from EU buyers.*

4. Transshipment

One of the main ways in which IUU fishing can remain undetected is by vessels transshipping their catch at sea. Large vessels remain at sea for months at a time, refuelling, re-supplying and rotating their crews. By transferring their catches onto transport ships (reefers) IUU fishing vessels never need enter ports with their illegally caught fish. Moreover, the illegally caught fish are laundered by mixing with legally caught fish onboard transport vessels[10,19,53]. A key step to combat this practise would be for all States to make it illegal for their transport vessels to transship fish caught by vessels engaged in IUU fishing[10].

Several measures to manage at-sea transshipment and re-supply are suggested in a recent paper by Gianni & Simpson (2004)[53]. They recommend that all transport vessels should be authorized and listed by the relevant RFMO, and have observers on board to monitor and report on transshipment at sea. RFMOs could also ensure that all transshipment vessels are flagged to a contracting or cooperating party, with sanctions applied to vessels (e.g. denial of port access) and countries (import restriction/bans) in contravention of the measures. Furthermore, RFMOs should involve the companies that own, manage or charter the boats servicing fishing vessels on the high seas, in international efforts against IUU fishing[53].

ICCAT has realized the importance of strict measures for the monitoring and control of transshipments at sea, and now requires Contracting Parties to only transfer to and receive from vessels flying the Flag of Contracting Parties. Transshipments from non-contracting Party vessels are only allowed if the vessel can demonstrate that its catch has been taken in a manner that complies with ICCAT conservation measures[80].

© Greepeace / Davison

Weak laws and piracy

At present, the penalties for owners, operators, captains and crew of IUU are largely financial[10], and these fines do not act as a sufficient deterrent as they are often seen simply as a cost of doing business[10,67]. Repeat offenders and/or non-payers of fines can be jailed however; in April 2005 Australia sentenced two Indonesian fishermen to three months jail and fines totalling $200,000 for illegally fishing in the country's northern waters (these are among the most severe penalties ever recorded)[81].

Penalties are often low however, and the chances of being caught are slim[8]. Furthermore, as the net profits of each vessel usually exceed the price of the vessel, abandoning a captured vessel is not a major problem for most operators[67,81], and by using fake operating companies vessels can avoid having to pay fines altogether when caught[67]. When these factors are contrasted with the potentially huge profits on offer, the economic incentives for engaging in IUU fishing become clear[10,26].

Whilst many stocks dwindle, the demand for fish and seafood is increasing in virtually all parts of the world[61,83]. As legal fishing becomes ever more constrained, IUU fishing becomes a more and more profitable option. When one considers that Patagonian toothfish and tuna sell for up to US$1000 and US$50, 000 per fish respectively, the allure of IUU fishing is evident[10,17]. Indeed FOC fleets are known to be particularly active in these commercially valuable high-seas fisheries[17]; ICCAT has estimated that 10% of all tuna catches are taken by IUU fishing FOC vessels[67].

Even when the profits on offer from illegal fishing are not huge, it can still be a very lucrative activity if the fishermen themselves are poor. For example, many Indonesians choose to fish illegally in Australian waters due to a combination of a lack of marine resources in their own waters (due to severe overexploitation), and the existence of few alternative income generating activities. If they are not caught, a single trip can provide the same economic return as a year of fishing in Indonesian waters[67].

A State is free, under international law, to introduce laws that prohibit its nationals from engaging in IUU fishing, even if it takes place onboard a foreign vessel or in waters under the jurisdiction of a foreign State[19]. Making the activities of citizens abroad liable to domestic sanctions can be a powerful disincentive to partake in illegal operations[84]. Thus, Spain introduced legislation in 2002 that constrains the involvement of Spanish citizens in fishing operations of vessels flying Flags of Convenience; whilst Japan requires its citizens to obtain permission from the Japanese government before working on non-Japanese vessels fishing for Atlantic or Southern bluefin tuna[12]. The effectiveness of such measures is limited, however, by the fact that unless a national returns 'home', the opportunity for the home State to take action against them is fairly limited, although there may be room for extradition arrangements to be broadened to include indictable offences against fisheries law[18].

Real deterrents are required in order to make engaging in IUU fishing less attractive. States should ensure that sanctions for IUU vessels and nationals are sufficiently severe so as to deprive offenders of the benefits from such fishing. This could include jail time for captains and beneficial owners, confiscation of fishing vessels and catches, denial of future fishing licences, and increased fines[10,20].

Finally, black lists drawn up by governments can serve as a basis for refusing vessels access to national resources, ports or services. If access to government-compiled IUU information becomes more broadly available, then the private businesses that IUU operations rely on (for refuelling, freight and financial services) may decide to deny them these services[12].

Stopping the sale of pirated fish

An important step has been the establishment of trade-related and catch documentation schemes established by RFMOs. These measures are designed to keep track of legally-caught fish from the point it is caught, to when it reaches the consumer, thereby enabling the sale of IUU-caught fish to be blocked or at least made more difficult[85]. However, at present, only a few RFMOs have implemented such schemes, and these have been only been applied to a few species[71].

Some RFMOs have introduced trade embargoes against certain non-member countries whose vessels are known to be involved in IUU fishing. For example, in 1996 ICCAT authorized its members to ban bluefin tuna products from Belize, Honduras and Panama (all major FOC countries)[71,85]. Consequently, Panama and Honduras became contracting parties in 1998 and 2001 respectively. ICCAT extended similar sanctions to bigeye tuna caught by vessels flagged to Belize, Cambodia, Honduras, Equatorial Guinea, and St Vincent and the Grenadines in 2000. This action was again effective, and in 2001 the import ban on bigeye from St Vincent and the Grenadines and bluefin from Honduras was lifted[26].

Another approach, pioneered by the North Atlantic Fisheries Organization (NAFO), involves restrictions on landings of fish caught by non-member vessels. If a non-member vessel is seen to be fishing in NAFO's regulatory area, and later enters a port of a NAFO member, then that vessel is not allowed to transship or land its catch until it has been inspected. Any fish species found on board that are regulated by NAFO must be demonstrated to have either been harvested outside of the NAFO area, or in accordance with NAFO rules[85].

In 1999, the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR) adopted a Catch Documentation Scheme designed at preventing IUU toothfish catches from entering markets in CCAMLR member countries. A white list of vessels authorized to fish by contracting parties was drawn up, and only these vessels were permitted to sell certified toothfish[86]. This approach differs from ICCAT's trade measures, described above, which require the establishment of a black list of countries supporting IUU fishing activities. While the white list approach focuses on catches and individual vessels, the black list approach seeks a multilateral sanction against fish and fish products from black listed States.

In the case of the white listing procedure, the burden of the proof is switched to the vessel operators – to establish that the catch was taken in a manner consistent with conservation measures – which may reduce RFMOs' need for monitoring and therefore save them much needed funds. Black lists, on the other hand, require a strong monitoring capacity to assemble. ICCAT, the Inter-American Tuna Commission (IATTC), and the Indian Ocean Tuna Commission (IOTC) have all recently adopted new measures based on positive lists, where only those on the list have authorization to fish for, retain on board, transship or land tuna and swordfish[87].

ABOVE LEFT: *Illegal toothfish catch confiscated from Viarsa 1.*
© AFMA

ABOVE: *Black cod (top) and Patagonian toothfish on sale in Japan.*
© Fumihito Muto / TRAFFIC East Asia

RECOMMENDATIONS

The implementation and enforcement of a suite of inter-related measures are required if IUU fishing is to be eradicated. EJF contends that failure to adopt these measures – highlighted below – will result in a rapidly deteriorating situation, declines in commercial catch, marine biodiversity and impoverished livelihoods in some of the world's poorest nations. It is also abundantly clear that the economic costs of inaction far outweigh the costs of new and effective measures to stop IUU.

EJF contends that only with the strong political leadership of wealthy nations will the solutions identified be made possible.

Near-term action to deliver the following is required:

- **Strengthen the International MCS network**, so that it is made far more effective. This will require increased funding to enable the network to employ its own full-time staff and develop institutional capacity for analysis, training and technical support to fisheries enforcement personnel in developing countries. Basic improvements have been estimated to cost around US$1 million per annum[60] (approximately the same as the yearly budget for medium sized RFMOs such as IOTC). In comparison to the expense of physical surveillance activities, these costs are extremely low. As a core objective this would provide a strengthened network to act as a central monitoring and compliance authority for all vessels active on the high seas. An enhanced International MCS Network would not conflict with efforts by other international organizations, for example the FAO, where the creation of a central repository of information on IUU fishing activities worldwide is under consideration. The FAO has no role in management and enforcement, whereas a strengthened MCS Network would work directly with individual State enforcement agencies and RFMOs. Moreover, information sharing and cooperation between these bodies would enhance both initiatives and provide relative checks[1].

- **Establish a centralized, publicly available global database of high seas fishing vessels**, including information on IUU related prosecutions, domestic legislation, crew lists, vessel masters and owners, etc. When combined with stringent MCS, this could act as a powerful disincentive to the practice of renaming and re-flagging IUU vessels, as the vessel and the real company behind it would be easier to trace. States and/or RFMOs should also take measures to deter companies from doing business with IUU operations including: importers, transshippers, buyers, equipment suppliers, bankers, and insurers.

  Legal fishers and civil society groups should be supported in 'naming and shaming' vessels and companies proven to be involved in IUU fishing activities and a role for their input into the database should be assured, along with proper mechanisms for checks and verification.

- **Require centralised VMS systems for all high seas fishing vessels** and ensure sufficient transfer of technology to enable developing States in particular to adopt new compliance measures such as the use of electronic logbooks and Vessel Detection Systems, to complement VMS and strengthen monitoring and surveillance. To ensure compliance, access to markets, port facilities and other essential services could be restricted to only vessels fitted with VMS systems. In a recent FAO survey it was found that less than 25% of responding high seas fishing nations required their vessels to be fitted with VMS systems[2]. Furthermore, it was found that under half of responding coastal States had implemented VMS and observer programmes, despite the practise being recommended in the IPOA[2]. VMS and other new MCS technologies have been shown to be both effective and cost efficient in relation to 'traditional' MCS activities

© FAO / 17108 / M. Marzot

and therefore should be of great value to developing States. VMS systems must however be improved to ensure they are tamper-proof.

- **Access to fishing grounds, ports and markets should be restricted exclusively to vessels that have demonstrated themselves to be fishing in a responsible manner, in compliance with conservation and management measures.** States and RFMOs should construct such 'white lists' of owners permitted to fish, rather than conventional 'black lists' of IUU vessels and owners. In the case of the white listing procedure, the burden of the proof is switched to the vessel operators (an approach enshrined in the IPOA), which may reduce the need for monitoring and therefore save much needed funds. Black lists, on the other hand, require a strong monitoring capacity to assemble. In addition, white listing creates a powerful incentive for fishers to legitimise themselves by listing, thereby sharing the cost of enforcement. The use of VMS systems would be necessary to demonstrate innocence.

- **Further support for artisanal and civil society projects to monitor IUU.** The development and replication of pilot programmes that engage artisanal fishers and other civil society groups in monitoring of IUU vessels is essential (such as the example in Guinea cited in this report). Such direct support to civil society will help to improve governance and will have positive ramifications beyond the fisheries sector.

- **In line with the IPOA recommendations, improved financial and technical support should be provided for developing States to enhance their monitoring and enforcement capabilities**, including practical measures to supply and maintain the use of aerial and at-sea surveillance equipment and vessels.

Port State controls

- **Landing and transshipment of IUU-caught fish should be prohibited by all States**, and access to ports and port facilities denied for known IUU fishing and support vessels. In the event of such vessels entering their ports action should be taken to detain or arrest them.

- **Vessels should be required to provide advance notice if they wish to enter port**, and provide port authorities with a copy of their authorization to fish, details of their fishing trip, and catches on board. Port States should communicate inspection results with relevant RFMOs and Flag States, and vice-versa through enhanced bilateral communication. Although these port State measures – which are recommended in the IPOA – represent the leading way in which IUU fishing is being tackled by States, higher levels of implementation must still be pressed for, especially as notorious Ports of Convenience, such as Las Palmas, continue to ignore international efforts to eradicate IUU fishing. In addition, inspection results are in most cases not passed on to the relevant RFMOs or Flag States, so this is an important area where improvements are needed.

- **Ports of convenience must be controlled or closed.** Ports such as Las Palmas in the Canary Islands and Port Louis in Mauritius, must introduce measures to combat IUU fishing, or have sanctions brought against them.

© FAO / 18431 / P. Cenini

At-sea transshipment

- **All States must make it illegal for their transport or supply vessels to transship fish from, or provide other services to, vessels engaged in IUU fishing**. Transport vessels should be authorized and the presence of on-board observers would enhance monitoring of at-sea transshipment and other services (re-fueling, re-supply vessels). These measures are suggested by the IPOA and many countries now prohibit at sea transshipment or require prior authorization. Nevertheless, further implementation should be encouraged as this remains a key way in which IUU fishing can avoid detection.

Market measures

- **Fish and fish products should be better labelled** so that consumers can be dissuaded from buying fish products that do not carry credible certificates to prove their legitimate origin. These measures would require trade and catch documentation schemes to be in place.
- **Investigate the ability of States to apply additional tariffs** on fish from countries known to have vessels engaging in IUU fishing, whilst ensuring that market access for legitimate products caught by artisanal fishers is not curtailed.
- **Multilateral market-related measures such as trade embargoes** (like those under ICCAT) are recommended under the IPOA; however globally, the implementation of such measures appears to be still in its early stages. Such measures need further promotion, especially in developing countries.

Flags of convenience

- **Greatly enhanced international pressure should be brought to bear on FOC States to ensure greater compliance with the needs and obligations of international maritime law**. In particular, the governments of the UK and other Commonwealth countries must exert pressure on the 15 Commonwealth members – Antigua and Barbuda, Bahamas, Barbados, Belize, Bermuda, Cayman Islands, Cyprus, Gibraltar, Jamaica, Malta, Mauritius, Sri Lanka, St Vincent and the Grenadines, Tonga, and Vanuatu – that are currently failing to control vessels flying their flag. They should be persuaded to stop issuing Flags of Convenience, join relevant RFMOs, sign up to international fishing agreements (1982 UN Convention, 1993 FAO Compliance Agreement, 1995 UN Fish stocks agreement), and fulfil their obligations as responsible flag and port States.
- **The initiation of legal action by a responsible Flag State, or a group of States that are parties to an RFMO, to seek compensation for the costs incurred from FOC** (i.e. IUU) fishing, by taking a FOC State to the International Tribunal for the Law of the Sea (ITLOS) under the compulsory dispute-settlement provisions of the United Nations Convention on the Law of the Sea (UNCLOS). If such a test case was successful, FOC States would be faced with the prospect of paying substantial sums in compensation to other States for their failure to regulate their fishing fleets, and this could prove a significant and cost-effective deterrent to IUU fishing[18,53].

REFERENCES

1. Meere, F. (2005) Personal Communication

2. FAO (2004) *Technical consultation to review progress and promote the full implementation of the IPOA to prevent, deter and eliminate IUU fishing and the IPOA for the management of fishing capacity.* FAO, Rome.

3. G8 Summit (2003) *Marine Environment and Tanker Safety Plan* http://www.g8.fr/evian/english/navigation/2003_g8_summit/summit_documents/marine_environment_and_tanker_safety_-_a_g8_action_plan.html

4. Doulman, D.J. (2003) *Global overview of Illegal, Unreported and Unregulated (IUU) fishing and its impacts on national and regional efforts to sustainably manage fisheries: The rationale for the conclusion of the 2001 FAO International Plan of action to Prevent, Deter and Eliminate IUU Fishing.*

5. Doulman, D.J. (2000) *Illegal, Unreported and Unregulated Fishing: Mandate for an International Plan of Action.* FAO, Rome.

6. FAO (2004) *Illegal fishing and high-seas fisheries*
http://www.fao.org/newsroom/en/focus/2004/47127/article_47140en.html

7. **FAO** (2003) *FAO calls for intensified action to combat illegal fishing* http://www.fao.org/english/newsroom/news/2003/25379-en.html

8. OECD (2004) *OECD workshop on IUU fishing activities: Key observations and findings of the workshop chairs*, Organisation for Economic Co-operation and Development (OECD), Paris.

9. Upton, S. and Vitalis, V. (2003) *Stopping the High Seas Robbers: Coming to Grips with Illegal, Unreported and Unregulated Fishing* Round Table on Sustainable Development, OECD.

10. Rigg, K., Parmentier, R., Currie, D. (2003) *Halting IUU Fishing: Enforcing International Fisheries Agreements*. Oceana. www.oceana.org

11. FAO (2004) ***Excess capacity and illegal fishing: challenges to sustainable fisheries***
http://www.fao.org/newsroom/en/focus/2004/47127/index.html

12. Stokke, O.S. & Vidas, D. (2004) 'Regulating IUU Fishing or Combating IUU Operations?' Chapter in: *Fish Piracy: Combating Illegal, Unreported and Unregulated Fishing*. Paris, Organization for Economic Co-operation and Development, 2004, pp. 19-47.

13. **Le Gallic, B.** (2005) Personal communication

14. Le Gallic, B. (2004) *Using Trade Measures in the Fight against IUU Fishing: Opportunities and Challenges*. Proceedings of IIFET 2004 Japan

15. International Transport Workers' Federation *Flags of Convenience Campaign*, viewed March 2005 http://www.itfglobal.org/flags-convenience/index.cfm

16. Balton, D. *Global review of IUU fishing issues: what's the problem?* Viewed March 2005 www.oecd.org

17. SeaWeb (2002) *Fishing Under Flags of Convenience*
http://www.seaweb.org/background/book/flags_convenience.html

18. Bray, K. (2005) Personal communication

19. FAO (2002) *Guidelines on implementation of the IPOA-IUU* Technical Guidelines for Responsible Fisheries No. 9, FAO, 2002

20. FAO (2001) *International Plan of Action to prevent, Deter and Eliminate Illegal, Unreported and unregulated fishing*. FAO, Rome.

21. CCAMLR (2004) *Report of the Twenty-Third Meeting of the Commission* www.ccamlr.org

22. NEAFC Secretariat (2004) *IUU fishing in NEAFC: how big is the problem and what have we done?* Submitted to the IUU Workshop, 19-20 April 2004, as a background document.

23. FAO (2004) *Shutting the door on illegal fishing*
http://www.fao.org/newsroom/en/news/2004/50167/index.html

24. SeaWeb (2001) *Patagonian Toothfish* http://www.seaweb.org/background/book/toothfish.html

25. Lack, M. and Sant, G. (2001) *Patagonian toothfish: Are conservation and trade measures working?* TRAFFIC Bulletin 19(1), 1-19.

26. Agnew, D.J., and Barnes, C.T. (2004) 'Economic Aspects and Drivers of IUU Fishing: Building a Framework' in OECD (2004). *Fish Piracy. Combating Illegal, Unreported and Undergulated Fishing*. Paris: OECD.

27. BirdLife International *Pirate Fishing* Save the Albatross Campaign
http://www.birdlife.net/action/campaigns/save_the_albatross/pirate_fishing.html

28. Fegan, B. (2003) Plundering the Sea. *Inside Indonesia*, Jan – Mar 2003 http://www.insideindonesia.org/edit73/Fegan%20fishing.htm

29. TRAFFIC (2001) *Illegal fishing and mismanagement rampant in the Western Bering Sea*
http://www.traffic.org/beringsea/release.html

30. Brashares, J.S., Arcese, P., Sam, M.K., Coppolillo, P.B., Sinclair, A.R.E., Balmford, A. (2004) Bushmeat Hunting, Wildlife Declines, and Fish Supply in West Africa *Science*, Vol 306, Issue 5699, 1180-1183 , 12 November 2004

31. FAO (2002) *Fighting the Fish Pirates*
http://www.fao.org/english/newsroom/news/2002/3500-en.html

32. Bours, H. (2004) *Illegal, Unreported and Unregulated (IUU) Fishing in West Africa*. Greenpeace & Coalition for Fair Fisheries Agreements (CFFA).

33. Benguela Current Large Marine Ecosystem (BCLME) Programme viewed March 2005 http://www.bclme.org/

34. FAO (2004) *The State of Food Insecurity in the World (SOFI) 2004*. FAO, Rome.

35. Carroll, R. (2004) *Hungry Angola bans GM food aid.* Guardian unlimited www.guardian.co.uk

36. Lankester, K. (2002) *The EU-Angola Fisheries agreement and fisheries in Angola*.
http://www.panda.org/downloads/marine/Angola_Fishing_brief.doc

37. Salopek, P. (2004) Fade to Blue: A tale of fish, pirates, greed and the end of a global frontier. *Chicago Tribune,* August 15, 2004.

38. SADC Marine Fisheries & Resources Centre *Angola General Information* viewed April 2005 http://www.sadcfisheries.com/country.asp?countryid=2

39. Benn, J. (2002) *Angola: Hunger in the midst of riches.* WWF www.panda.org

40. IRIN (2004) *Angola: Unlicenced foreign trawlers deplete fish stocks*
http://www.plusnews.org/report.asp?ReportID=40765&SelectRegion=Southern_Africa&SelectCountry=ANGOLA

41. Cederrand, S. (2004) *Report of the Surveillance Voyage to Angolan Waters of the Namibian Fisheries Protection Vessel 'Anna Kakurukaze Mungunda' April – May 2004.* SADC Monitoring Control and Surveillance of Fisheries Activities Programme, Working Paper No 31, September 2004 www.mcs-sadc.org

42. Giraux, F. (2004) *Review of Aerial Fisheries patrols of Angolan Maritime Waters* SADC Monitoring Control and Surveillance of Fisheries Activities Programme, Working Paper Nº 29, September 2004 www.mcs-sadc.org

43. Kulmiye, A.J. (2001) Militia vs Trawlers: Who is the Villain? *The East African*. Monday, July 9, 2001 http://www.ecop.info/e-news/e-news-01-07-9.htm

44. Coffen-Smout, S. (1998) *Pirates, Warlords And Rogue Fishing Vessels In Somalia's Unruly Seas*.
http://www.chebucto.ns.ca/~ar120/somalia.html

45. United Nations Environment Programme (2002) 'Harvesting of Coastal and marine resources in eastern Africa' in *Africa Environment Outlook: Past Present and Future Perspectives*
http://www.grida.no/aeo/107.htm

46. Left, S. (2005) *Q&A: The state of Somalia* Guardian Unlimited
http://www.guardian.co.uk/theissues/article/0,6512,1428533,00.html

47. FAO (2005) *Fishery Country Profile: Somalia*
http://www.fao.org/fi/fcp/en/SOM/profile.htm

48. Dr Euan Dunn (2005) Personal account from COFI ministerial meeting, 12 March 2005.

49. United Nations (2003) *Report of the panel of experts on Somalia pursuant to security council resolution 1474* www.un.org

50. European Parliament (2001) *Draft report on the role of flags of convenience in the fisheries sector* (2000/2302(INI))

51. Commission of the European Community (2002) *Community Action Plan for the eradication of illegal unreported and unregulated fishing* COM (2002) 180.

52. EU (2004) *Commissioner Fischler's opinion* http://europa.eu.int/comm/fisheries/news_corner/doss_inf/illegal/en/illegal_a_02.htm

53. Gianni, M. & Simpson, W. (2004) 'Flags of convenience, transshipment, resupply and at sea infrastructure in relation to IUU fishing', in *Fish Piracy: Combating IUU Fishing*, OECD, 2004, Chapter 6.

54. Greenpeace (2005) *Case Studies on IUU Vessels, 'Chang Xing'.*

55. OECD, *Fish Piracy. The Economics of Illegal, Unreported and Unregulated Fishing*, OECD, Paris, 2005.

56. Swan, J. (2002) *Fishing Vessels Operating under Open Registers and the Exercise of Flag State Responsibilities – Information and Options* FAO Fisheries Circular No. 980, FAO Rome.

57. High Seas Task Force (2005) *How to get better information about high seas fishing vessels* www.high-sea.org

58. Coalition of Legal Toothfish Operators, viewed March 2005 www.colto.org

59. EU (2004) *Focus on IUU* http://europa.eu.int/comm/fisheries/news_corner/doss_inf/illegal/en/illegal_a_01.htm

60. High Seas Task Force (2005) *Better high seas monitoring, control and surveillance – an improved network* www.high-seas.org

61. Bray, K. (ed.) (2000) *A global review of illegal, unreported and unregulated (IUU) fishing.* Prepared as a background document for the Expert Consultation on Illegal, Unreported and Unregulated Fishing Organized by the Government of Australia in Cooperation with FAO, Sydney, Australia, 15-19 May 2000.

62. Flewwelling, P., Cullinan, C., Balton, D., Sautter, R.P., Reynolds, J.E. (2002) *Recent trends in monitoring, control and surveillance systems for capture fisheries*. FAO Fisheries Technical Paper. No. 415. Rome, FAO. 2002.

63. Australian Customs Service (2004) *Armed Southern Ocean patrol trials launched from Hobart*
http://www.customs.gov.au/site/page.cfm?u=4232&c=4002

64. FAO (2004) *New tools in the IUU battle*
http://www.fao.org/newsroom/en/focus/2004/47127/article_47142en.html

65. Beslier, M.S. (2004) *Enforcement and Surveillance: what are our technical capacities and how much are we willing to pay?* www.oecd.org

66. Smith, A. (2001) *Vessel Monitoring Systems.* UN Atlas of the Oceans www.oceansatlas.org

67. Sumaila, U.R, Alder, J and Heather, K. (2004) 'The cost of being apprehended for fishing illegally: Empirical evidence and policy implications'. Pages 201-230 in *Fish Piracy: Combating illegal, unreported and unregulated fishing*. Organisation for Economic Co-operation and Development (OECD), Paris.

68. Shepherd, I., Bishop, J., & Gallagher, R. (2004) *Falsification of VMS Records.* European Commission JRC IPSC/G03/R/ISH/ish D(2004)(3222)

69. SADC-EU MCS Programme viewed March 2005

70. FAO (2005) *The 2005 Rome Declaration on Illegal, Unreported and Illegal Fishing.* Adopted by the FAO Ministerial Meeting on Fisheries, Rome, 12 March 2005.

71. Schmidt, C-C. (2004) *Addressing Illegal, Unreported and Unregulated (IUU) Fishing*. Prepared for the International Fisheries Compliance 2004 conference, 29-30 September 2004, Brussels.

72. FAO (1995) *Agreement to promote compliance with international conservation and management measures by fishing vessels on the high seas.* FAO, Rome.

73. FAO (2003) *Poachers routed by community patrols*
http://www.fao.org/english/newsroom/focus/2003/sflp4.htm

74. Sustainable Fisheries Livelihoods Programme *Incursions by industrial trawlers into Guinea's coastal zone at last a sigh of relief from the small-scale fishers of Bongolon.* Liaison Bulletin 10. Viewed March 2005 http://www.sflp.org/eng/007/pub1/103.htm.

75. Earthtrends Data Tables: Coastal and Marine Ecosystems *Fisheries and Aquaculture 2003*
http://earthtrends.wri.org/datatables/index.cfm?theme=1

76. Sustainable Fisheries Livelihoods Programme *Forum on participatory coastal fisheries surveillance in Guinea*. Viewed March 2005 http://www.sflp.org/eng/003/forguin/forguin.htm

77. Sustainable Fisheries Livelihoods Programme (2003) *Participatory fisheries surveillance in Guinea: a striking example for others to emulate.* Liaison Bulletin 12. Viewed March 2005.
http://www.sflp.org/eng/007/pub1/123_a.htm

78. Bours, H. (2004) *Illegal, Unreported and Unregulated (IUU) Fishing in West Africa*. Greenpeace and Coalition for Fair Fisheries Agreements (CFFA).

79. High Seas Task Force (2005) *Responsible port states* www.high-seas.org

80. ICCAT (2004) *Compendium Management Recommendations and Resolutions Adopted by ICCAT for the Conservation of Atlantic Tunas and Tuna-like Species* www.iccat.org

81. Macdonald, I. (2005) *Record fine for Indonesian fisherman*
http://www.mffc.gov.au/releases/2005/05053m.html

82. ICFTU, TUAC, ITF, Greenpeace International (2002) *More Troubled Waters: fishing, pollution and FOCs.* www.itfglobal.org

83. Denton, P. (2005) *Over-fishing the World's Seas* World Resources Institute www.wri.org

84. High Seas Task Force (2005) *Do we need to control nationals?* www.high-seas.org

85. Balton, D. (1999) *Dealing with the "bad actors" of ocean fisheries.* Address at Conference on Fisheries Management, Norway Graduate School of Economics Bergen, Norway, 20 May 1999.

86. CCAMLR *Catch Documentation Scheme*, viewed April 2005 www.ccamlr.org

87. Lobach, T. (2003) *Port State Control of Foreign Fishing Vessels.* FAO Fisheries Circular No. 987. FAO, Rome.

EJFct

5 St Peter's St, London N1 8JD, UK
Tel 44 (0) 20 7359 0440
Fax 44 (0) 20 7359 7123
info@ejfoundation.org
www.ejfoundation.org