

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14

25 - 26 April 2017, Hong Kong

Azmath Jaleel Cardiff University

The race to fish and the threat to sustainability of stocks, environment and coastal communities



The race to fish and the threat to sustainability of stocks, environment and coastal communities

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

Background

The operating environment

The consequences of the pressures and intense competition

The effect on the fish stocks, communities and the environment

An example of good fishing practice

What can be done?

The race to fish and the threat to sustainability of stocks, environment and coastal communities

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

Background

Dangerous profession

High waves, gale-force winds, pelting rain, and thunderstorms

Working around the clock - extreme fatigue

Dangerous gear, hauling hundreds of kilos of catch under treacherous conditions

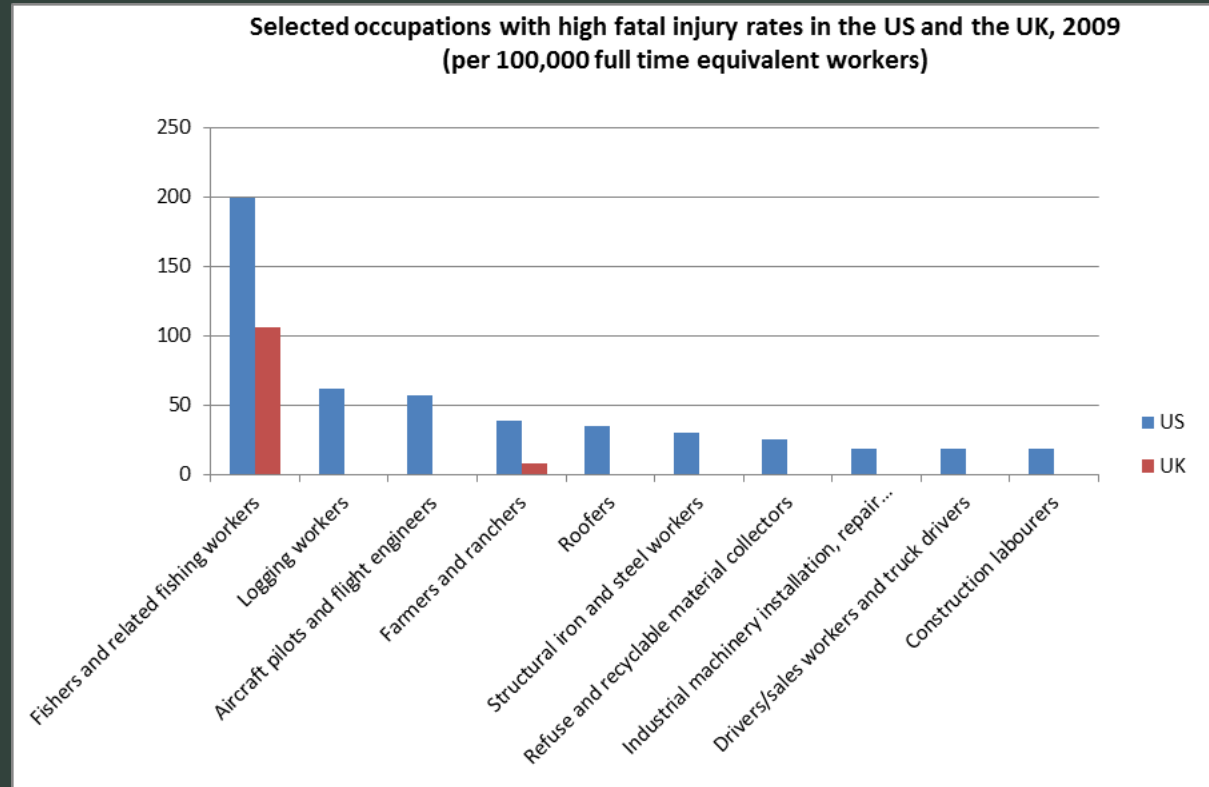
Icy decks, extremely cold waters, lack of safety gear and lack of training

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Background

Dangerous profession



Sources: Data for 2009 are preliminary. Source: U.S. Bureau of Labor Statistics, U.S. Department of Labor, 2010.

http://economix.blogs.nytimes.com/2010/08/20/the-most-dangerous-jobs-in-america/?_r=0

and Barrie, J. <http://munchies.vice.com/articles/fishing-is-one-of-the-most-deadly-jobs-in-the-uk>

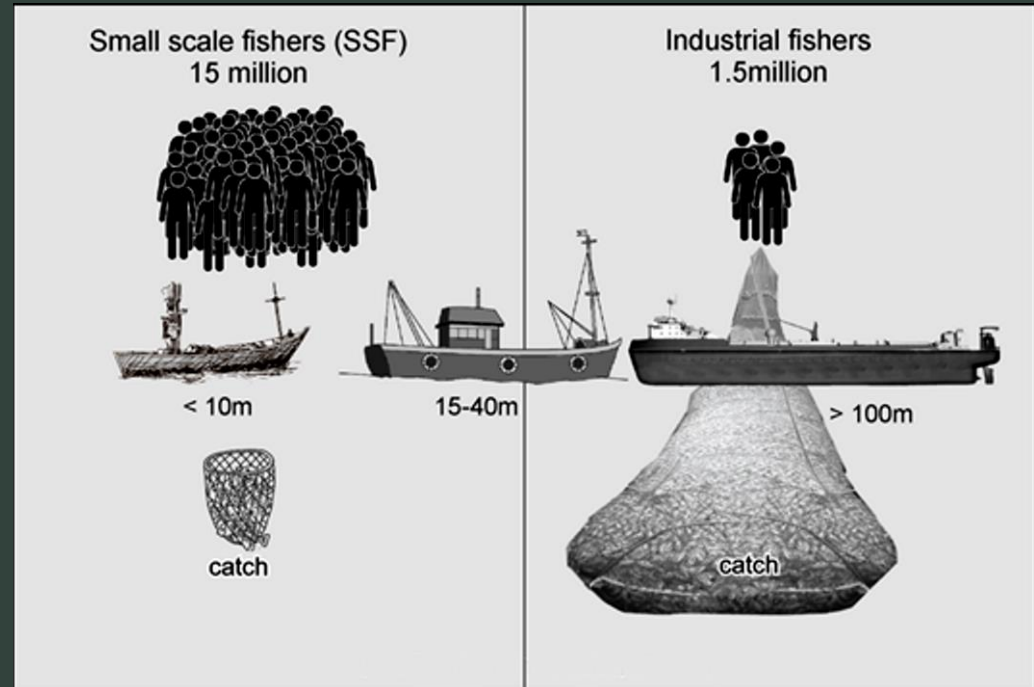
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The types of fishers and sizes of fishing boats



The race to fish and the threat to sustainability of stocks, environment and coastal communities

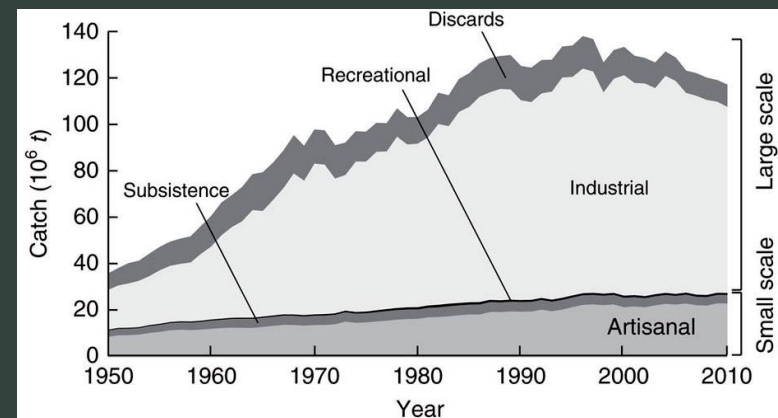
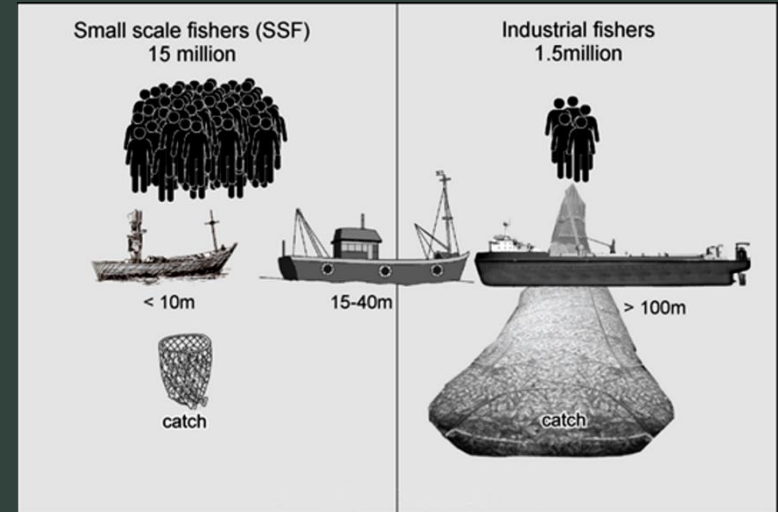
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Global catch statistics



Reconstructed catches for all countries in the world, plus High Seas, by large-scale (industrial) and small-scale sectors (artisanal, subsistence, recreational), with discards (overwhelmingly from industrial fisheries) presented separately.
<http://www.nature.com/articles/ncomms10244>

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Price of fish



Sushi Restaurant Owner Bids \$1.7M for Tuna

Cost: \$3,603 per pound (bought at \$1.76 million in 2013)

Tokyo, Japan

The king of the sushi game, Kiyoshi Kimura, currently holds the record for the most amount of money spent on a bluefin tuna—buying it at a hefty \$1.76 million dollars in 2013. The fish can be eaten at specialty restaurants scattered throughout Japan. <http://firstwefeast.com/eat/2015/06/most-expensive-seafood-dishes>



Cost: £108 (\$169.86)
Kai Mayfair



Cost: £16,000 (\$25,162.88)
The Caviar House & Prunier



Cost: £2000 (\$3,200)
Bombay Brasserie



Cost: \$100 per oyster
Coffin Bay, Australia



Cost: \$2,000/pound
Across the U.S.

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The operating environment

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The operating environment

Total allowable catch (TAC) and quotas

Table 1: League Table of TAC vs ICES Advice by Member State (Average from 2001-2015)

Member States	Excess TAC (tonnes)	Excess TAC (%)
Denmark	89,943	17%
United Kingdom	77,077	20%
Spain	53,367	37%
The Netherlands	43,401	26%
Ireland	38,297	24%
France	33,775	18%
Sweden	32,538	18%
Germany	30,626	22%
Poland	20,116	14%
Portugal	15,892	37%
Finland	11,473	10%
Latvia	9,655	14%
Estonia	8,209	12%
Lithuania	3,100	14%
Belgium	2,849	16%
EU	471,490	20%

Total Allowable Catches (TAC) are often set higher than scientific recommendations of ICES (International Council for the Exploration of the Sea) <http://iuriskintelligence.com/who-is-to-blame-for-excess-fisheries-quotas-in-eu-member-states/>

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The operating environment

Total allowable catch (TAC) and quotas

Nations' inability to protect own waters



Somali fishers. <http://piracyreport.com/index.php/topic/10>

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The operating environment

Total allowable catch (TAC) and quotas

Nations' inability to protect own waters

Piracy



Somali pirates return, seized Iranian fishing vessel
AFRICA. Thursday 26 March 2015 <http://www.enca.com/africa/somali-pirates-return-seized-iranian-fishing-vessel>

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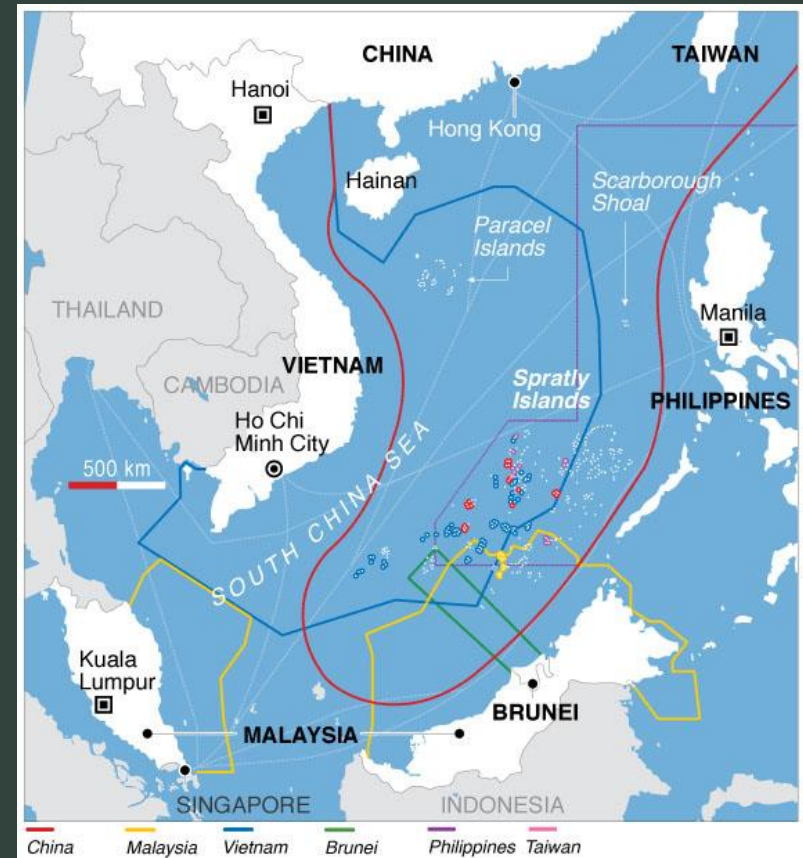
The operating environment

Total allowable catch (TAC) and quotas

Nations' inability to protect own waters

Piracy

Geopolitics



Territorial claims in the South China Sea

https://en.wikipedia.org/wiki/Territorial_disputes_in_the_South_China_Sea

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The consequences of the pressures and intense competition

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The consequences of the pressures and intense competition

Overfishing/bycatch



Examples of overfishing exist in areas such as the North Sea, the Grand Banks of Newfoundland and the East China Sea. In these locations, overfishing has not only proved disastrous to fish stocks but also to the fishing communities relying on the harvest. <http://www.wikiwand.com/en/Overfishing>

Inset: Bycatch. <http://www.sapphirecoastdiscovery.com.au/2012/07/professor-steve-kennelly-at-scmdc-to-talk-about-bycatch-reduction/>

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Overfishing/bycatch

Illegal, unreported and unregulated (IUU) fishing



Activists climb on board the illegal cargo ship "Binar 4" full of fish stolen from Guinean waters, as it awaits entry to the port of Las Palmas. April 2006
<http://www.greenpeace.org/international/en/news/features/pirate-ship-boarded-130406/>

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Overfishing/bycatch

Illegal, unreported and unregulated (IUU) fishing

Circumventing quota restrictions



<http://www.itfseafarers.org/files/seealsodocs/9186/FOC%20flags.pdf>

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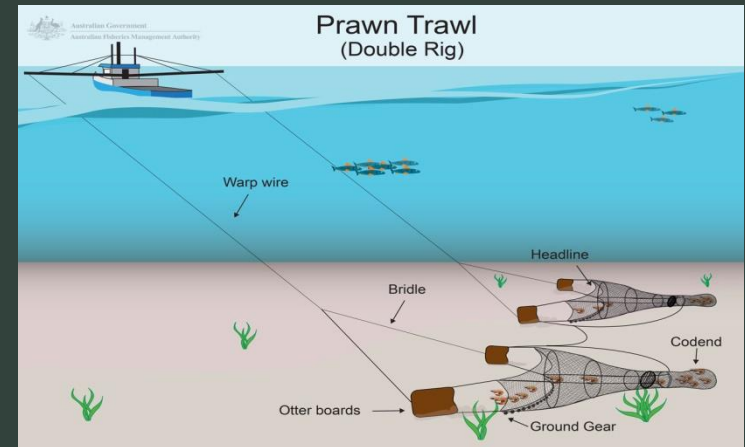
The consequences of the pressures and intense competition

Overfishing/bycatch

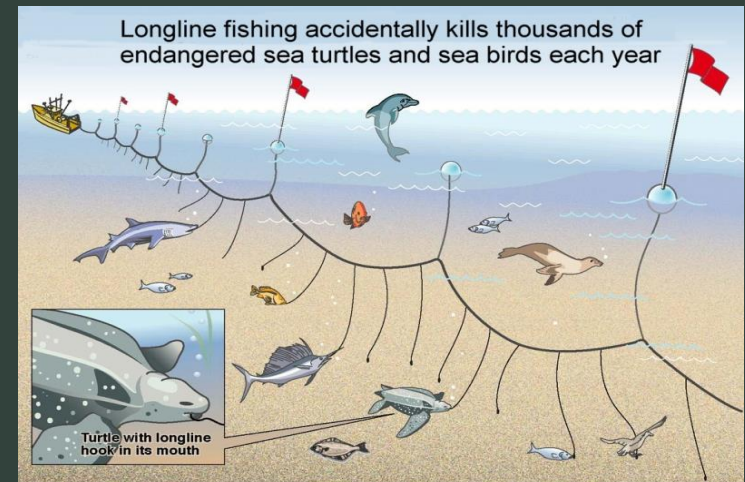
Illegal, unreported and unregulated (IUU) fishing

Circumventing quota restrictions

Destructive fishing gear



<http://www.afma.gov.au/portfolio-item/trawling/>



<http://www.ghostfishing.org/longline-fishing-curtain-of-death/>

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Circumventing quota restrictions

Destructive fishing gear

Destructive fishing methods



<http://flintmag.com/komodo-big-boom/>



Poison fishing using Mongonbo (*Millettia sanagana*, Fabaceae). A: A Bakwele woman waving a mekala basket – B: Preparation of mongonbo – C: Mixing mongonbo with mud – D: Harvesting fish with mekala. <https://ethnoecologie.revues.org/2893>

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Illegal, unreported and unregulated (IUU) fishing

Circumventing quota restrictions

Destructive fishing gear

Destructive fishing methods

Ghost fishing



<https://www.worldanimalprotection.org/our-work/animals-wild/sea-change>

It is estimated that abandoned, lost or discarded fishing gear in the oceans makes up around 10 percent (640 000 tonnes) of all marine litter.

The bottom edge of a bottom set gill net is anchored to the sea floor and floats are attached to their top, so that they form a vertical undersea wall of netting that can run anywhere from 600 to 10 000 meters in length. If a gillnet is abandoned or lost, it can continue to fish on its own for months - and sometimes years - indiscriminately killing fish and other animals.

Traps and pots are another major ghost fisher. In the Chesapeake Bay of the United States, an estimated 150 000 crab traps are lost each year out of an estimated 500 000 total deployed. On just the single Caribbean island of Guadeloupe, about 20 000 of all traps set each year are lost each hurricane season - a loss rate of 50 percent. Like gill nets, these traps can continue to fish on their own for long periods of time.

<http://www.fao.org/news/story/en/item/19353/icode/>

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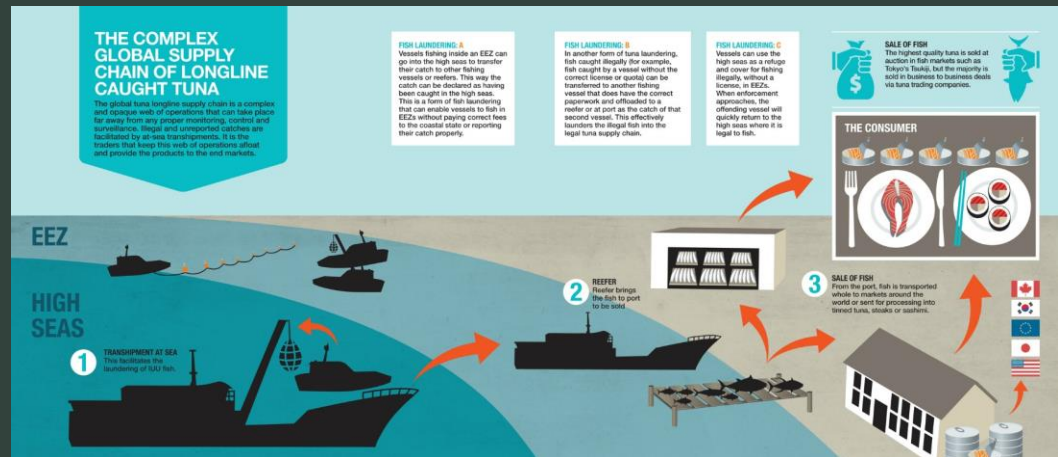
Circumventing quota restrictions

Destructive fishing gear

Destructive fishing methods

Ghost fishing

Fish Laundering



<http://www.greenpeace.org/international/Global/international/artwork/oceans/2013/GPI-Tradelnfographic-DEF-standalone150dpi.jpg>

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Overfishing/bycatch

Illegal, unreported and unregulated (IUU) fishing

Circumventing quota restrictions

Destructive fishing gear

Destructive fishing methods

Ghost fishing

Fish Laundering

Discard of over catch/ bycatch



<http://theblackfish.org/opinion/discard-ban-no-cure/>

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Fish Laundering

Discard of over catch/ bycatch

Fish farming and fish feed



<http://impactalpha.com/what-to-feed-the-fish/>

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Circumventing quota restrictions

Destructive fishing gear

Destructive fishing methods

Ghost fishing

Fish Laundering

Discard of over catch/ bycatch

Fish farming and fish feed

Cost cutting



<https://www.thenation.com/article/did-slave-labor-produce-your-seafood/>

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Marginalisation of Small scale fishers – loss of employment and livelihood



Loss of employment and income for island and coastal communities



Depletion of fish stocks



Pollution, diseases

The effect on the fish stocks, communities and the environment

Arrests and detention of fishers



Destruction of habitats and the marine environment



Piracy



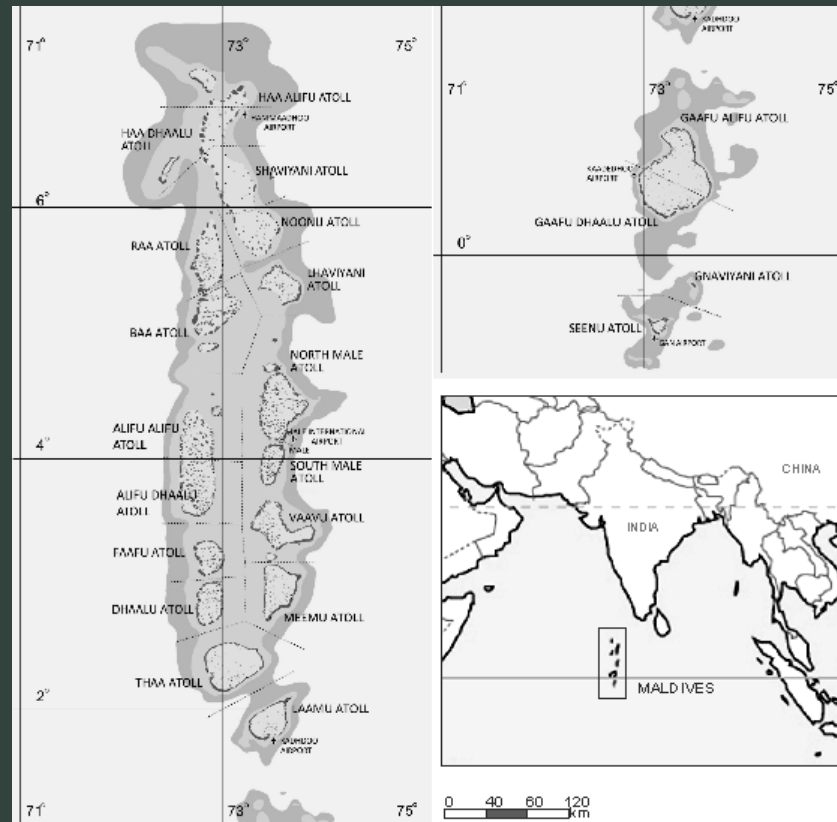
Trafficking of humans, enslavement, abuse and murder



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An example of good fishing practice – The Maldives



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Pole and line fishery



<http://www.wwf.org.au/about-us/partners/john-west#gs.mQ8Y3TI>

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No contract (walk-in-walk-out)
community fishers



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Regular payment in kind or cash

Return home for the night



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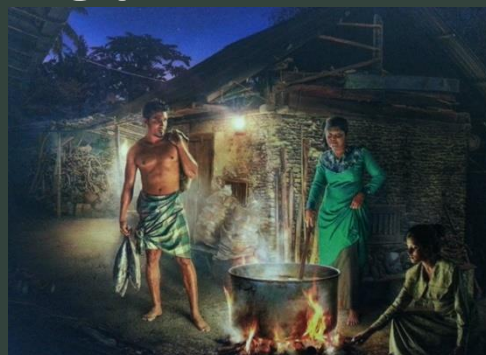
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Community involvement (including
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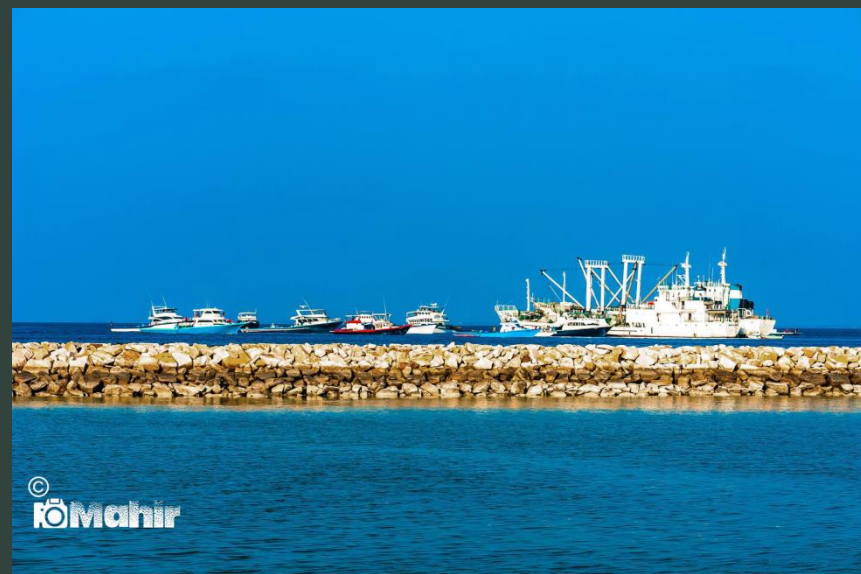
Fish collecting vessels and processing
plants geographically distributed



Fish processing plant at *Felivaru*



Fish processing plant at *Kooddoo*



Fish collecting vessel at *Adu*

© **KOMahir**

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EEZ fishery done by local companies



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Fish collecting vessels and processing
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EEZ fishery done by local companies

No seiners or trawlers – nets are
banned



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Regular payment in kind or cash

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Community involvement (including women/young) in the industry

Fish collecting vessels and processing plants geographically distributed

EEZ fishery done by local companies

No seiners or trawlers – nets are banned

Regular updating of operations and catch data

Table 5 : Fish Catch by Atoll and by Month, 2013
(في كميتون متر)

In metric tons (MT)

Region	شهر												Total catch
	January	February	March	April	May	June	July	August	September	October	November	December	
REPUBLIC	9,784.29	9,317.84	9,882.52	7,886.71	9,784.16	11,291.29	11,296.09	11,898.33	9,418.77	19,513.28	16,930.06	11,977.81	129,843.16
EEZ	27.08	24.37	31.64	82.23	102.01	64.41	31.73	130.86	190.33	233.31	341.80	360.67	1,600.42
Male	1,891.99	1,813.70	1,930.47	1,994.93	1,272.16	2,100.53	1,508.84	2,287.28	1,602.54	3,057.07	4,303.88	4,200.24	27,369.23
North Thiladhunmathi (HA)	135.64	194.40	194.47	59.73	88.47	380.01	671.18	752.28	622.08	1,080.78	1,943.20	480.37	6,916.20
South Thiladhunmathi (HD)	937.91	886.21	697.07	43.49	105.25	381.93	628.87	363.77	278.31	200.16	311.14	202.46	4,876.87
North Maalhosomadu (SH)	166.22	116.36	142.03	110.16	102.34	207.91	186.21	189.79	204.04	216.91	277.23	190.07	2,126.13
South Maalhosomadu (MC)	59.99	59.89	54.80	38.98	13.30	62.84	46.01	55.11	69.78	130.73	135.56	244.69	978.94
North Maalhosomadu (RA)	337.52	467.16	847.71	405.70	348.39	793.61	711.27	688.64	636.40	604.36	1,012.65	512.12	7,333.44
South Maalhosomadu (BA)	119.25	124.32	179.87	137.74	121.74	116.92	284.18	279.09	247.90	284.71	185.86	185.86	2,342.98
Faadhippolu (LH)	388.14	233.88	548.48	184.76	112.95	246.16	222.15	160.08	165.46	218.81	340.18	346.11	2,174.14
Male Atoll (KA)	621.87	637.47	712.89	209.99	263.87	481.29	1,259.21	644.00	623.82	702.18	628.20	612.94	7,396.73
North Ari Atoll (AA)	401.80	306.23	313.52	303.54	224.11	306.37	344.03	300.68	320.83	353.93	419.94	277.57	3,926.94
South Ari Atoll (AD)	485.41	519.41	542.97	583.73	632.57	480.48	458.95	495.72	277.39	316.45	317.29	312.26	6,294.29
Felidhu Atoll (VA)	39.09	39.09	32.81	29.00	23.82	89.78	112.28	112.45	39.87	71.46	93.89	48.00	684.68
Makulu Atoll (ME)	335.03	380.98	400.35	232.05	223.87	367.55	406.10	525.47	251.83	370.24	333.02	292.47	4,148.86
North Nilandhe (FA)	126.43	158.00	127.12	143.22	170.08	200.05	340.91	124.13	174.27	293.82	343.77	86.43	2,261.01
South Nilandhe (DH)	263.28	227.55	241.19	204.93	228.37	124.48	374.74	729.88	467.94	600.69	620.89	382.53	4,887.38
Kulhumadu (TH)	404.53	106.15	181.18	162.71	300.21	1,201.47	794.81	567.92	491.94	958.85	697.41	262.14	6,102.23
Hadhunmathi (LA)	511.58	375.32	642.00	525.90	643.21	1,050.89	646.70	723.19	453.95	974.35	901.79	894.23	8,243.17
North Havudhu (GA)	1,274.02	1,106.28	1,204.29	985.46	846.13	1,163.20	1,190.71	1,199.50	2,206.52	2,198.09	874.98	1,600.99	16,669.09
South Havudhu (GD)	479.65	376.25	411.02	485.96	369.77	300.51	488.14	678.16	608.71	843.78	712.77	665.24	6,616.68
Fuvahmalah (GN)	406.41	328.21	355.99	373.73	328.92	345.70	271.10	180.18	322.91	467.84	382.42	216.30	4,919.80
Addu (SE)	495.09	591.67	492.30	482.43	318.99	349.05	304.77	379.08	347.12	609.09	320.61	327.29	4,977.86

Source: Island Office & Companies
Compiled by: Statistics Unit
Ministry of Fisheries & Agriculture

منبع: مكتب الجزر
تجميع: وحدة الإحصاء
وزارة الثروة السمكية والزراعة

Table 6 : Fish Catch by Atoll and by Species, 2013
(في كميتون متر)

In metric tons (MT)

Region	نوع السمك										Total catch
	Skipjack tuna	Yellow-fin	Bigeye tuna	Dogtooth tuna	Little tuna	Albacore	Frigate tuna	Other tuna	Other fish	Other	
REPUBLIC	74,421.63	48,628.08	1,820.36	91.12	1,006.44	666.00	6,811.06	1.48	129,843.16		
EEZ	25.94	244.34	1,059.46	-	-	-	270.23	1.49	1,600.42		
Male	18,963.19	6,841.32	93.36	4.28	137.84	55.04	1,274.21	-	27,369.23		
North Thiladhunmathi (HA)	1,518.54	3,997.54	66.57	0.09	90.01	44.53	479.91	-	6,916.20		
South Thiladhunmathi (HD)	1,570.17	3,113.90	46.64	0.12	58.51	33.37	154.87	-	4,876.87		
North Maalhosomadu (SH)	392.84	1,542.29	35.02	-	71.52	33.22	46.25	-	2,126.13		
South Maalhosomadu (MC)	197.94	797.95	-	-	3.84	1.69	4.42	-	978.94		
North Maalhosomadu (RA)	3,779.69	3,202.94	8.07	0.13	54.99	42.40	245.21	-	7,333.44		
South Maalhosomadu (BA)	676.40	1,303.73	24.75	18.18	37.58	67.20	215.14	-	2,342.98		
Faadhippolu (LH)	1,176.13	1,753.54	-	-	42.43	23.26	178.78	-	3,174.14		
Male Atoll (KA)	3,126.10	3,423.68	12.59	0.01	96.26	73.45	661.67	-	7,396.73		
North Ari Atoll (AA)	1,246.81	2,147.64	20.07	0.10	109.98	56.97	346.37	-	3,926.94		
South Ari Atoll (AD)	483.47	2,238.18	-	-	87.30	124.18	45.51	-	6,294.29		
Felidhu Atoll (VA)	284.24	222.06	-	-	0.08	10.39	25.38	-	684.68		
Makulu Atoll (ME)	2,667.37	1,362.70	8.05	0.24	42.30	31.30	369.90	-	4,148.86		
North Nilandhe (FA)	227.89	1,696.51	6.63	-	9.66	0.48	408.54	-	2,261.01		
South Nilandhe (DH)	1,618.84	3,252.97	-	-	6.41	2.08	7.08	-	4,887.38		
Kulhumadu (TH)	4,371.18	1,616.37	3.56	0.18	26.27	0.89	84.07	-	6,102.23		
Hadhunmathi (LA)	6,881.98	1,536.44	12.82	0.30	89.59	16.85	31.52	-	8,243.17		
North Havudhu (GA)	13,481.44	1,042.96	127.70	0.08	18.52	10.57	47.33	-	16,669.09		
South Havudhu (GD)	5,675.18	816.55	5.02	-	10.65	0.07	11.11	-	6,518.55		
Fuvahmalah (GN)	2,463.91	1,480.70	-	0.05	33.29	-	31.85	-	4,919.80		
Addu (SE)	3,906.99	1,038.07	0.85	-	2.58	0.35	29.02	-	4,977.86		

Source: Island Office & Companies
Compiled by: Statistics Unit
Ministry of Fisheries & Agriculture

منبع: مكتب الجزر
تجميع: وحدة الإحصاء
وزارة الثروة السمكية والزراعة

The race to fish and the threat to sustainability of stocks, environment and coastal communities

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

An example of good fishing practice – The Maldives

Pole and line fishery

No contract (walk-in-walk-out)
community fishers

Regular payment in kind or cash

Return home for the night

Community involvement (including women/young) in the industry

Fish collecting vessels and processing plants geographically distributed

EEZ fishery done by local companies

No seiners or trawlers – nets are banned

Regular updating of operations and catch data

Ensure seaworthiness and safety of fishing vessels

Transport Authority
Republic of Maldives

202-TA(M)FSC/2016/337

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27.350 M	27.350 M	27.350 M	27.350 M	27.350 M
BQQ2561	BQQ2561	BQQ2561	BQQ2561	BQQ2561

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INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

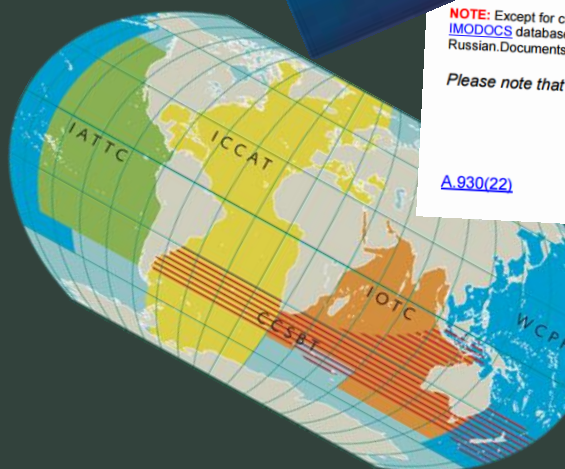
What can be done?

The race to fish and the threat to sustainability of stocks, environment and coastal communities

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

What can be done?

Enforce international, regional, bilateral and national laws and other instruments in spirit



IMO DOCUMENTS

NOTE: Except for current meetings' documents and working papers, all IMO Documents issued since 1998 are available in the **IMODOCS** database in English, French and Spanish; some documents are also available in Arabic, Chinese and Russian. Documents prior to 1998 can be obtained on an ad hoc basis provided that they exist in electronic form.

Please note that only Resolutions, Circulars, Circular Letters and Final Reports are listed below.

RESOLUTIONS

[A.930\(22\)](#)
Guidelines on provision of financial security in case of abandonment of seafarers
Adopted on 29 November 2001

The Code of Conduct for Responsible Fisheries
(FAO, 1995)

The image shows the cover of the Code of Conduct for Responsible Fisheries (FAO, 1995). The cover is blue and white, with the title 'CODE OF CONDUCT FOR RESPONSIBLE FISHERIES' prominently displayed. It also features the FAO logo and the United Nations logo.

The race to fish and the threat to sustainability of stocks, environment and coastal communities

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

What can be done?

Enforce international laws and other instruments in spirit

Better monitoring of fishing activities

Vessel Monitoring System (VMS)

- Compulsory for vessels above 12 m (from 1 January 2012)
- Minimum interval between signals - 2 hours
- Signal contain information about:
 - Location
 - Time
 - Course
 - Speed of vessel



CONTROL TECHNOLOGIES OF FISHERY



E-monitoring ensures that AFMA and scientists have an accurate record of all catch and effort in a fishery. This is achieved through independent verification of logbook data and means that assessments of fish populations and interactions with protected species will be more accurate and reliable.

The race to fish and the threat to sustainability of stocks, environment and coastal communities

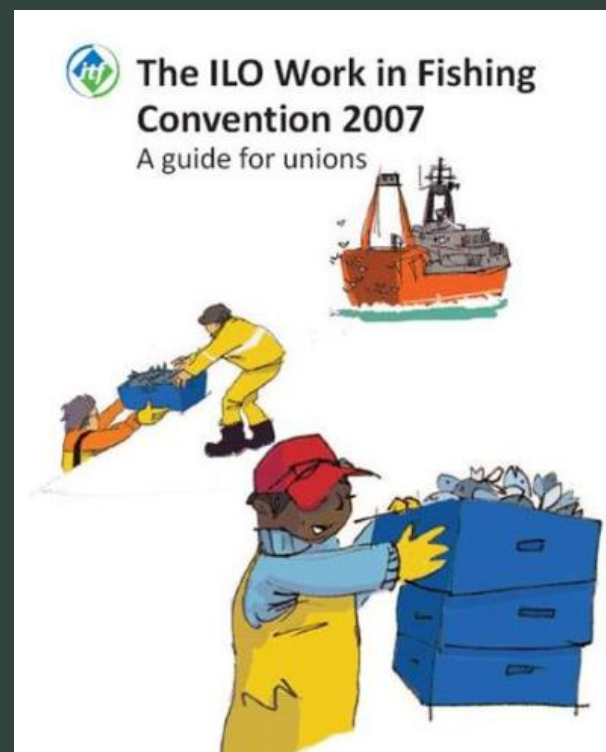
INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

What can be done?

Enforce international laws and other instruments in spirit

Better monitoring of fishing activities

Be party to the Work in fishing Convention 188



Applicable to all types of commercial fishing it was designed to ensure that fishers worldwide have access to decent working and living conditions

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What can be done?

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Better monitoring of fishing activities

Be party to the Work in fishing Convention 188

Better management of MPA/SACs

Features of Marine Protected Areas Worldwide

No-Use Zone

No activities permitted.

No-Take Zone

Measures are taken to protect species whose populations may be affected in other zones/areas. Examples include spawning and nursery grounds.

Non-extractive activities are permitted, such as diving and mooring.

Buffer Zone

Transitional zones from no-take zones to multiple-use zones.

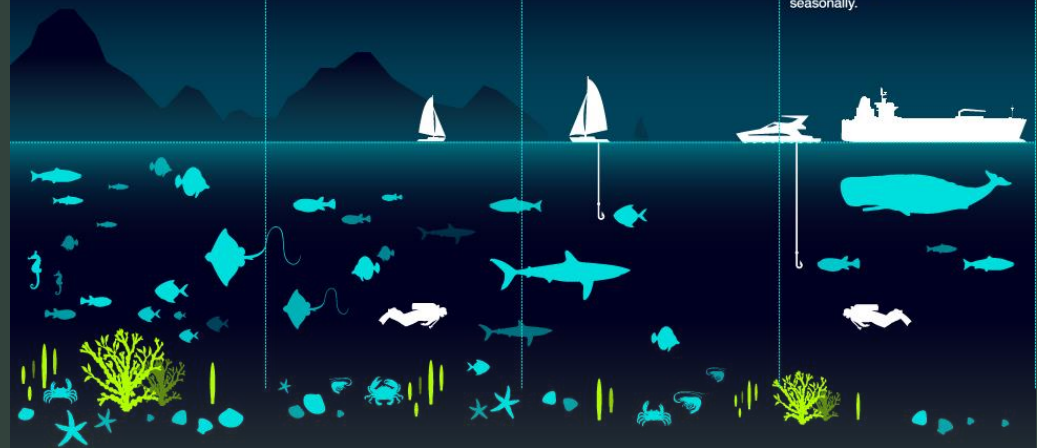
Moderate activities, such as hook-and-line fishing, limited aquaculture, and limited tourism are permitted.

Multi-Use Zone

All tourism, fishing and aquaculture activities permitted.

Permitted activities include diving and snorkeling, artisanal fishing, large-scale commercial fishing, and aquaculture.

Activities may be restricted seasonally.



SOURCE:

Marine Managed Areas: What, Why, and Where, Science to Action

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INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

What can be done?

Enforce international laws and other instruments in spirit

Better monitoring of fishing activities

Be party to the Work in fishing Convention 188

Better management of MPA/SACs

Train/invest in local fishers to be able to use the EEZ more effectively and take back control



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Enforce international laws and other instruments in spirit

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Better management of MPA/SACs

Train/invest in local fishers to be able to use the EEZ more effectively and take back control

Create awareness among the public and especially at schools



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What can be done?

Enforce international laws and other instruments in spirit

Better monitoring of fishing activities

Be party to the Work in fishing Convention 188

Better management of MPA/SACs

Train/invest in local fishers to be able to use the EEZ more effectively and take back control

Create awareness among the public and especially at schools

Bottom up approach from consumers and NGOs to promote sustainable practices and prevent abuse of fishers



The race to fish and the threat to sustainability of stocks, environment and coastal communities

INTERNATIONAL LEADERSHIP SEMINAR TOWARDS ACHIEVING SDG 14, 25 - 26 April 2017, Hong Kong

Thank you