



**Asia-Pacific
Economic Cooperation**

2018/OFWG/WKSP1/008

Doomsday Analysis: The Economic, Social and Food Security Outcomes of Illegal, Unreported and Unregulated Fishing


Submitted by: University of British Columbia



**Experts' Workshop on Illegal, Unreported
and Unregulated Fishing
Singapore
27 April 2018**

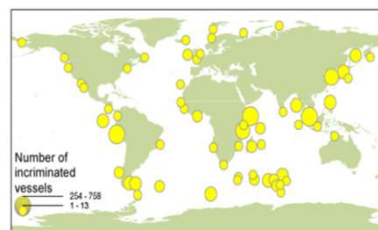
Doomsday analysis: The economic, social and food security outcomes of IUU fishing

Rashid Sumaila
 Fisheries Economics Research Unit
Global Fisheries Cluster
 The University of British Columbia
 Vancouver, Canada
r.sumaila@oceans.ubc.ca
 @DrRashidSumaila

 **OCEAN CANADA** APEC Expert Workshop on IUU fishing
 Singapore, April 27, 2018

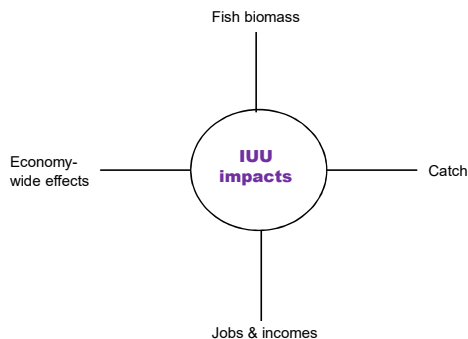


Global picture of IUU incidence



Sumaila *et al.* (2006)

What if we don't get IUU fishing under control?



Major IUU fish species from African waters

Region	Species/group	Reference
Central Africa	Giant African threadfin; Mackerels, tunas	Pauly & Zellers (2016)
East Africa	Tunas, lobster, shark, deep water shrimp	Environmental Justice (2005); Marine Resources Assessment Group (2008)
North Africa	Shrimp, barracudas, mackerels, eels, tunas.	Liddick (2014); Pauly & Zellers (2016)
Southern Africa	Rock lobster, abalone, hake, pilchard	Stop Illegal fishing (2008)
West Africa	Yellow croaker, shrimp, snappers, seabream tuna, mackerel	Pauly & Zellers (2016); Liddick (2014) BBC story (July 8, 2016)

Reported & unreported catch values from African waters

Fishing sector	Reported	Unreported	Total	Unreported/total unreported
Artisanal				
Value (US\$ million)	2,323	1,473	3,796	0.45
Subsistence				
Value (US\$ million)	134	450	585	0.14
Industrial				
Value (US\$ million)	4,484	1,293	5,776	0.40
Recreational				
Value (US\$ million)	0	51	51	0.02
Total value (US\$ million)	6,941	3,267	10,209	0.32

Pauly and Zeller (2016)

Illicit trade according to the Global Agenda Council of the WEF

- Trade that:

“involves money, goods or value gained from illegal and generally unethical activity. It encompasses a wide variety of illegal trading activities, including human trafficking, environmental crime, illegal trade in natural resources, various types of intellectual property infringements, trade in certain substances that cause health or safety risks, smuggling of excisable goods and trade in illegal drugs, as well as a variety of illicit financial flows.”

For the purposes of this analysis, illicit trade is defined as ...

- Trade that involves money, goods or value gained from illegal and unreported fishing mainly by foreign and domestic fishing fleets but also by artisanal fishing vessels who catch fish for commercial purposes.

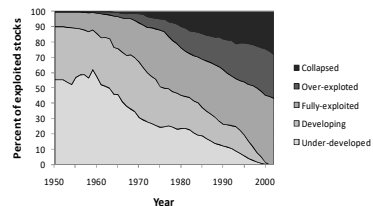
For the purposes of this analysis, illicit trade is defined as ...

- We exclude unreported catches by the subsistence sector because they are not necessarily fishing illegally, and that in general, their catches do not fuel illicit trade since they are solely used for household consumption.

For the purposes of this analysis, illicit trade is defined as ...

- In the case of the artisanal sector, part of their catch, i.e., the catches of highly valuable species such as tunas are traded and sold in the market, and therefore are partly assumed to enter the illicit trade in marine resources.

Impacts on catch and the underlying biomass



Sumaila and Tesfamichael (2015)

Economic and food security losses to Africa

Region	Catch loss ('000 t)	Gross revenue loss (US\$ M)	Net revenue loss (US\$ M)
Central Africa	77-88	113-129	28-32
Eastern Africa	66-77	96-113	19-23
North Africa	449-495	658-726	238-263
Southern Africa	195-211	285-309	88-94
West Africa	739-856	1,083-1254	403-468
Total for Africa	1,525-1,726	2,236-2531	776-880

(Sumaila, *in press*)

Economic & social losses to Africa

Region	Economic (US\$ M)	Income (US\$ M)	Tax revenue (US\$ M)
Central Africa	297-335	86-98	9-10
Eastern Africa	252-297	79-94	8-9
North Africa	1,624-1765	425-456	48-53
Southern Africa	924-995	207-225	28-30
West Africa	1,709-1954	523-593	51-59
Total for Africa	4,806-5,347	1,400-1,555	144-160

(Sumaila, *in press*)

EU Regulation 1005/2008 stipulates that EU Regulation 1005/2008

- Stipulates that the EU will issue warnings, known as a "yellow card," to countries that perform poorly in the effort to end IUU fishing;
- Failure to reduce IUU fishing significantly leads to a ban from exporting seafood to the EU.

Key questions

- What is the economic risk of being carded by the EU?
- Is the risk big enough to significantly reduce IUU fishing?
- What if APEC member countries institute a similar carding system?

Computing economic risk index (C-ERI)

- C-ERI under red carding depends on how high the ratio of:
 - Fish2Fish exports to the EU;
 - Fish2Products exports to the EU; and
 - Fish2GDP exports to the EU
- are.

$$C-ERI = w1 * Fish2Fish + w2 * Fish2Products + w3 * Fish2GDP$$

– Where w1, w2 and w3 are weights, which are given the values of 1, 2, 3, respectively, because of our assumed relative dependence of the exporting country on the EU market depicted by each of these ratios.

(Sumaila, *in prep.*)

Top 13 countries with the highest C-ERI under an EU red carding scenario

Country	Risk index	Export ('000 tonnes)
Seychelles	2.768	52.6
Falkland Islands	2.406	57.4
French Southern Territories	2.305	0.6
Maldives	2.238	7.6
Faroe Islands	1.848	150.9
Greenland	1.728	110.0
Mauritius	1.185	62.7
Madagascar	1.114	20.3
Senegal	0.993	39.3
Macedonia	0.956	1.2
Cote d'Ivoire	0.939	32.6
Morocco	0.887	205.1
Mozambique	0.88	7.2

(Sumaila, *in prep.*)

What if APEC member countries institute a similar carding system?

The number of the top 10, 20 and 50 countries that export fish to the EU, Japan and the USA included in the list of top 20 highest economic risk countries under a red card scenario by the EU alone, and by the 3 countries combined

Top X exporters to EU, Japan & USA	No. of countries on top 20 econ risk index of			% change
	EU only	EU, Japan & USA		
10	0	3	100	
20	4	8	100	
50	11	22	100	

(Sumaila, in prep.)

Concluding remarks

- Using analysis of IUU fishing and illicit trade in Africa's marine resources, we demonstrate that if we don't get IUU fishing under control, the economic and social cost would be huge;
- Red carding by the EU alone would increase the economic risk to some seafood exporting countries to the Union but ...
- ... to significantly reduce IUU fishing globally, important seafood importing countries such as APEC members should probably consider instituting similar carding systems to the EU's.

Acknowledgements



Social Sciences and Humanities Research Council of Canada

Conseil de recherches en sciences humaines du Canada

Canada

Thanks for your attention



19

EU carded countries – as at January 2017

Country	Yellow (pre-identified)	Red (identified)	Green (delisted)
Belize	Nov 2012	March 2014	Dec 2014
Cambodia	Nov 2012	March 2014	-
Comoros	Oct 2015	-	-
Curacao	Nov 2013	-	-
Fiji	Nov 2012	-	Oct 2014
Ghana	Nov 2013	-	Oct 2015
Guinea	Nov 2012	March 2014	Oct 2016
Kiribati	April 2016	-	-
Panama	Nov 2012	-	Oct 2014
Papua New Guinea	June 2014	-	Oct 2015
Philippines	June 2014	-	April 2015
Republic of Korea	Nov 2013	-	April 2015
Saint Kitts & Nevis	Dec 2014	-	-
Saint Vincent & the Grenadines	Dec 2014	-	-
Sierra Leone	April 2016	-	-
Solomon Islands	Dec 2014	-	-
Sri Lanka	Nov 2012	Jan 2015	June 2016
Taiwan	Oct 2015	-	-
Thailand	April 2015	-	-
Togo	Nov 2012	-	Oct 2014
Trinidad & Tobago	April 2016	-	-