

# **International Commercial Fishing Management Regime Safety Study: Review of International Case Studies**

by

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**Center for Maritime Safety and Health Studies  
National Institute for Occupational Safety and Health**

and

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**July 2016**

**Photo: Homer, Alaska  
Ted Teske (NIOSH)**



The findings and conclusions in this report are those of the author(s) and do not necessarily represent the views of the National Institute for Occupational Safety and Health. Mention of any company or product does not constitute endorsement by NIOSH.



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# International Commercial Fishing Management Regime Safety Study

- Sponsors:
  - Food and Agriculture Organization of the United Nations (FAO)
  - United States National Institute for Occupational Safety and Health (NIOSH)
- Purposes:
  - to *document* (globally) the relationship between safety at sea and fisheries management practices and
  - to *provide practical guidelines for fisheries managers* on how they can help to make commercial fishing safer







# Timeline

- February 2008- Literature Review
- Spring 2008- FAO sponsored 16 case studies from around the world
- August 2008- Review of case studies
- November 2008- Expert Consultation





# Review of Case Studies

- Conceptual Framework
- Hypotheses
- Findings from Case Studies
- Preliminary Recommendations



*Photo courtesy Harold Mason*





# Review of Case Studies

- **Conceptual Framework**
- Hypotheses
- Findings from Case Studies
- Preliminary Recommendations

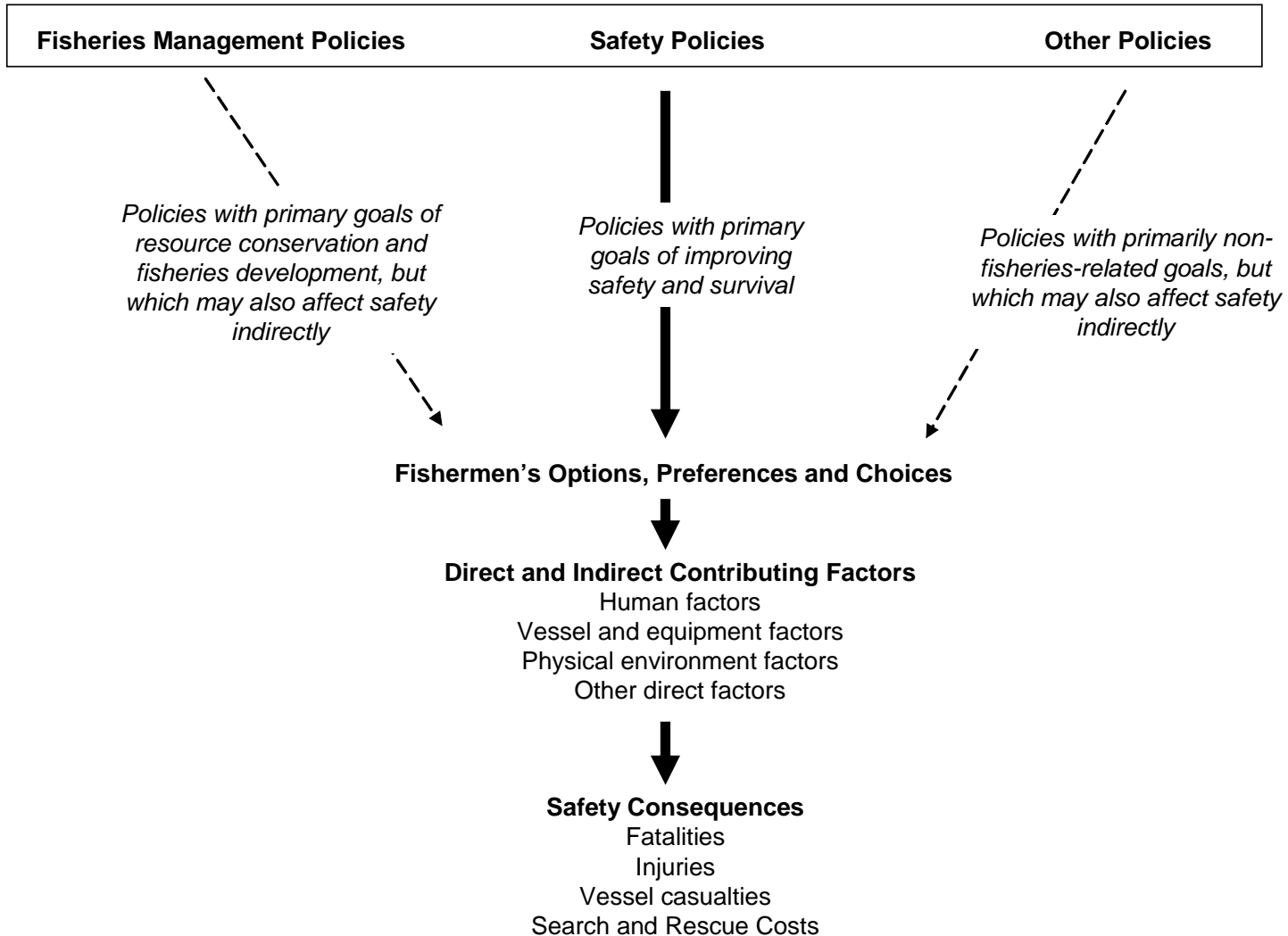


*Photo courtesy Harold Mason*





## Government Policies Which May Affect Fishing Safety







# Hypotheses

1. Fisheries management policies may have wide-ranging indirect effects on fishing safety.
2. Quota-based fishery management systems are safer than competitive fishery management systems.
3. Ineffective fisheries management policies may also affect safety.
4. Fisheries management can affect fishing safety directly by integrating safety policies with fishery management policies.





## Hypotheses #1

**Fisheries management policies may have wide-ranging indirect effects on fishing safety.**





# Examples from Case Reports



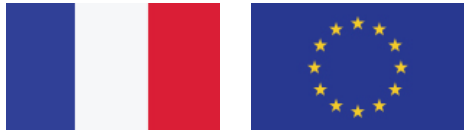
- Spain: **Engine Power Limits**
  - The report suggests that engine power limits might limit the opportunity to participate in some fisheries safely
- “ . . . the State determines a maximum power for the engines of vessels, which is too low for shell-fishing out at sea, inshore fishing and the harvesting of goose barnacles in Galicia, as a higher power engine is necessary to escape from storms and maneuver better among rocks, etc.” [page 18]*







# Examples from Case Reports



- France and EU: **Maximum Tonnage**
  - *reduced freeboard,*
  - *reduced enclosed volumes in the upper parts,*
  - *reduced living and working space, detrimental to living and working conditions, [Page 7]*



# Examples from Case Reports













- Thailand: **Race for fish.**
- The report suggests that race for fish conditions are created by seasonal closures, aggravating risks:  
  
*“... especially after the closing season periods, with the open access condition, fisheries will be in high competition in order to get to and from the fishing ground as fast as possible and carrying home with the largest possible catch.” [pages 6-7]*







# Hypotheses #1 Summary

	Country/ Region	Type of Evidence
	Chile	Empirical
	EU	Hypothesized
	Iceland	Empirical
	Japan	Implicit
	Malawi	Hypothesized
	New Zealand	Empirical & Anecdotal
	Philippines	Hypothesized
	Spain	Hypothesized
	Sri Lanka	Empirical & Hypothesized
	Thailand	Implicit





## Hypotheses #2

**Quota-based  
fishery  
management  
systems may be  
safer than  
competitive  
fishery  
management  
systems.**








# Examples from Case Reports

- France

	Total accidents 2000-2005	Accidents yearly average	Yearly exposure time	Frequency rates
<b>Brittany: Bay of St Brieuc (Race)</b>	80	13.3	108 900	<b>122</b>
<b>Normandy: Bay of Seine (Quota)</b>	227	37.8	638 600	<b>59</b>
<b>Normandy:Off Bay of Seine (Quota)</b>	313	52.2	2 860 000	<b>18</b>



# Hypotheses #2 Summary



Country	Type of Evidence
Argentina	Empirical and anecdotal
Chile	Empirical
France	Empirical
Iceland	Empirical





## Estimated Annual Fatality Rates in Alaska Halibut and Sablefish Fisheries

Year	# Fatalities	FTE	Rate per 100,000 FTEs
1991	6	2663	225
1992	7	3167	221
1993	1	2220	45
1994	1	2394	42
1995*	0	1266	0
1996	0	1214	0
1997	0	1229	0
1998	1	1104	91
1999	1	1096	91
2000	0	1124	0





# Estimated Search and Rescue (SAR) Case Rate in Alaska Halibut and Sablefish Fisheries

Year	# SARs	Vessels	Rate per 100,000 Vessels
1992	23	4618	498
1993	26	4362	596
1994	33	4641	711
1995	15	2673	561
1996	7	2527	277
1997	7**	2455	285
1998	7**	2078	337
1999	6	2076	289
2000	3	2018	149





## Hypotheses #3

**Ineffective fisheries management policies  
may affect safety.**





# Examples from Case Reports



- Ghana
- *“Our fishing grounds have dramatically changed due to the operations of other fishers. We are now fishing in higher seas. . . Now we spend between four and five days at sea for each trip.”*
- *“I am the captain of an inshore boat and started fishing since 1983. Due to declining fish catch, we have moved from our fishing grounds in Ada Foah in the Greater Accra Region, Keta in the Volta Region, Elmina in the Central Region and Sekondi in the Western Region, to deeper waters.”*







# Examples from Case Reports



- *Malawi*
- *“Resource decline due to lack of proper institutional arrangements (open access and common property) and weak enforcement capacity results in overfishing of stocks in shallower water and hence forces fishers to venture into risky offshore deep water fishing.”  
[Page 40]*





# Hypothesis #3 Summary



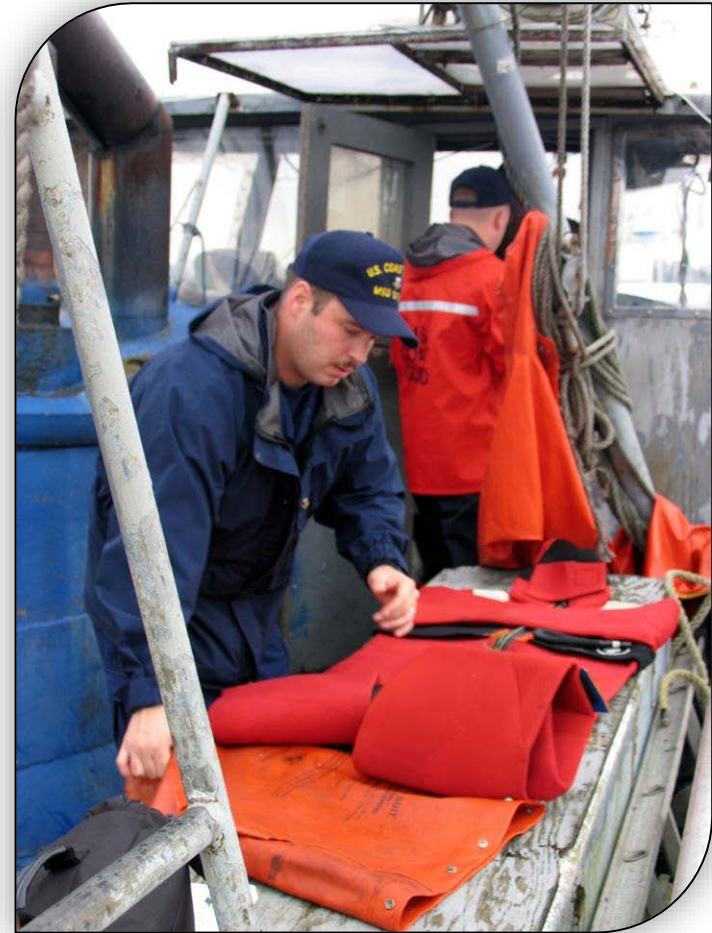
Country/Region	Type of Evidence
Ghana	Anecdotal
Malawi	Hypothesized
Pacific Islands	Anecdotal
Thailand	Implicit





## Hypotheses #4

**Fisheries  
management can  
affect fishing  
safety directly by  
integrating safety  
policies with  
fishery  
management  
policies.**







# Examples from Case Reports



- **Iceland**
- *“...the system can also contribute to increased safety through placing requirements on equipment and training, resulting in a lower accident rate.” (pg. 2)*
- *“We conclude that there is most likely a link between increased safety training, equipment and awareness and the steady decline in accidents from the inception of the Marine Safety and Survival Training Center in 1985.” (pg. 11)*





# Examples from Case Reports

- **Pacific Islands**
- “ . . . In developing countries where the state of management is rudimentary, rather than improving safety by changing the type of management measure, it may be more relevant to alter the process so as to include safety as specific fisheries management objective.” (Pacific Islands, pg. 27)
- In effect, this equates to the concept of “safety at sea as an integral part of fisheries management” . Presently, this concept is not a prominent feature of fisheries management in the Pacific Islands region. Where management is intended to improve sea safety, it is by way of a peripheral requirement, not as an explicit objective of management.





# Hypotheses #4 Summary



Country/Region	Type of Evidence
Ghana	Implicit
Iceland	Empirical
Japan	Implicit
Malawi	Hypothesized
Pacific Islands	Hypothesized
Peru	Hypothesized
Spain	Hypothesized
Sri Lanka	Hypothesized







# Recommendations for Fishery Managers #1

*Fisheries managers must be aware that the way fisheries are managed can affect safety.*



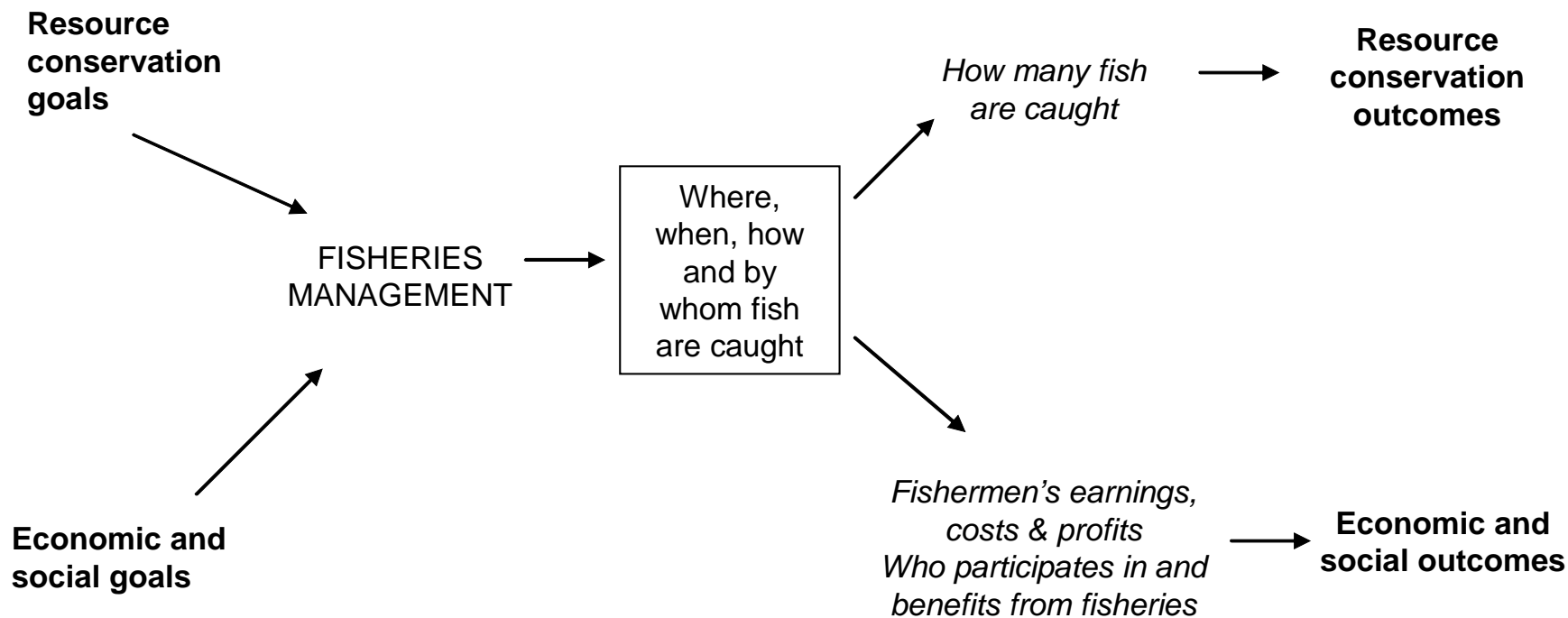


# Questions?





## Fisheries Management: A Traditional Perspective







## Fisheries Management: An Expanded Perspective

