Describing the world’s biggest shark fishery

THROUGH FISHERS’ KNOWLEDGE AND
PARTICIPATION IN SCIENTIFIC DATA COLLECTION

**Vanessa F Jaiteh**, Carol Warren, Neil R Loneragan

*a Centre for Fish, Fisheries and Aquatic Ecosystems Research*

*b Asia Research Centre*

Indonesia’s shark fishery

v.jaiteh@murdoch.edu.au
Indonesia and the shark fin trade

Biggest shark fishery in the world
66% species of conservation concern
Full geographic extent of fishery unknown
Indonesia and the shark fin trade

No catch/effort data from Maluku, Papua and NTT

Shark fin = optimal product for remote communities
Challenges for fisheries scientists

Limited capacity to manage shark fisheries


“Problems with species ID, data collection”

Cannot quantify impact on shark populations

Sharks not landed, catches not reported

Low research effort

Many livelihoods at risk

Conservation not a priority
Challenges for fishers

- Closures and restrictions to fishing grounds
- Declining fin prices
- Declining catches, smaller sharks
- Changes in fishing gear
- Increasing living costs
- Increasing debt

- Declining catches + fin prices
- Increased fishing effort
- Increasing debt

v.jaiteh@murdoch.edu.au
Economic gain vs Ecological loss

“Why would people refrain from the exploitation of marine species for their own socio-economic needs in favour of biodiversity conservation?” (Visser, 2004)

Management recommendations must account for fishers’ high dependence on livelihoods and limitations on enforcement

Fishers’ data
Involving fishers in data collection

Biological and sociological methods
Dynamics of the fishery
Significance of livelihoods
Ecological and economic changes

v.jaiteh@murdoch.edu.au
Case study locations
Data collection at sea
Data summary

30 fishers
45 fishing trips
371 fishing days
3245 sharks caught
  1905 sharks measured (59%)
31 species + 8 taxa
Top 4 species:
  Shovelnose rays
  Grey reefs & all blacktips
  Sandbar sharks
  Hammerheads
Fishers that used nets: 4 (caught 41% of measured sharks)
Fishers that used longlines: 26
Catch composition by case study (Top 10)
Fisher knowledge & perceptions
On changes in fishing grounds

*Interviewer:* Where did you fish for sharks when you first went fishing?

*Fisher:* The first time I went fishing, I went to Australia, to Broome there.

*I:* And now, do you still go there?

*F:* Oy! We can’t do that anymore, that is not possible anymore. Now if you went there, your boat would probably be burnt.
On the most valuable species he caught on his last trip:

F: The most valuable one, that’s bull shark.

I: How much do you get for one kilogram?

F: We used to get 1.8, 1.9 million Rupiah (~ $170-180). Now we only get about 600,000 (~ $55).

I: So the price has dropped three times.

F: Yes. So us fishers are doing it tough if we want to keep doing this job.
On life as a shark fisher in 2013

F: So for us fishers here it is very difficult now.

I: Yes... since last year, right?

F: Yes. Now many people in the community here are getting into people smuggling. Because their work is not enough for them to afford living costs. These days, if we try to get 10,000 Rp. (~$1) per day, that’s difficult.
I: Do you believe that sharks are important for the ocean?

F: Yes, they are important. They are important for the ocean because in the open ocean, there are always sharks. They have to be free. It is just that now, to buy rice is increasingly difficult, so we have to catch them.
Conclusions

To manage shark fisheries in developing countries, we need to understand and account for socio-economic implications.

Inform realistic management strategies:

- Western solutions, fishing bans → illegal activity
- Alternative livelihoods, economically comparable to shark fishing
- Collaboration among nations to manage shared stocks
Take-home message

Sharks are important but so is rice
Ari amori– Thank you

Fishers and respondents in Osi, Dobo and Pepela

Supervisors: Neil Loneragan & Carol Warren

Assistant: Irene Purnamawati

Funders:
Prime Minister’s Australia-Asia Endeavour Award
Australian Postgraduate Award
Karl Mayer Stiftung Switzerland

Friends and families in Indonesia, Switzerland and Australia