

Achieving sustainable and equitable fisheries requires nuanced policies not silver bullets

To the Editor — Cabral et al.¹ argue that Indonesia's "aggressive policies" aimed at combatting illegal, unregulated and unreported (IUU) fishing can recover fish stocks without temporary reductions in domestic catches, a strategy that the authors suggest can be followed by other nations. The methods and insights are interesting, but key issues — namely, the ambiguous use of 'IUU', inappropriate extrapolation of context-specific quantitative analyses and unaddressed issues of capacity-enhancing subsidies — must be addressed to prevent adoption of potentially overly simplistic policies with risks for the environment and vulnerable fishers. Indonesia has led highly progressive efforts to curb overfishing, including ratification of international agreements and improvements to national transparency; ending illegal foreign fishing is one such action, but its potential benefits should not be considered in isolation.

First, policy recommendations for IUU fishing should define its varying components and implications, both domestic and foreign: violations of relevant laws and agreements ('illegal'), unreported or misreported catches where reporting laws exist ('unreported'), and unsustainable practices even where no specific laws exist ('unregulated')². Unauthorized foreign vessels certainly are illegal, yet many artisanal fishers in Indonesia — and throughout the world — also fall within the IUU designation, mainly because of ineffective or inappropriate reporting mechanisms and legal frameworks³. Strongly enforcing relevant laws is important, yet addressing IUU fishing must avoid criminalizing or further marginalizing subsistence, indigenous and artisanal fishers who may lack the capacity to comply with regulations or the political power to provide input into them^{4,5}.

Second, although the authors advocate a nuanced approach to IUU fisheries, imprecise use of the term leads to extrapolation of the main argument using inconsistent data and assumptions. Modelled benefits for Indonesia are based

on one fish stock (skipjack) specifically impacted by illegal foreign industrial vessels, but global estimates use data based on total domestic and foreign illegal and unreported catches⁶. The Indonesian case study very convincingly addresses a clear issue with identifiable bad actors. But scaling up the policy implications poses a number of problems; for example, how to choose which domestic fishers or vessels to punish or seize, or from which fisheries, especially if their catch is legal aside from unreported.

Third, Indonesia's ultimate plan would replace foreign vessels with increased domestic capacity¹, through capacity-enhancing subsidies that the global community is seeking to restrict^{7,8} due to their negative environmental and economic impacts. Projected benefits hinge on the questionable assumption that relatively smaller new vessels imply lower fishing capacity. Benefits ultimately rely on adequate management, as exemplified by the authors for US waters, where foreign and then domestic overfishing was eased through strengthened sustainability efforts. We agree this progression is clearly possible and can be achieved through careful and committed policies, but counting on it to occur ignores the vast contextual and capacity differences between highly developed and developing countries.

Overfishing, particularly in developing regions, is a deeply complex issue that includes ineffective management and monitoring. In Indonesia, 28% of domestic catches from 1950 to 2010 don't appear in official statistics⁹. And too often, overfishing is intertwined with poor overall governance and recognition of community needs and incentives³. Cabral et al. acknowledge the need for further management reforms for Indonesia, but then provide unnuanced global estimates, stating that for many regions, solving IUU fishing alone "could be sufficient to recover fisheries to sustainable exploitation levels"¹.

Ending illegal fishing — foreign or domestic — is important for sustainability and as a signal of support for legal fishers, but simplistic approaches can

have negative consequences. Any policy that aims to advance sustainability and equity in fisheries must carefully consider and address the complexities that exist throughout social-ecological systems of different types and scales^{3,10}. □

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References

1. Cabral, R. B. et al. *Nat. Ecol. Evol.* **2**, 650–658 (2018).
2. *International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing* (Food and Agriculture Organization of the United Nations, Rome, 2001).
3. *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication* (Food and Agriculture Organization of the United Nations, Rome, 2015).
4. Finkbeiner, E. M. et al. *Fish Fish.* **18**, 1180–1191 (2017).
5. Cisneros-Montemayor, A. M., Pauly, D., Weatherdon, L. V. & Ota, Y. *PLoS ONE* **11**, e0166681 (2016).
6. Agnew, D. J. et al. *PLoS ONE* **4**, e4570 (2009).
7. *Transforming Our World: The 2030 Agenda for Sustainable Development* (United Nations, New York, 2015).
8. *Fisheries Subsidies: Ministerial Decision of 13 December 2017* (World Trade Organization, Buenos Aires, 2017).
9. Pauly, D. & Budimartono, V. *Marine Fisheries Catches of Western, Central and Eastern Indonesia, 1950–2010* (Fisheries Centre, The University of British Columbia, Vancouver, 2015).
10. Lindley, J. & Techera, E. *J. Mar. Policy* **81**, 71–79 (2017).

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Author contributions

A.M.C.-M. drafted the original manuscript. All authors contributed to discussion of the topic, edited and approved the final manuscript.

Competing interests

The authors declare no competing interests.