



Interdisciplinary fisheries management through social harvest control rules (sHCR)

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Acknowledgment of Country

I would like to acknowledge the Gadigal and Cammeraygal peoples upon whose lands I live and work.

I would also like to pay respect to the Elders both past and present, and any Indigenous people here today, acknowledging them as the traditional custodians of knowledge for land and sea Country.



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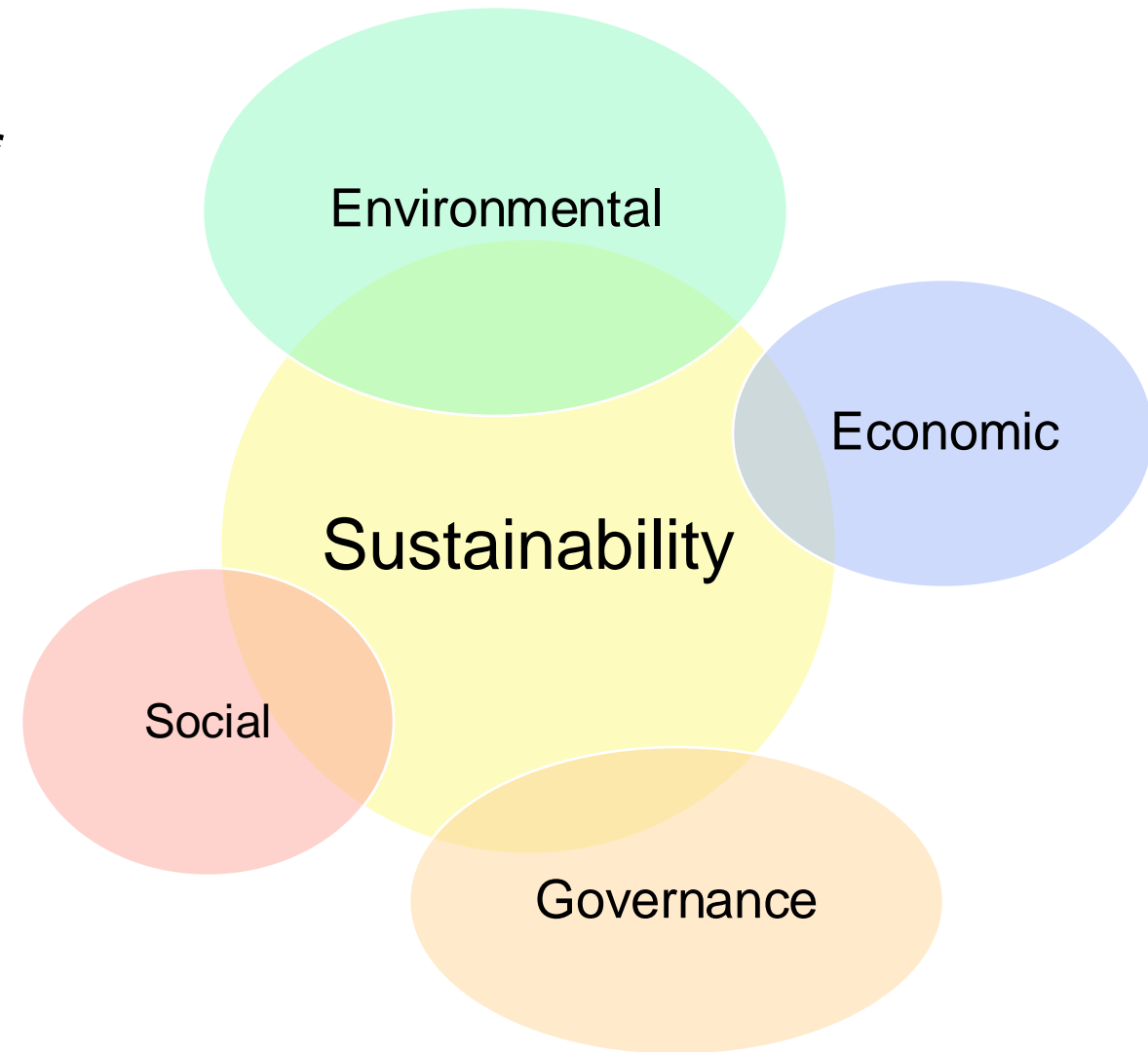
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Purpose of fisheries management

Sustainable use of resources *for the benefit of citizens*

Eg: Fisheries Management Act 1994 for the State of New South Wales, Australia:

“The objects of this Act are to *conserve, develop and share* the fishery resources of the State *for the benefit of present and future generations.*”



FISH and FISHERIES

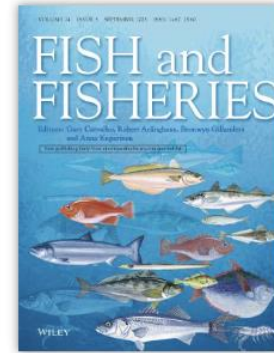


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Social harvest control rules for sustainable fisheries

Kate M. Barclay , Simon R. Bush, Jan Jaap Poos, Andries Richter, Paul A. M. van Zwieten, Katell G. Hamon, Eira Carballo-Cárdenas, Annet P. Pauwelussen, Rolf A. Groeneveld ... [See all authors](#) 

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Why social harvest control rules (sHCR)?

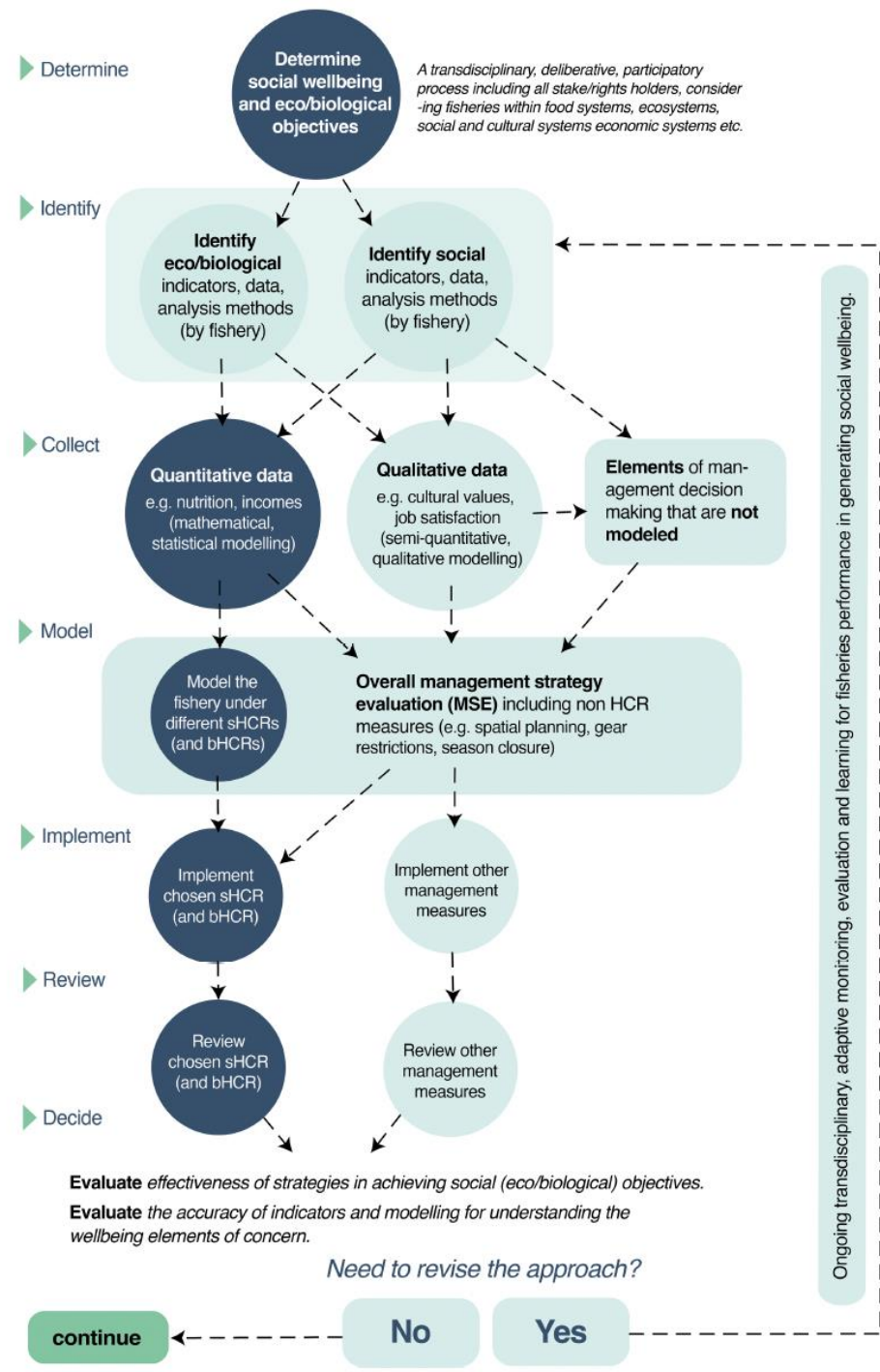
bHCR: Pre-agreed guidelines on how much fishing is allowed relative to the status of target fish stocks

HCRs incorporate good governance principles: transparency, evidence-based, adaptive

- Define performance objectives for the fishery
- Define indicators for monitoring performance
 - Target and limit reference points
- A priori agreement on what will happen if target or limit reference points are met
- Periodically review approaches, adjust as necessary

Why not bHCR **first**, to set the size of the 'pie' (TAC), then **second** allocation discussions to carve up the 'pie'?

Governance preconditions for sHCR



Doughnut-type sHCR

Doughnut Economics by Kate Raworth and colleagues

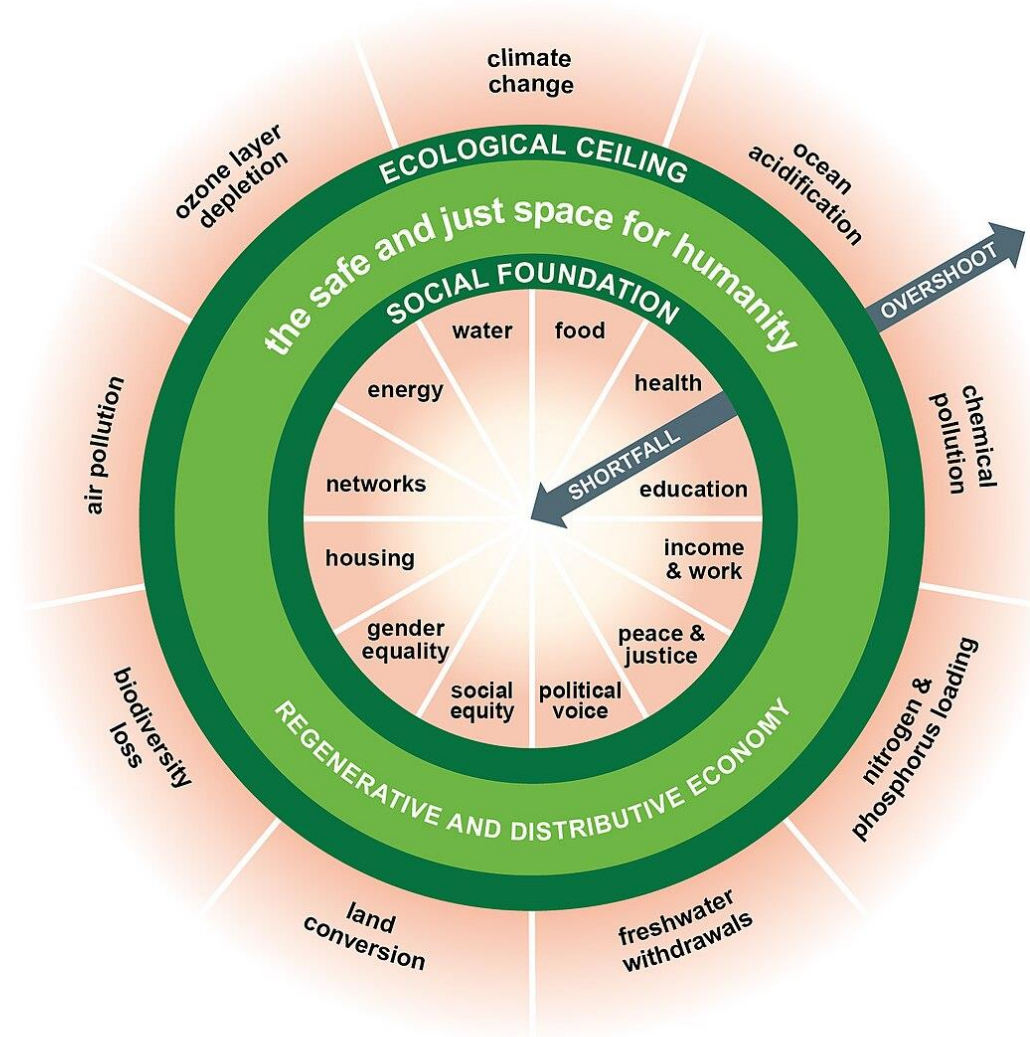


Image: DoughnutEconomics Wikimedia Commons

Doughnut-type sHCR

Allocating TAC between different user groups:

- Proportionally constant, or
- Preferential under certain conditions

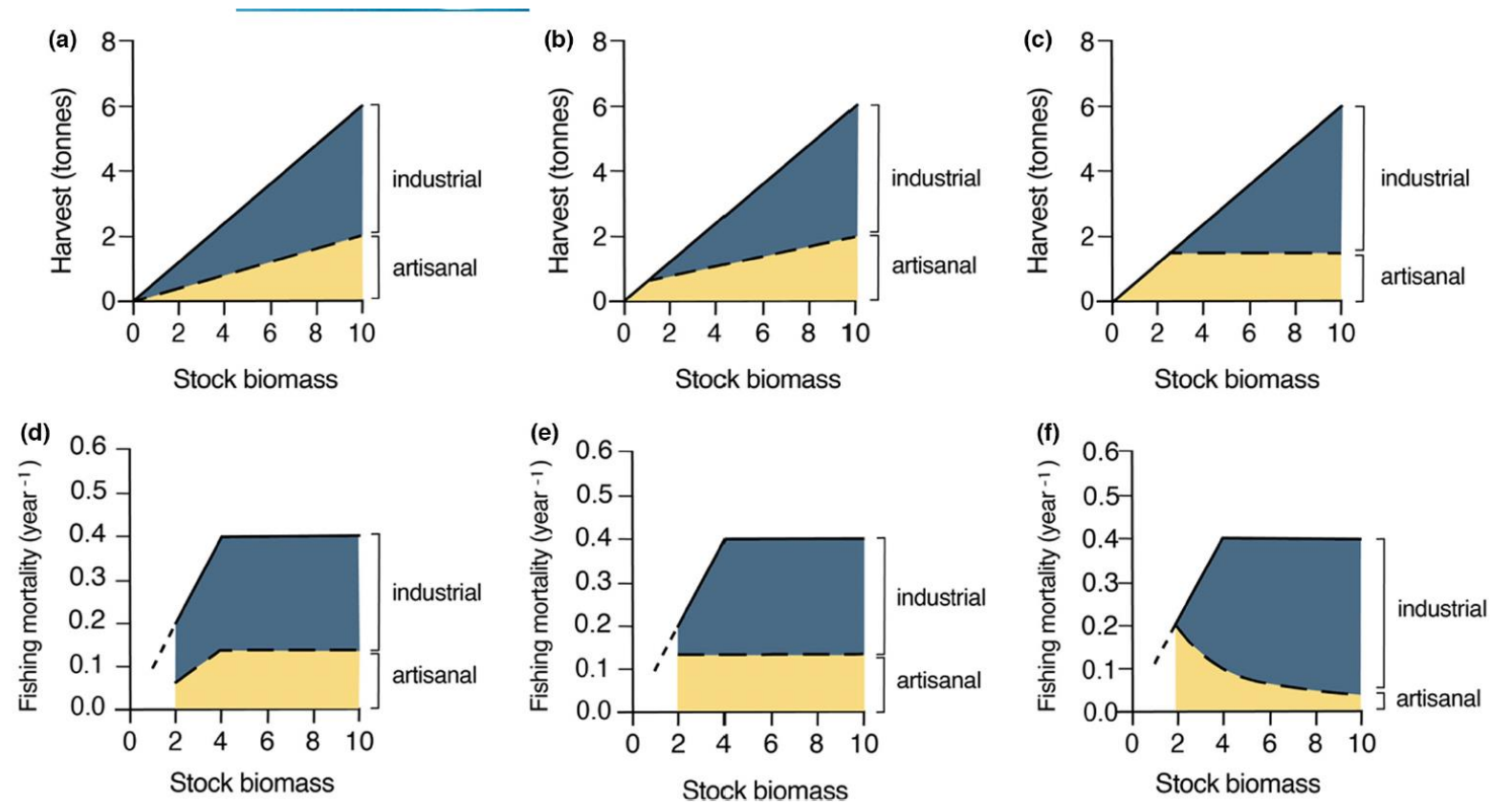


FIGURE 2 Examples of doughnut-type sHCRs proportionally constant (a) and (d) and preferential (b, c, e) and (f).

Bank and Borrow sHCR

Decision-makers already allow overfishing for social reasons.

sHCR could improve the public policy process around that by:

- Making objectives transparent
- Evidence-based assessment of whether those objectives are achieved

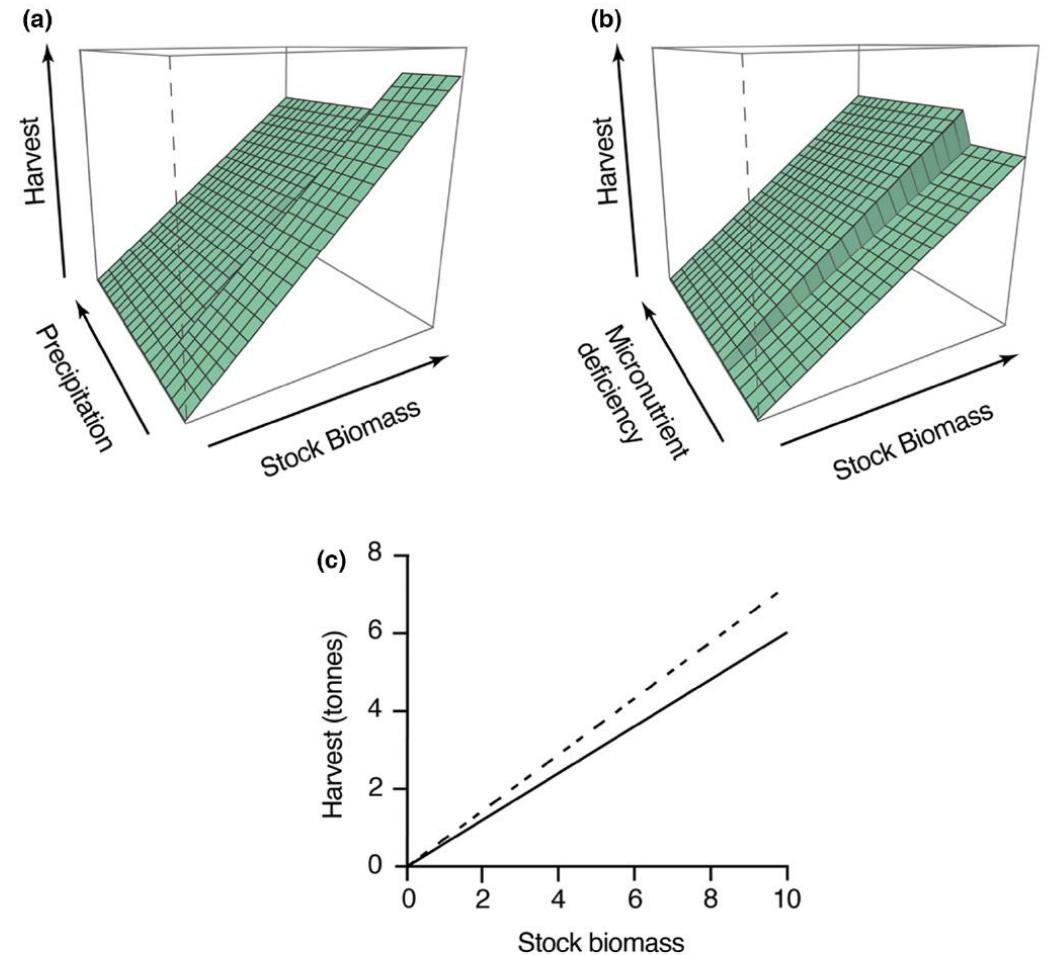


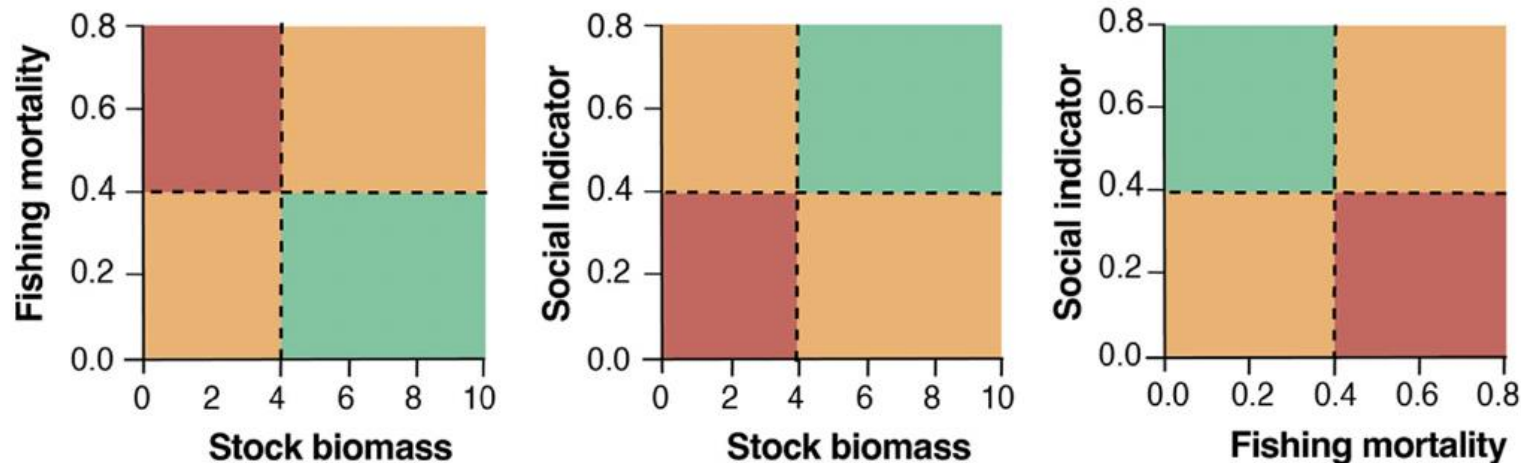
FIGURE 3 Example of a bank and borrow-type sHCR.

sHCR within Management Strategy Evaluation (MSE)

HCRs do not work alone, they should work within a fisheries management framework with multidimensional objectives and different temporal and spatial scales.

MSE can be part of that framework. MSE done broadly (eg, *Plagányi et al., 2013*) can model different scenarios to work out which strategy will best achieve the objectives.

sHCRs can be integrated into fisheries stock status instruments.



Plagányi, É. et al. (2013). Integrating indigenous livelihood and lifestyle objectives in managing a natural resource. *PNAS*, 110(9), 3639–3644. <https://doi.org/10.1073/pnas.1217822110>

FIGURE 4 bHCR and sHCR related Kobe plots.

Key Takeaways

Social scientists and biophysical scientists need to work harder to integrate our knowledge for better marine resource governance

bHCRs are already unavoidably having social and economic impacts

Fisheries objectives (social, economic and ecological) should be deliberated and co-designed by stakeholders and rights holders



The social performance of fisheries should be monitored and subject to evidence-based evaluation



ありがとうございます
Thank you!

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