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EDITED AND REVIEWED BY
Sangwon Suh,
Watershed Technology Inc., United States

*CORRESPONDENCE
Inés López-Ercilla
✉ ineslopezercilla@gmail.com

RECEIVED 02 October 2025
ACCEPTED 04 November 2025
PUBLISHED 19 November 2025

CITATION
López-Ercilla I, Fernández Rivera-Melo FJ and
Buchary EA (2025) Editorial: Un-graying of the
fleet: young people and their futures in search
for sustainable fisheries.
Front. Sustain. 6:1717554.
doi: 10.3389/frsus.2025.1717554

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Editorial: Un-graying of the fleet: young people and their futures in search for sustainable fisheries

Inés López-Ercilla^{1,2*}, Francisco J. Fernández Rivera-Melo¹ and
Eny A. Buchary³

¹Comunidad y Biodiversidad (COBI), Guaymas, Mexico, ²Independent Consultant, Madrid, Spain, ³The University of British Columbia, Vancouver, BC, Canada

KEYWORDS

sustainable livelihood and community, new generations, young fishers, small-scale fisheries, generational renewal

Editorial on the Research Topic

Un-graying of the fleet: young people and their futures in search for sustainable fisheries

Introduction

Across the globe, the “graying of the fleet” has emerged as a pressing concern for the sustainability of fisheries. The term captures not only the demographic reality of an aging workforce but also the risks of weakened intergenerational knowledge transfer, reduced community resilience, and diminished capacity to adapt to ecological and market changes (Donkersloot and Carothers, 2016; Cramer et al., 2018). If younger generations do not see viable futures in fishing, the very foundations of coastal societies and marine stewardship may erode.

This Research Topic responds to these challenges. The four contributions collected here move beyond diagnosing the problem to explore pathways for youth engagement, highlighting cultural, institutional, and policy mechanisms that can revitalize fisheries through younger generations’ active participation. From Nunatsiavut to Mexico, Norway to Alaska, these studies offer comparative insights into how fisheries systems can support or constrain youth futures and what this means for sustainable ocean governance.

Knowledge, stewardship, and intergenerational learning

Two contributions center on knowledge transmission as a cornerstone of sustainable fisheries. *Fostering fisheries futures: the promise of localized stewardship education in Nunatsiavut* (Laver et al.) describes Inuit-led initiatives bridging Indigenous and scientific knowledge within the formal education system bridged by a co-management body, the Torngat Joint Fisheries Board (TJFB). The Paigitsiaguk project— “to take care of it”— has created culturally grounded curriculum kits on snow crab (Putjotik) and Arctic char (IKaluk). These link classroom learning to land-based practices, involve Elders and fishers as knowledge holders, and nurture youth stewardship in ways that strengthen cultural

identity alongside ecological awareness and understanding of the changing environment and climate. By embedding stewardship into provincial curricula, fisheries are positioned not as a distant industry and culturally mismatched with the provincial curricula, but as an immediate, lived experience in which youth can envision viable livelihoods.

A similar concern animates *Inheriting wisdom: transfer of traditional, scientific, and ecological knowledge in fishing communities in Mexico* (Fernández-Rivera Melo et al.). Based on 120 interviews across three coastal regions, the authors examine how traditional skills—navigation, gear-making, species cycles—are passed down and how external actors bring scientific and technical expertise. They identify multiple modes of knowledge transfer (vertical, oblique, horizontal) and note perceived losses due to technology reliance and weakened intergenerational ties. Crucially, young people emerge not only as recipients but also as contributors, introducing digital tools, conservation ideas, and new practices. Knowledge here is dialogical: a bidirectional process essential for both cultural continuity and innovation.

Together, these articles underscore that sustaining fisheries is not only a technical challenge but also a pedagogical, inclusive, and cultural one. Where educational systems integrate local knowledge and communities recognize youth as both learners and teachers, the foundations for resilient stewardship are laid.

Structural barriers and pathways in commercial fisheries

If Nunatsiavut and Mexico emphasize cultural and educational approaches, the contributions from Norway and Alaska highlight structural and institutional dimensions of youth recruitment. In *Ungraying of the Norwegian fishing fleet: turning the tide?* (Sønvisen et al.) document a rare reversal of aging trends. Since 2014, the number of fishers under 30 has grown by 40%, reflecting a combination of favorable economic conditions, recruitment through social networks, and targeted policies that facilitate entry. The study introduces the Fisher Pathway Model, an analytical framework that distinguishes between primary socialization (family- and community-based entry) and secondary socialization (formal education, apprenticeships, certifications). This dual pathway highlights both the enduring role of kinship networks and the growing importance of vocational schools and formal qualifications.

By contrast, in *Charting a new course: ungraying the fleet and comprehensively supporting fishing livelihoods and communities* (Ringer et al.) portrays a more sobering picture from Alaska. Here, systemic barriers—especially the privatization of access rights through limited entry and catch-share programs—have entrenched inequities and have made it increasingly difficult for young fishers without substantial capital or family ties to enter the industry. Ethnographic research shows that youth do value fishing livelihoods, contradicting narratives of disinterest, but often face “insurmountable barriers.” Recent shocks—including seafood market collapses, geopolitical instability, and climate impacts—have further exposed the precarity of fishing as a livelihood, disproportionately affecting new and small-scale entrants. The authors call for comprehensive policy support, drawing comparisons with U.S. agriculture, where federal

programs provide young farmers with loans, training, and risk-reduction tools. They argue that similar systemic support is urgently needed for fisheries if intergenerational equity is to be realized.

Together, the Norwegian and Alaskan cases illustrate how institutional design and policy choices can either enable or constrain youth engagement. Norway demonstrates that demographic renewal is possible through adaptive recruitment systems, while Alaska warns of the costs of inequitable governance structures.

Cross-cutting themes

Across all four articles, several themes emerge:

1. **Knowledge Systems and Learning:** Indigenous and local knowledge in Nunatsiavut and Mexico demonstrates the value of intergenerational and place-based learning. Norway and Alaska show that vocational education and formal apprenticeships are increasingly central to youth pathways. In every case, education—formal and informal—is decisive for shaping fisheries' futures.
2. **Equity and Access:** High costs of entry and privatized access are most stark in Alaska but resonate elsewhere. Norway's more open systems illustrate that recruitment can be broadened when access is affordable and pathways are diversified.
3. **Policy and Governance:** Co-management in Nunatsiavut and Mexico shows the promise of locally grounded institutions, while Norway's quota system and Alaskan privatization reveal how national policies shape demographic outcomes. Governance matters not only for ecological sustainability but also for social resilience.
4. **Resilience and Future Challenges:** All cases highlight uncertainties from climate change, market volatility, and cultural shifts. Investing in youth engagement—through education, fair access, or supportive policies—is essential to keep fishing both a viable livelihood and a community cornerstone.

Toward a research and policy agenda

What does this comparative lens suggest for future research and action? First, it is clear that young people are not absent from fisheries by choice alone. Rather, they face systemic obstacles that can be addressed through intentional policy design and institutional support. Recognizing youth interest is crucial to countering deficit narratives that portray younger generations as disinterested or disengaged.

Second, the transmission of knowledge—traditional, scientific, and technical—must be actively supported. Programs such as Paigitsiaguk in Nunatsiavut demonstrate how formal education systems can integrate Indigenous stewardship. In Mexico, the recognition of youth as contributors to technological and conservation knowledge highlights the dynamic nature of intergenerational exchange.

Third, fisheries policy must address equity explicitly. The contrast between Alaska and Norway illustrates the stakes: while privatized systems risk excluding youth and eroding community ties, more inclusive frameworks can stabilize and

even rejuvenate fleets. Lessons from agricultural policy suggest that systemic financial and training support could be extended to fisheries, situating fishers as essential food providers rather than peripheral actors.

Finally, comparative research is needed to understand how different social-ecological contexts shape youth pathways. Longitudinal studies tracking young entrants, analysis of quota systems, and evaluations of education programs can provide valuable evidence for designing effective interventions.

Conclusion

This Research Topic advances a vital conversation: how to ensure that young people can inherit fisheries that are socially just, ecologically sustainable, and economically viable. The articles collected here remind us that the un-graying of the fleet is not a natural process but a political and cultural project. It requires investing in youth as learners, workers, and leaders; ensuring equitable access to resources; and creating governance systems that support intergenerational continuity.

If fisheries are to thrive in the twenty-first century and beyond, there must be places where young people can imagine and realize futures of dignity, security, inclusivity, and stewardship. This Research Topic offers pathways toward that horizon and calls for a collective commitment to making it a reality.

Author contributions

IL-E: Conceptualization, Supervision, Writing – original draft, Writing – review & editing. FF: Writing – review & editing,

Writing – original draft. EB: Writing – review & editing, Writing – original draft.

Conflict of interest

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