



Financing Small-Scale Fishers' Transition to Sustainability

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Introduction

For supply chain companies, communities, governments, and fishers, there is significant trapped economic, social and ecological value in small-scale fisheries. While many barriers to releasing trapped value are fishery-specific, the bigger challenges occur at a systems level and across fisheries – weak governance, poor infrastructure (cold chain, water treatment, basic services), IUU and forced labor, and inadequate or inappropriate finance models.

Seafood companies are very familiar with complicated systems (their supply chains) and the difficulty of cutting through the complexity of these systems to drive improvement and create efficiencies. The purpose of this paper is to help seafood companies understand *how* to cut through the complexity to drive change and create effective financing mechanisms and systems that support thriving communities, good fisheries management, and assured supply for fishers and supply chains.

Along with providing an understanding of the barriers and opportunities to developing effective financing mechanisms, the maps and guidance in this brief provide small-scale fishery interventions, their implementers, and their supply chain partners with a way to assess or rationalize the system they are working in. What stage of development are we in – experimentation, redesign, optimization? Do we have all of the enabling elements for and system roles in an effective finance system? If not, is that o.k.?

Seeing the system also helps explain why solutions that may seem obvious are insufficient or even counter-productive. Pressing upon one point of a system without being aware of the change needs of the whole system can be futile. The maps provide a critical window into the complexity of the issues that make responses actionable. The power of a systems perspective is that it allows identification of high leverage points to focus action, while understanding the ramifications for action on other points.

Thank you to the authors for providing an easy to understand, digestible treatment of this complex issue.

- Seafood2030

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Executive Summary:

Despite their modest operating scale, small-scale fishers collectively produce 40% of harvested seafood. Their work is associated with enormous environmental, economic and social equity issues. The highly fragmented nature of their operations and their low individual economic resources make supporting their movement to sustainability particularly challenging.

Arising from the 2023 report *A New Paradigm for Sustainable Seafood Strategies*, this report examines the challenges of financing small-scale fishers' sustainability. The goal is to support the journey of small-scale fishers' to sustainability by describing emerging *financial systems* of structures and processes. Developing these systems is foundational for effectiveness of efforts.

There are two financing challenges that are distinct, but inter-dependent. One is to finance fishers' journey to sustainability; the second is to finance their on-going operation sustainably. These two challenges require different financing strategies. How to do this is still developing, but experience and emerging practices provide powerful guidance. The experience is quite broad at the fishers' level, but still narrow in terms of global capital engagement, and this analysis draws heavily from the work of the Ocean Risk and Resilience Action Alliance (ORRAA).





These experiences are looked at with a systems lens to address the question: what does a financial system look like that addresses the journey and on-going sustainability of small-scale fisher's production system? A systems lens focuses on patterns and relationships between all the activities that are required to realize a system's goals. In this case, the systems are the production system of small-scale fishers, and the financial systems that will support their journey to, and maintenance of, sustainability.

The report concludes with six key activities required to address the complexity and scale of the financing challenge. There are emerging illustrations of how these challenges are being addressed, but the illustrations fall short of what is needed and are not integrated to form a comprehensive system.

- 1. Creating authentic, supportive, authoritative, competent Coastal Steward Organizations (CSOs) and Fishers Associations:** These groups are essential for sustainable financing and operations. CSOs provide local leadership necessary for sustainability, while Fishers Associations ensure fishers can contribute to CSOs and maintain their financial stability.
- 2. Developing Intermediary Fishers' Aggregator Network Capacity to More Deeply Engage Capital Allocators:** On the other hand, even a well-developed CSO cannot be reasonably expected to have the necessary expertise or be of sufficient scale to meaningfully interact with global capital. Intermediaries are needed between CSOs and large finance to design financial mechanisms and provide the amount of funding necessary. Currently some international Northern NGOs are playing this role like Rare (in the insurance case) and TNC (with Blue Bonds) and ORRAA/SCIFF (with various financial instruments). This is top-down, North-south approach is helpful for the system experimentation stage. However, system redesign requires something more authentic and directly accountable to CSOs, like an association of CSOs...probably both at regional/national levels and globally. These can develop sufficient sophistication to inter-act with large capital and yet be grounded in accountability and commitment to the CSO communities' sustainability. The networks must be large enough to be able to aggregate sufficient CSO demand into scales that will attract large capital.
- 3. Dealing with the Underlying Transformation Challenges:** Technical innovations like new financial products and organizing innovations like CSOs and their networks are important to developing sustainability. However, there are deeper issues that need attention. For example, can global finance innovate to support sustainability, with methods of calculating risk and future value? Meetings between diverse groups, such as local organizations and global financiers, are key to addressing these issues.
- 4. Dealing with Power Inequities:** Large capital has huge power. It is very well organized and its concentration and wealth gives it powerful influence in decision-making. CSO communities have little power that is fragmented. They are poorly organized and have little influence in most corridors of power. To make themselves heard requires enormous effort. As well, large capital

has little legitimacy with CSOs and vice versa. This points to the importance of creating spaces not just for making deals, but for getting to know each other and build mutual understanding, respect and commitment.

- 5. Addressing values, goals and measurements:** The two key parties are far apart with these qualities. Large capital talks about high financial profit expectations, pipelines of projects, and future value calculations with externalities. CSOs talk about environmental sustainability, fair livelihoods, communities and relationships. CSOs are on the front line of experiencing the impact of large capital's approach to the world. A transcendent approach that integrates these two perspectives must be developed.
- 6. Transforming the dominant narrative from wealth generation to collective value creation:** A key challenge remains the prevailing narrative that positions artisanal fishers as marginal, informal, or inefficient actors in the seafood economy. This affects legitimacy in financial spaces, access to policy, support, and social recognition. Transforming the financial system for artisanal fishers also requires shifting how value is defined – recognizing ecological stewardship, cultural continuity, and social equity as integral parts of what is worth financing.

These activities aim to produce the scale and ease of access to investment that is required to address the sustainability needs of small-scale fishers. However, they depend on the commitment and creativity of all stakeholders to transform their own practices.



Sustainability Issues and Artisanal Fishers

Artisanal fishers are individuals or small-scale operators engaged in fishing for subsistence, local, national, or international markets, typically using traditional, low-tech methods and equipment. They are present in both advanced economies and less developed ones. They work in coastal areas or inland waters, and their fishing activities are typically labor-intensive, relying on basic tools like small boats, nets, handlines, traps, or spears. They harvest fish, shellfish, crustaceans, and aquatic plants.

Some artisanal fisher sustainability issues are like those of other seafood industry businesses, but there are nuances. While artisanal fisheries are often celebrated for their lower ecological footprints and more sustainable production methods, negative sustainability impacts still exist due to various factors such as overfishing, habitat degradation, unregulated fishing, pollution, and the effects of climate change. Some distinctive challenges in approaching sustainability for artisanal fishers include:

- 1. Financial Challenges:** They have modest assets and low margins which means they cannot invest in technologically advanced solutions easily. They have difficulty accessing formal financial institutions and are often trapped in debt cycles with informal money lenders.



2. **Market Access:** They are price takers with little bargaining power with buyers. Without buyer commitments, taking on investment is highly risky since returns are not guaranteed.
3. **Vulnerability:** They are more vulnerable to environmental factors, market conditions, and other changes given their limited resources, scale, and ability to adapt to conditions.
4. **Capacity Constraints:** In comparison to larger businesses, they usually have limited technical, managerial, and financial skills. They require supportive lending and financing structures.
5. **Weak Organizing:** Artisanal fishers are often pitted in direct competition with one another over limited resources. They are fragmented and have modest ability for collective action.
6. **Limited Influence:** They are often marginalized and seen as peripheral in the context of larger fisheries and economic activity. They are often hidden as in the informal economy. This has implications on their influence on governance (fisheries management and policymaking) and access to fishing grounds.
7. **Gender and Equity Dynamics:** In small-scale fisheries, women often play key roles in post-harvest work but are under-recognized and excluded from action and decision-making structures. Women are often systematically excluded from accessing finance from formal lenders. Broader equity issues, related to caste, race, or Indigenous identity, also shape access and rights.

Developing small-scale fishers' social-economic-environmental sustainability requires addressing these challenges. It also requires ensuring that they have the tools, knowledge, and support to implement sustainable practices, manage resources effectively, and adapt to environmental changes. Community-based management, improved access to sustainable fishing gear, and stronger regulations are important elements in sustainability of small-scale fishers. All of this requires developing financial system support.





Critically, sustainability efforts must also recognize the intergenerational and cultural significance of small-scale fishing. These practices are often embedded in local traditions, identity, and community life, and protecting them means not only supporting livelihoods but also ensuring the continuity of knowledge, culture, and belonging across generations.

“Sustainability” has many interpretations. In this case it refers to long-term flourishing economically, socially and environmentally. Inevitably issues arise around justice and power from the way benefits are distributed. In sustainability for small-scale fishers, key concerns include their economic well-being and fair distribution of benefits associated with finance.

The Sustainability Financing Challenge

Financing is required for:

1. the transition to sustainability for coastal environments and small-scale fishers, and
2. their on-going operational sustainability and well-being.

These are two different goals and require different types of financing systems. One is to experiment with innovative financing instruments and structures. The experiments to produce sustainability are much more complex than the traditional ones for the finance industry and venture capitalists. These experiments must produce a financial system that is aligned with sustainability.

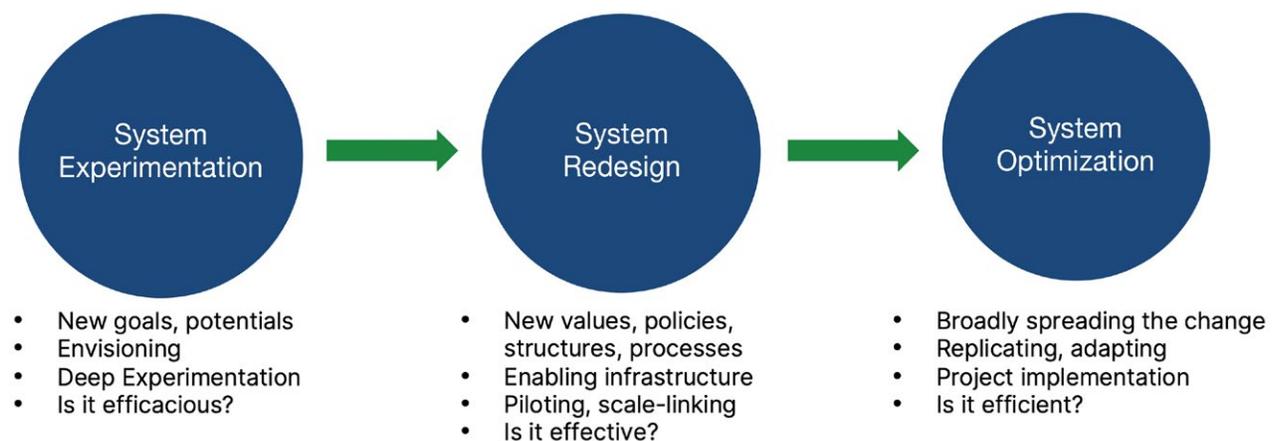
The types of finance systems required to address these issues are emerging, although much too slowly. Sustainability entrepreneurs are putting together mis-fitting pieces of a jigsaw puzzle and developing piecemeal the innovations necessary to finance the transformation. Their work includes innovation in financial instruments, strategies and structures.

Financing must address the core characteristics of transformation. The financing effort requires **sufficient scale** to result in transformation. Experience indicates the change process must be **sustained at least 10 to 20 years** for a coastal fishery. It must **address complexity** of all the production system pieces – it cannot simply focus on one issue like harvesting. And it must support **shifts in mental models, capacities, and dynamics** to deep commitment to, and support for, sustainability.

The challenges are characterized as financing three different stages of development (Figure 1). The stages have very different risk/return profiles in the eyes of the legacy finance system.

1. **Experimentation:** Identifying options for finance systems that support the two goals requires learning. Successful experiments produce prototypes that emerge as new parts of the finance system.
2. **Systemic redesign:** To advance development and use of the prototypes requires new infrastructure in the form of networks, organizations and policies for broader learning, technology connection, adaptation of existing practices.
3. **Optimization:** With the new financial infrastructure, the transformation can be widely applied to realize the scale and new norm that is being enforced.

Figure 1: Stages of Transformation



Seeing the trajectory of financing within a transformational context through these three stages is crucial – too often, there is a rush to optimize systems through finance without first enabling the necessary experiments or building the structural foundations required to support a new paradigm in sustainable seafood.

Lessons from financing the transitioning of small-scale fisheries to sustainability suggest that in some locations at least, system redesign is beginning. To accelerate that stage, lessons must be brought together comprehensively across strategies and tools to design the needed sustainable finance system for small-scale fishers.

The Need: Finance for a Production System and its Governance

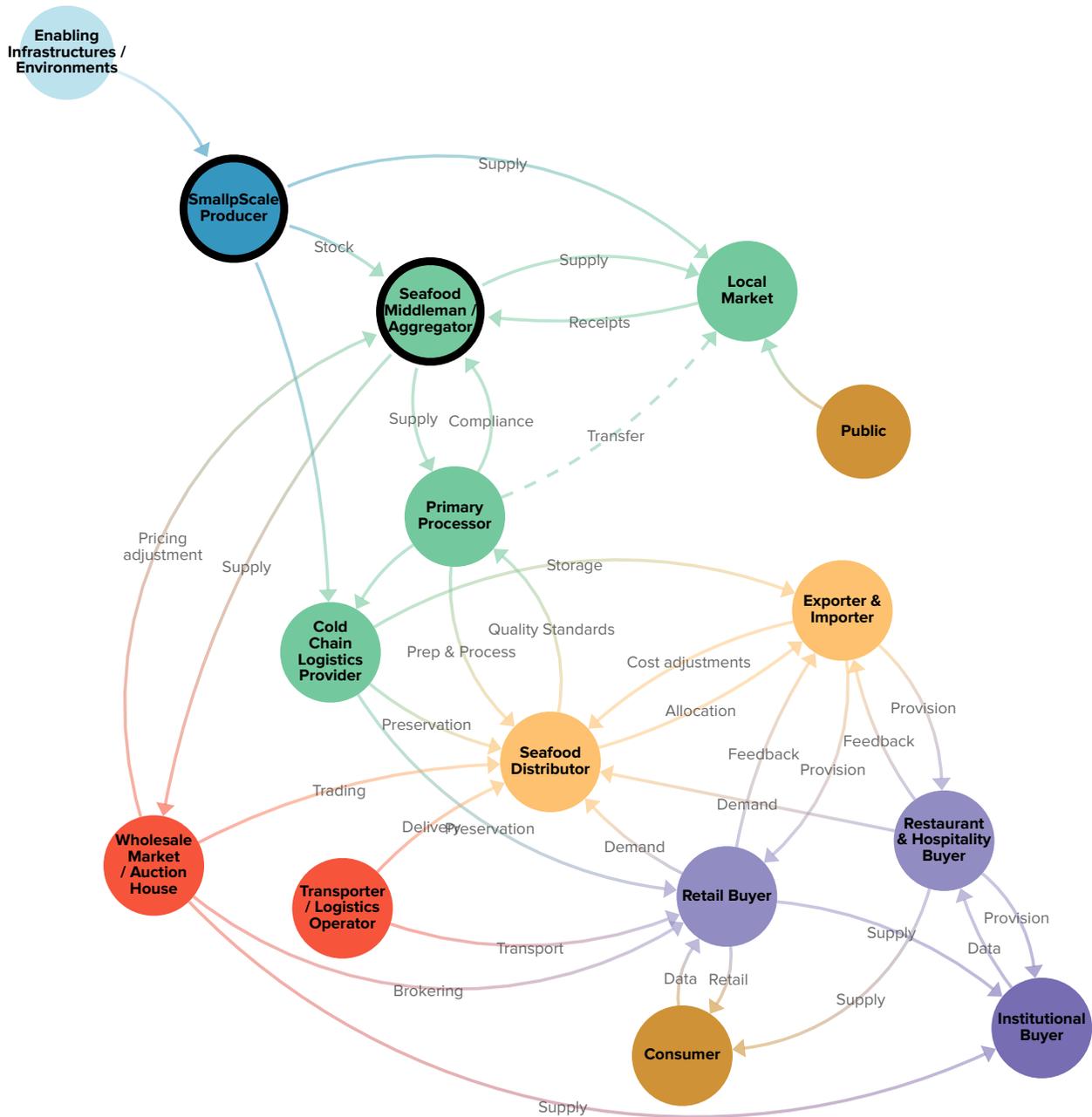
A high-performance financial system for small-scale fishers will finance their production system that consists of all those activities that support healthy coastal seafood stocks through to consumers. This is sometimes referred to as a “supply chain” but analyzing it as a “system” emphasizes the importance of interconnected activities that do not form a “chain”. A system framing points to the need for “system” organizing for collective value creation, whereas a chain perspective suggests the benefits are generated by links where the head of the chain has disproportionate responsibility and control over benefit allocation.

Figure 2 provides a graphic description of the major roles in a high-performing small-scale fishers production system. There are variations in particular examples. But if some of the roles, such as cold chain logistics, are omitted, the system will underperform their potential. Most of the names of each role in the system are sufficiently self-explanatory, but short descriptions are in Attachment A. However,



the Enabling Infrastructure / Environments node requires further explanation. This indicates conditions for a successful sustainable seafood system. It must provide for the well-being of fishers, include a robust compliance and environmental sustainability component, and support the entire system with sufficient organizing infrastructure so the participants can effectively manage their system.

Figure 2: Artisanal Fishers Production System See Attachment A for a detailed explanation.



The organizing and governance system to ensure all works well is usually given insufficient attention or simply assumed is a governmental function. Elinor Ostrom, winner of the Nobel Prize in Economics, spent her life focused on situations such as those characterized by small-scale fishers. She referred to them as “common pool resource” situations that require collective action by diverse stakeholders to create sustainable strategies. She urged people to look at the situation from a *system* perspective with an inter-connected set of activities and organizations that she called a “governance system”. In this case “governance” refers to collective direction setting, decision-making and action-taking. Ostrom emphasized the value of stakeholder-organized governance systems, dependent on effective communication, internal trust, and reciprocity for organizing the resource system as a whole. These can be labelled Coastal Steward Organizations (CSOs).

Governance systems are how production system problems are resolved and participants’ collective success is developed – to move to system optimization. Well-functioning systems ensure good quality public market facilities, for example. And they address how to move to, and ensure, sustainability.

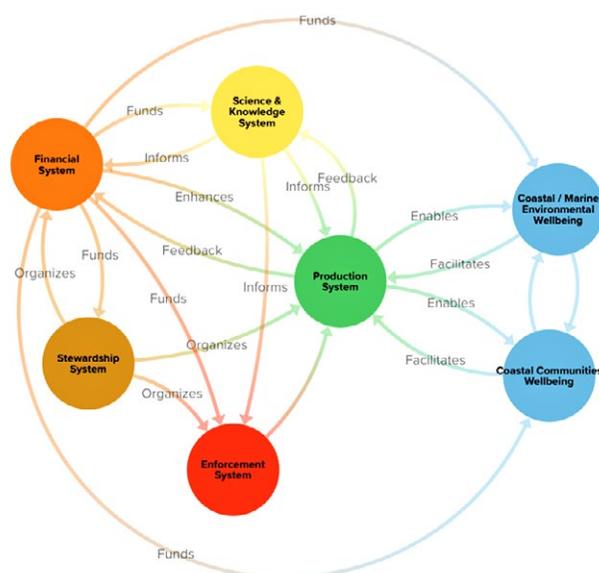
Meta-Systems in the Seafood Space

Figure 3 places the production system in its larger context as just one system among many. These systems must work together to support truly sustainable small-scale fisheries. While the production system is often the focus of investment and intervention, it is embedded within a wider set of interconnected systems – each of which has its own functions, actors, and financing needs.

Building on the importance of governance described above, it is important for a moment to view the seafood sector through a meta-systems lens. This perspective reveals several key systems that shape outcomes for small-scale fisheries. These include:

- **The Production System:** Covering harvesting, processing, logistics, and market access (as previously described.)
- **The Finance System:** The flow of capital and design of financial infrastructure that supports or undermines sustainability. This system is the prime focus of this report.
- **The Stewardship System:** Including MPAs, FIPs, government regulations, and voluntary standards.

Figure 3: The Meta Seafood System



- **The Enforcement System:** Legal frameworks, monitoring, and sanctions that uphold rules and rights.
- **The Science & Knowledge System:** Data, research, traditional knowledge, and learning platforms.
- **The Coastal Community Wellbeing System:** Livelihoods, food security, gender equity, and cultural continuity.
- **The Marine and Coastal Environmental System:** Biodiversity, habitat health, and resilience to climate change.

These are all systems that interact dynamically. Each system is deeply interdependent with the others. In many contexts, only the production system is financed. Even in instances where other systems are financed, they are not integrated under a common strategy.

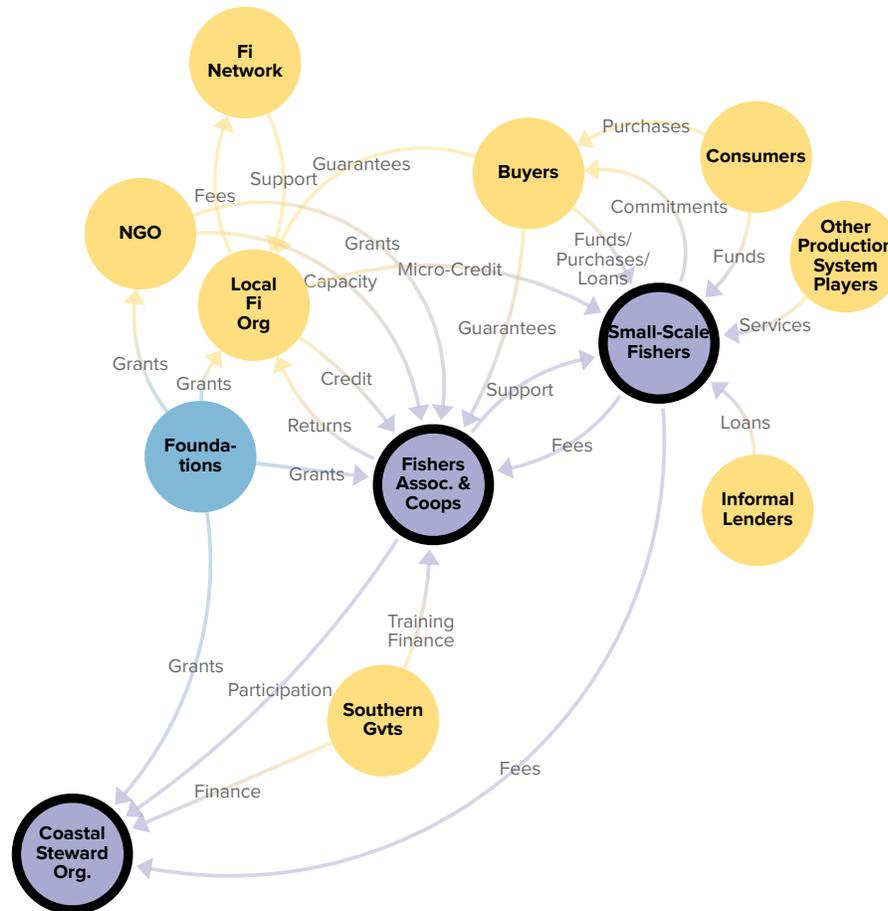
A meta-systems approach makes visible the complexity of transformation and reminds us that sustainability cannot be achieved through isolated interventions. It also brings out the importance of equitable finance across these interlinked systems – not just for fishers, but for the overall health, resilience, and justice of coastal regions.

We will now take a deeper look at the finance system.

The Finance System

A finance system comprises a definable set of activities and organizations that provide financial flows to ensure systems (like the production system for small-scale fishers) have necessary financial resources to function sustainably. What does a finance system for moving small-scale fisheries to sustainability look like? And what does a finance system for on-going operation of a sustainable small-scale fisheries look like? There is enough experimentation today to suggest the shape of these two systems. They require both legacy organization changes and new organizations. They require both local and global financing, given nature of global markets small-scale fishers are increasingly selling to, the weakness of local finance systems, and the environmental health of coasts is a global issue.

Figure 4: The Financing System for Transformation of Small-Scale Fishers



Fishers need money both for their livelihoods and for operating expenses for their boats and equipment. Figure 4 describes key actors in a finance system to support the journey to sustainability. We call these a Financing System for Transformation (FST) – finance systems that are designed with the ultimate goal of system transformation.

Fishers typically receive financing upfront to make purchases or repairs to equipment and for working capital to support fishing trip expenses. This financing often comes from either Buyers who could be formal or informal entities and/or informal lenders such as family members or wealthy individuals in the community. For informal lenders, the costs of financing can be high and can result in long-term accrued debt – often locking fishers into debt trap conditions.

Most Fishers receive financing either from Buyers or Informal Lenders. Associations or Co-ops as well as formal lenders may also play a role in very high volume and dollar value fisheries. When providing financing, Buyers may make commitments to purchase the Fisher’s catch most often at market rates (which can be volatile and change rapidly from when financing was provided) or set an agreed price upfront. The financing provided to the Fisher leaves them at high risk to service their debts. Often times, the income from fishing activities will not be sufficient to pay back their loans.



Local Financial Institutions, such as microfinance institutions and commercial banks, typically only lend to the biggest fishers and Co-ops. They take non-fishing assets as collateral. However, the proportion of fishers that can access this credit is negligible on a global scale currently. Financial support is also required for the Other Production System Players. A key transition to sustainable challenge is to build up LFIs capacity.

In the evolving model, there are two other organizations that are critical for sustainability. One is the type of organization that Ostrom described that is labelled here a Coastal Steward Organizations (CSOs), comprising stakeholders in local fisheries who work together to ensure that the fishery is sustainably maintained and addresses diverse needs. Stakeholders include fishers, relevant government representatives, environmental organizations, local communities and others depending on the situation, such as tourism operators.

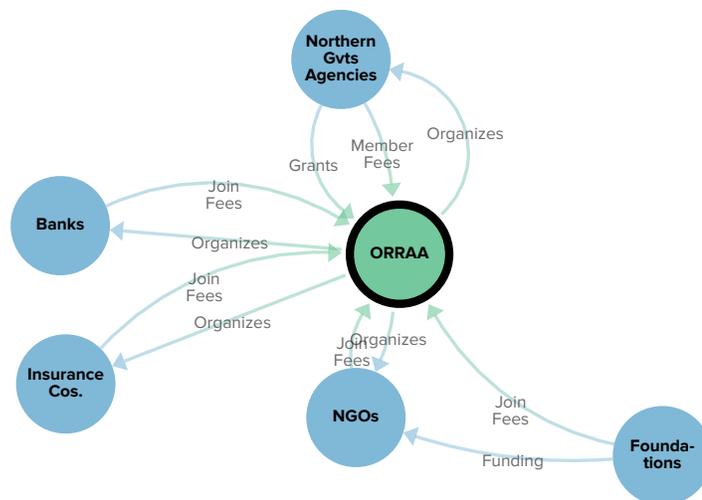
The CSO concept is related to organizations like Fishery Improvement Projects (FIPs) and Marine Protected Areas (MPAs). However, the former are organized around fish species and the latter are usually organized around a special legal status focusing on environmental health. Developing competent, strong Fishers Associations is part of the redesign focus.

The CSOs and FAs are becoming a common feature of coastal fishing, organized geographically with groups of small-scale fishers and others. To develop and maintain both of these key organizations requires finance. Foundations, donor agencies, governments, blue bonds and finance facilities, and revenue generation strategies are developing to support them (Attachment B). CSOs are initiated with the theory that the fishers' revenue will increase with improved Fishers Associations and therefore they and other revenue generators can make the CSOs become self-sustaining financially. Revenue generation includes government funding, user fees, ecosystem service payments and philanthropic funding. However, this economic model is still in the system redesign stages and proving elusive in many cases. For foundations and donors, this becomes a significant issue that is still generating experiments and tests for the time horizon to financial sustainability. Resolving this dilemma is leading to blue bonds and other financing instruments.

The major global experiment with financing strategies for sustainable coastal communities and the ocean is the Ocean Risk and Resilience Action Alliance (ORRAA). It describes itself as “the only multi-sector collaboration connecting the international finance and insurance sectors, governments, non-profits, and stakeholders from coastal communities to pioneer finance products that incentivize investment into coastal and ocean Nature-based Solutions. Our mission, by 2030, is to activate at least USD\$500 million of investment into this space, and in so doing, help build the resilience of 250 million climate vulnerable coastal people in the Global South.”

Figure 5 describes the major direct players in ORRAA. It is an organizer of the legacy conventional financial institutions (CFIs), with the blue circles representing members. Members pay \$50,000 in annual fees or in-kind contributions and participate in developing financial innovations for addressing coastal sustainability. Members include the governments of Canada and the UK, Deutsche Bank, AXA Insurance, IUCN and WWF. Partners include public and development banks like the Asia Development Bank and the Inter American Development Bank.

Figure 5: ORRAA's Core System

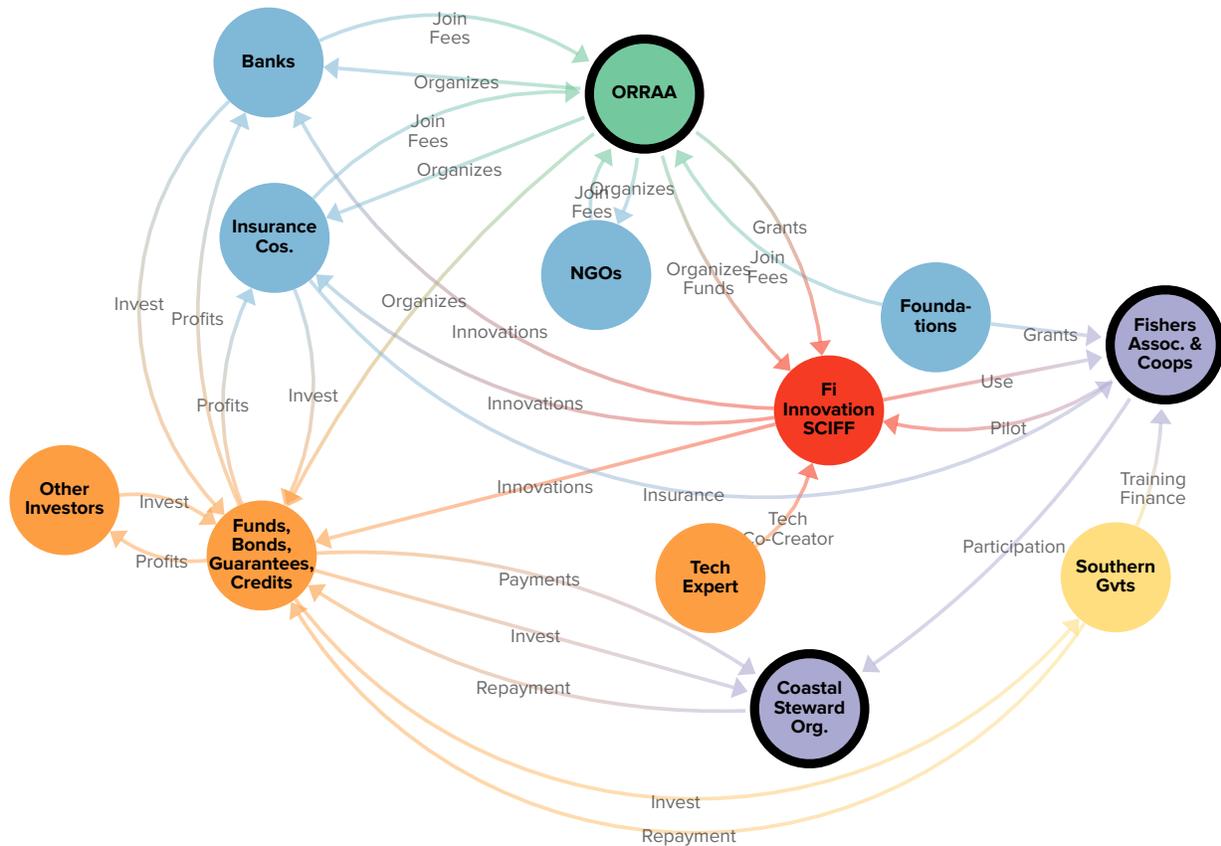


There are significant impediments to meaningful engagement of CFIs, including public ones like the World Bank and the Global Environmental Facility. These include:

- 1. Investment Size:** Small investments are needed, whereas the financial institutions generally look for at least \$15 million investments.
- 2. Project Origination:** CFIs simply don't have the capacity or competency to look at individual MSOs and FAs.
- 3. Repayment Periods:** Repayment periods beyond 3-5 years are challenging.
- 4. Sector Variability:** Different locations have very different needs and variables, such as government stability and capacities and qualities associated with a particular coastal community.
- 5. Local Community Engagement:** Local communities and NGOs usually lack the financial expertise to manage complex financial instruments.
- 6. Revenue Generation:** Developing revenues and sustainable business plans for on-going operation of MPOs is a challenge.

These impediments emphasize the need for innovation in financial instruments and organizational structures. Figure 6 takes a closer look at the finance system innovations and the flows being generated.

Figure 6: ORRAA Innovation System



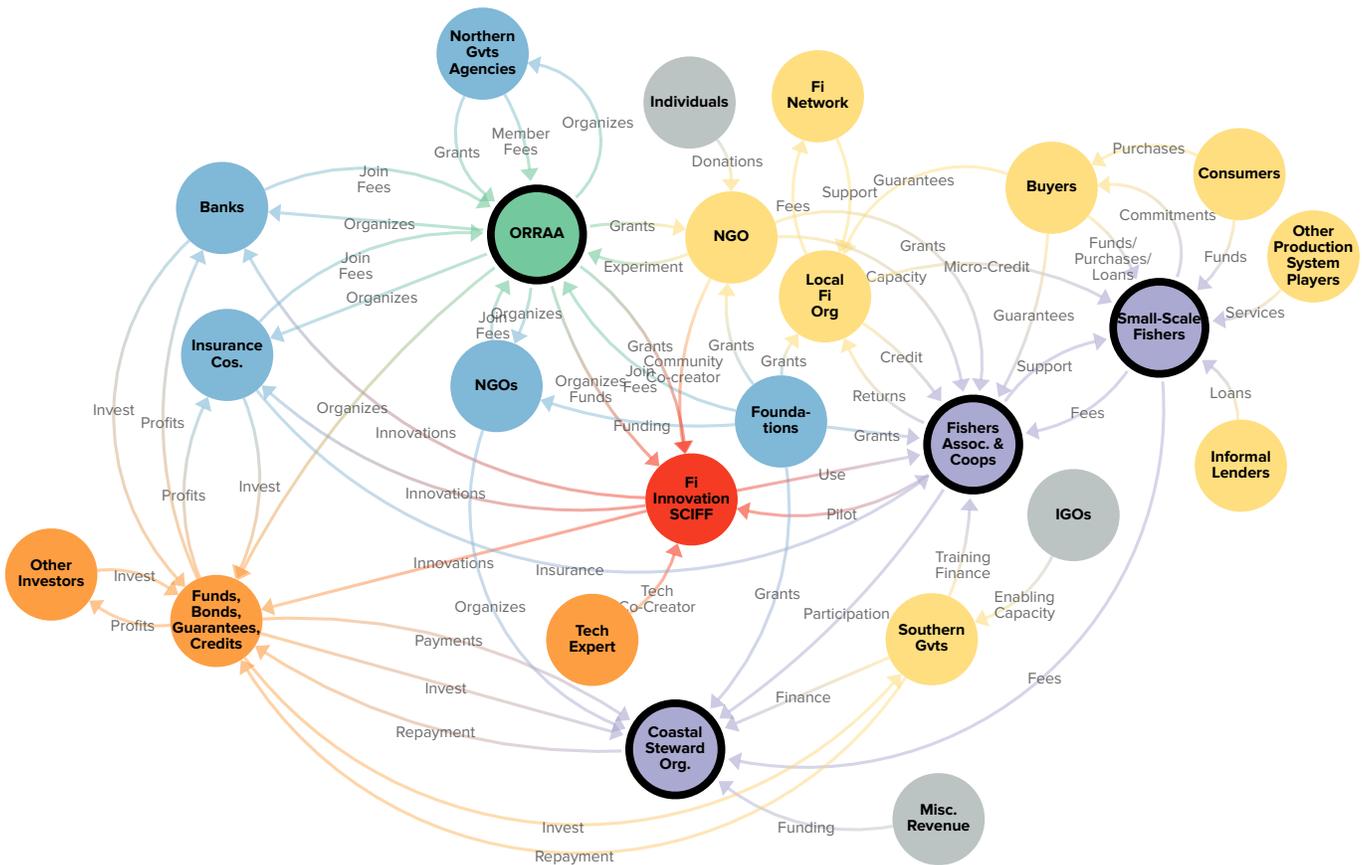
ORRAA's role is to advance financial innovation for coastal communities in the global south, including small scale fisheries in response to various challenges. It has established the Sea Change Impact Financing Facility (SCIFF), which serves to develop the financial architecture to drive billions of dollars into the space. SCIFF supports the creation of blue bonds, guarantees, credits, and blended finance solutions. Through grant funding, ORRAA has aided the development of specialized insurance products. For instance, working with Rare and WTW (a commercial insurance brokerage firm) it has designed insurance for small-scale fishers that provides payouts triggered by specific, hazardous, measurable weather forecast events, incentivizing fishers to abstain from fishing under dangerous conditions. This significantly reduces the risk of loss of life and damage to equipment, which traditionally would lead to seeking loans at exorbitant rates. Moreover, purchasing this insurance obliges fishers to refrain from using dynamite – a harmful practice to the environment that kills fish for easier harvesting.

ORRAA unites parties across the three stages of financing transformation to innovate and organize resources. It is being introduced into traditional and new product sales and delivery systems (a relatively simple example of system redesign stage) that leads to large-scale deployment (system optimization stage).

Reflections

The scale, complexity and time horizons of transformation processes make progress often difficult to see. This report has described the arising innovations from the perspective of three stages of development and systems design to illustrate the emerging new infrastructures and types of financial support required. The complexity of the transformation system can be demonstrated through the case study of ORRAA – Fishers Financing System as presented in Figure 7.

Figure 7: Whole Artisanal Fisher - ORRAA Financing System



This perspective helps illuminate where effort is needed and the emerging sustainable model, but there are important challenges that remain.

- 1. Creating authentic, authoritative, supportive, competent Coastal Steward Organizations (CSOs) and Fishers Associations:** These groups are essential for sustainable financing and operations. CSOs provide local leadership necessary for sustainability, while Fishers Associations ensure fishers can contribute to CSOs and maintain their financial stability.
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6. Transforming the dominant narrative from wealth generation to collective value creation:

A key challenge remains the prevailing narrative that positions artisanal fishers as marginal, informal, or inefficient actors in the seafood economy. This affects legitimacy in financial spaces, access to policy, support, and social recognition. Transforming the financial system for artisanal fishers also requires shifting how value is defined – recognizing ecological stewardship, cultural continuity, and social equity as integral parts of what is worth financing.

The legacy Convention Financial Institutions (CFIs) work with assumptions that are increasingly out of step with the real world. For example, they do not invest with intelligence about systemic impact with approaches such as organizations like The Investment Integration Project (TIIP) are developing. They fail to meaningfully take in social-environmental considerations when calculating future returns such as The Predistribution Project is pointing out. In short, they presume that the future will continue as it has in the past without limits to exploitive behavior.

Facing a similar situation – being caught in a web of assumptions that is not fit to address the current need, circumstances and capabilities has been addressed in a number of ways. One is development of “skunkworks”, a strategy describing development of a division of Lockheed Martin that developed advanced aircraft in World War II by forming a team that could work outside of the burdening assumptions of the traditional organization, structure and procedures. This team developed new ideas and products, focusing on disruptive innovation rather than incremental improvements. This approach has been widely applied to leap to next generation information and communications technologies. It was applied at the end of the last century when the Secretary General realized the UN needed to meaningfully engage business and he created the UN Global Compact. It assumes that diverse voices and perspectives are the source of deep innovation that with transcend individual perspectives and stuckness, to experimentally create highly valuable radical collaboration that can because a new norm and provide transformation pathways for the CFIs.



Summary

The multiple challenges facing the world today make the development of sustainable finance for the transformation of small-scale fishers seem both more daunting and possible. More daunting because traditional mechanisms and extractive approaches we are familiar with are breaking down. More possible because the breakdown opens up many to the need for deep reassessment of assumptions and the way the world works.

Enormous investment was made to create the post World War II system that dominates today. Relationships, partnerships, institutions, networks, trade associations, regulatory structures and the fees and payment flows that sustain them are the product of enormous government, private and civil society effort. Extrapolating this case of financing fishers to other financing sustainability issues suggests that a similar scale effort is required today.

Experiments in how to finance small-scale fishers and the role of global financial institutions have produced sufficient experience and new structures to provide strong guidance for designing the necessary system that will carry the transformation forward successfully. However, it requires a focus on not just technological innovation and design in financial instruments, but innovation in structures and organizing as well. ORRAA is an impressive move in that direction.

Sustainable finance for small-scale fishers cannot be reduced to designing the right instruments. It requires sustained investment in the *process* of transformation. This includes relationship-building, power rebalancing, cultural legitimacy, and the slow work of “systems weaving”. ORRAA’s progress illustrates that it is possible to design for both systemic experimentation and long-term structural change, if process is treated as central, and not peripheral, to financing strategy.

The challenge is for ORRAA and its participants to deepen their experiments to include broader questions about creating experiments that influence financial institutions to integrate sustainability as an imperative. What are the values, beliefs, fears, and assumptions? The experimental spaces that ORRAA is already creating are the spaces for beginning these conversations where participants can ask what has impeded their organizing from taking action earlier and what financial organizations that do not have the impediments would look like? They can design the needed financial institution from the top-down and the bottom up by engaging in meaningful dialogue those who they are aiming to serve. This will, of course, require all parties to learn deeply about not just each others’ current reality, but potential future collective success as well. Through developing this collaborative sense of a truly sustainable future, excitement and energy can produce great benefit from the system redesign work not only for financing small-scale fishers, but for the finance industry more broadly. It’s an investment in the future. ■

Attachment A: The Small-Scale Fishers Production System

Enabling Infrastructures / Environments: Conditions necessary for a sustainable seafood system to function effectively. Includes fisher well-being (health, safety, income security), compliance mechanisms (licensing, conservation rules), environmental safeguards, and physical/institutional infrastructure (cold chains, finance access, cooperative governance).

- 1) Artisanal Producers:
 - a) **Small-scale fishers:** Use traditional methods (nets, handlines, traps, spears) in coastal or inland waters.
 - b) **Shellfish gatherers:** Collect shellfish such as oysters, clams, and crabs, often manually or with basic tools.
 - c) **Small-scale aquaculture operators:** Raise fish or shellfish in controlled, low-tech environments.
 - d) **Aquatic plant harvesters:** Harvest seaweeds and other marine plants, often by hand or with small vessels.
- 2) Seafood Middleman / Aggregator: Buys seafood from multiple fishers, aggregates volumes for sale to processors or markets. Critical link between dispersed producers and downstream buyers; often holds price-setting power.
- 3) Primary Processor: Performs initial processing tasks such as gutting, descaling, sorting, and cleaning catch near landing sites.
- 4) Cold Chain Logistics Provider: Supplies and manages temperature-controlled storage and transport to preserve seafood freshness. Services include ice, refrigeration, and insulated transportation.
- 5) Local Market: Sells fresh or preserved seafood to nearby consumers via open-air stalls, roadside vendors, or fishmongers.
- 6) Seafood Distributor: Coordinates movement of seafood from producers/processors to retailers, exporters, or food service. Handles packaging, aggregation, and basic quality assurance.
- 7) Exporter and Importer: Manages cross-border seafood trade, ensuring compliance with certification and destination market standards.
- 8) Retail Buyer: Purchases seafood in bulk for sale in supermarkets, grocery stores, or dedicated fish shops.
- 9) Restaurant and Hospitality Buyer: Procures seafood for food service (restaurants, hotels, cafes), sometimes directly from fishers.
- 10) Institutional Buyer: Buys seafood for schools, hospitals, public kitchens, often under regulated procurement contracts.
- 11) Consumer: Final consumer purchasing seafood for domestic consumption from local markets or retailers.

- 12) Public: Wider society including citizens, advocacy groups, and media—shapes norms, demand, and policy through visibility and pressure.
- 13) Transport / Logistics Operator: Handles movement of seafood, supplies, and equipment between landing sites, processors, and markets.
- 14) Wholesale Market / Auction House: Centralized venues where seafood is traded post-landing, often setting reference prices for the supply chain.

Attachment B: Sources of Funding For Coastal Stewardship Organizations

- 1) Government Funding: National governments play a crucial role.
 - a) Government grants and subsidies are a common source of funding.
- 2) Donor Support:
 - a) Official Development Aid (ODA) and philanthropic support are important sources of funding, particularly for marine conservation.
 - b) Partnerships with non-governmental organizations (NGOs) that focus on marine conservation can also provide financial and technical assistance.
- 3) Innovative Financing Mechanisms:
 - a) Blue Bonds: These are financial instruments similar to green bonds, but focused on marine conservation, offering a mechanism for attracting private investment.
 - b) Blue Finance Facilities: These combine grants and debt to fund early-stage MPA investments, often with revenues generated from sustainable sources like ecotourism and blue carbon credits.
 - c) Impact Investments: These investments seek to generate both financial returns and measurable social and environmental impacts.
- 4) Revenue Generation from Coastal Steward Organizations (CSO):
 - a) User Fees: Small user fees for activities like snorkeling permits can generate a steady stream of income.
 - b) Tourism Concessions: Implementing tourism concessions can be a way to generate revenue from eco-tourism.
 - c) Ecosystem Service Payments: CSOs can generate revenue from providing ecosystem services, such as carbon sequestration or fisheries management.
 - d) Blue Carbon Credits: These credits can be generated from projects that enhance carbon storage in marine ecosystems, like mangrove restoration.
 - e) Sustainable Fisheries: Revenues can be generated from payments by fishers who are fishing within a CSO jurisdiction.

Attachment C: Background Papers

Numerous documents and interviews were the basis for this report. Some papers include:

Bakit, José, Andrés Hurtado, Raúl Márquez, and Sebastian Villasante. “Navigating Transformations from Artisanal Fishers to Entrepreneurial Scallop Farmers in Chile.” *Frontiers in Marine Science* 10 (July 3, 2023). <https://doi.org/10.3389/fmars.2023.1128527>.

Beeston, Mark, and et al. “High-Quality Blue Carbon Practitioners Guide.” Ocean Risk Alliance, 2024.

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Hofstetter, Dominic, and Jess Daggars. “Builders Vision’s Oceans Strategy: A Case Study of Systemic Investing.” TransCap Initiative, October 2024.

López-Ercilla et al., “Who Pays for Sustainability in the Small-Scale Fisheries in the Global South?”

ORRAA. “ORRAA 2024 Blue Carbon Principles Guide,” 2024.

ORRAA. “ORRAA 2025: A Critical Year for the Ocean,” March 2025.

Stefanova, Marieta, Jennifer Ring, Meyke Nering Bogel, and Katherine Stodulka. “Scaling Ocean Finance: Blue Bonds and Innovative Debt Instruments for a Sustainable Ocean Economy in MENAT and APAC.” Systemiq, Rare, June 2024.

Sumaila, U. Rashid, Melissa Walsh, Kelly Hoareau, Anthony Cox, Louise Teh, Patriza Abdallah, Wisdom Akpalu, Zuzy Anna, Dominique Benzaken, and Beatrice Crona. “Financing a Sustainable Ocean Economy.” *Nature Communications* 12, no. 1 (2021): 1–11.

Waddell and Friedemann, “Systems Change Finance: Financing Three Types of Change.”

World Ocean Summit & Expo. “Oceans Financing Enabling Environment ‘How to’ Sessions Summary Report.” 2024.

About SEAFOOD2030  **The ISSUES SHAPING the FUTURE of SEAFOOD**
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Seafood2030 is interested in the intentional design and evaluation of the sustainable seafood “system” or the collective impact of sustainability efforts in seafood. The organic growth of efforts in sustainable seafood has led to inefficiencies and unnecessary complexity in the seafood industry’s journey toward greater sustainability. The ability to address inefficiencies and strategic dilemmas in the system is the greatest opportunity to increase the uptake of sustainable practices and ability to address new social and environmental challenges facing seafood.