



*“Financial barriers are real. People are worried about being pioneers—they’re the ones to get the arrows stuck in their backs. They’d rather wait and see who is making money.”*

—JOÃO FERREIRA, PhD  
Universidade Nova de Lisboa

## THE OPPORTUNITY

Engage the insurance and financial sectors to develop better risk mitigation strategies and improved dialogue around how to lower risk profiles of aquaculture farms.

Risk management is overwhelmingly poorly addressed. Ecologically sound and commercially viable aquaculture is still in its infancy, and lack of capital is impeding growth. One of the impediments to investment is risk, both real and perceived. We did not see any significant involvement from the financial sector in either creating risk mitigation products, or offering loans that provide risk mitigation incentives. That lack of participation is a clear opening to explore. It’s not the domain of farmers to design financial instruments to make their work more investable. We need other players addressing this part of the conundrum.

## THE PUSH

Financial tools and instruments (such as insurance) can be designed to reward better risk planning by farmers and to stabilize cash flow, therefore making the sector a more appealing investment.

## THE PUSHBACK

The biggest risk factors remain imbedded in the farming process and the fragility of the nature of the crop. Financial instruments can’t change the basic biology of the challenge.

## THE POTENTIAL

An influx of financing and insurance support designated for ecologically sound aquaculture could unleash a flurry of innovation and accelerate the growth of this industry

## THE ACTION (AND HOW TO GET IN ON IT)



*in progress*



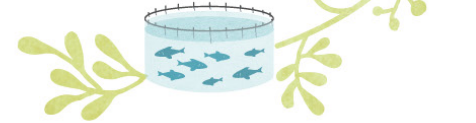
*seeking players*

*One of key opportunities to be addressed by upcoming Convening. Looking for co-sponsors and innovators. Interested? Contact us: [contact@futureoffish.org](mailto:contact@futureoffish.org)*



## THE OPPORTUNITY

Build distribution networks that help aquaculture producers access bigger markets



*“Unless you’re pushing to maximize profits by densely populating your system, growing the fish is not your biggest challenge. The challenges for yellow perch are getting fingerlings when you need them and finding a market that will pay premium prices for small quantities. Those are the tough issues.”*

**DIANE DURANCE**

*Harvest Food and Fisheries*

**Seafood buyers make purchasing decisions based on consistency, quality, quantity, and price.**

Most ecologically sound fish farms can deliver consistency and quality, but many, limited by land area, lease size, or tank capacity, produce volumes too low to be competitive. Because the coordinated logistics to source product from multiple distributed farms are lacking, poor market access continues to be a barrier to new aquaculture start-ups.

## THE PUSH

The development of distribution networks for small-scale fish farmers would allow them to sell into existing markets at fair prices. Those networks could include, for example, product aggregation, forward contracting, or community-supported fishery models.

## THE PUSHBACK

Coordinating distribution of farms raising different species with different grow-out cycles is complex, and building the infrastructure and traceability technology for such disperse production systems will be a challenge.

## THE POTENTIAL

Fish farmers across a range of scales could add their production to an established, traceable value chain to deliver fresh, local, healthy, environmentally friendly products to diverse end users.

## THE ACTION (AND HOW TO GET IN ON IT)



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## THE OPPORTUNITY

Increase the supply of shell to decrease the cost of restoration



**Demand for oyster shell far outstrips supply.** The result is high shell prices and competition between restoration and commercial uses. This scarcity is largely due to shell loss after harvesting. Simple policy changes that forced capture of “waste” or harmful products in the past have sparked development of whole new industries, such as toxic waste management and recycled products. Similar regulatory drivers could unleash markets around shell recovery and recycling. If it were illegal to discard shells in garbage dumps, or the fees to do so were heavy enough, business pathways to reclaim and recycle shells would develop.

*“Making this all work is not a biology issue. It is a materials handling issue.”*

**JOHN SUPAN**  
Director, Louisiana Sea Grant  
Oyster Program

## THE PUSH

Shell recycling and recovery initiatives have already proven effective at diverting shells bound for the landfill back onto reefs. Incentivizing shell recycling, and/or facilitating a used shell market, would serve to further increase shell supply and could drive down costs.

## THE PUSHBACK

As with new taxes, new regulations that require businesses to change practices and incur costs are typically met with resistance. Further, the historic loss of shell is so enormous, fully recycling all shell might not be enough to meet demand.

## THE POTENTIAL

The development of a market for recycled shell—a material perceived by some to have little or no value—could significantly improve the cost-effectiveness of restoration efforts.

## THE ACTION (AND HOW TO GET IN ON IT)



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Oyster pod is developing aspects of this opportunity.  
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## THE OPPORTUNITY

Pair **industry and restoration** in a way that taps into underutilized resources and piggy-backs on infrastructure and know-how that exists in other industries



*The ongoing efforts of the various entities working with oysters should be coordinated and consolidated into a cohesive partnership*

**HUDSON RIVER FOUNDATION, ET AL.**  
*Oyster Restoration Feasibility Study*



**Oyster restoration is expensive, ranging from thousands to millions of dollars per acre of reef.** Most restoration projects remain small because of a shortage of cash. One solution to this bottleneck is to look to other industries for existing technologies, methodologies, supply chains, and resources that could improve efficiency while reducing restoration costs. Opportunities might include creating substrate from waste materials, backfilling seafood distribution trucks with empty oyster shells, borrowing undeveloped lots for shell curing, or employing specialized equipment to facilitate time- and labor-intensive processes.

## THE PUSH

By tapping into underutilized resources and building on infrastructure that's already been created, reef restoration can emerge into a more competitive market space where many of the logistical problems have already been solved.

## THE PUSHBACK

Identifying and testing what this opportunity looks like in action would be time-consuming, and some ideas might not turn out to be as cost-effective as hoped. Viability will depend on profitability, which must be modeled for each specific idea.

## THE POTENTIAL

The chance to align oyster restoration with business interests and processes opens the door to an elegant momentum that the market itself would drive.



## THE ACTION (AND HOW TO GET IN ON IT)



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