



In Ecuador, sustainable shrimp for a sustainable future

“It’s not just farm to fork.
This is before the farm.”

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10 min read

Pamela Nath has just gotten off the phone with a Manhattan chef when we connect on a snowy New York morning. His fresh shrimp delivery is being delayed because of the weather.

In 2019, that delivery is one tiny part of the 1.5 million tons of shrimp exported from Ecuador, the world's second largest shrimp producer. Shrimp are sold by their quantity per pound; Ecuadorian shrimp average from 20–30 a pound to 50–60 a pound. "It's a lot of shrimp," Nath says.

Nath is the director of the Sustainable Shrimp Partnership (SSP), a sustainability initiative led by Ecuadorian shrimp producers. SSP's goal: the highest quality premium shrimp that meets the highest social and environmental standards.

The ever-expanding global population, estimated by the UN to hit 9 billion by 2050, means a growing need for protein, including seafood—and shrimp.

Around 3 million tons of farmed shrimp are produced worldwide annually. Shrimps are farmed using aquaculture, where fresh- and saltwater populations are cultivated under controlled conditions. Aquaculture uses less land and fresh water than meat production, according to Nath, with better feed conversion and ratio, and a higher rate of protein retention. That means more food and more protein with fewer resources—with a smaller environmental impact.

The United Nations (UN) expects aquaculture to contribute to more than half of global fish consumption by 2025. Aquaculture methods can vary widely from one farm to the next—let alone across the globe. Which is why, Nath says, one of SSP's founding tenets is a race to the top.

Shrimp exported from
Ecuador in 2019

1.5

million tons

Per pound, on average

50–60

Ecuadorian shrimp

“Most consumers, especially in the US, don’t really know where the shrimp they eat comes from.”

Jose Antonio Camposano
President, Ecuador Aquaculture Chamber

She explains: Farmed shrimp, a commodity market, has traditionally rewarded those with the lowest prices. Those low prices can also mean that best farming practices get sacrificed, which could mean a lower quality product, as well as higher antibiotics use because of greater risk of disease.

Ecuador is the world’s second largest shrimp producer, after India.

“SSP was born because a group of Ecuadorian enterprises got together a few years ago and said, ‘we see many regions are looking to lower the cost of shrimp prices,’” Nath says. Their concern was that lower prices would come at the cost of responsible practices.

The group wanted to highlight that Ecuador was committed to producing shrimp with sustainable practices. SSP members are Aquaculture Stewardship Council certified, with a particular focus on zero antibiotic use, neutral water impact and full traceability.

“A growing race to the bottom of the shrimp industry is harmful to the shrimp, and to the environment,” Nath says. “It also limits consumer choice and their ability to buy healthy and sustainable farm shrimp.”

Consumer awareness is critical, says Jose Antonio Camposano, President

of Ecuador’s Aquaculture Chamber. He works with SSP to educate consumers and retailers alike on why origin adds to the value of the end product.

“Most consumers, especially in the US, don’t really know where the shrimp they eat comes from,” Camposano says.

Distributors, supermarkets, importers and wholesalers, too, may not know—or want to know—the origin of the shrimp, especially if it may be associated with bad practices, or environmental or labor issues.



SSP Criteria 1

Zero antibiotics

In the 1990s, white spot disease decimated entire shrimp farms across Asia. To combat and prevent disease, much of the global shrimp industry began putting antibiotics into the water the shrimp were farmed in. The Ecuadorian shrimp industry took a different tact.

“We helped the animal develop its own resistance,” Camposano says. “Decades later, the resistance in Ecuadorian shrimp is natural, a result of the animals’ own genetic capacity to resist and tolerate disease. Part of that is the shrimp feed, which is crucial to keep the animals’ immune system healthy.”

Antibiotic levels in animal-based food production have long been a concern for researchers. Studies show that even small levels can lead to the development of antibiotic resistance in humans.



SSP Criteria 2

Tracking and transparency



For this, SSP turned to IBM.

“We’re working under the IBM Food Trust system,” Camposano says, “to provide all the information to consumers so they can better understand how the shrimp was produced.”

The IBM® Food Trust™ platform was created specifically for the food ecosystem. “It’s a blockchain solution different from any other blockchain product,” says Vanessa Barbery, IBM Food

Trust Business Development Executive “It’s been created and tailor-made for the industry.”

The clients don’t need knowledge about blockchain to use it, Barbery says. “We integrate into their data and their supply chain. For the client, it’s really simple.”

Each shrimp has an identifier, which is applied through blockchain. Anyone can follow the full journey of the life of the shrimp through the supply chain.

“It stocks at X processor, Y distributor, Z retailer,” IBM Food Trust Global Sales Leader Luis Izquierdo says. “There’s one simple version of the truth that can be followed on the blockchain.”

Sharing that information—that truth—can help drive trust for the brand. Which can then help drive sales.

“It’s not just farm to fork,” Izquierdo says. “This is before the farm. What feed goes

into the shrimp? There’s lots of information that can be shared.”

In their work with SSP, Barbery and Izquierdo see substantial interest from the farmers in the technology.

“They need it to stand out from the competition,” Barbery says.

Because their product is premium, its prices may also be premium. The farmers may struggle with explaining the price: “it’s because I don’t use antibiotics, and I don’t use children in my production line,” are all true, but don’t necessarily add value.

Traceability provides that value.

“Our shrimp has many certifications,” Barbery says. “But instead of just saying that, we can share the data that validates that information,” which includes care at every stage of the production cycle to avoid antibiotic use. That care also extends to employees and the environment as well.

SSP Criteria 3

Neutral impact on water

Water used to produce the shrimp is the same quality when it goes out as when it came in. That means aquaculture farms have effective waste management strategies in place.



SSP Criteria 3

What's next for SSP and beyond

“Since the launch of SSP, we’ve seen industry colleagues and countries announcing efforts to improve their practices,” Camposano says. “That’s very good. We want to make sure everyone is racing with us.”

SSP has had early success with early adopters, and now is working to educate the mainstream market that there’s space for a new category of shrimp produced with the highest environmental and social standards.

“We think everyone deserves a better product,” Camposano says.

That might extend beyond shrimp in the not-so-distant future. Other Ecuadorian industries—banana, cocoa, coffee—are looking to SSP, he says, and asking how it’s done.

“Let’s say you’re a pineapple producer,” Barbery says. “You’re rainforest certified. You put that badge on your product. As a consumer, how do I know what you’re saying is true?”

With technology, the pineapple producer could share about how they’ve planted 15,000 plants. That information validates what you’re saying about your product in general, Barbery says.

“That’s our next goal,” he says. “How do we face the consumer with transparency, and show them why what you’re saying is true?”



About Sustainable Shrimp Partnership

SSP is a group of leading companies sharing one main mission: to drive the future of shrimp aquaculture to be a clean, sustainable and successful practice for the world. In order to reach its goal, SSP has set out a clear and ambitious plan to lead the whole sector to the next level.

Solution components

- IBM® Food Trust™

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