

THE *Current*

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[Harrison Tasoff](#)

Christopher Costello recognized for his pioneering work in environmental markets

If you want to change the world, you need to work with human behavior, not against it. Professor [Christopher Costello](#) came to that realization early in his career, and it's a lesson he tries to pass on to his students, colleagues and collaborators.

Over the years, Costello has applied this insight to problems from climate change to resource extraction, establishing UC Santa Barbara's [Environmental Markets Lab](#) (emLab) to translate research and scholarship into actions and interventions throughout the world.

Costello was just named a Fellow of the Association of Environmental and Resource Economists (AERE), the highest honor bestowed in the field of environmental and resource economics. Fellows demonstrate "sustained impact through scholarship, leadership, mentoring and service," the association's announcement said.

AERE cited Costello for his research spanning fisheries policy, ocean governance and regulatory design, including his influential 2008 [paper](#) in Science on catch shares and fisheries collapse. Beyond his research, he has shaped the field through his work as chief economist at the Environmental Defense Fund, his involvement in the Latin American Fisheries Fellowship and his mentorship of more than 30 Ph.D. students and postdocs.

Costello was humbled by the recognition; he hadn't even known that he was nominated. "It was a total surprise," he said.

"Professor Costello's research is critically important to combatting climate change and rapid environmental degradation," said UCSB Chancellor Dennis Assanis. "Professor Costello understands how to create economic frameworks that align human behavior with the sustainable practices we so urgently need. His dynamic scholarship reflects UC Santa Barbara's interdisciplinary culture and foundational commitment to the environment, and we are deeply proud that he has received this prestigious honor."

Understanding human behavior

Costello's work lies at the intersection between economics and the environment. He considers how we manage natural resources and how to address issues like climate change, biodiversity loss and overfishing.

This requires understanding the sources of these problems, which are usually what economists call market failures. These often happen when an activity's true costs aren't properly reflected in the market itself. And brute force solutions won't fix these failures, they require properly aligning people's interests and incentives so that their behavior naturally changes. "I've built a research agenda around how to internalize those external costs," said Costello, a distinguished professor at the Bren School of Environmental Science & Management.

This approach fascinated Costello from the earliest moments in his budding career. He studied political economy as an undergraduate, a field devoted to understanding incentives and vested interests. "What really grabbed me was this idea that you could change people's incentives, and therefore change outcomes," he recalled.

Over the years, he's come to realize that most issues that society faces stem from human behavior. And human behavior is a reflection of the incentives that people face. By this same logic, changing the incentives can help solve the problem: The source of the problem becomes the strategy for fixing it. This concept underpins nearly all of Costello's work.

Harnessing markets for the environment

One way to change the incentives is to create a market for the environmental good, be that clean water, fishing rights or carbon sequestration. It was this idea that drove Costello to establish the Sustainable Fisheries Group in 2006 with former Bren School dean, Steve Gaines, which eventually became part of the larger emLab at Bren.

To understand environmental markets, consider fishing. To ensure the health of the fish stock and the ecosystem it's a part of, scientists set a cap on the total number of fish that can be caught. At this point, a lot of people think "problem solved." But you can't simply set the quota and walk away, Costello said.

The issue is that the incentives faced by fishermen, regulators and policymakers aren't fully aligned with the solution. "Even when you tell people what they're supposed to be doing, they're going to find a way around that rule unless you align the incentives," Costello explained. So instead of closing the binder after setting the quotas, you then allocate fishing rights to the fishermen, who can then use them or sell them among themselves.

Now the stakeholders have a vested interest in the health and sustainability of the stock because they own a share of the fishery's future. And most importantly, the ability to trade this share ensures that their stewardship is rewarded even if they don't use the fishing rights themselves. Over the years, Costello has researched, consulted and helped implement fisheries solutions in more than 20 countries.

Image



Photo Credit

Split Second Stock

Fishing rights markets can help fisheries become more sustainable despite the growing demand for seafood.

The case for carbon

EmLab continues its work as a leader in the sustainable fisheries movement, however much of Costello's current work focuses on carbon markets. There are markets for greenhouse gas emissions in about 45 different countries and states spanning developing and developed nations large and small. Over a quarter of all global emissions are now covered under carbon markets, he explained.

In that light, Costello said he is excited for emLab's next major project, which he calls "nature-based compliance markets." As emissions eventually come down — Costello assures us that they will, in time — we simply won't be able to entirely eliminate emissions from certain activities. "So we need to think about creating markets for removals themselves," he said.

Nature-based compliance markets incorporate environmental processes, like reforestation, into existing carbon markets, which mostly exclude these activities, at the moment. "Nature itself has a huge potential to store more carbon than it does now, if incentivized properly," he said. "And one reason it's not being incentivized is

that it's kept outside of those compliance markets.”

A sobering realization becomes a powerful tool

Despite his lofty ambitions for environmental progress, Costello remains disillusioned about how to achieve his dreams. “Wishing that people behaved differently than they do isn't a solution,” he said. “A solution is an intervention that changes people's behavior to solve a problem.” Once we recognize this, then we have to start examining the incentives behind all the behaviors involved in an issue, he said, as well as any possible solutions we might devise.

“People are creative. Even when you try to force them to do things, they often find a way around it.” Costello continued. “So it’s only once you understand the incentives that you're in a position to design interventions that truly address the problem.”

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