MedDialogues +2030

FROM FISH TO FORK: RECONNECTING WITH THE SEA THAT FEEDS US

ANNA BOZZANO

14 LIFE BELOW WATER

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Food, fishing, and culture are deeply intertwined in the Mediterranean. Yet pride in gastronomy often coexists with a striking lack of awareness about where fish comes from, how it is caught, and what it takes to bring it to the plate. In a region shaped by ancient fishing traditions, many consumers today remain disconnected from the sea that feeds them.

This paradox framed the closing conversation of the Med Dialogues +2030 – 5th Edition 2025, featuring Anna Bozzano, marine biologist and founder of El Peix al Plat. Drawing on twenty years of marine research and more than a decade of public engagement, Anna reflected on how societies can reconnect with their food sources, support fishing communities, and adopt more responsible consumption habits, without losing pleasure, culture, or creativity.

Born in Genoa, Anna's relationship with the sea began long before her scientific career. She grew up overlooking the Mediterranean, in a city whose structure and rhythm she later found mirrored in Barcelona. But her earliest influence, she explained, was not academic. It came from her mother's everyday practice of buying fish.

Several times a week, her mother would go to the fishmonger without a shopping list. She would buy what was available rather than asking for a specific species. At the time, this was unremarkable – fishmongers sold mostly local catch – but in retrospect, Anna recognises it as her first lesson in responsible consumption: flexibility, seasonality, and trust in what the sea provides. That intuitive relationship with food would later collide with a very different reality.

TWENTY YEARS OF SCIENCE, ONE MOMENT OF DECISION

Anna spent two decades at the Institute of Marine Sciences (CSIC) in Barcelona, participating in oceanographic campaigns and researching fisheries, sharks, and marine ecology. She described those years as formative, not only because of the scientific knowledge gained, but because of the collaborative nature of marine research. Knowledge, she insisted, is never isolated; it is a puzzle built collectively.

Yet even while working as a researcher, she felt an increasing need to communicate beyond academia. The decisive moment came through an unexpected channel: her daughters' school.

While serving on the school dining committee, Anna discovered that children in Barcelona were regularly being served imported species such as pangasius and perch, fish that had travelled thousands of kilometres, were farmed in freshwater, and required confirmed additives and preservatives. This, she stressed, was happening in a city with a vast fishing culture and direct access to sardines, anchovies, and other local species.

Her intervention had immediate effects. Pangasius disappeared from her daughter's school menu, only to be replaced the following year by dogfish, a small shark species. Once again, Anna intervened, explaining issues related to heavy metals and children's health. By the third year, local anchovies had finally made their way into the school's meals.

That experience crystallised her decision. She left research to dedicate herself fully to changing how people understand and consume fish.

FROM RESEARCHER TO EDUCATOR

The transition, Anna admitted, was not carefully planned. She described it as a leap taken with "*total unconsciousness.*" She had no background in business or entrepreneurship, but received support from Barcelona Activa, a public entity that helps people develop new initiatives.

What sustained her confidence was scientific rigour. The discipline she had developed as a researcher became the foundation of her outreach work. She began by giving public talks on responsible fish consumption, but audience feedback quickly revealed a gap: people were interested, but did not know where to find unfamiliar species or how to cook them.

Listening to those concerns shaped the next phase of her work. In 2013, she created her first guided itinerary at the Barcelona fishermen's guild. These visits became official in 2018 through a formal agreement with the guild, integrating fishing tourism, education, and cultural memory.

For Anna, education is not simply about information. It is about experience. During visits to the fishermen's guild, participants witness boats returning after long hours at sea, observe the diversity of species landed, and learn about the daily realities of fishing.

These visits often triggered emotional responses, particularly among older participants, who recalled childhood memories of the port or family connections to fishing. Anna emphasised that emotion strengthens learning: when people reconnect memory, place, and knowledge, understanding becomes lasting.

Her approach avoids moralising. Change, she told the audience, requires effort, but the benefits far outweigh the inconvenience.

THE PRINCIPLES OF RESPONSIBLE FISH CONSUMPTION

Anna structured her message around three core principles: diversification, seasonality, and proximity.

Most consumers, she explained, regularly eat no more than 10 to 15 species, despite the fact that the Catalan Mediterranean alone offers around 200 edible species throughout the year. This lack of diversity concentrates pressure on a few species while others are exported or ignored.

Seasonality is equally important. When fish is imported year-round, consumers lose awareness of natural

cycles. Eating tuna during tuna season or squid during squid season restores that connection. Proximity completes the triangle: choosing local fish supports fishing communities and reduces dependency on distant imports.

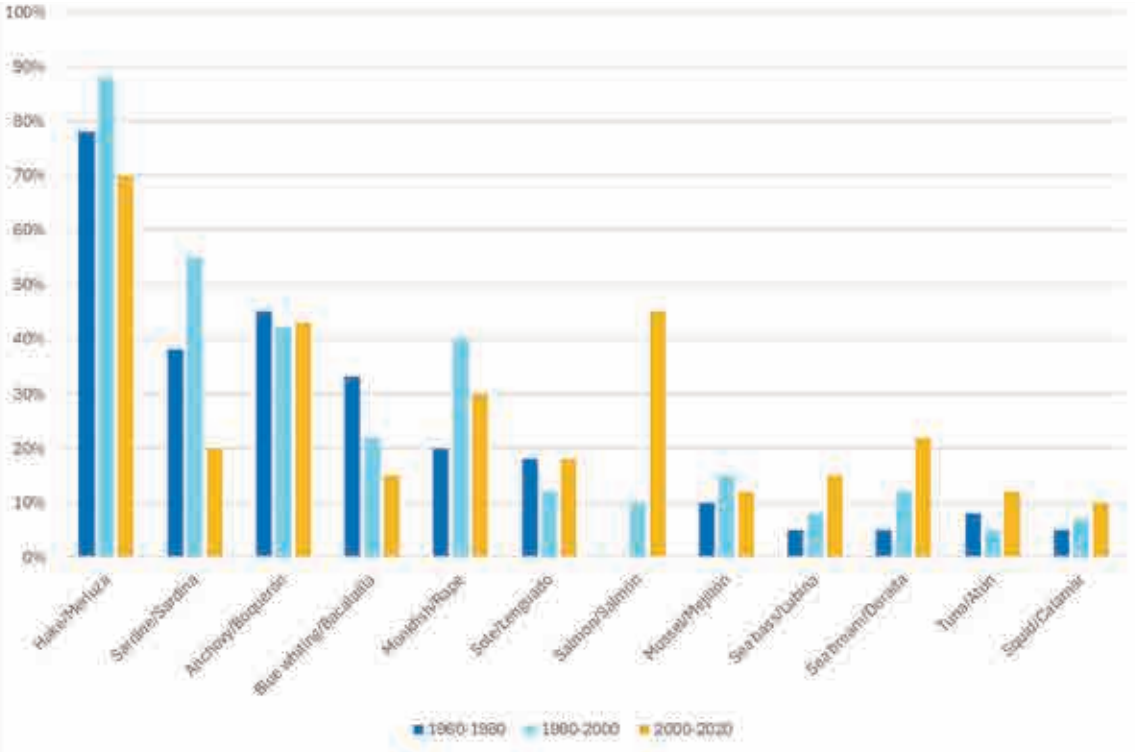
A fourth, essential element is traceability. Although European regulations have required detailed labelling since 2014, information in markets remains inconsistent. Knowing where a fish comes from, how it was caught, and when it was caught is fundamental for informed choice.

Using consumption data, Anna illustrated how habits have changed over decades. Sardine consumption has plummeted, while salmon consumption has risen sharply. Between 2000 and 2025, average fish consumption dropped from 27 to 18 kilograms per person per year, with fresh fish declining in favour of frozen and processed products.

Salmon, she noted, dominates health narratives despite being almost entirely farmed and absent from the Mediterranean. Sardines, by contrast, are nutritionally exceptional: rich in protein, omega-3, and vitamin A, essential for vision and eye health. A single portion of sardines and carrots provides the daily recommended intake.

These facts, she argued, are rarely communicated, despite their relevance in a society increasingly exposed to screens and visual strain.

CHANGES IN FISH CONSUMPTION AND SALES IN CATALONIA AS SEEN FROM FISHMONGERS (ICM-CSIC)



Source: Ortega et al. (2025), p. 10. ICM-CSIC. https://doi.org/10.20350/digitalCSIC/17110

SIZE MATTERS: JUVENILE OR ADULT, NOT SMALL OR BIG

Another critical aspect of responsible consumption is understanding fish size. Anna criticised campaigns that simply discourage eating "small fish," pointing out that size is not the issue: maturity is.

Minimum catch sizes are based on scientific evidence of reproductive maturity. Eating fish before they re-

produce contributes unknowingly to overexploitation. She used hake as an example: although legal minimum size is 20 centimetres, scientific data shows that females reproduce at 27 centimetres and males at 32.

Consumers, she insisted, have power. If illegal sizes appear on the market, they should not be bought and can even be formally reported: "*At fishmongers, we can ask for a complaints form, because some sizes should not even be on display, as they are illegal, yet we still sometimes find them. Therefore, the power we have is not to order them, not to consume them.*"

FISHERS: BETWEEN PRESSURE, RESPONSIBILITY AND COMMITMENT

Working closely with fishing communities has shaped Anna's perspective. On the Catalan coast alone, around 1,600 fishers operate across 180 vessels. Through her activities, the public witnesses the realities of fishing: long days at sea, uncertain catches, and growing regulatory pressure.

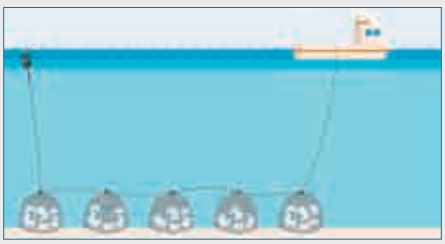
She addressed current tensions with the European Commission, which has proposed drastic reductions in fishing days for trawlers. While acknowledging the need for sustainability, Anna warned against timelines that ignore social and economic realities. Reducing fishing to nine days a year, she argued, risks collapsing entire coastal economies without preparing consumers for alternative models.

Fishers are often portrayed as exploiters, Anna said, but this overlooks their contributions. She highlighted initiatives such as *Mar Viva* and *Pesca Neta*, through which fishers voluntarily bring marine litter back to port. Today, the majority of Catalan fishers participate in these initiatives, removing waste from depths unreachable by others.

She also described different fishing methods – trawling, purse seining, and small-scale gear – emphasising that many are selective and balanced with marine ecosystems. Artisanal fishing, in particular, targets adult fish and has limited environmental impact: "*let us also revalue the work of fishers who spend many hours at sea, who (depending on the type of fishing gear they use) are in balance with the sea, and who bring us these products that we can enjoy and that are so beneficial to our health*."

MOST COMMON FISHING METHODS AND THEIR SUSTAINABILITY

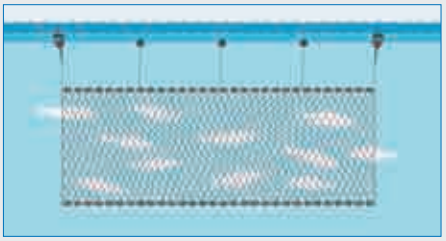
1. Pole and line
Sustainability: high (when well managed)
Used to catch large coastal or pelagic fish one at a time with a hook on a line. Bycatch is usually very low and there is no contact with the seabed, so this is widely considered one of the more sustainable small-scale fishing methods when stocks are healthy and effort is controlled.
Source: **International Seafood Sustainability Foundation (ISSF)**



2. Pots and traps
Sustainability: medium–high
Used mainly for crustaceans and some fish, with a cone- or funnel-shaped entrance that animals can enter but not escape from; gear is set on the seabed and later hauled up. Pots and traps are generally selective and cause little habitat damage, but lost gear can continue "ghost fishing" and may entangle other marine wildlife.
Source: **Marine Stewardship Council**

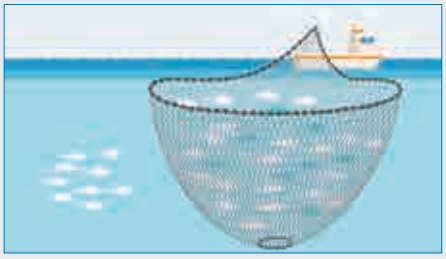
3. Longline
Sustainability: medium (depends strongly on bycatch mitigation)
A long main line with many baited hooks is trailed or set behind the boat for midwater or bottom fishing. This can lead to unintended catches of non-target fish, seabirds, turtles and sharks. With good management (hook type, weighting, bird-scaring lines, time-area closures) bycatch can be reduced substantially, making longlines a moderate-impact gear.
Source: **Sustainable Fisheries UW**

4. Pelagic (Midwater) trawl
Sustainability: medium
Cone-shaped nets are towed through the mid-water column, guided by sonar and other sensors that track the position of fish schools. Pelagic trawls can have sizeable bycatch when different species mix, but because the gear normally avoids contact with the seabed, habitat damage is much lower than for bottom trawls.
Source: **Marine Stewardship Council**

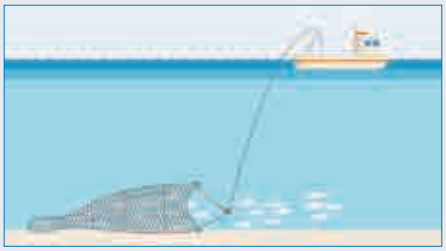


5. Gillnets
Sustainability: medium–low
A curtain of netting hangs in the water and fish are caught as they try to swim through. Contact with the seabed can be limited and mesh size can be adjusted, but globally gillnets are associated with relatively high levels of bycatch of marine mammals, turtles and seabirds, and lost nets are among the gears with highest ghost-fishing risk.
Source: **Marine Conservation Society**

6. Dredging
Sustainability: low
A rigid metal frame with a bar, sometimes toothed, is dragged along the seabed to dig up shellfish while moving through the sediment. This gear can cause intense disturbance of bottom habitats and benthic communities, so it is generally considered one of the least sustainable methods unless very strictly limited in area and effort.
Source: **Marine Stewardship Council**



7. Purse seine
Sustainability: medium–high (best on free-swimming schools)
A vertical wall of netting surrounds a school of fish; then a purse line closes the bottom so the fish cannot escape. There is no contact with the seabed and, when used on free-swimming schools of a single species, bycatch and habitat impact can be relatively low. However, sets around drifting Fish Aggregating Devices (FADs) can increase bycatch of juvenile tuna and other species.
Source: **Food and Agriculture Organization of the United Nations (FAO)**



8. Demersal or bottom trawls
Sustainability: low–medium (high potential impact if poorly managed)
A cone-shaped net is towed along or very close to the seabed to catch large numbers of demersal fish and invertebrates. This method is efficient but can generate high bycatch and is responsible for some of the most significant physical impacts on seafloor habitats; its overall sustainability depends heavily on where it is used, how often, and whether sensitive areas are closed.
Source: **Marine Stewardship Council**

Images Source: Marine Stewardship Council. (2025) https://www.msc.org/en-us/what-we-are-doing/our-approach/fishing-methods-gear-types



WOMEN OF THE SEA

Women visibility was another central theme. Historically, women have been absent from fishing narratives, constrained by stigma and lack of role models. In 2018, the Catalan association Dones de la Mar was created with 20 members. By 2025, it had grown to around 160 women, including fishers, shipowners, scientists, educators, and communicators.

Through school programmes, congresses, and gastronomy projects, the association works to normalise women's roles in the sector and inspire future generations: "*Nowadays, we have a number of young women who are starting out in the fishing profession. In Barcelona, we have the youngest woman fisher in Catalonia; she is 24 years old, comes from a fishing family, and this very year bought her own boat and goes out to fish every day*."

SIGNS OF PROGRESS IN A SEA UNDER PRESSURE

Pausing to reflect on positive developments, Anna highlighted several concrete examples. After years of work as a researcher and public communicator in the Mediterranean, she acknowledged that progress is visible, though fragile. One of the clearest advances, she noted, has taken place in the education system: pangasius and shark are no longer routinely served in many school canteens, a change that would have been unthinkable a decade ago. Beyond menus, this shift reflects a deeper transformation in how food choices are evaluated, introducing greater awareness of origin, impact, and responsibility from an early age.

Another significant step forward has been the creation of educational and business-oriented programmes designed to strengthen local fishing activity. In recent years, the regional Directorate-General for Fisheries has promoted Local Fisheries Action Groups (GALP – according to their acronym in Spanish), five bodies distributed along the Catalan coast. These groups support and finance projects aimed at improving, promoting, or adding value to local fishery products, provided they demonstrate economic and social viability. For Anna, this framework represents a meaningful advance in enabling the sector to innovate while remaining rooted in its territory.

Anna also pointed out the development of marine fishing protection areas as a source of cautious optimism. These zones differ from conventional marine protected areas open to recreational use; instead, they are specifically designed to safeguard targeted species through regulated fishing practices. In Catalonia alone, around twenty such areas have been established.

Each area is tailored to protect particular species, and according to Anna, the results are beginning to show. In some zones, species such as hake and shrimp are clearly recovering. These experiences have attracted the attention of fishing associations from other parts of the Mediterranean, interested in understanding how such measures were implemented. For Anna, they

demonstrate that management grounded in scientific knowledge and cooperation with fishers can yield tangible ecological and economic benefits, provided time is allowed for ecosystems to respond.

RECOGNITION OF A LONG-TERM COMMITMENT

Anna reflected on milestones in her own professional journey. Among them was the recognition granted by Barcelona Turisme for good practices associated with El Peix al Plat in its tourism dimension. The award acknowledged the project's contribution to promoting local products, fishing culture, and environmental awareness in the city. Anna admitted she had been genuinely surprised by the recognition: compared to Barcelona's iconic attractions, her initiative seemed modest. Precisely for that reason, the award carried particular meaning, signalling that smaller-scale, responsible tourism initiatives also matter.

That recognition was followed by another, awarded by the Spanish Network of Women in the Fisheries Sector, which honoured her for female entrepreneurship and the development of new business models. For Anna, the award reflected more than a single project; it recognised over a decade of work aimed at making the fishing sector visible and building bridges between fishers and consumers.

LOOKING AHEAD: SCIENCE, CULTURE, AND CREATIVITY

Turning to the future, Anna outlined three projects she hopes to develop in 2026. The first focuses on nutrition, addressing the lack of scientific data on the nutritional profiles of many fish species consumed in Spain. Of the more than one thousand species eaten nationwide, only around ninety are well documented nutritionally. The aim is to begin with a small number of species and gradually build a broader knowledge base.

The second project addresses food waste by exploring how different Mediterranean culinary traditions, particularly between the northern and southern shores, use parts of the fish that are often discarded elsewhere. By exchanging gastronomic knowledge, the initiative seeks to reduce waste while expanding culinary possibilities.

The third project, still under development, connects pollution, education, and art. While Anna did not reveal details, she made clear that it would continue her effort to blend scientific understanding with emotional engagement.

CLOSING THE CIRCLE: CULTURE, FOOD, AND RESPONSIBILITY

As the session closed, Anna returned to the kitchen, the place where knowledge becomes habit. Buying fish responsibly and sustainably, cooking simply, asking elders for recipes, and daring to try unfamiliar species were not framed as sacrifices, but as acts of reconnection.

Her message was clear: when people understand where food comes from, how it is caught, and who depends on it, choices change. Reconnecting with fish is not only about sustainability: it is about culture, memory, and responsibility in a shared Mediterranean.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