



Photo credit, front cover:
Kaia Joye Moyer

Photo credit, back cover:
Alexis Rife



THE POTENTIAL FOR GLOBAL FISH RECOVERY:

HOW EFFECTIVE FISHERIES MANAGEMENT CAN
INCREASE ABUNDANCE, YIELD AND VALUE



BREN SCHOOL of
ENVIRONMENTAL SCIENCE & MANAGEMENT
University of California Santa Barbara



ENVIRONMENTAL
DEFENSE FUND
Finding the ways that work



UNDERPERFORMING RESOURCE

Ocean fisheries are a tremendous underperforming resource

Three billion people worldwide rely on seafood as a key source of protein, and about 260 million people, many of whom live in developing countries, work in ocean-related sectors. Beyond food and job security, fishing economies add billions to global GDP. But this segment of the blue economy has long been overlooked because the dominant view about the future of the oceans has been so bleak: nearly a third of fish stocks that have been officially assessed are in trouble, and half produce less food, employment, economic value, and biodiversity than they could.



Photo credit:
Kaia Joye Moyer

On the other hand, if sustainable fisheries management is not implemented, the health of the oceans will continue to decline.

The data reveal a stark choice: manage fisheries sustainably and realize the tremendous potential of the world's oceans; or allow "business as usual" to continue to draw down the natural capital of our oceans.

Compared to business as usual, the long-term potential of the oceans is even more striking. Sustainably managed fisheries could produce 17 MMT (or 23 percent) more wild fish and generate 90 billion USD (or 315 percent) more in profits each year. The biomass of fish in the water would be 112 percent greater, making our oceans healthier and more resilient and enabling fisheries to continue delivering high volumes of food and profits every year.



Photo credit:
Noel Lopez Fernandez

MORE FOOD AND PROFITS

The oceans have tremendous potential to produce significantly more food and profits, year after year

The future does not have to be so dire. New ground-breaking research shows that poorly performing fisheries can be turned around fast. Scientists and economists from the University of California Santa Barbara, Environmental Defense Fund, and the University of Washington have teamed up to create a new "upside" bio-economic model that gives the most holistic view to date of the potential benefits to be gained from the oceans, if sustainable fishing becomes the norm. The upside model estimates the options, benefits and timing of recovery for individual fisheries, nations, ecosystems, and the world.

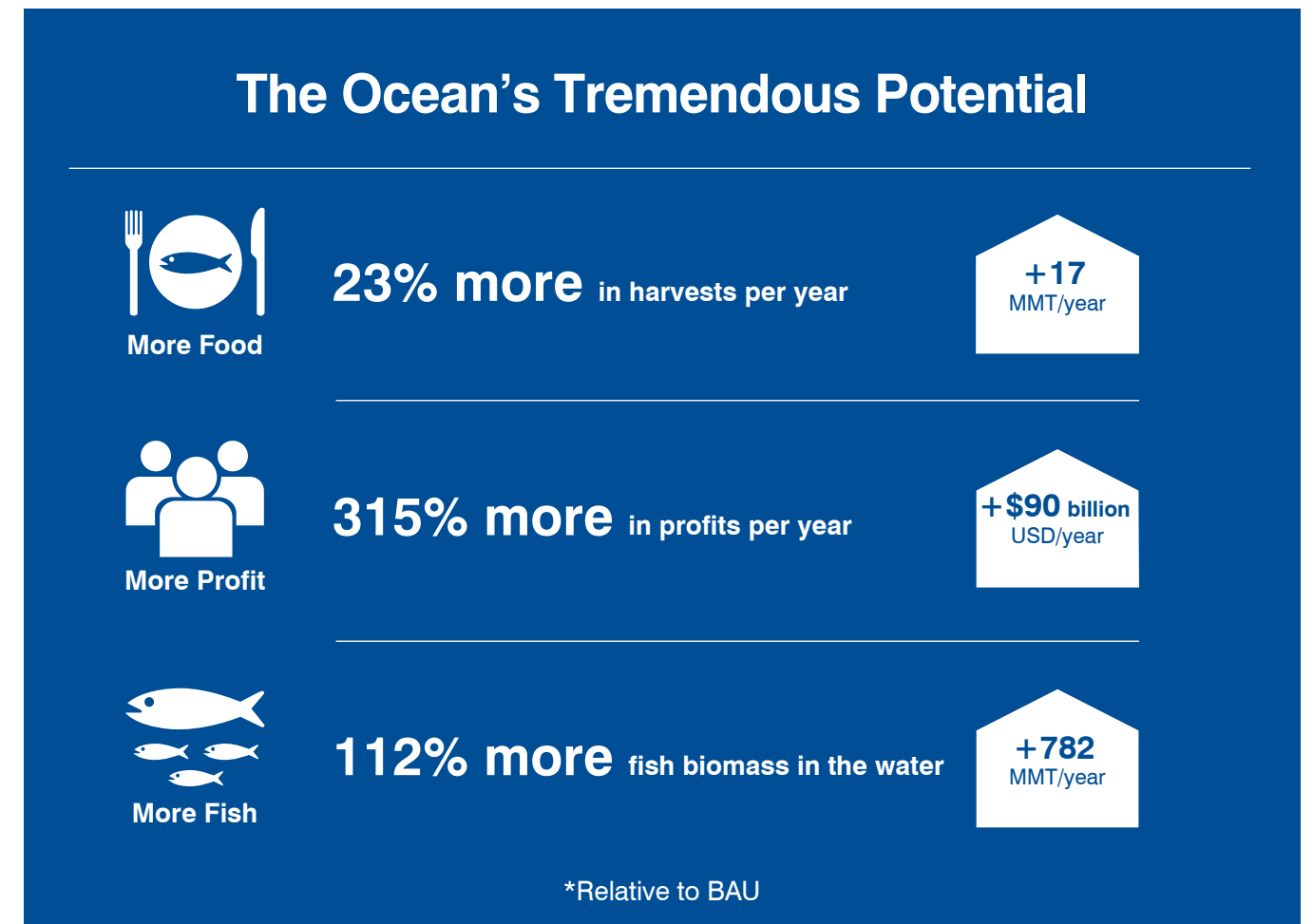
Our preliminary results show there is great promise for the world's oceans and those who rely on them. Healthy oceans can provide more fish in the water, more food on the plate, and more prosperity for fishing communities around the world. Even more importantly, the world stands to gain all three of these benefits at the same time. Our final research will be published this summer.

The research is based on a database of 4,373 fisheries worldwide, representing 77 percent of global catch. Previous studies aggregated trends of relatively few fisheries or represented the whole ocean as a single stock. As a result, this new research gives a much stronger understanding of the world's future with sustainable fishing.

Our preliminary results find that within 10 years we could increase profits in the fishing sector by 51 billion USD (or 115 percent) a year compared to today, if fisheries were managed sustainably. By 2050, profits could grow by 74 billion USD (or 168 percent) each year. The research also shows that even though fisheries are being fished hard today in most countries, global fish production could rise by 14 percent, providing an additional 12 million metric tons (MMT) of seafood. At the same time, biomass, or the amount of fish left in the water for conservation, would grow by 36 percent¹.

¹ The values from the model, which represents 77 percent of the world's catch, have been adjusted upward to illustrate the global potential.

A MORE SUSTAINABLE FUTURE





“Rapid economic gains from rights-based approaches can help offset many of the costs associated with the transition to sustainability.”

Photo credit:
Jason Houston

BENEFITS CAN ACCRUE QUICKLY

While many of the world’s fisheries have been on a steady downward trend for decades, the model indicates that fisheries can be made healthy again relatively quickly — even while fishing continues. For example, the typical fishery could recover in just nine years. What’s more, the percentage of fisheries in the world that are considered

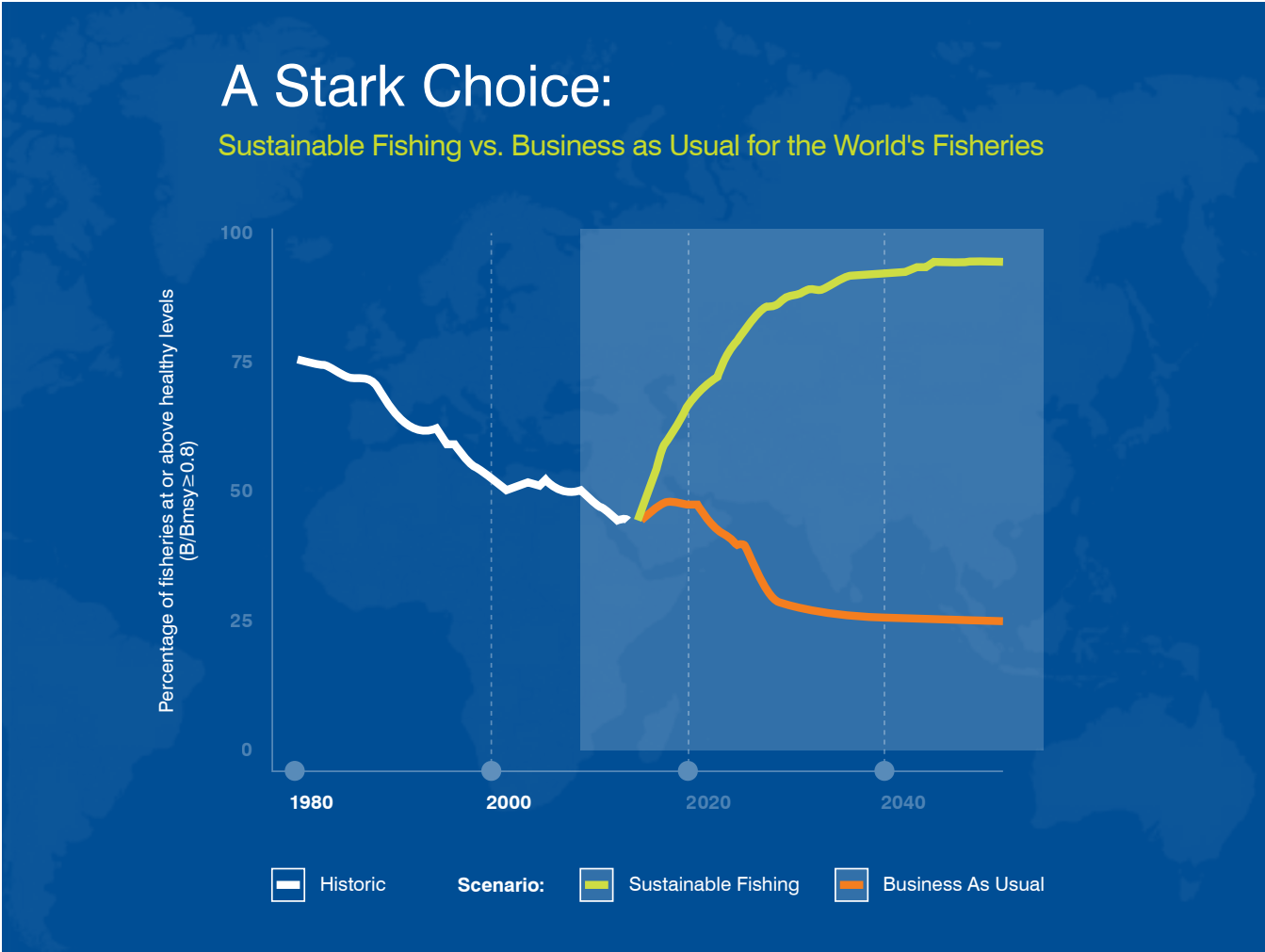
biologically healthy would grow from around 45 percent today to 79 percent within 10 years. The vast majority (around 98 percent) of fisheries would be near biologically healthy levels by mid-century, and in a strong position to supply food and a greater prosperity for a growing global population.

PATH TO PROSPERITY

Institutional reforms can provide a path to prosperity

Our results suggest that some of the greatest economic improvements in fisheries come from reforming institutions. For example, various approaches such as cooperatives, territorial use rights for fishing (TURFs), or individual transferable quotas could be used to improve the economic results under a range of harvest policies. Gains in

profits under these “rights-based” approaches can occur quickly following reform since they do not rely exclusively on the biological recovery of the fishery. Rapid economic gains from rights-based approaches can help offset many of the costs associated with the transition to sustainability.



BENEFIT FROM REFORM

Every fishing nation stands to benefit from reform

Every fishing nation we examined stands to benefit by fishing sustainably. And even though management costs associated with sustainable fishing may rise, the benefits that these nations can realize by reforming their fisheries always exceed the costs — and profits grow over time. Practical experience demonstrates this to be true in countries like Australia, Belize, Chile,

Denmark, Namibia, and the United States, where stakeholders are reversing overfishing, reviving coastal communities, and bringing the oceans back to life. By evaluating how much could be gained by fishing sustainably and the timing of recovery, the model can be a useful guide for investment that could help fisheries become sustainable.

CALL TO ACTION

This research is a call to action for governments, fishermen and investors

Within decades, a projected 9.5 billion increasingly affluent and urban people will compete for more food from maxed-out resources. If effective reforms to end overfishing were put in place today, the ocean could become a sustainable and highly productive source

of wild seafood that could help feed this burgeoning population. The study shows how we can make this vision a reality. We have a choice now to get wild fishing right and make fisheries a driving force of the blue economy for the long-term.



Photo credit:
Carlos Aguilera

For more information, please contact Amanda Leland at aleland@edf.org, or Chris Costello at costello@bren.ucsb.edu



“... the benefits that these nations can realize by reforming their fisheries always exceed the costs — and profits grow over time.”

Photo credit:
Carlos Aguilera