

Closing Address

- **TRAVIS LARKIN, THE SEAFOOD EXCHANGE**



Travis Larkin

Travis is president of The Seafood Exchange. He joined the company in 1997 from Darden Restaurants, where he handled shrimp procurement for Red Lobster, Olive Garden and Bahama Breeze. He has a lot of experience with production and procurement in Latin America and Asia as well as product development and marketing in U.S. retail and foodservice. Along with George Chamberlain, Travis is the only person to attend every GOAL conference since its inception in 2001.

PRESIDENT
SEAFOOD
EXCHANGE

Thank you
to our
hosts in
Guayaquil!



GAA is proud to be here, reconnecting after 20 years.



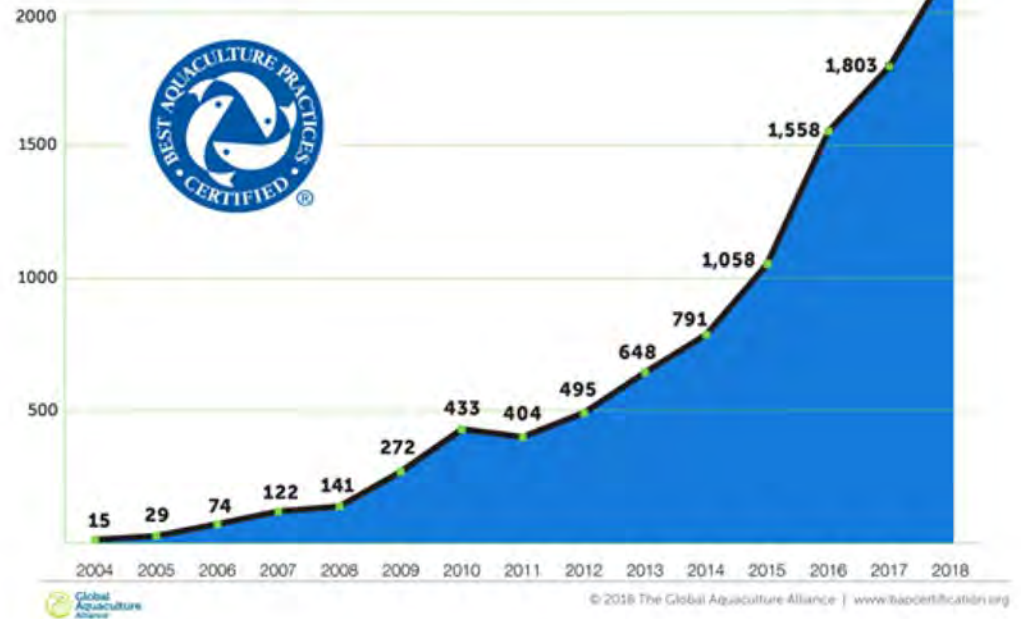
George Chamberlain and Sandro Cognitore signing a Letter of Intent to follow the principles of GAA.

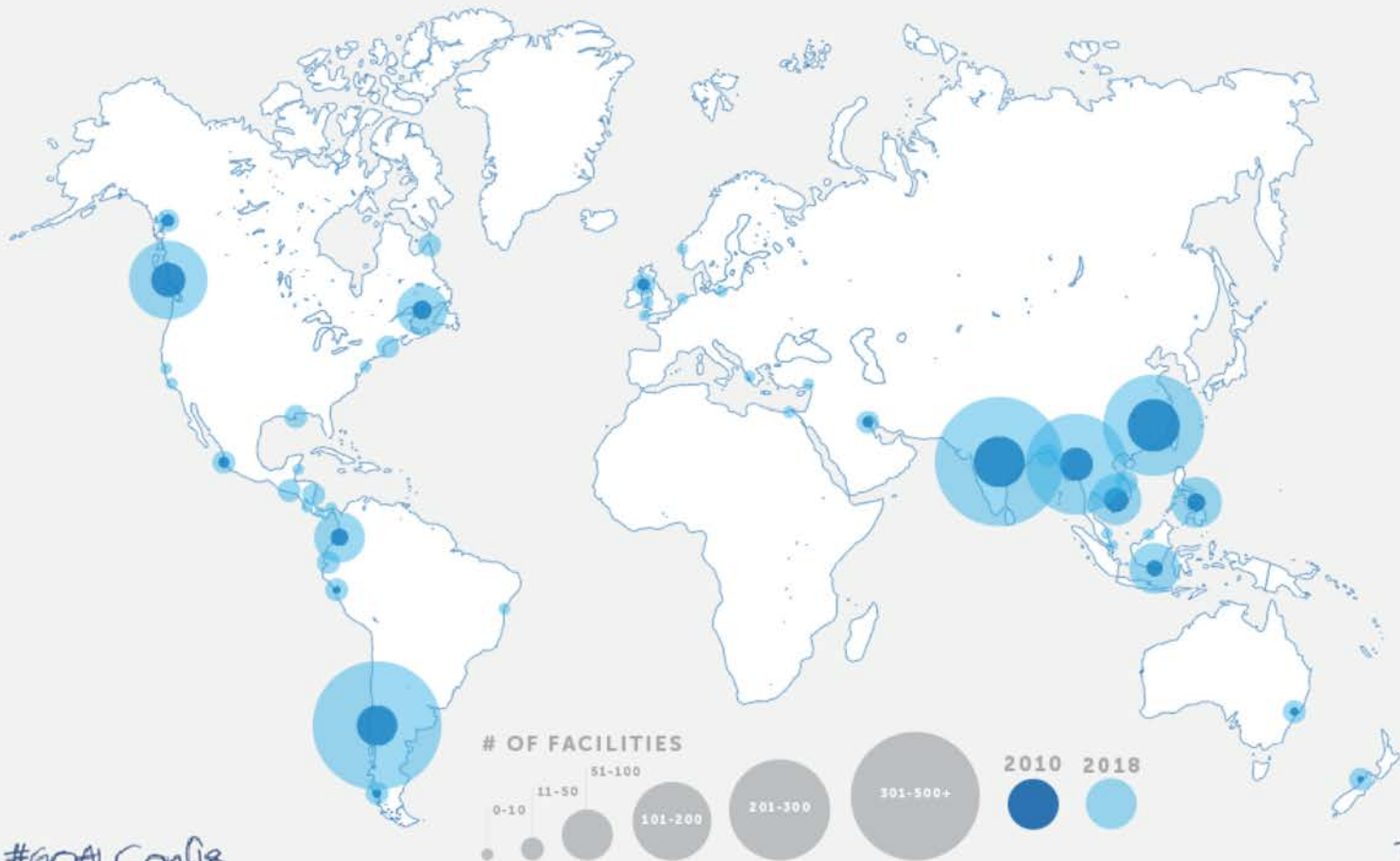


BAP: Making a difference—and fast

Number of BAP Certified Facilities

Includes Processing Plants, Farms, Hatcheries and Feed Mills (through August 2018)





BY THE NUMBERS

2010
— VS —
2018

34 COUNTRIES WITH
BAP-CERTIFIED
FACILITIES

27 BAP ENDORSERS IN
THE SCT PROGRAM

29.4%
GROWTH IN FACILITIES
FROM 2017 - 2018

1.9 MILLION
METRIC TONS
OF SEAFOOD FROM
BAP-CERTIFIED FACILITIES

#GOALConf18

Power of Collaboration

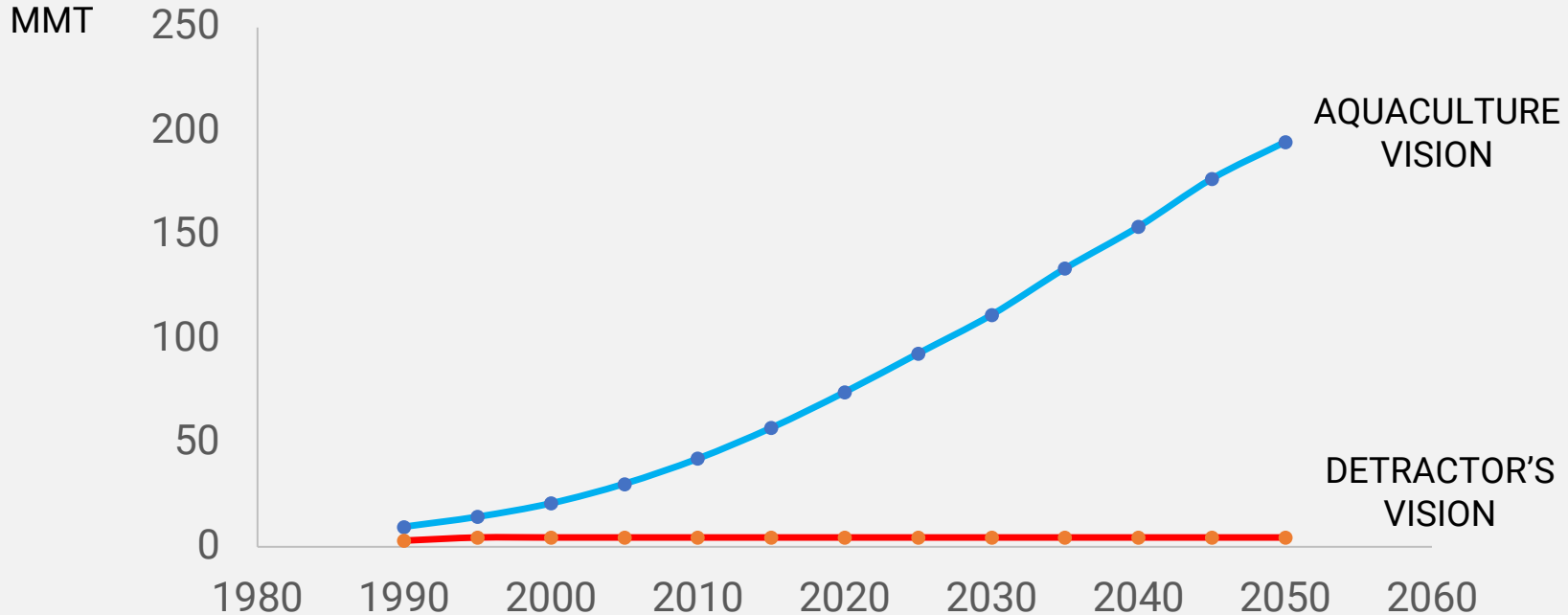
Challenges for Aquaculture

- Pre-competitive collaboration
- Increasing consumption
- Claiming our place in global nutrition



What is our mission?

To feed the world through responsible aquaculture

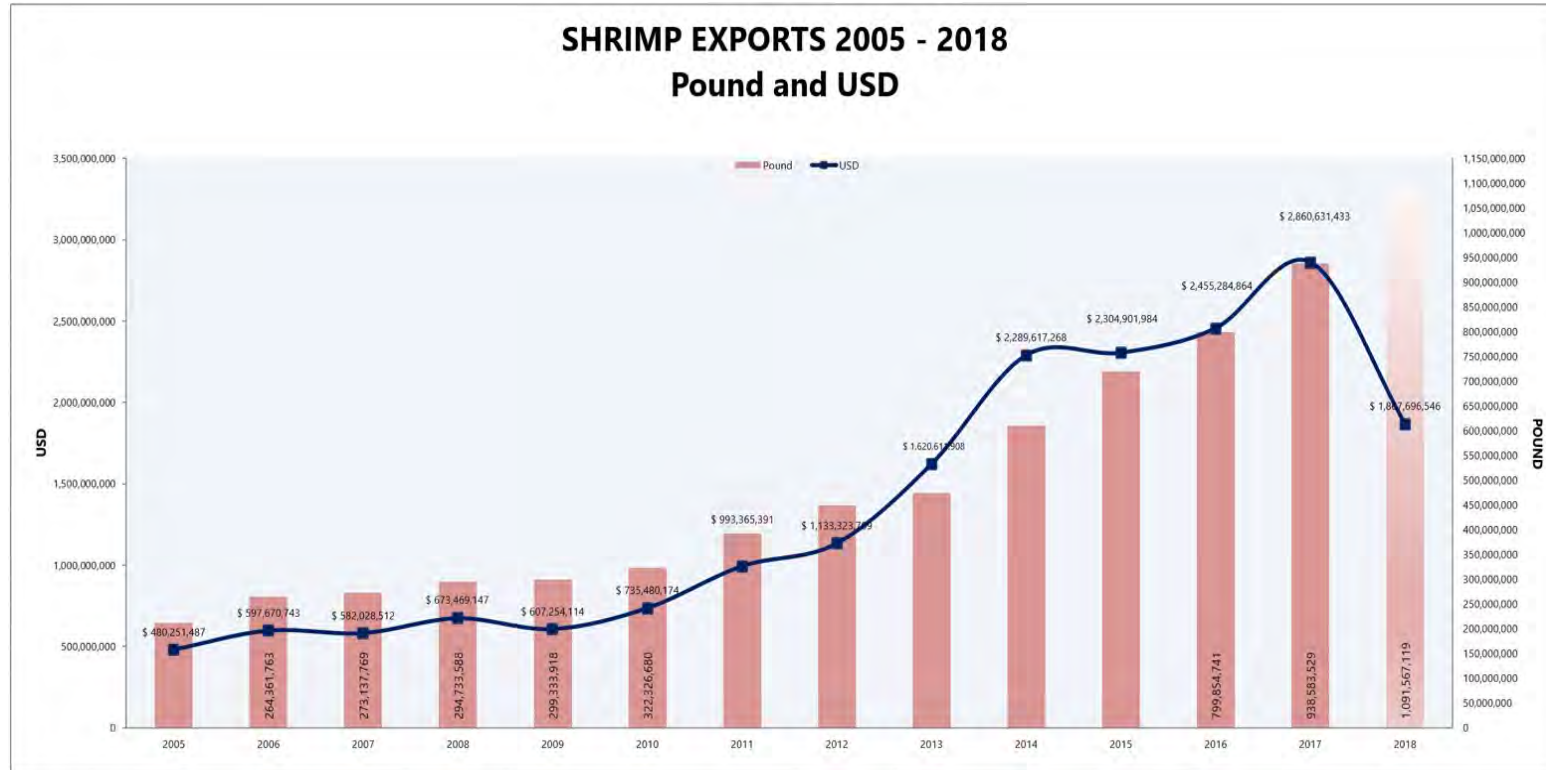


The Bad Old Days:

Issues we've dealt with previously:

- Mangroves
- Antidumping
- Antibiotic residues
- Disease outbreaks (white spot, ISA, EMS, EHP)
- Social issues

Production has tripled in 7 years



AQ1 SOUND FEEDING SYSTEM



Real Time Information

- SF200 Software**
- Acoustic Feeding Control
 - Aeration Control
 - Environmental Monitoring



INTERNET

Wifi
Access
Point

Control Office

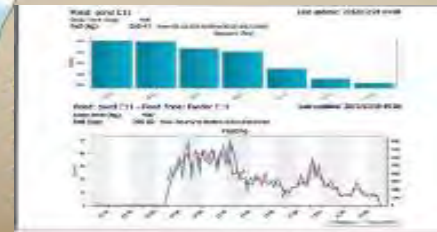
SF200
Controller

Feeder

Aeration
Control

Hydrophone

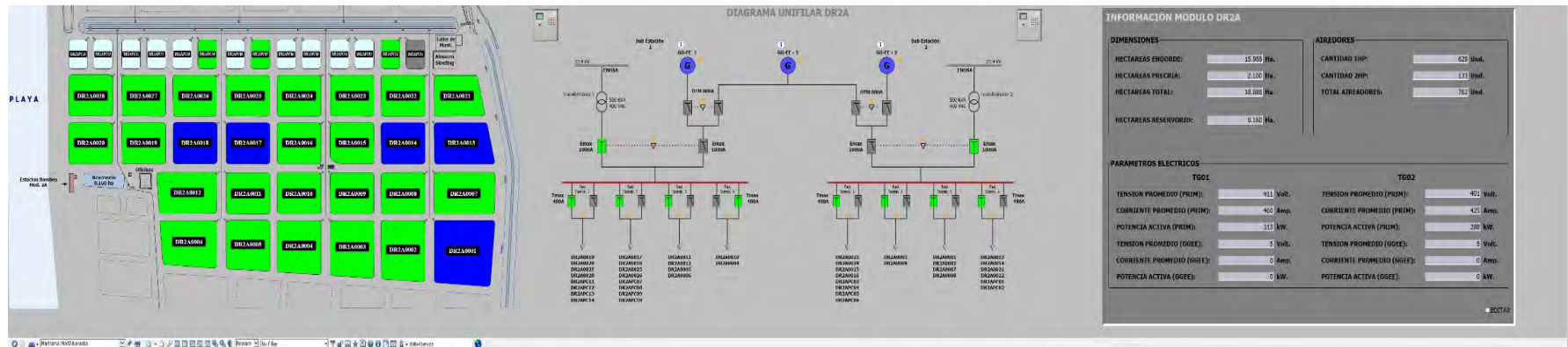
D.O./Temp
Probe



Marinasol in Peru: Converting traditional farms to intensive farming technology

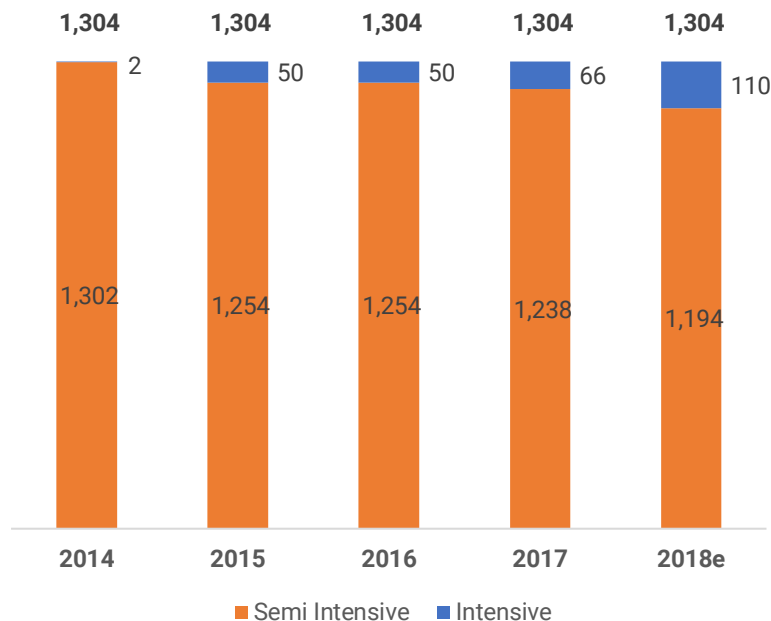


Progress through technology: Automation is a **MUST**.





Marinasol: Growth due to transition to intensive farming technology

Hectare evolution



Farming technology characteristics

	Semi-intensive	Intensive
		
Indicator		
Density	14 – 20 shrimp/m ²	300 shrimp/m ²
Yield	2 MT/Cycle	34 – 36 MT/Cycle
Cycles/year	2.5	3
Yield/year	5 MT	+100 MT

10x more investment for 20x more production

Recent Updates from Loc Trang (a.k.a. Shrimp Superman)



- Asian shrimp production in 2017-2018:
 - Increasing, albeit with dropping prices (second quarter)
- Major challenges:
 - EMS/AHPND, WSSV, EHP, White Feces Disease, SHIV?
 - Antibiotic residues



Superman's Take-Home Messages



1. Biosecurity is a MUST.
2. Keeping a healthy microbiota balance is a MUST.
3. Probiotics/bioremediation is a TOOL – Probiotics need a jump start.
4. Functional diets have big potential.
5. Antibiotics-free hatchery and growout protocol are both achievable.
6. Make shrimp farming more science-based, more predictable, simple, and more cost effective.





Biotechnology in the food chain

- Climate change and consumer demands are affecting food supply
- Biotechnology is now more **consumer-facing**, with crops, food, food ingredients, animal breeding, and animal feed
- But...it doesn't come with a clean slate (GMO backlash)

From our panel: Biotechnology is...

Harnessing the power of
biology to serve
mankind

A way of doing some
natural processes a little
better and faster—and
the end product is
similar or the same

NOT what was
happening in the 80s
and 90s

Biotechnology moving forward

- Needs sound policy decisions supporting innovation & risk-taking
- Requires a well-informed public
- Requires funding, protection, and regulation
- Risks and challenges need to be addressed through dialogues among stakeholders, including policy makers, experts, the public, and NGOs

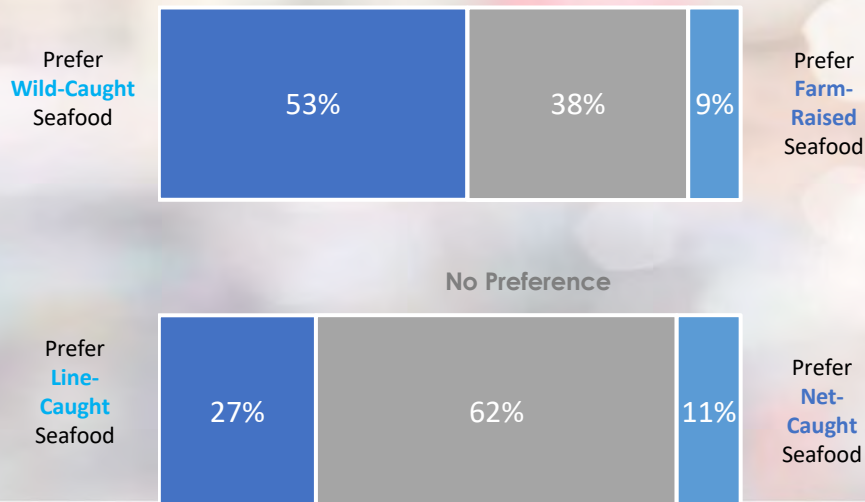
Biotech enhances all parts of our lives'
health, food and environment

Consumer concerns with animal-based protein

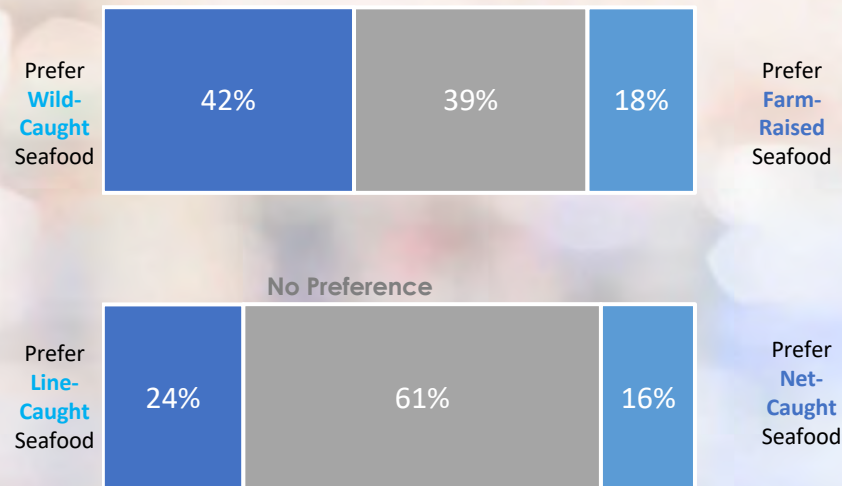
animal welfare is a driving force in changing what consumers eat

animals given antibiotics	34%
unnatural farming techniques	29%
animals not treated well	26%
too expensive	21%
lack of food safety	18%
artificial flavoring / coloring added	18%
not healthy	16%
environmental impact	15%
don't know how to cook it	6%
friends / family don't eat animal protein	5%

Consumer: preference for different seafood origins



Operator: preference for different seafood origins



However...notice the
two most menued
seafood species in
U.S. restaurants

	2018 PENETRATION	4-YEAR GROWTH
Shrimp	65%	-1%
Salmon	43%	+7%
Tuna	38%	-2%
Crab	34%	-5%
Scallop	26%	-12%
Calamari	24%	-6%
Clam	22%	-13%
Lobster	20%	-3%
Anchovy	18%	-6%
Mussel	16%	-10%
Cod	14%	+8%
Oyster	13%	+5%
Tilapia	11%	-15%
Squid	10%	-4%
Ahi Tuna	10%	+27%
Octopus	9%	+17%
White Fish	8%	+2%
Catfish	7%	-1%
Albacore Tuna	7%	-10%
Snapper	6%	-10%

Adopting humane practices can unlock the market for aquaculture

likelihood to purchase [humanely caught and harvested] fish / seafood

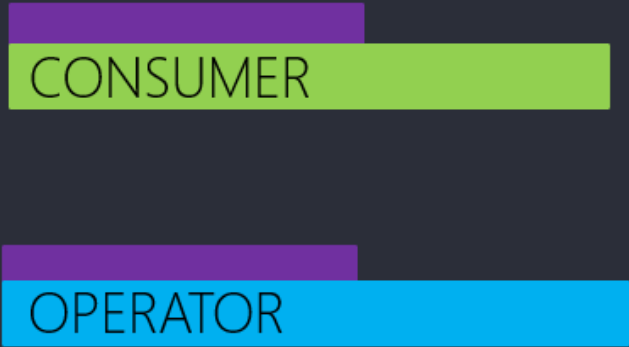
CONSUMER

49%

likelihood to purchase [humanely caught and harvested] fish / seafood for operation

OPERATOR

52%





REPUTATION AT RISK:

How Social Responsibility is Shaping Consumer Perception of Farmed Seafood

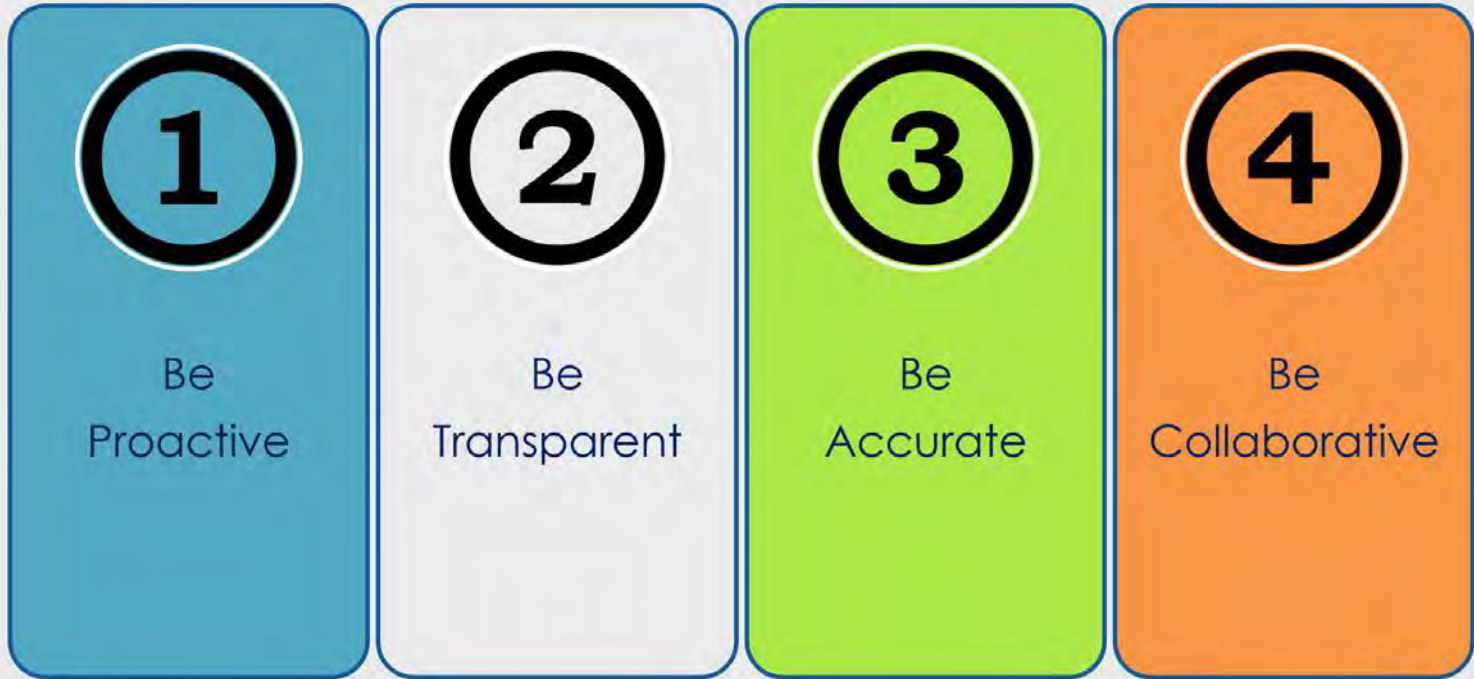
What is my company doing to achieve this?



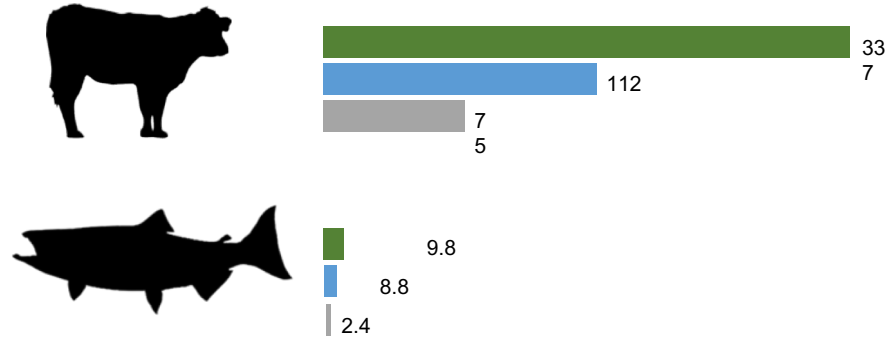
So what
about
messaging?



Four culture changes to increase confidence in aquaculture



Resource Use of Beef versus Aquaculture



Sources: WRI (2014) (mollusks, chicken, pork, and beef) and Pahlow et al. (2015)

GHG Emissions
(tonnes CO₂ emissions
per tonne edible protein)

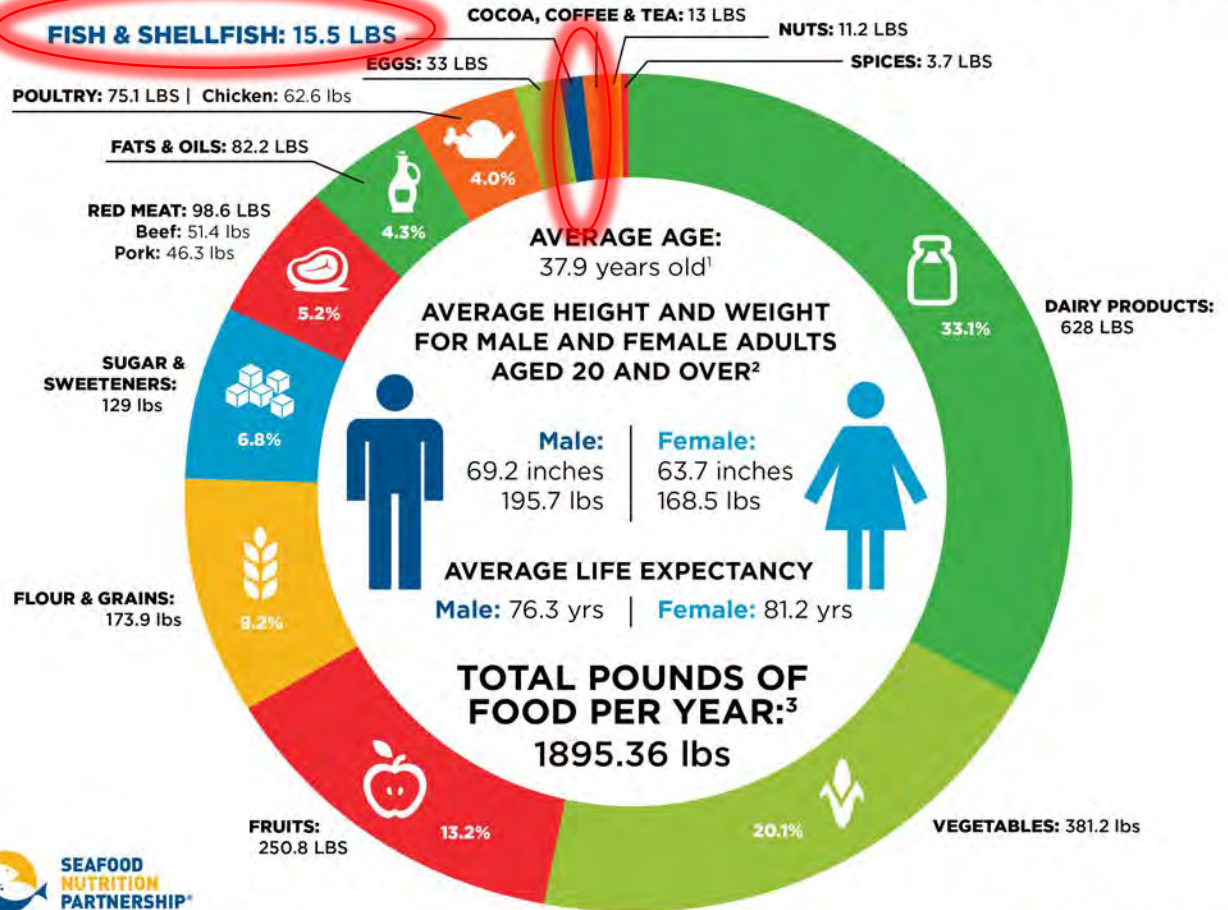
Land Use
(hectare per tonne
edible protein)

**Fresh Water
Use** (m³ per tonne
edible protein)

Credit: Aquarium of the Pacific

First: a look
at what
Americans
are eating

What We Eat In America THE AVERAGE AMERICAN



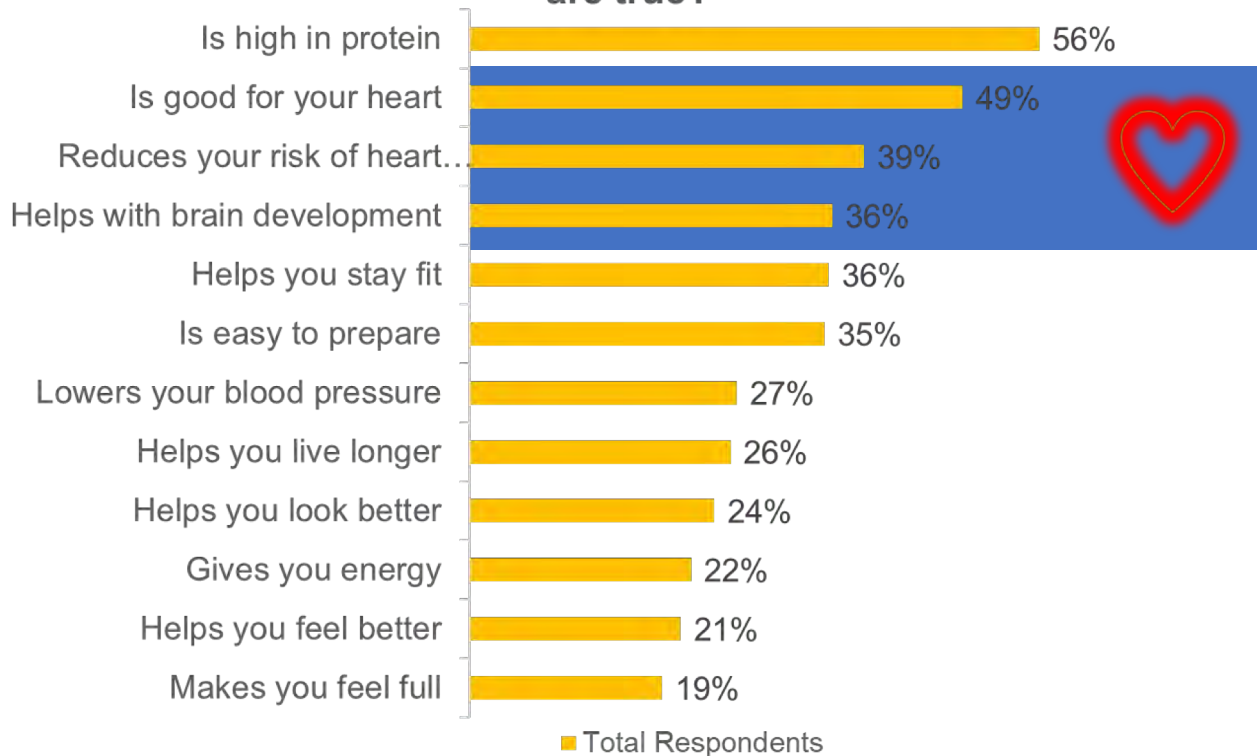
seafoodnutrition.org

Source: 1 census.gov • 2 cdc.gov • 3 ers.usda.gov 2015 data

#Seafood2xWk

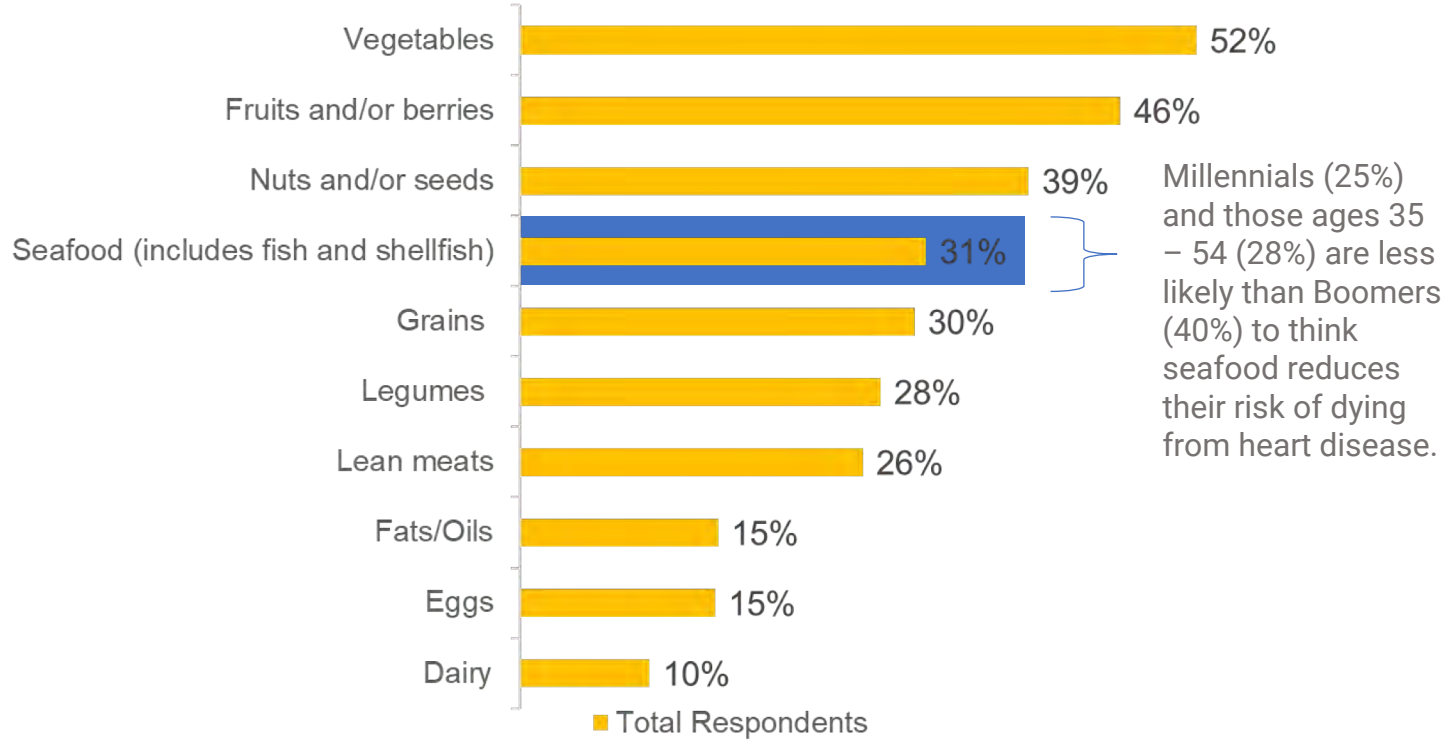
Americans are aware that seafood is high in protein, and secondarily the benefits for heart and brain health.

Which, if any, of the following statements about eating seafood (including fish and shellfish) do you believe are true?



Men (30%) and women (32%) say in near equal numbers that seafood has been proven to reduce the risk of dying from heart disease, though men (38%) are more likely to have added seafood to their diet in order to be healthier (vs 31% of women).

Which, if any, of the following food groups do you think have been proven to reduce the risk of dying from heart disease?



Messaging Opportunities

Reinforce the preventive and long-term health benefits of seafood, particularly among Millennials.

Reinforce seafood as a highly functional food that should be added to people's diet **at least twice a week**, since consumers tend to underestimate the extent of seafood's benefits.

"Superfoods" tend to come and go in mainstream media, but "**functional foods**" may reinforce the proven and lasting health benefits of eating more seafood.

Recent studies and media questioning the benefits of omega-3s are focused on supplements



Fish oil supplements for a healthy heart
'nonsense'

MEDICAL NEWS TODAY

Fish oil may not be as healthful as you think, study
finds



Harvard Health Publishing
HARVARD MEDICAL SCHOOL
Trusted advice for a healthier life

Fish oil: friend or foe?

The New York Times

ALTERNATIVE MEDICINE

Fish Oil Claims Not Supported by Research

So our message? Get your omega-3s from fish

Eat fish 2x week.

Near universal consensus by health professionals and government agencies is that eating fish 2x a week, with at least one being oily fish, is recommended as part of a healthy diet.

It's not just about heart health; DHA and EPA are an important part of a healthy diet.

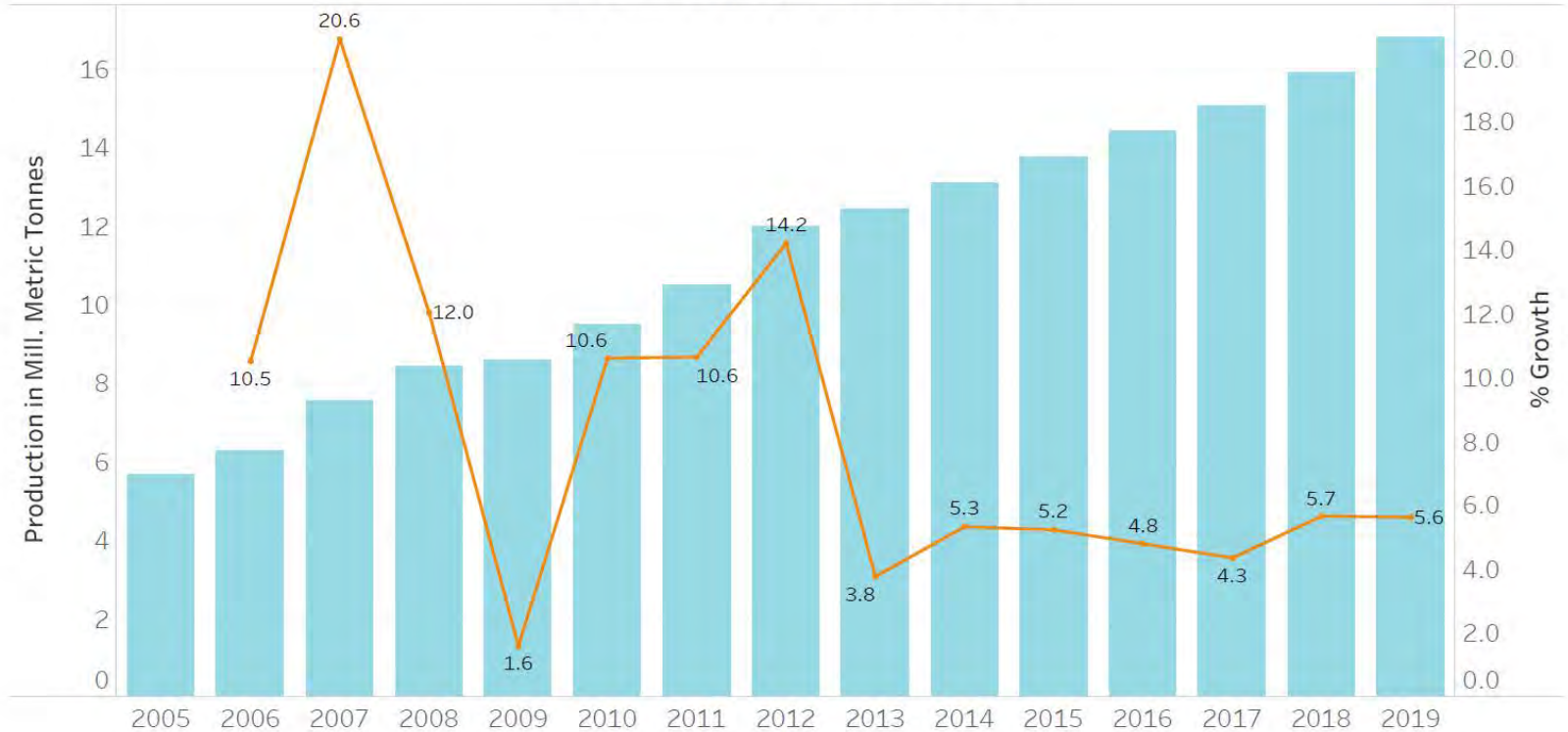
There are tremendous benefits of eating seafood and omega-3s for brain, eye, heart, and prenatal health.

Farmed fish is an important source of omega 3s.

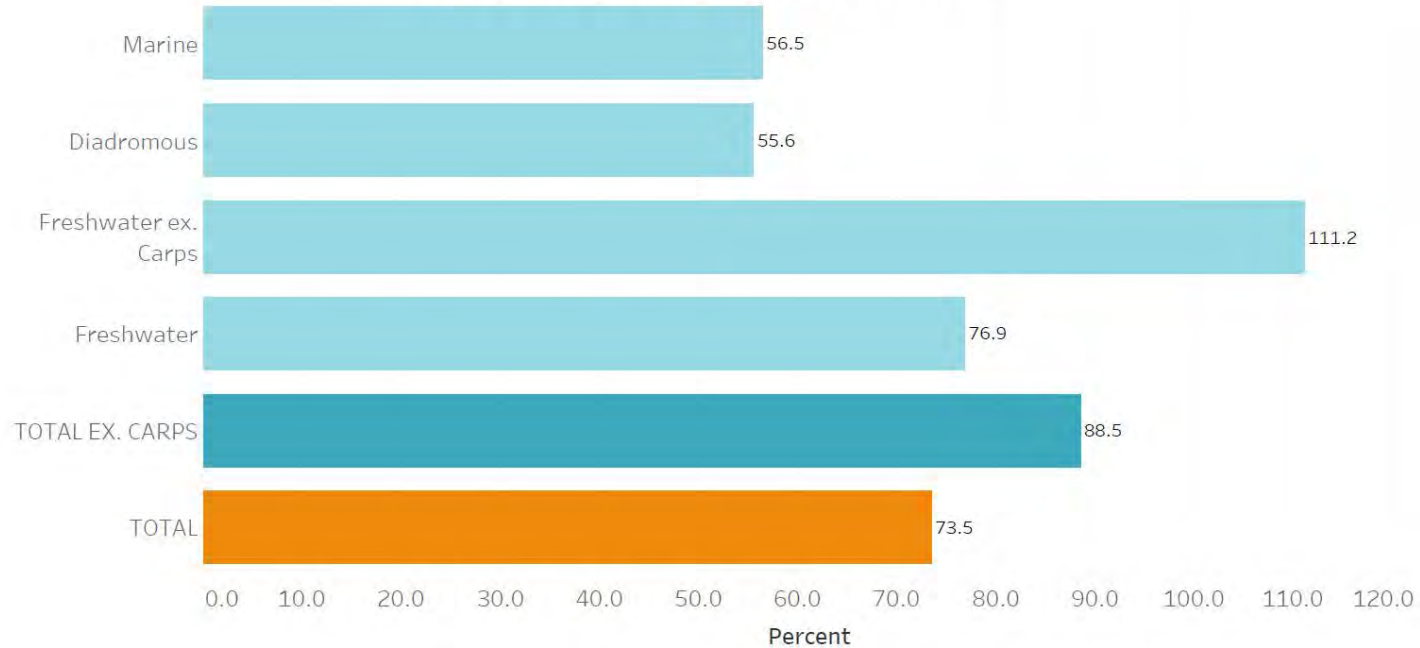
With a growing population and demand for seafood, wild fisheries simply cannot provide all of our seafood needs. Sustainably-raised seafood is meeting these demands and is one of the best sources of omega 3s.

OPPORTUNITY: Advocating the omega 3 and sustainability value proposition of farmed fish

Production of Surveyed Species Excl. Carps, 2005-2019



Did They Double in a Decade? Percentage Growth, 2008-2018

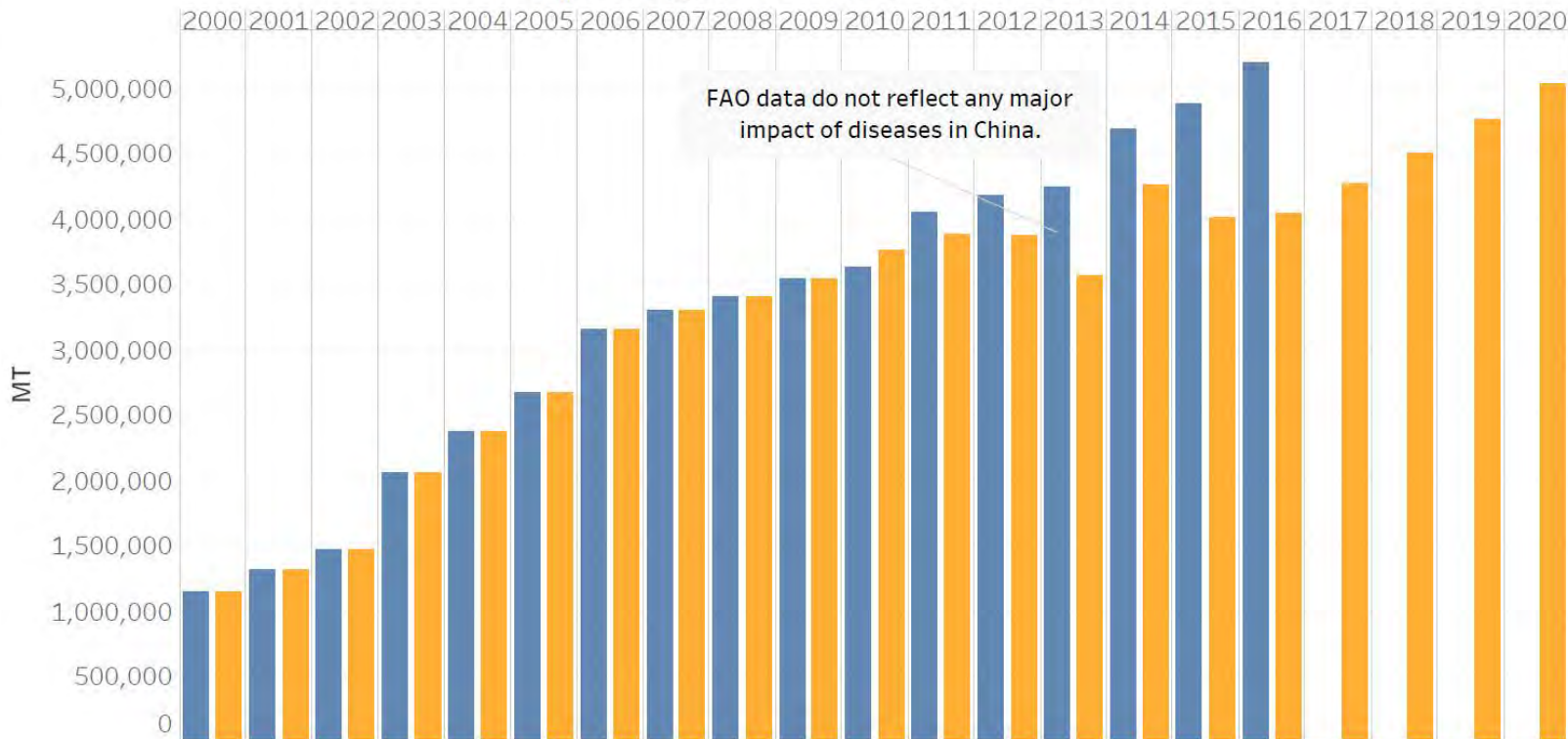


■ FAO Data
■ GOAL Data

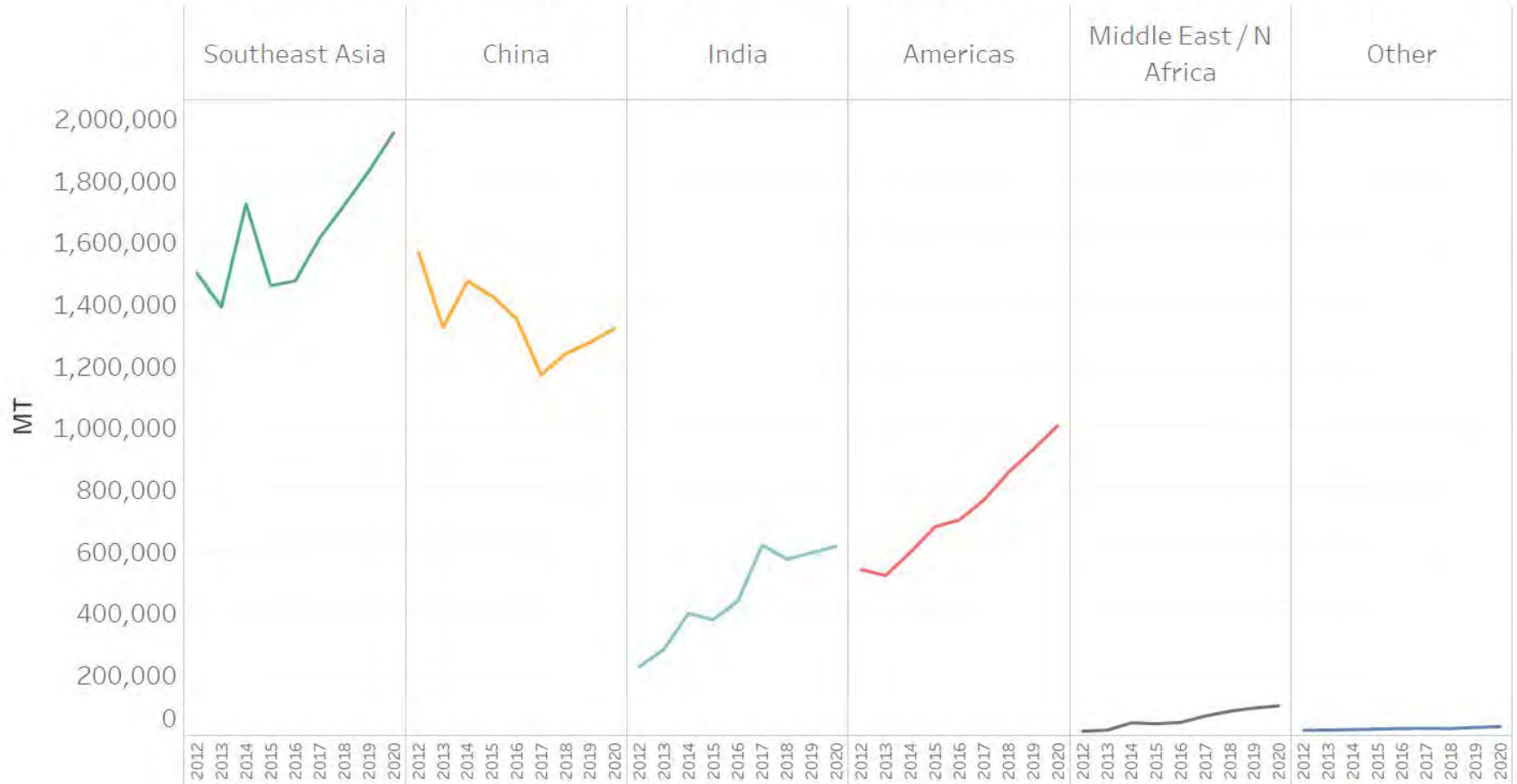
Sources: FAO
(2018) and GOAL
(2011-2018).

Species included
are *L. vannamei*, *P.*
monodon and
Other. *M.*
rosenbergii is
excluded.

World Shrimp Aquaculture Production Comparing FAO and GOAL Data



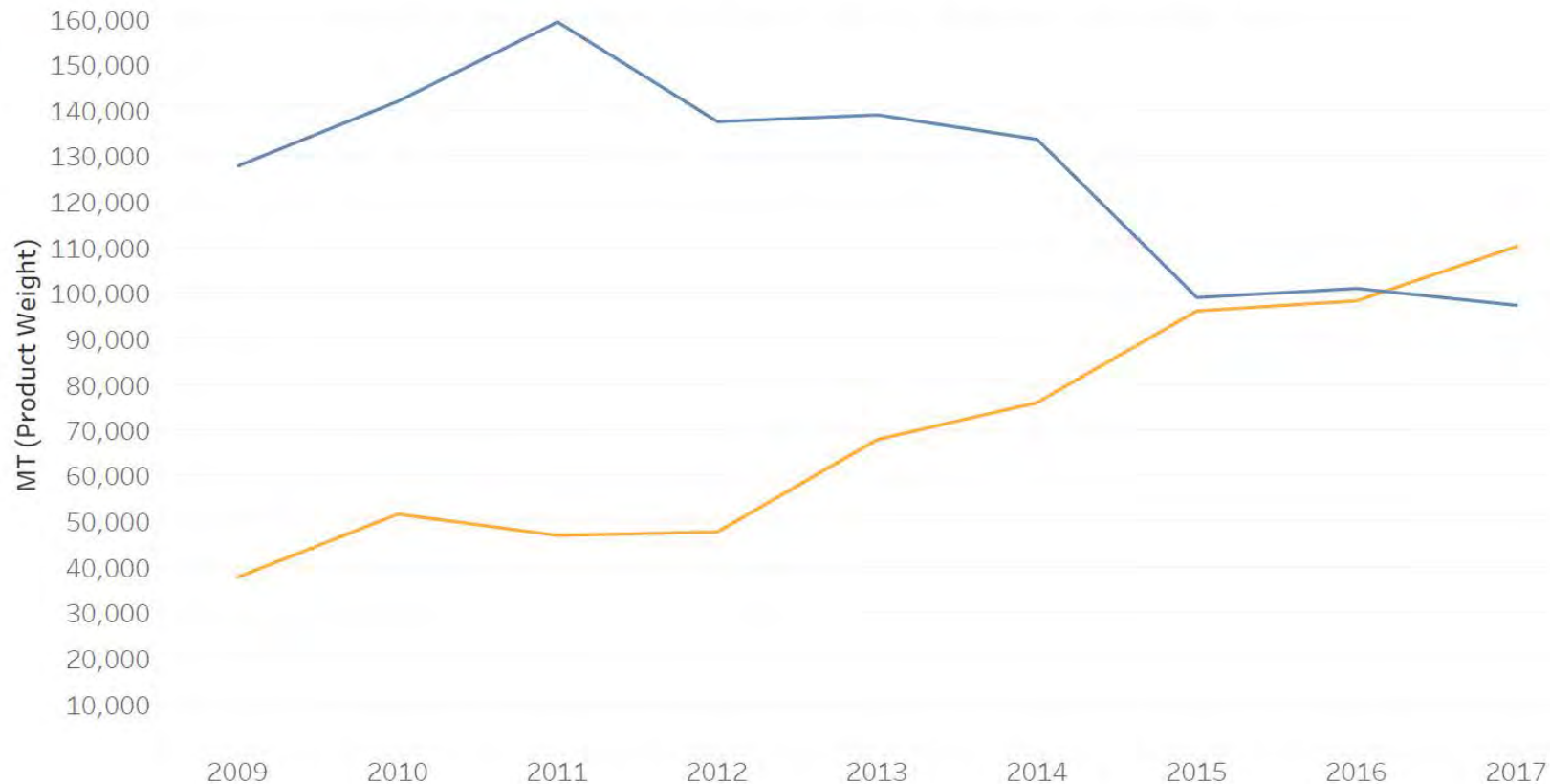
Shrimp Aquaculture by Major Producing Regions: 2012-2020



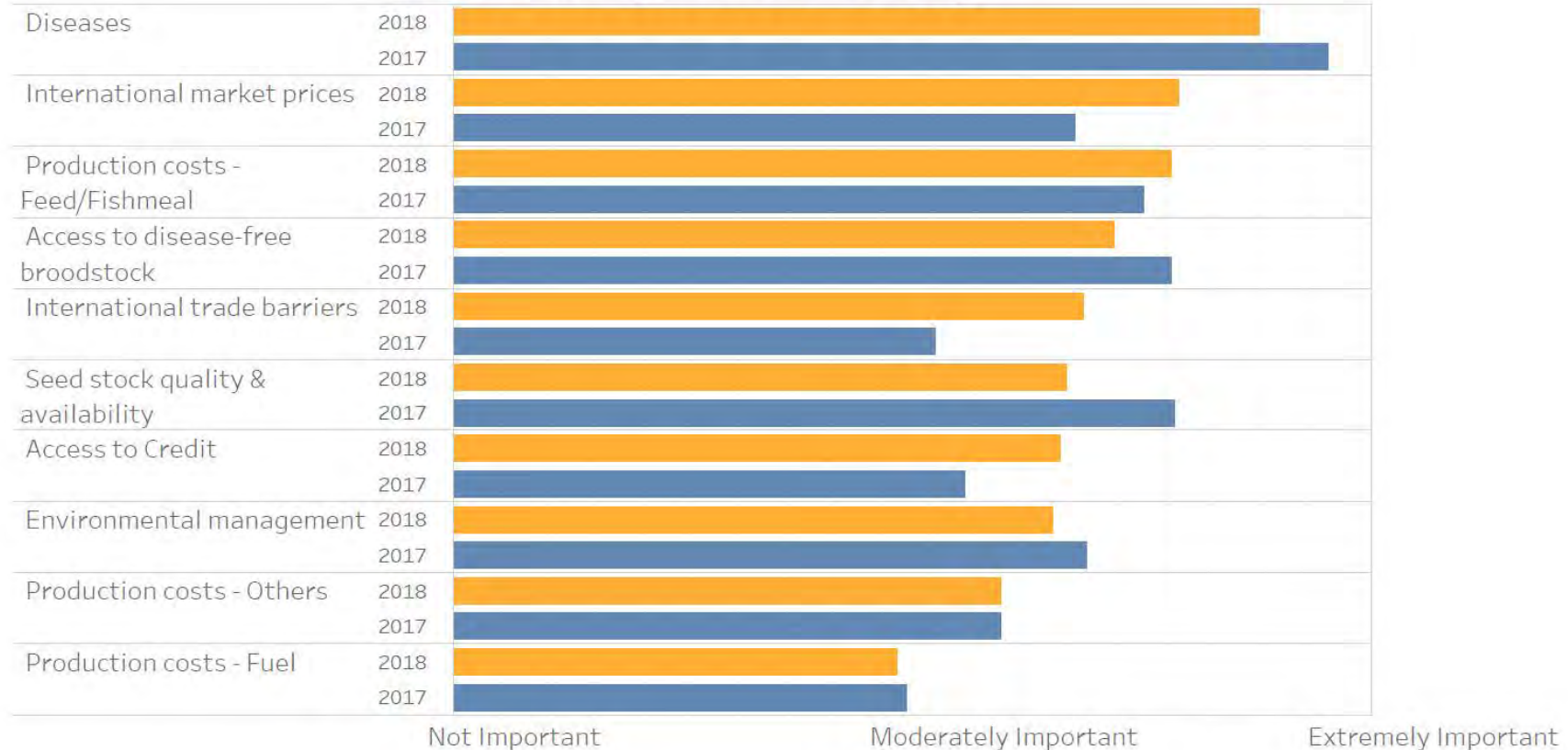
■ Exports
■ Imports

China - Exports and Imports of Frozen Shrimp

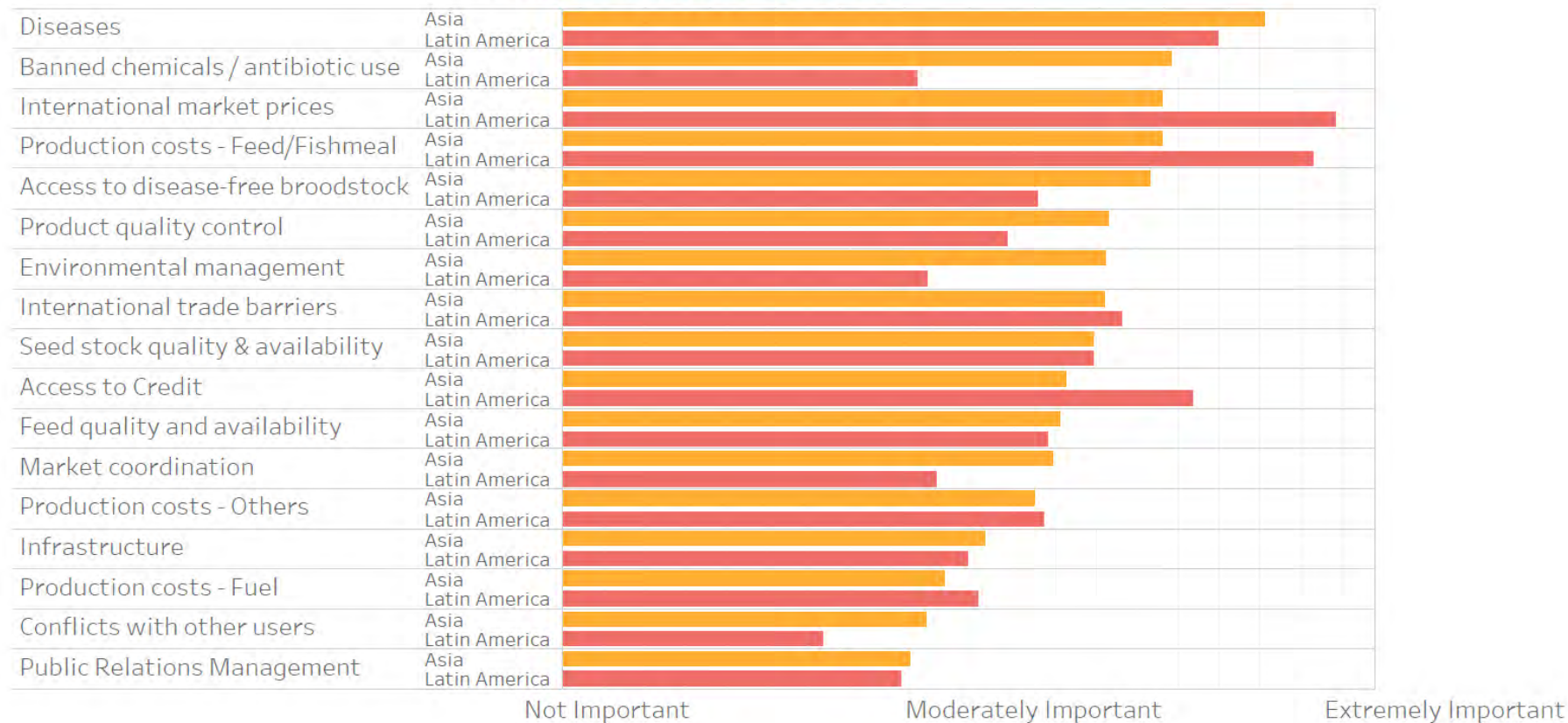
Source: WB/World
Integrated Trade
Solution Database
(2018)



Worldwide Top Issues & Challenges in Shrimp Aquaculture: 2018 Survey vs 2017 Survey



GOAL 2018 Survey: Top Issues & Challenges in Shrimp Aquaculture - Asia vs Latin America



Conclusions



Top 3 Constraints to Growth (Global):

- #1 Disease
- #2 International Price (last year - Seed Stock Quality)
- #3 Costs-Feed/Fishmeal (last year - Disease-free Broodstock)

Top 3 Constraints to Growth (Asia):

- #1 Disease
- #2 Antibiotic Use (last year - Seed Stock Quality)
- #3 International Prices & Costs Feed/Fishmeal (last year Disease-free Broodstock)

Top 3 Constraints to Growth (Latin America):

- #1 International Prices (last year Production Cost feed/fishmeal)
- #2 Production Cost feed/fishmeal (last year Disease)
- #3 Disease (last year Market Prices)



Conclusions

Global Shrimp Production Expectations

2017-18: **+5.5%**

2017- 2020: **+5.7% per year**

2020 expected to be **+18% over 2017**

Marketing: Is it time for a change?

- “If we take the negative issues off the table, seafood will sell itself.”
- “Let’s just produce as much as we can and the market will take it.”

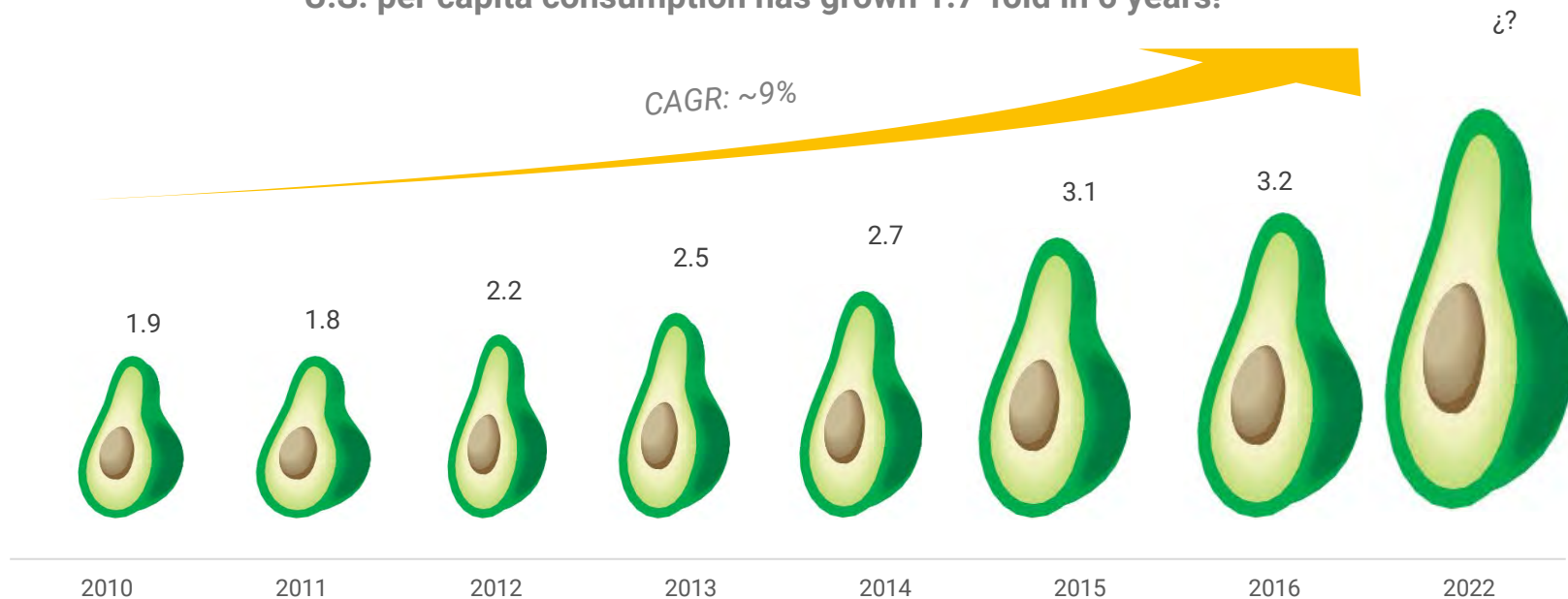
*** But is that enough? ***

- Hass avocados: From commodity to branded product through **data collection** and a **unified approach to marketing**

How can this happen? CONSUMPTION!

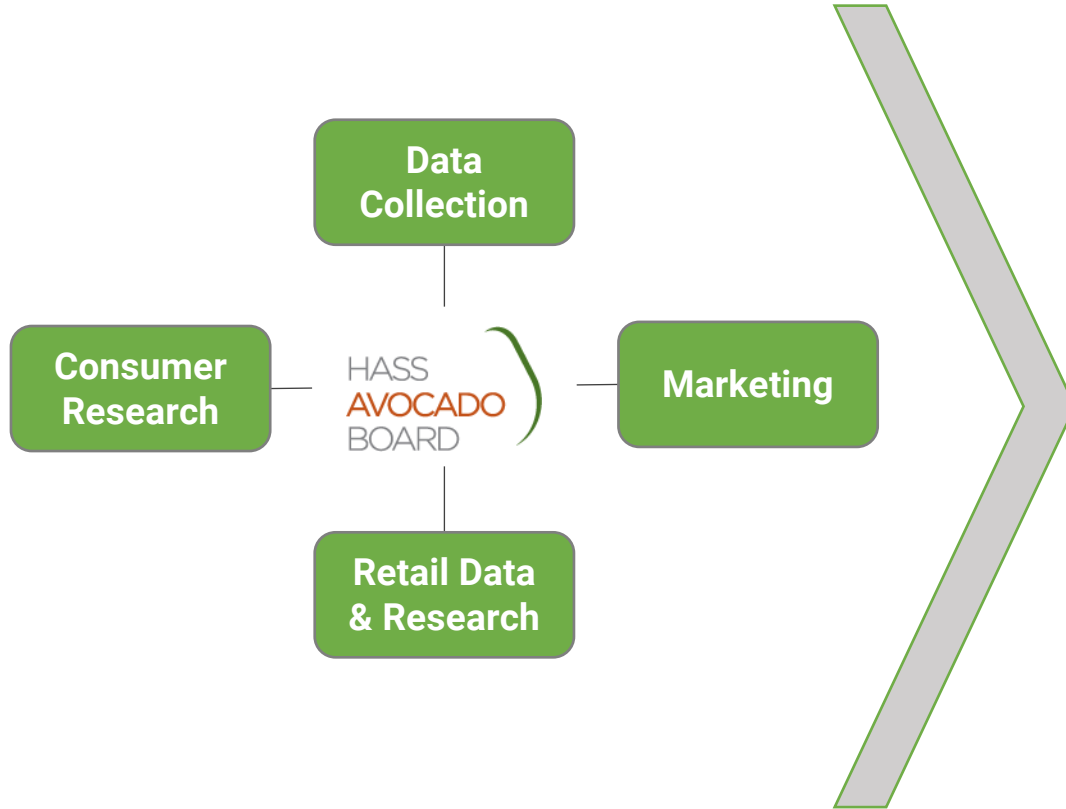
Driven by marketing and good data

U.S. per capita consumption has grown 1.7-fold in 6 years!



Source: USA Avocado consumption per capita Fruitrop, april 2017

The Hass Avocado Board



How does it work?

- Subject to the Hass Avocado Promotion Act and Order.
- Regulated under the Secretary of Agriculture.
- Members are Hass avocado producers and importers.
- An assessment of no more than 5 cents (US) per pound is charged in order to fund the board and is defined annually.
- Producers remit directly to the board and importers are charged by customs.

Unified marketing focused on healthfulness and trends

fresh **avocados**

LOVE
ONE TODAY™

naturally good fats + cholesterol free

REASON #31
to ♥ Fresh Avocados:

One-fifth of a medium avocado (1 oz.) contributes nearly 20 vitamins, minerals and phytonutrients, making it a good choice to help meet nutrient needs



Copyright © 2013. Visit AvocadoCentral.com for more reasons to love fresh avocados.

Hass Avocados.

HASS AVOCADOS A BIG FAVORITE FOR BIG GAME

In 2000
8 million pounds*

In 2013
79 million pounds*

That's an **888%** increase... or Over
158 MILLION AVOCADOS!

10 feet from the top of the goal post!

Enough to fill a football field end zone to end zone 30 feet high

95%
of avocados sold in the U.S. are HASS AVOCADOS

Is it because they're football shaped?

Big Game/Pro Football remain the top time for sports fans to enjoy avocados. Followed by college football.

Nearly 1.5 billion pounds of avocados were eaten in 2012. That's almost 3 billion avocados!

That's a lot of guacamole, avocado salads & avocado topped hamburgers

— Three of the top ways avocado loving Americans enjoy them on game day.

Visit AvocadoCentral.com for Big Game recipes and fun facts.

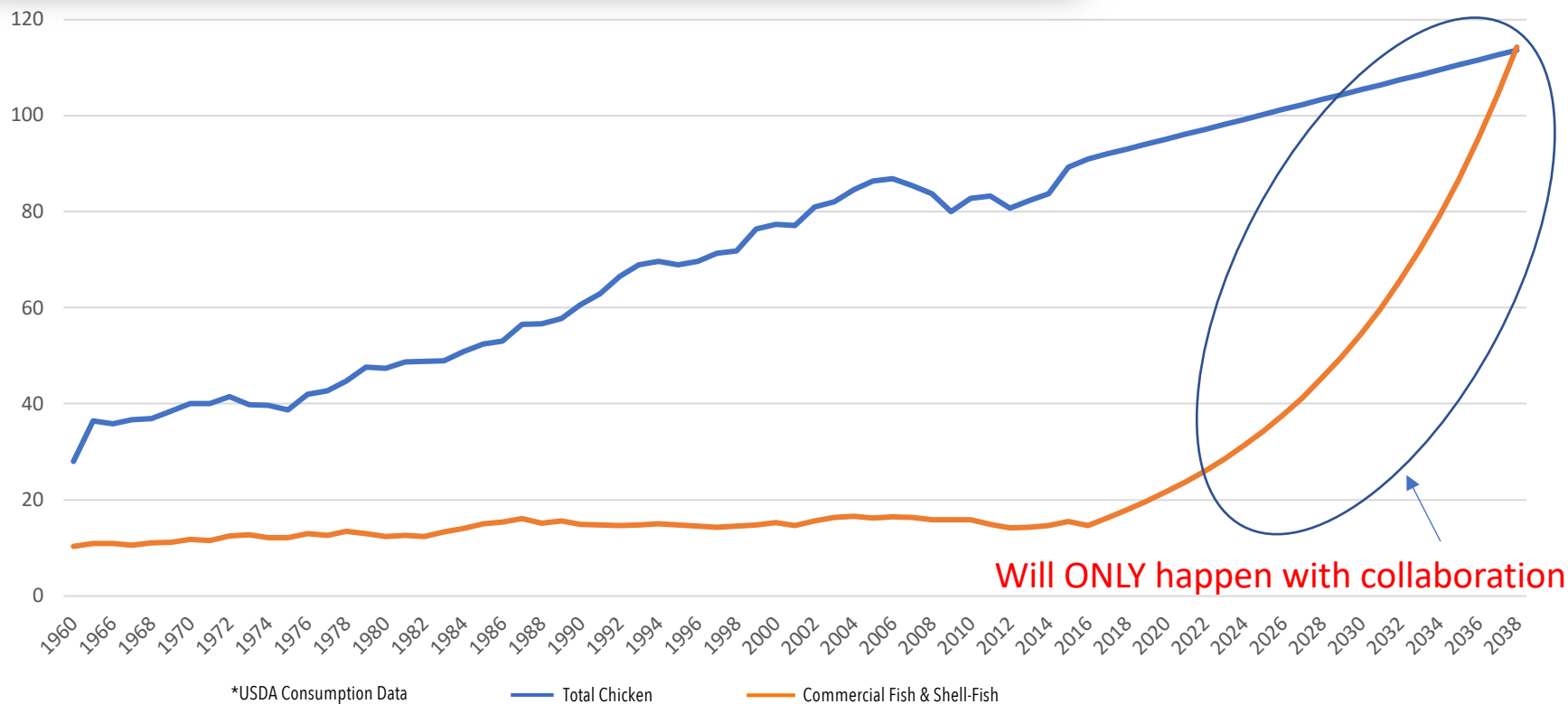
Hass Avocados.

© 2013 © Copyright Hass Avocado Board

What can we learn from the Kipster model of collaboration and branding?



1960-2038 Per Capita Consumption - Chicken vs. Seafood...WHY NOT?



A close-up photograph of two avocado halves, each filled with a mixture of cooked shrimp, diced green cucumber, and fresh green herbs. The avocados are served on a light-colored surface, and some small pieces of the filling are scattered nearby. The text is overlaid on the image, with the first line at the top left and the second line in the center, separated by a vertical line.

The Power of Collaboration:

So is it time to come
together for a new
marketing
approach?

To the entire
crew at
GAA...

Thank you!



See you in India!

