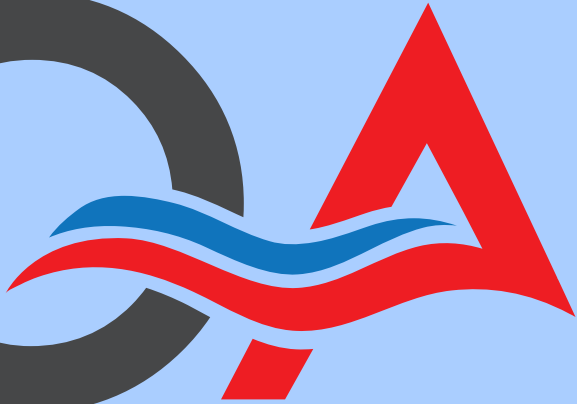


GOAL



VANCOUVER, CANADA 2015



Shrimp Production Review

James L. Anderson

Director, Institute for Sustainable Food Systems
University of Florida

Diego Valderrama

University of Florida

Darryl Jory

Global Aquaculture Alliance



James Anderson

Institute for Sustainable Food Systems
University of Florida

- Dr. James Anderson is director of the Institute for Sustainable Food Systems and a Professor of Food and Resource Economics at the University of Florida.
- Previously, he led the World Bank's Global Program on Fisheries and Aquaculture. And earlier he chaired the Department of Environmental and Natural Resource Economics at the University of Rhode Island.
- Anderson was also the editor of Marine Resource Economics from 1999 through 2011.
- His recent work has focused on the role of seafood in food security, constraints to aquaculture development and seafood market analysis.



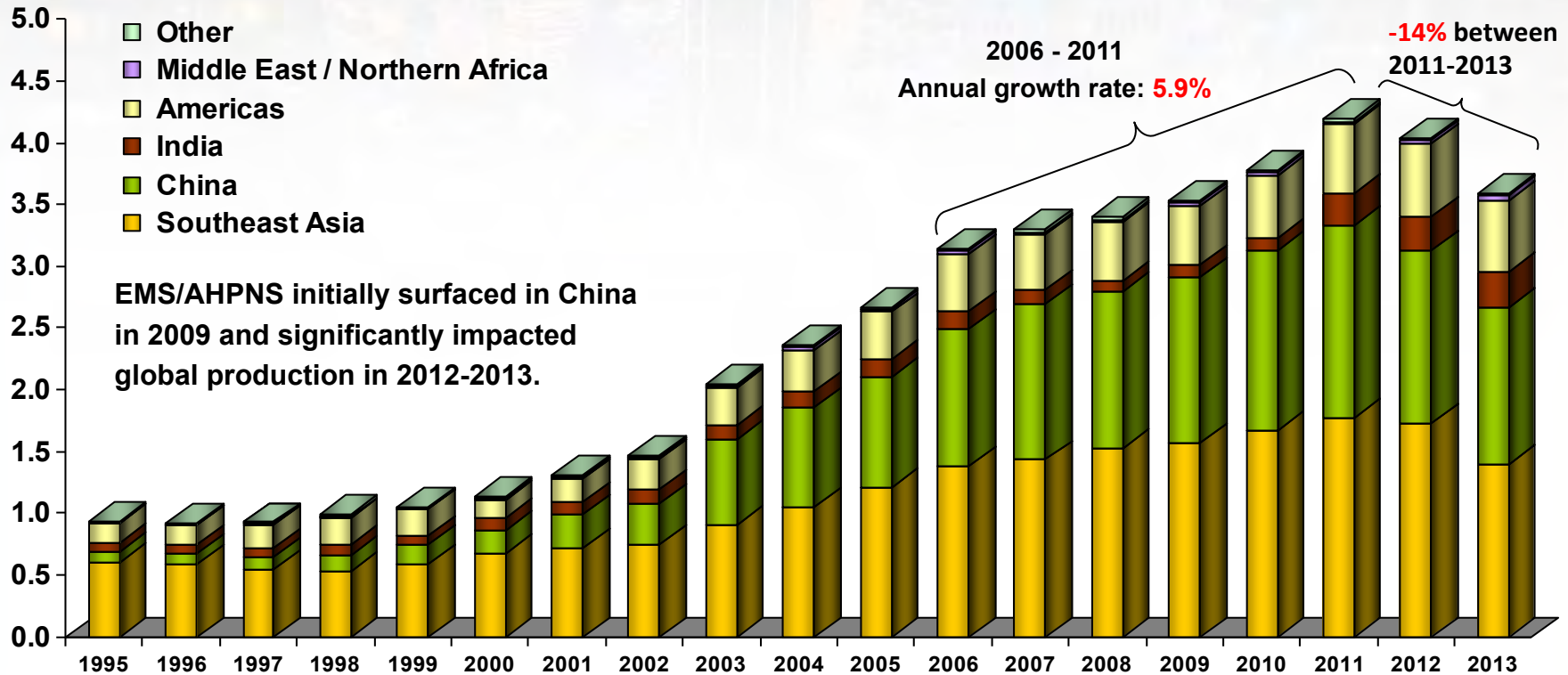
GOAL 2015

Shrimp Production Survey

Issues & Challenges

Shrimp Aquaculture Production by World Region: 1995 - 2013

Million MT



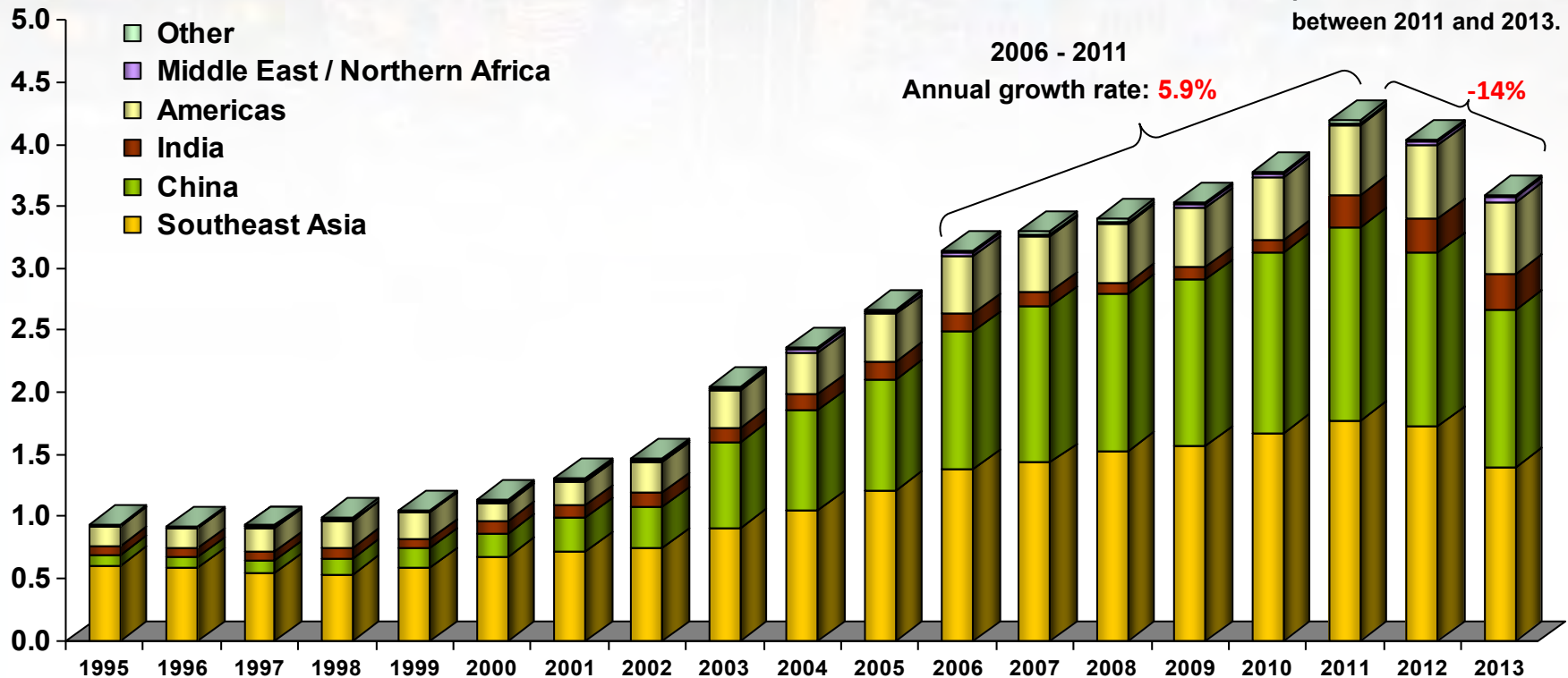
Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013.

Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.

M. rosenbergii is not included.

Shrimp Aquaculture Production by World Region: 1995 - 2013

Million MT



Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013.

Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.

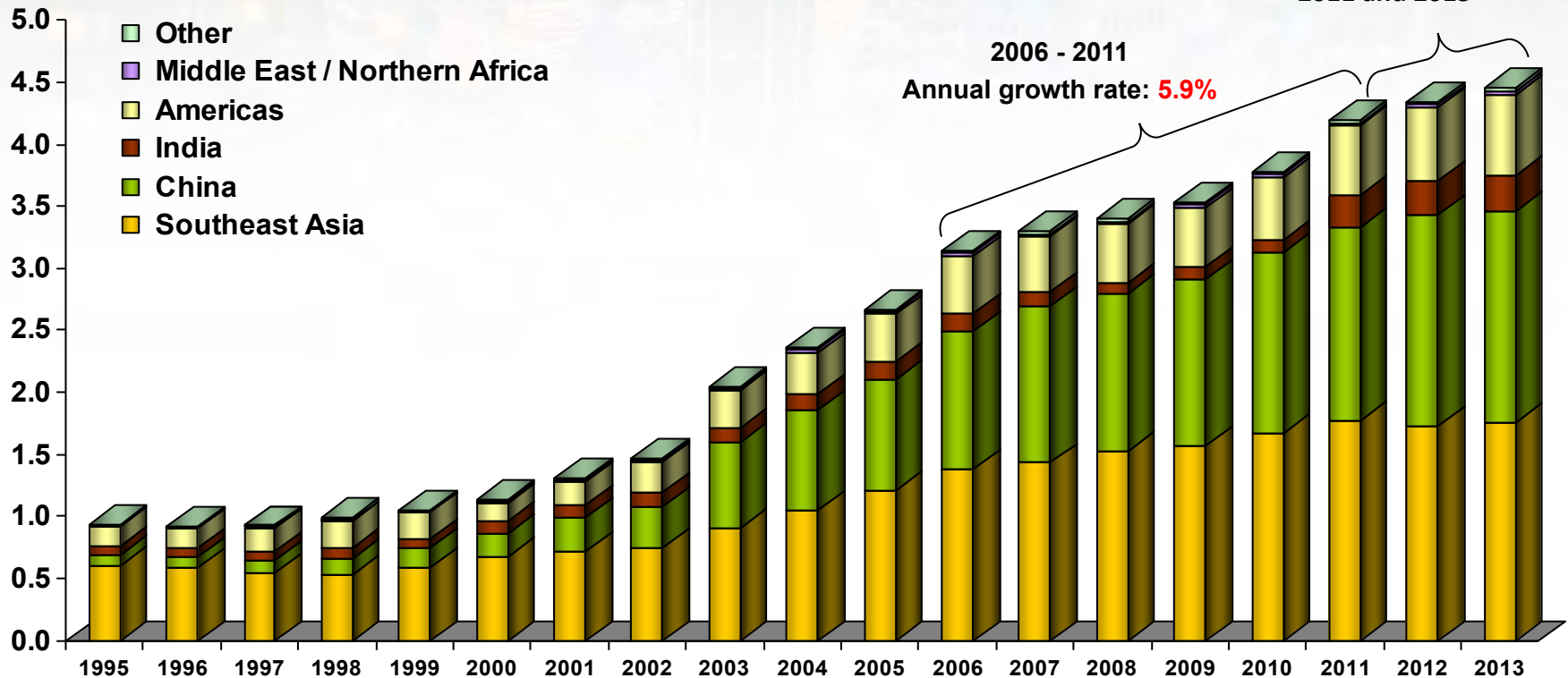
M. rosenbergii is not included.

Shrimp Aquaculture Production by World Region: 1995 – 2013

FAO Statistics

Based on FAO
Production went up
by **6.3%** between
2011 and 2013

Million MT

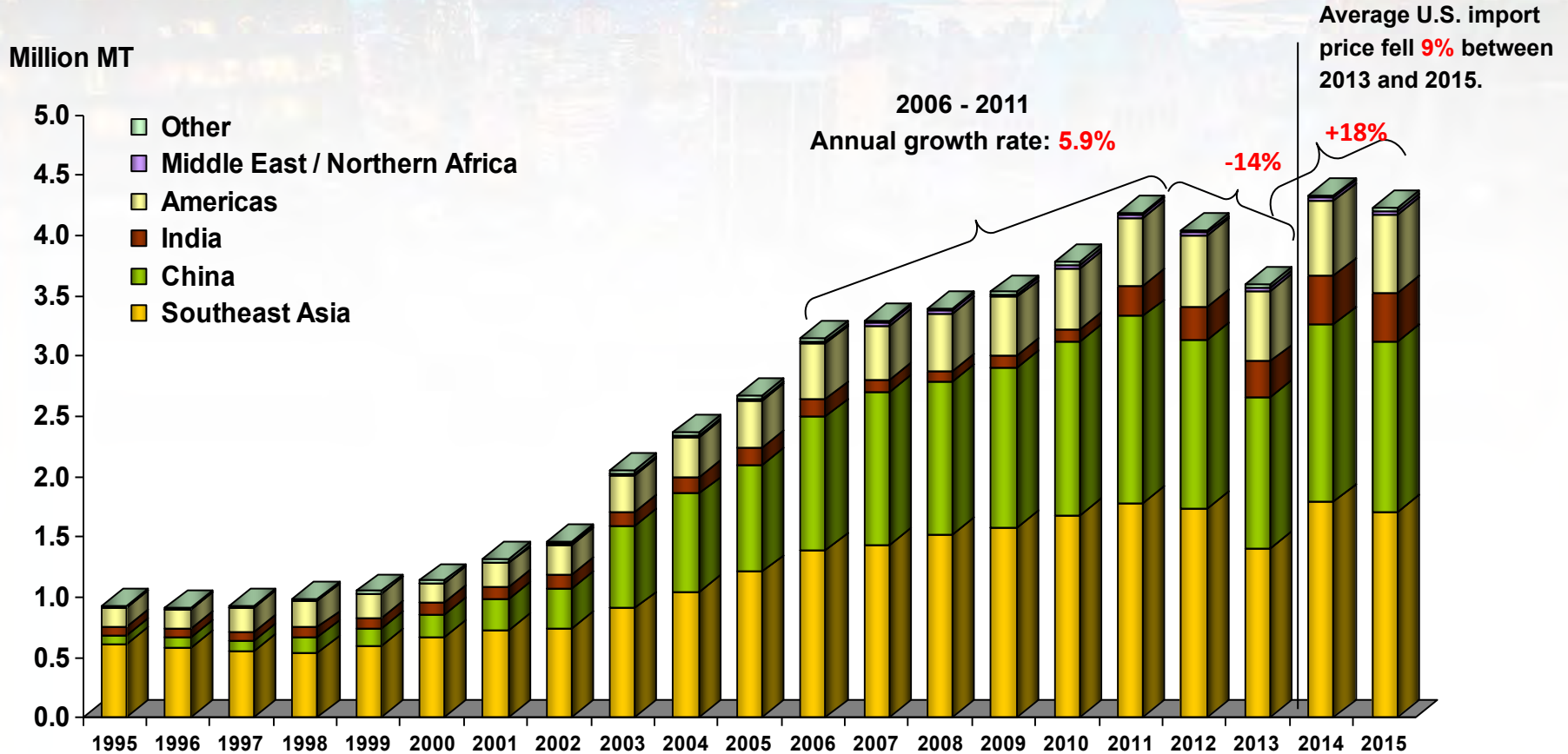


Sources: FAO (2015) for 1995-2013.

Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.

M. rosenbergii is not included.

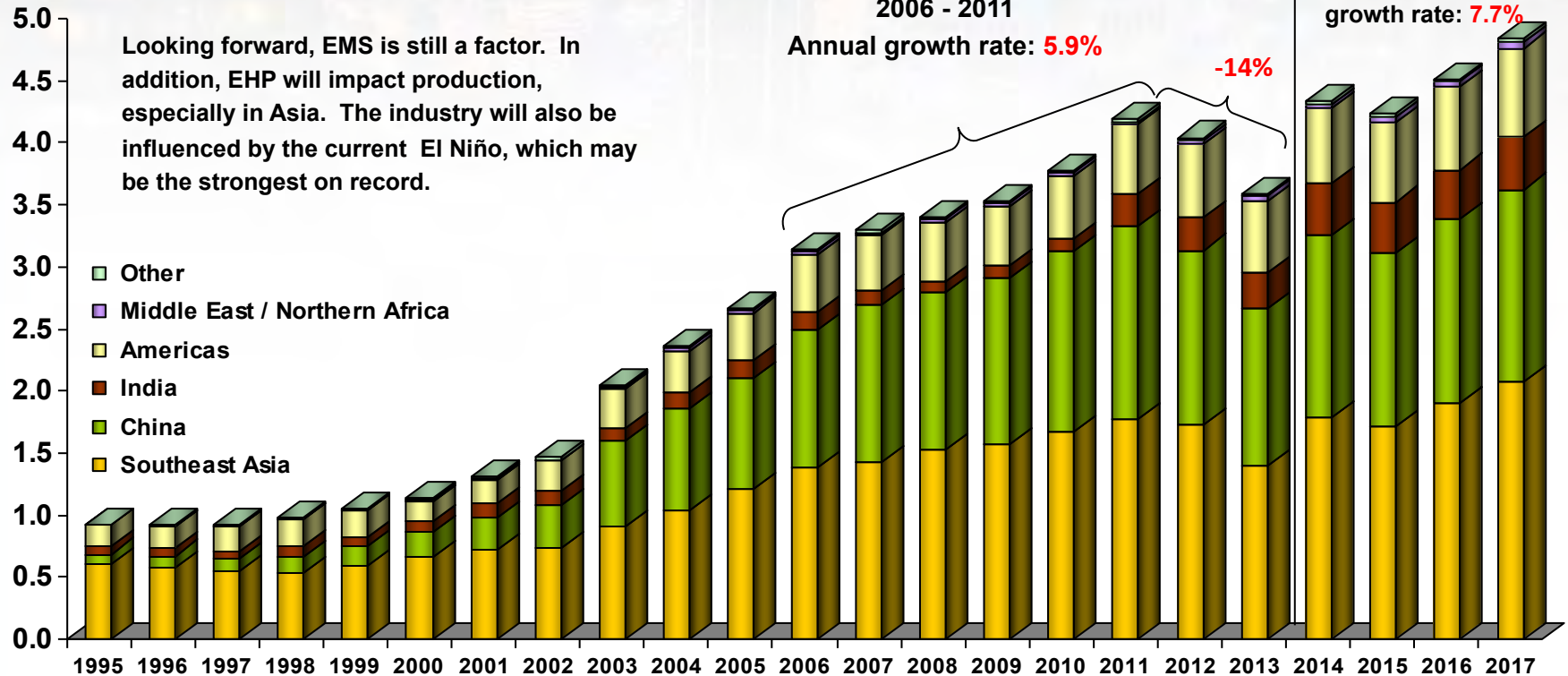
Shrimp Aquaculture Production by World Region: 1995 - 2017



Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013; GOAL (2015) for 2014-2017.
 Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.
M. rosenbergii is not included.

Shrimp Aquaculture Production by World Region: 1995 - 2017

Million MT



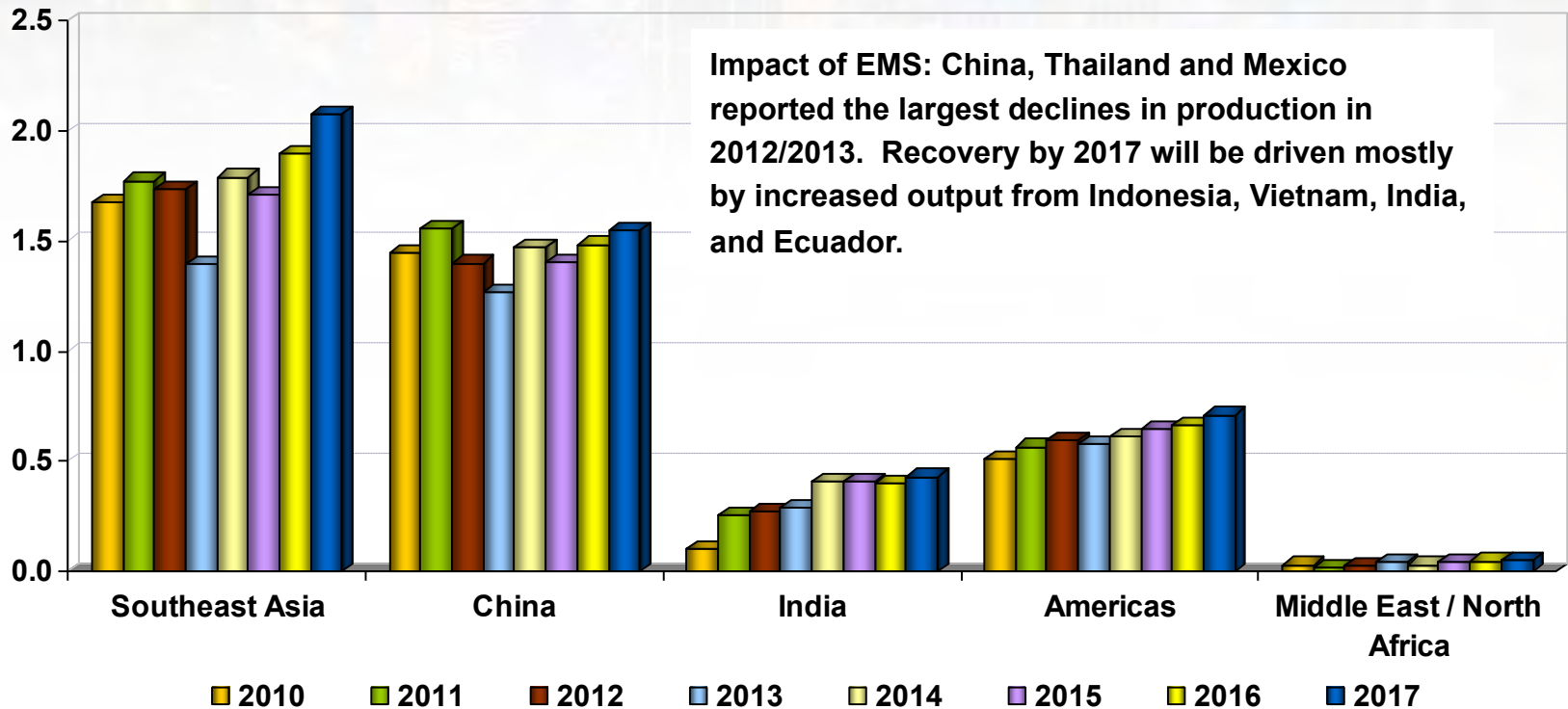
Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013; GOAL (2015) for 2014-2017.

Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.

M. rosenbergii is not included.

Shrimp Aquaculture by Major Producing Regions: 2010 – 2017

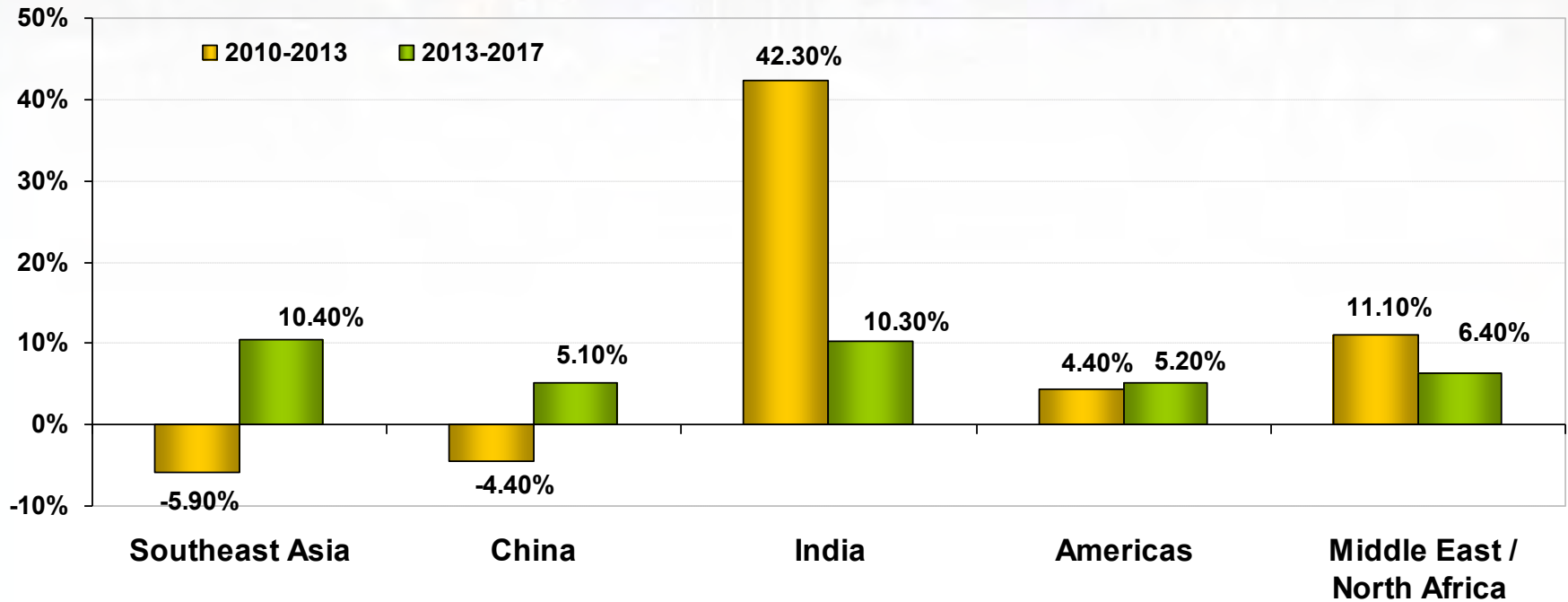
Million MT



Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013; GOAL (2015) for 2014-2017. Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan. *M. rosenbergii* is not included.

Shrimp Aquaculture by Major Producing Regions: 2010-2013 vs. 2013-2017

Average Annual Growth
Rate



Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013; GOAL (2015) for 2014-2017.

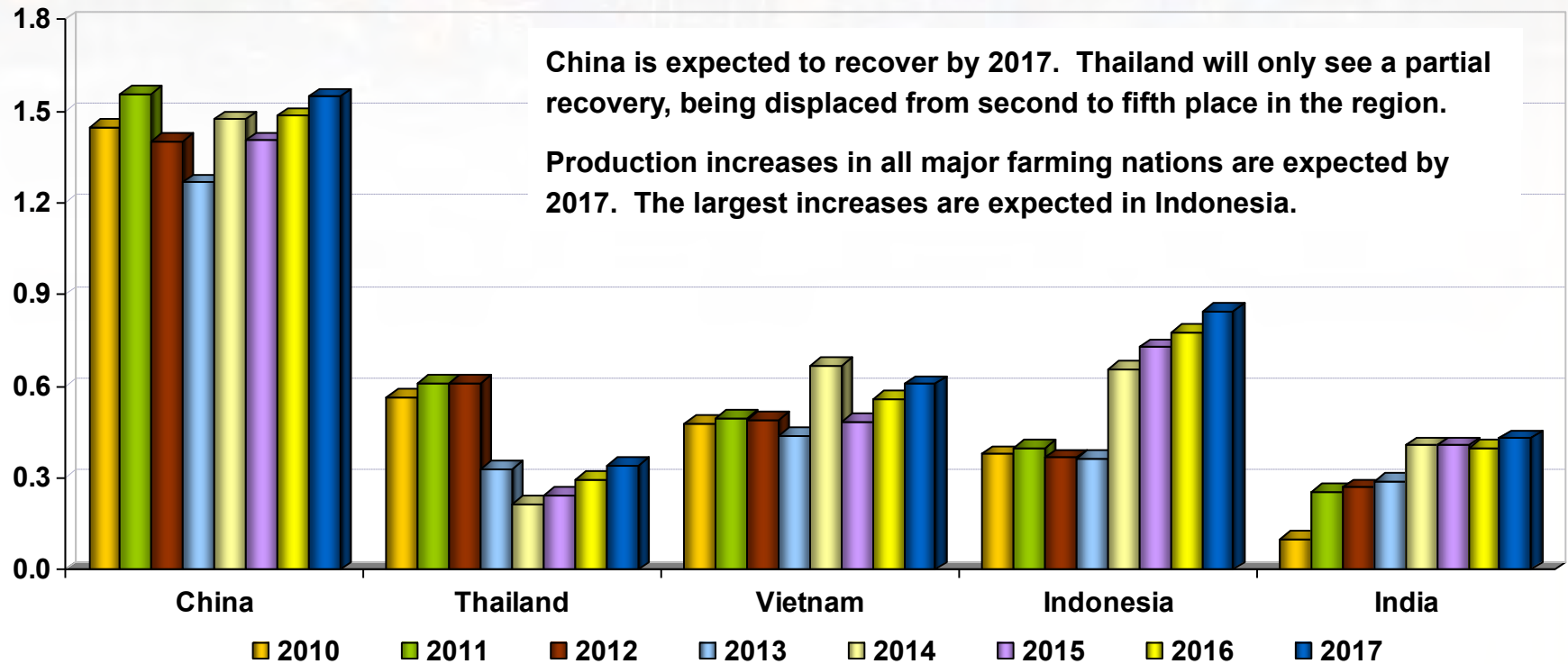
Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.

M. rosenbergii is not included.

Shrimp Aquaculture in Asia: 2010 – 2014

Major Producers

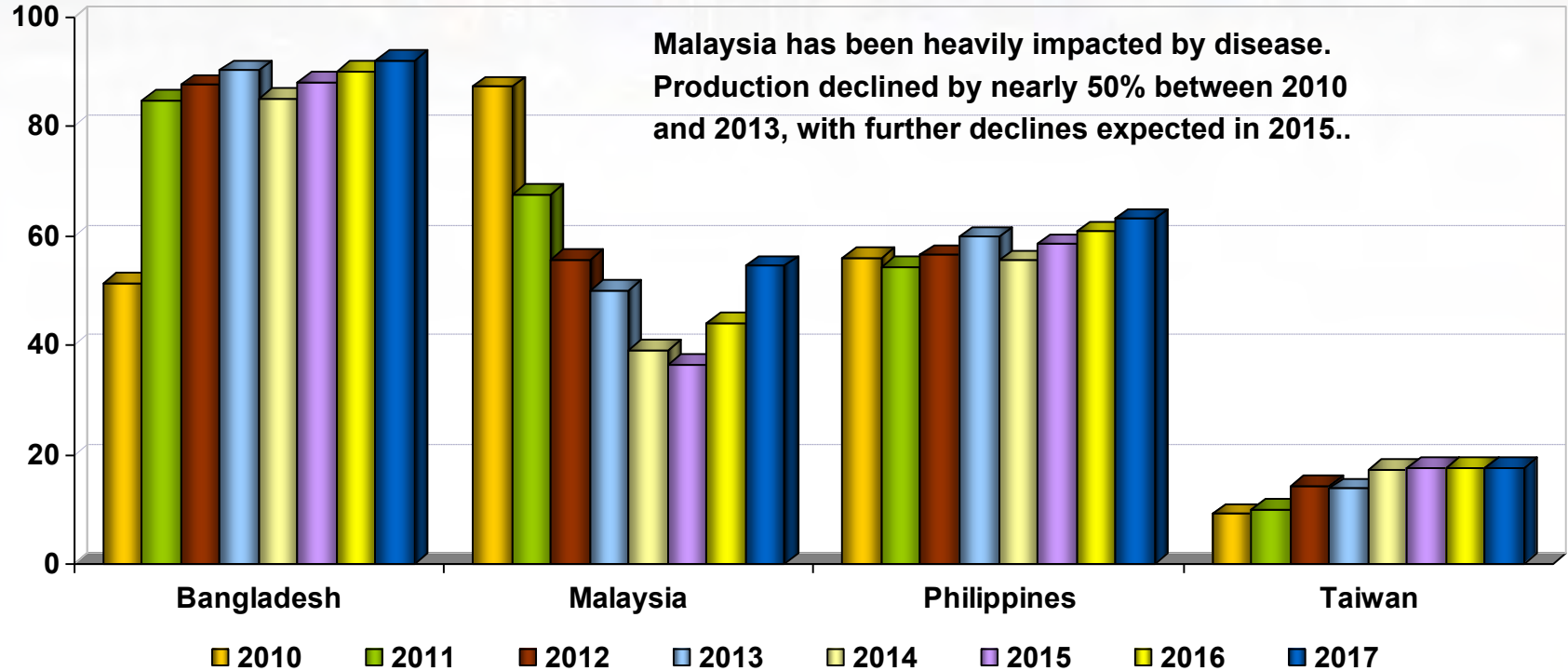
Million MT



Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013; GOAL (2015) for 2014-2017.
M. rosenbergii is not included.

Shrimp Aquaculture in Asia: 2010 – 2017

Thousand MT

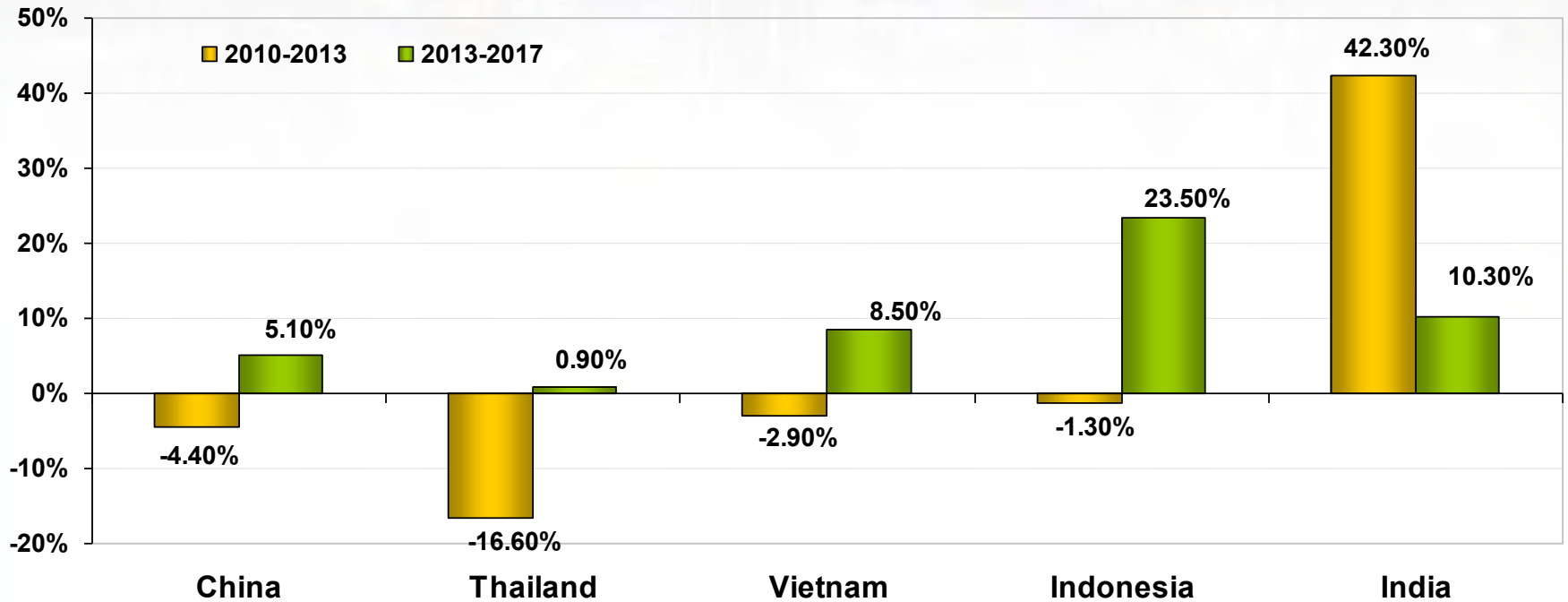


Sources: FAO (2015) for 2010-2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

Shrimp Aquaculture in Asia: 2010-2013 vs. 2013-2017

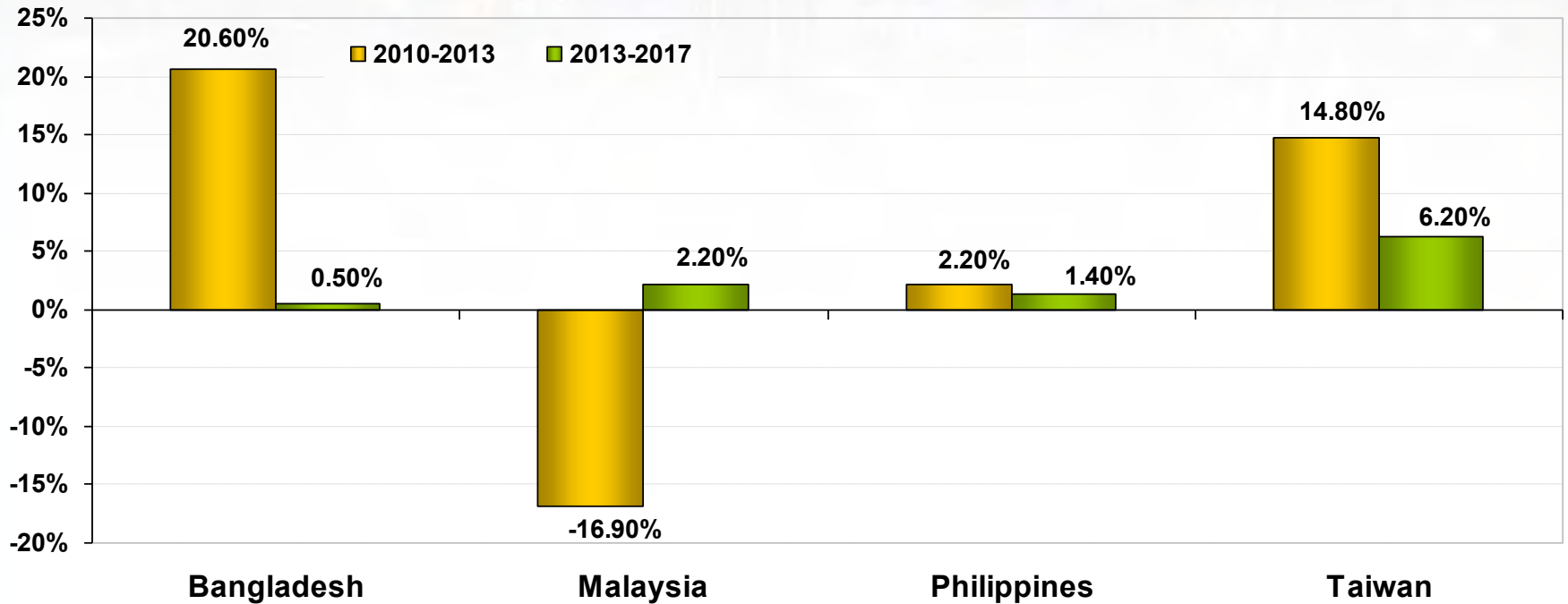
Average Annual Growth
Rate



Sources: FAO (2015) for 1995-2011; FAO (2015) and GOAL (2014) for 2012-2013; GOAL (2015) for 2014-2017.
M. rosenbergii is not included.

Shrimp Aquaculture in Asia: 2010-2013 vs. 2013-2017

Average Annual Growth
Rate



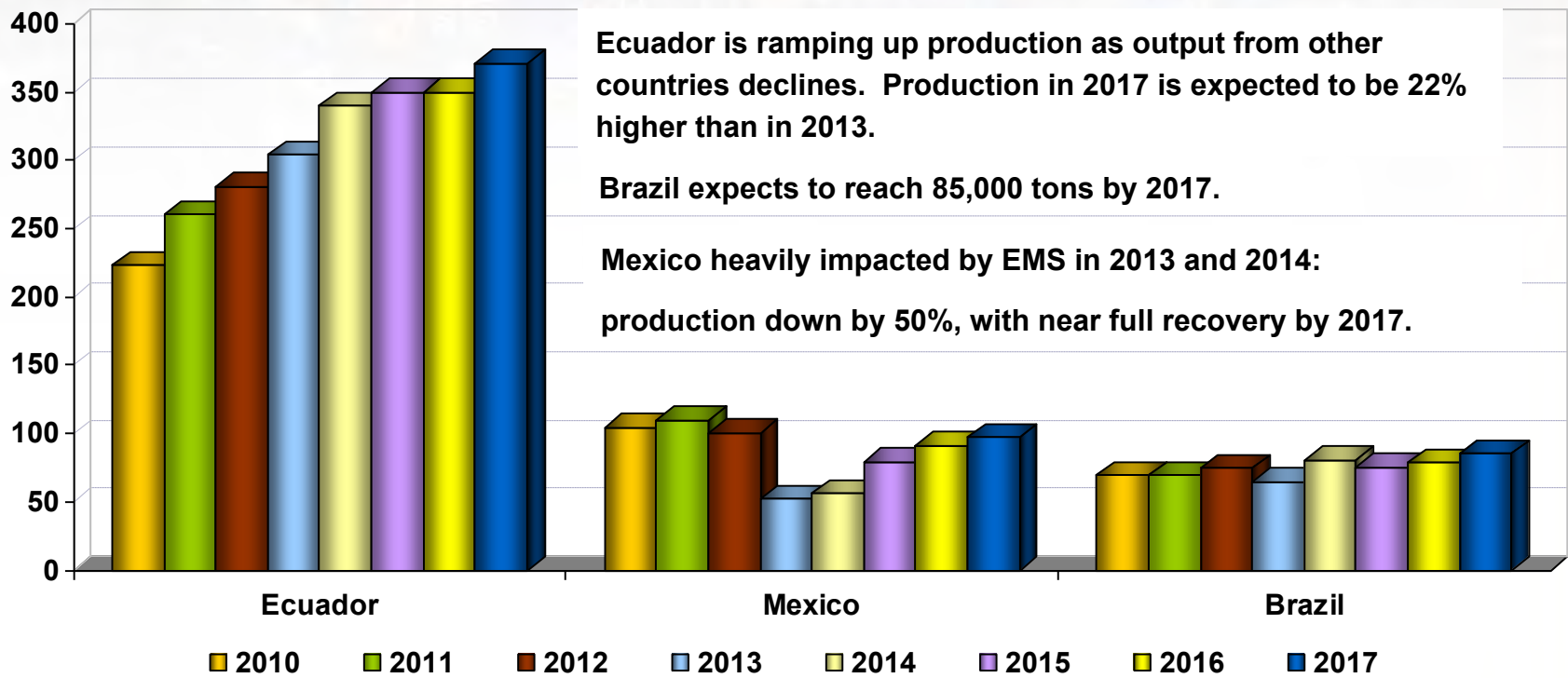
Sources: FAO (2015) for 2010-2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

Shrimp Aquaculture in Latin America: 2010 – 2017

Major Producers

Thousand MT



Sources: FAO (2015) for 1995-2012; FAO (2015) and GOAL (2014) for 2013; GOAL (2015) for 2014-2017.

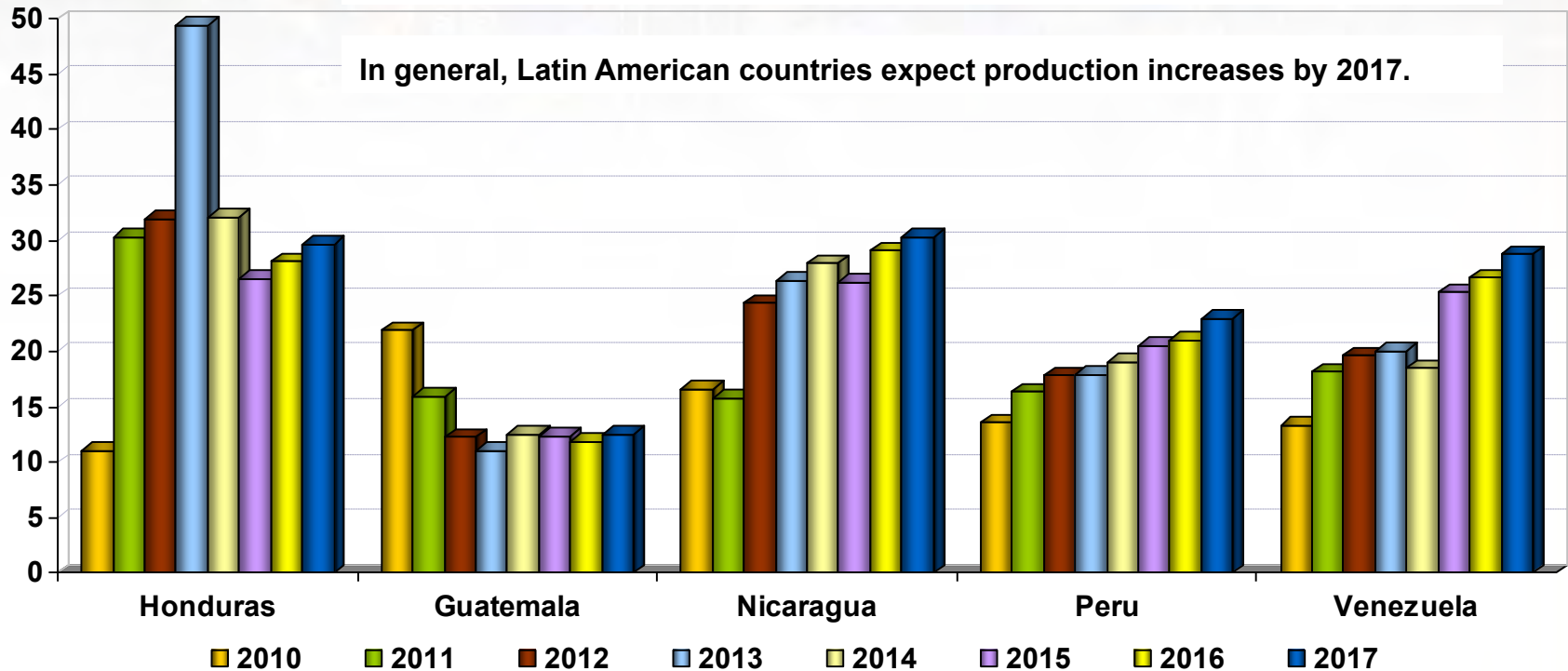
M. rosenbergii is not included.

Shrimp Aquaculture in Latin America: 2010 – 2017

Thousand MT

FAO reported substantial increases in production of Honduran shrimp in 2013 but production had decreased by 2015 due to the effect of droughts.

In general, Latin American countries expect production increases by 2017.

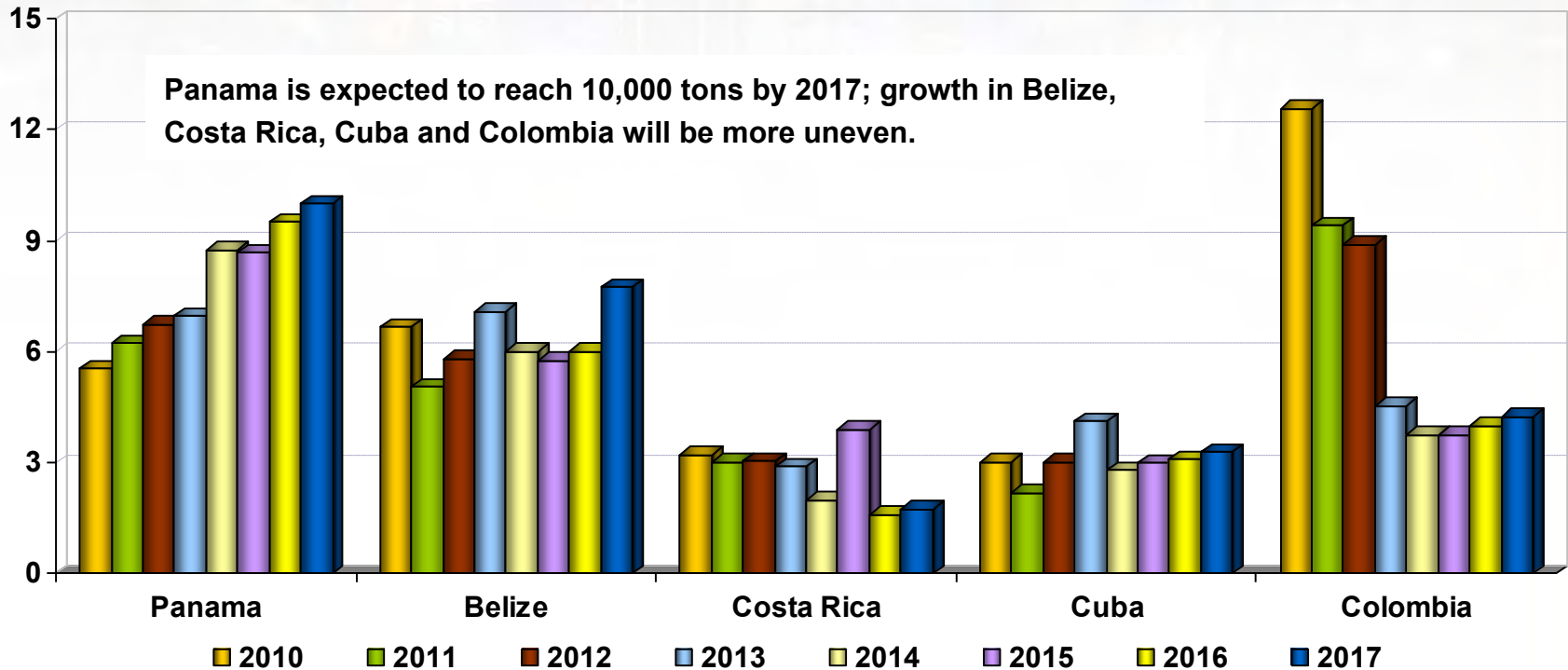


Sources: FAO (2015) for 2010-2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

Shrimp Aquaculture in Latin America: 2010 – 2017

Thousand MT

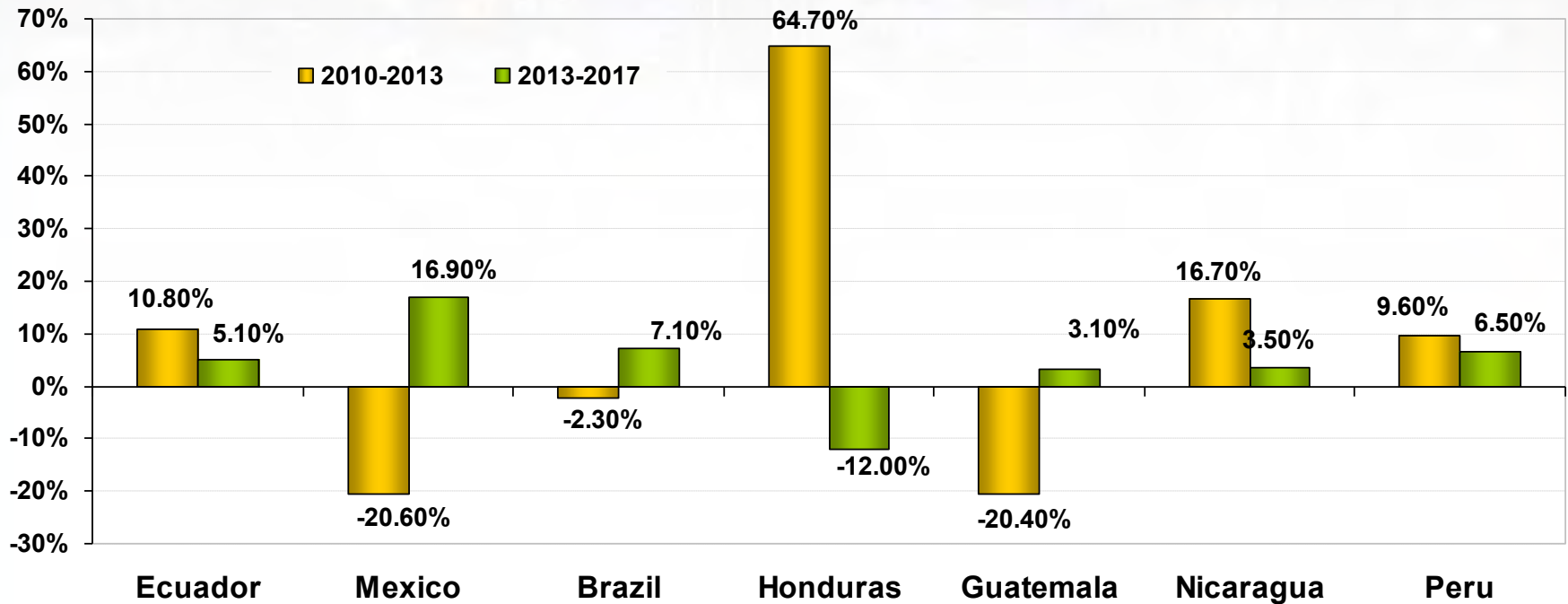


Sources: FAO (2015) for 2010-2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

Shrimp Aquaculture in Latin America: 2010-2013 vs. 2013-2017

Average Annual Growth
Rate

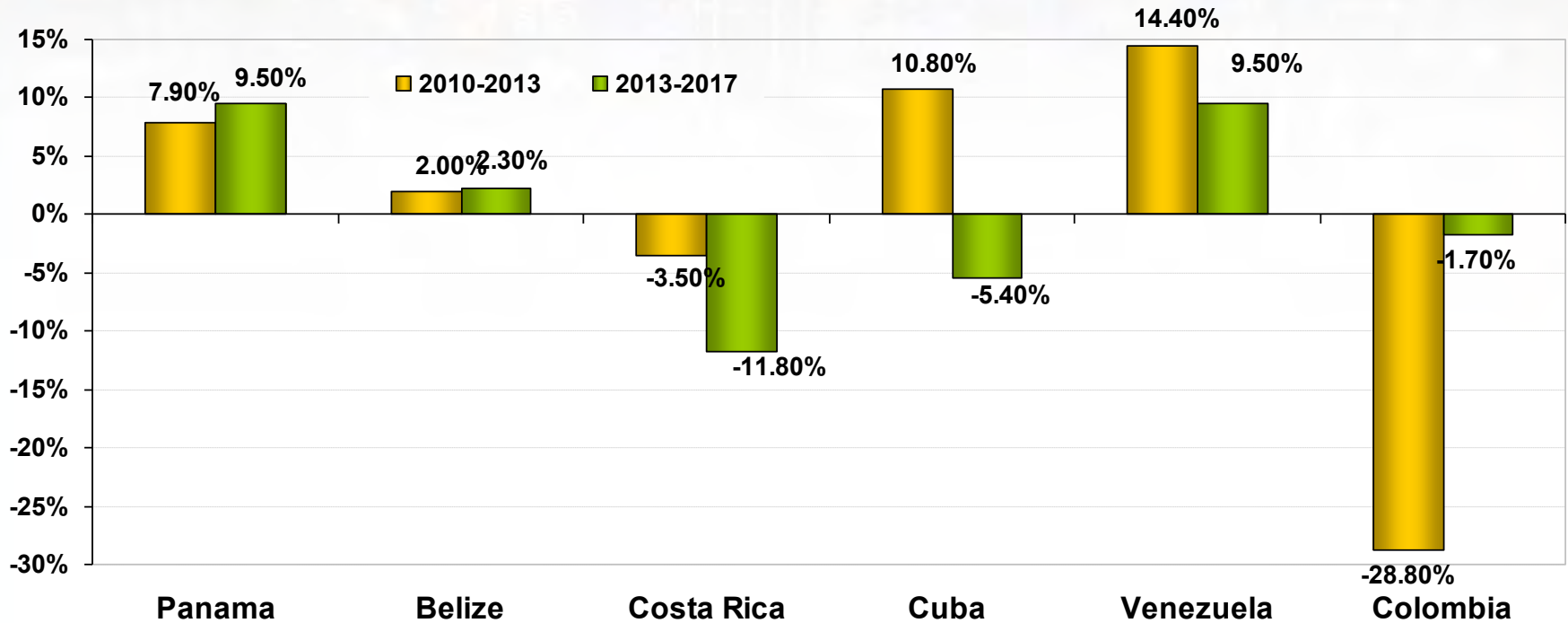


Sources: FAO (2015) for 1995-2012; FAO (2015) and GOAL (2014) for 2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

Shrimp Aquaculture in Latin America: 2010-2013 vs. 2013-2017

Average Annual Growth Rate

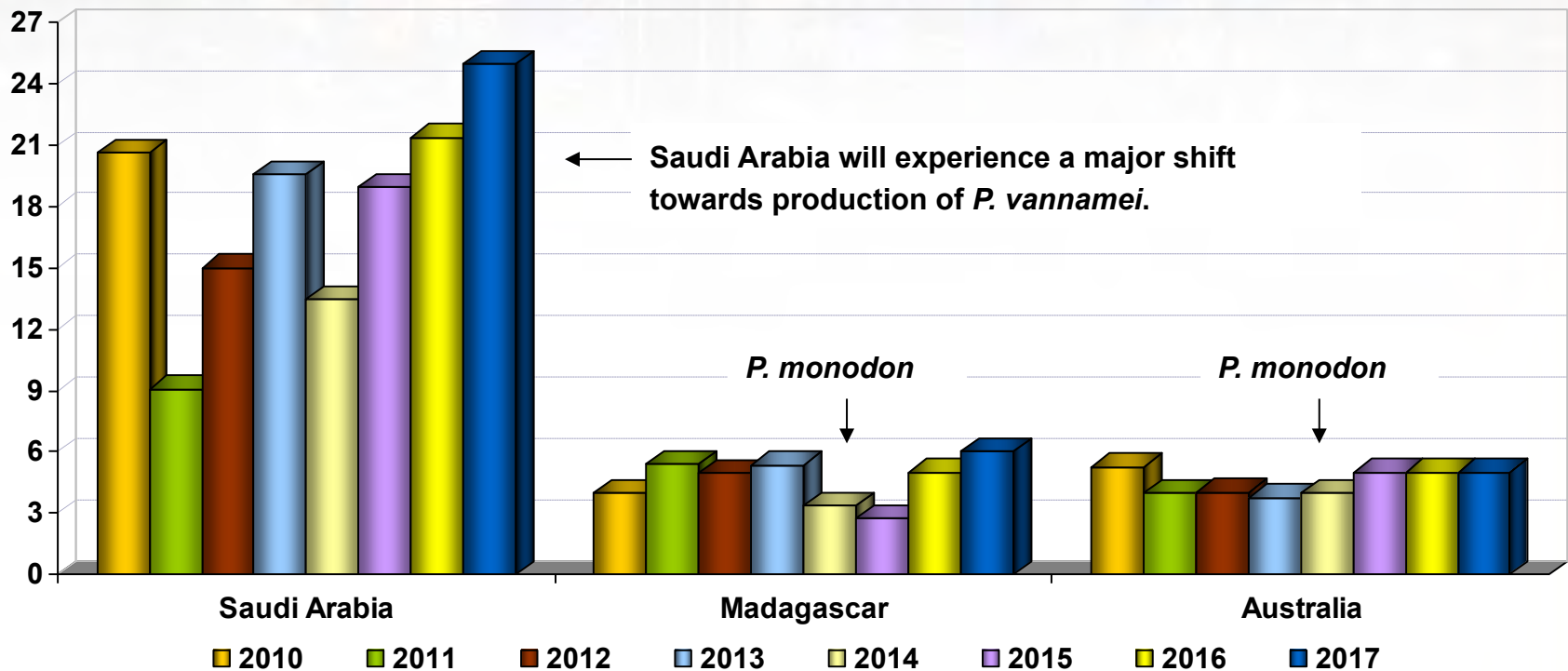


Sources: FAO (2015) for 2010-2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

Shrimp Aquaculture in Other Reporting Countries: 2010 – 2017

Thousand MT

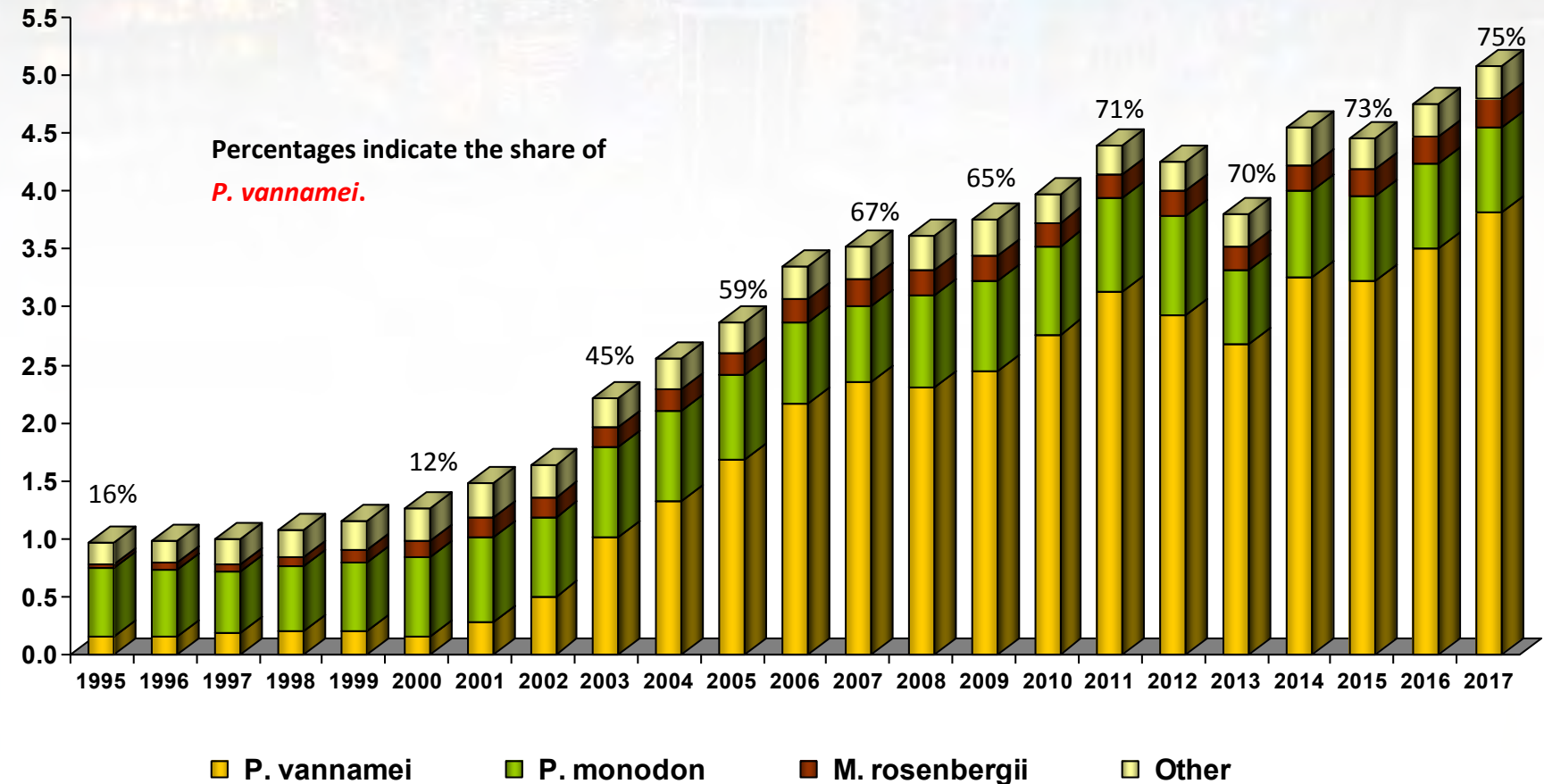


Sources: FAO (2015) for 2010-2013; GOAL (2015) for 2014-2017.

M. rosenbergii is not included.

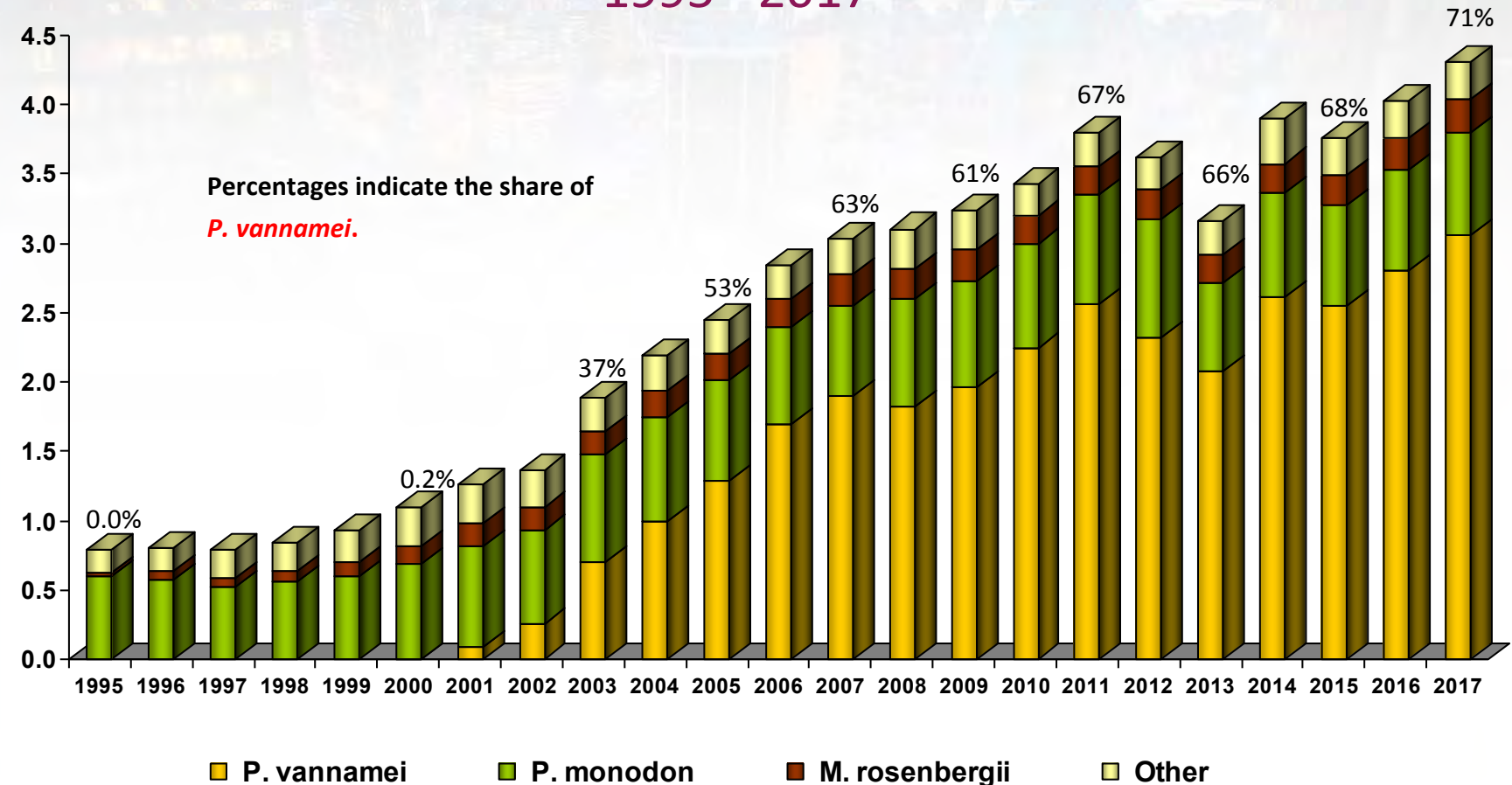
World Shrimp Aquaculture (including *M. rosenbergii*) by Species: 1995 - 2017

Million MT

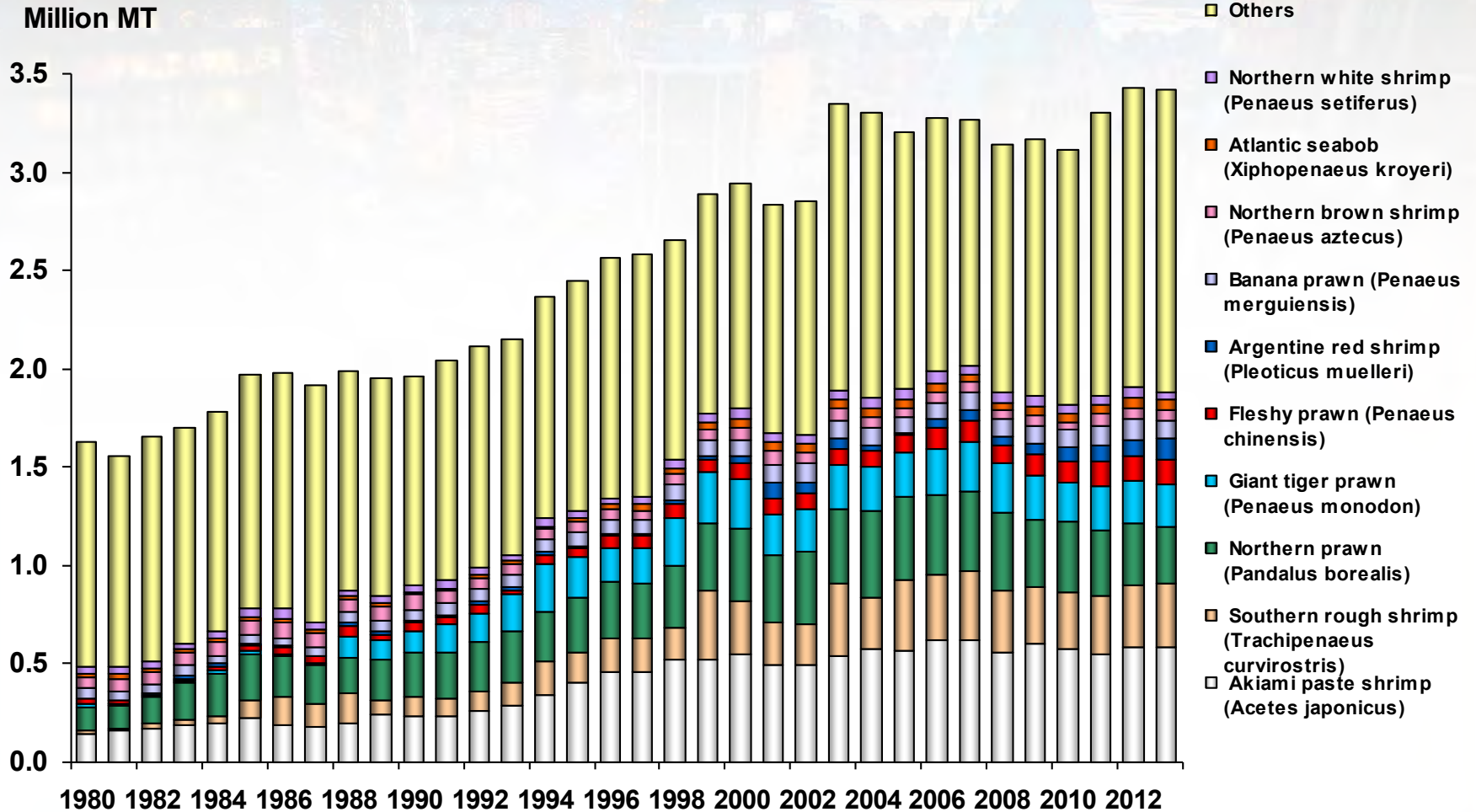


Shrimp Aquaculture (including *M. rosenbergii*) in Asia by Species: 1995 - 2017

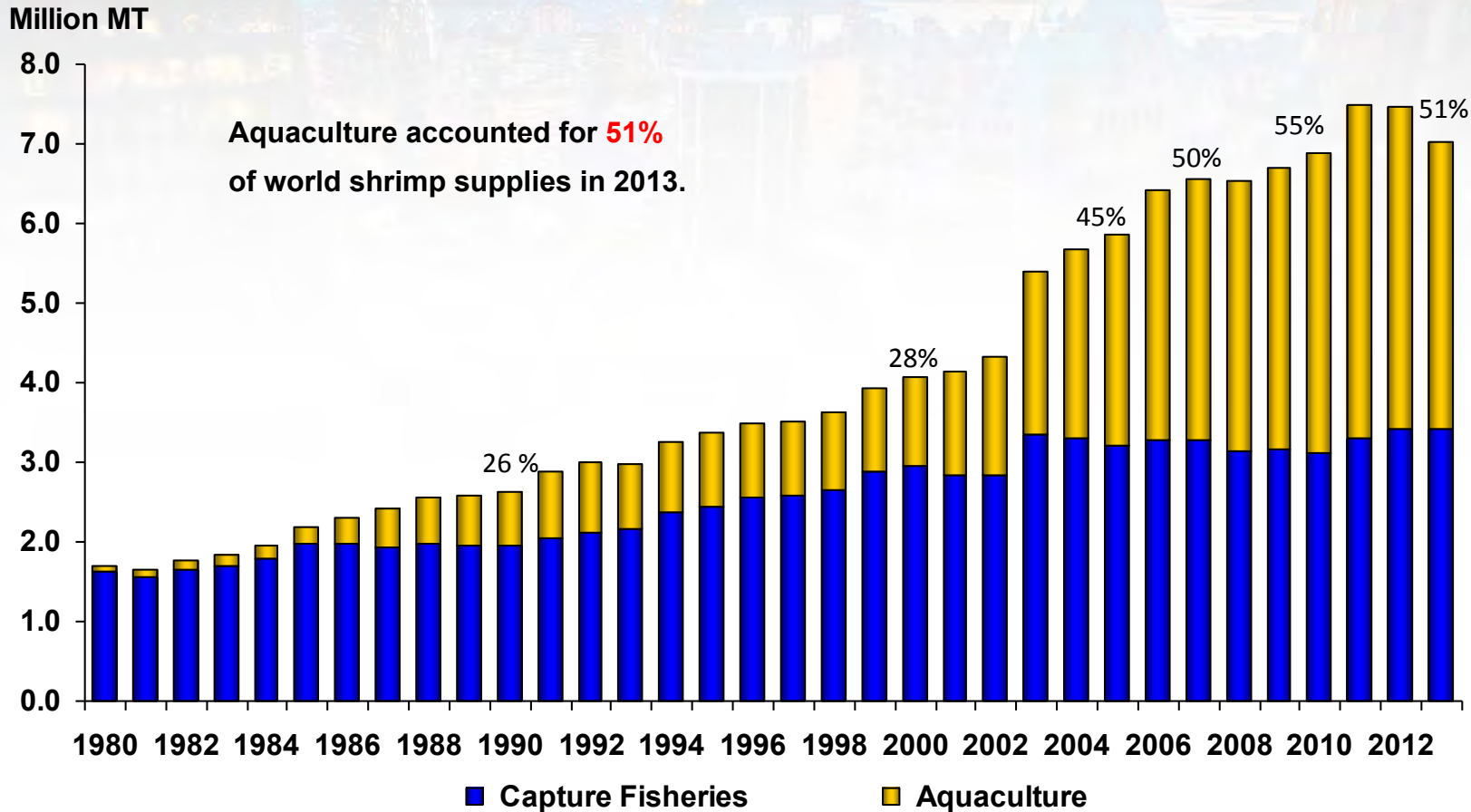
Million MT



World Landings of Wild-Caught Shrimp by Species



World Production of Shrimp -- Capture Fisheries & Aquaculture



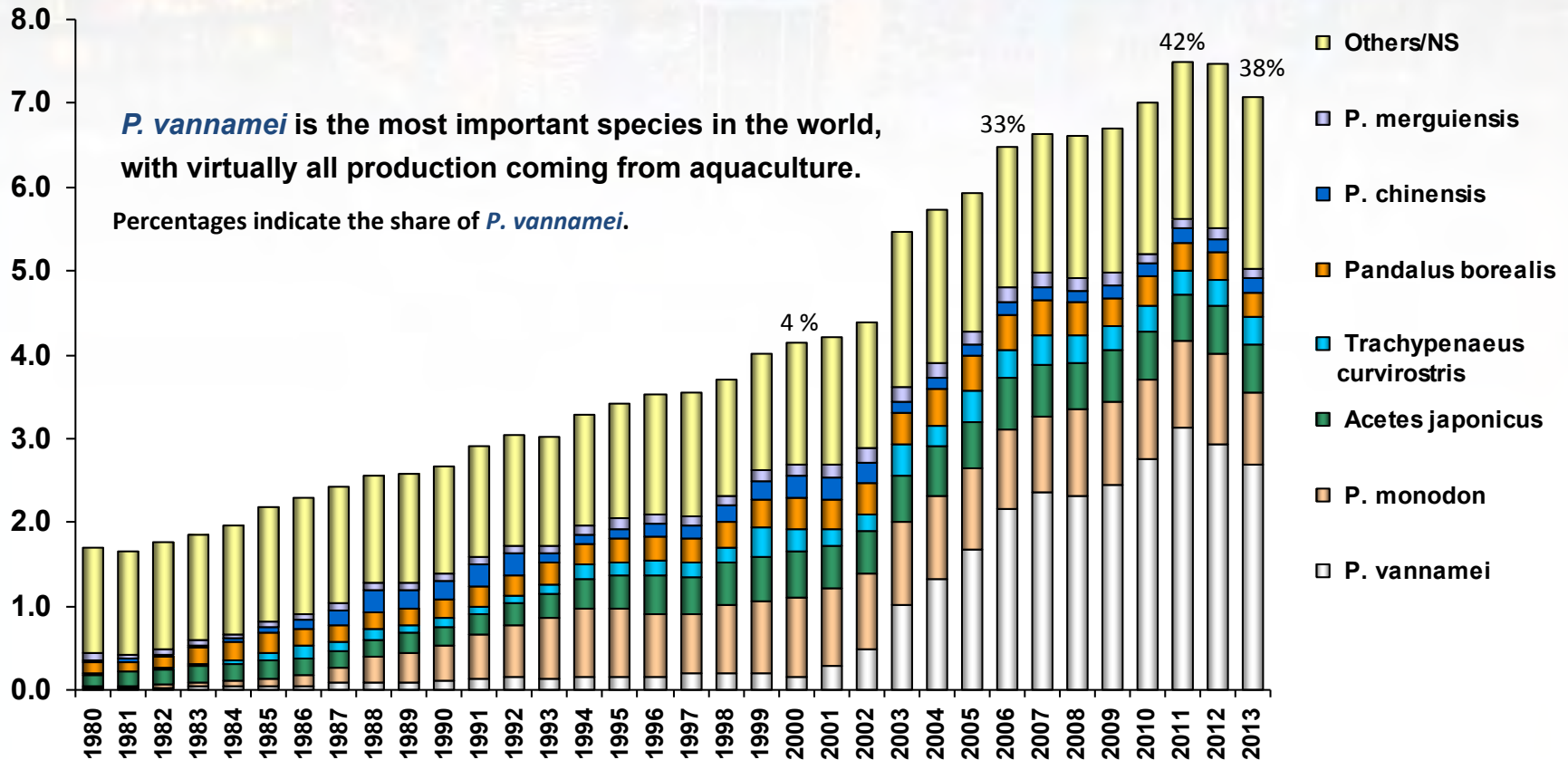
Sources: FAO (2015); GOAL (2014, 2015).

Notes: *M. rosenbergii* is not included.

China includes freshwater production of *P. vannamei*.

World Production of Shrimp by Species Capture Fisheries & Aquaculture Combined

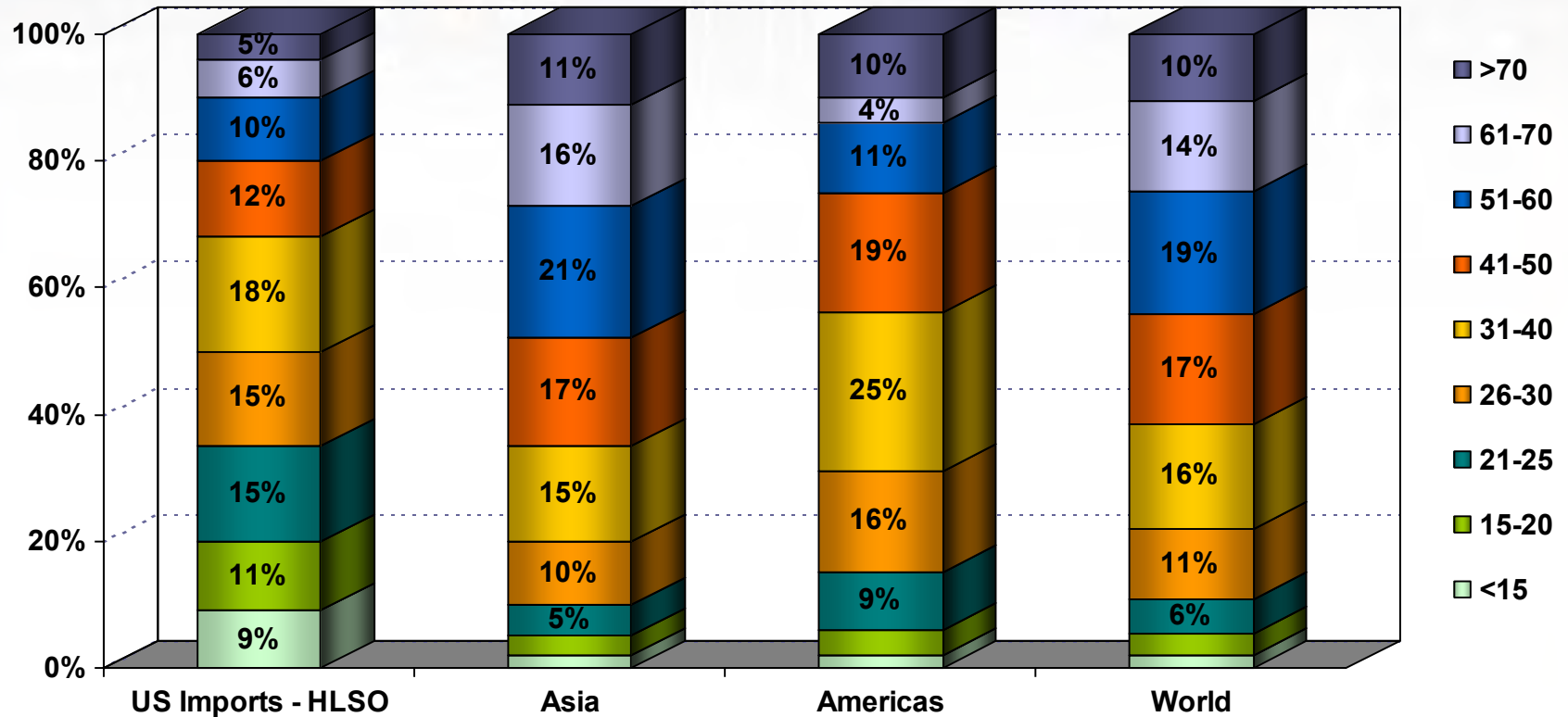
Million MT



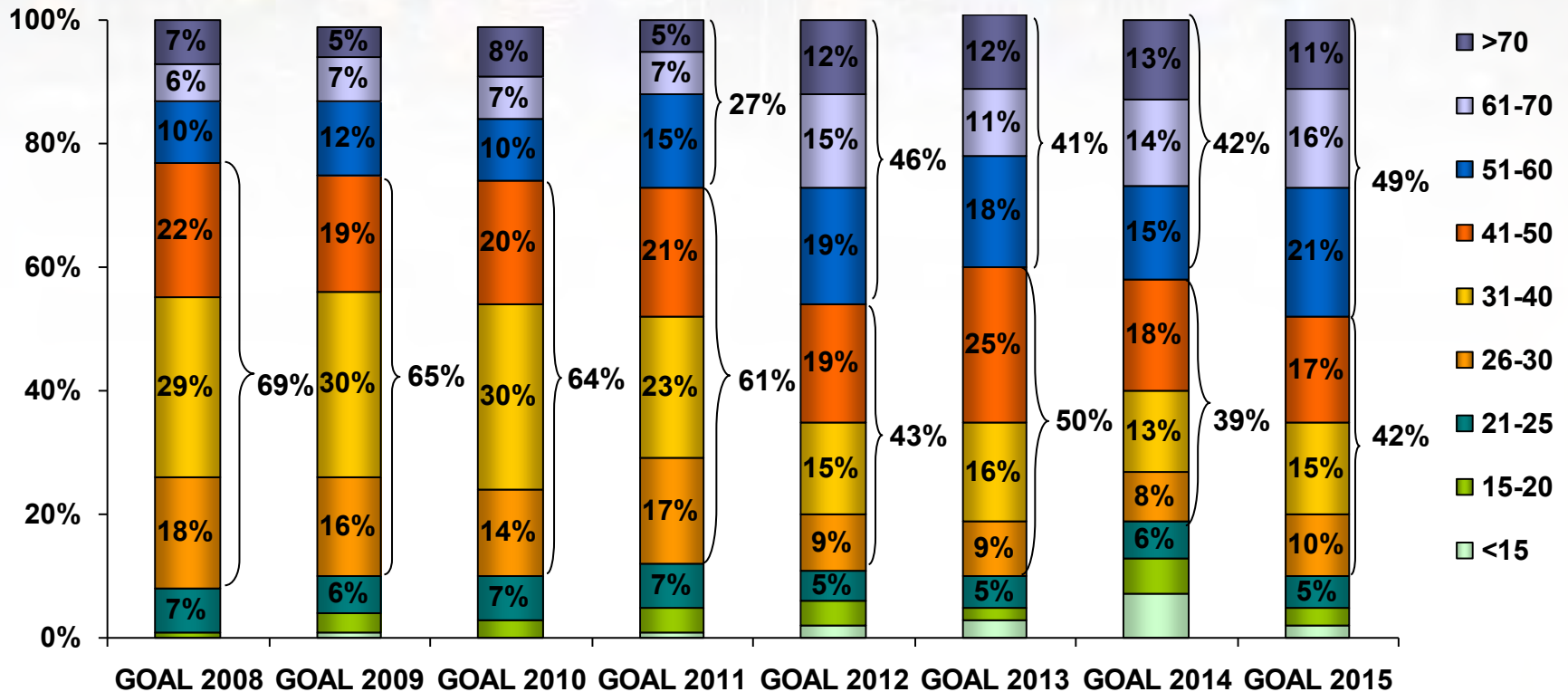
Sources: FAO (2015); GOAL (2014, 2015).

Notes: *M. rosenbergii* is not included. China includes freshwater production of *P. vannamei*.

Composition of Shrimp Aquaculture Production by Size Categories – Aggregate 2014

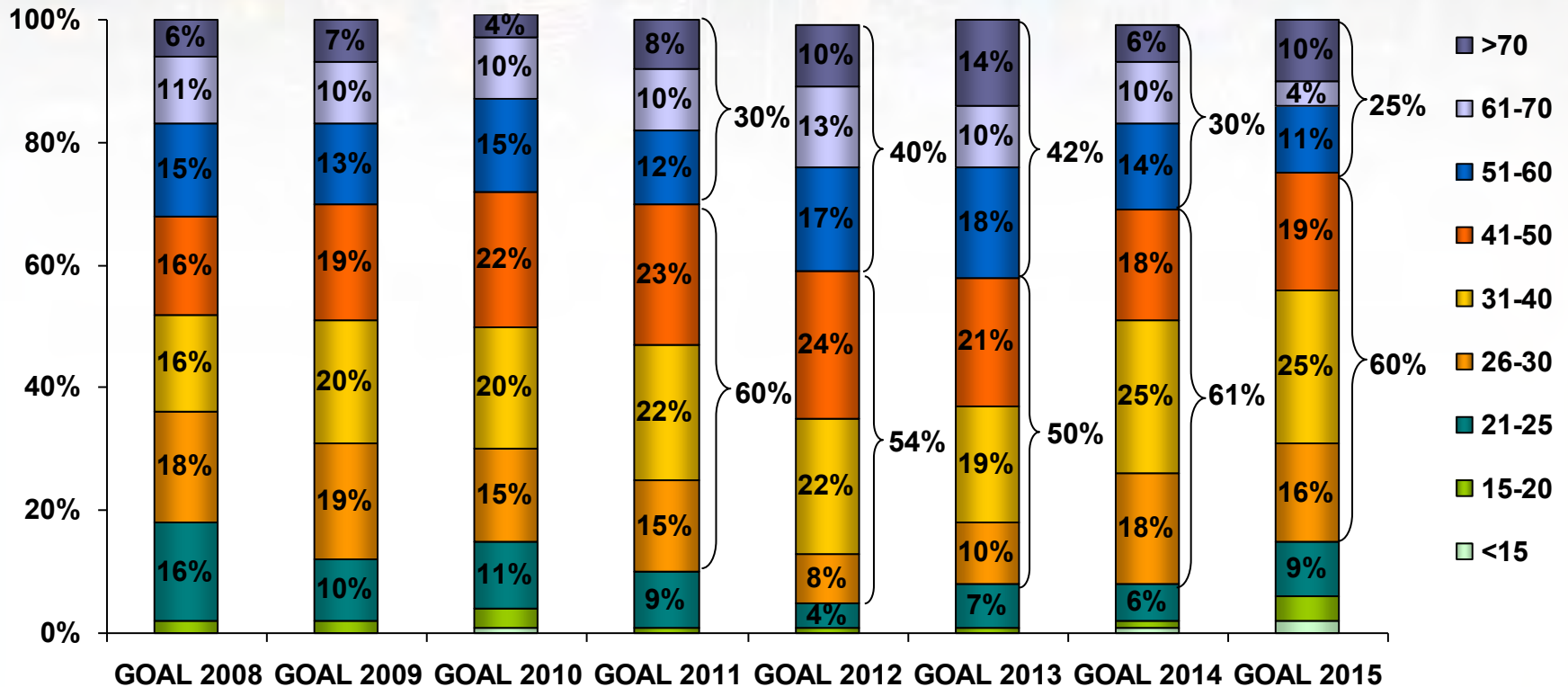


Composition of Shrimp Aquaculture Production by Size Categories – Comparison of Survey Data for Asia



Disease problems in Asia led to the harvesting of smaller sizes since 2011.

Composition of Shrimp Aquaculture Production by Size Categories – Comparison of Survey Data for the Americas



There was also a temporary trend towards smaller sizes in Latin America in 2011 and 2012.

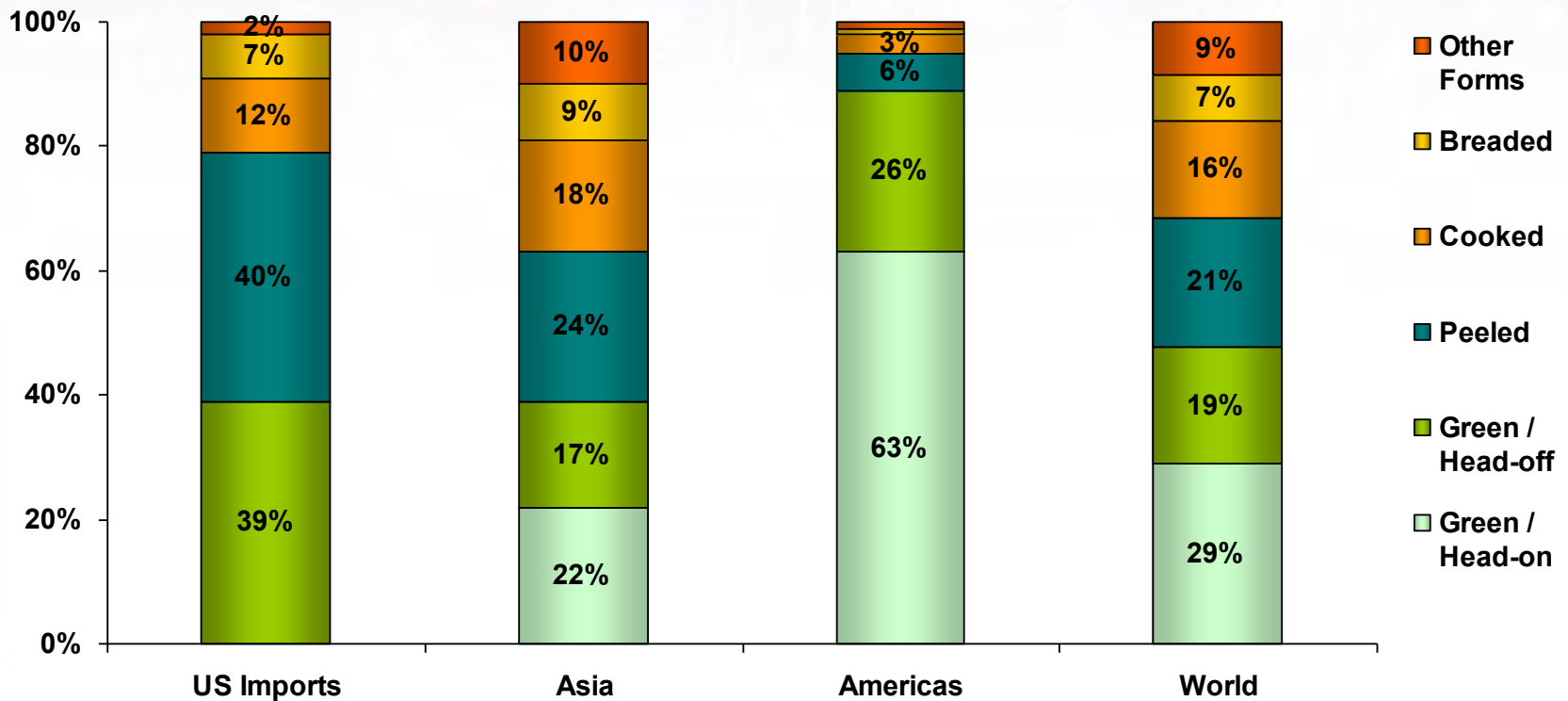
Expected Trends in Shrimp Aquaculture Size Categories - GOAL Survey 2015

Size Category	Asia	Americas	World
<15	Decrease/Stable	Stable	Decrease/Stable
15-20	Decrease	Decrease	Decrease
21-25	Decrease	Stable	Decrease/Stable
26-30	Decrease/Stable	Stable/Increase	Decrease/Stable
31-40	Decrease/Stable	Stable/Increase	Decrease/Stable
41-50	Stable	Decrease/Stable	Stable
51-60	Increase	Stable	Increase
61-70	Increase	Stable/Increase	Increase
>70	Increase	Increase	Increase

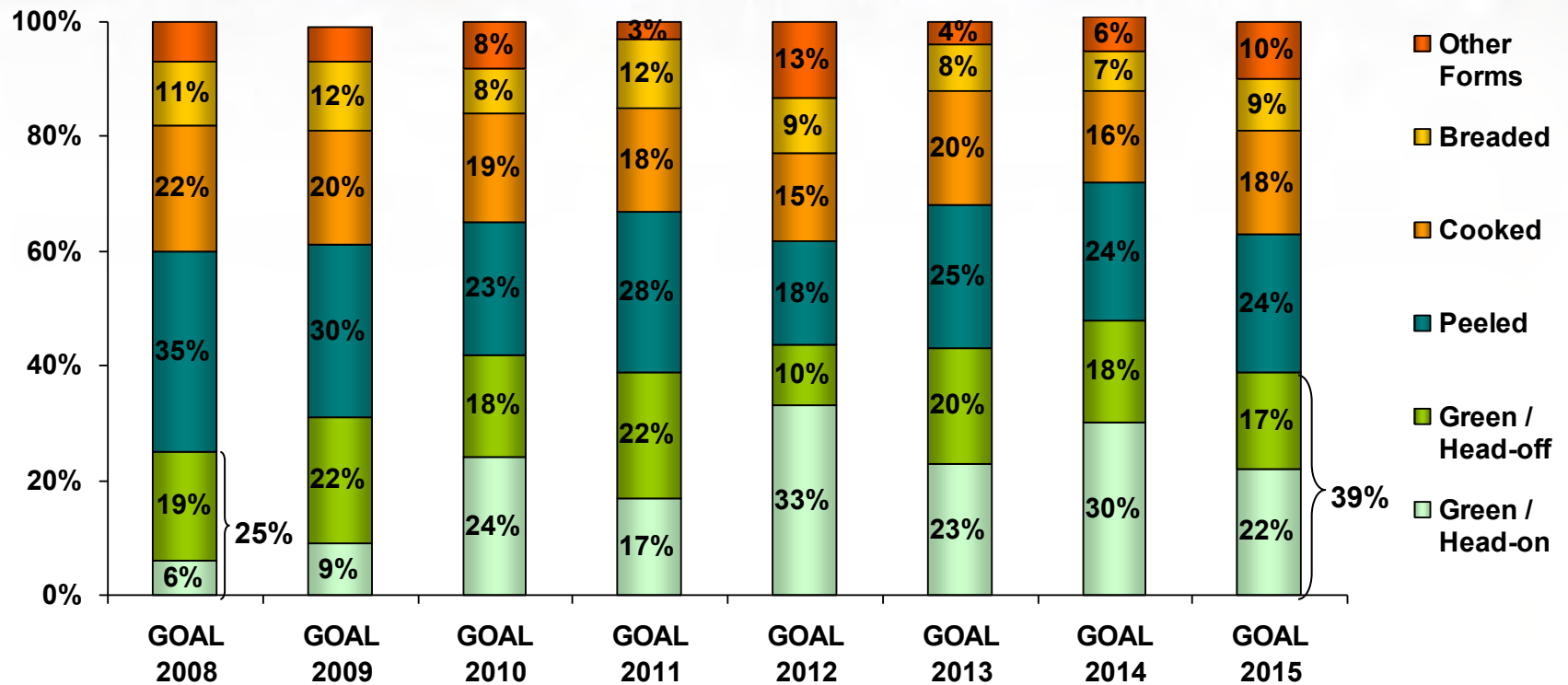
China and Indonesia expect increased production of smaller counts.

GOAL 2015 Survey

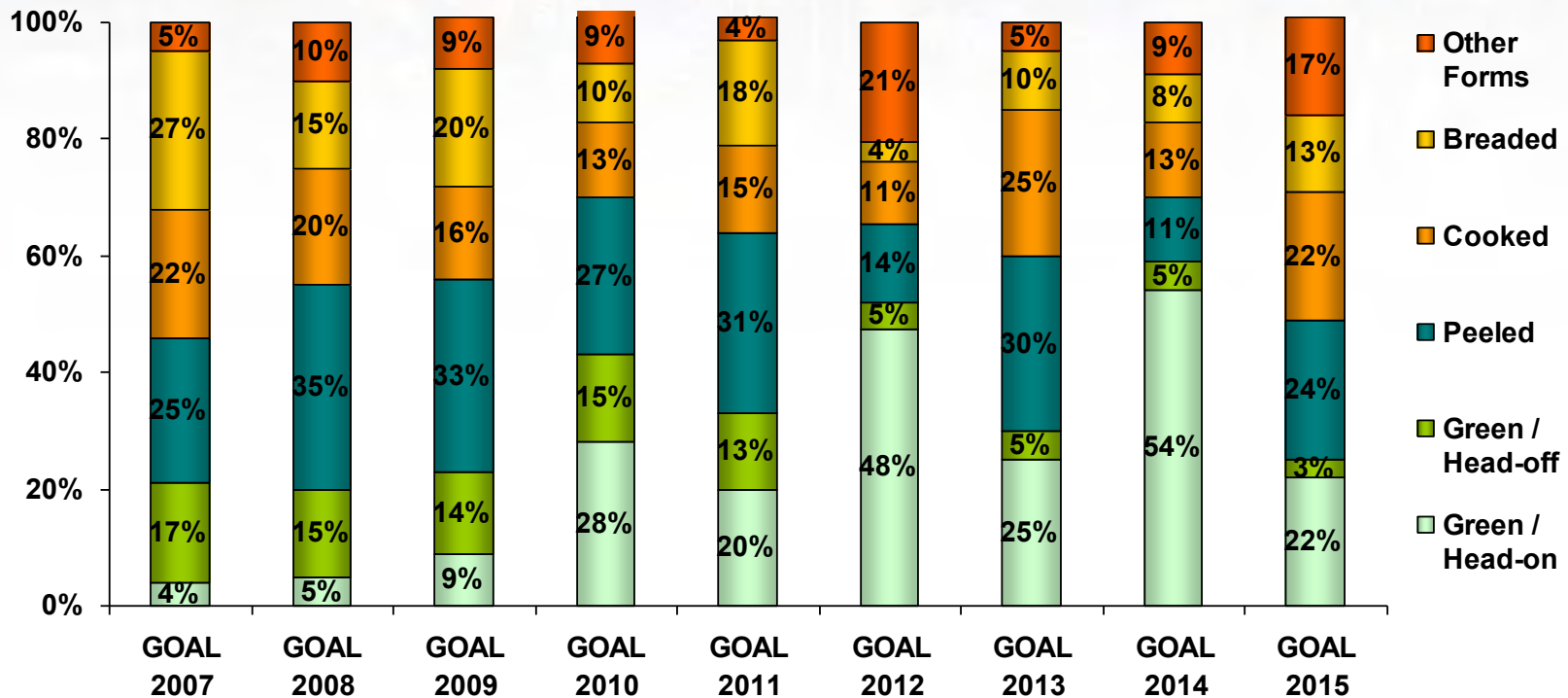
Composition of Shrimp Aquaculture Production by Product Form – Aggregate 2014



Composition of Shrimp Aquaculture Production by Product Form – Comparison of Survey Data for Asia

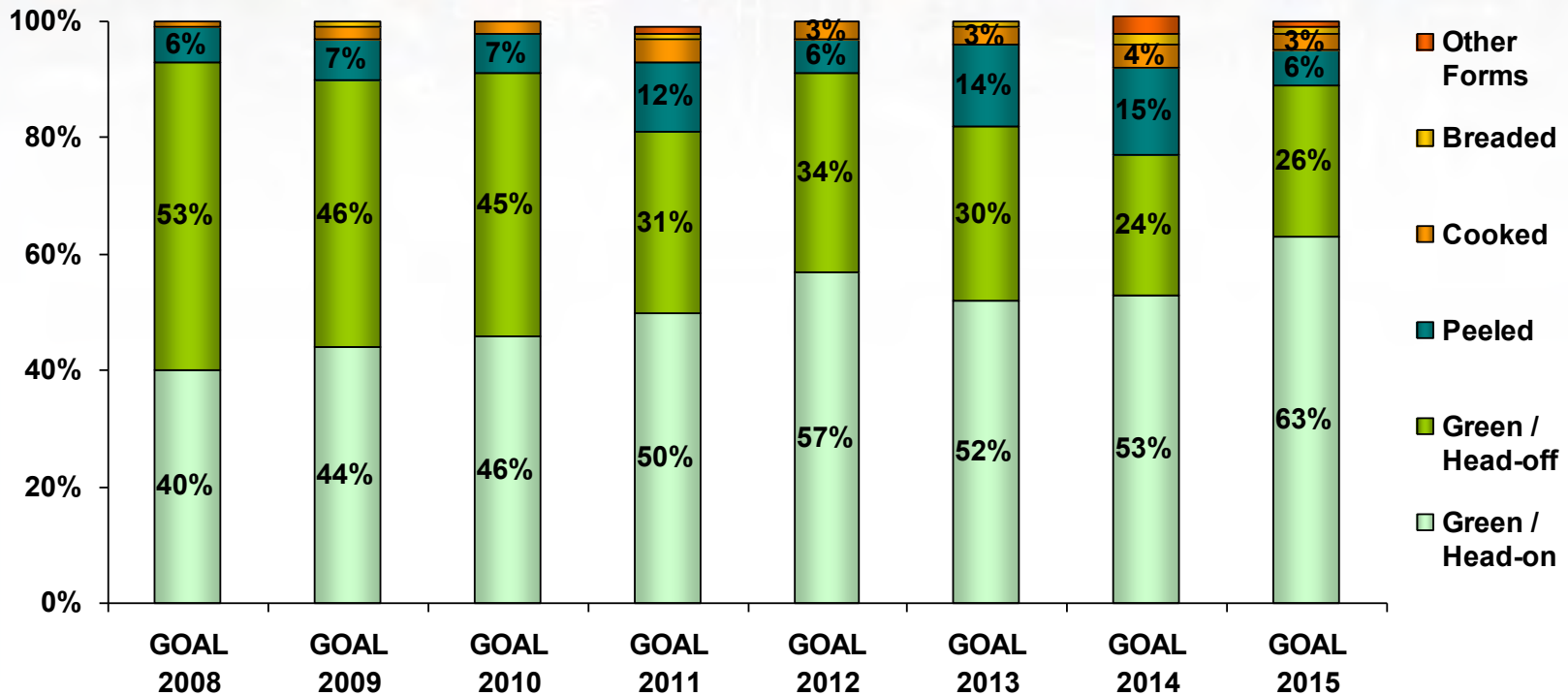


Composition of Shrimp Aquaculture Production by Product Form – Comparison of Survey Data for China



There is a trend in China towards the production of green head-on/head-off and peeled shrimp relative to processed forms.

Composition of Shrimp Aquaculture Production by Product Form – Comparison of Survey Data for the Americas



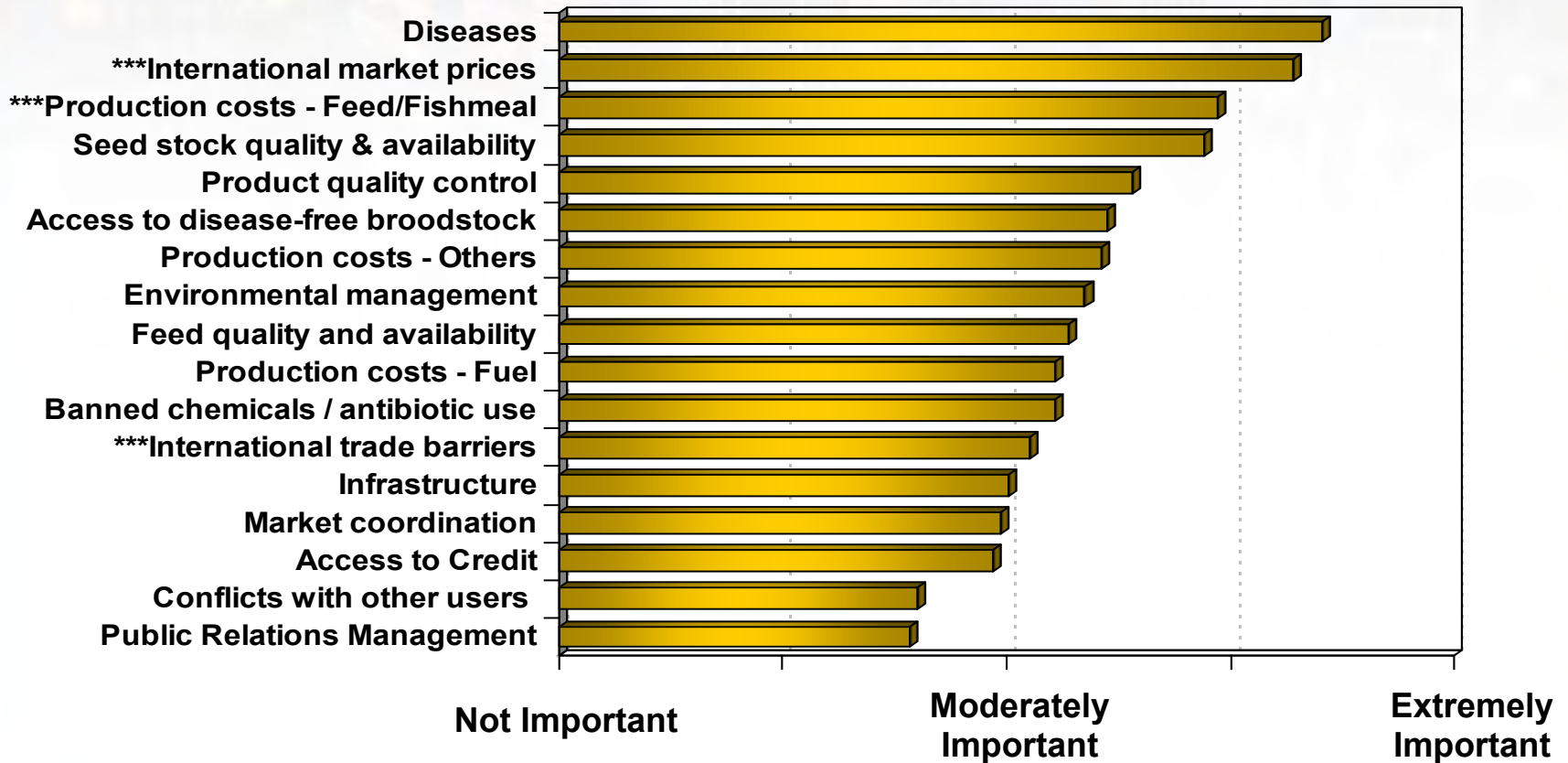
The growing share of the green head-on form reflects an increased presence of Ecuadorian shrimp in European and Asian markets.

Expected Trends in Shrimp Aquaculture Product Form - GOAL Survey 2015

Product Form	Asia	Americas	World
Green / Head-on	Decrease	Increase	Stable
Green / Head-off	Increase	Stable	Stable/Increase
Peeled	Increase	Stable/Decrease	Increase
Cooked	Stable/Increase	Stable	Stable/Increase
Breaded	Increase	Stable	Increase
Other Forms	Stable/Decrease	Decrease	Stable/Decrease

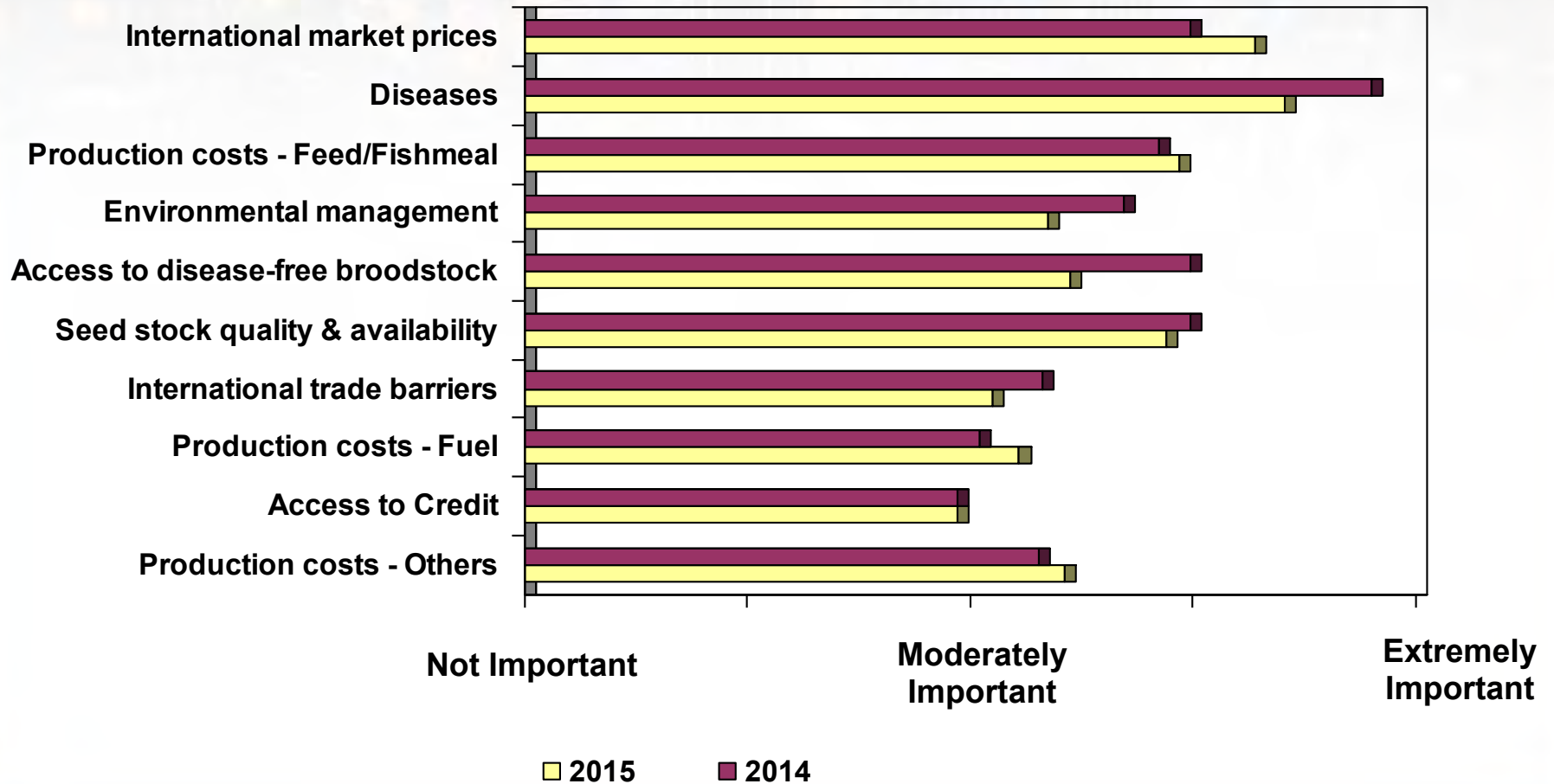
There is a clear trend for increased production of green / head-on shrimp in Ecuador for the European and Asian markets.

GOAL 2015 Survey Issues & Challenges in Shrimp Aquaculture All Countries



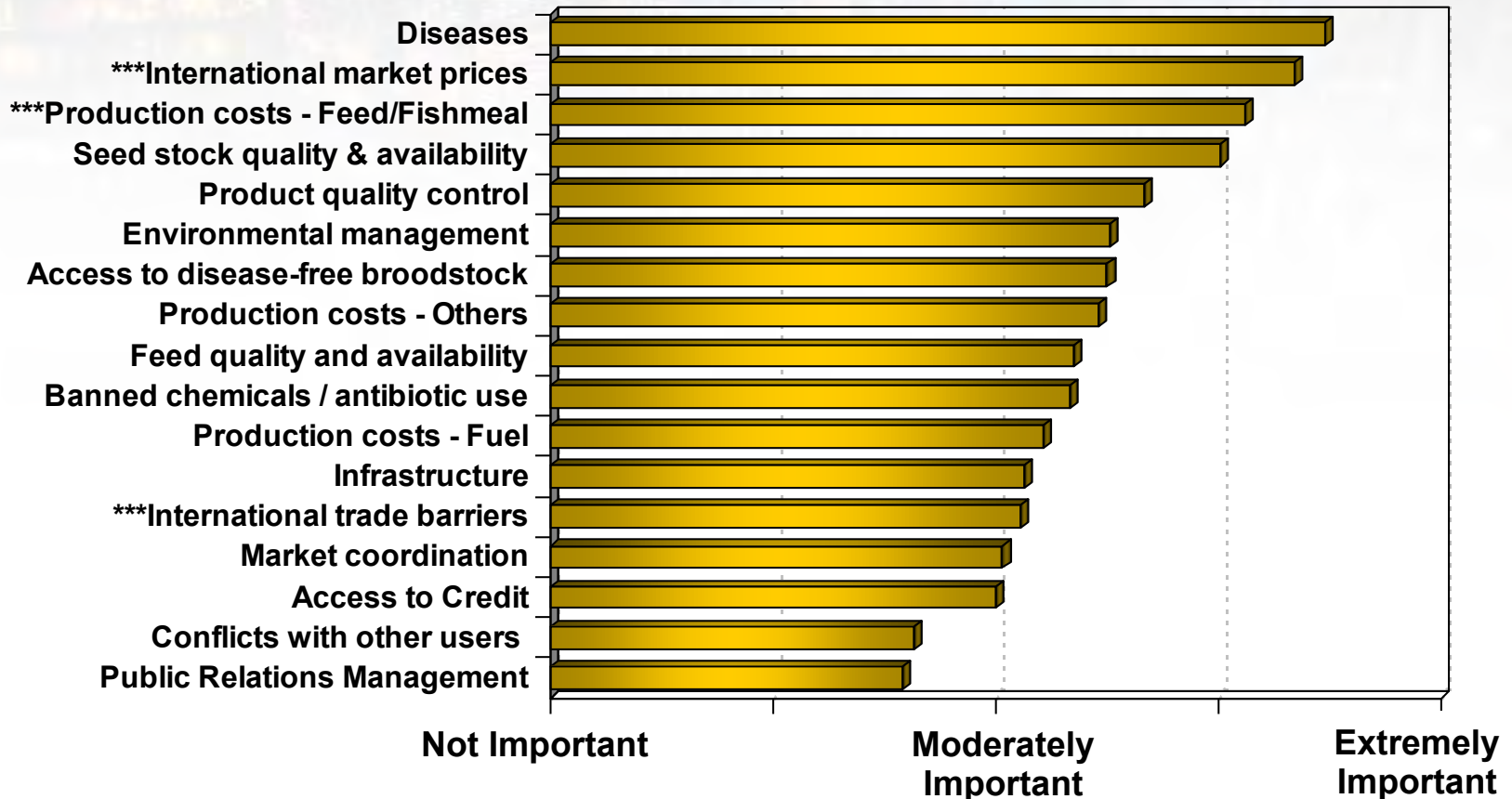
Asterisk indicates a Top 3 issue in GOAL 2007 Survey

Worldwide Top Issues & Challenges in Shrimp Aquaculture: 2015 Survey vs. 2014 Survey



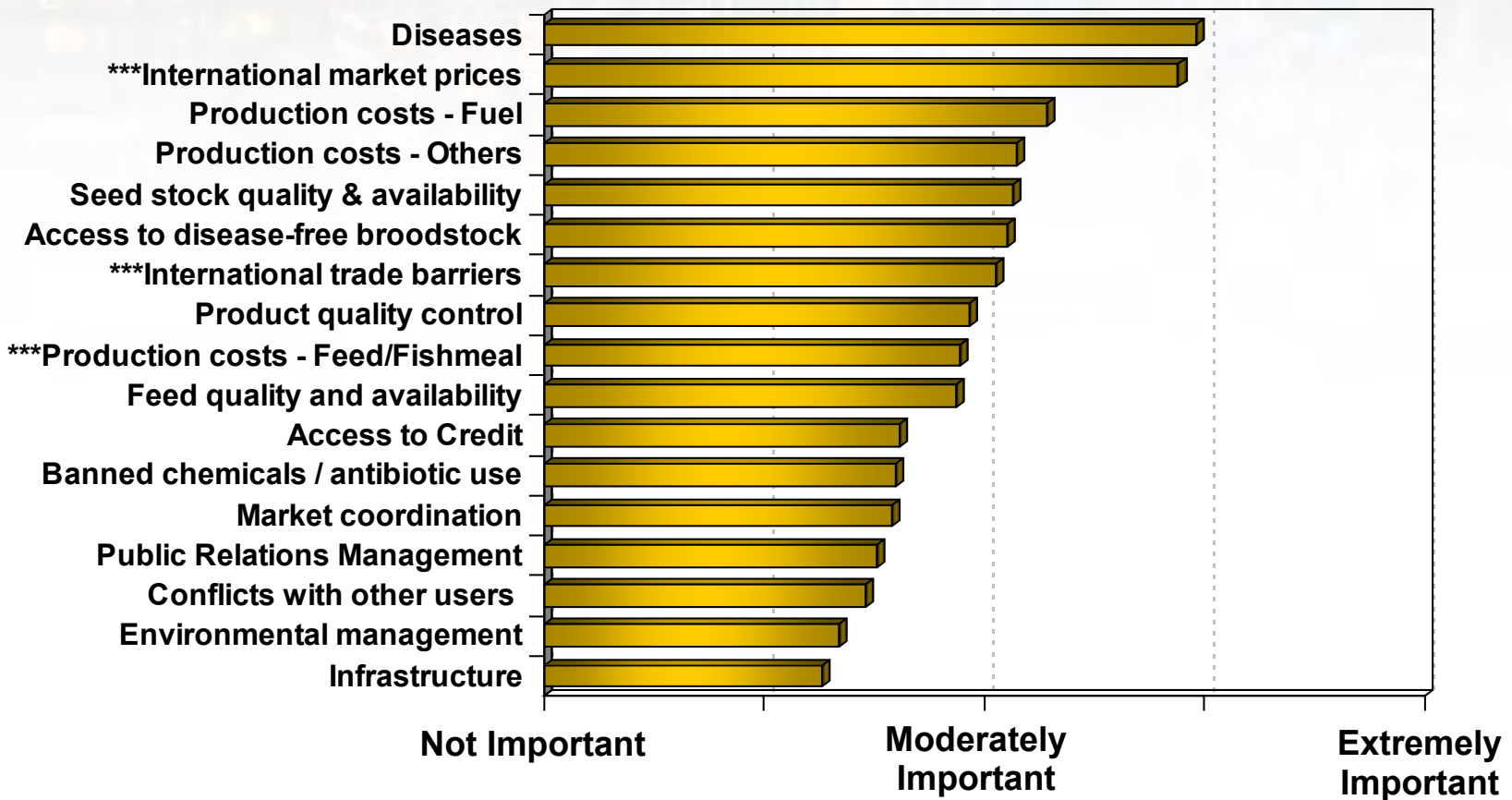
GOAL 2015 Survey

Issues & Challenges in Shrimp Aquaculture - Asia



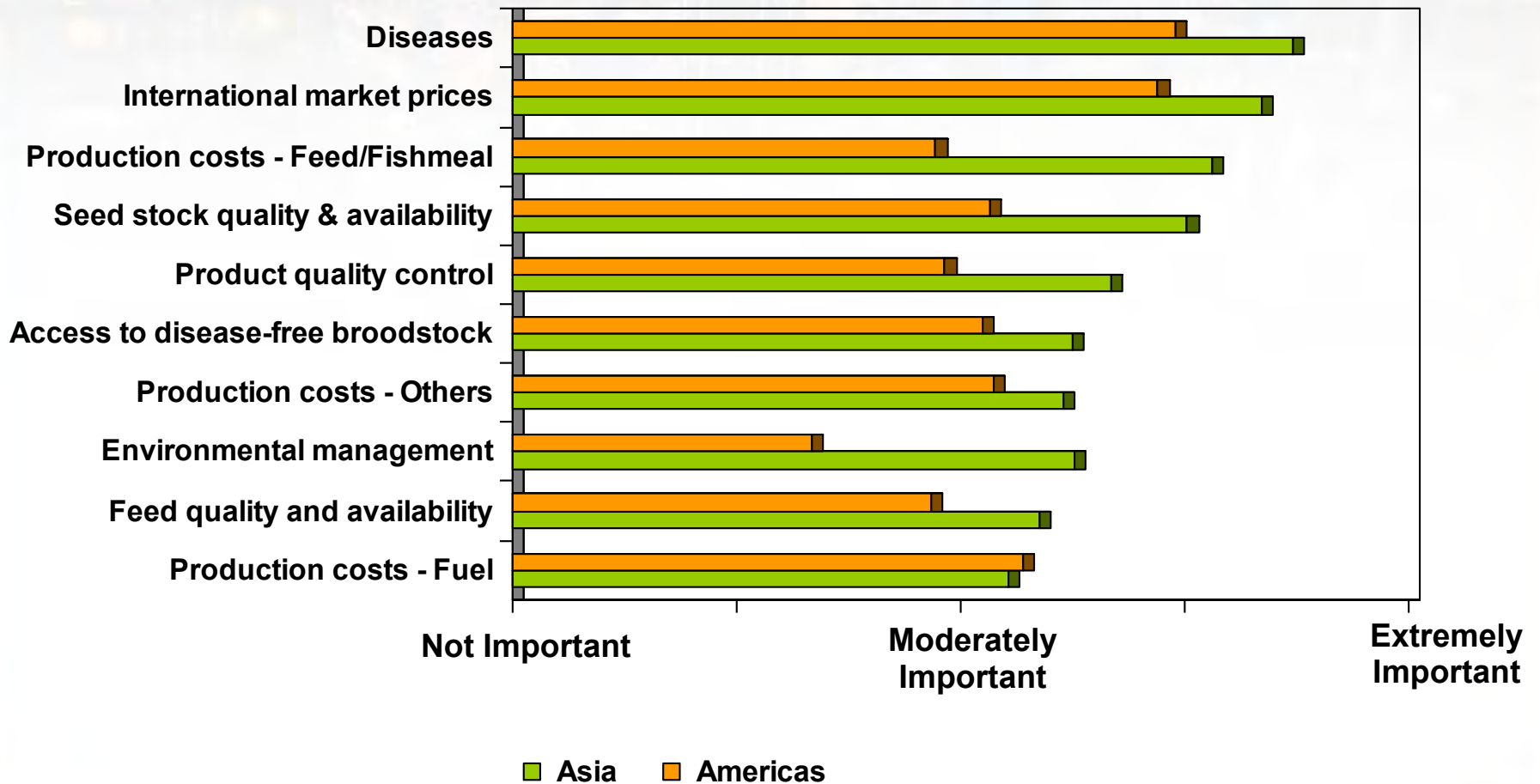
Asterisk indicates a Top 3 issue in GOAL 2007 Survey

GOAL 2015 Survey Issues & Challenges in Shrimp Aquaculture Latin America



Asterisk indicates a Top 3 issue in GOAL 2007 Survey

GOAL 2015 Survey Top Issues & Challenges in Shrimp Aquaculture Asia vs. Latin America



GOAL 2015 Survey

Global economic conditions will be better in **2016** compared to **2015**

Outlook	Asia	Americas	Others
Strongly Agree	Bangladesh		
Agree	India, Indonesia, Philippines, Taiwan, Vietnam	Colombia, Cuba	Egypt
Neutral/No Opinion	China, South Korea	Belize, Ecuador, Mexico, Nicaragua, Panama, Peru	Australia, Madagascar, Saudi Arabia
Disagree	Malaysia, Thailand	Brazil, Guatemala, Honduras, Venezuela	
Strongly Disagree			

GOAL 2015 Survey

Feed prices will be lower in **2016** compared to **2015**

Outlook	Asia	Americas	Others
Strongly Agree			
Agree			
Neutral/No Opinion	China, South Korea	Cuba, Ecuador, Mexico	
Disagree	Bangladesh, India, Indonesia, Philippines, Taiwan, Thailand, Vietnam	Belize, Brazil, Colombia, Guatemala, Honduras, Nicaragua, Panama, Venezuela	Australia, Egypt, Madagascar, Saudi Arabia
Strongly Disagree	Malaysia	Peru	

GOAL 2015 Survey

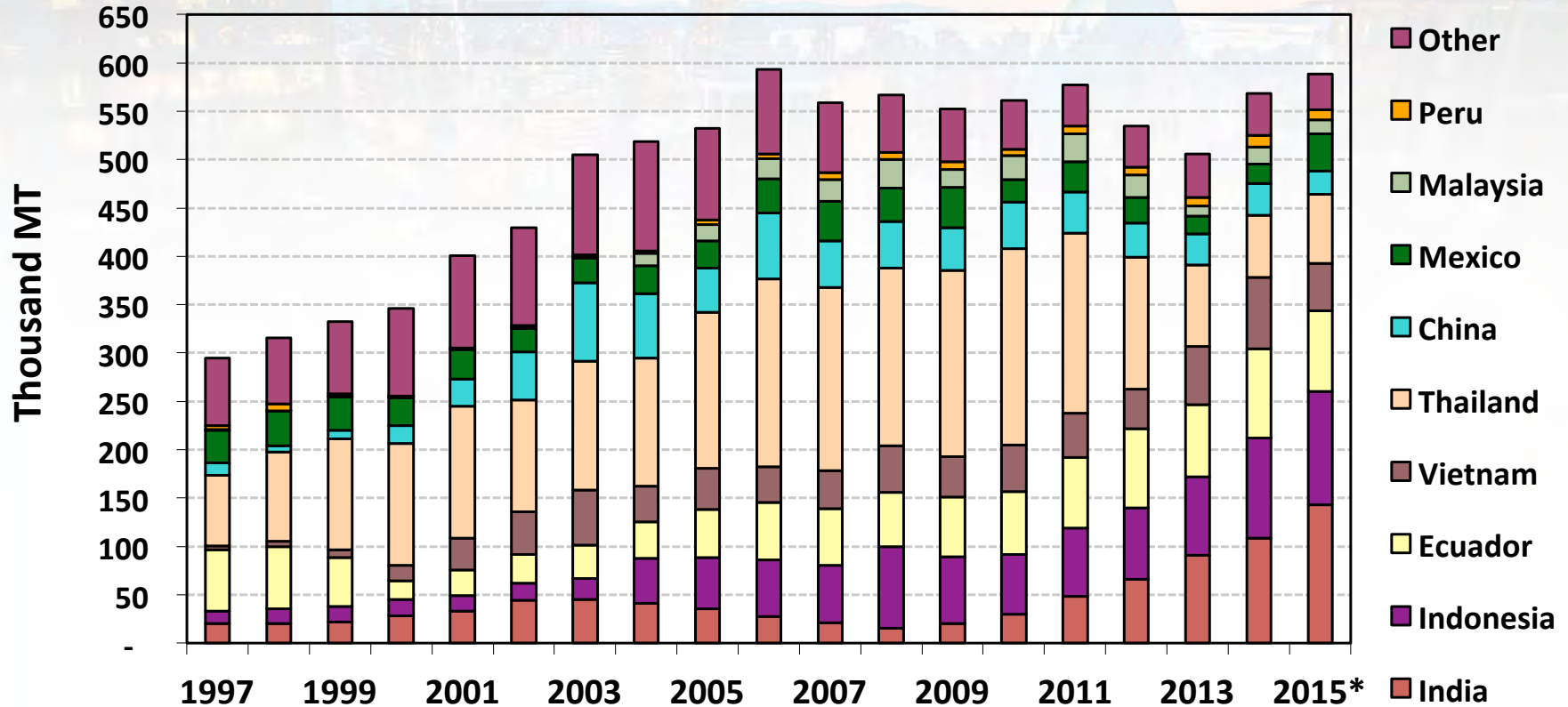
The global shrimp market will strengthen in 2016 compared to 2015

Outlook	Asia	Americas	Others
Strongly Agree	Indonesia		
Agree	Bangladesh, Taiwan	Belize, Colombia, Cuba, Ecuador, Guatemala, Panama, Peru, Venezuela	Egypt
Neutral/No Opinion	China, India, Malaysia, South Korea, Vietnam	Brazil, Honduras, Mexico, Nicaragua	Madagascar, Saudi Arabia
Disagree	Philippines, Thailand		Australia
Strongly Disagree			



Trends in Trade:

U.S. Shrimp Imports: Expected to Go Up by 4% in 2015

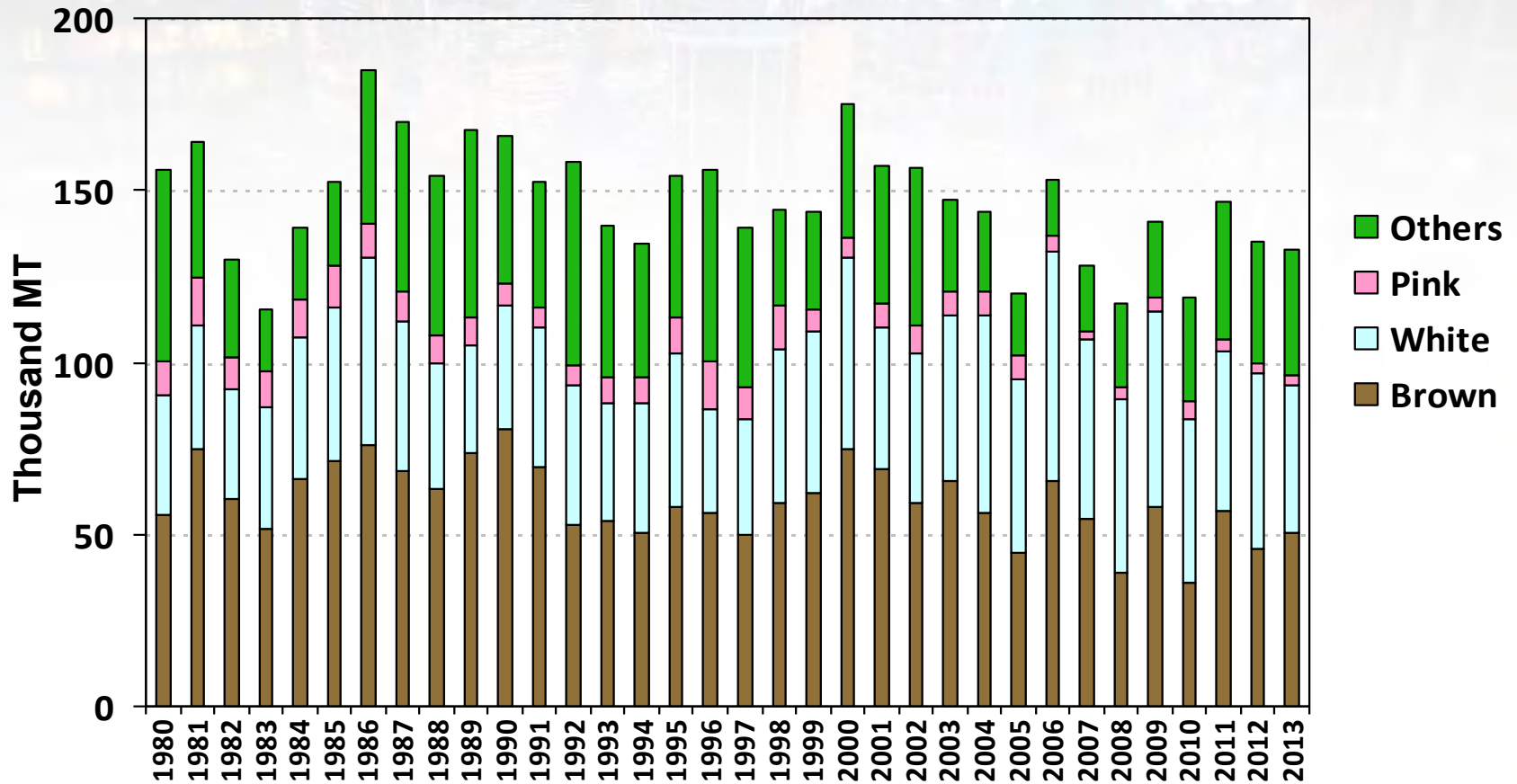


Imports from Thailand have declined sharply since peaking in 2010 at 203,000 tons. Thai imports in 2014 were only 32% of the import volume in 2010. Imports in 2015 are expected to recover partially, from 65,000 to 72,000 tons. India, Indonesia and Ecuador have increased their shipments and become the top exporters to the U.S. market.

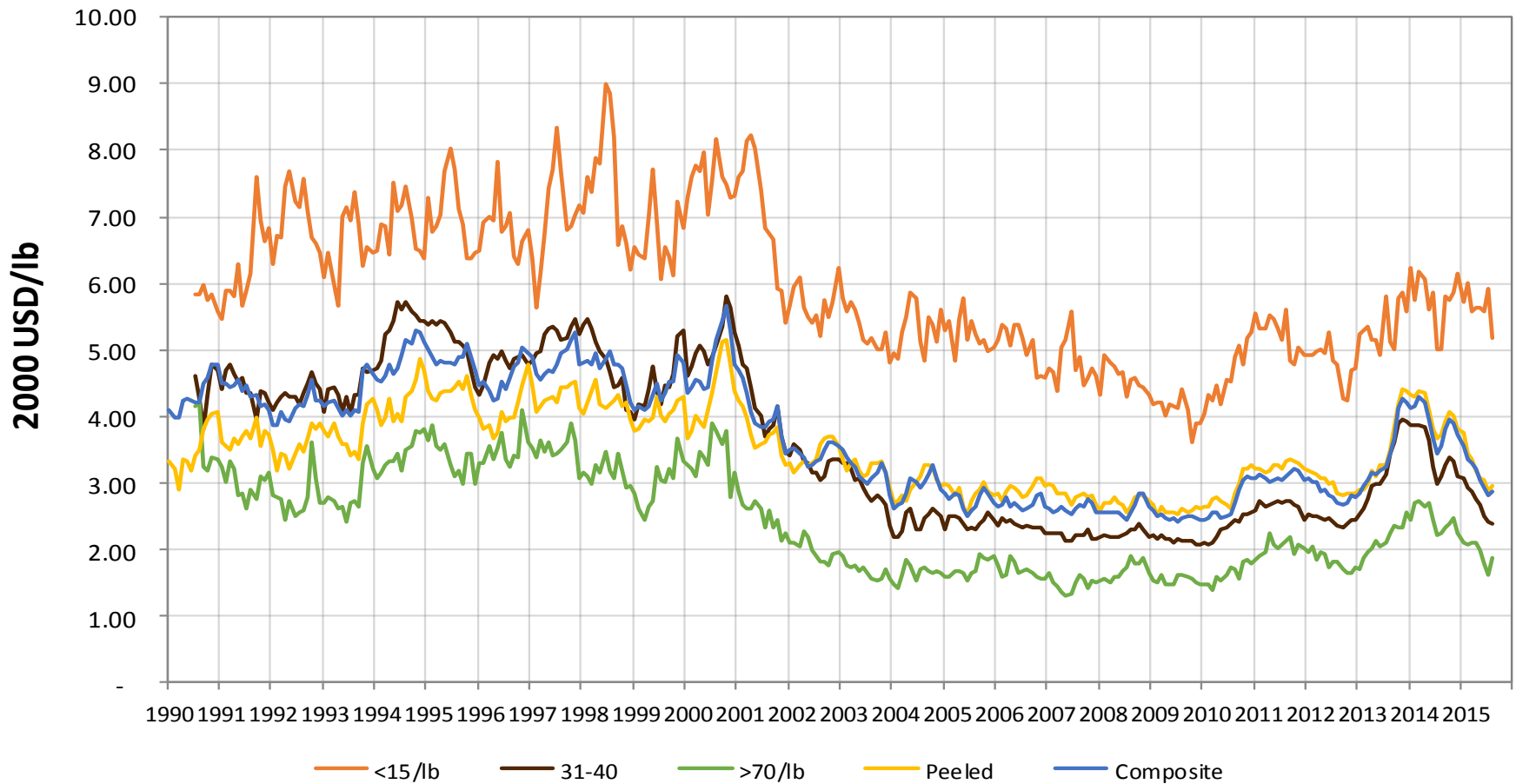
Source: USDC/NMFS (2015)

* Estimate

U.S. Landings of Wild-Caught Shrimp



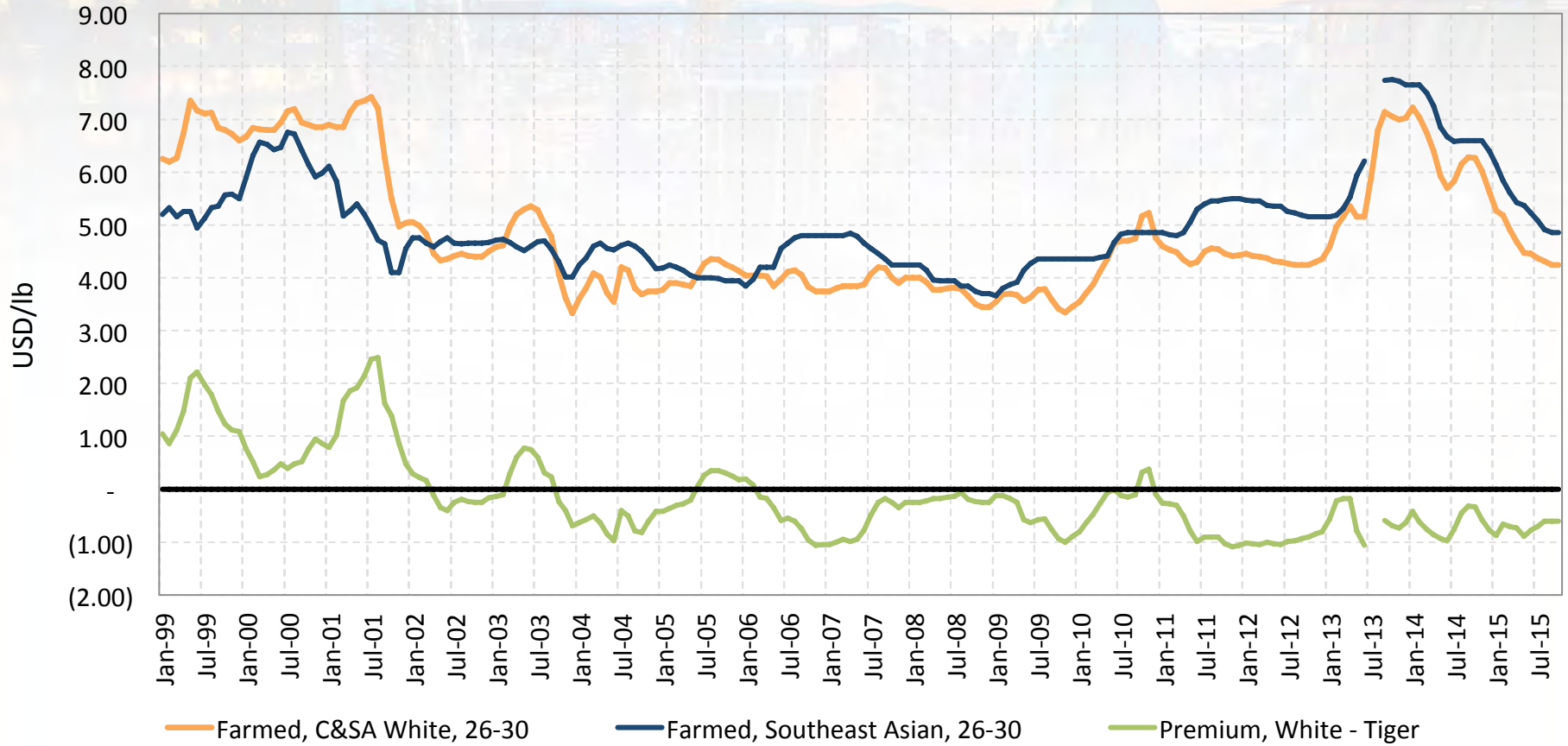
Trends in U.S. Shrimp Import Prices



Real prices increased sharply during 2013 but have been declining since 2014.

Source: USDC/NMFS (2015)

P. monodon vs. *P. vannamei*: U.S. Wholesale Prices



Coinciding with falling supplies from Thailand, wholesale shrimp prices began rising since 2010 with the sharpest increase taking place in 2013. Prices have declined during 2014 and 2015 as other countries (India, Indonesia, Ecuador, Vietnam) increase their exports to the U.S.

Source: Urner Barry (2015)

Conclusions

Significant recovery occurred in **2014**

Expected Global growth rate **2014-17 about +7%**

However, **2014 to 2015** expected global harvest down **-2%**
(-5% Asia; +5% Americas)

**Disease - Biggest Constraint
followed by market prices**

2016 - Expectations
Higher feed prices;

Somewhat stronger shrimp markets (less confident than 2014)
Mixed about global economic conditions (expectations in 2014 were more bullish)