

# Shrimp Production Review

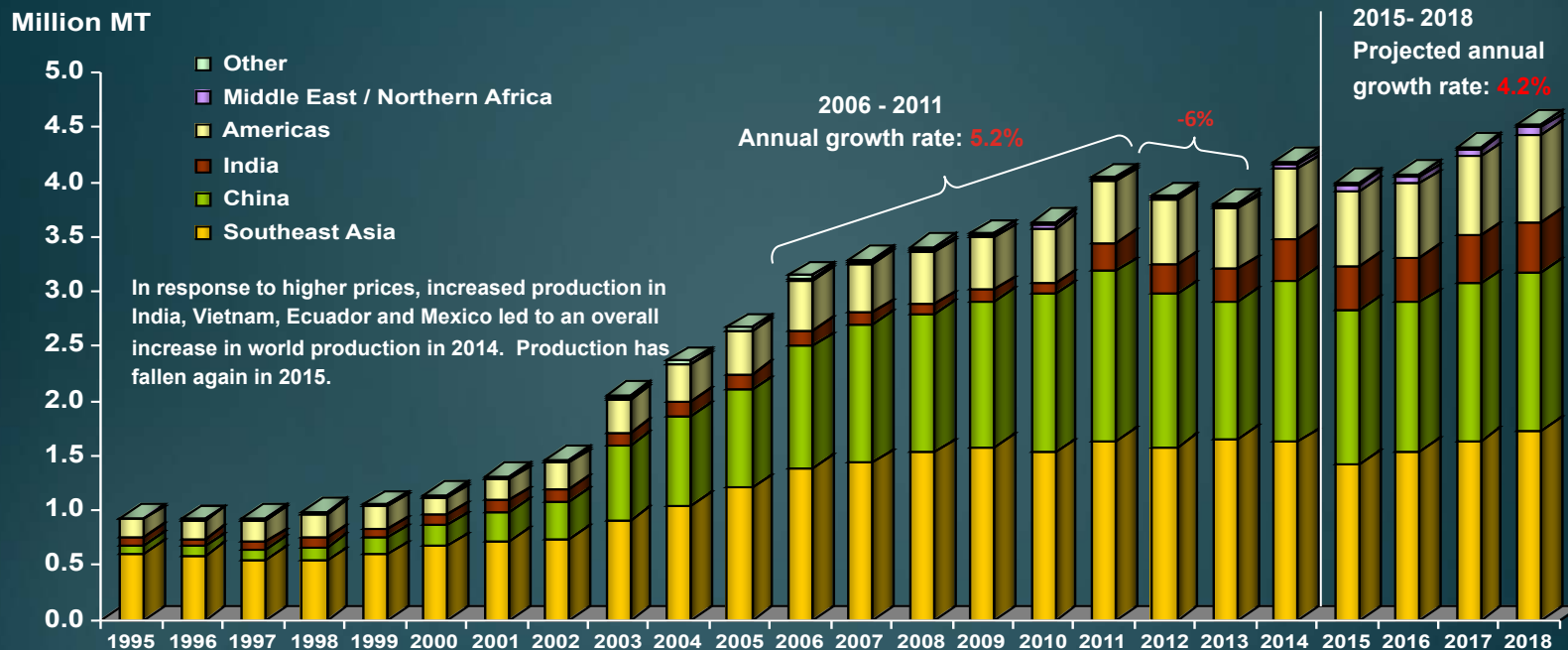
James L. Anderson, Director, Institute for Sustainable Food Systems  
University of Florida

Diego Valderrama, University of los Andes, Colombia

Darryl Jory, Global Aquaculture Alliance



# Shrimp Aquaculture Production by World Region: 1995 - 2018



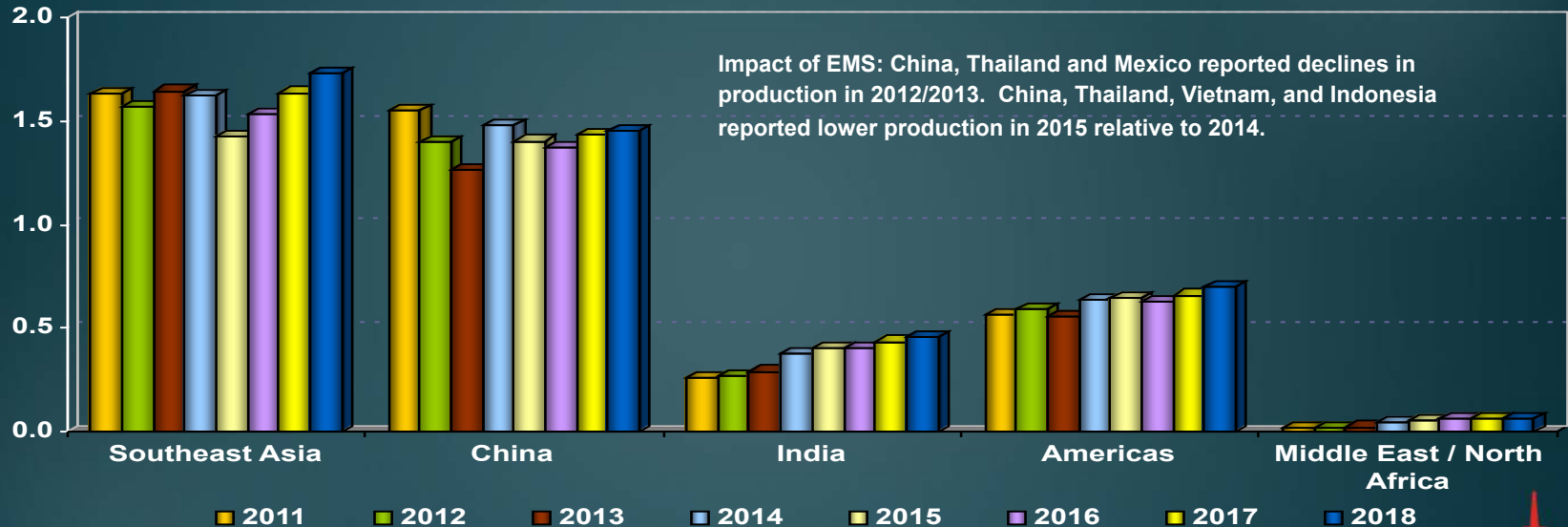
Sources: FAO (2016) for 1995-2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.

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

*M. rosenbergii* is not included.

# Shrimp Aquaculture by Major Producing Regions: 2011 – 2018

Million MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.

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

*M. rosenbergii* is not included.

# China: Production of Shrimp Feed



Source: Chinese Fisheries Yearbook (2006-2016); Chinese Feed Industry Yearbook (2009-2012); Freetrade.com.cn (2012-2014)

# Shrimp Exports from China



Source: FAO (2013); World Integrated Trade Solution Database (2005-2015):  
<http://wits.worldbank.org>

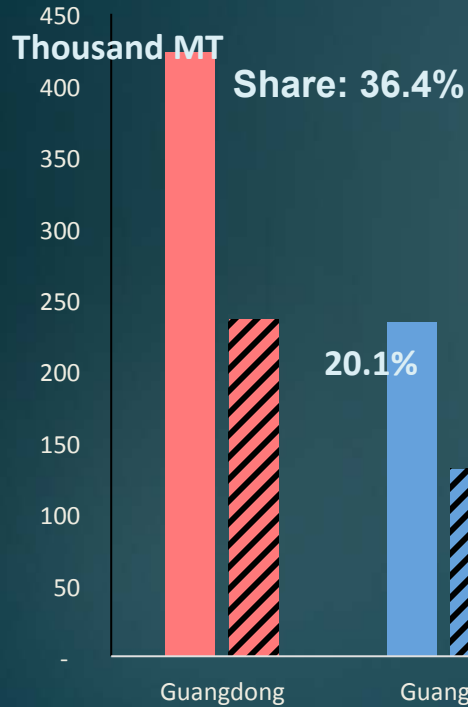
# China – Estimated Domestic Shrimp Consumption (Round Weight)



Source: Chinese Fisheries Yearbook; FAO (2013); World Integrated Trade Solution Database (2005-2015): <http://wits.worldbank.org>

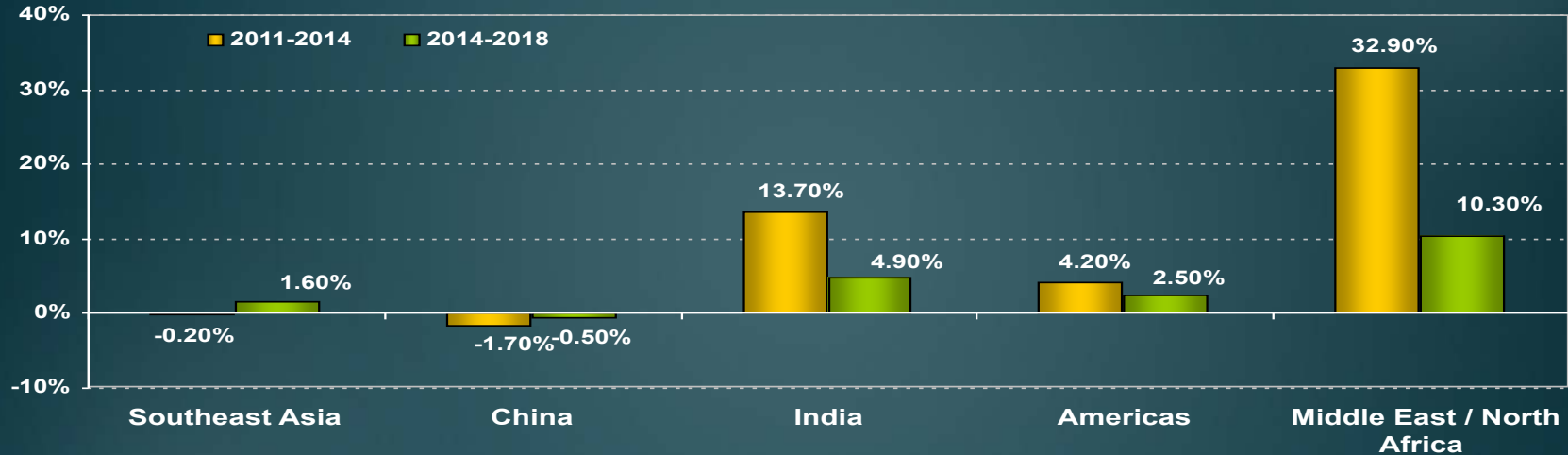
**Note: Estimated Consumption = Production + Import - Export**

# Marine Shrimp Aquaculture in China by Region – 2015 and 2006



# Shrimp Aquaculture by Major Producing Regions: 2011-2014 vs. 2014-2018

Average Annual Growth  
Rate



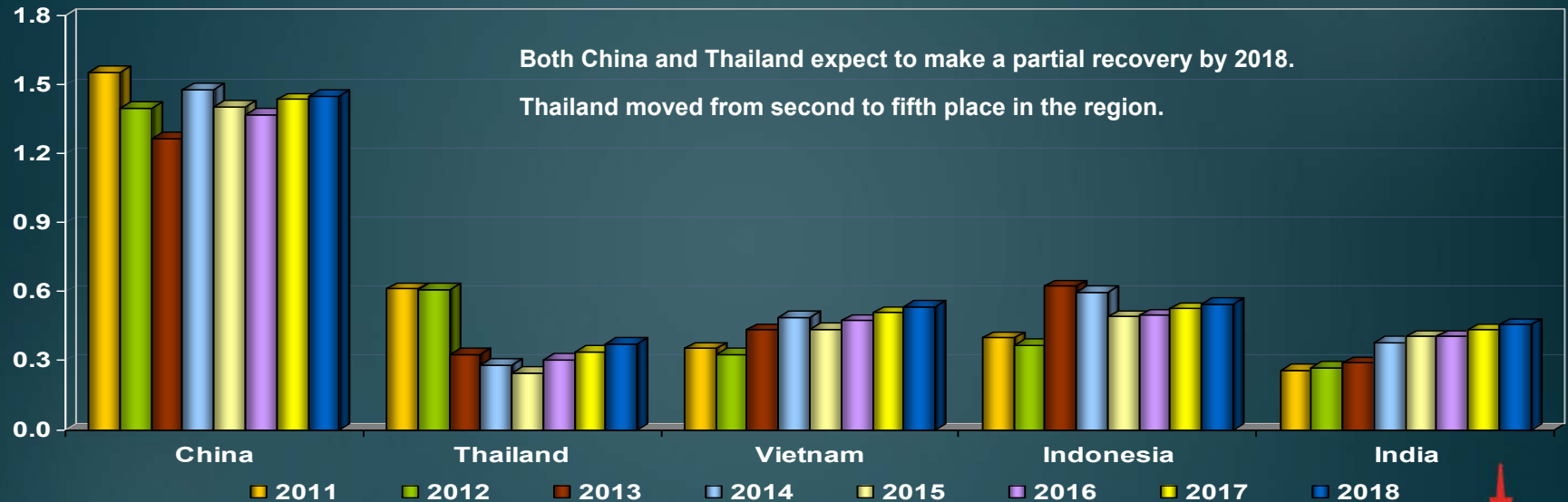
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Southeast Asia includes Thailand, Vietnam, Indonesia, Bangladesh, Malaysia, Philippines, Myanmar and Taiwan.  
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# Shrimp Aquaculture in Asia: 2011 – 2018

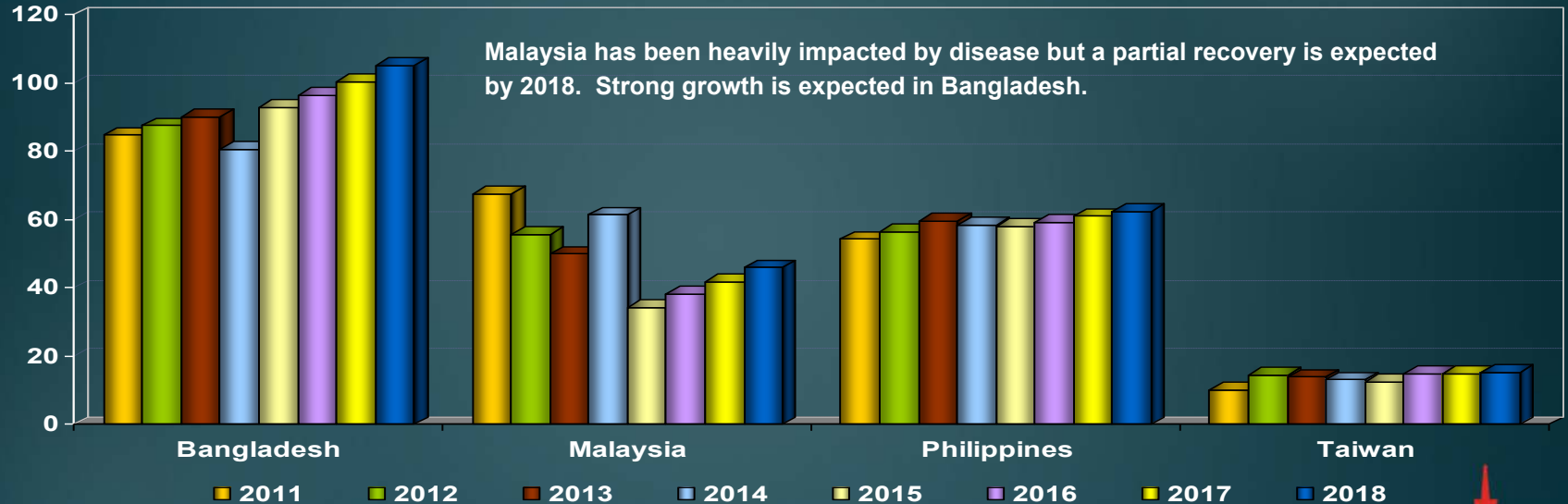
Million MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
*M. rosenbergii* is not included.

# Shrimp Aquaculture in Asia: 2011 – 2018

Thousand MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
*M. rosenbergii* is not included.

# Shrimp Aquaculture in Latin America: 2011 – 2018

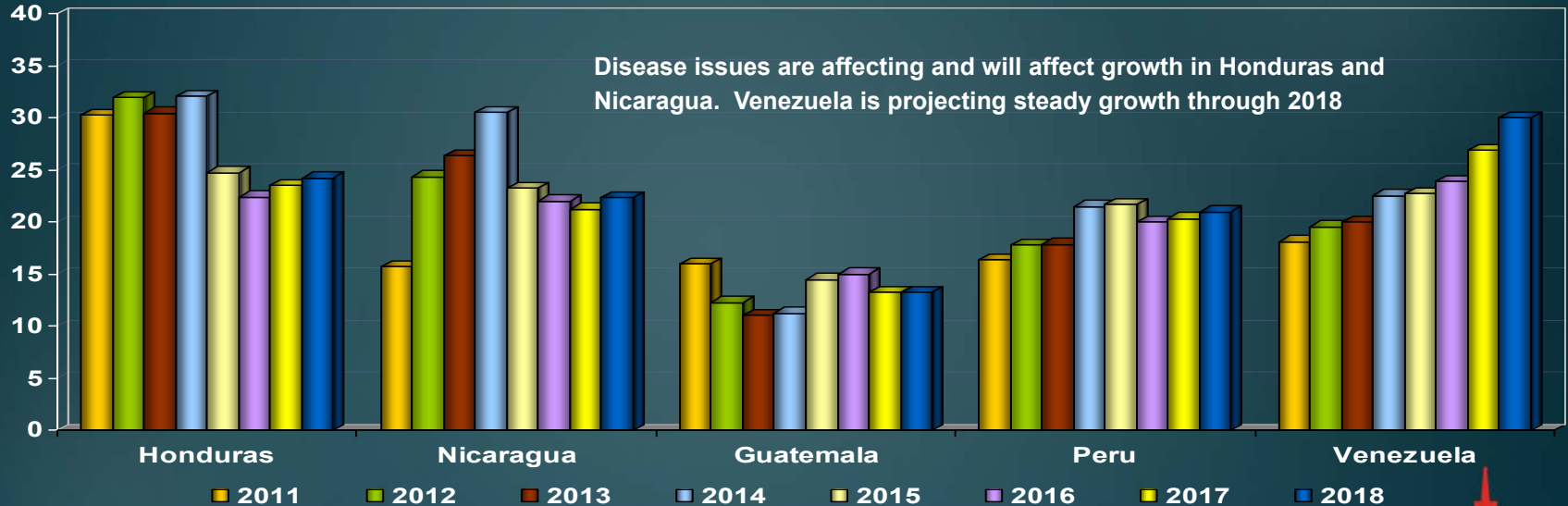
Thousand MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
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# Shrimp Aquaculture in Latin America: 2011 – 2018

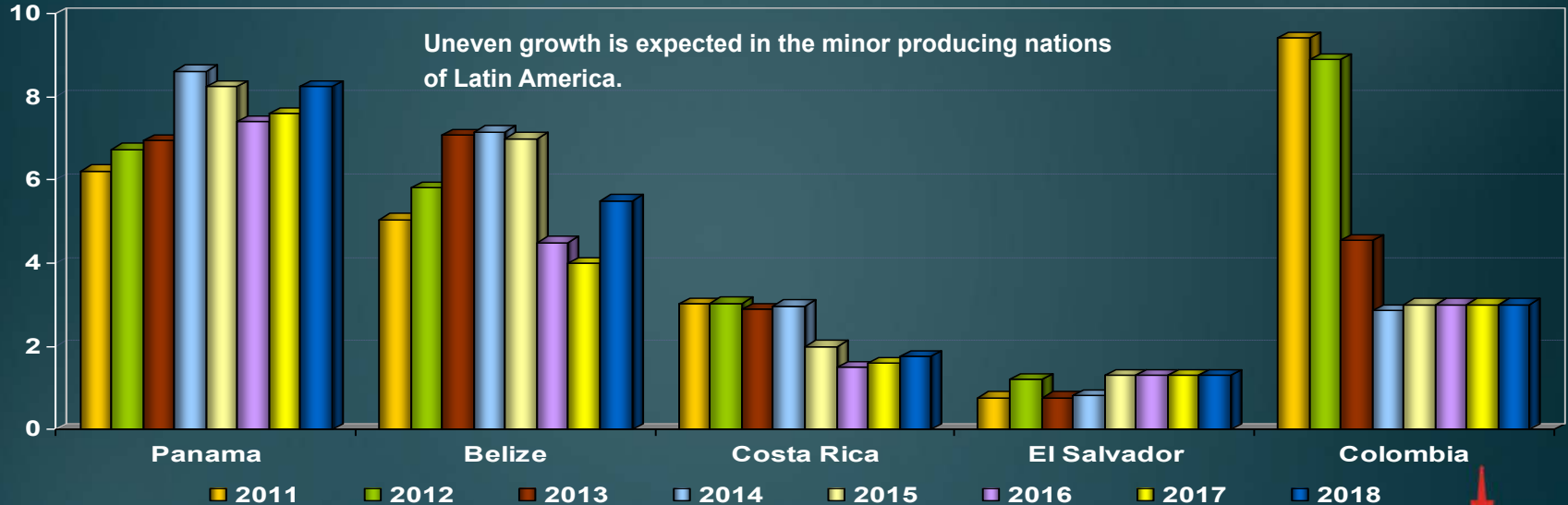
Thousand MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
*M. rosenbergii* is not included.

# Shrimp Aquaculture in Latin America: 2011 – 2018

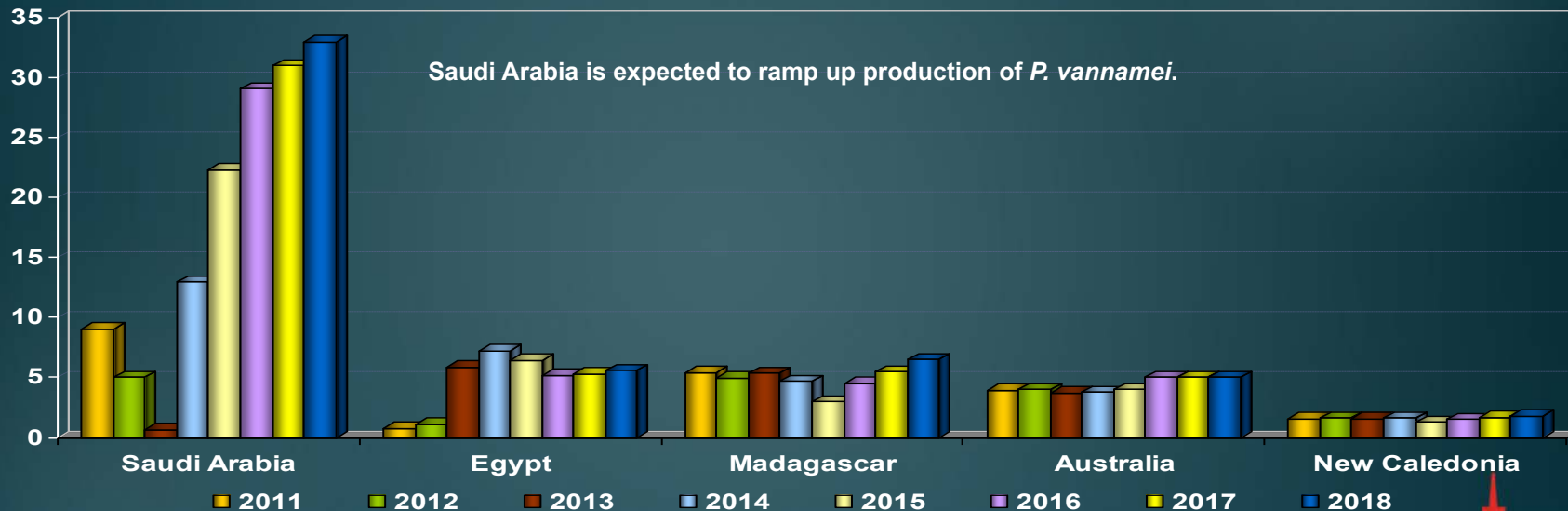
Thousand MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
*M. rosenbergii* is not included.

# Shrimp Aquaculture in Other Reporting Countries: 2011 – 2018

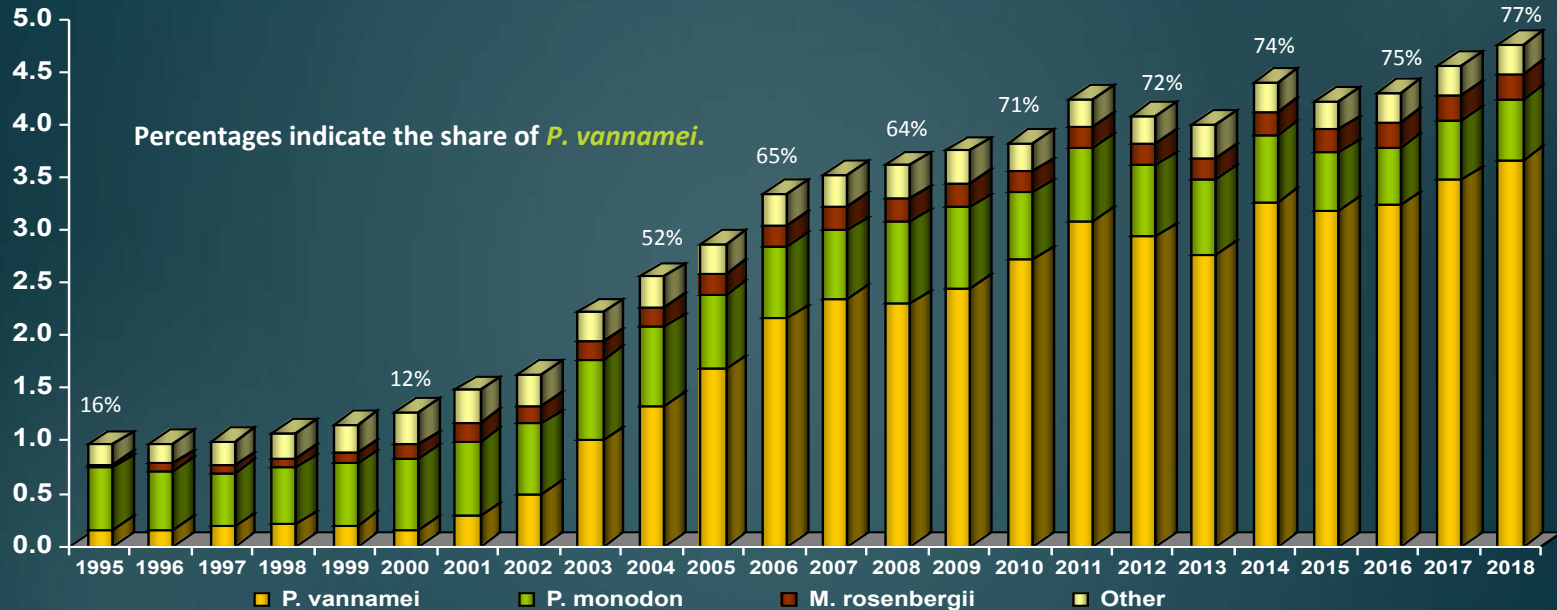
Thousand MT



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
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# World Shrimp Aquaculture (including *M. rosenbergii*) by Species: 1995 - 2018

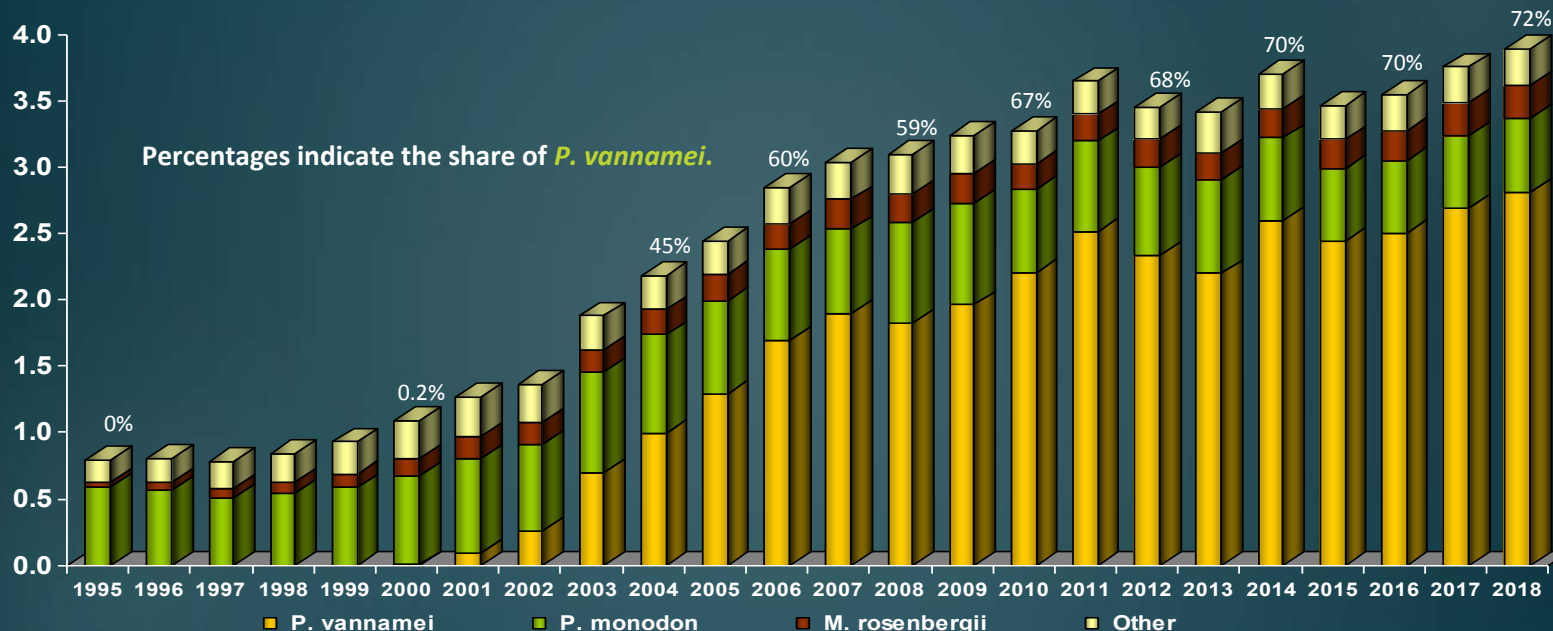
Million MT



Sources: FAO (2016) for 1995-2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.

# Shrimp Aquaculture (including *M. rosenbergii*) in Asia by Species: 1995 - 2018

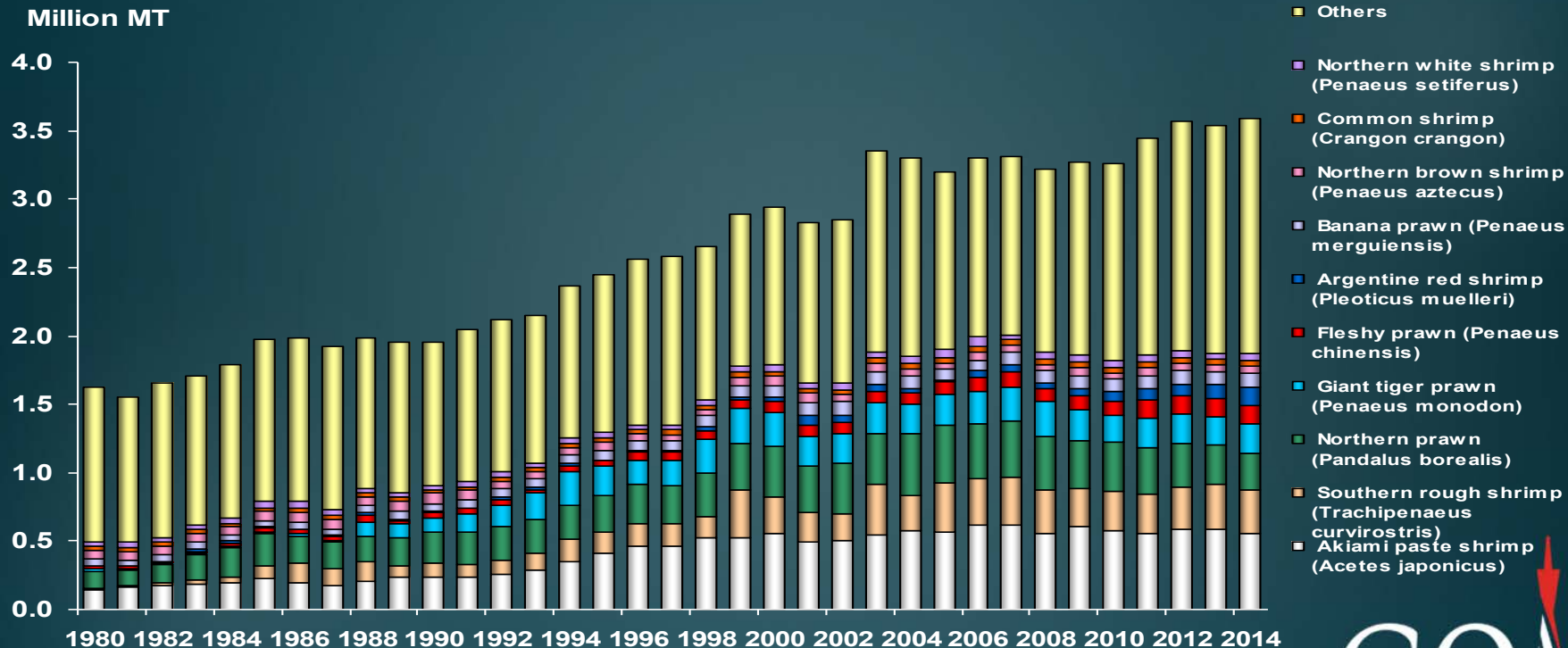
Million MT



Sources: FAO (2016) for 1995-2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.

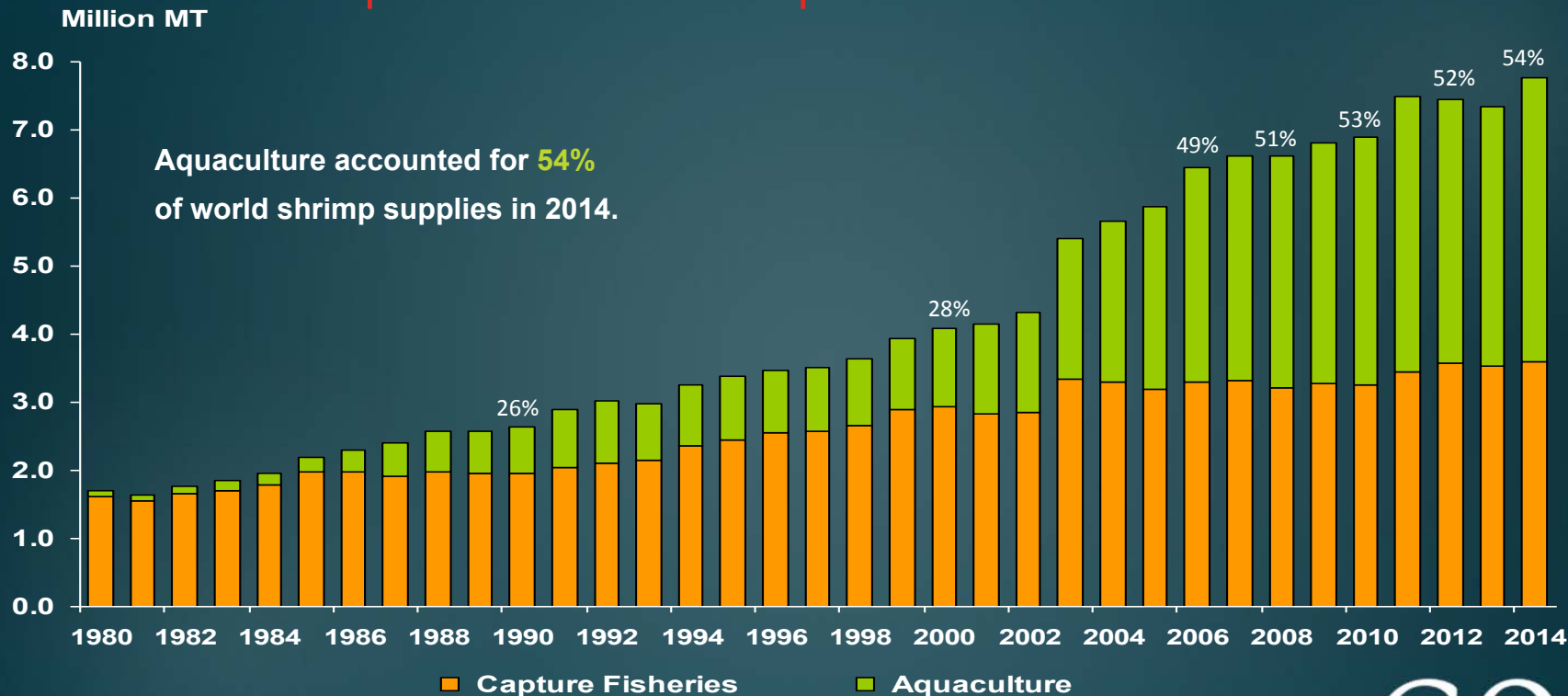


# World Landings of Wild-Caught Shrimp by Species



Source: FAO (2016).

# World Production of Shrimp Capture Fisheries & Aquaculture



Sources: FAO (2016); GOAL (2014, 2016).

Notes: *M. rosenbergii* is not included.

China includes freshwater production of *P. vannamei*.

# World Production of Shrimp by Species

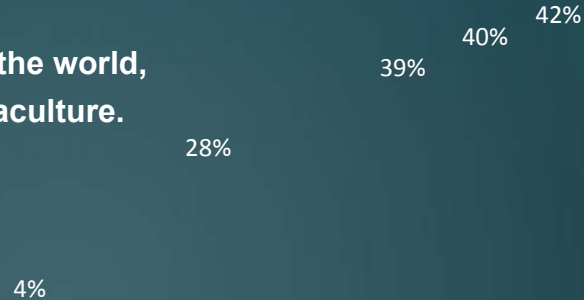
## Capture Fisheries & Aquaculture Combined



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*P. vannamei* is the most important species in the world, with virtually all production coming from aquaculture.

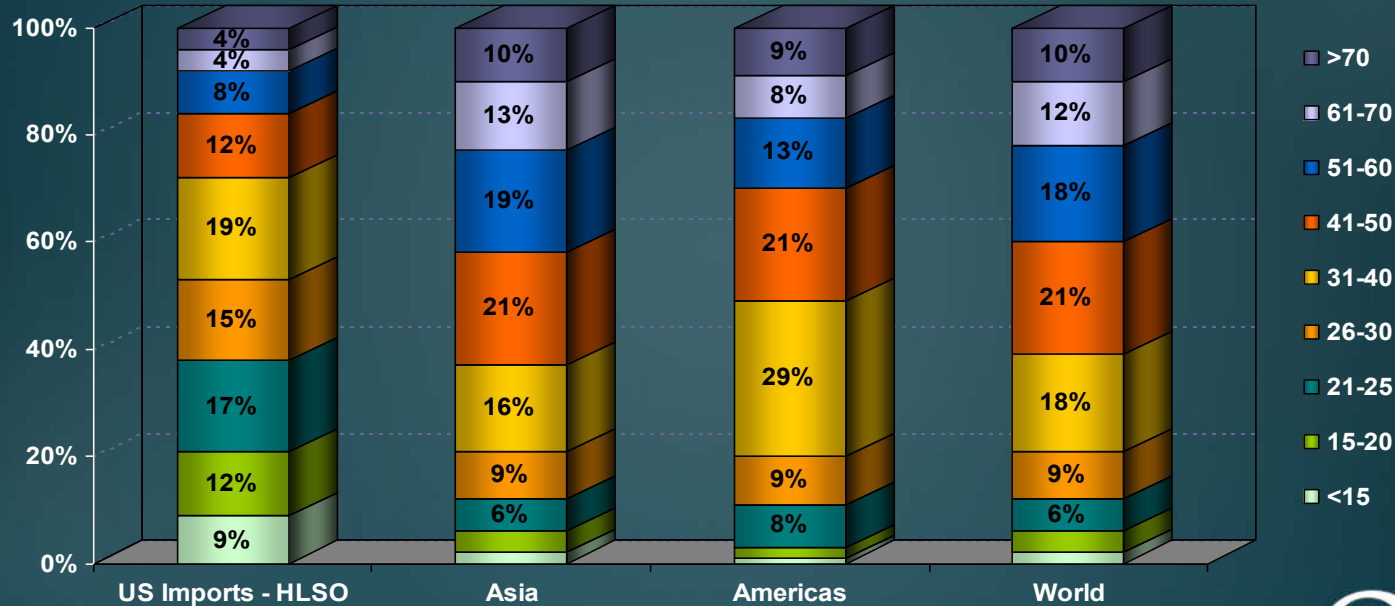
Percentages indicate the share of *P. vannamei*.



Sources: FAO (2016); GOAL (2014, 2016).

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

# Composition of Shrimp Aquaculture Production by Size Categories – Aggregate 2015



Source: GOAL (2015).

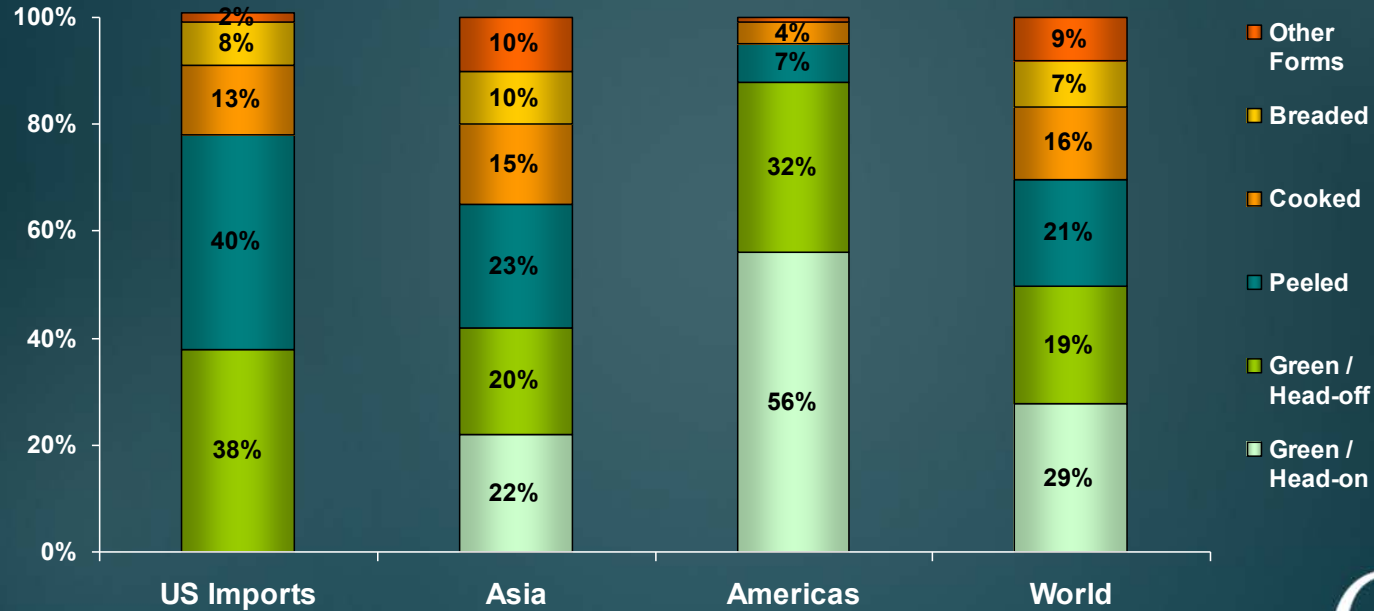
## Expected Trends in Shrimp Aquaculture Size Categories - GOAL Survey 2016

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

India, Indonesia and Vietnam expect increased production of smaller counts.

# GOAL 2016 Survey

## Composition of Shrimp Aquaculture Production by Product Form – Aggregate 2016



## Expected Trends in Shrimp Aquaculture Product Form - GOAL Survey 2015

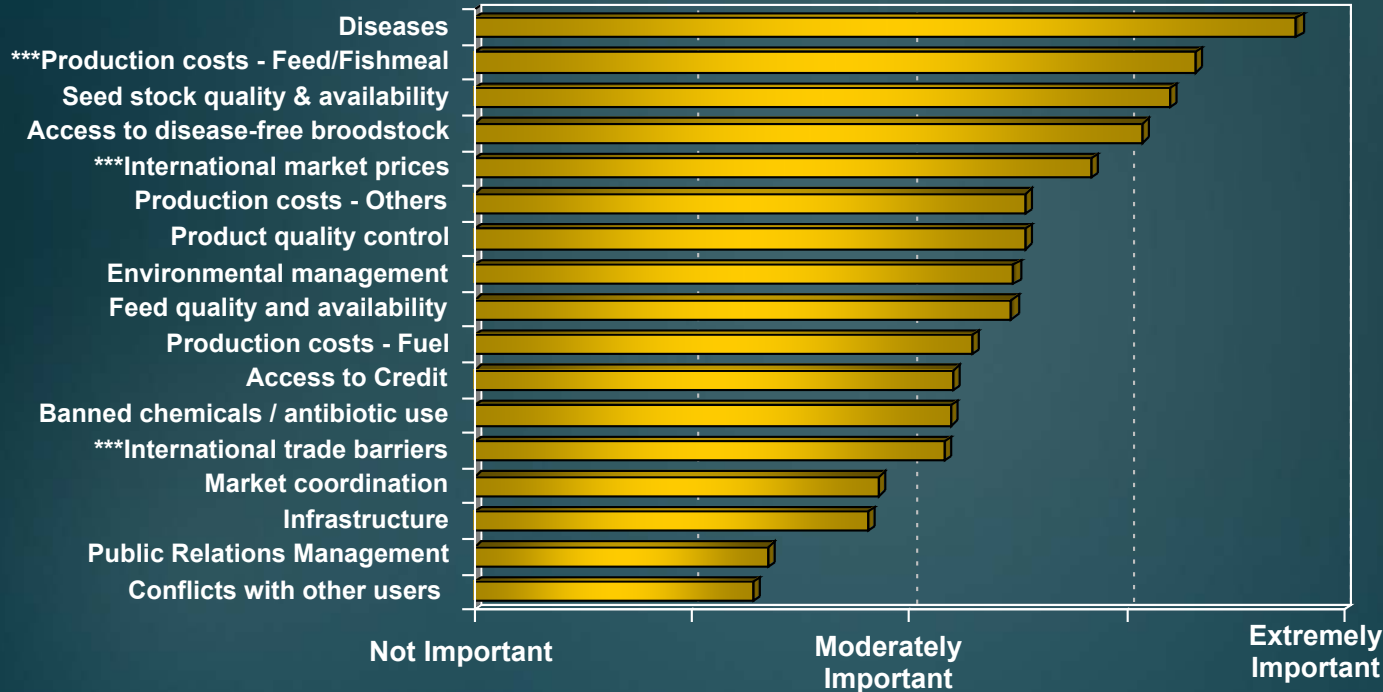
Product Form	Asia	Americas	World
Green / Head-on	Stable/Decrease	Stable/Increase	Stable
Green / Head-off	Increase	Stable/Decrease	Stable/Increase
Peeled	Stable/Increase	Stable	Stable/Increase
Cooked	Stable	Stable	Stable
Breaded	Increase	Stable/Decrease	Increase
Other Forms	Increase	Decrease	Increase

For a number of years there has been a trend for increased production of green / head-on shrimp in Ecuador for the European and Asian markets.

# GOAL 2016 Survey

## Issues & Challenges in Shrimp Aquaculture

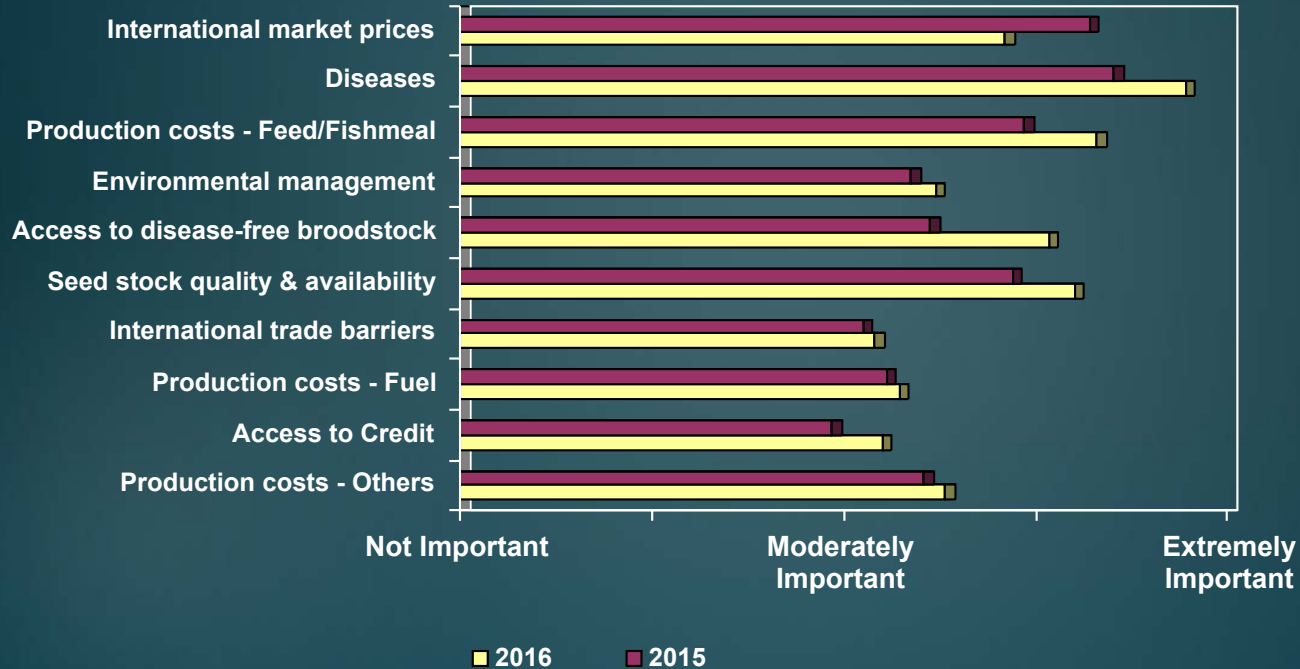
### All Countries



Asterisk indicates a Top 3 issue in GOAL 2007 Survey



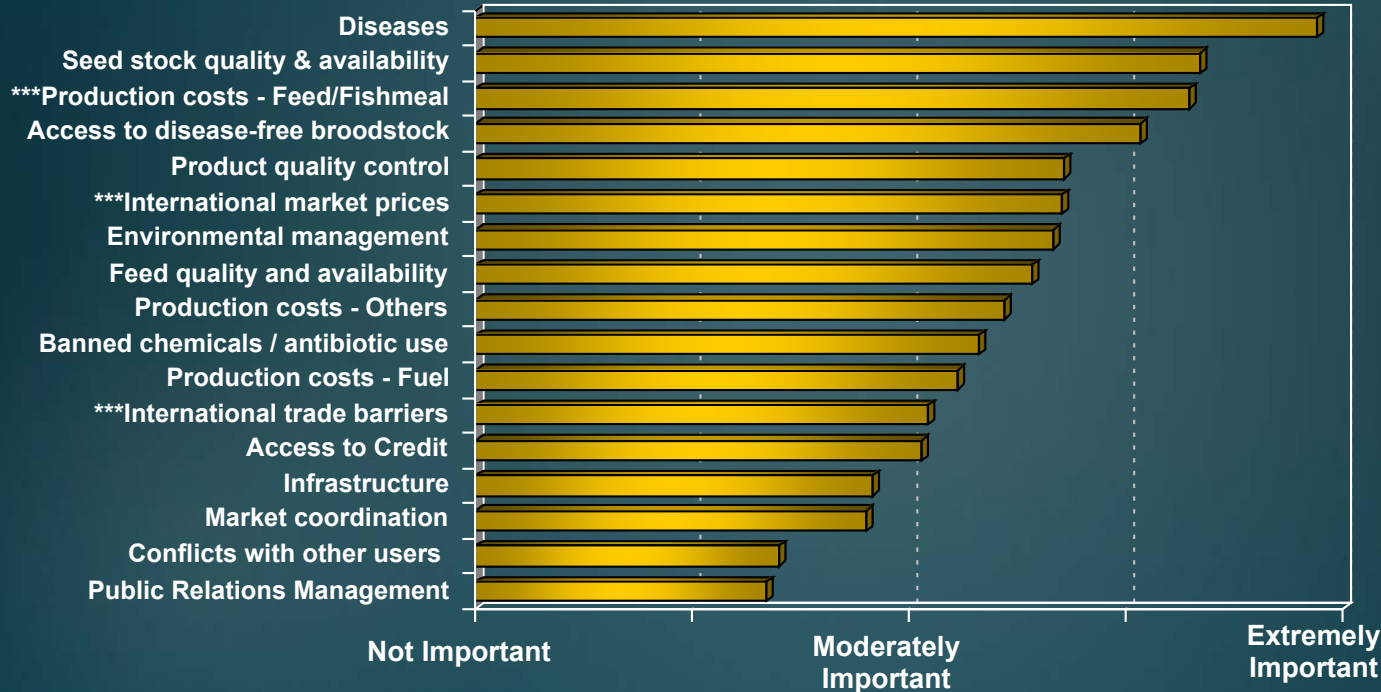
# Worldwide Top Issues & Challenges in Shrimp Aquaculture: 2016 Survey vs. 2015 Survey



# GOAL 2016 Survey

## Issues & Challenges in Shrimp Aquaculture

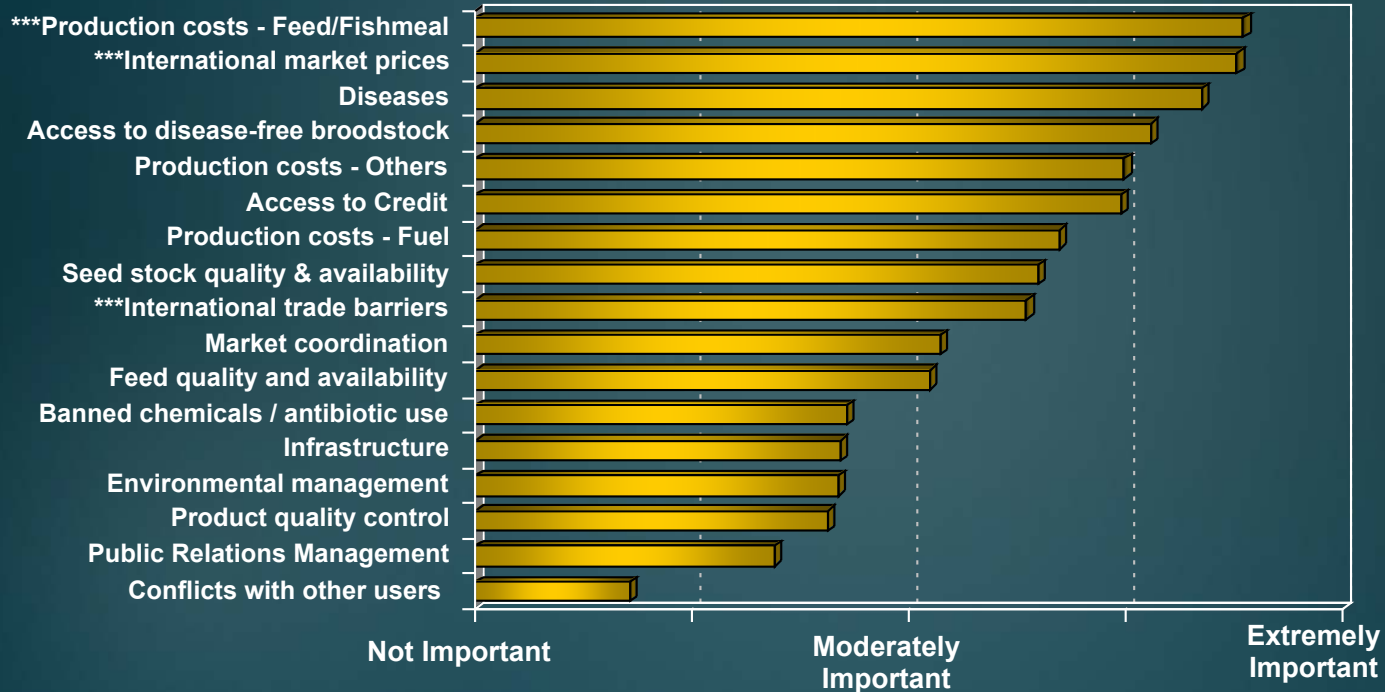
### Asia



Asterisk indicates a Top 3 issue in GOAL 2007 Survey

# GOAL 2016 Survey

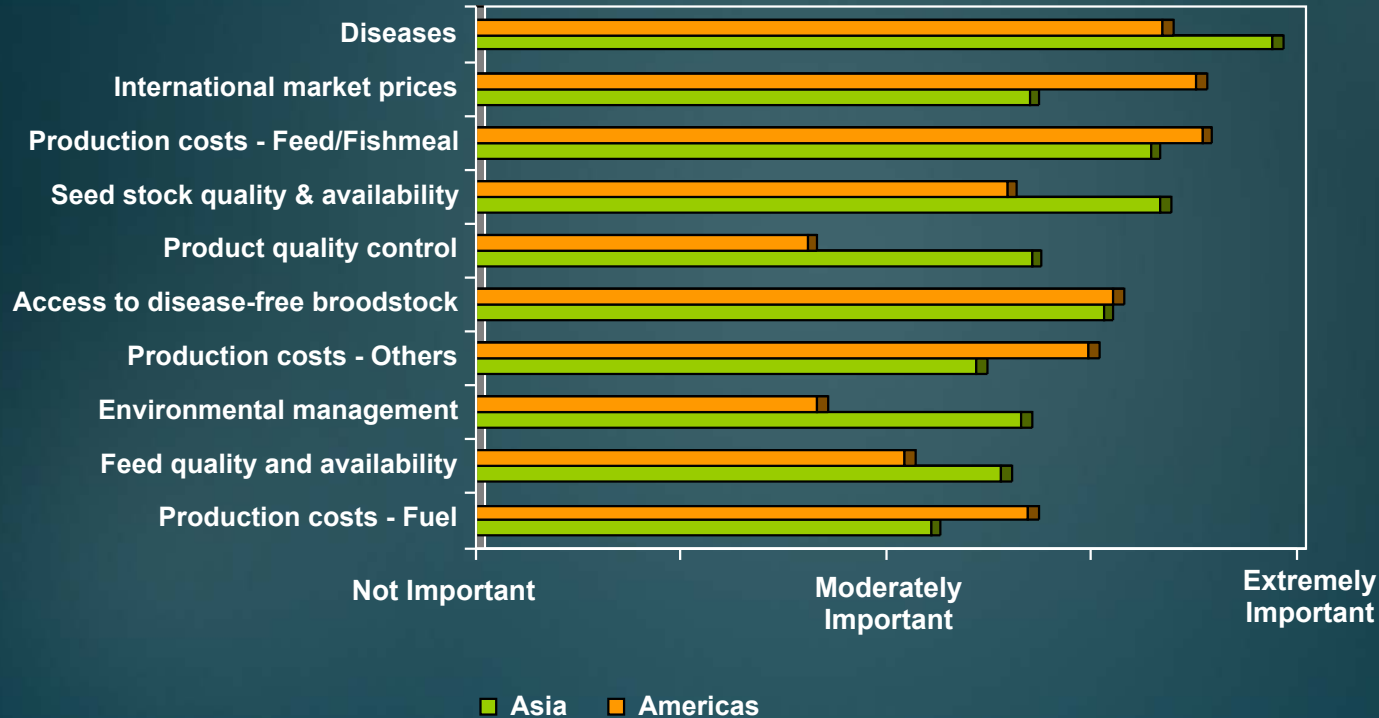
## Issues & Challenges in Shrimp Aquaculture Latin America



Asterisk indicates a Top 3 issue in GOAL 2007 Survey

# GOAL 2016 Survey

## Top Issues & Challenges in Shrimp Aquaculture Asia vs. Latin America



## GOAL 2016 Survey

Global economic conditions will be better in 2017 compared to 2016

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

Americas: more positive than last year

Asia: little less positive than last year

## GOAL 2016 Survey

Feed prices will be lower in 2017 compared to 2016

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

About  
same  
perspective  
as last year

## GOAL 2016 Survey

The global shrimp market will strengthen in 2017 compared to 2016

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

Americas: Same perspective as last year

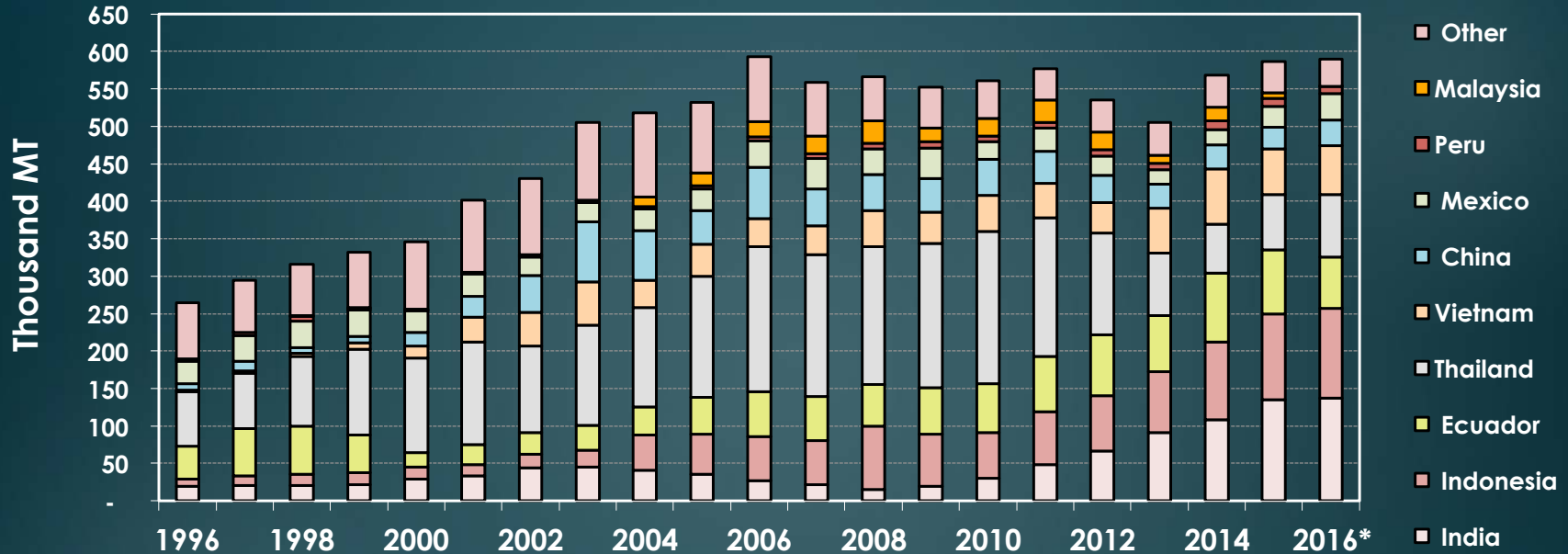
Asia: More market strengthening than last year

# Trends in Trade



# U.S. Shrimp Imports

Down 12% between 2011-13, Up 17% between 2013-16

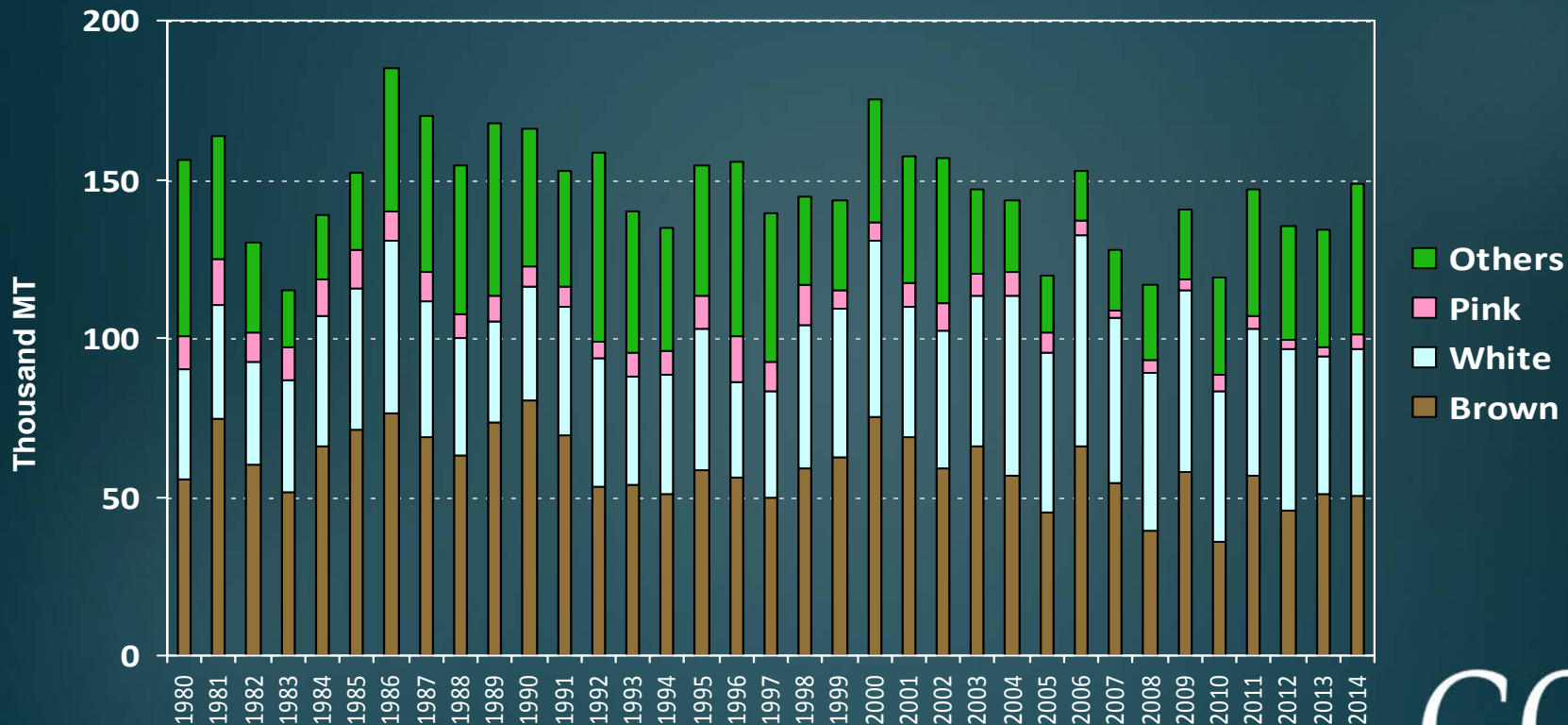


Imports from Thailand declined sharply (by 68%) between 2010 and 2014, with a slight recovery taking place in 2015 (from 65 to 74 thousand tons). India and Indonesia have become the top exporters to the U.S. market, accounting for 44% of imports in 2016.

Source: USDC/NMFS (2016)

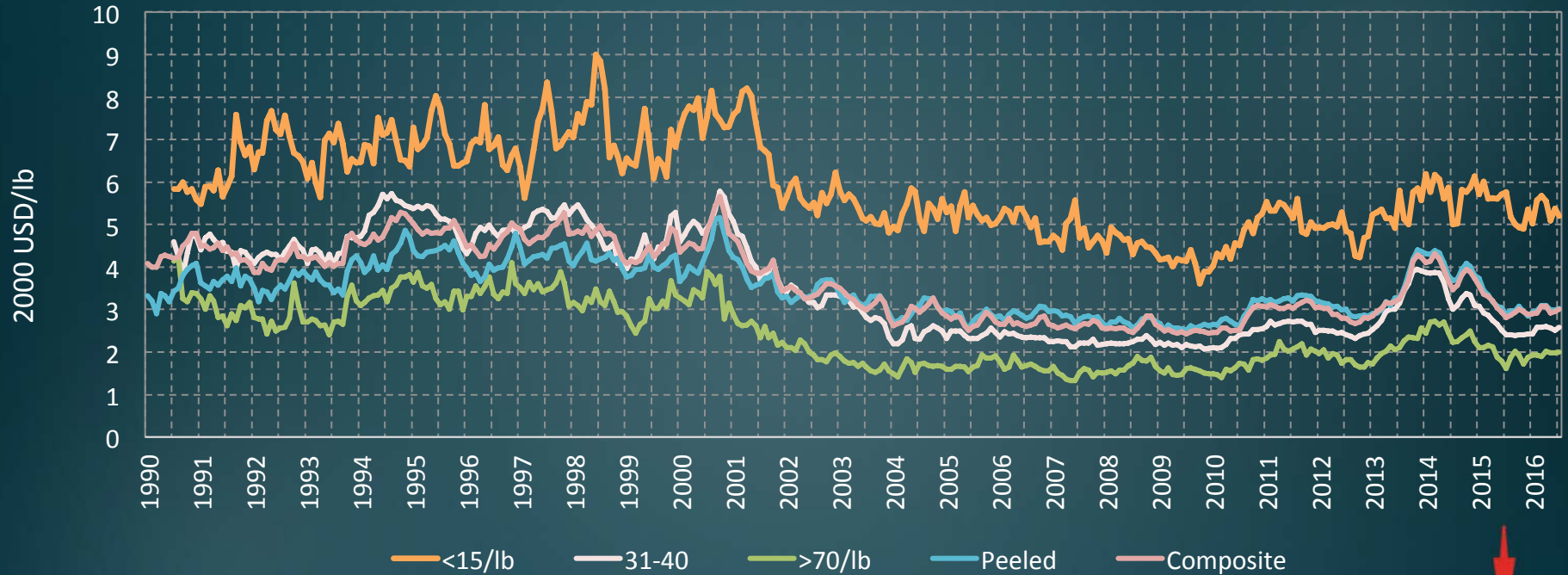
\* Estimate

# U.S. Landings of Wild-Caught Shrimp



Source: USDC/NMFS (2016)

# Trends in U.S. Shrimp Import Prices

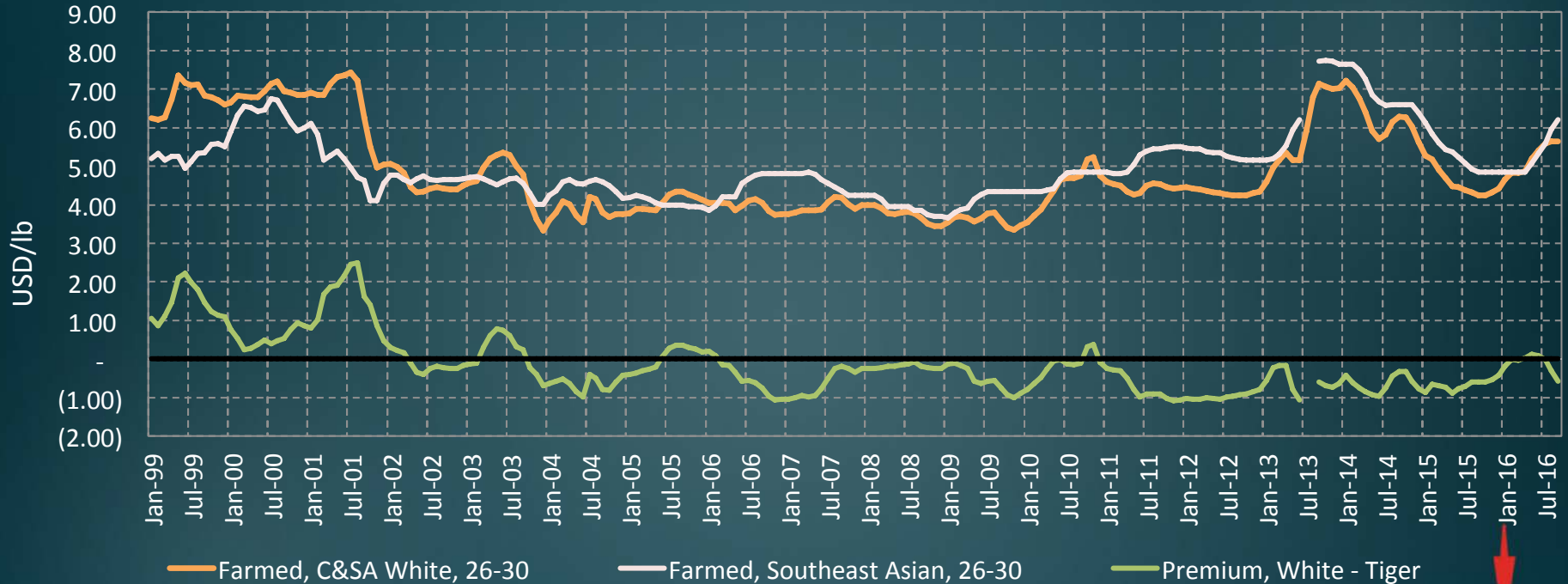


Real prices increased sharply during 2013 but returned to previous levels in 2014 and early 2015. Real prices have remained stable over the last 12 months.

Source: USDC/NMFS (2016).

# *P. Monodon* vs. *P. vannamei*

## U.S. Wholesale Prices

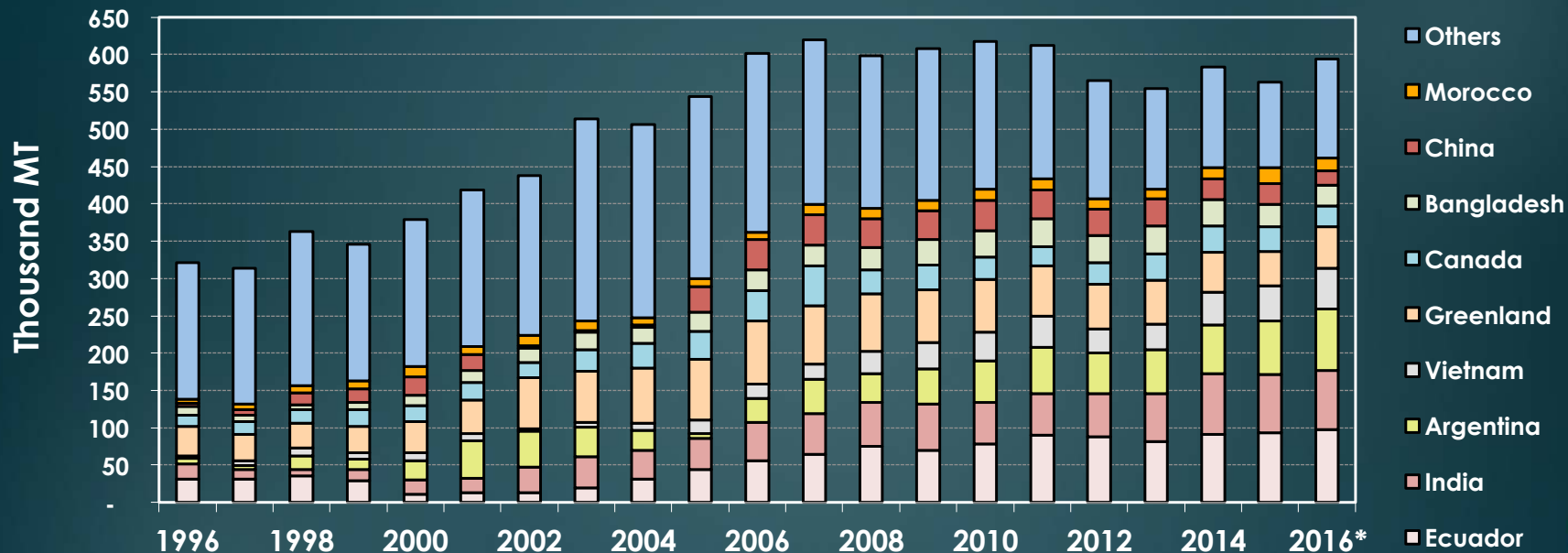


Coinciding with falling supplies from Thailand, wholesale shrimp prices began rising in 2010 with the sharpest increase taking place in 2013. Prices declined during 2014 and 2015 as other countries (India, Indonesia, Ecuador, Vietnam) increased their exports to the U.S. The increase in prices during 2016 is partially driven by low harvests from the Gulf of Mexico shrimp fisheries.

Source: Urner Barry (2016).

# European Shrimp Imports from Extra-EU Countries

Down 9% between 2011-13, Up 7% between 2013-16

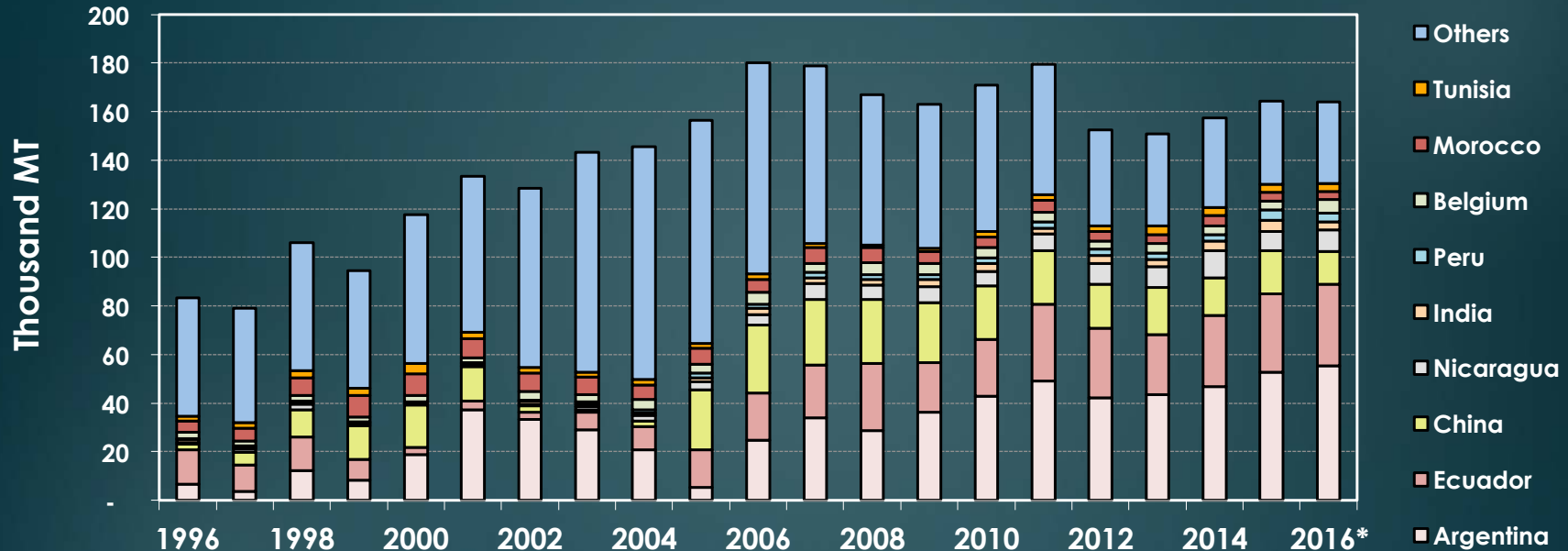


Source: Eurostat (2016).

\* Estimate

# Spanish Shrimp Imports

Down 16% between 2011-13, Up 9% between 2013-16

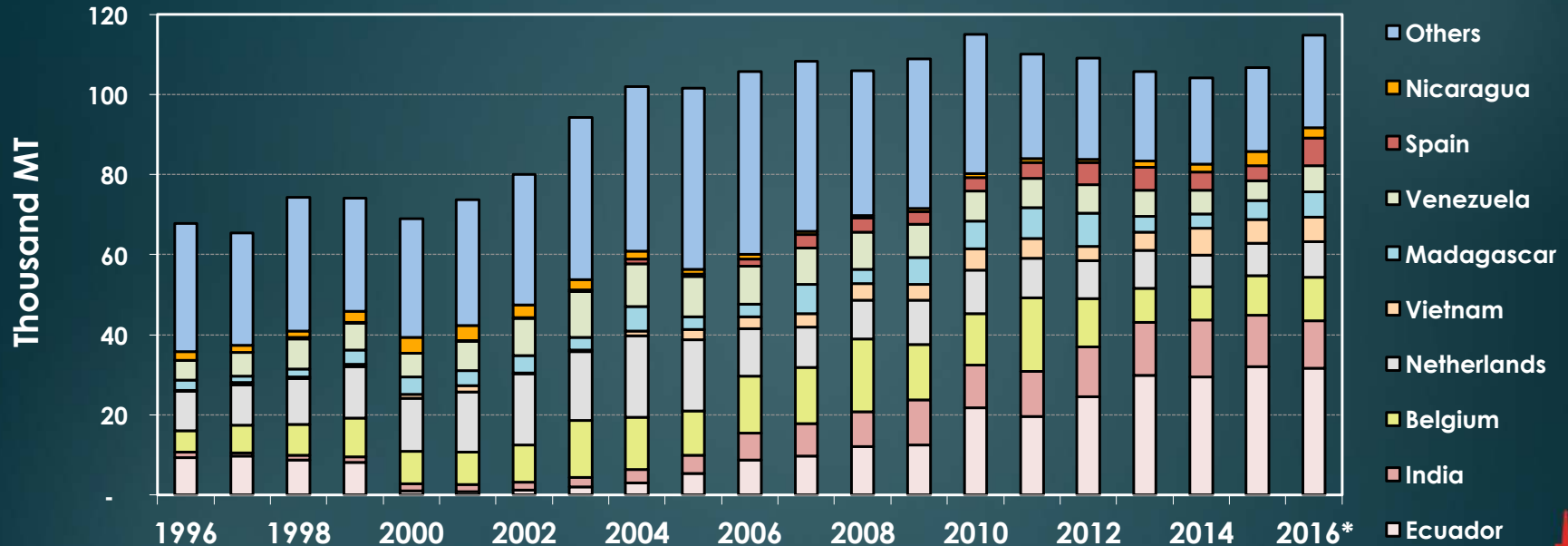


Source: Eurostat (2016).

\* Estimate

# French Shrimp Imports

Down 9% between 2010-14, Up 10% between 2014-16



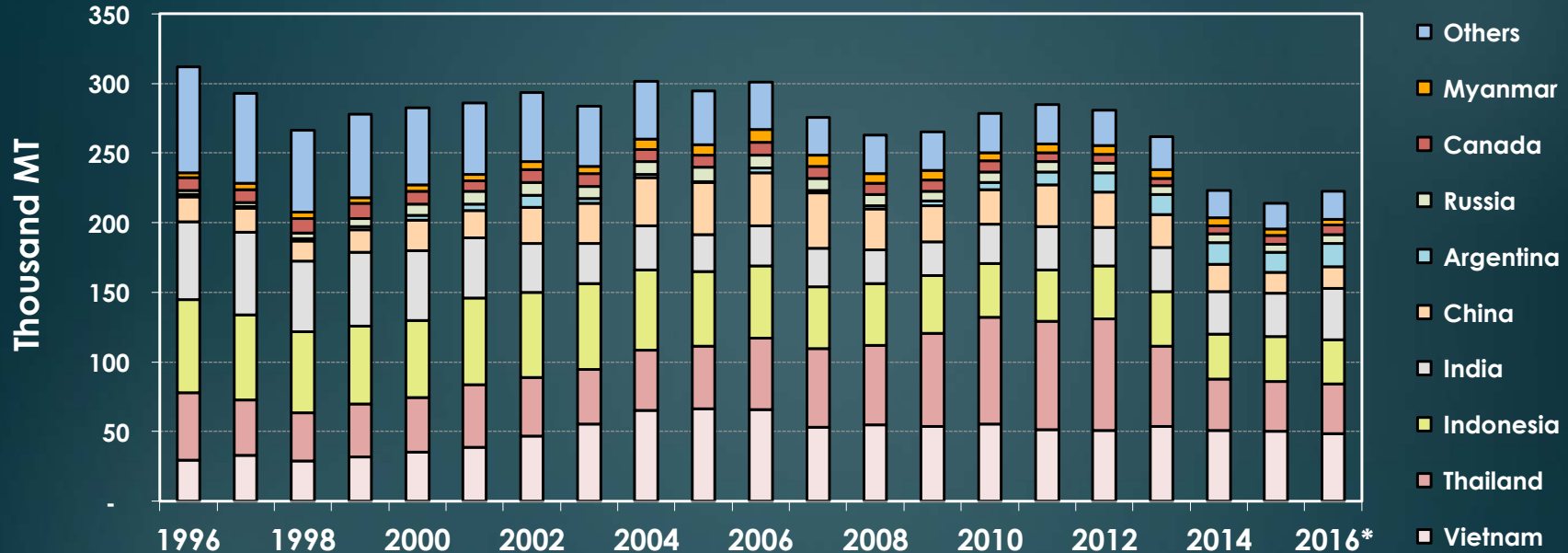
Imports from Ecuador and India have increased dramatically since 2000, currently accounting for nearly 38% of the import market.

Source: Eurostat (2016).

\* Estimate

# Japanese Shrimp Imports

Down 25% between 2011-15, Up 4% in 2016



Declining imports were caused primarily by lower shipments from Thailand, which went down from 80 thousand tons in 2012 to 36 thousand tones in 2015, with no substantial increase in 2016.

Source: Japan Customs (2016).

\* Estimate



## Conclusions

2014 to 2015 **-5%**  
2015 to 2016 **+2%**

Expected global growth rate **2015-18 about +4% per year**  
(Less bullish about than recovery last year)

**Disease - Biggest Constraint Esp. Asia**  
Followed by **cost and availability of quality seed stock**

**2017 - Expectations**  
Higher feed prices;  
Stronger shrimp markets (esp. in Asia)  
Leaning bullish on global economic conditions  
(Asia less bullish & Americas more bullish than last year)



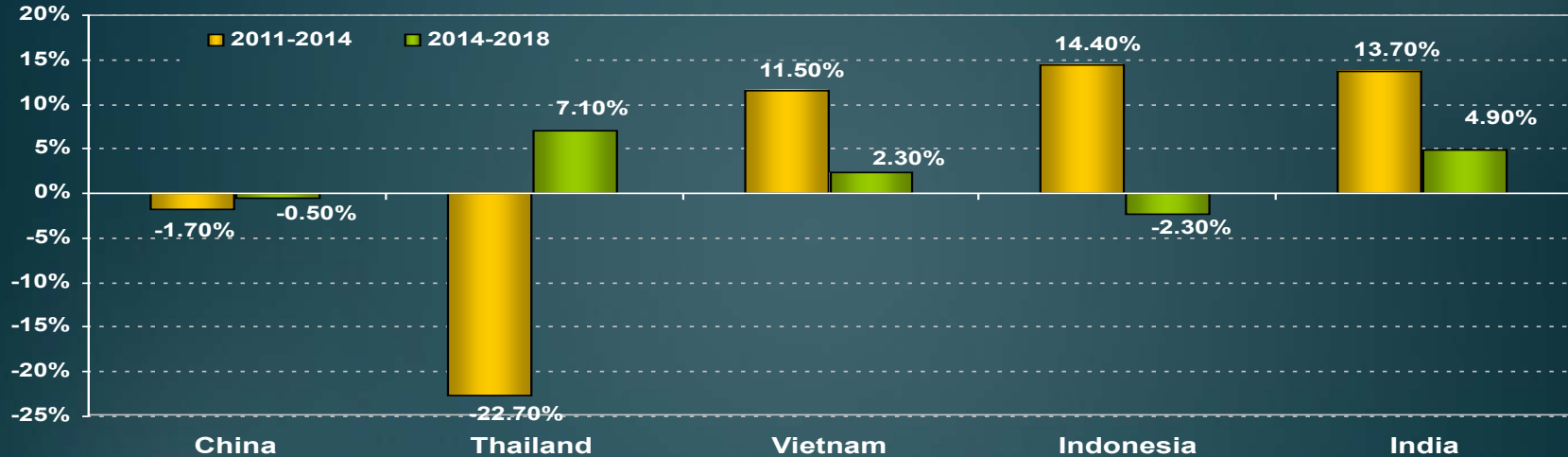
Thank You

James.anderson@ufl.edu  
<http://isfs.institute.ifas.ufl.edu>

# BONUS SLIDES

# Shrimp Aquaculture in Asia: 2011-2014 vs. 2014-2018

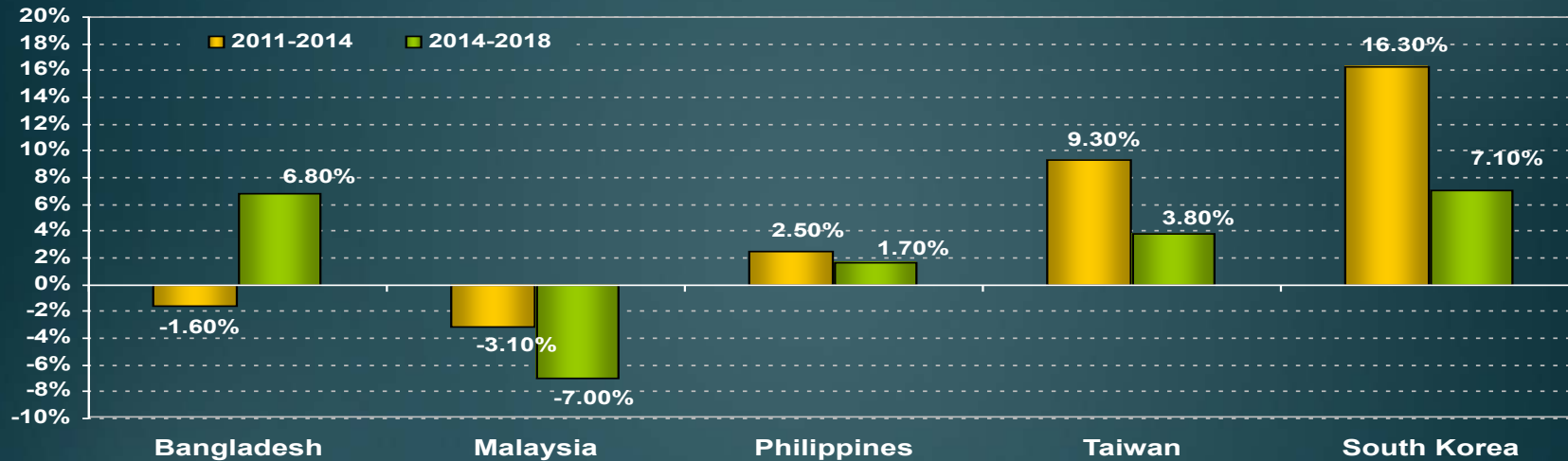
Average Annual Growth  
Rate



Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
*M. rosenbergii* is not included.

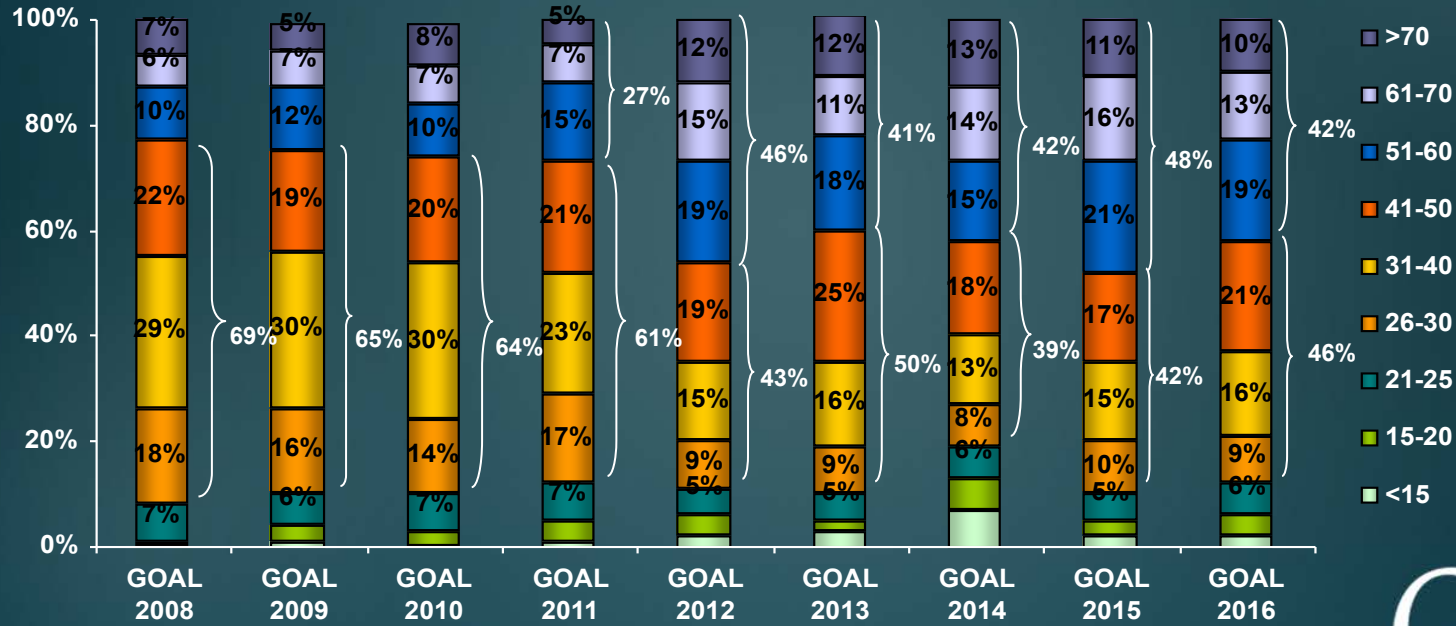
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Average Annual Growth  
Rate



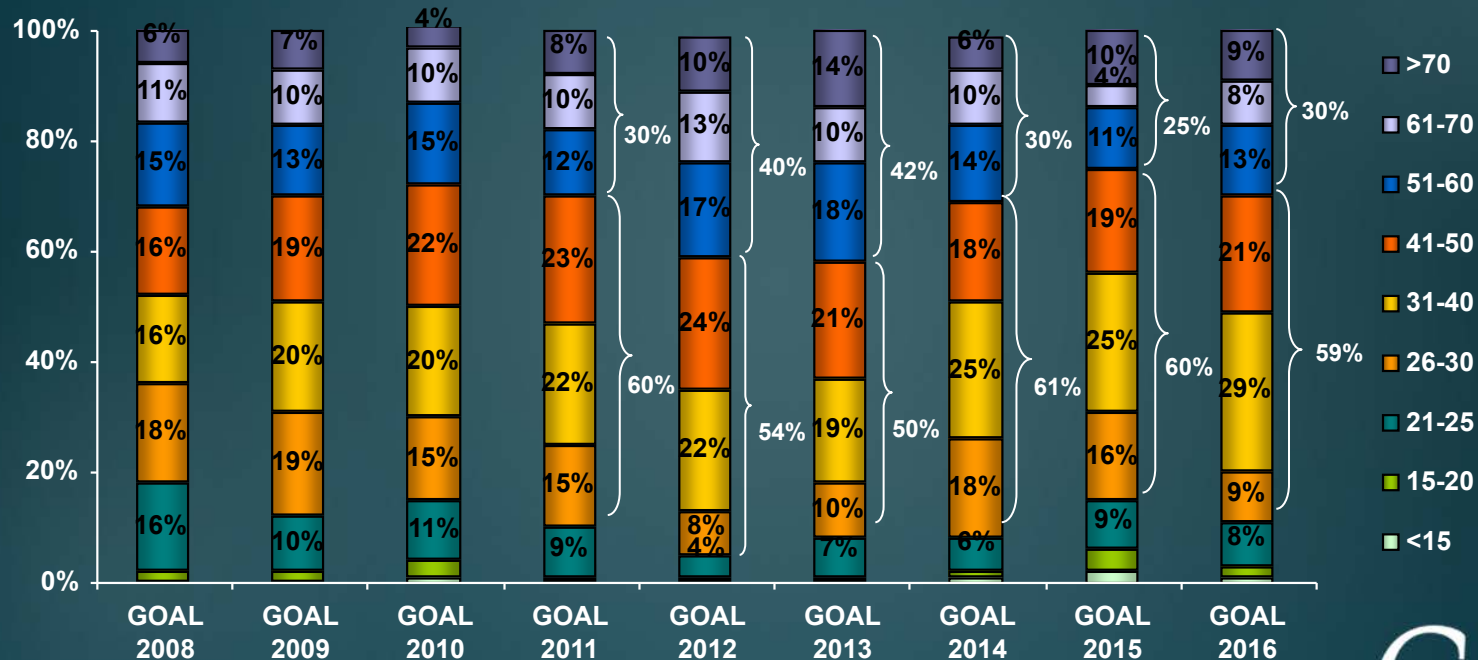
Sources: FAO (2016) for 2011; FAO (2016) and GOAL (2014) for 2012-2014; GOAL (2016) for 2014-2018.  
*M. rosenbergii* is not included.

# 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

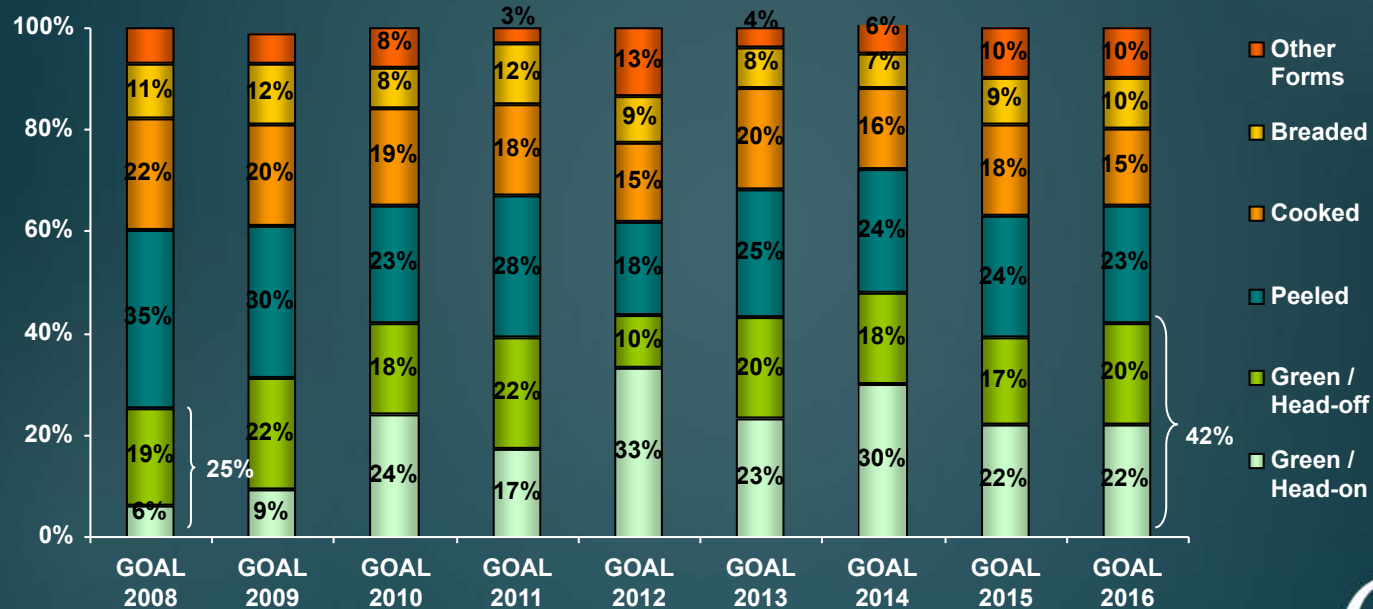


There was also a temporary trend towards smaller sizes in Latin America in 2011 and 2012.

# Composition of Shrimp Aquaculture Production

by Product Form –

Comparison of Survey Data for Asia

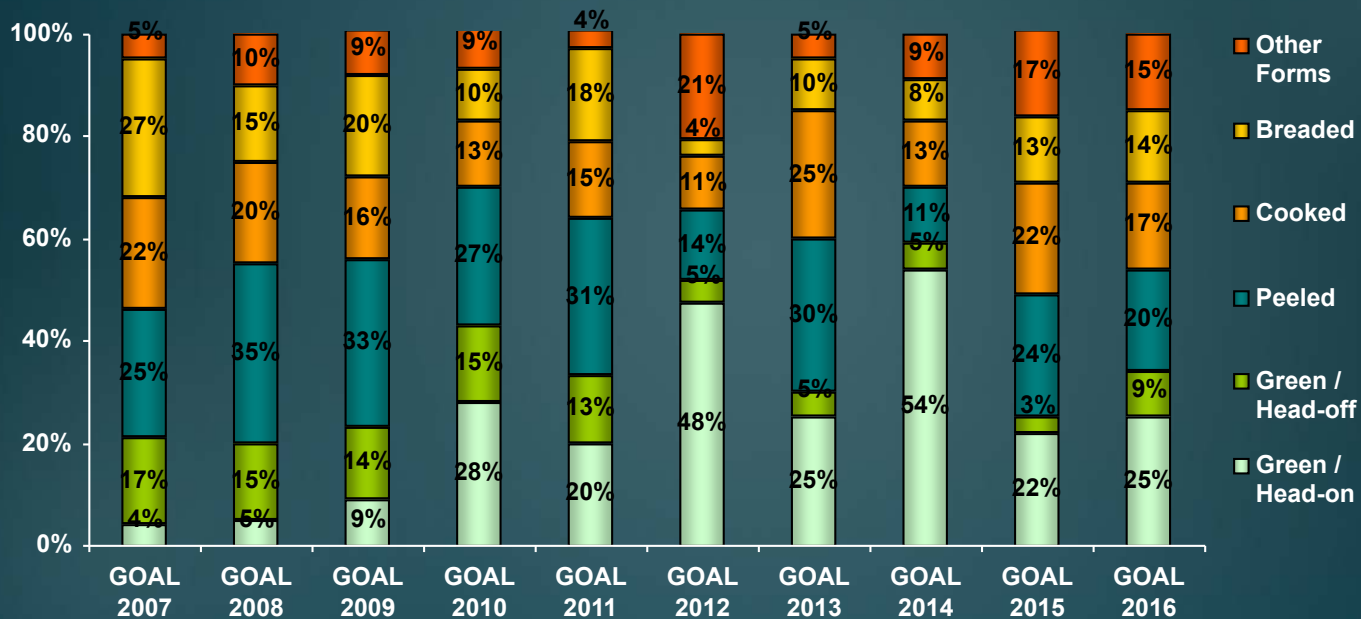




# Composition of Shrimp Aquaculture Production

by Product Form –

Comparison of Survey Data for China

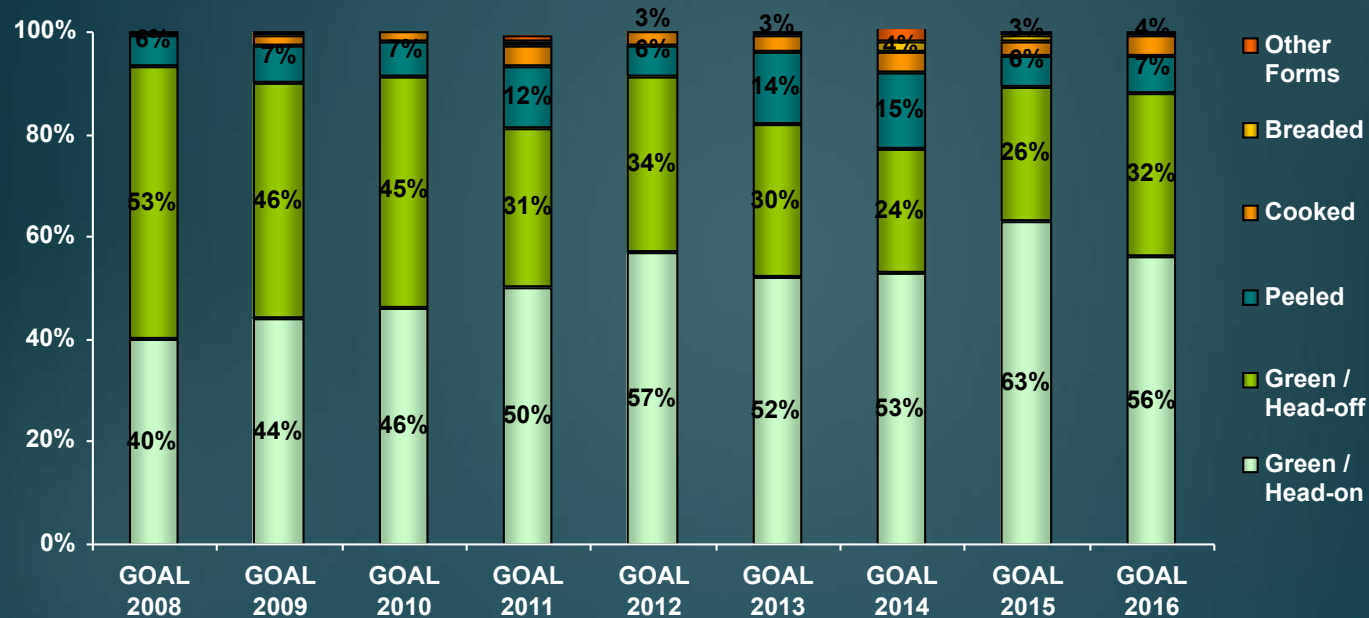


There has been a trend in China towards the production of green head-on/head-off and peeled shrimp relative to processed forms in recent years.

# 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.