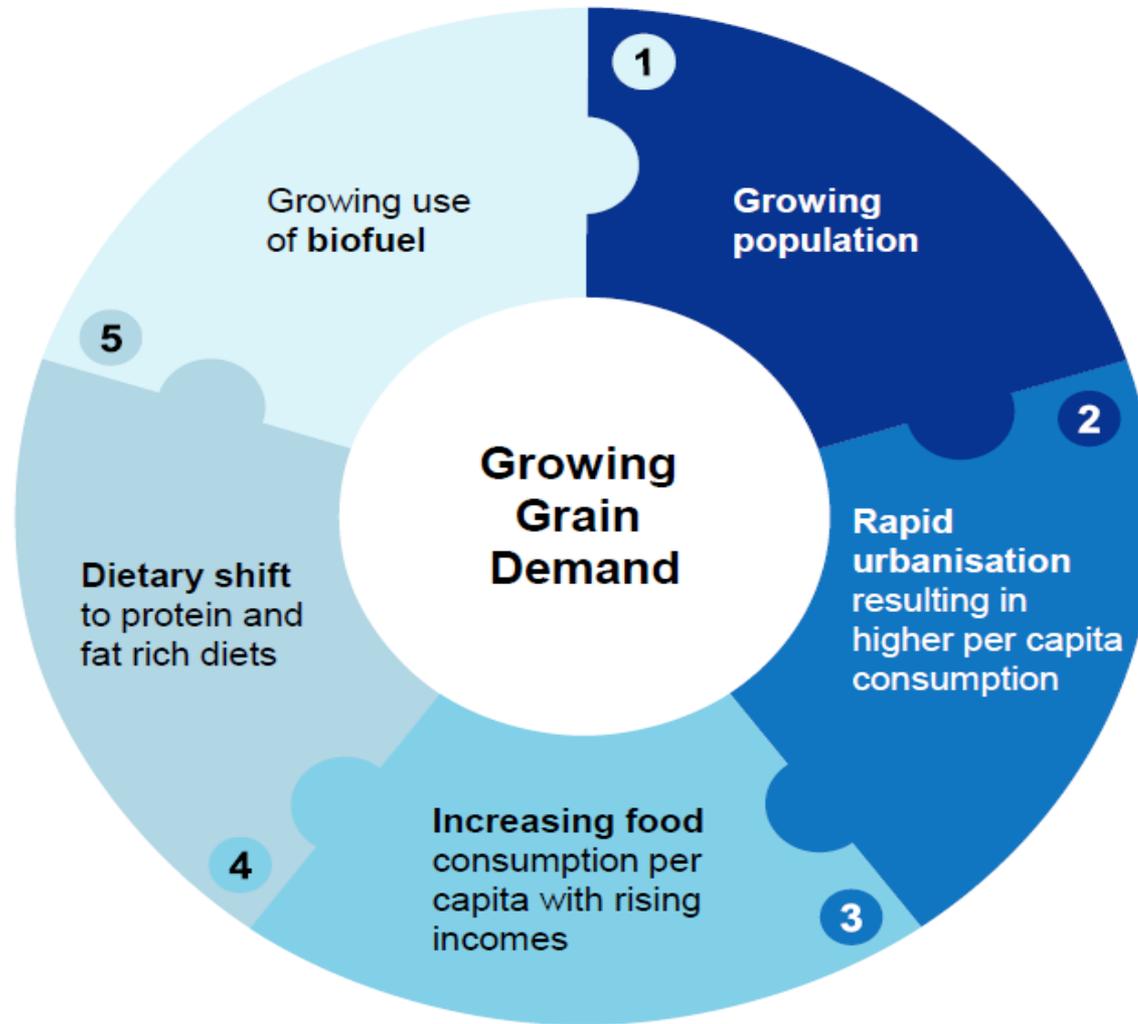


# Federal Reserve 2013 Agricultural Symposium

JULY 16/17, 2013

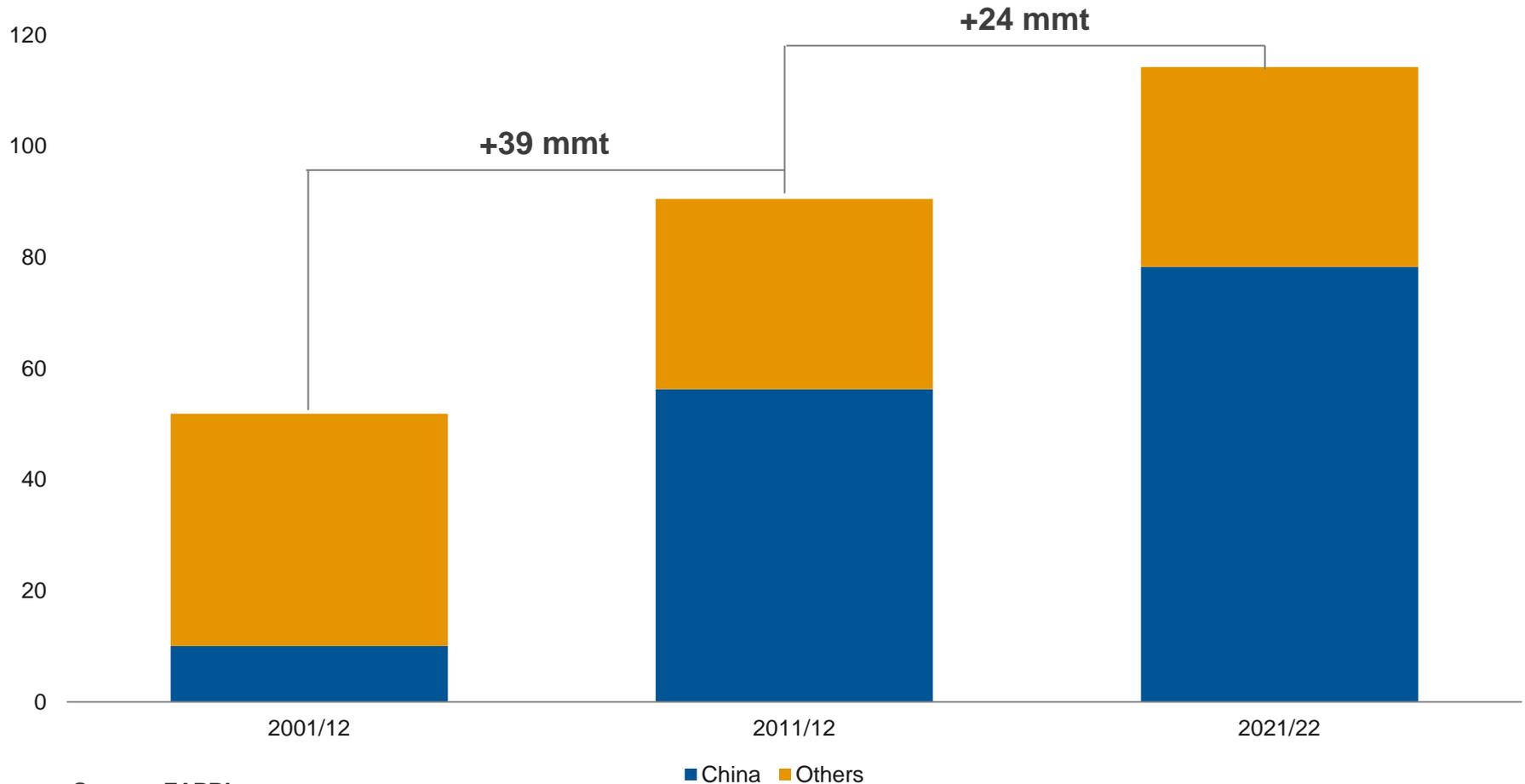


# The following trends are driving global trade expansion



# Global soybean imports are dominated by China

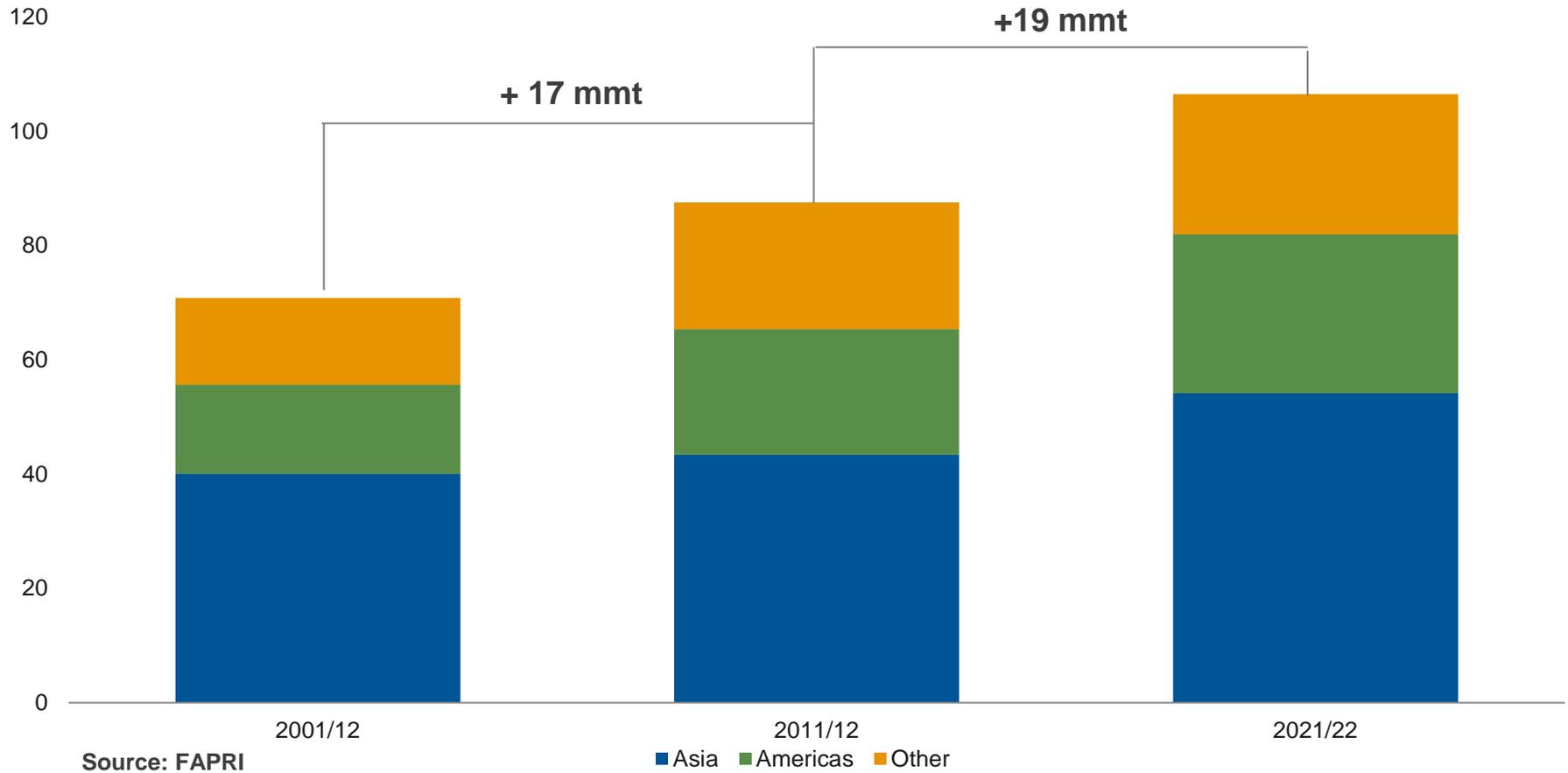
## Soybean Imports



Source: FAPRI

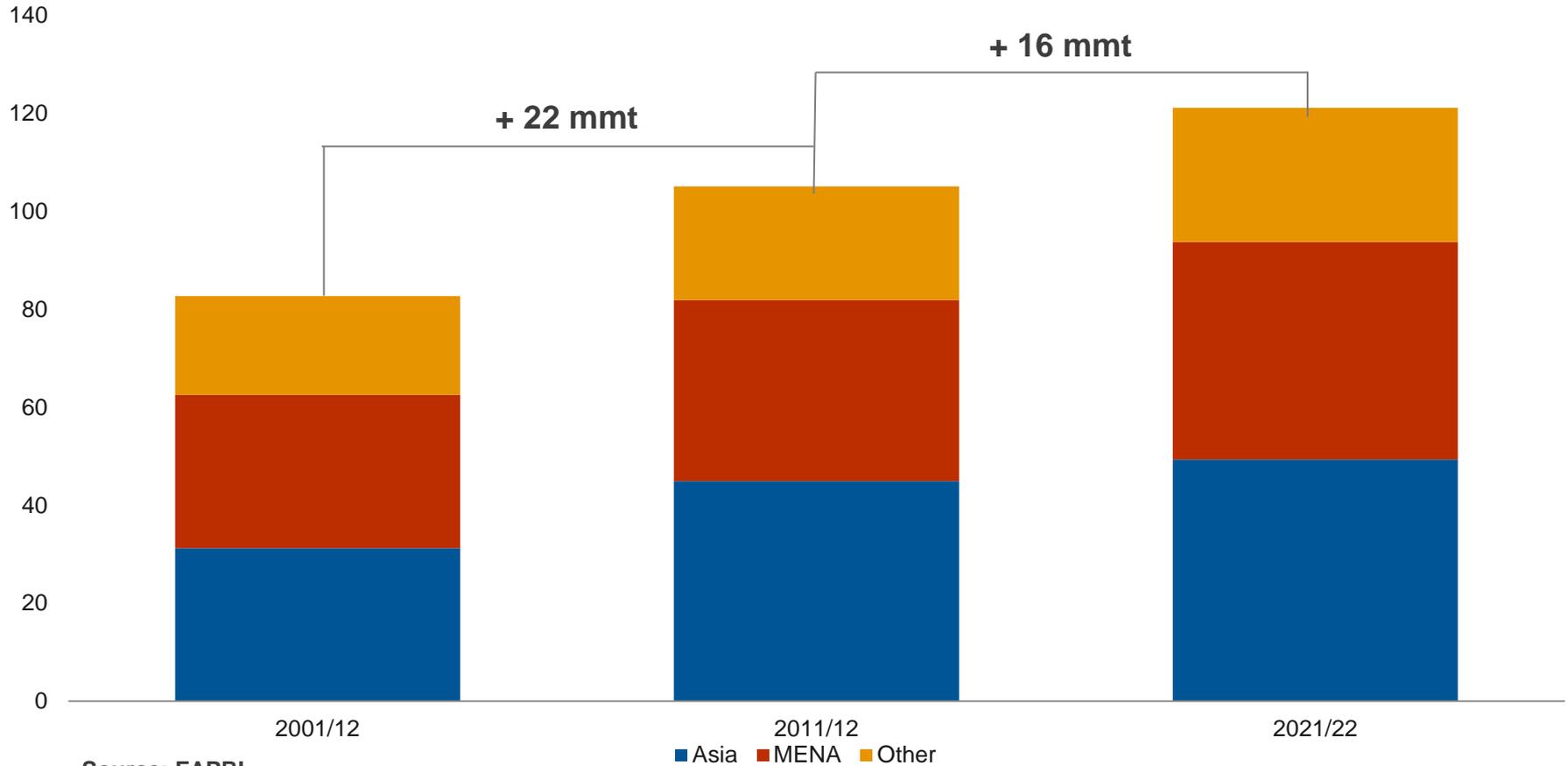
# Asia is the growth leader in corn as well

## Corn Imports



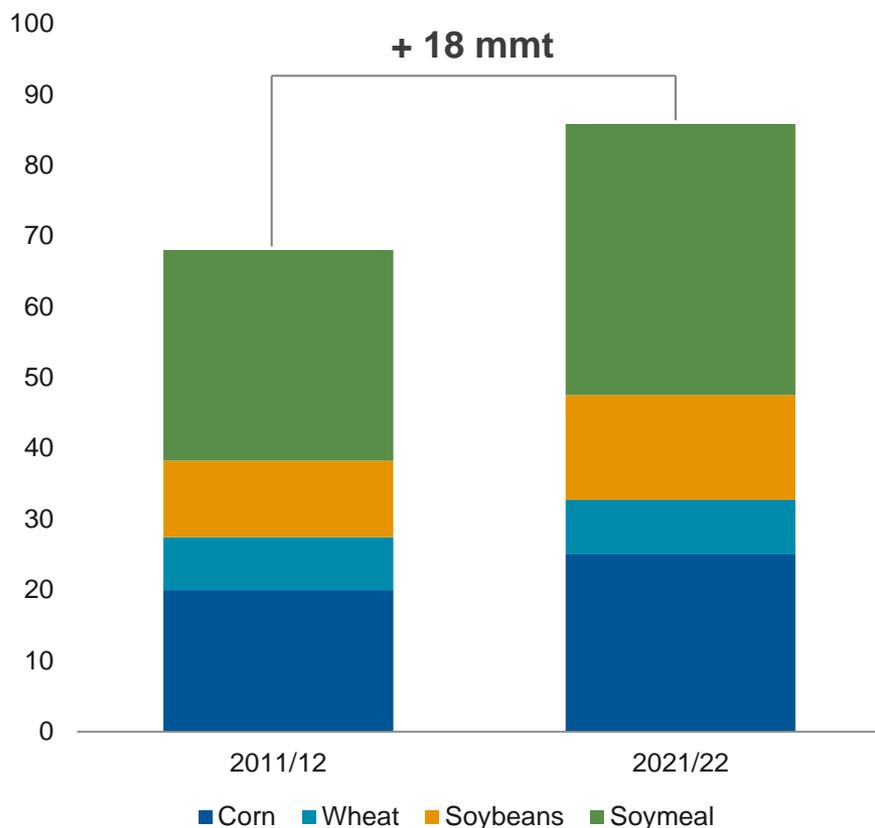
# MENA and Asia drive growth in wheat imports

## Wheat Imports

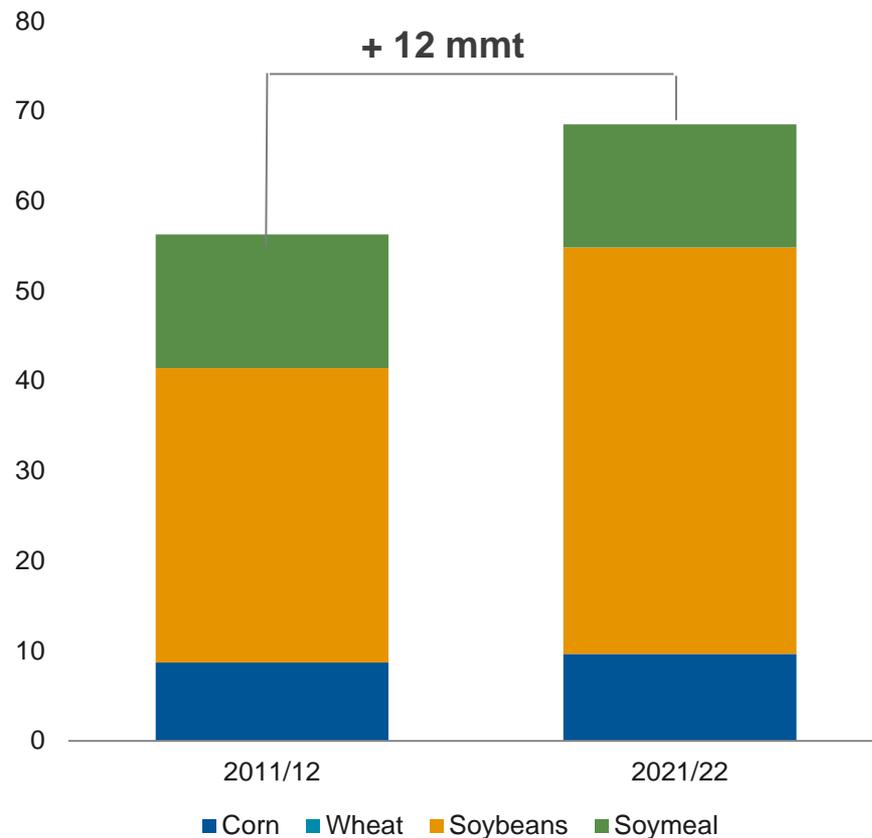


# Southern Hemisphere captures soybean/soy product growth

## Argentina Exports



## Brazil Exports

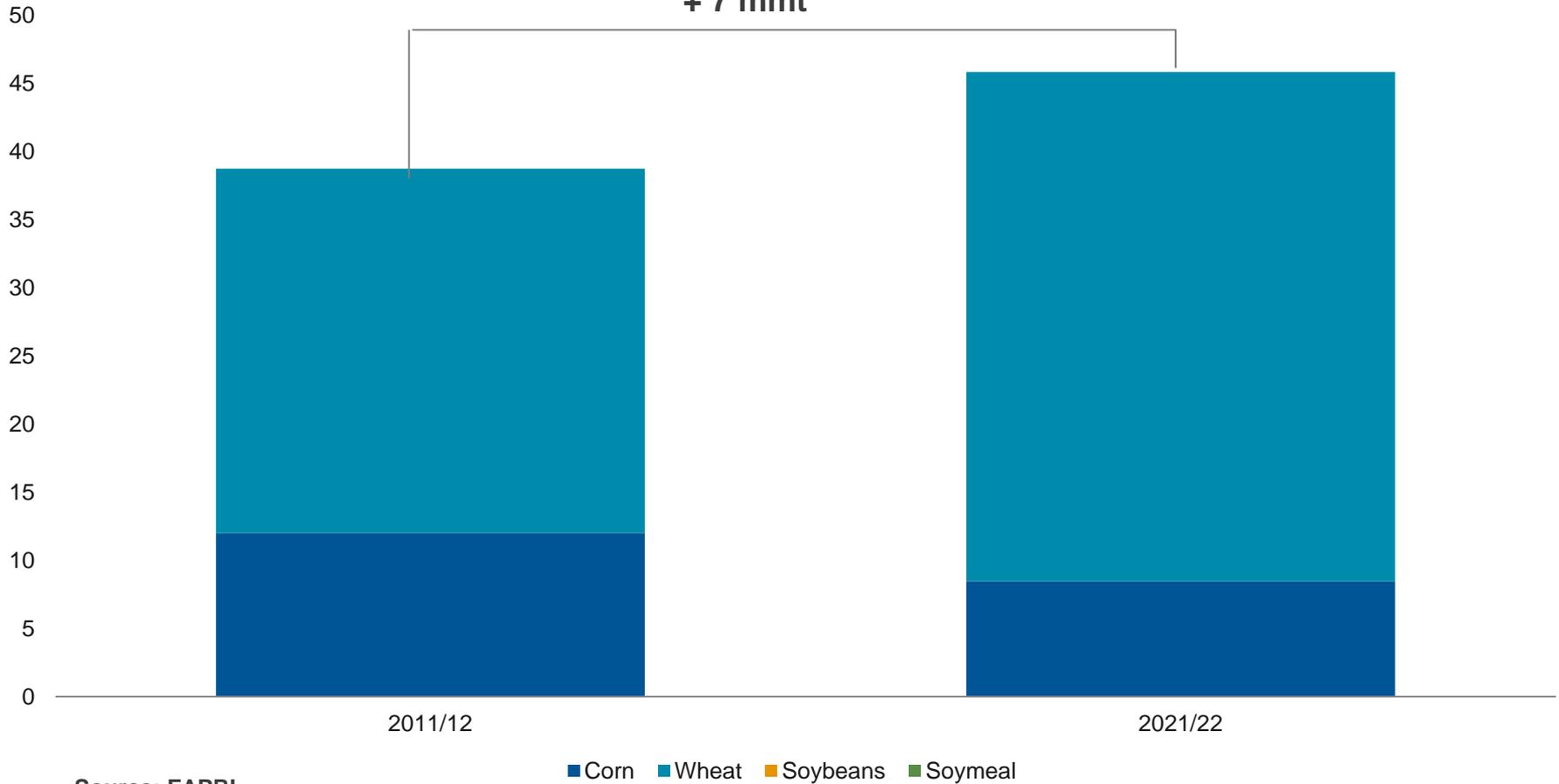


Source: FAPRI

# Black Sea captures global wheat growth

## Black Sea Exports

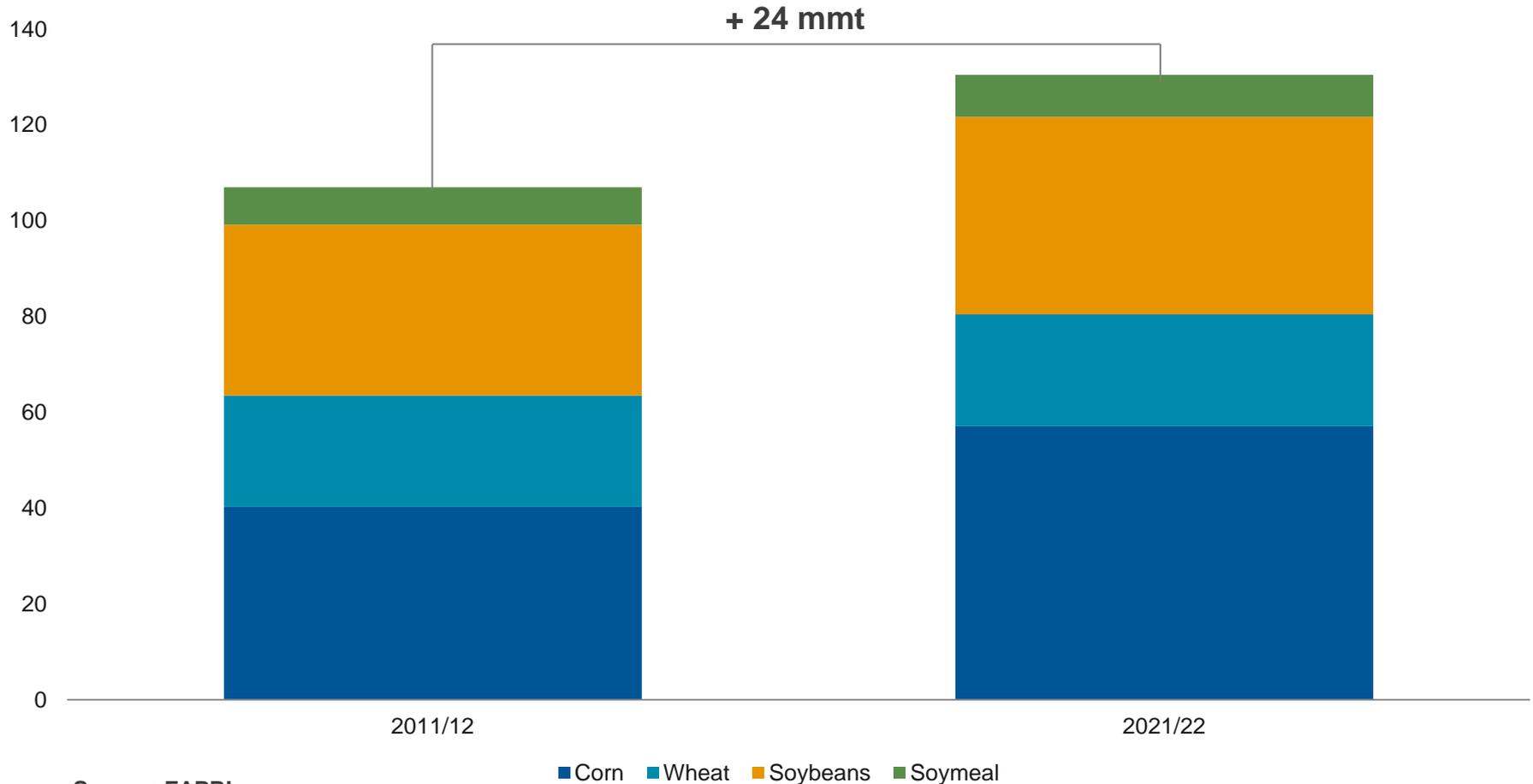
+ 7 mmt



Source: FAPRI

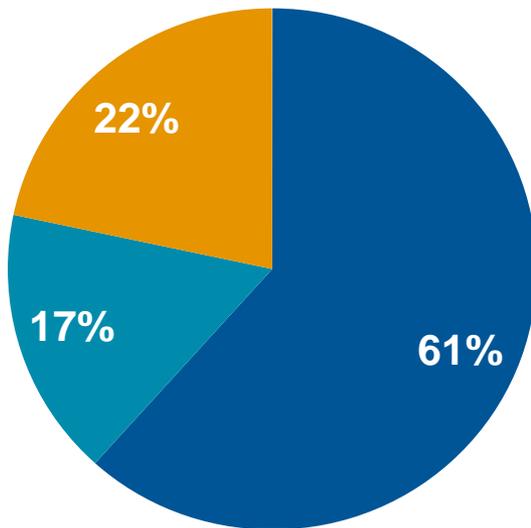
# US captures primarily corn but seizes soybean/soy product growth as well

## United States Exports



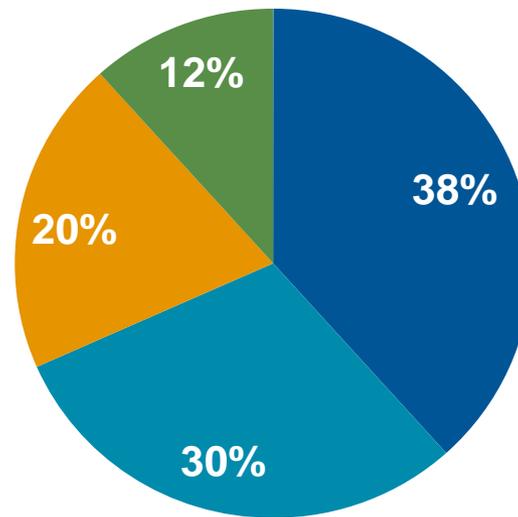
# In summary...global trade increases 60 mmt from 2011/12 to 2021/22

## Destination Import



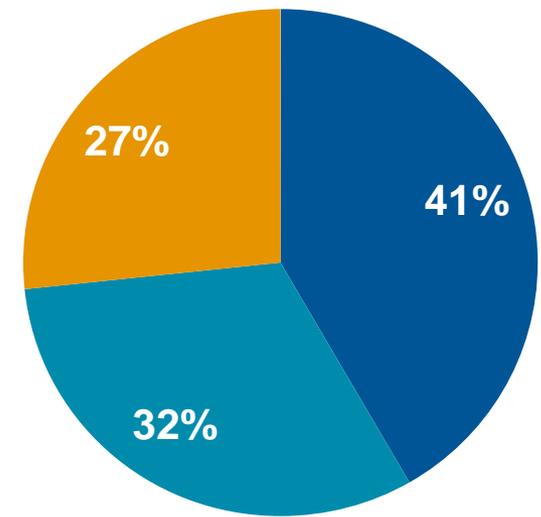
■ China ■ MENA ■ Others

## Origin Export



■ United States ■ Brazil  
■ Argentina ■ Black Sea

## Commodity Increases



■ Soy ■ Corn ■ Wheat

Source: FAPRI

# US system is unique, with natural waterway resources

Ports and Navigable Waterways of the United States



- 40,000 km of navigable rivers
- Mississippi River and tributaries funnel in excess of 65 mmt of grain exports
- New Orleans is the largest single global grain port
- Columbia River provides a low cost alternative in the PNW

Source: AOPOA

# And an expansive rail system



- US railroads have over 300,000 km of track
- Serve all major grain points with primary supply to PNW and Texas Gulf
- Best in the world for productivity and efficiency

# But the end of the useful life is near...more infrastructure investment is needed

- Inland waterways need \$50 billion in investments between 2010 and 2015
  - Average life of lock is 50 years. Currently 54% are 50+; 36% are 70+
  - Annual funding below cost of maintenance
    - U.S. Army Corps of Engineers estimates \$13 billion needed to maintain current level of service. Funding level expected to be \$7 billion
- Average size of vessel increased by 9% in the last five years
  - Federal funding for navigation channel upgrades half of what is collected through Harbor Maintenance Trust fund

2011 revenue: \$1.5 billion.  
2012 budget allocated: \$759 million



Source: American Society of Civil Engineers

# Private investment in terminal expansions has begun



# Brazil has a shortage in infrastructure...both rail and waterway



- Current Major Corridors
- 1 ALL/Rondonópolis – Santos TGG
  - 2 ALL – Paraguá – SFS
  - 3 ALL – Rio Grande
  - 4 Vale South – Vitória
  - 5 Vale North – São Luís
  - 6 Porto Velho – Itacoatiara Waterway
  - 7 Transnordestina
  - 8 Tietê-Paraná Waterway

# It too is in need of investment!



# But government is getting more deeply involved

## Laws & Regulation Timeline

1993	Act 8.630 Ports Law
1995	President Cardoso decides to privatize Brazil's railroads
1997	Railroads Concession Contracts with Private Companies
2008	Act 6.620 – Ports and Terminals Rules
2011	President Dilma creates EPL – Government Logistics Planning Company
2011	Railroads Regulation for Users, Trackage Rights, Safety and Production Goals
2012	Act 12.619 - Regulation for Truck Drivers Profession
2012	Government announces Logistics Investments Plan
2013	Act 12.815 – Ports Law

### Railroads

- In 2011, this act aimed to regulate trackage rights , users rights and safety and operation performance indexes
- Also established rules for investments by users or other 3<sup>rd</sup> parties
- In 2012, an investment program was launched for construction of new railroads in a PPP model, with BNDES funding
- These new railroads will have their capacities negotiated to users or logistics operators

### Trucks

- In 2012, new truck drivers labor rules impacted on freight prices increases

### Ports

- Terminals under Public lease contracts are limited to a maximum of 25 years term, renewable once for same period
- Bid offers will be selected by cheapest tariff or lowest handling time
- Private terminals can handle owned or 3<sup>rd</sup> party products
- Ports Authority Council has a consultant role

# Brazil export corridors and government investments plan – Long term Projects

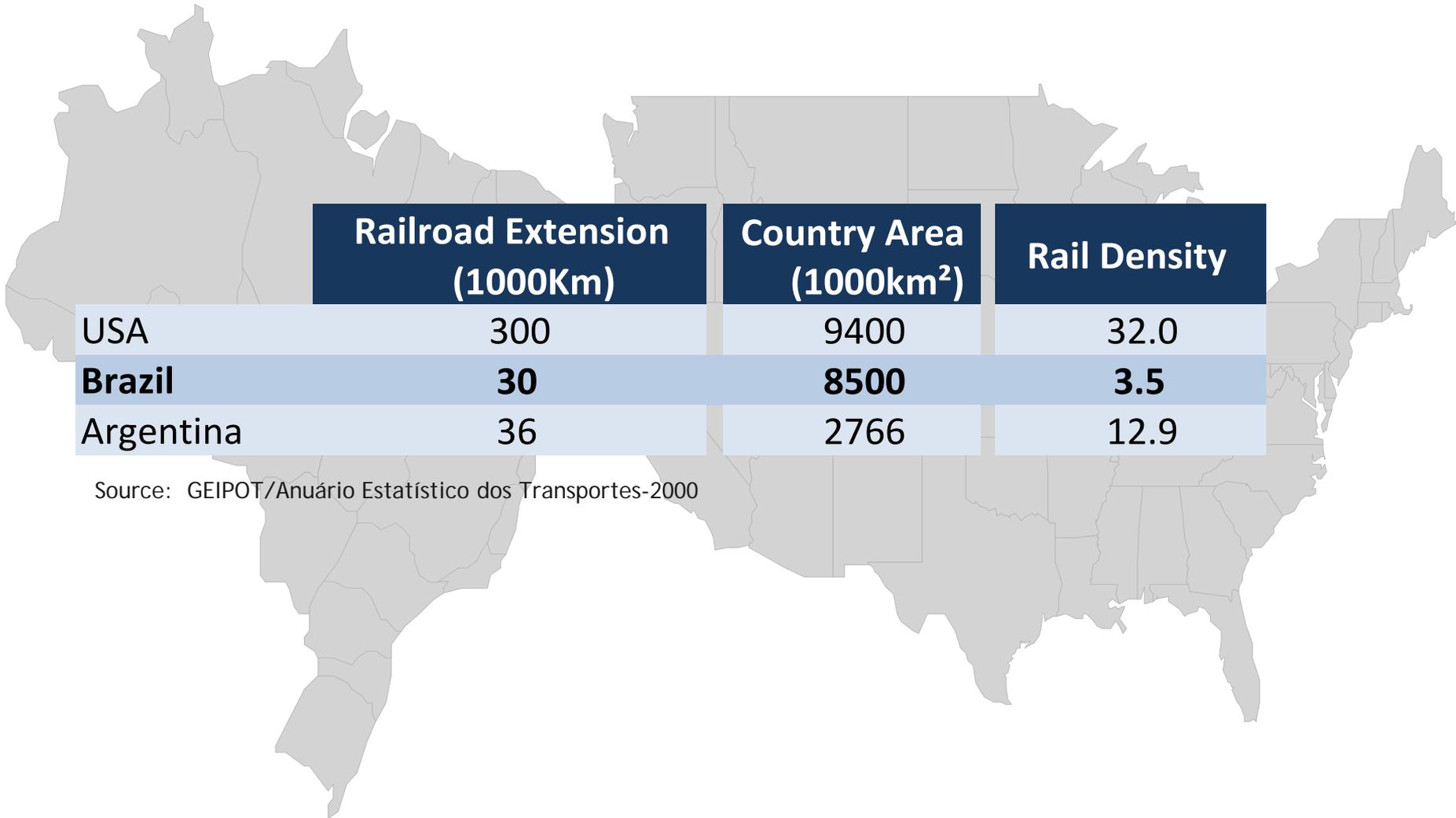
- Group 1 – Contract expected by July, 2013.
- Group 2 – Contract expected by Sept., 2013.



## PPP Ferrovias

- 1 Ferroanel – North
- 2 Ferroanel – South
- 3 Porto de Santos Access
- 4 Lucas do Rio Verde – Uruaçu
- 5 Uruaçu – Corinto Campos
- 6 Rio de Janeiro – Campos - Açú- Vitória
- 7 Belo Horizonte – Salvador
- 8 Salvador – Recife
- 9 Estrela d’Oeste – Panorama – Maracaju
- 10 Maracaju – Mafra
- 11 São Paulo – Mafra – Rio Grande
- 12 Açailândia – Vila do Conde

# As we know, comparisons are interesting...



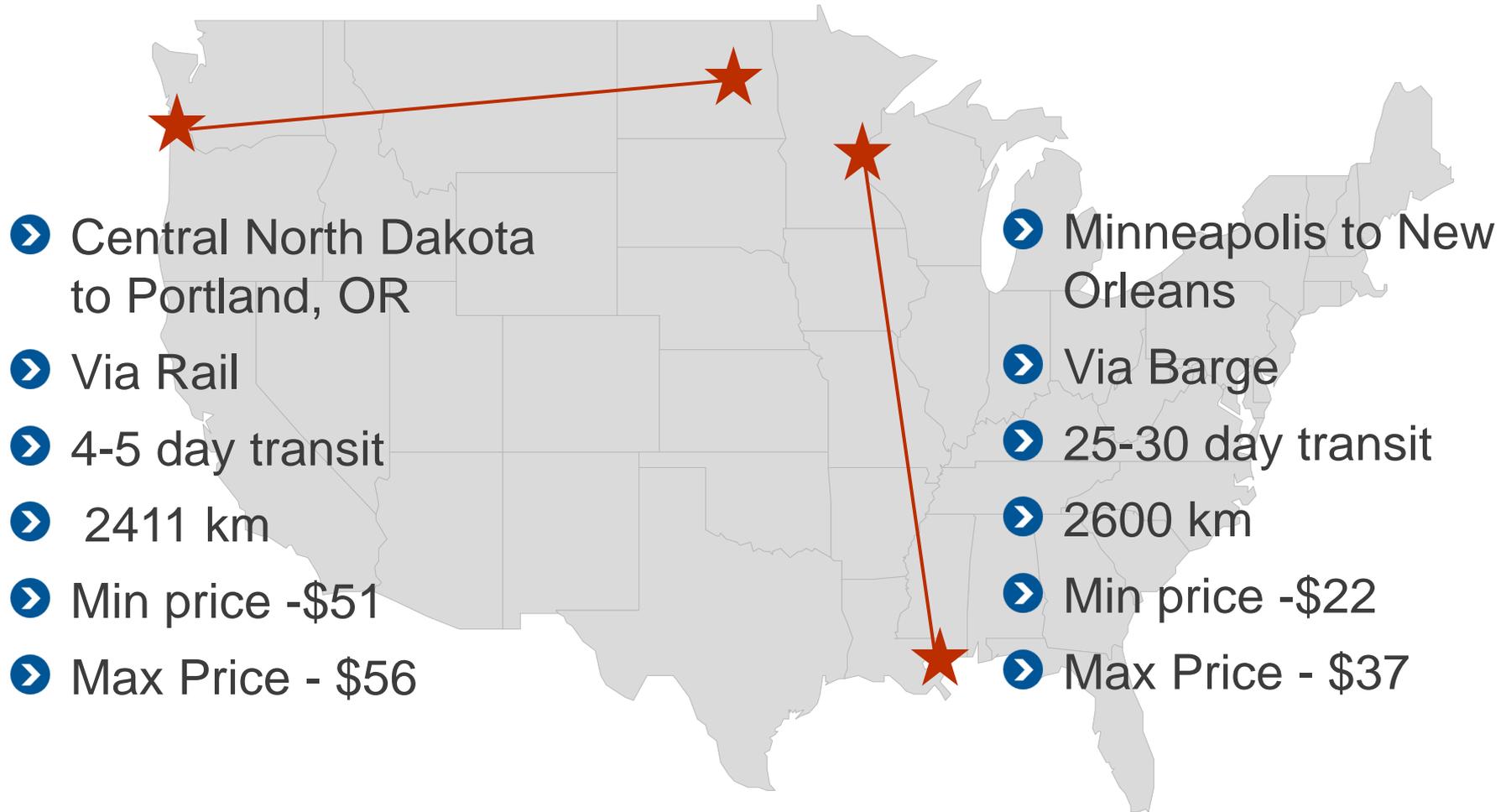
Source: GEIPOT/Anuário Estatístico dos Transportes-2000

# Cost differences can significant...

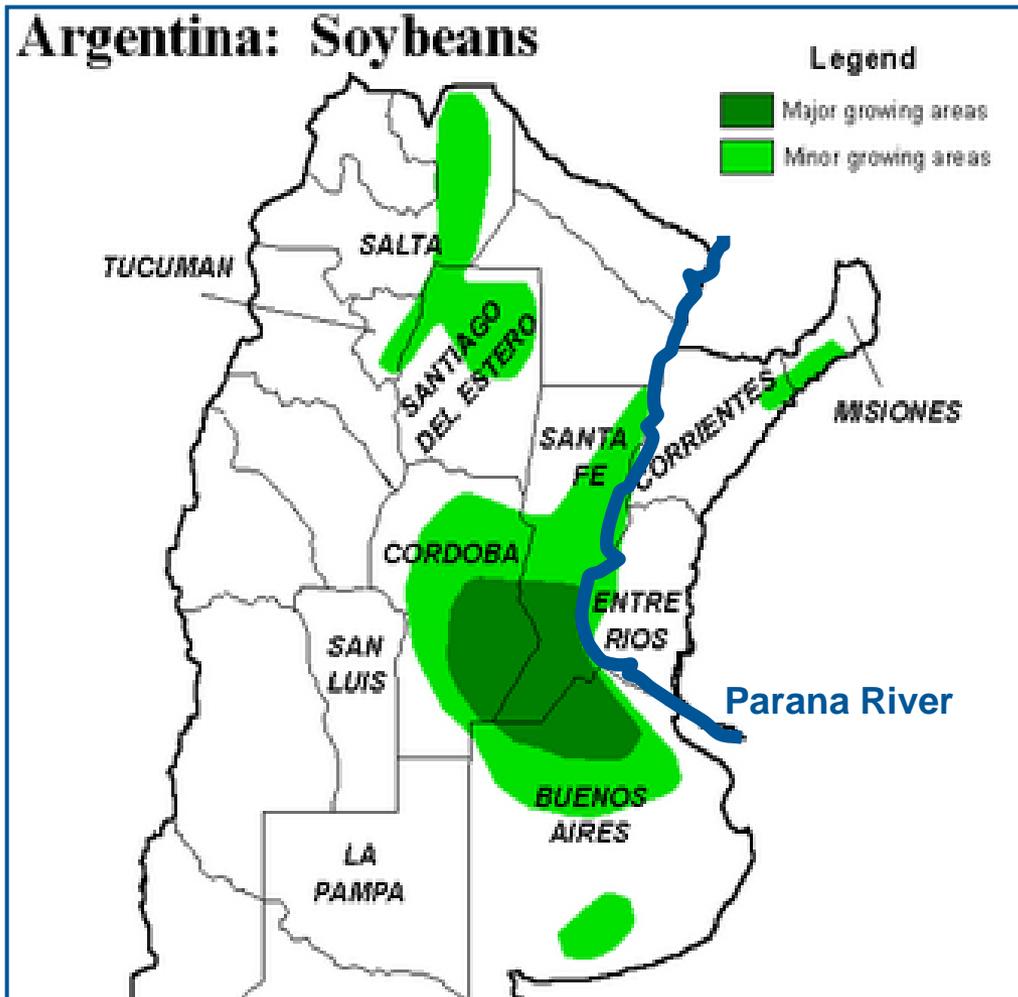
- Rio Verde to Santos
- 3210 km
- 6-7 day transit
- 2.25 Reals per USD
- Min price - \$66
- Max Price - \$74
- Flow interruptions can cost another \$20-25/mt



# Similar trips in the US...



# Argentina, probably the most efficient grain flow system. Politics... well, maybe less efficient!



- Parana River system allows deep draft vessels “Like bringing a vessel to the heart of Iowa.”
- Leaders in scale and efficiency
- Ports primarily served by short haul trucks

TRANSPORT	Share	Avg. Distance
TRUCK	84,0%	260 KM
RAILROAD	14,5%	430 KM
BARGE	1,5%	500 KM

# Russia/Eastern Europe depends on the Black Sea



Source: ASOP, AgroAtlas

# Black Sea ports are a natural service point to bridge the Black Sea crop growing region to the MENA



- Geographic advantaged to MENA markets
- Natural fit
  - Wheat flow
  - Handy size vessels a common for both the origin and destination ports
- Challenging political environment
- But...investments being made

Source: ASOP, AgroAtlas

# Observations

- Demand growth requires significant investment,
  - Terminals
  - Roads/Bridges
  - Rail
  - Waterway /Locks/Dams
- US system and approach creates a near term advantage but constrained governmental infrastructure budgets can change that quickly
- Others origins are adapting to find ways for public/private infrastructure investments