US Grain Production – how does it compare from a Global Perspective?

Ag Summit

Chicago, December 8th 2014

Dr. Yelto Zimmer, Coordinator *agri benchmark* Cash Crop
Major contribution from Savannah Gleim

Global Partners :

Agenda

1. *agri benchmark* Cash Crop – What‘s that?
2. Economic Drivers in Global Wheat Production
3. Competitiveness of a Typical US Iowa Farm on Global Corn and Soybean Markets
4. Overall Conclusions

The *agri benchmark* Project – Let's grow together!

We help our partners to grow…

- ⇨ Growers & their unions to take more profitably decisions
- ⇨ Intern'l organizations (e.g. FAO) to define goals and monitor projects
- ⇨ Agribusinesses to adjust products and strategies

We are…

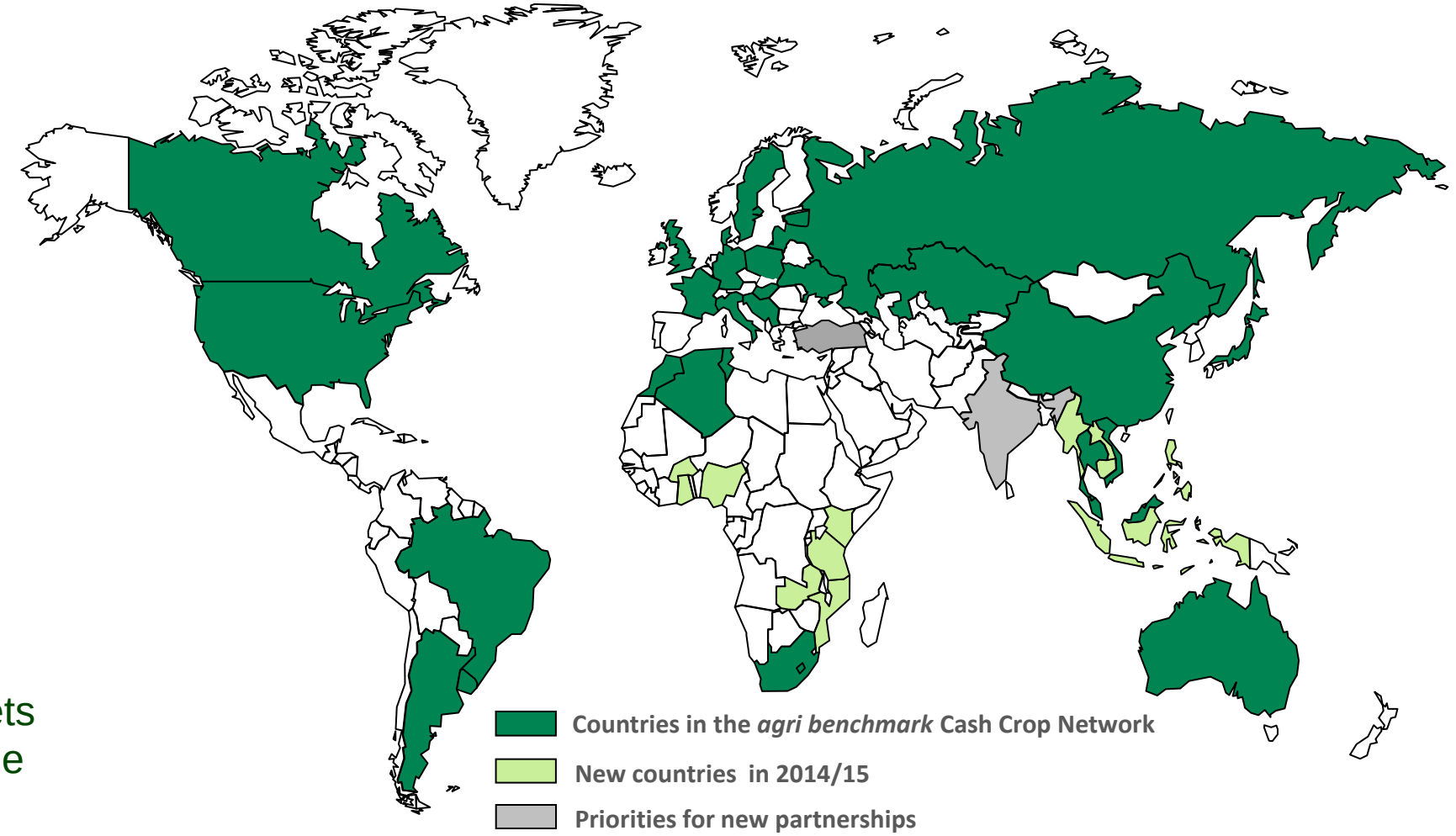
- ⇨ a global network of ag economists, farmers and advisors
- ⇨ independent, non-political and non-profit

We deliver…

- ⇨ deep understanding of production systems and their drivers
- ⇨ data on strengths and weaknesses of production systems and sites
- ⇨ information on global trends in production

32 Countries in *agri benchmark* Cash Crop Network

Crops:
Corn
Soybeans
Wheat
Rice
Rapeseed
Rye
Barley
Sunflower
Sorghum
Cotton
Peas
Beans
Palm oil
Sugar beets
Sugar cane



Current U.S. partners in *agri benchmark*

Iowa, Kelvin Leibold

IOWA STATE UNIVERSITY
University Extension

Indiana, Michael Langemeier

PURDUE
UNIVERSITY

Kansas, Mykel Taylor

KANSAS STATE UNIVERSITY
DEPARTMENT OF AGRICULTURAL ECONOMICS
www.AgManager.info

North Dakota, Andy Swenson

NORTH DAKOTA STATE UNIVERSITY
FARGO, ND

We are interested to expand our network in the USA

Our data base: “typical farms”

A typical farm…

- ⇨ **represents the origin of a major share of the national output in a given crop**
- ⇨ **is defined by a certain production system and a combination (if any) of enterprises**
- ⇨ **has certain structural features re. ownership of land as well as labor organization (family vs. hired)**
- ⇨ **is annually being updated to track changes**

Data is derived by our international partners in a cooperation with growers and advisors.

What matters in International Competitiveness in Ag Commodities?

1. Cost of production at farm Level
2. Domestic transport & logistics cost
3. Oversees transport cost – distance to import destination
4. Exchange rates

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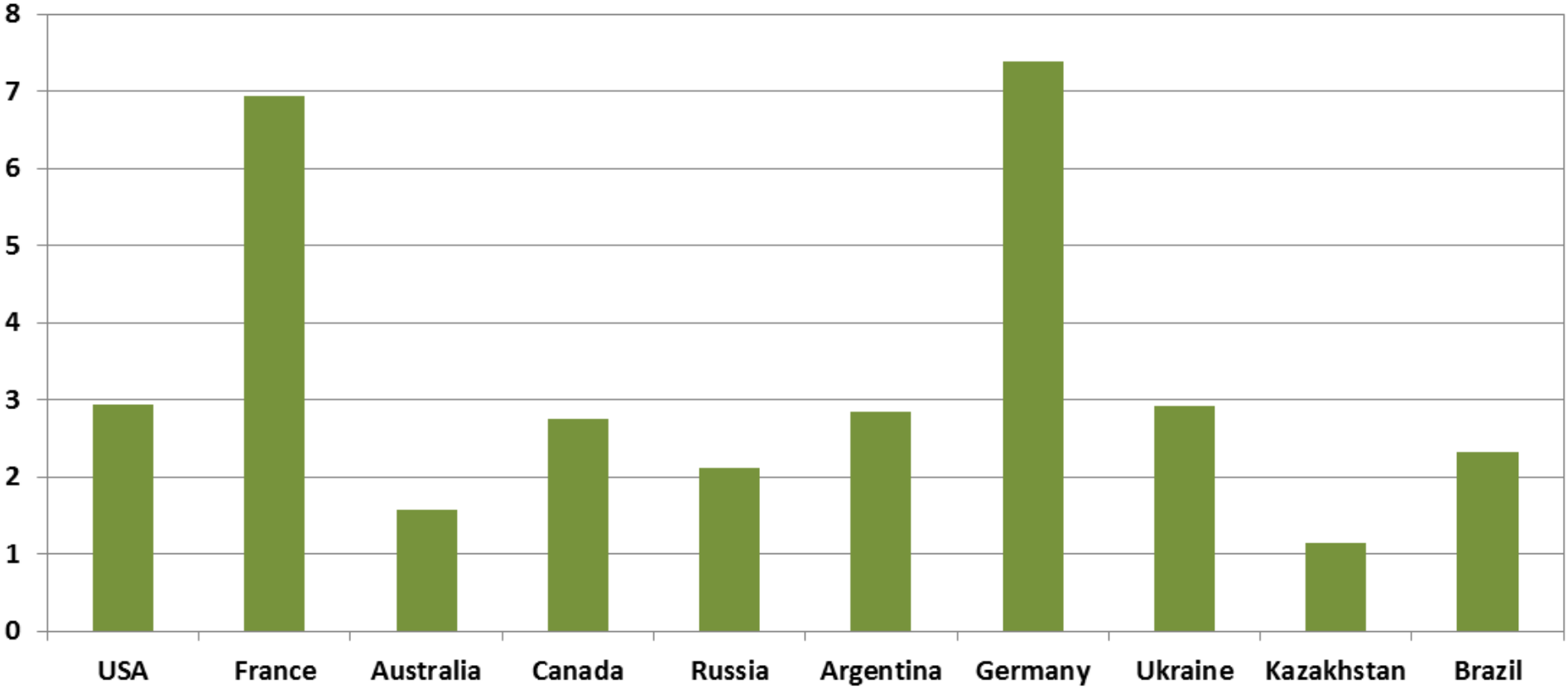
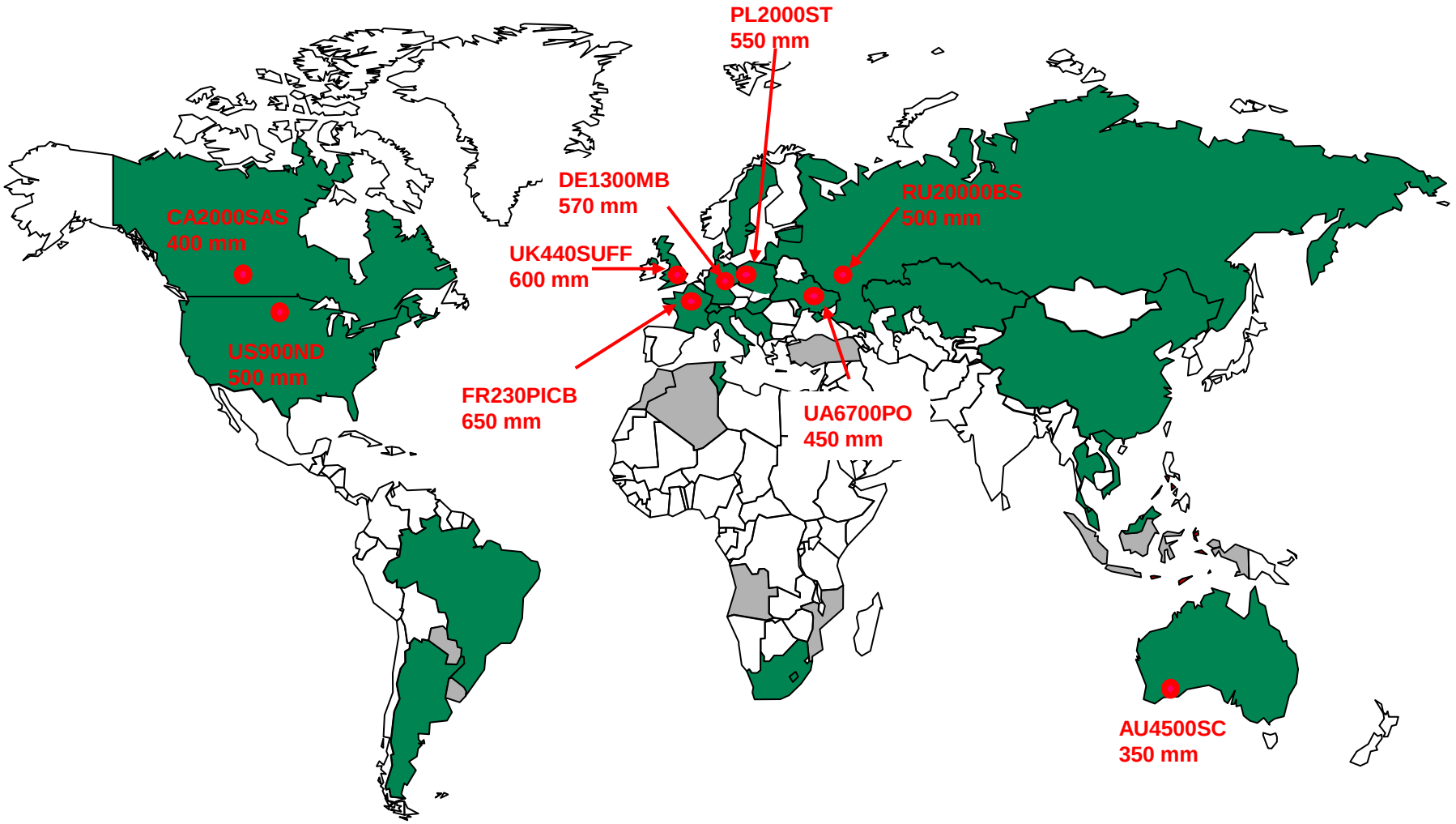
Global Wheat Yields (t/ha; Ø 2006 - 2012)



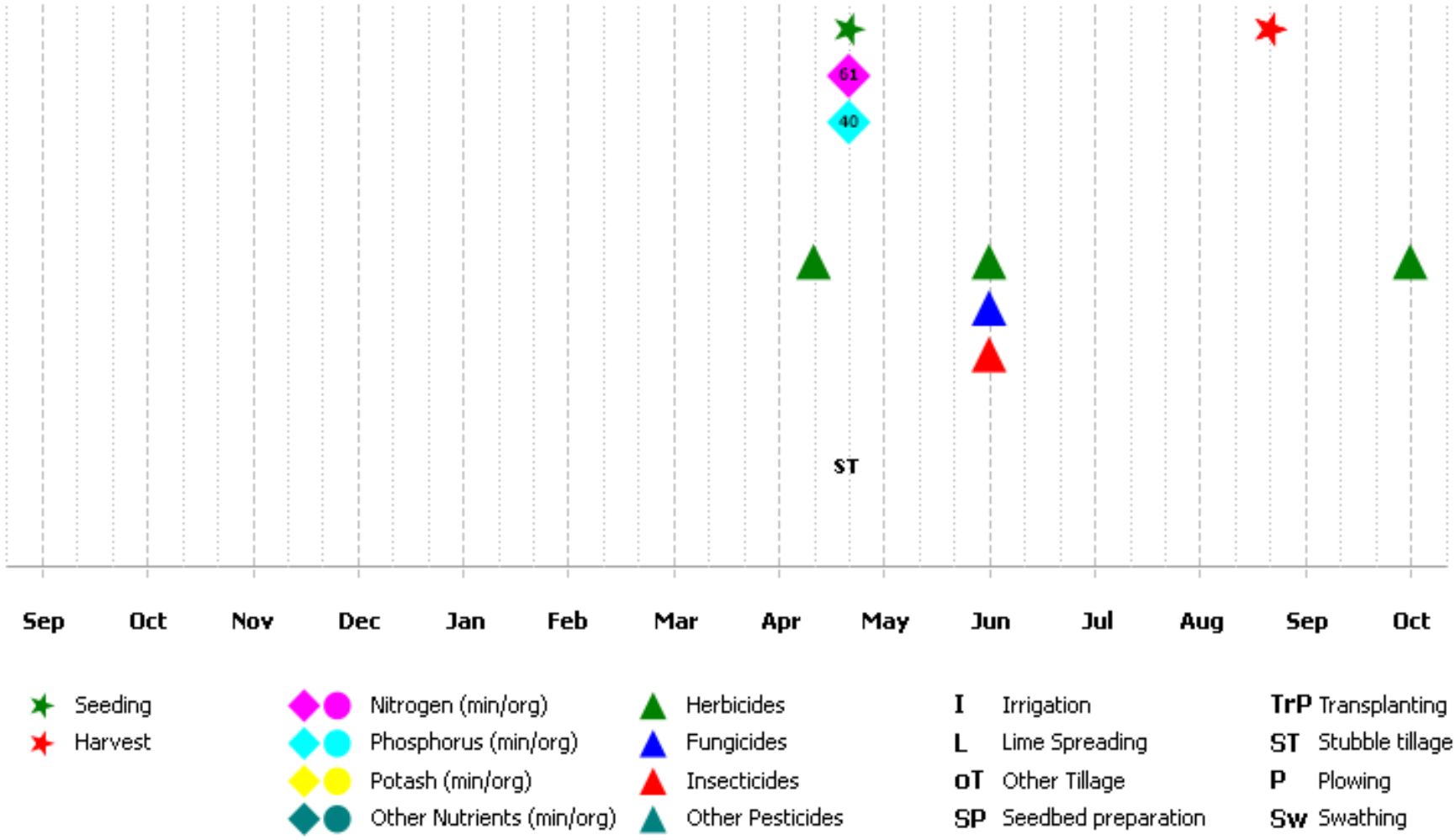
Source: FAO, own calculations

- ⇨ **Ranked according to importance in global wheat trade.**
- ⇨ **Conclusion: Low yielding countries dominate global markets.**

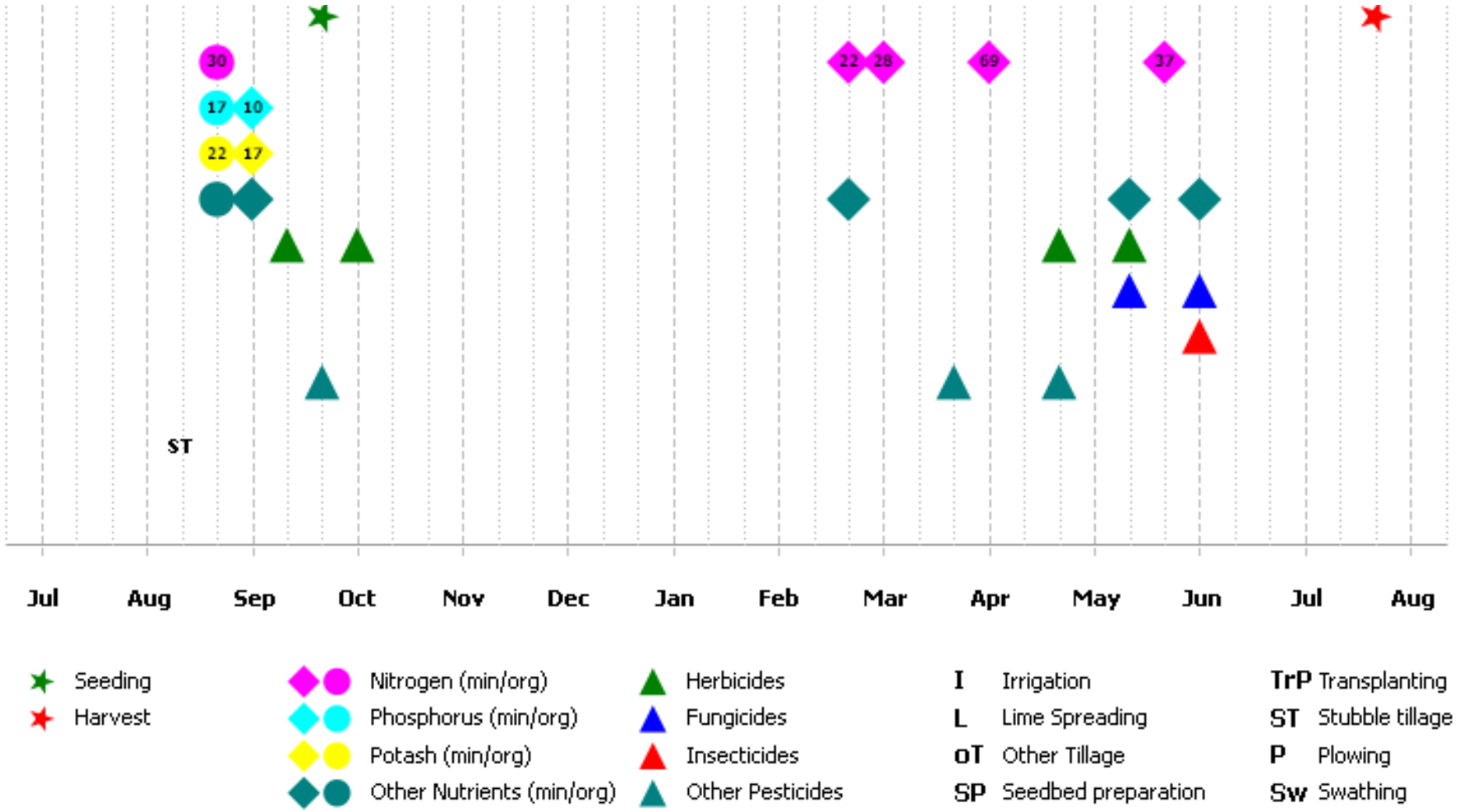
Locations *agri benchmark* Farms



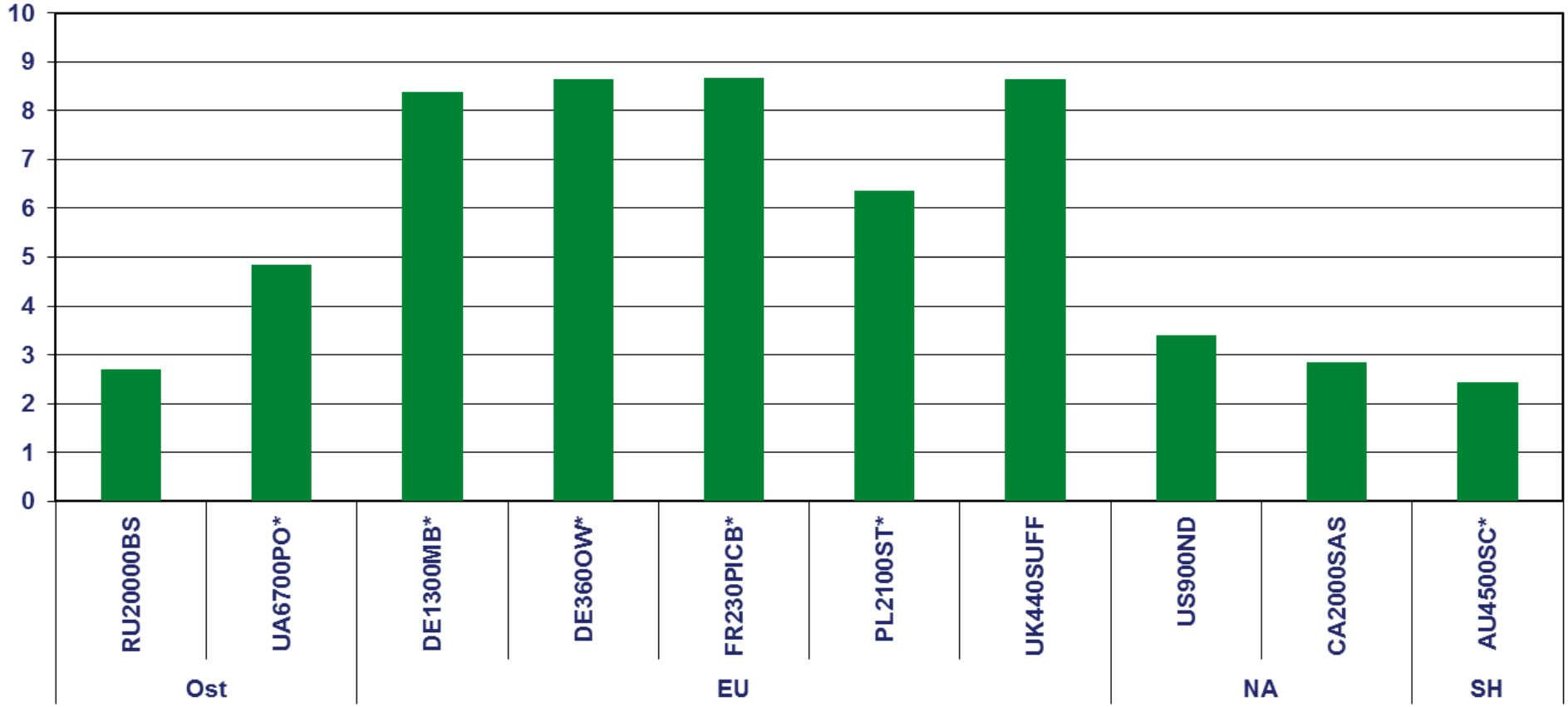
Spring Wheat Production System Canadian Farm



Winter Wheat Production System German Farm

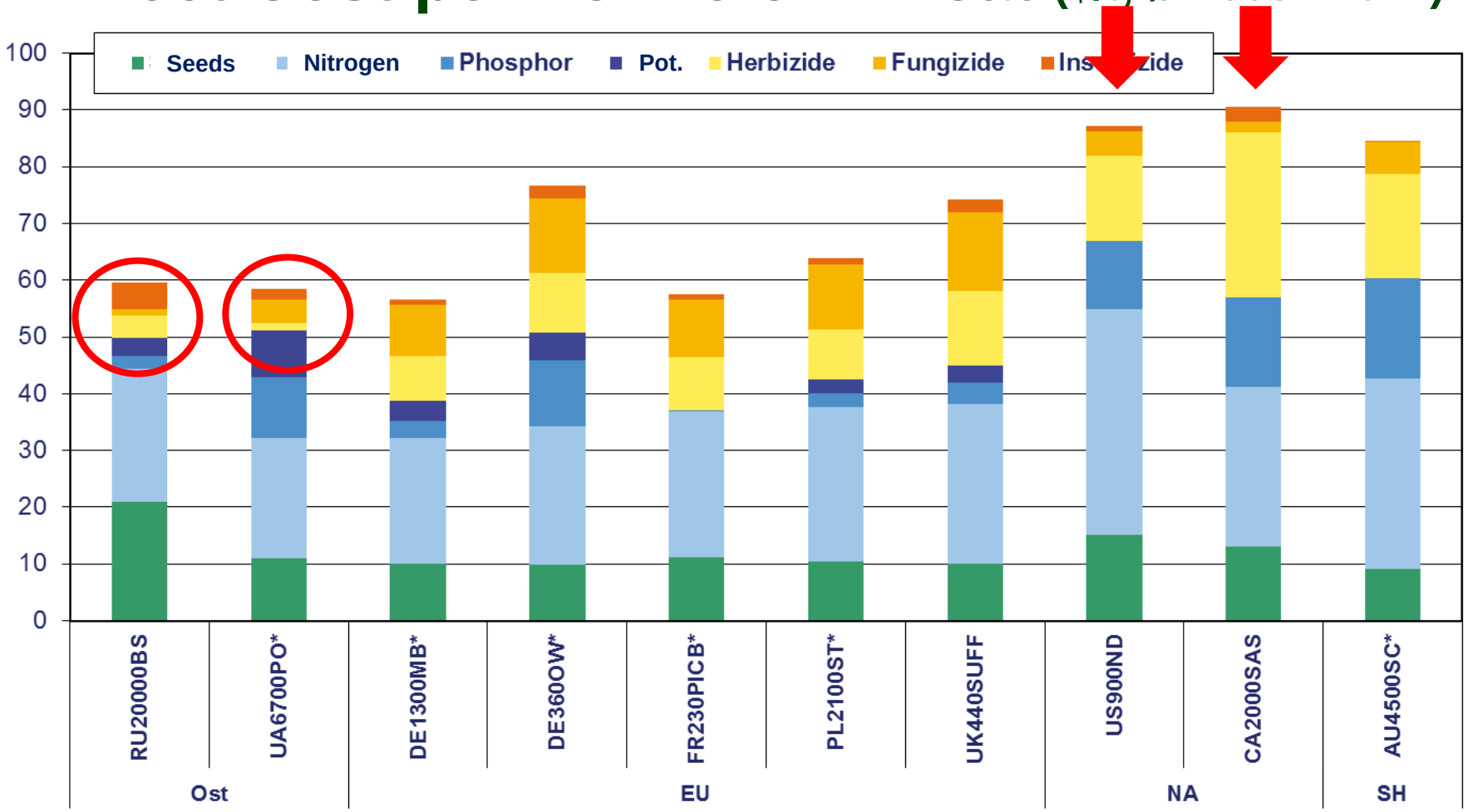


Wheat Yields *agri benchmark* Farms (t/ha; Ø 2008 - 2012)



- ⇨ Wheat yields for RU farm on a similar level as in US/CA
- ⇨ EU farms realize the highest yields
- ⇨ Yields tend to be higher than national average – typical farms are located in “hot spots”

Direct Cost per Tonne of Wheat ($/t; Ø 2008 - 2012)



⇨ RU/UA farms relatively competitive – in particular in plant protection

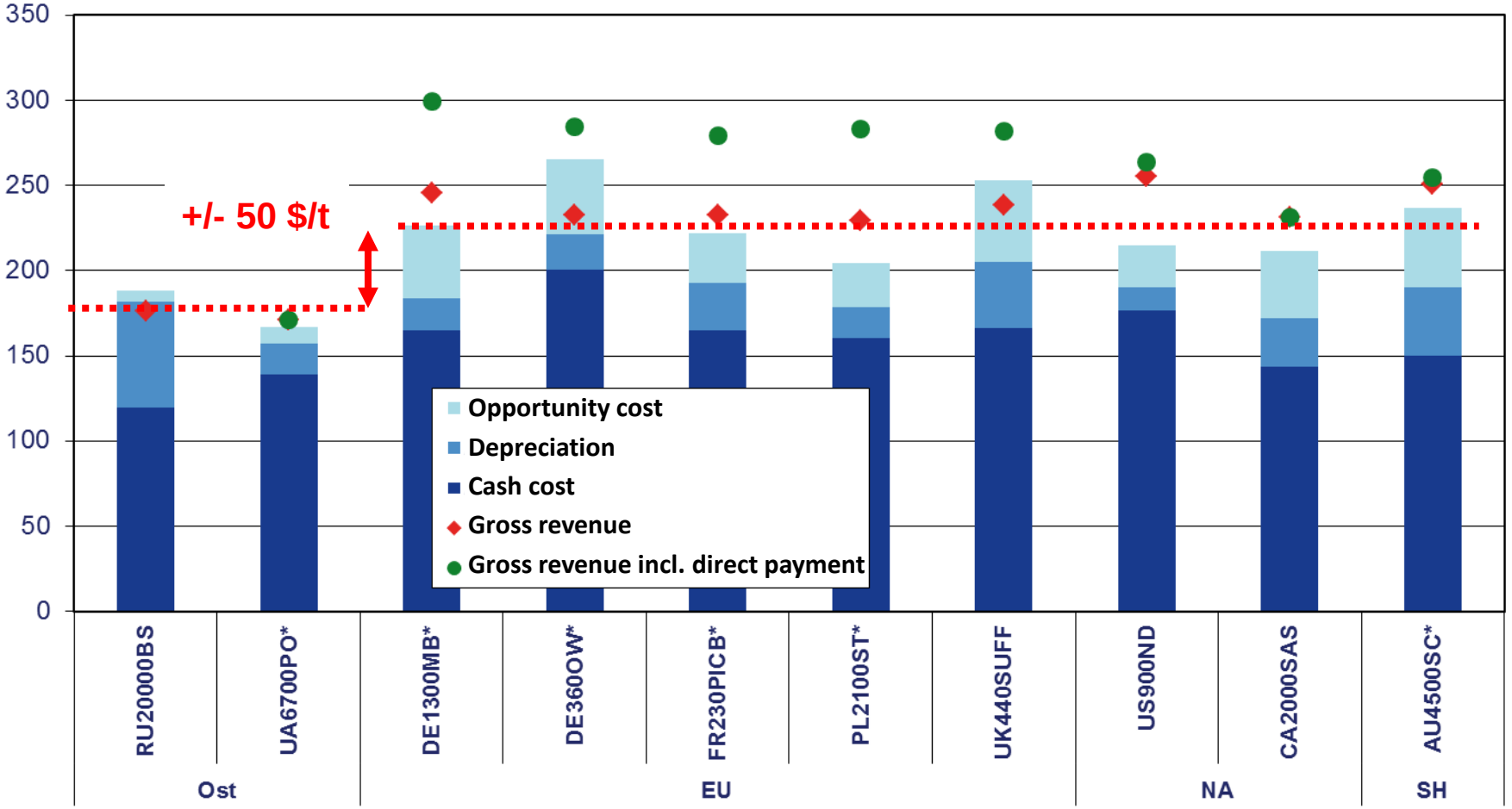
⇨ US/CA and AU exhibit relatively high direct cost

Operating Cost per Tonne of Wheat ($/t; Ø 2008 - 2012)

⇨ Operating cost is the strength of farms in US and CA

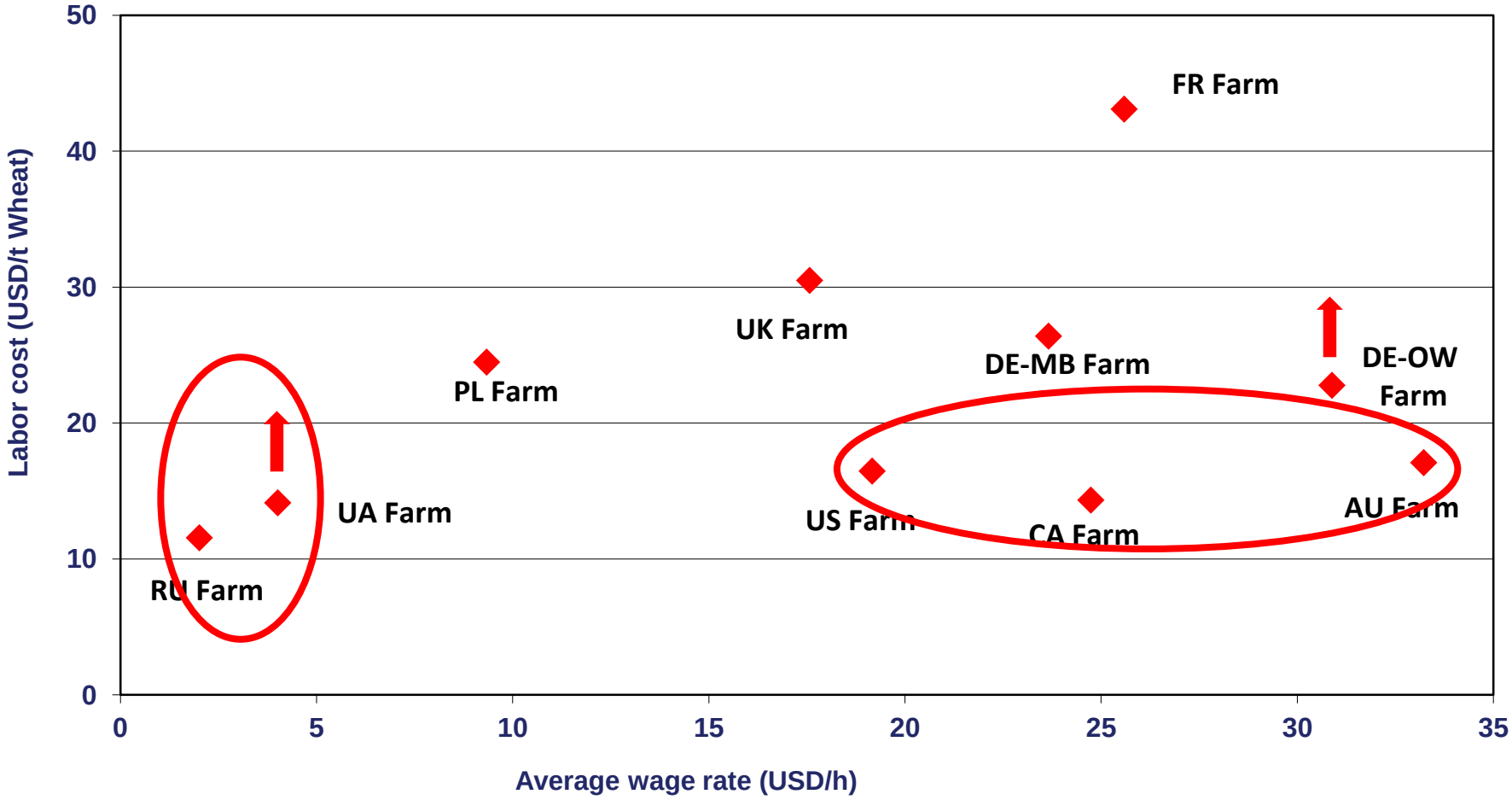
⇨ RU/UA despite low wage rates farms in RU and UA are not leading edge.

Total Cost & Gross Revenue Wheat ($/t; Ø 2008 - 2012)



- RU/UA have a cost advantage of about 50 $/t
- But: Output prices are at least 50 $/t lower
- EU direct payments increase gross revenues by app. 50 $/t

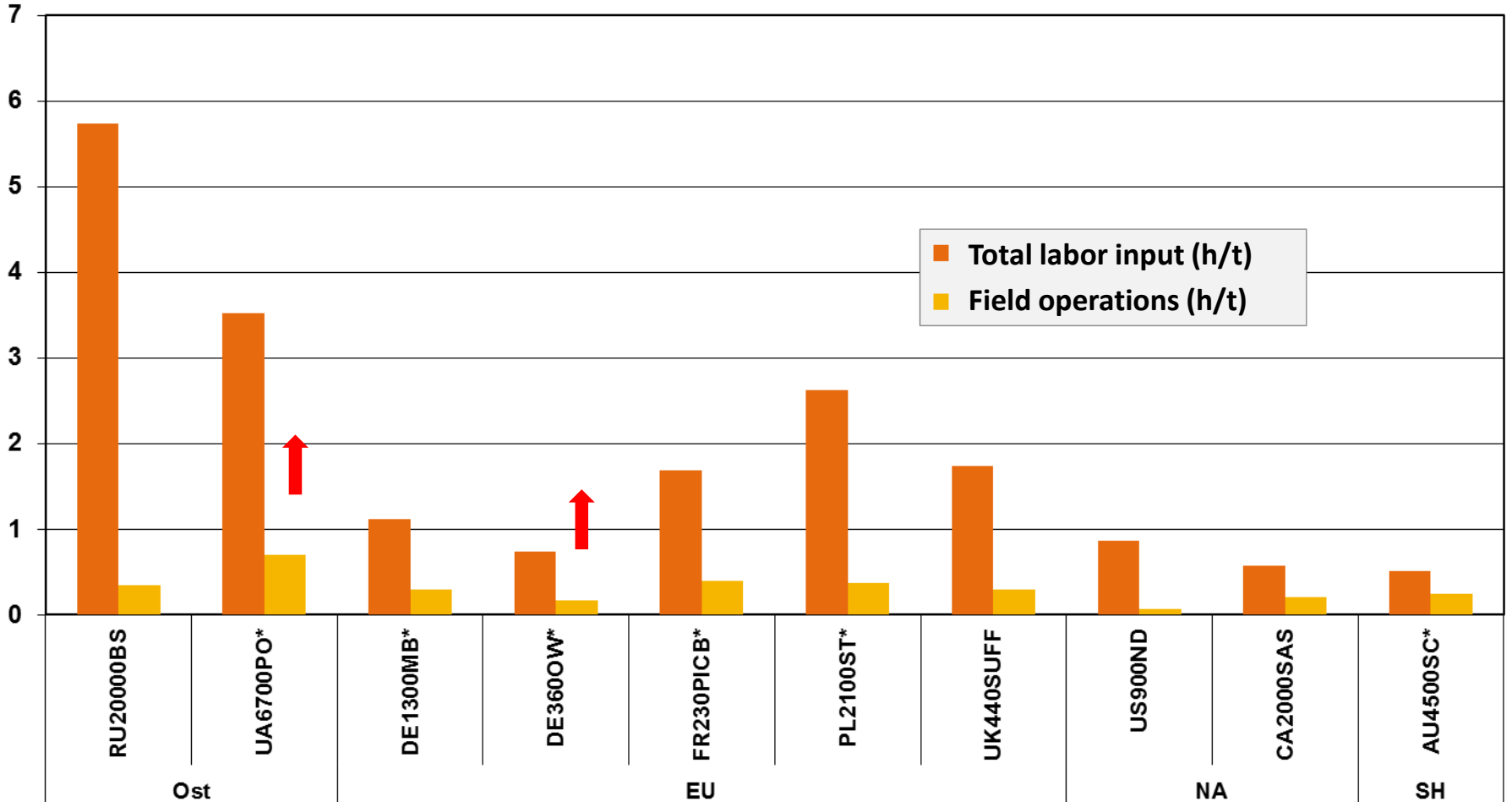
Labor Cost ($/t) and Wage Rates ($/h)



⇨ Farms in RU/UA despite low wage rates no clear advantage in labor cost per tonne

⇨ Farms with the highest wages rates tend to be competitive in labor cost

Fieldwork & total Labor Input (h/t Wheat)



⇨ The strength of US,CA & AU farms: low lead time in operations and overall labor input

⇨ The weakness of RU/UA farms: total labor input

Conclusions regarding Cost of Wheat Production

1. Strength of US farms – as well as CA and AU: high labor productivity.
2. Only 15 % of total cost is labor cost for US farm – increasing wages not a major threat.
3. Direct cost tend to be higher for low yielding sites such as ND.
4. Despite low wage rates, labor cost per tonne is not the major cost advantage for RU & UA farms– low physical labor productivity.
5. Plant protection is much cheaper for East European producers compared to their Western peers.
6. The increase of labor productivity will become the challenge for farms in RU and UA (assuming that wage rates will go up).

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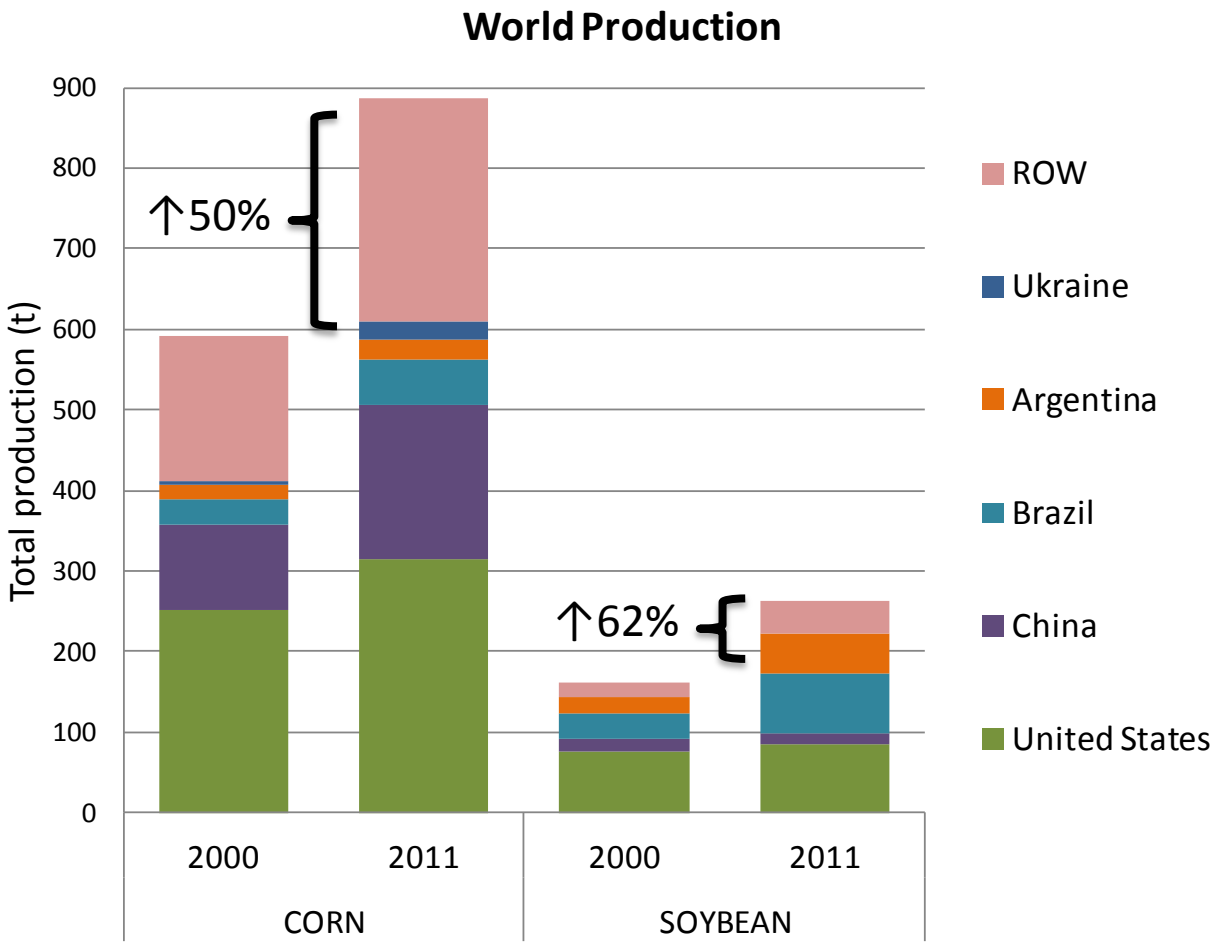
Global Corn & Soybean Markets

Corn

- **US production ↑ 25%**
- **China's production ↑ 82%**
- **4th largest exporter , Ukraine, produced 3% of the worlds corn**

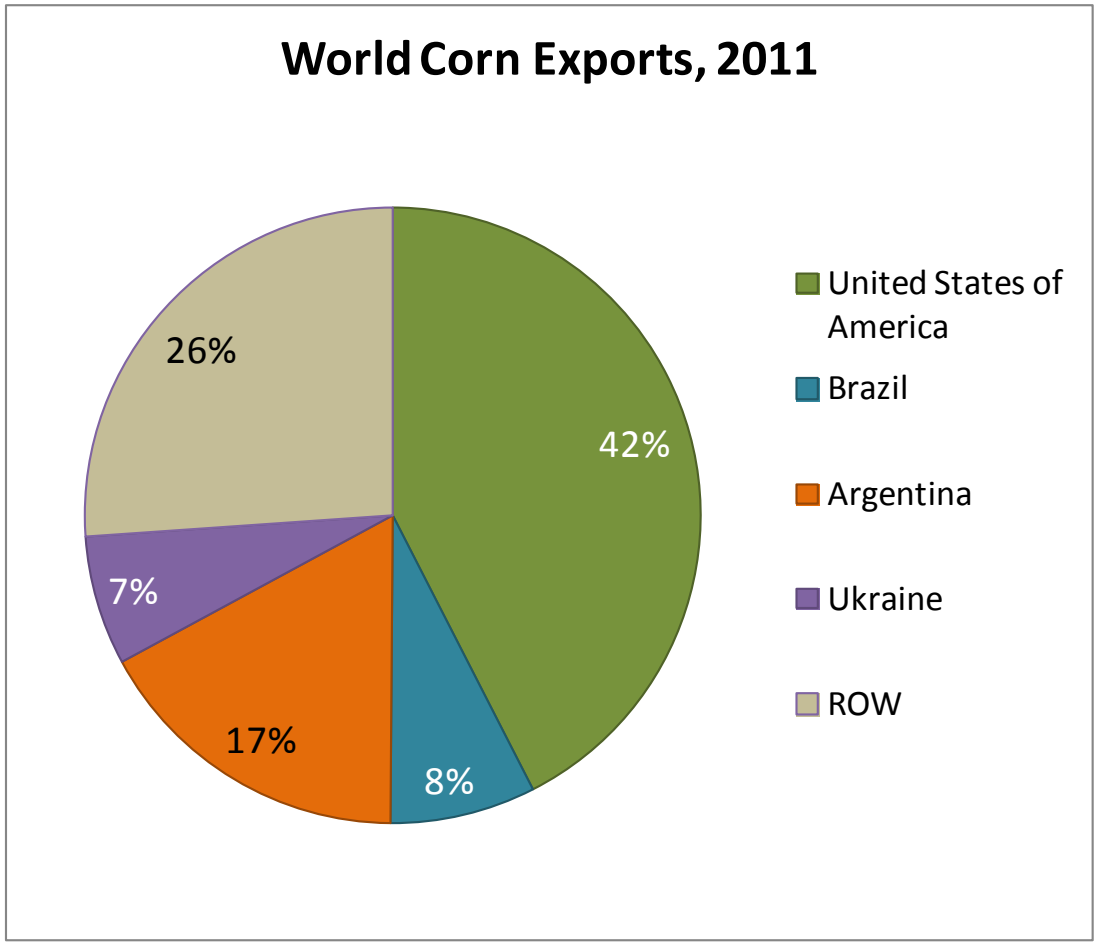
Soybean

- **US almost flat**
- **Brazil ↑ 129%**
- **Argentina ↑ 143%**



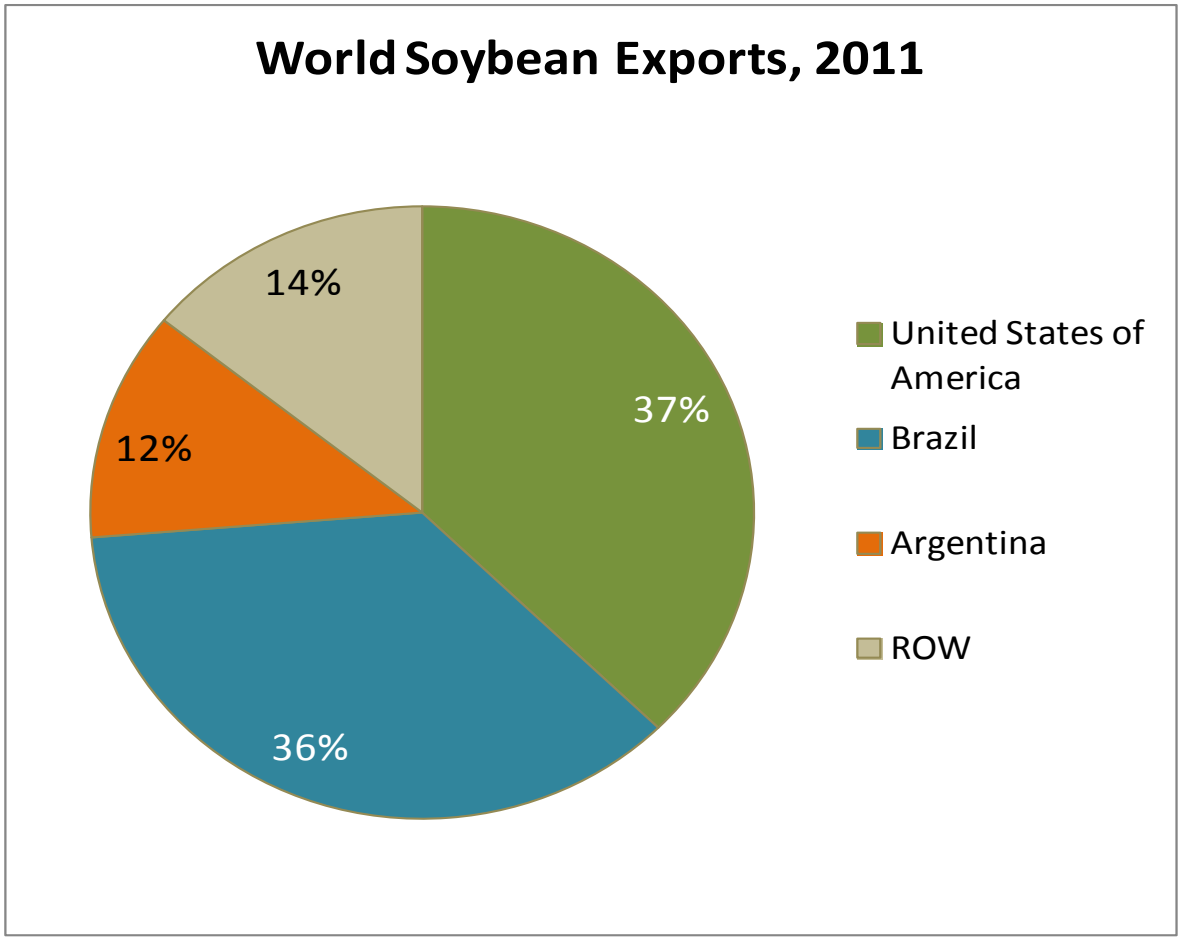
Source: FAO STAT, 2014

12% of corn production was exported – app. 118 mio t



Source: FAO STAT, 2014

35% of soybean output was exported – app. 91 mill. t



Source: FAO STAT, 2014

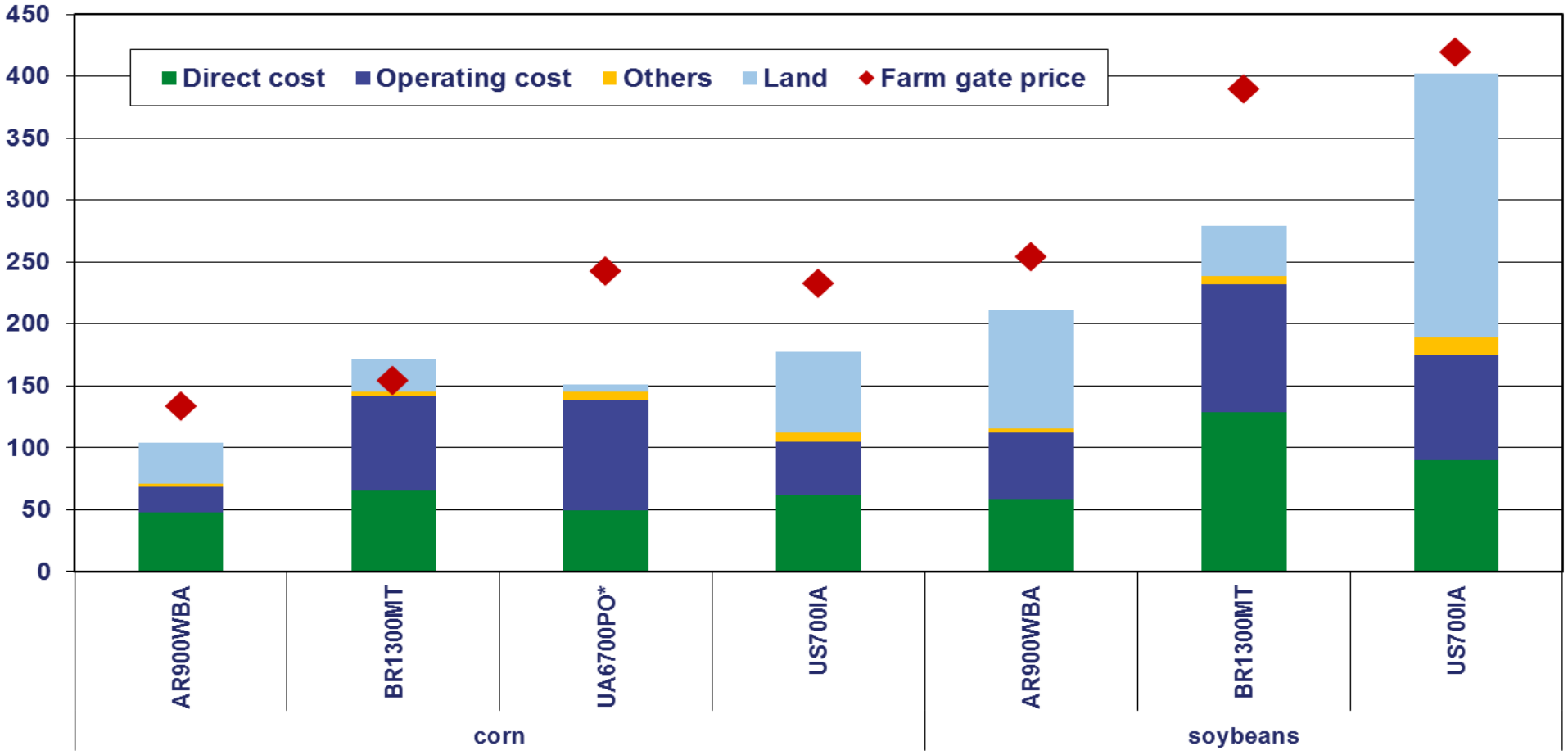
Typical Farms – Farm Gate Prices, 2011

‘Typical‘ Farm Prices (USD/t)	Corn	Soybeans
AR900WBA (Argentina, Buenos Aires Region)	$133	$254
BR1300MT (Brazil, Mato Grosso)	$154	$390
US700IA (USA, Iowa)	$232	$437
UA6700PO (Ukraine, Poltava)	$243	

Source: agri benchmark

Add 20 % export tax on corn and 35% on soybeans

Key Cost Elements and Farm Gate Prices (2011; USD/t)



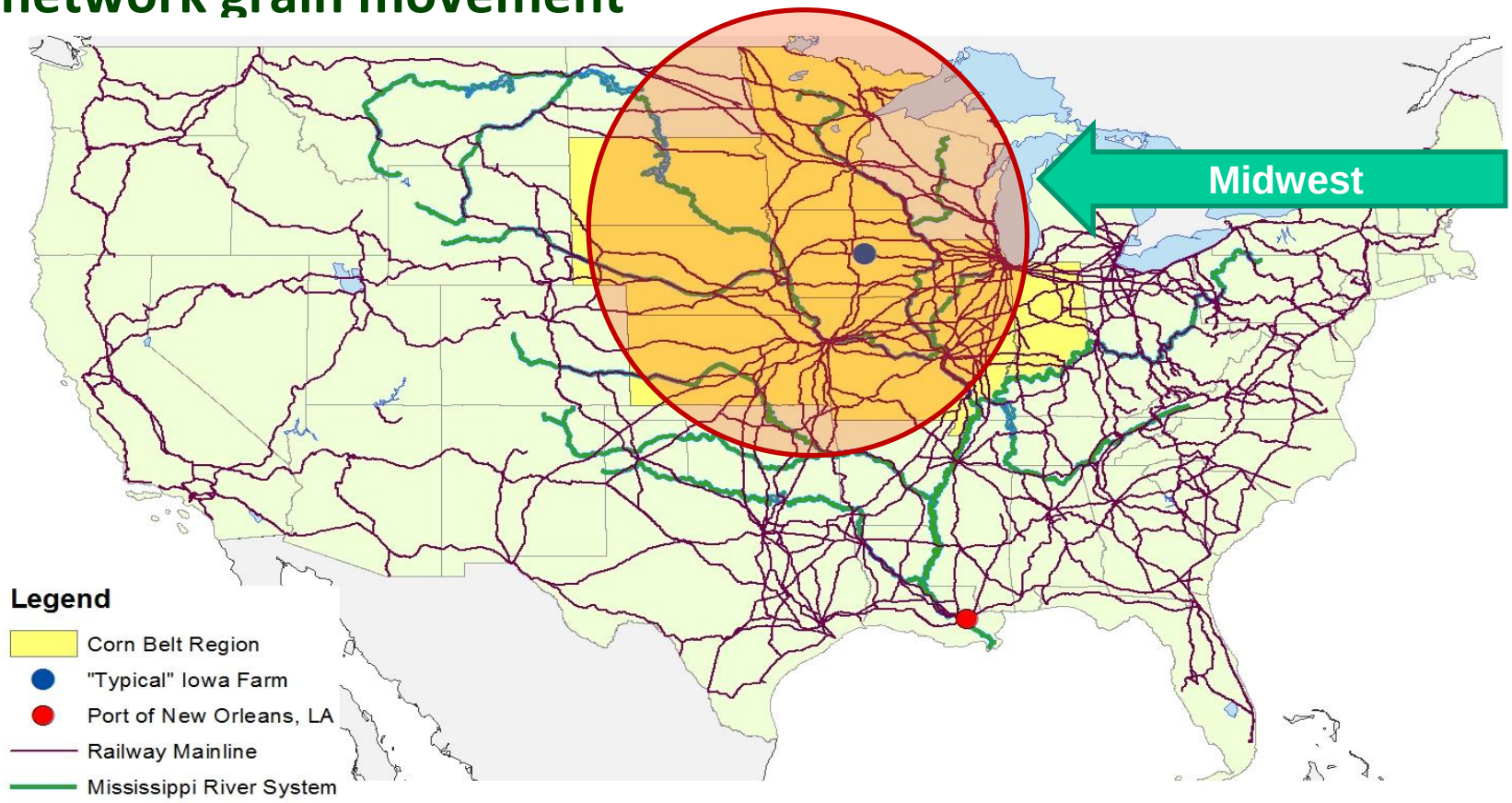
Source: agri benchmark

⇨ **In direct and operating cost just the AR farm can compete with US farm.**

⇨ **Land cost are a major buffer for the AR and the US farm – not for the UA farm – even with much lower prices farms will be able to profitable to produce.**

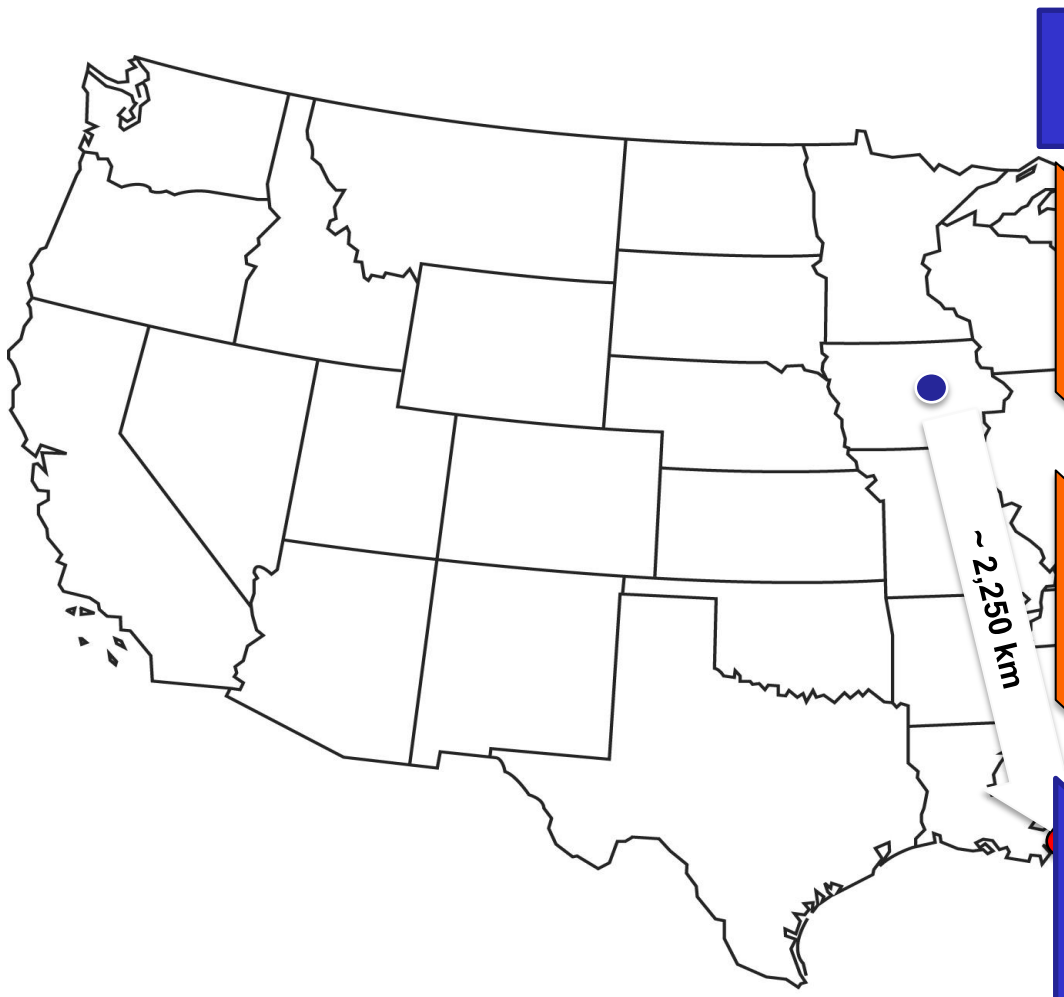
United States of America: Domestic Transportation

- **Intermodal network grain movement**
  - **47 % bar**
  - **44 % rail**
  - **8 % truc**



Source: USDA

U.S. Domestic Transport Cost



Transport Costs from N.C. Iowa to New Orleans (2011)

Trucking
- 11 (USD/t)

Barge
- 27 (USD/t)

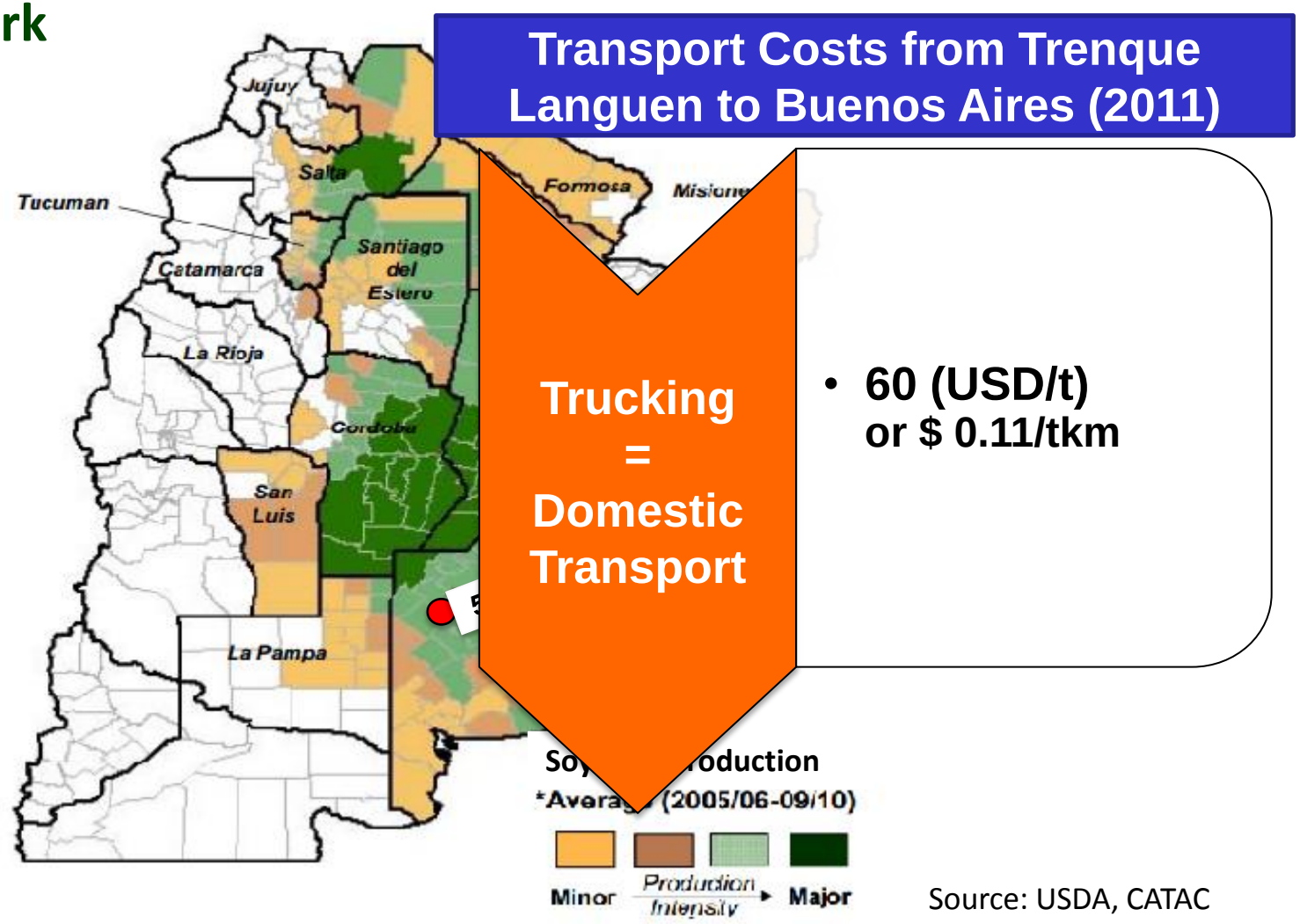
Domestic Transport
- 38 (USD/t)
- or $ 0.02/tkm

Source: USDA, NOAA

Argentine Domestic Transport Cost

- Typical Farm: Trenque Lauquen, Beunos Aires
- Port of Beunos Aires

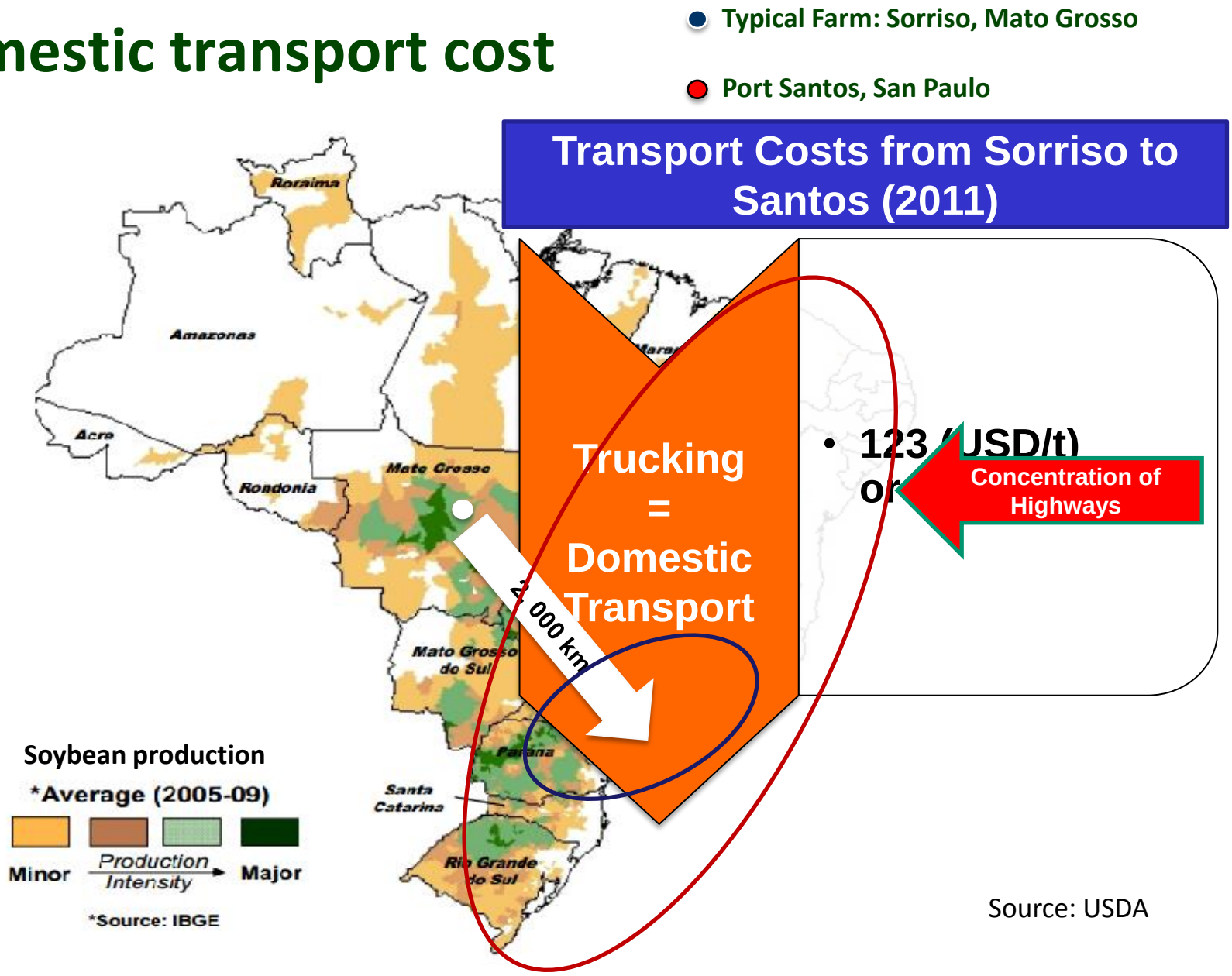
- **Intermodal network grain movement**
  - **84 % truck**
  - **15 % rail**



Source: USDA, CATAC

Brazilian domestic transport cost

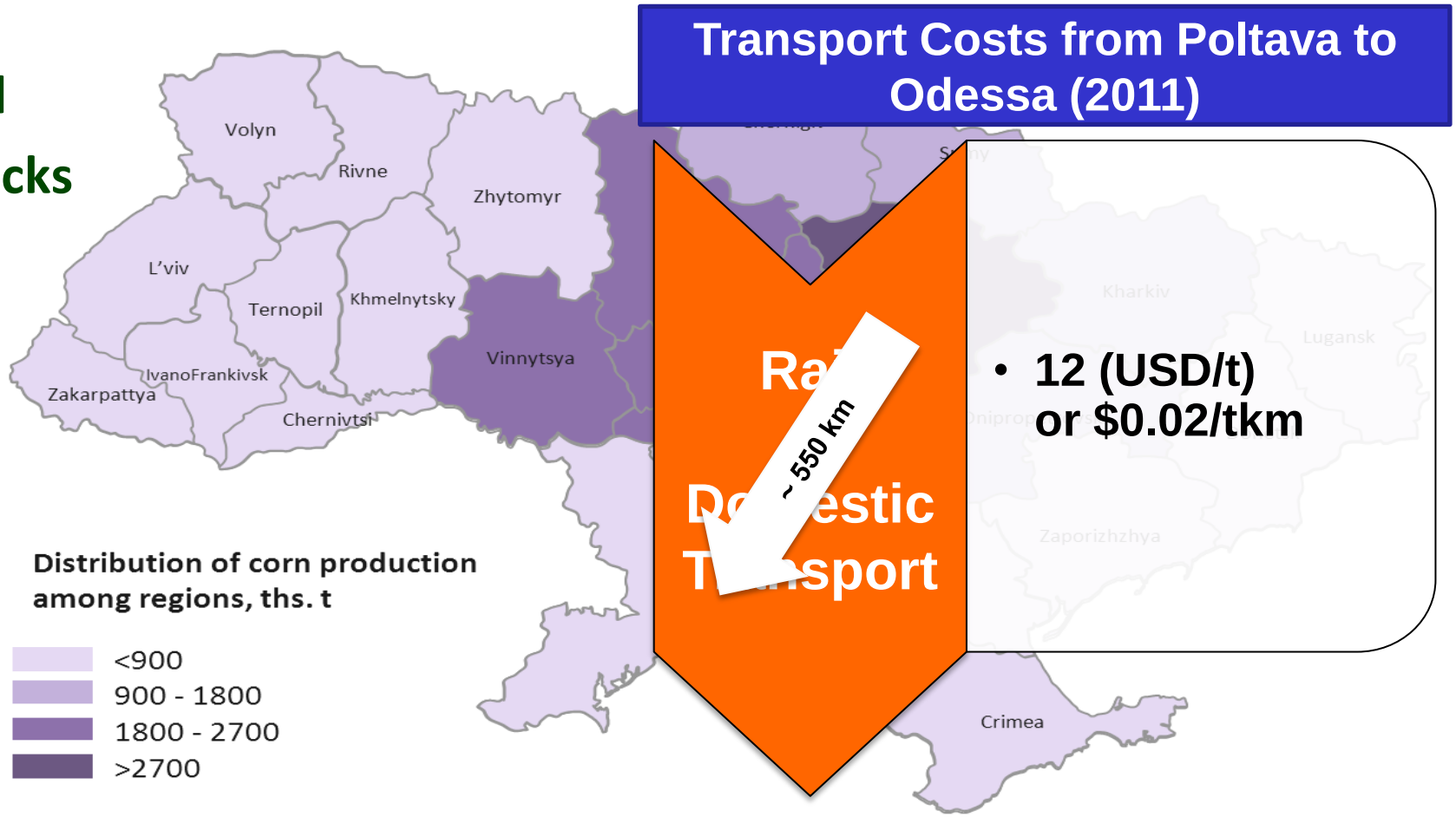
- 60% truck
- 33% rail



Source: USDA

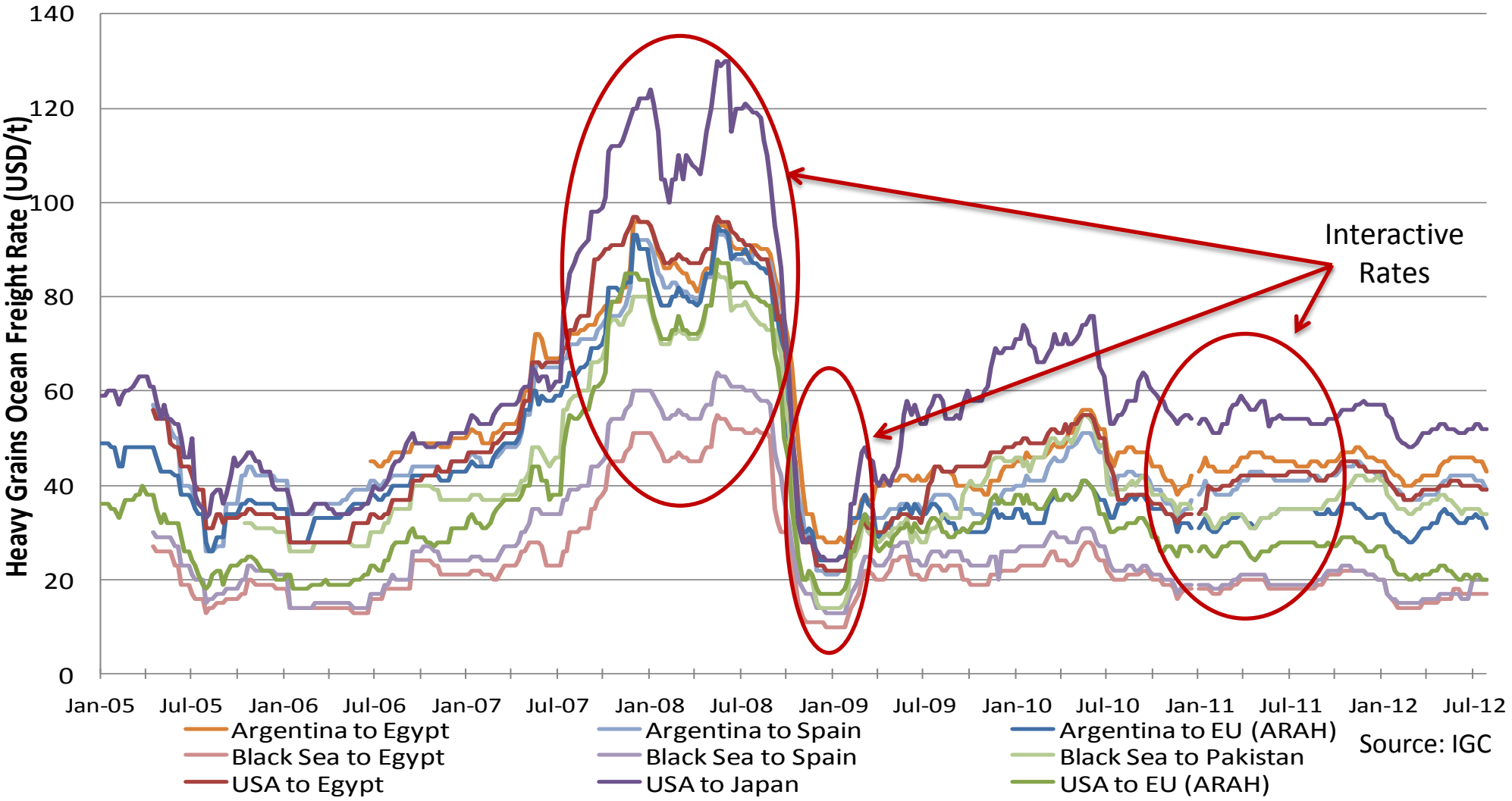
Ukrainian domestic transport cost

- 70 % rail
- 27 % trucks

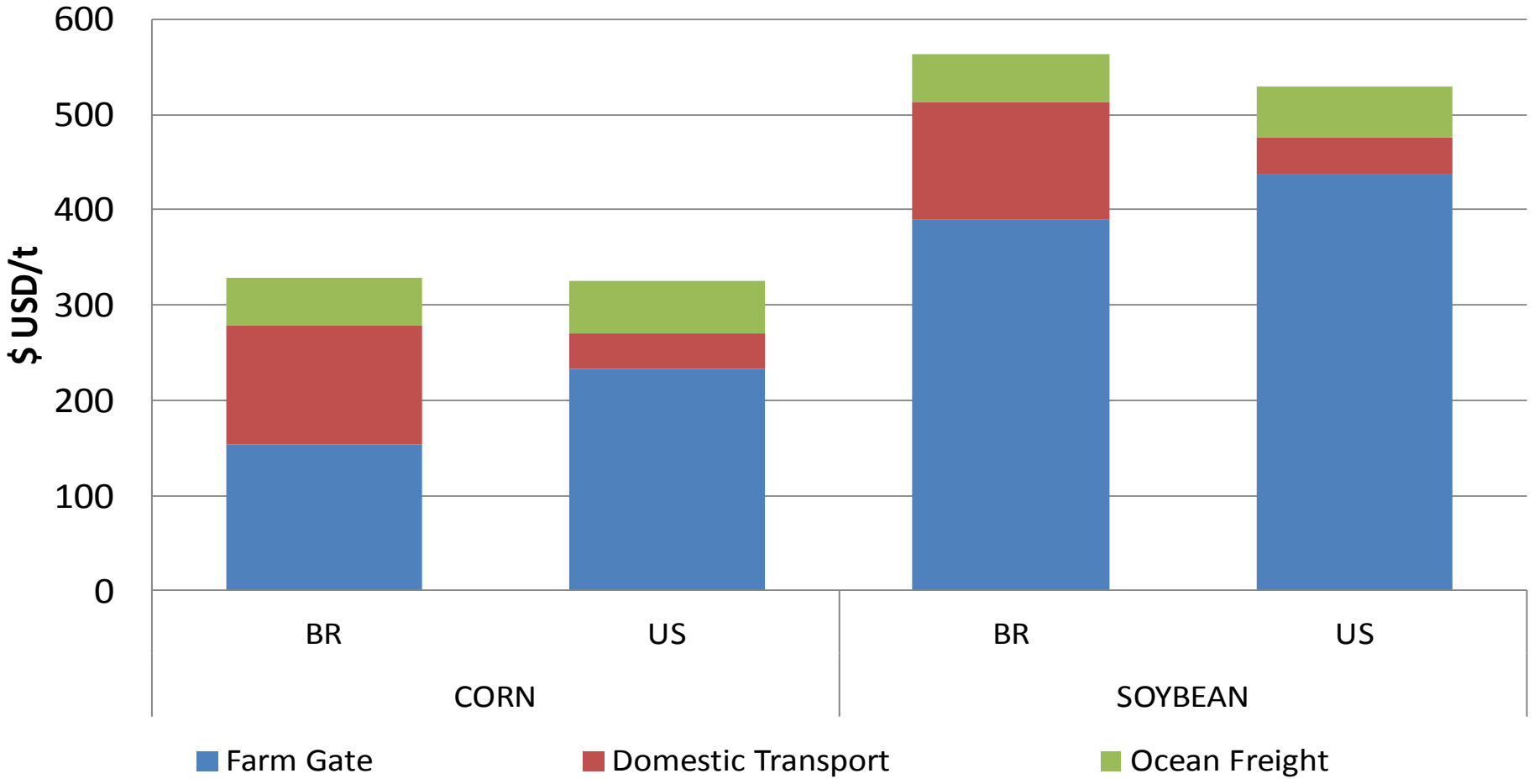


Source: Centre for Transport Strategies

Evolution Overseas Freight Rates

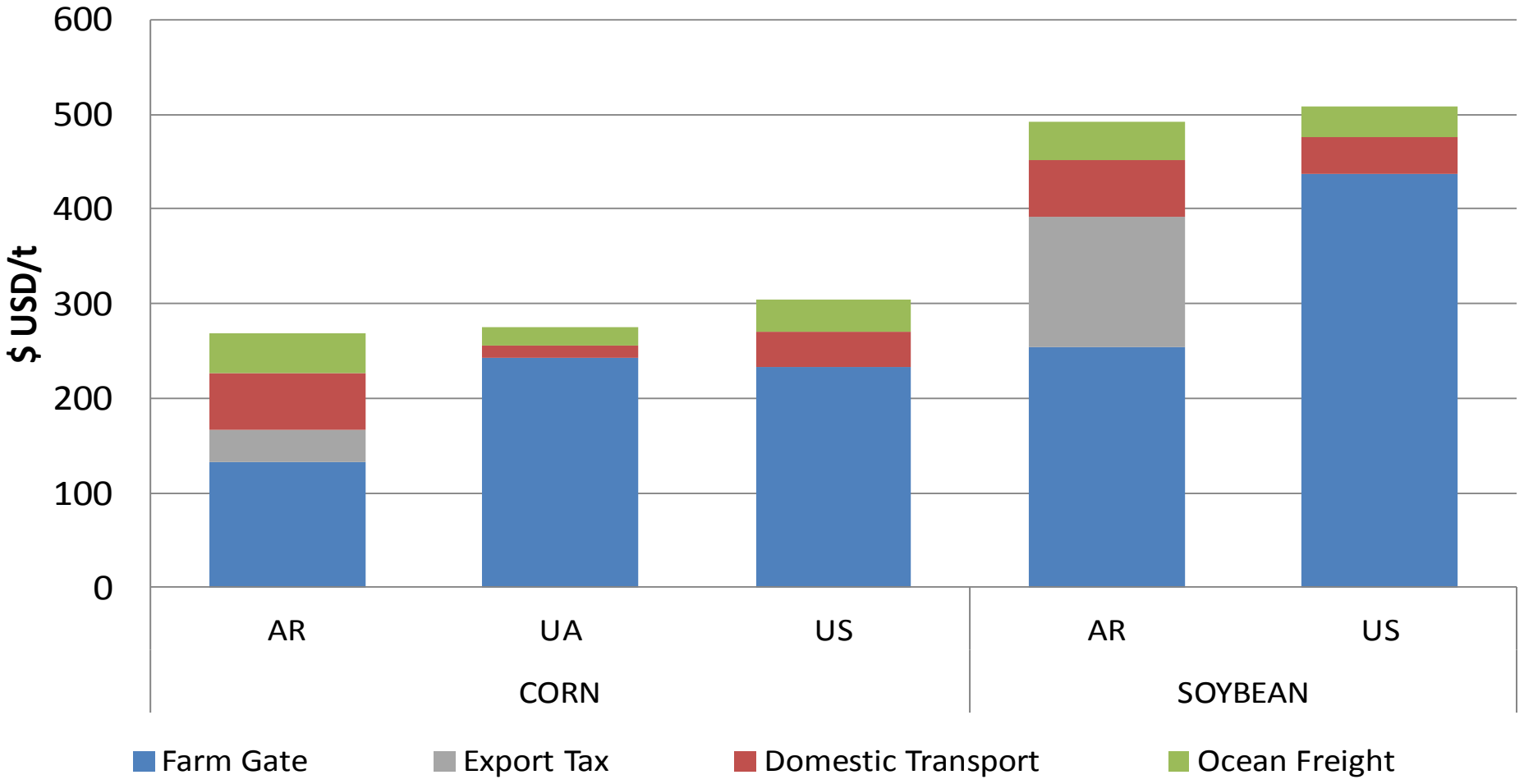


Typical Farm Quotes – Destination China



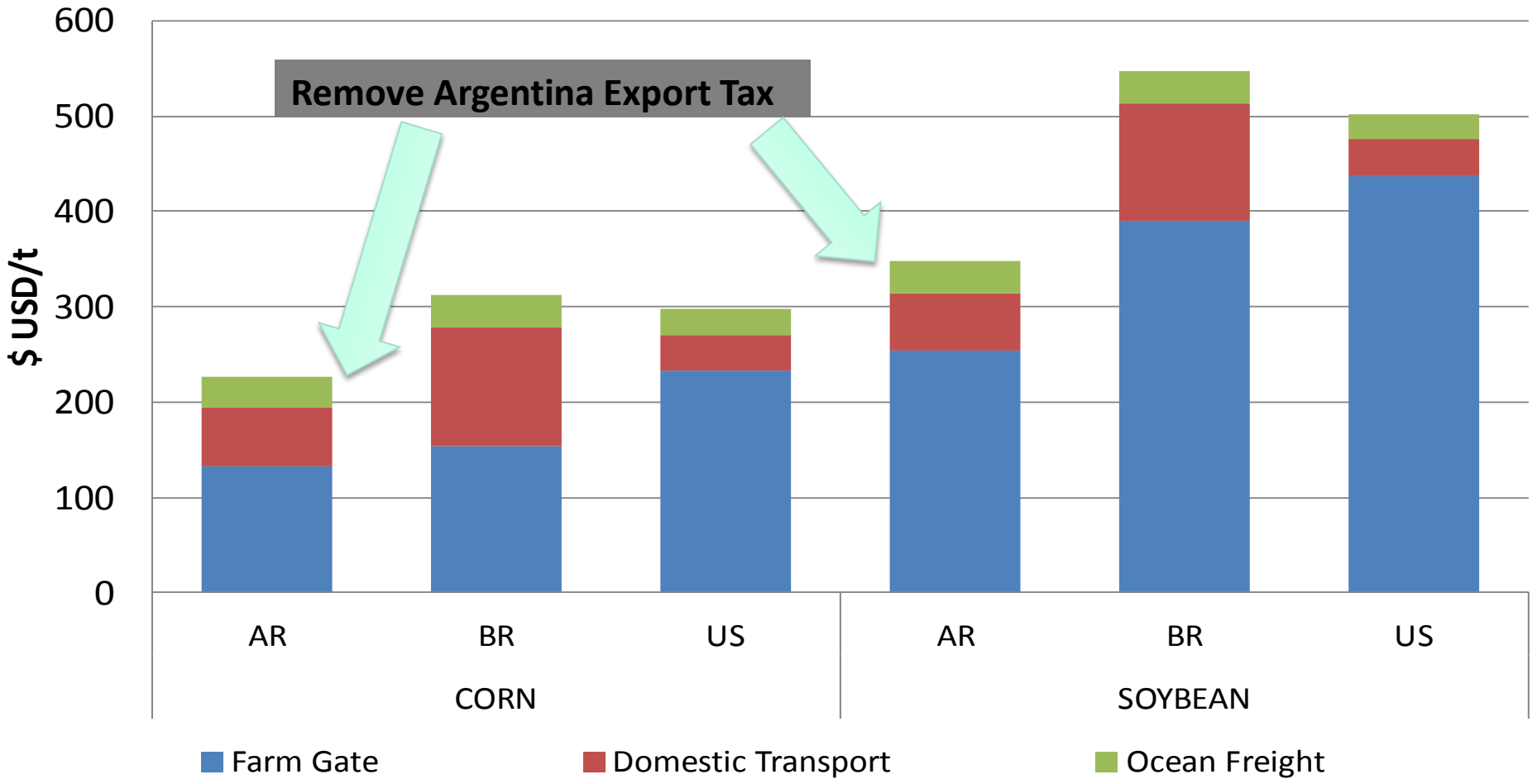
Source: agri benchmark, USDA, & IGC

Typical Farm Quotes – Destination Spain



Source: agri benchmark, USDA, & IGC

Typical Farm Quotes – Destination Hamburg



Source: agri benchmark, USDA, & IGC

Summary & Conclusions re. Trade (1)

1. What really matters is the quality of infrastructure – not pure distance.
2. Its efficient domestic transport system puts the US in a very competitive position – esp. relative to AR and BR.
3. For destinations such as Hamburg, Spain or Egypt the Ukraine has a competitive edge over the US, BR and AR.
4. Producers in BR and the US have to „hope“ for the current Argentine government policies to remain.
   ⇨Export taxes are a potential game changer

Summary & Conclusions re. Trade (2)

5. Provided Russian corn and soybean production will speed up, a similar picture as for the Ukraine can be assumed.
6. Ocean freight rates move in tandem – fluctuation unlikely to alter competitive position of producers.
7. Further research on Black Sea shipping to China needed.

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Overall Conclusions

1. US commodity production is very competitive – both because of low CoP as well as low transport & logistic cost.
2. Low and decreasing energy cost in the US not yet reflected in figures – additional advantage at least vis a vis EU, UA, AR.
3. Key advantage of US growers: high buffer through high and responsive (!) land leases.
4. Watch out for UA and RU (in the mid to long-term) in corn and soybeans.

Know how is our business

Thanks a lot for your interest

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