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AGRICULTURAL EXCELLENCE CONFERENCE

CANADIAN CROP PRODUCTION – HOW DOES IT COMPARE VIS Á VIS MAJOR COMPETITORS?

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#AgExConf16

FARM MANAGEMENT CANADA
GESTION AGRICOLE DU CANADA

Canadian crop production –
How does it compare to global competitors?

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Commercial partners

AgEx Conference Calgary
November 22nd – 24th 2016

Agenda

1. ***agri benchmark* – What is that?**
2. **Canola - International comparison production economics**
3. **Wheat - International comparison production economics**
4. **The elephant in the room:**
   Future Wheat production in Argentina

Let's grow together – Understanding agriculture worldwide.

We help to manage challenges in global agriculture

Learn local, grow global.

You need reliable and comparable data on farming systems to understand dynamics.

***agri benchmark* is there to satisfy this hunger for data and information.**

We compare apples to apples.

Because we collect data with globally standardized methods we deliver reliable and comparable results.

We dig deeper.

The unique depth and quality of our data guarantees appropriate support for your decision making.

agri benchmark – partners with high reputation (I)

Europe

UK

Italy

France

Denmark

Sweden

Ukraine

Bulgaria

Hungary

Czech Republic

Poland

Russia

North America

Canada

USA / Iowa

USA / Kansas

USA / Indiana

USA / N-Dakota

agri benchmark – partners with high reputation (II)

South America

Brazil

Argentina / Uruguay

Asia

China

Malaysia

Vietnam

Indonesia

Thailand

Japan

Africa

South Africa

Kenya

Zambia

Nigeria

Australia

Western Australia

Victoria

NSW/QLD

South Australia

The Canadian *agri benchmark* Network

- ⇨ Ag Canada funded expansion to Ontario and Manitoba in 2014/15.
- ⇨ Existing partners in Saskatchewan (Dick Schoney, UofSK), Ontario (John Molenhuis, OMAFRA) and Manitoba (Jörg Zimmermann); 6 typical farms.
- ⇨ Thanks to a collaboration with FMC, *agri benchmark* coverage in Canada will be improved further – working towards representativity.
- ⇨ More interaction among Canadian partners and tailored research on issues impacting Canadian crop producers and their stakeholders.
- ⇨ Domestic comparisons as important as global benchmarks.
- ⇨ Goal: Enable growers to put their strategic planning into a (global) perspective.

agri benchmark Farms - Established Systematically

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 updated and regularly being re-assessed to track changes

Data is jointly gathered from partners, regional advisors and growers. Basis: Standard operating procedure (SOP).

More detailed information on concept & methods

1. **Why "typical farms" and how are they defined?**
   http://www.agribenchmark.org/agri-benchmark/value-and-approach.html

2. **How do we run cost calculation and how do we define terms?**
   http://www.agribenchmark.org/fileadmin/Dateiablage/B-Cash-Crop/Misc/Economic-terms-141103.pdf

3. **Detailed information on partners?**
   http://www.agribenchmark.org/cash-crop/network.html

agri benchmark – From Corn to Cattle

We operate branches in Beef & Sheep, Hog, Horticulture and Aquaculture.

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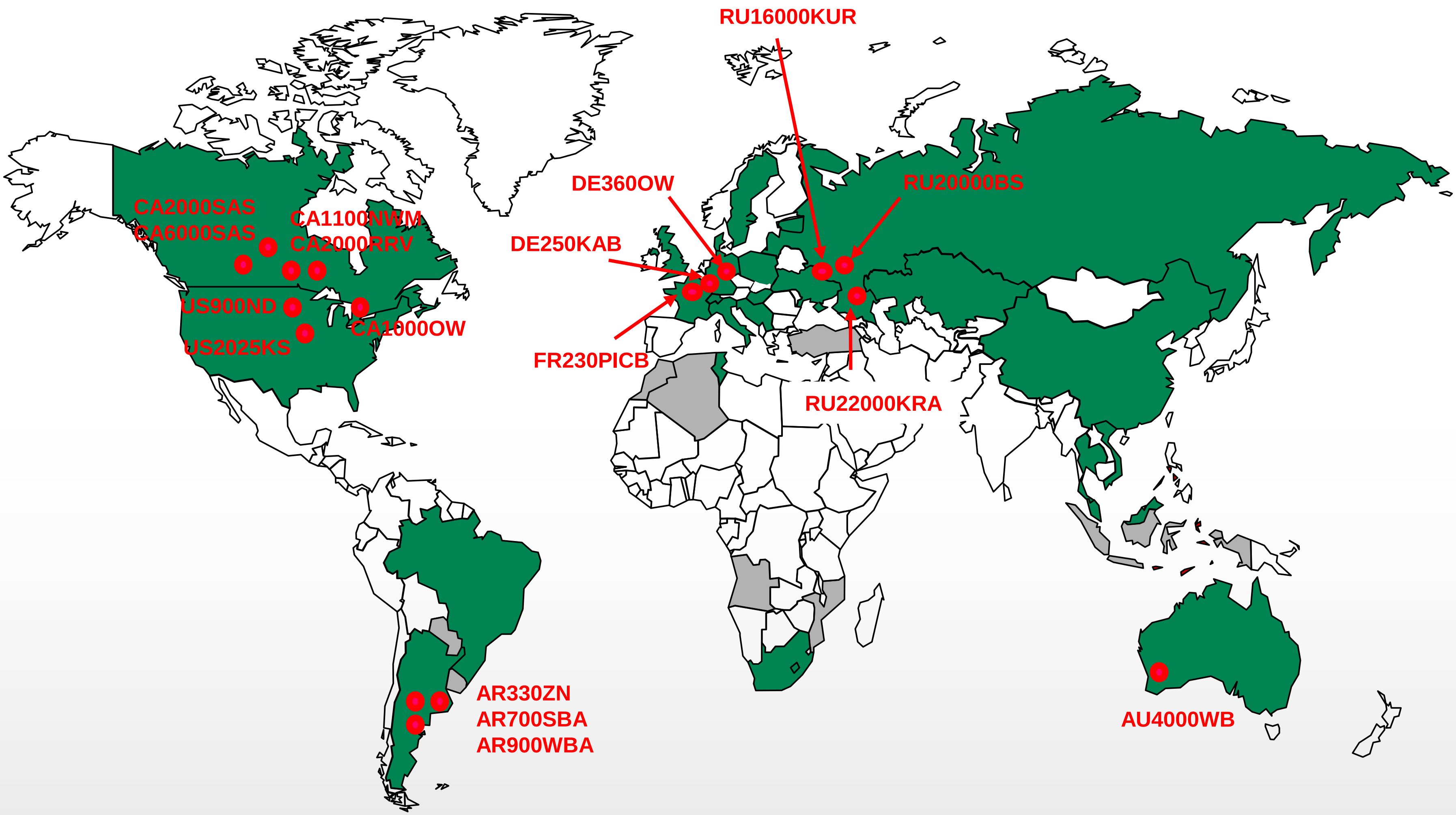
Location Typical Farms



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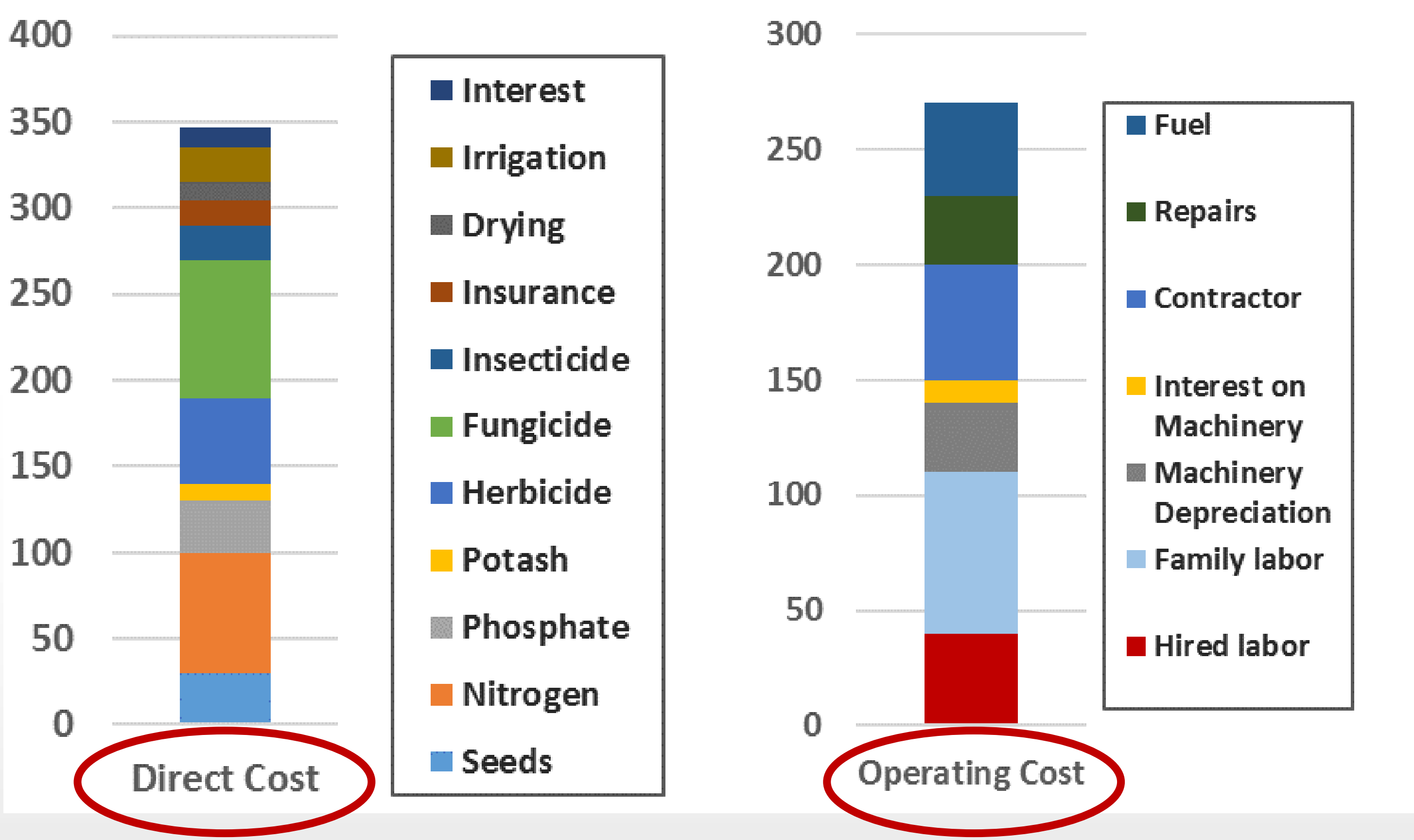
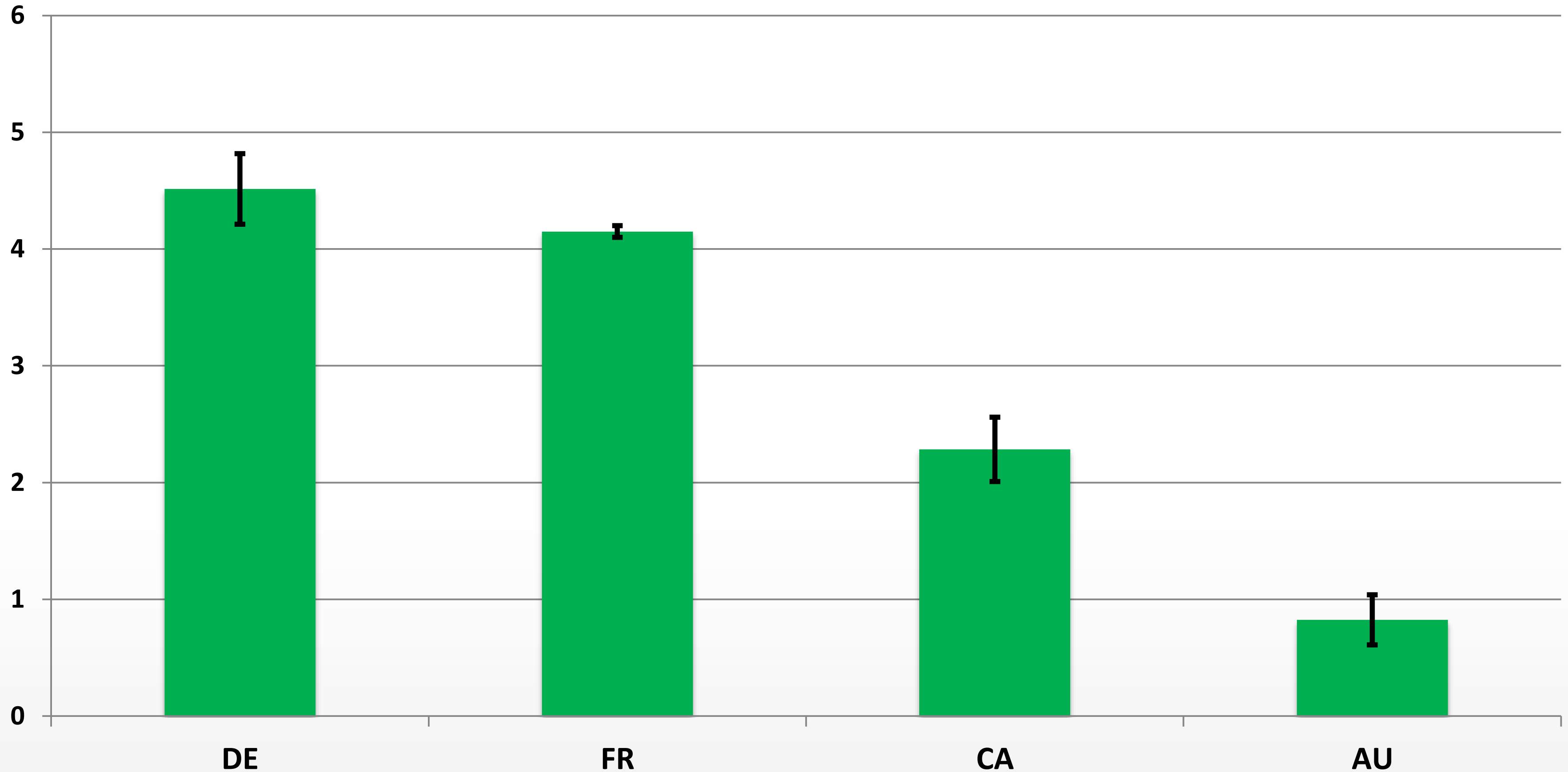
Key Cost Elements *agri benchmark*

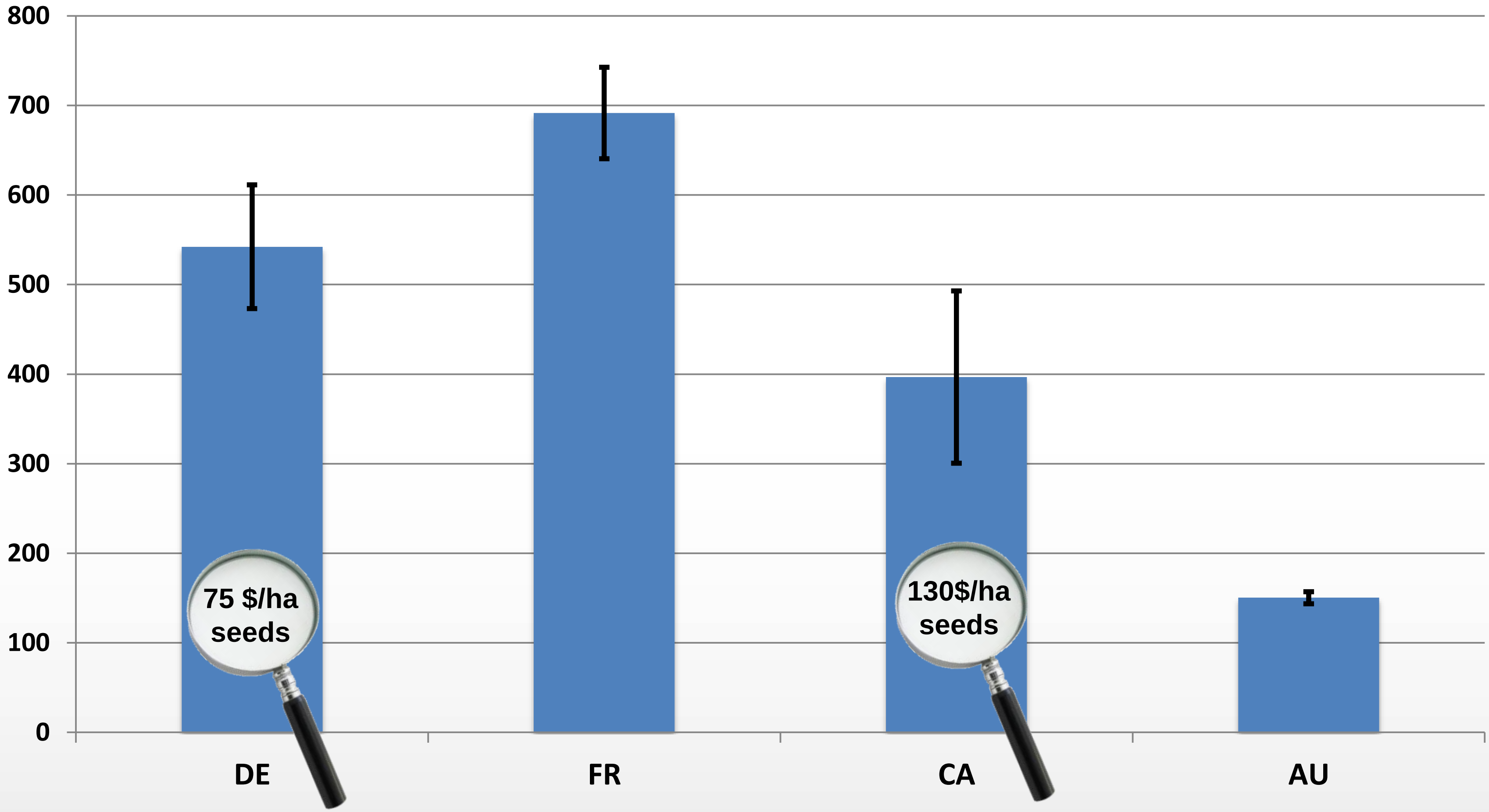


Canola Yields *agri benchmark* Farms (t/ha)



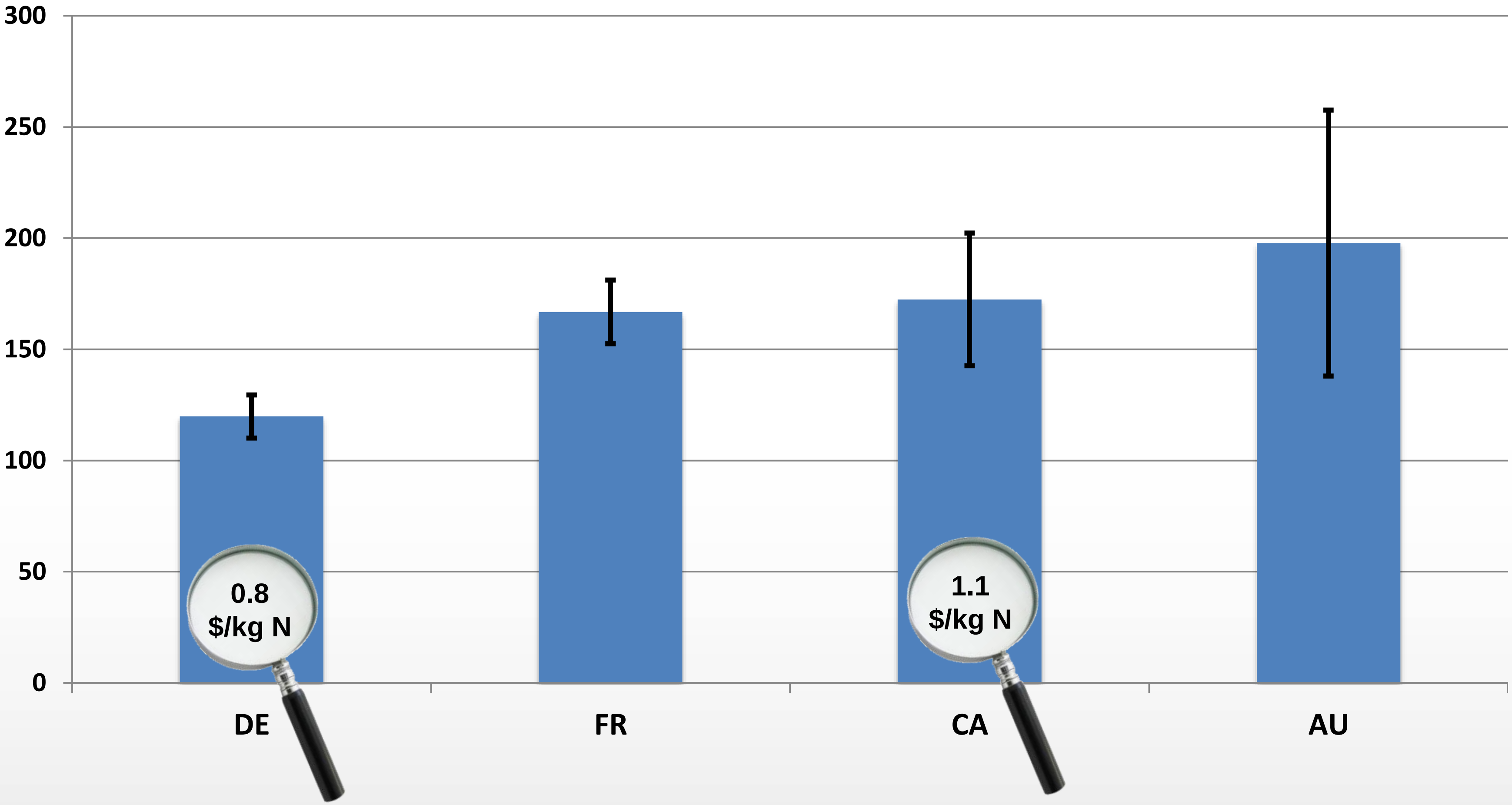
1. Canadian Canola yields moderate to low from a global perspective – main constraint: precipitation.
2. But: Australian, Kazakh and Russian producers tend to generate much lower yields.

Direct Cost Canola (USD/ha)



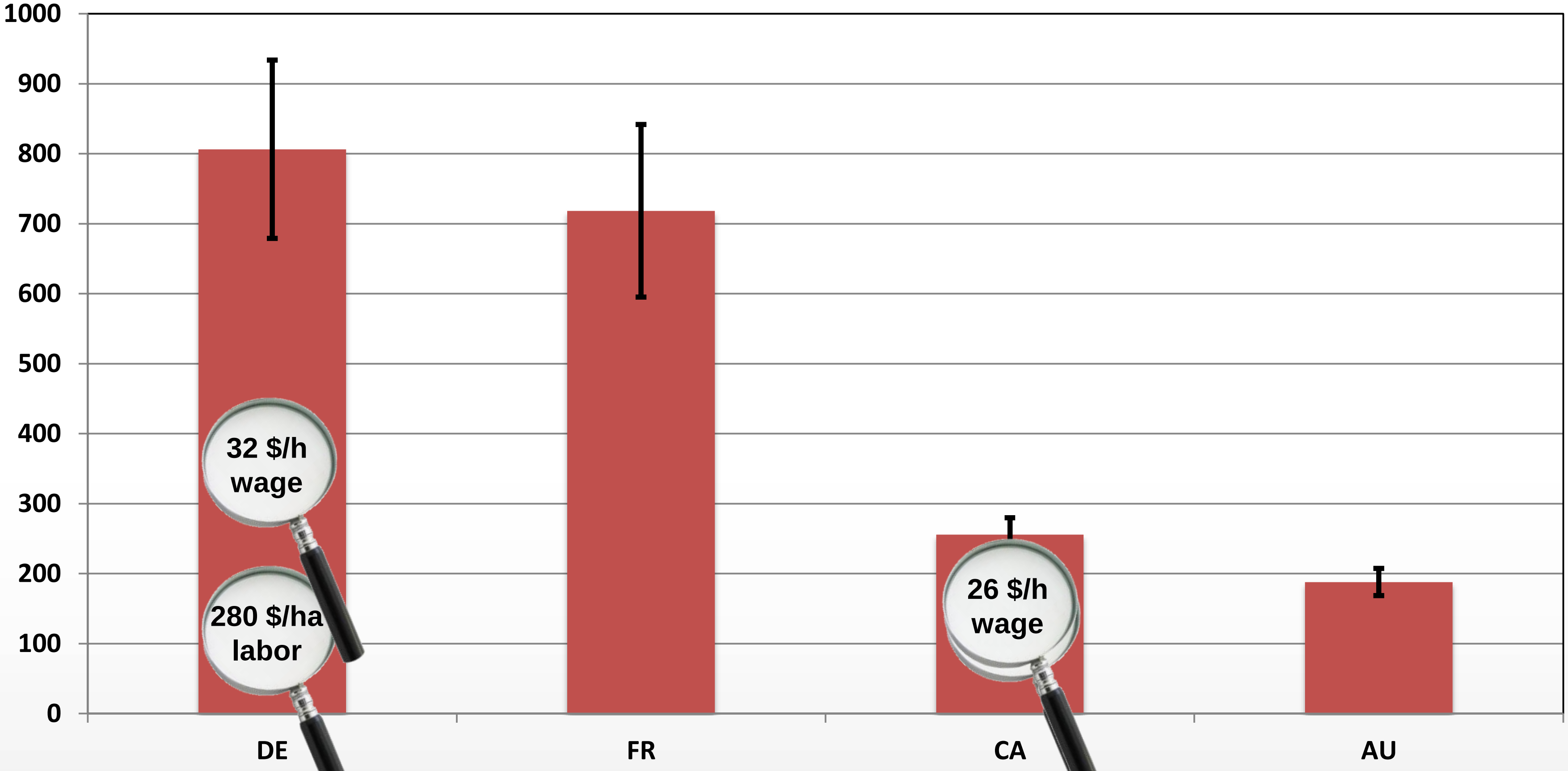
1. Per hectare: Canadian producers also moderate direct cost (seed, fertilizer, crop protection)
2. Australian producers tend to be very low – high risk of crop failure (much higher than in CA)

Direct Cost Canola (USD/t)



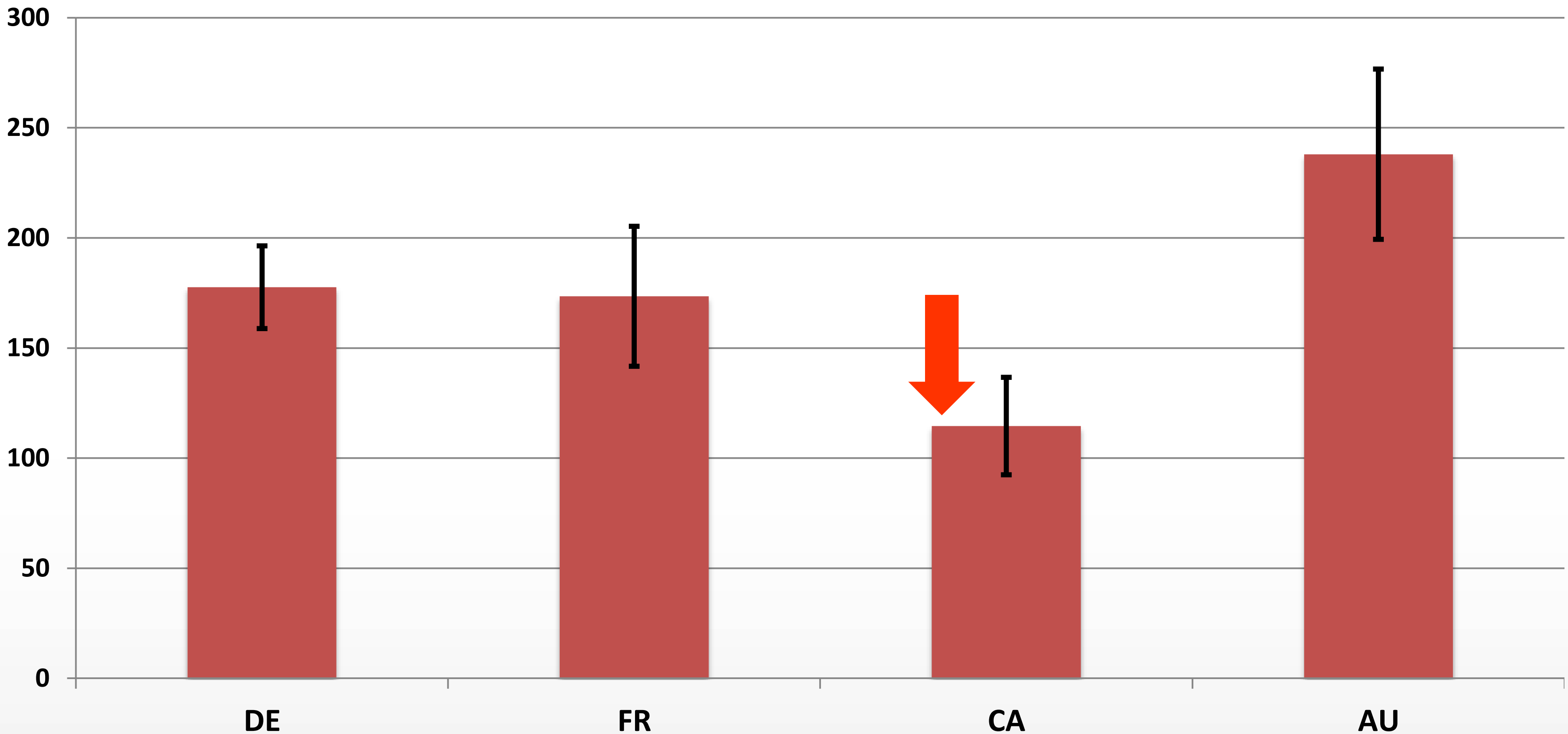
1. Direct cost per tonne: Canadian producers are relatively expensive, AU grower are most expensive.
2. Important factors: Higher seed and higher nitrogen prices.

Operating Cost Canola (USD/ha)



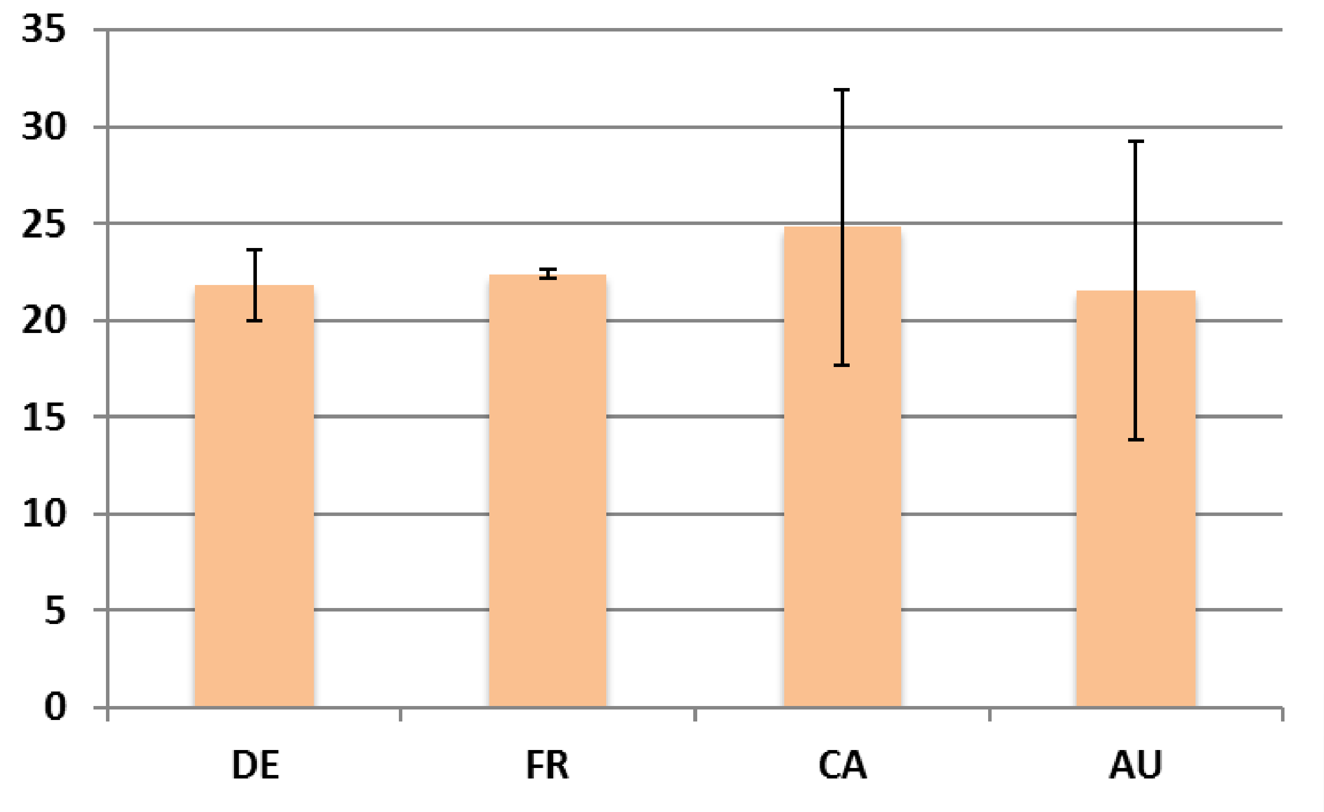
1. EU producers about [illegible] times more expensive than their Canadian peers.
2. Key drivers: high labor cost (many hours spend outside operations – farm size effects; wage rates only minor)
3. Canadian and Australian growers on a similar level.

Operating Cost Canola (USD/t)



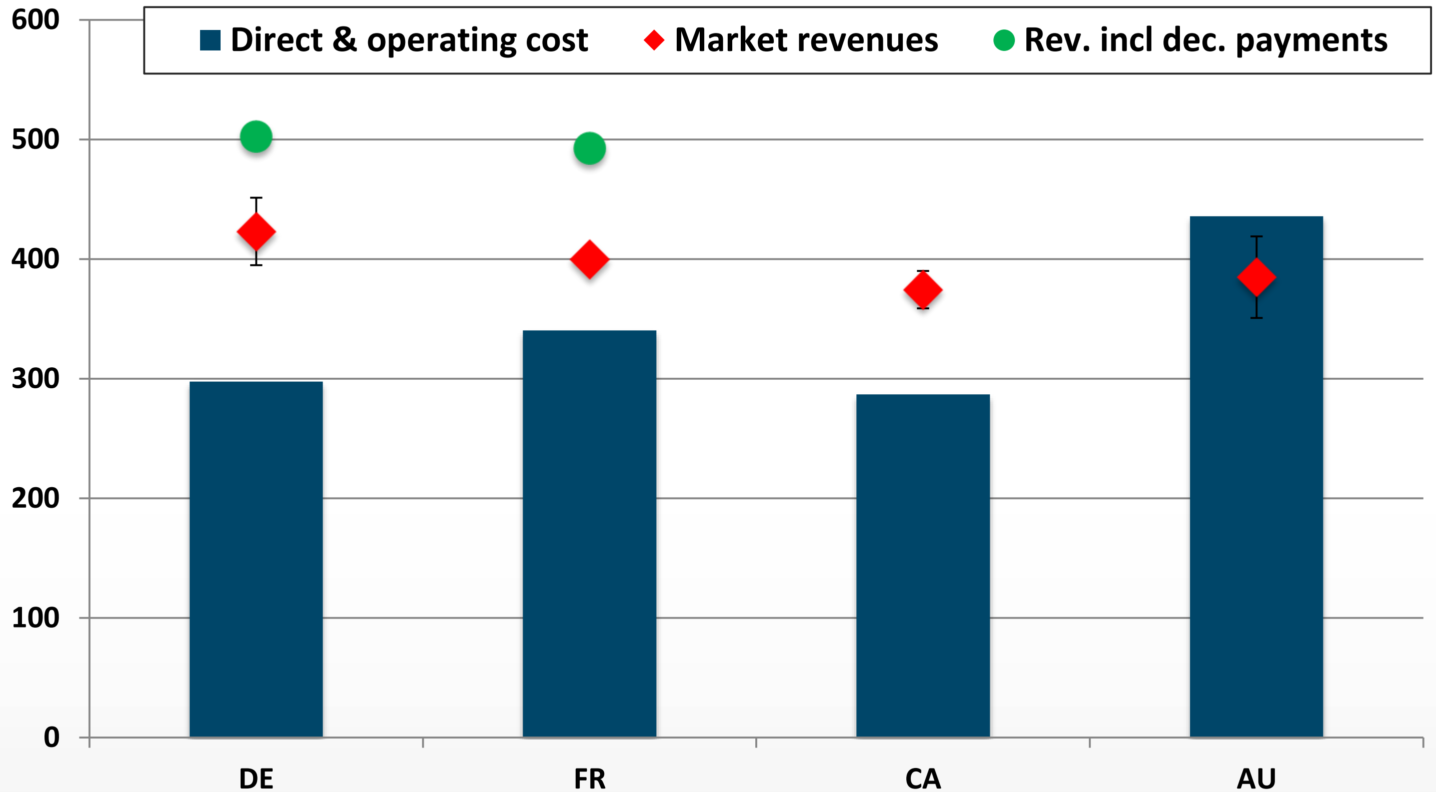
1. Per-ton-perspective reveals strength of Canadian growers in operations: 50 $/t less than EU typ. farms.
2. Due to rather low yields, Australian producers are rather high cost producers.

N-Productivity (kg canola/kg N input)



1. **Rather high N-productivity of CA growers (+15% vs DE and FR farm)**
2. **Question: Is there economic room for increased N-inputs in CA?**

Direct & Operating Cost vs. Market Revenue & EU Decoupled Payments (USD/t)



1. CA farms with lowest total cost (when land cost is excluded).
2. Due to logistics cost & export parity for oil and protein, farm gate prices in CA below Western Europe.
3. EU producers heavily benefitting from direct payments (app. 100 USD/t in canola)

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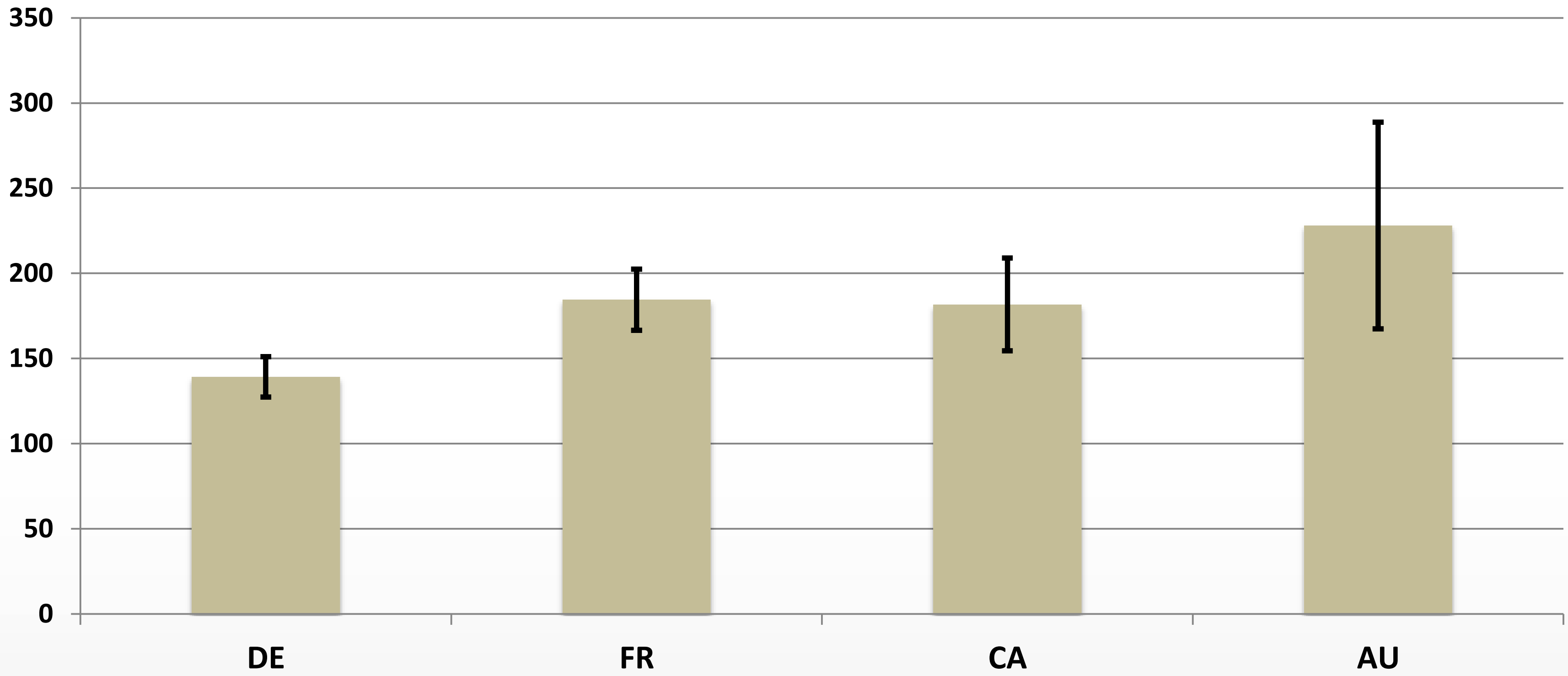
Canola Threshold Prices:
Prices needed to cover at variable Cash Cost (USD/t)



Even at canola prices of app. 200 USD/t, producers will grow canola (in order to at least pay part of their fixed and overhead cost).

Conclusions re. Canola

1. Overall, typical Canadian canola producers very competitive.
2. The strength of CA typical farms: low operating cost due to high efficiency in labor management.
3. The weakness: direct cost – mainly due to high seed cost and high nitrogen prices.
4. High N-productivity: Strong position in markets that care for greenhouse gas emissions (app. 90% of GHG emissions from N-input).
5. EU producers still very much driven by direct payments – to a large degree transferred into land rents (except for France).
6. Even with very bearish markets: Little supply response to be expected in canola (provided no alternative break crop available).

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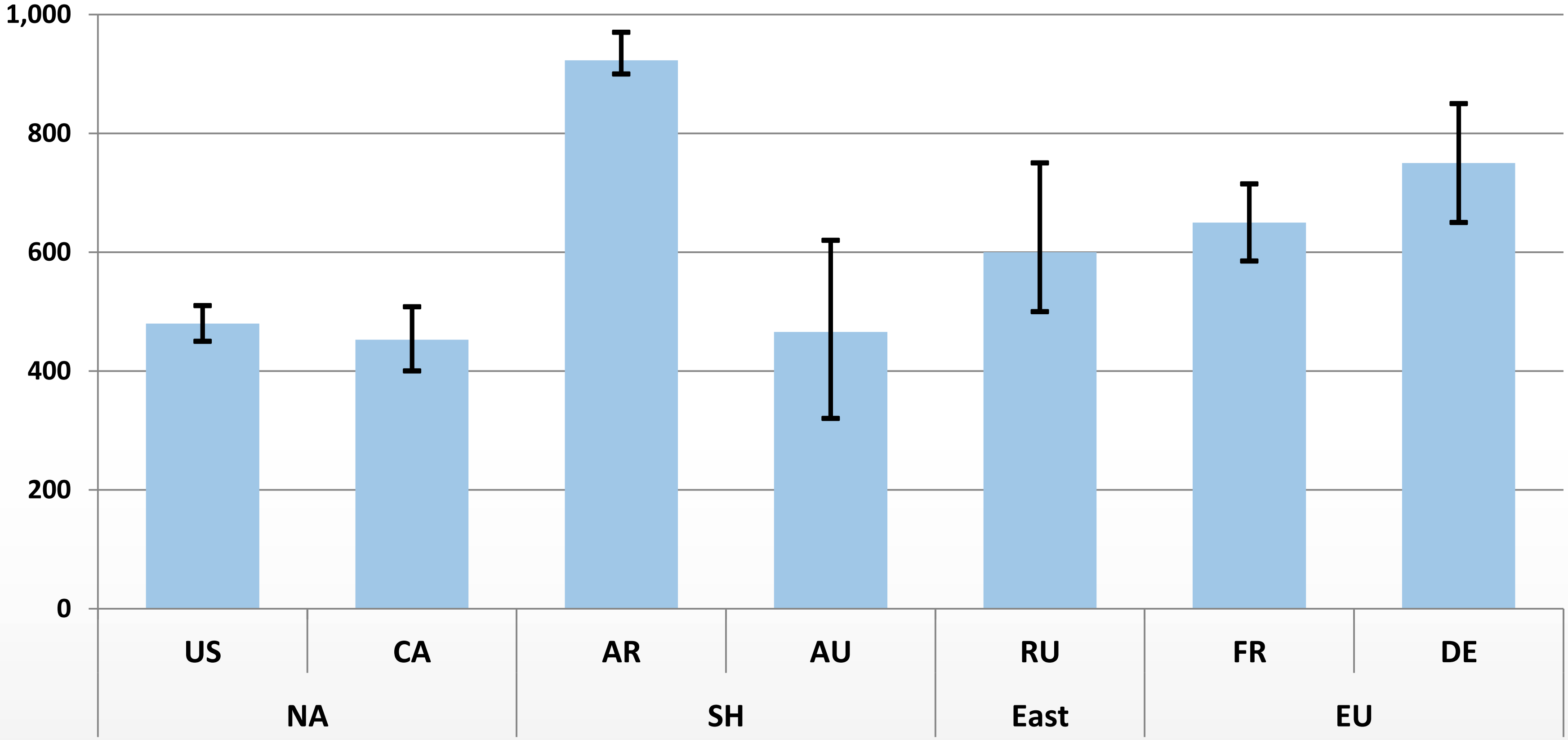
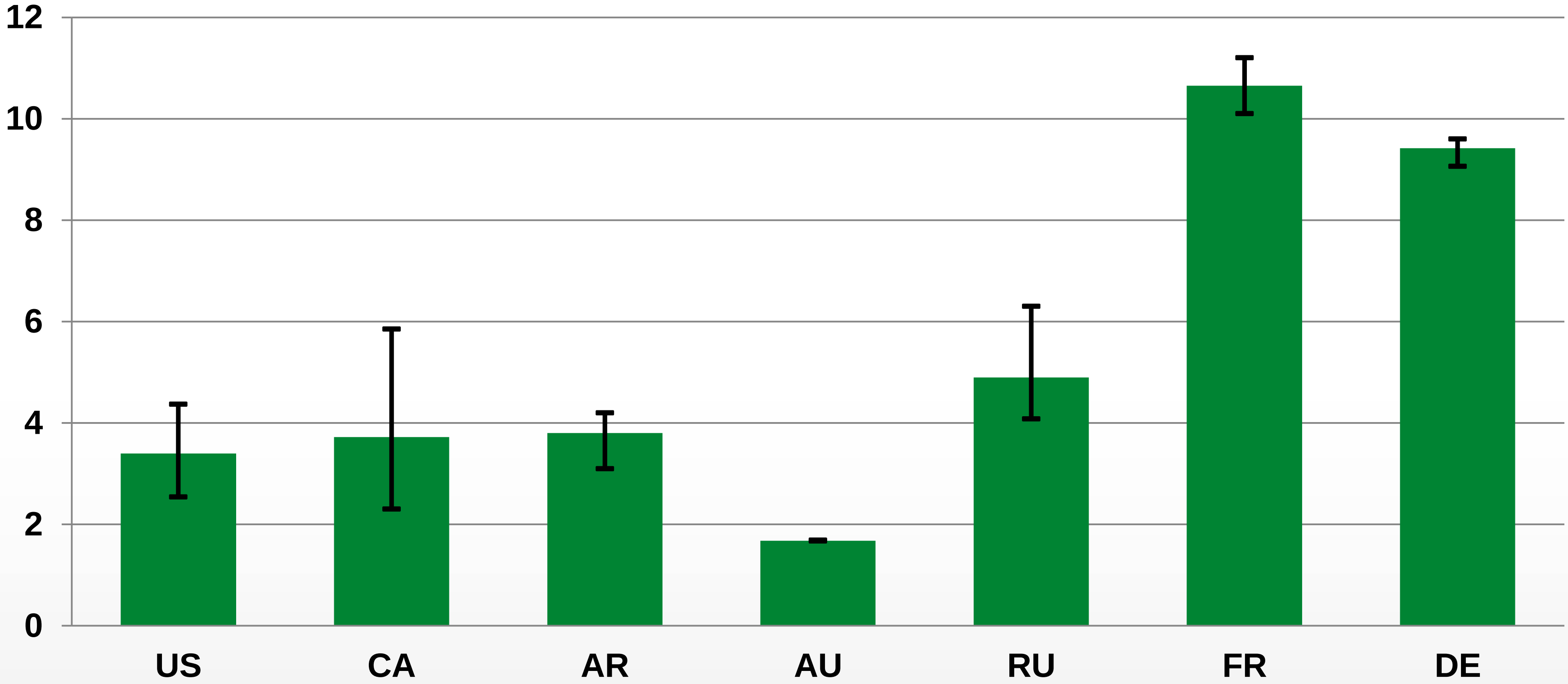
Annual Precipitation & Variation (mm)



(1) Variation of precipitation is rather strong for different production sites.
(2) Typical Canadian farms in a similar league as the US and Australia – all others much higher precipitation.

Typical Farms: Av. Wheat Yields and Variation (t/ha)

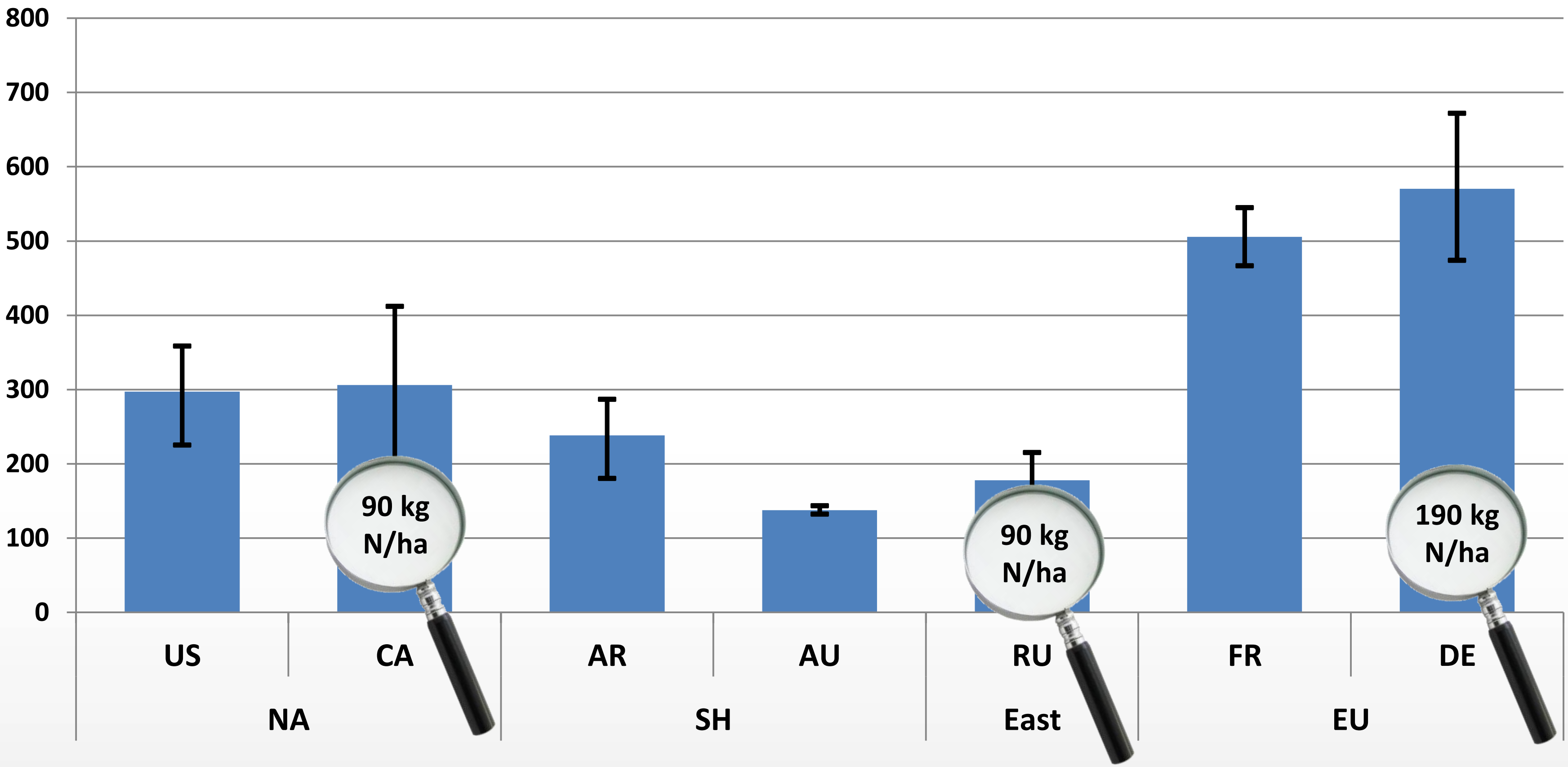


(1) Again, typical farms in Canada, the US and Argentina in one camp.

(2) Russian farms only slightly higher yields – despite much higher precipitation.

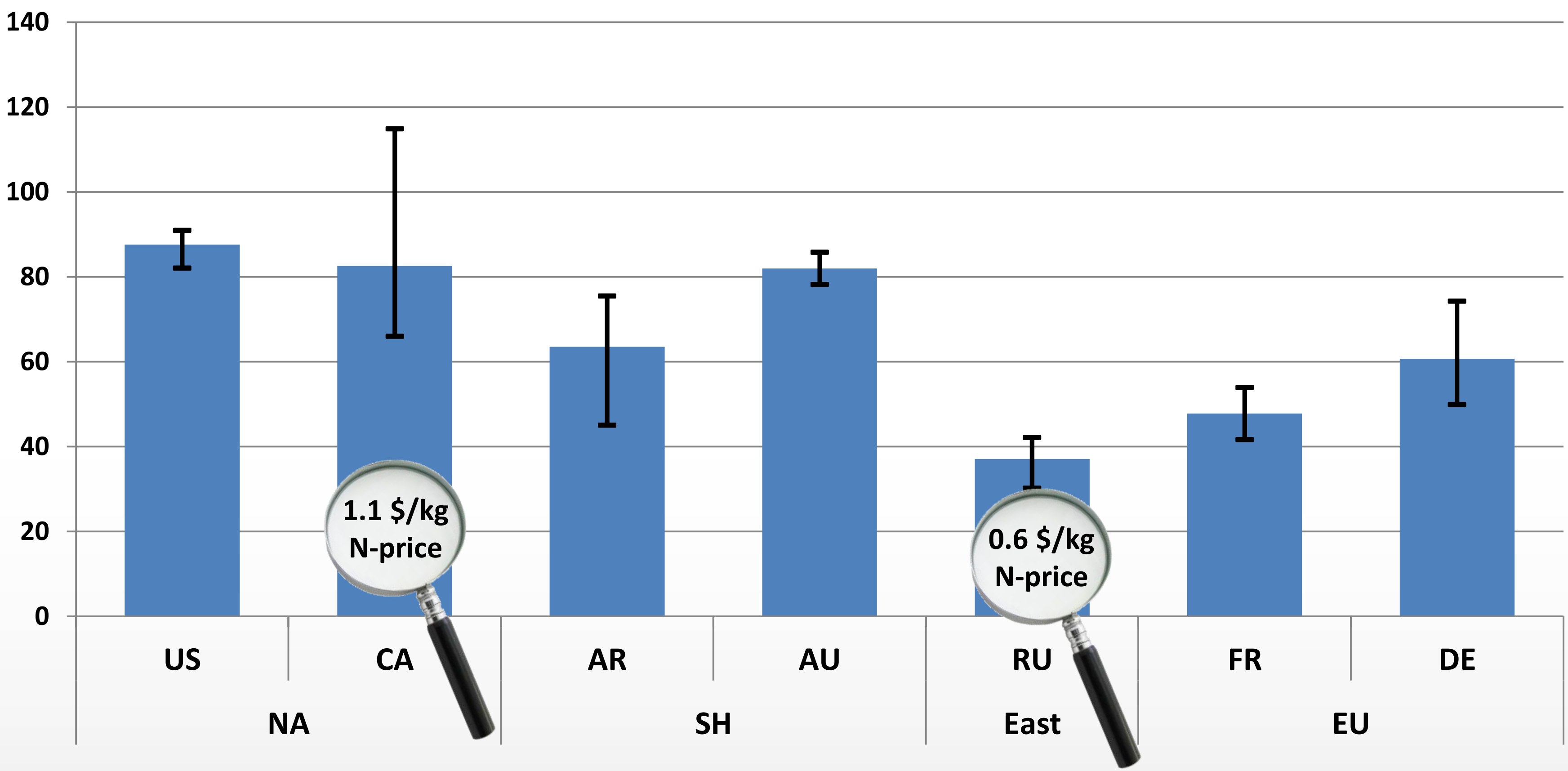
(3) Western Europe by far the most productive wheat region (precipitation, duration of cropping season).

Direct Cost Wheat - per Hectare (USD/ha)



1. On a per-hectare-basis, Canadian farms somewhere in the middle.
2. Typical Argentine, Australian and Russian producers lower, French and German in different league.
3. But: Fertilizer use for Canadiana and Russian farms at the same level.

Direct Cost Wheat – per Tonne (USD/t)



1. Russian farms have the lowest direct cost per tonne .
2. Very low nitrogen prices in Russia one key driver.

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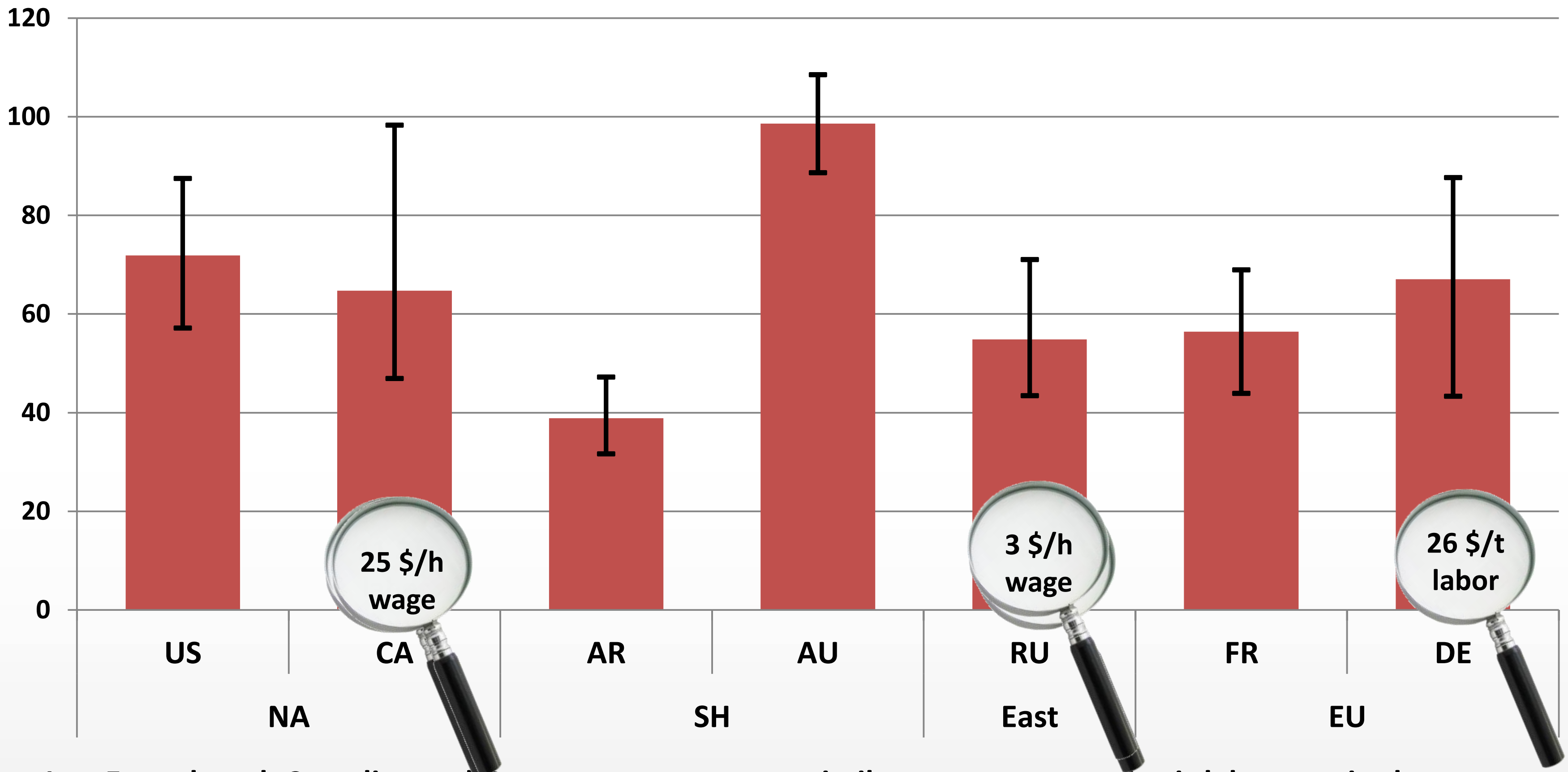
Operating Cost Wheat – per Tonne (USD/t)



1. Even though Canadian and German wage rates are similar, on a per tonne basis labor cost is about 2,5-times higher for typical German producers.
2. Canadian labor cost similar as for Russian producers – despite the fact that Russian wage rates are just 1/8 of the Canadian. Very low labor productivity in Russia; challenge when economy goes up.

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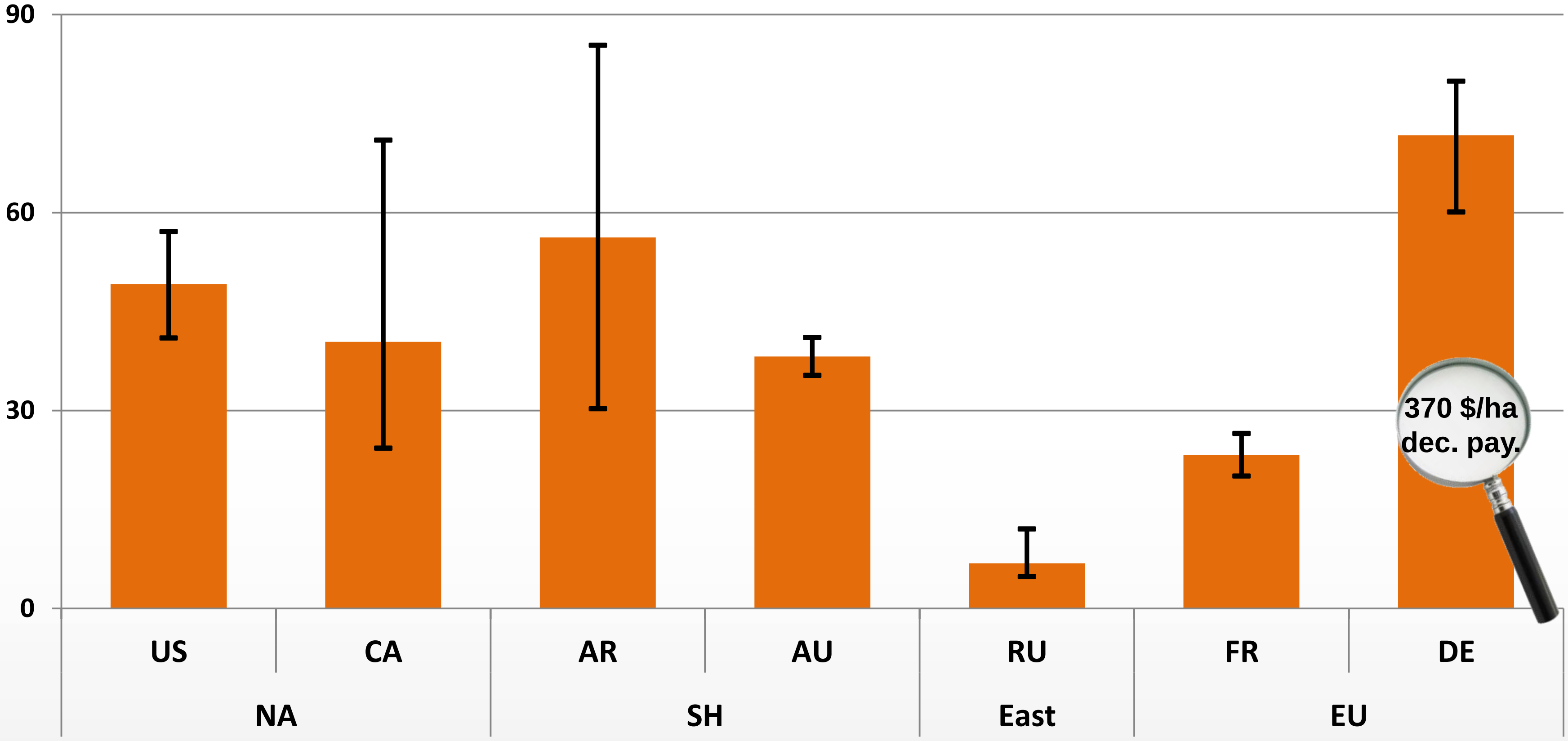
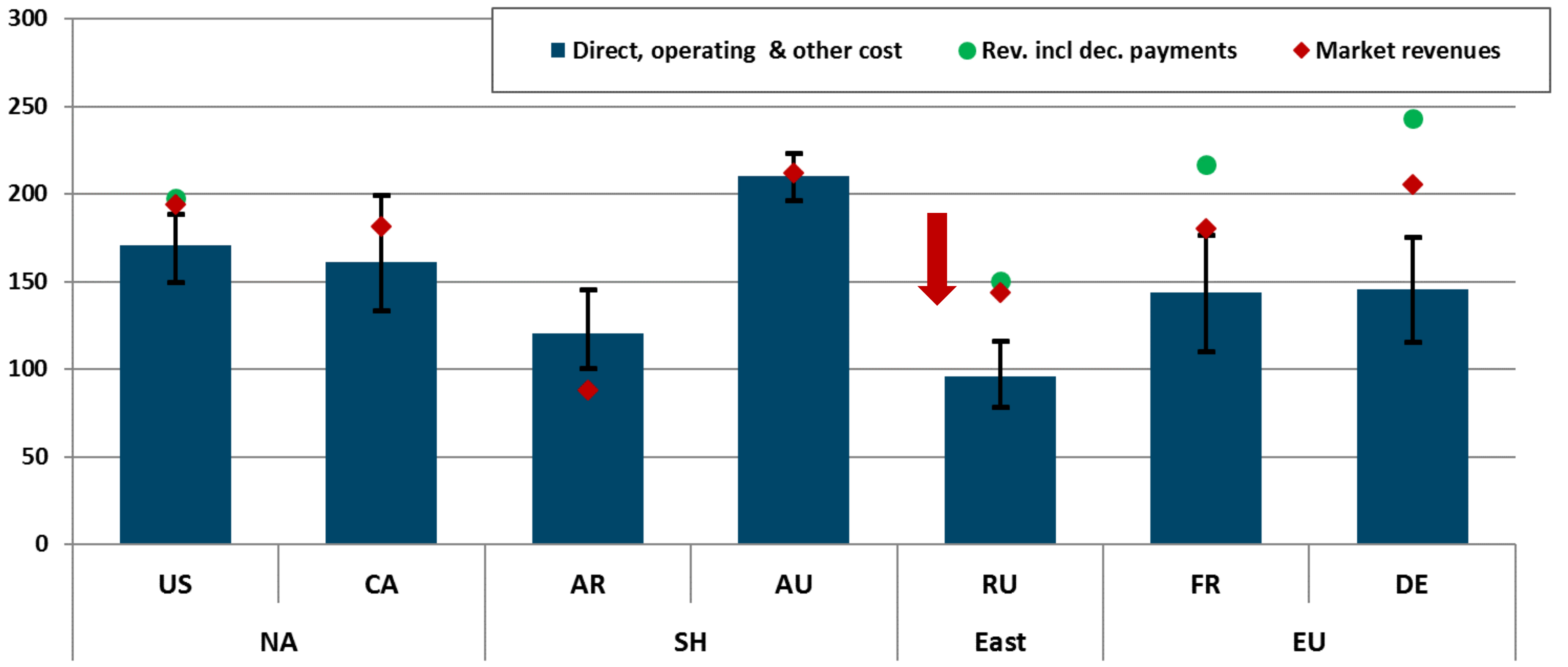
Land Lease Cost per Tonne of Wheat (USD/t)



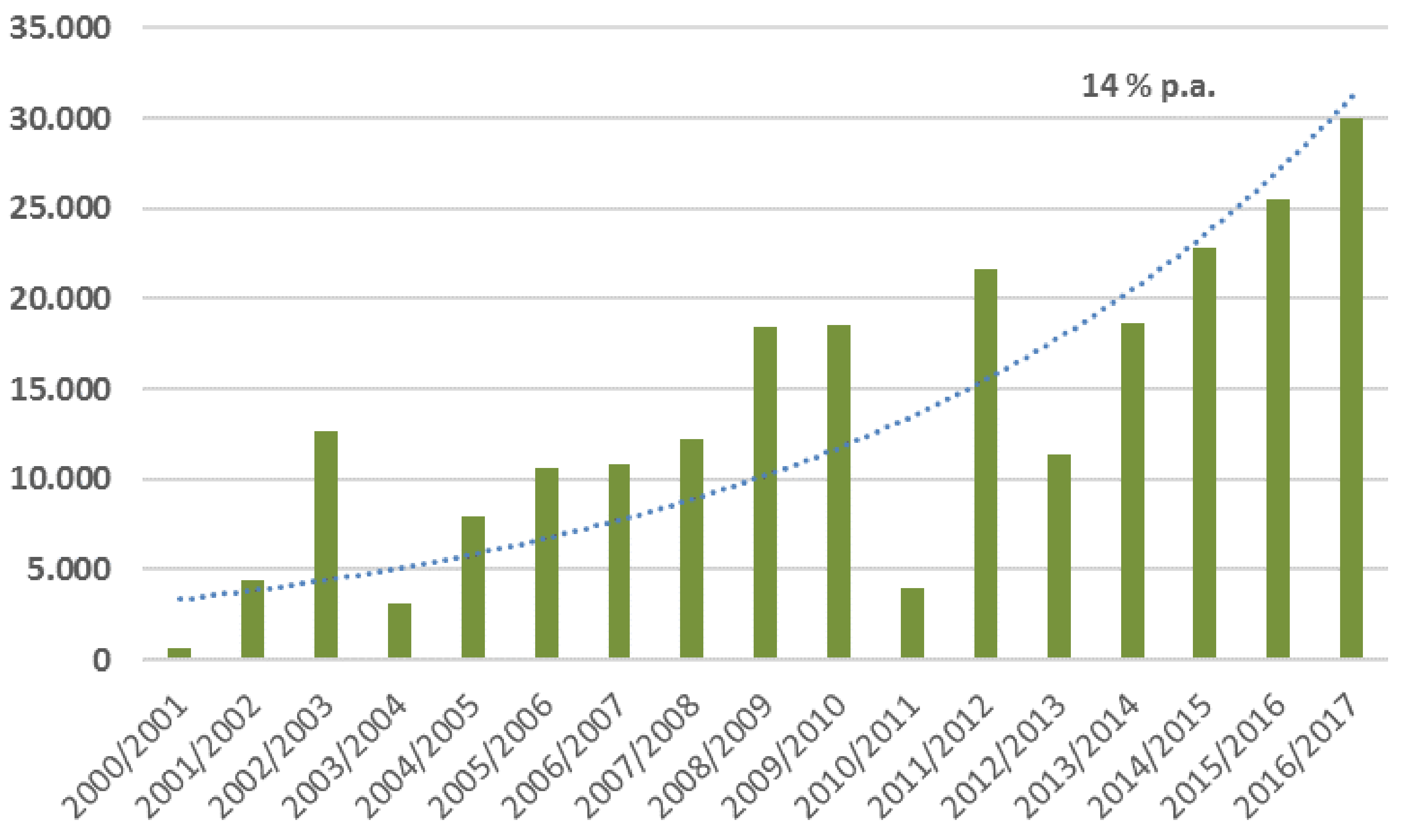
1. **Except for FR and RU: on a per ton-basis land cost are rather similar.**
2. **Typical French farm artificially low due to government restrictions on land rents. Payments "under the table" rather likely.**

Direct, Operating & Other Cost vs. Market Revenue and Decoupled Payments – per Tonne (USD/t)



1. Typical Russian, Argentine farms extremely competitive.
2. But: Russian farms also very low farm gate prices (- 50 $/t vs. the USA and CA).
3. Due to export taxes and export restrictions, Argentine wheat farm gate prices have been extremely low.
4. Adding land cost of at least 50 $/t for Western producers indicates that all farms – except for the Russian are in trouble to cover total cost in wheat.

Evolution of Russian Wheat Exports (in 1,000 t)



No comments

Conclusions re. Wheat

1. Overall, typical Canadian wheat producers are doing okay in CoP – but not as strong as in canola. Farms in AR and RU significantly better.
2. Strength typical CA farms: low operating cost due to high efficiency in labor management. On a per-tonne-basis comparable to Russian farms – despite app. 8-times higher wage rates.
3. The weakness (as in canola): direct cost. Even German growers with more than 2-times higher N-input produce at a lower direct cost.
4. You really need to watch out for Russia in wheat markets. Despite ongoing growth in yields (1-2 % p.a.) still room for a lot more.
5. Seriously explore more demanding and high value crops for Canada.

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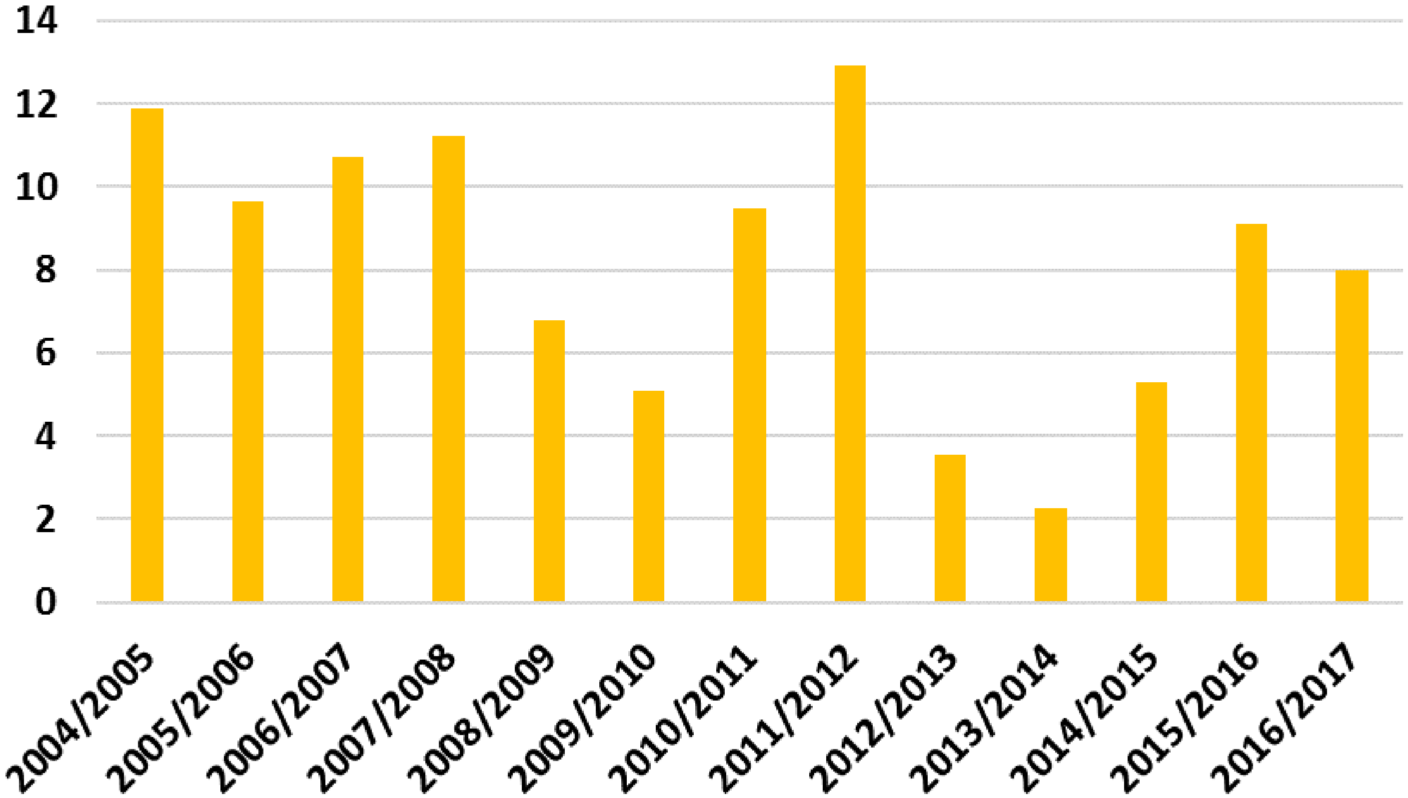
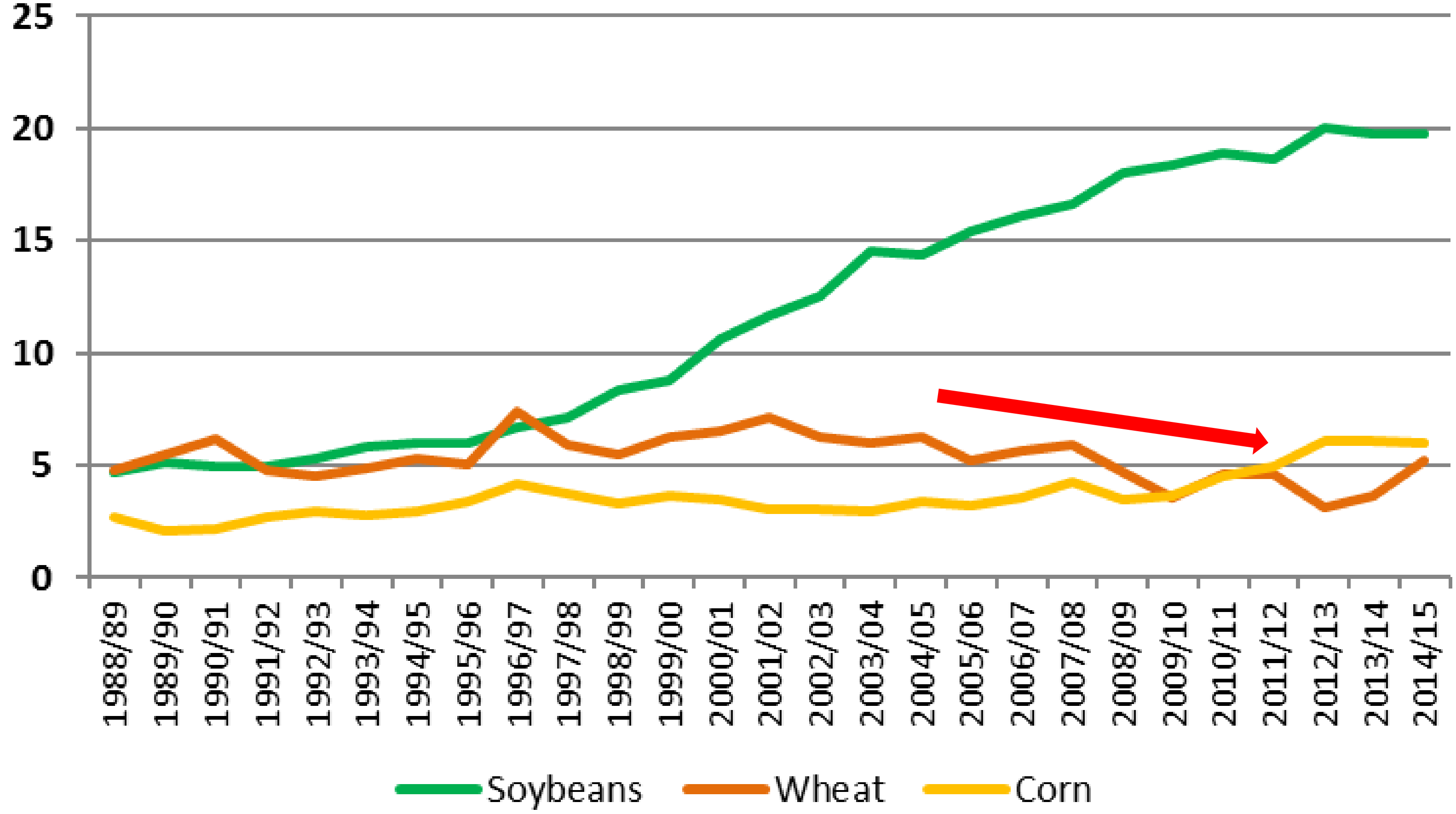
Argentine Wheat Trade (million t)



1. **In the early 2000 Argentina was a major wheat exporter**
2. **Due to massive political interventions (export ban & export tariffs) exports almost collapsed.**
3. **Slight recovery since 2014/15.**

Argentina: Sharp Decline in Wheat Acreage (-50%) - Corn and Soybean went up signficantly (million ha)



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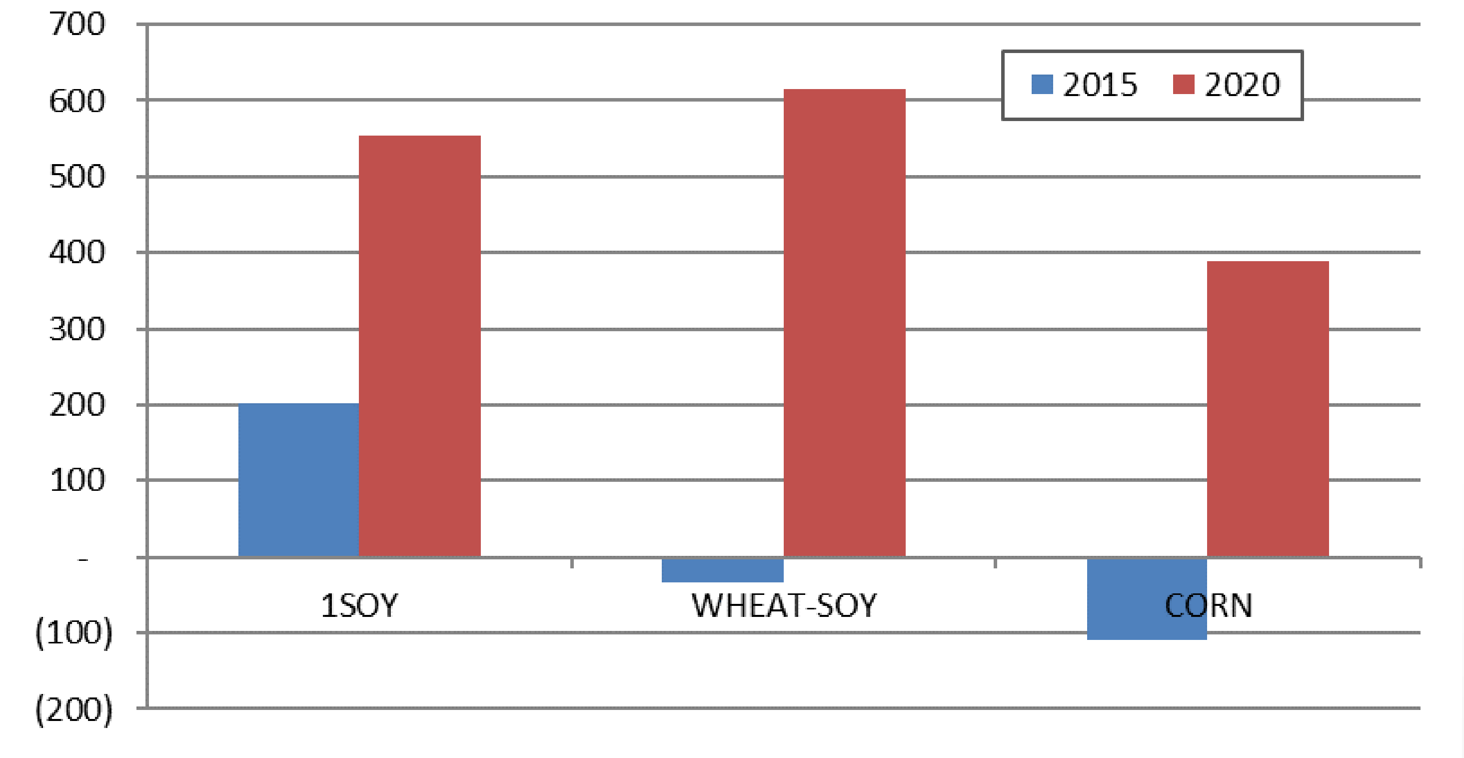
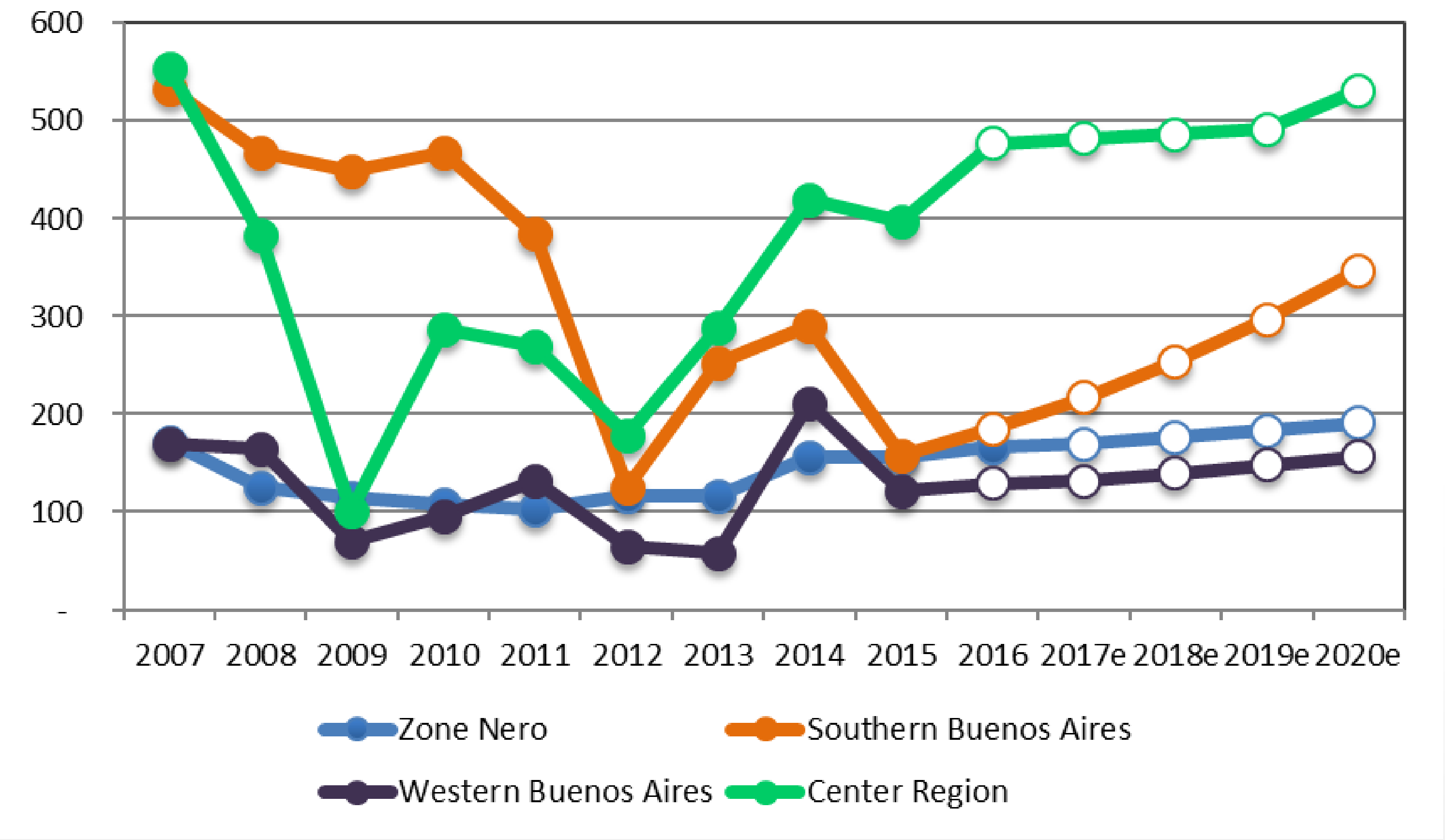
Current and Scenario-Calculation: Gross Margins typcial Farms in SBA Argentina (USD/ha)



Source: Hillock (2016)

1. **Most recently, wheat was almost a "no-go"…**
2. **Assuming export ban and tariffs will be lifted for wheat, it will become the cash cow of farms.**

Outlook:
Strong Recovery Argentine Wheat Regions (in 1,000 ha)



Source: Hillock (2016)

AgEx Conference, Nov. 22nd – 24th 2016
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Conclusions re. Argentina

1. Initiated change in ag trade policy will significantly raise farm gate prices in general and in wheat in particular.
2. Due to non-tariff interventions in wheat, the price increase will be much stronger than the percentage change in export tariff would suggest.
3. Strong increase in wheat acreage and yields to be expected. Since domestic wheat prices will go up, exports to grow even stronger.
4. Argentina will be come an important player in global wheat markets again.

Let’s grow together – Understanding agriculture worldwide.

Thank you for your interest in agri benchmark

jointly managed by: THÜNEN & global networks

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