Production Cost in the EU and in Third Countries: past Trends, Structures and Levels

Workshop on the Outlook for EU Agriculture by
COPA, COGECA, European Crop Protection & Fertilizers Europe

Brussels, June 27th 2012

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Global Partners:

Objectives

1. Shed some light on the evolution of revenues, cost and margins in crop production.

2. Explore to what degree the increase in output prices can be attributed to respective increases in cost and

3. Check whether there is room for price reduction – how sustainable are current bullish commodity markets?

Content

1. What is *agri benchmark*?
2. Key Figures re. Input and Output Prices
3. Scenario Calculation for *agri benchmark* Farms
4. Will bullish Commodity Markets persist?
5. Conclusions

agri benchmark - Partners with high Reputation (I)

Europe

UK

Sweden

Hungary

Italy

Ukraine

Czech Republic

France

Romania

Poland

Denmark

Bulgaria

Russia

North America

Canada

USA / Iowa

USA / North Dakota

USA / Kansas

agri benchmark - Partners with high Reputation (II)

South America

Brazil

Argentina / Uruguay

Asia

China

Malaysia

Vietnam

Kazakhstan

Thailand

Japan

Africa

Tunisia

South Africa

Morocco

Algeria

Transoceania

Australia

agri benchmark Farms - established systematically

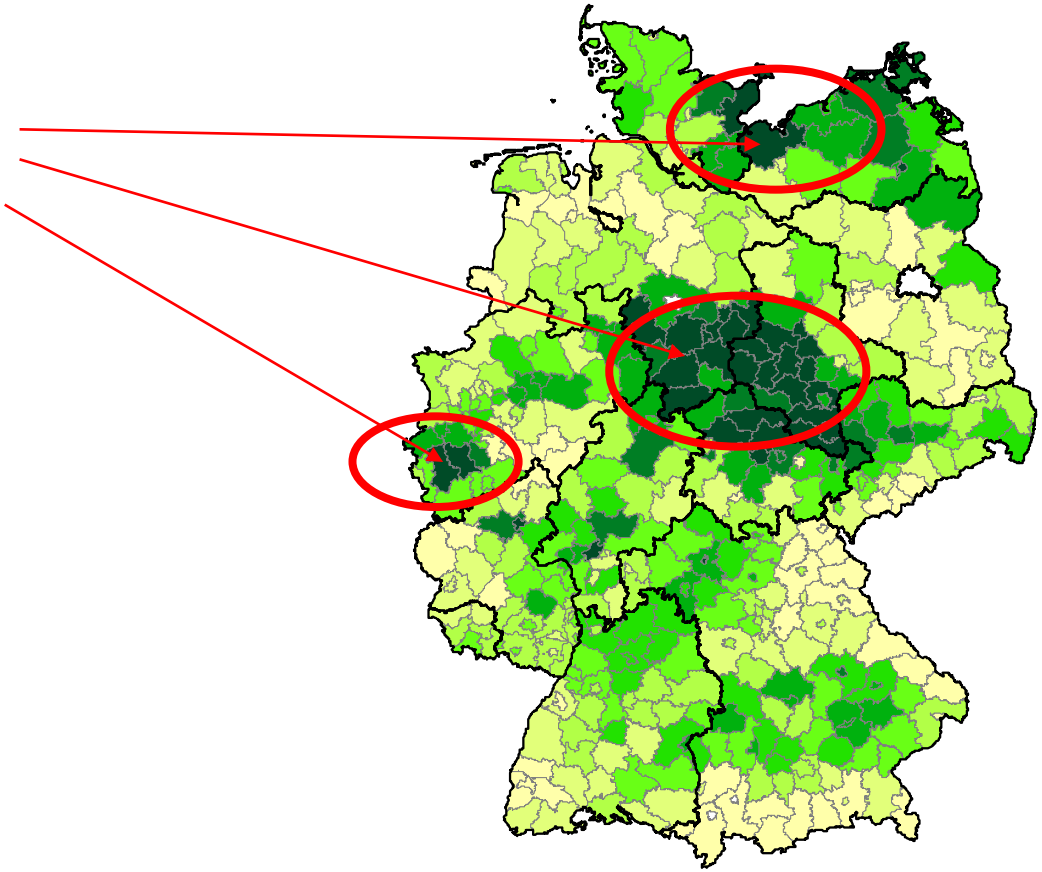
A typical farm…

- ⇨ **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 regularly being re-assessed to track changes**

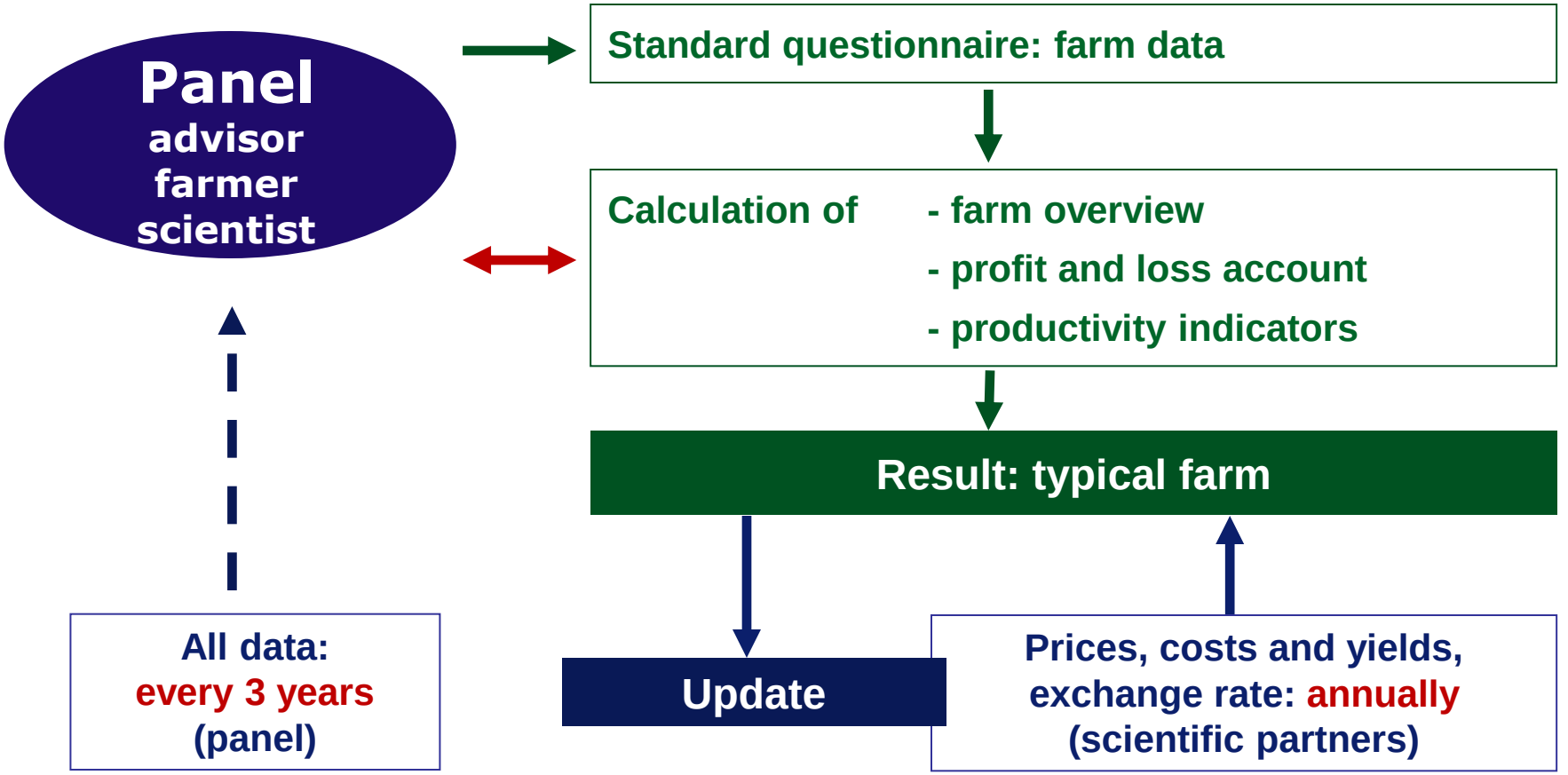
A **standard operating procedure (SOP)** to define typical farms was developed and is used by all partners involved.

How and where typical Farms are selected – Example Germany

Hot spots in wheat production



Procedure to establish a Typical Farms



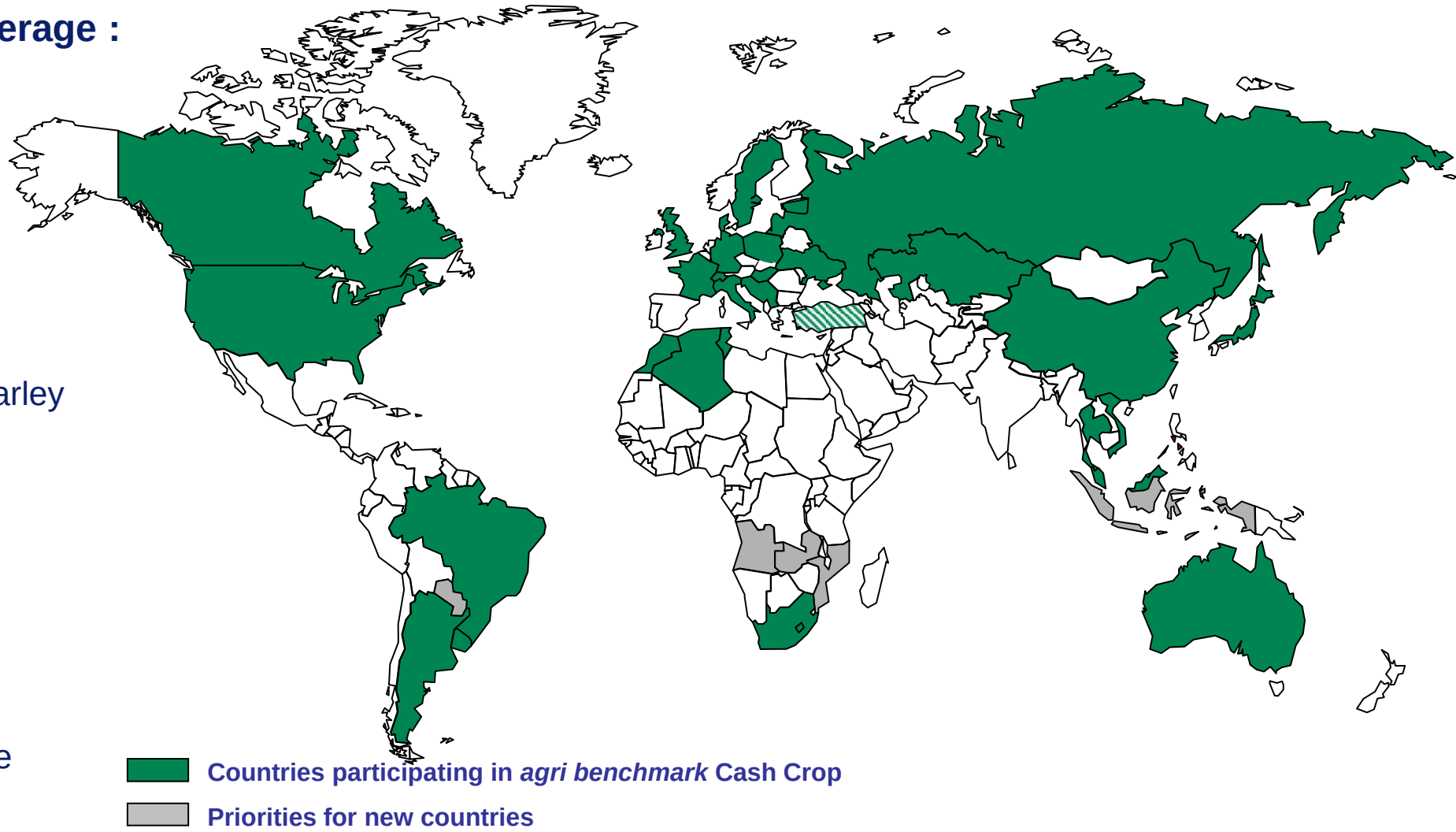
Present in all major Countries and Crops

Crop coverage :

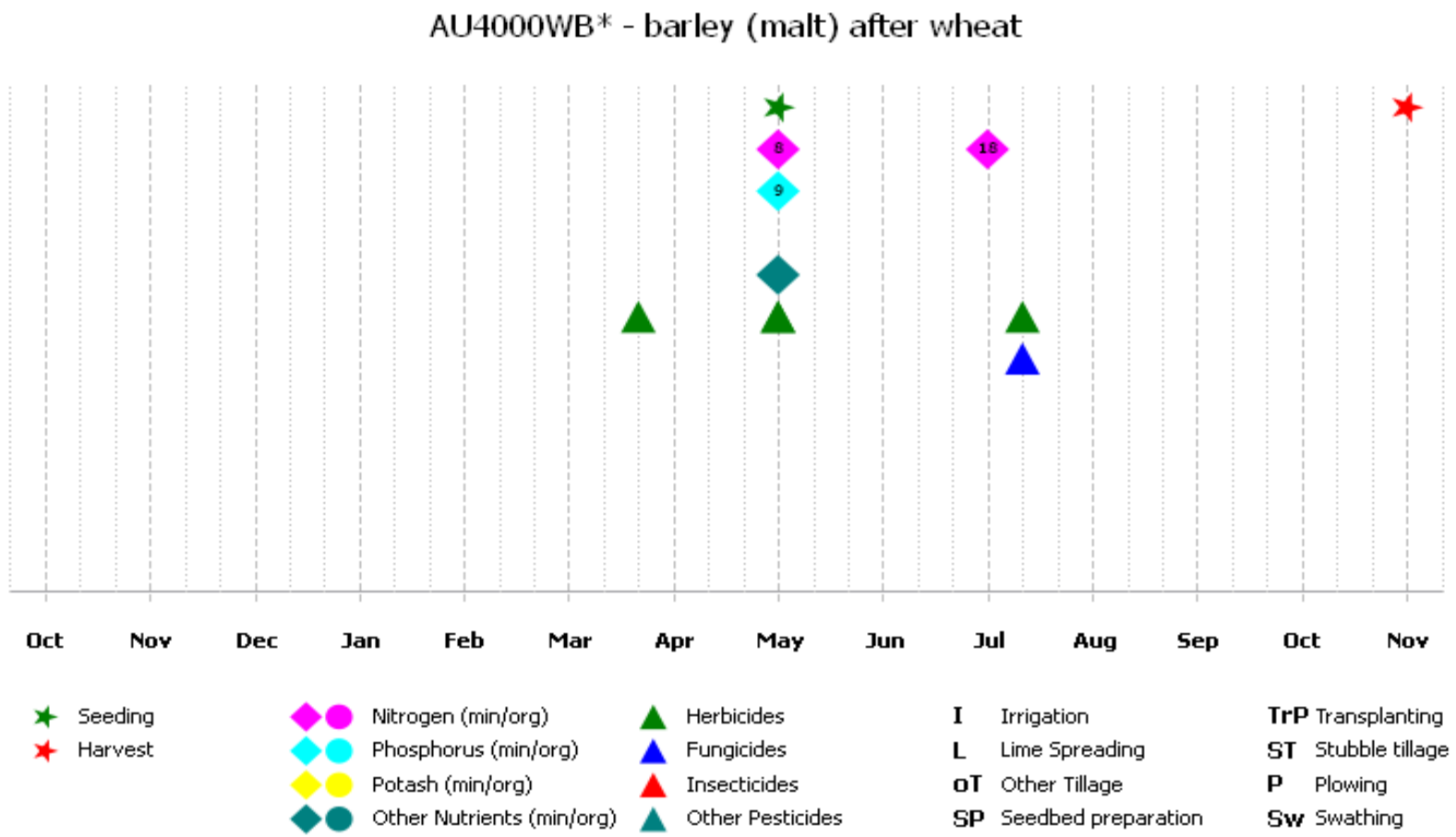
Corn
Soybeans
Wheat
Sugar beet
Rice
Rapeseed
Oats
Rye
(Malting) barley
Sunflower
Sorghum
Cotton
Peas
Beans
Palm oil

Pipeline:

Sugar Cane



agri benchmark Data on Cropping Systems – Example: Malting barley in Western Australia



Key Features of *agri benchmark* Calculations

1. We value
   i. family labor input
   ii. family capital input
   iii. family owned land

   based on an opportunity cost approach.
2. Repurchase prices for machinery used to calculate depreciation.
3. Consequence:
   Total cost is not equivalent to P&L account figures.
4. Direct payments not included in gross revenues.

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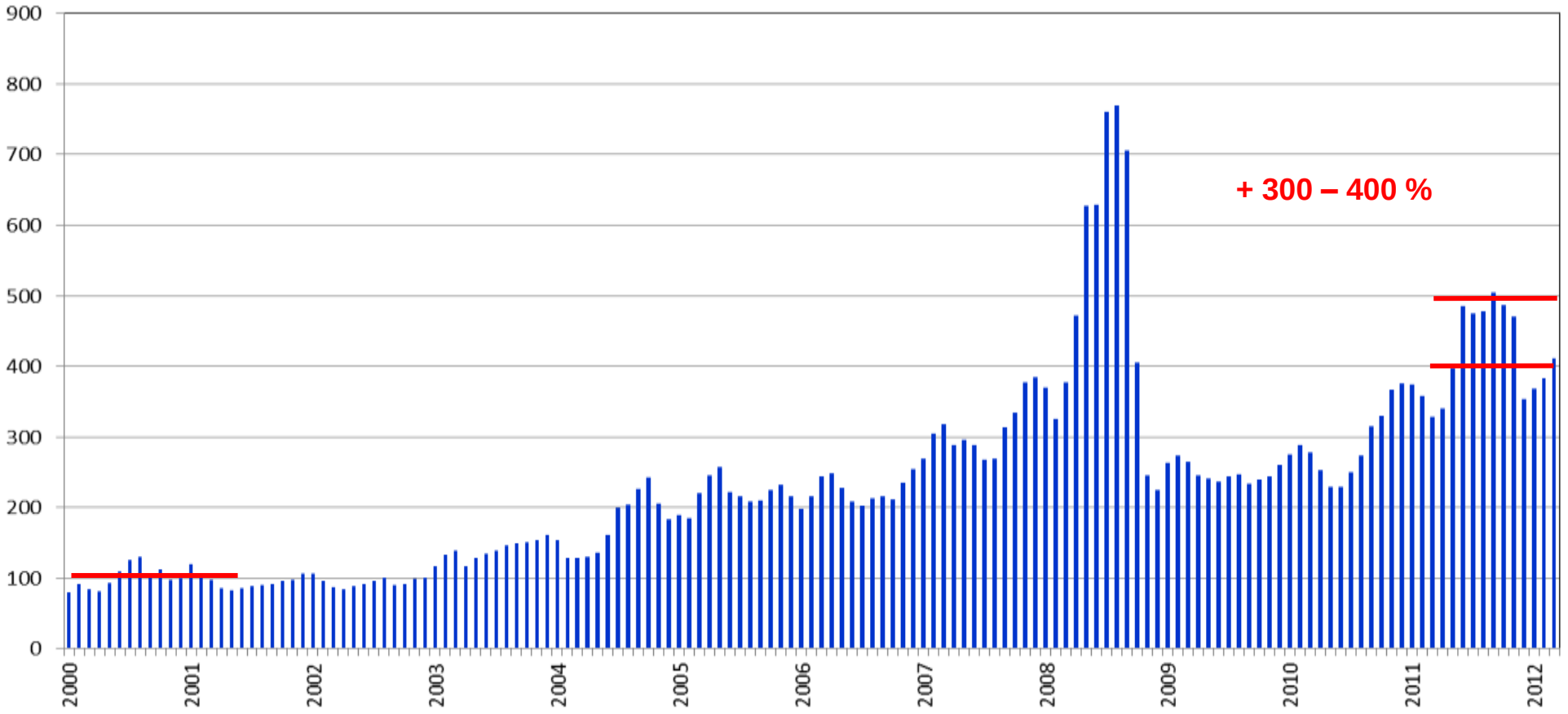
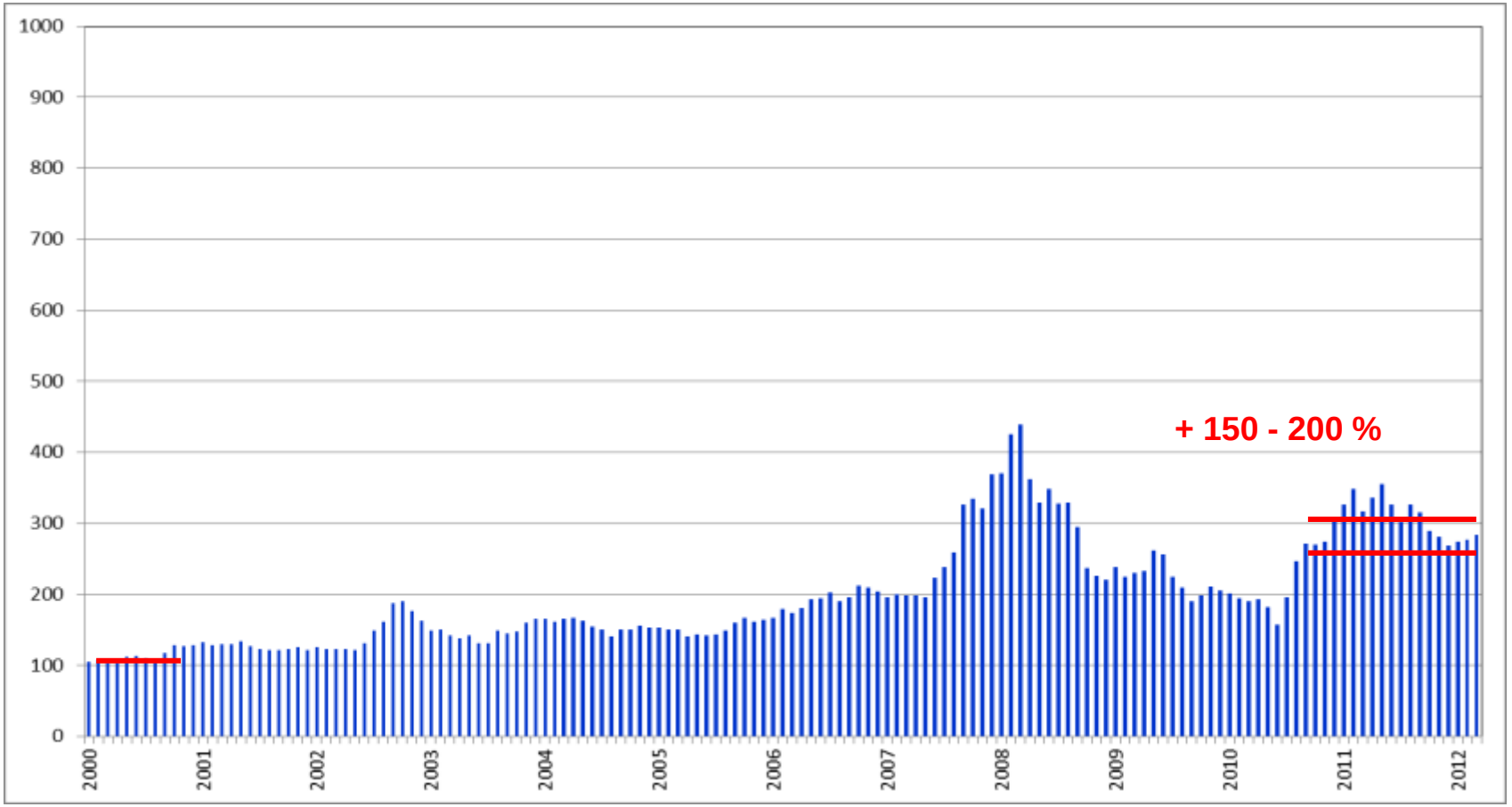
Evolution of Urea Prices (USD/t)



- **Increase against pre-boom period: 300 to 400 %**

Source: Word Bank, Pink Sheet (2012)

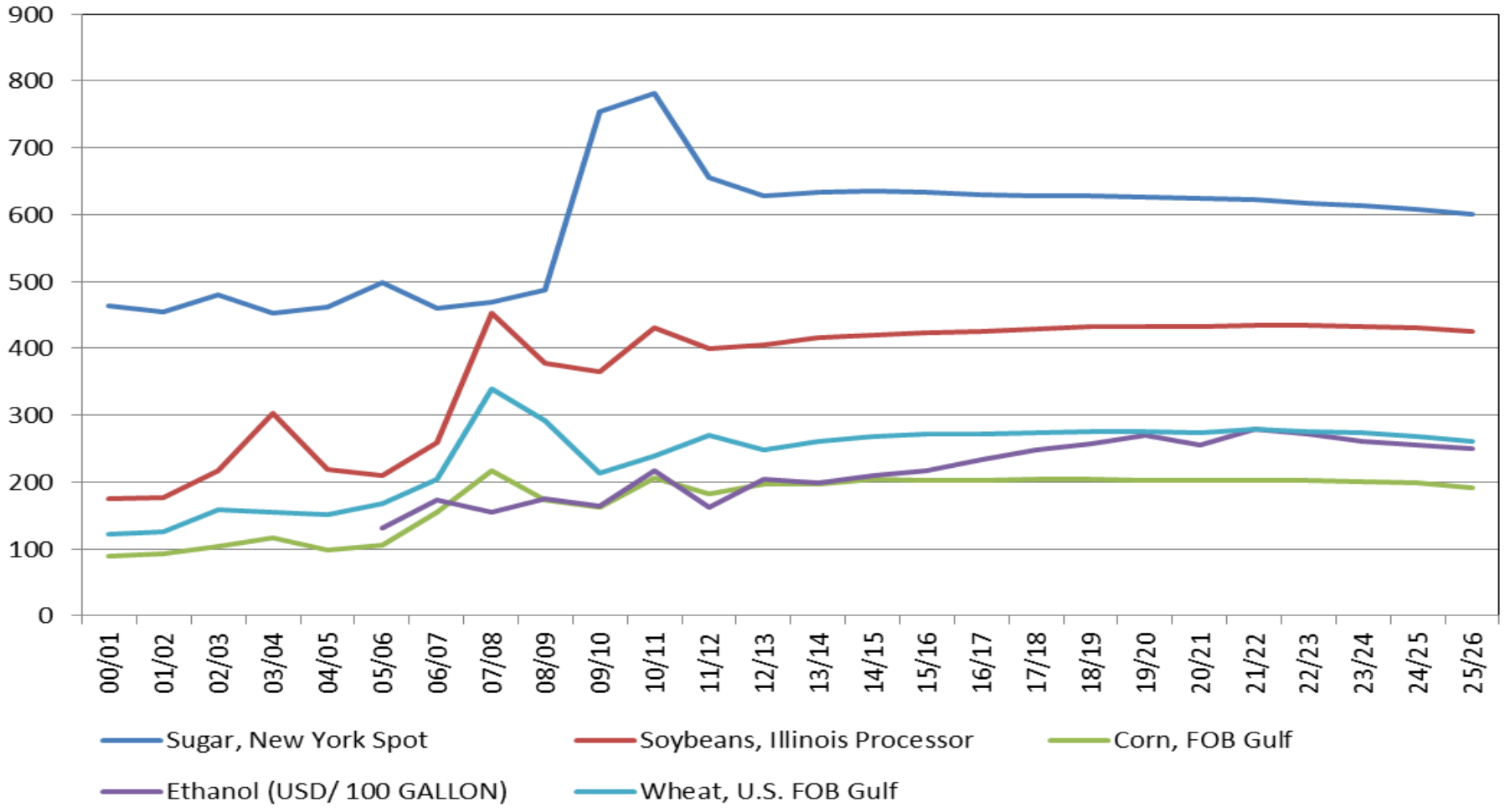
Evolution of Wheat Prices (HRW, USD/t)



- **Increase against pre-boom period: 150 to 200 %**

Source: Word Bank, Pink Sheet (2012)

FAPRI: Bullish about Future Commodity Prices



- **Long term wheat prices of almost 300 USD/t!?**

Source: FAPRI (2012)

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Methods and Data

1. Use official price time series (World Bank, FAPRI) for key inputs and wheat and rapeseed to caclulate a cost of production (CoP) during 2000 to 2003.
2. Use three year averages of *agri benchmark* Cash Crop to establish a status quo.
3. Compare status quo to hypothetical results for 2000.

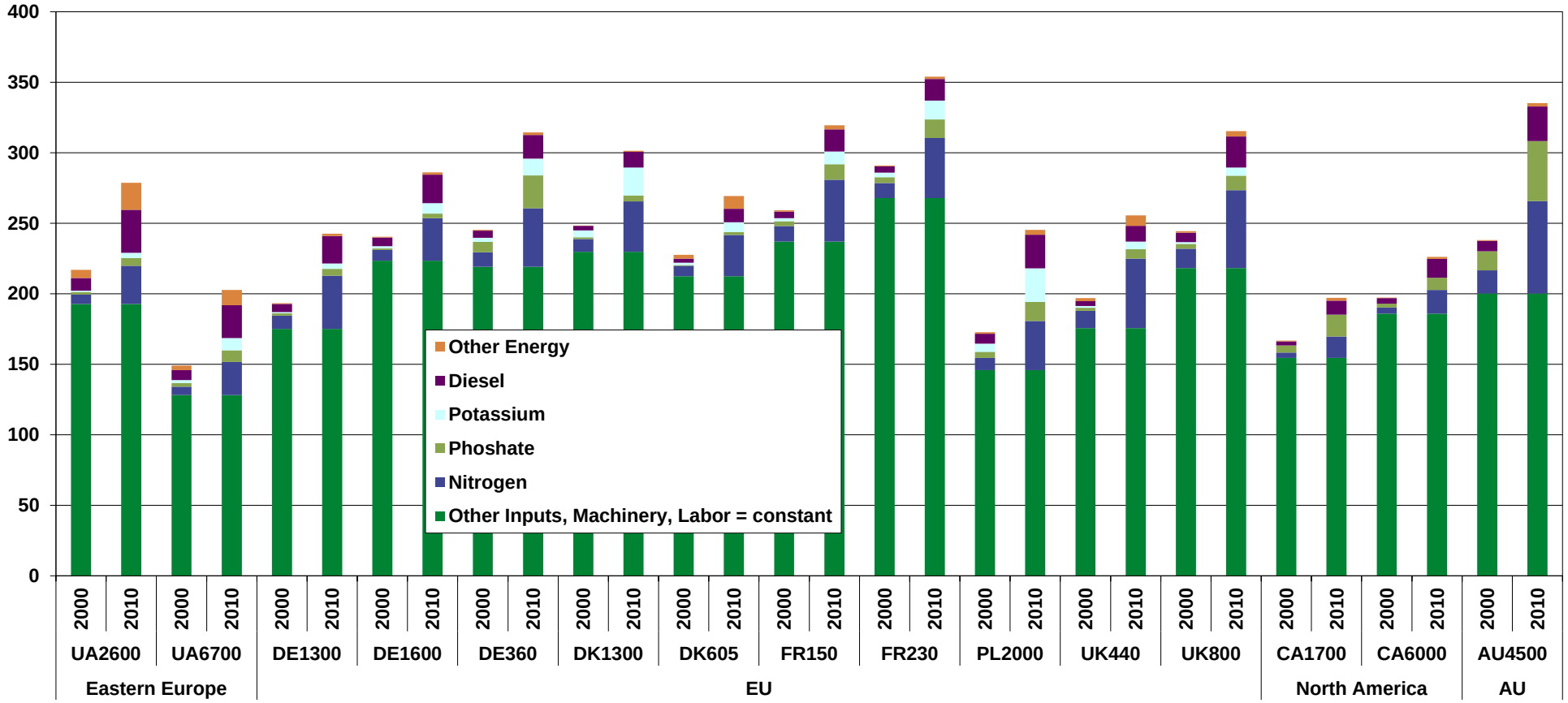
Assumptions

Commodity	Increase 2000/2003 vs. 2010/2011 (in %)
Rapeseed	150
Wheat	150
Urea	300
DAP	230
Potassium	320
Crude Oil	230

Sources: Word Bank, FAPRI, own calculations

Cost in Rapeseed Production

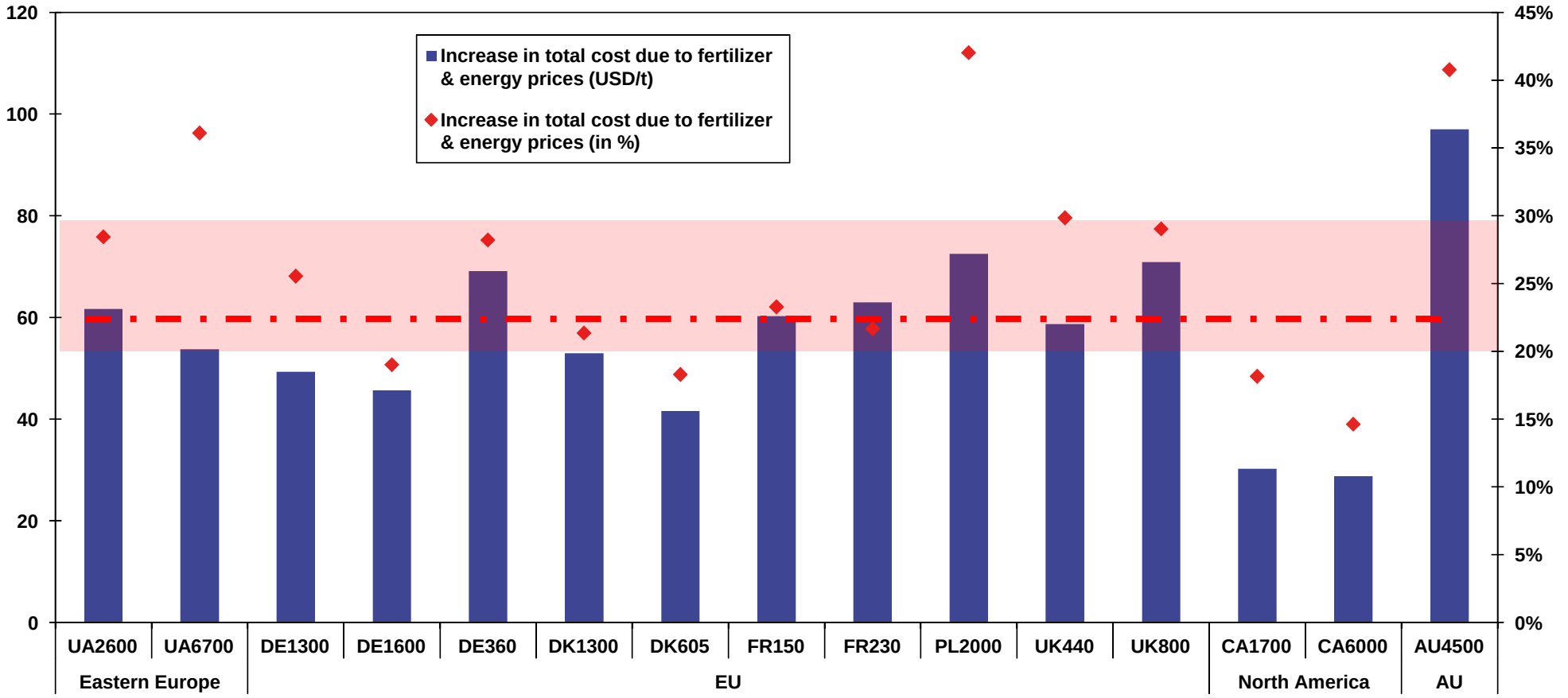
USD per ton



Sources: Word Bank, FAPRI, *agri benchmark Cash Crop 2012*

Increase total Cost of Rapeseed Production (2010 vs. 2000)

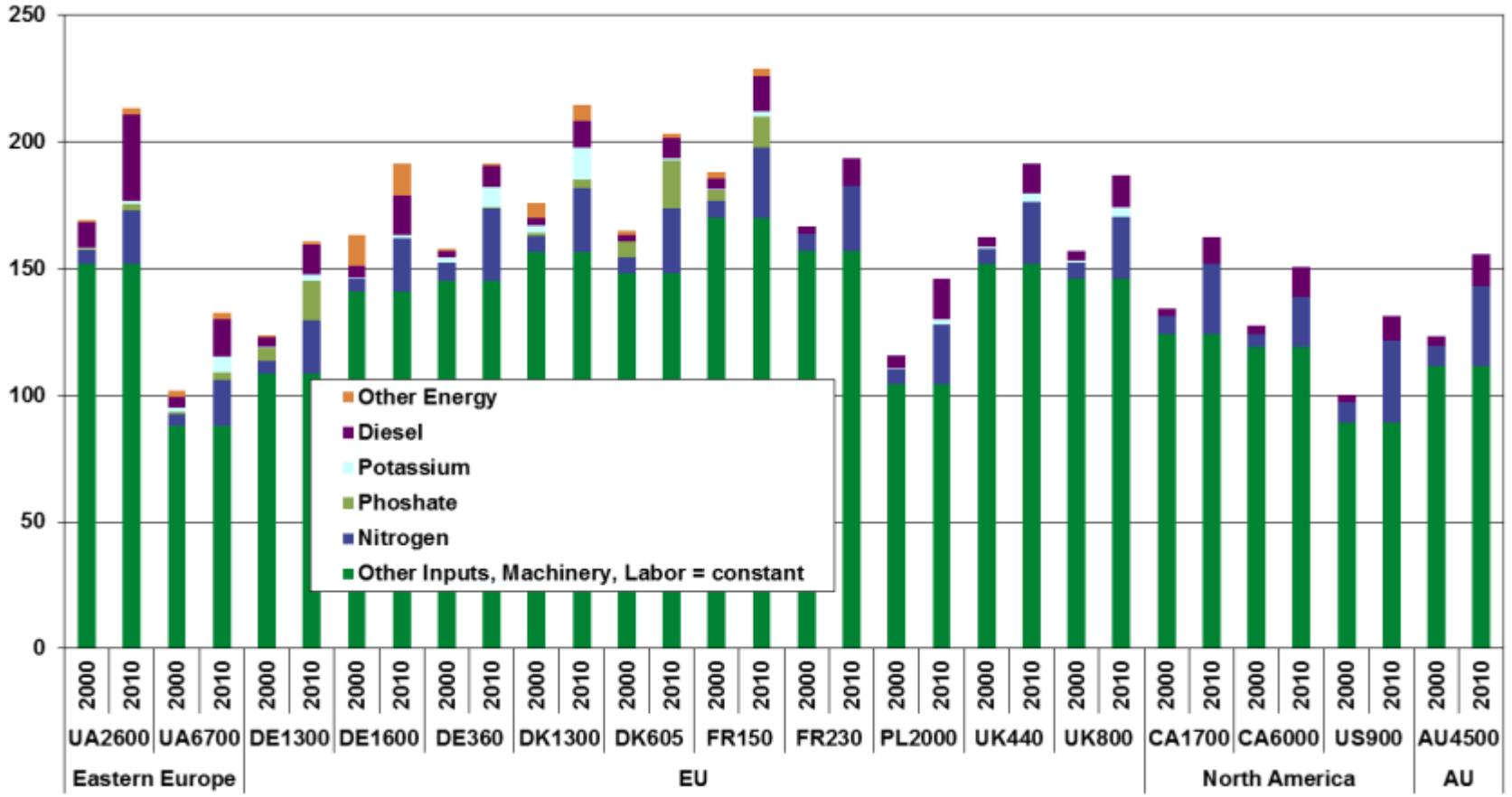
USD per ton / in percent



Source: *agri benchmark Cash Crop 2012*

Cost in Wheat Production

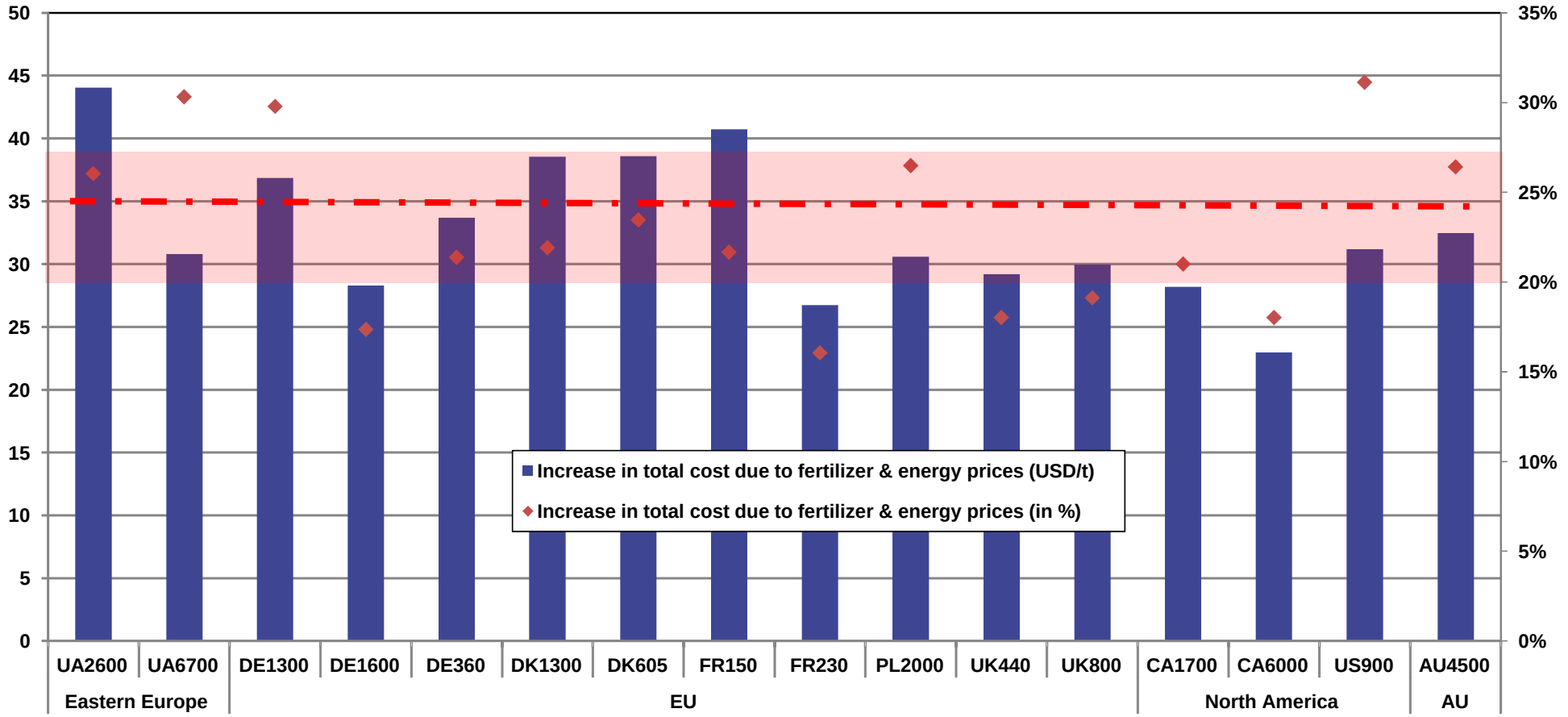
USD per ton



Sources: Word Bank, FAPRI, *agri benchmark* Cash Crop 2012

Increase total Cost of Wheat Production (2010 vs. 2000)

USD per ton / in percent



Sources: Word Bank, FAPRI, *agri benchmark Cash Crop 2012*

Key Findings Scenario Calculation

1. High input cost did have a sizeable impact on total cost of production.
2. Increases in total CoP ranges from 20 to 30 %; rapeseed tends to be more affected than wheat.
3. However, given increases in wheat and rapeseed prices of 150 % profitability of crop production improved significantly.
4. Increases in CoP only had a minor impact on output prices – if any.

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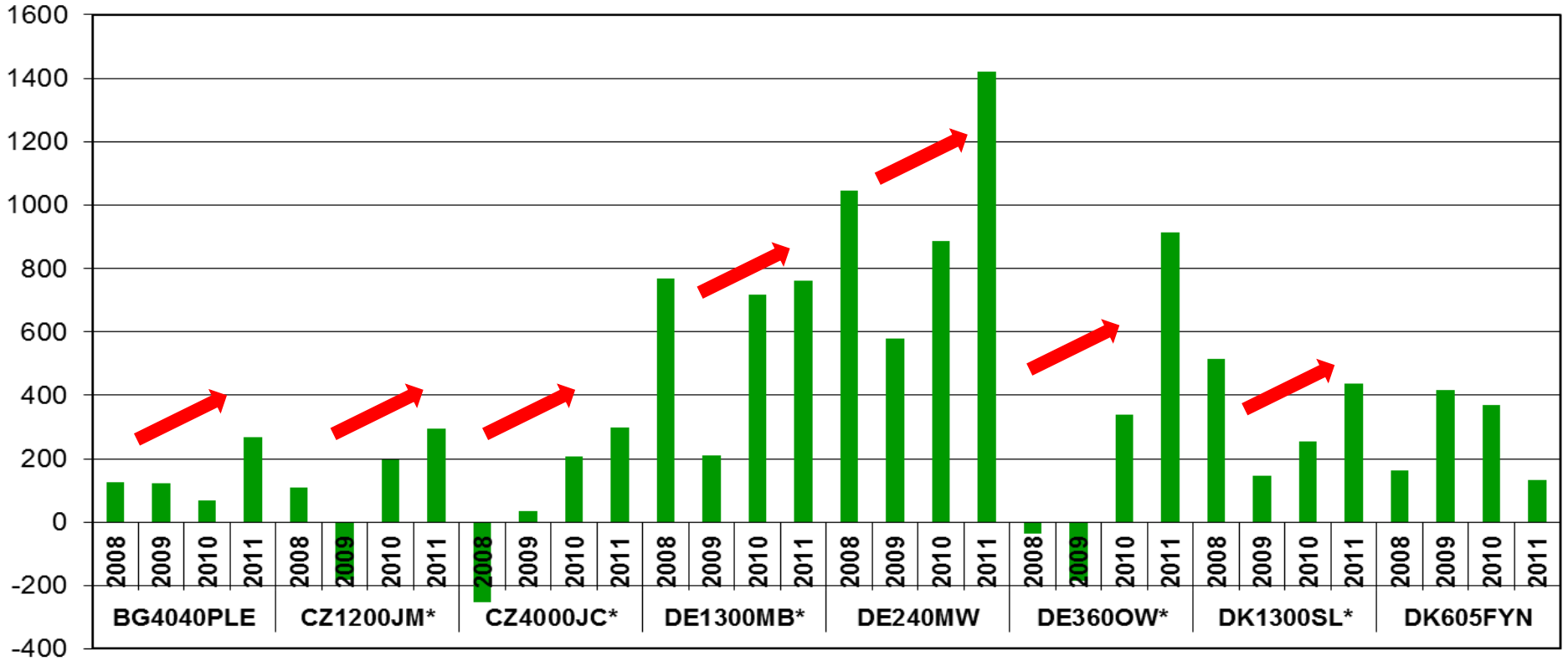
Concept

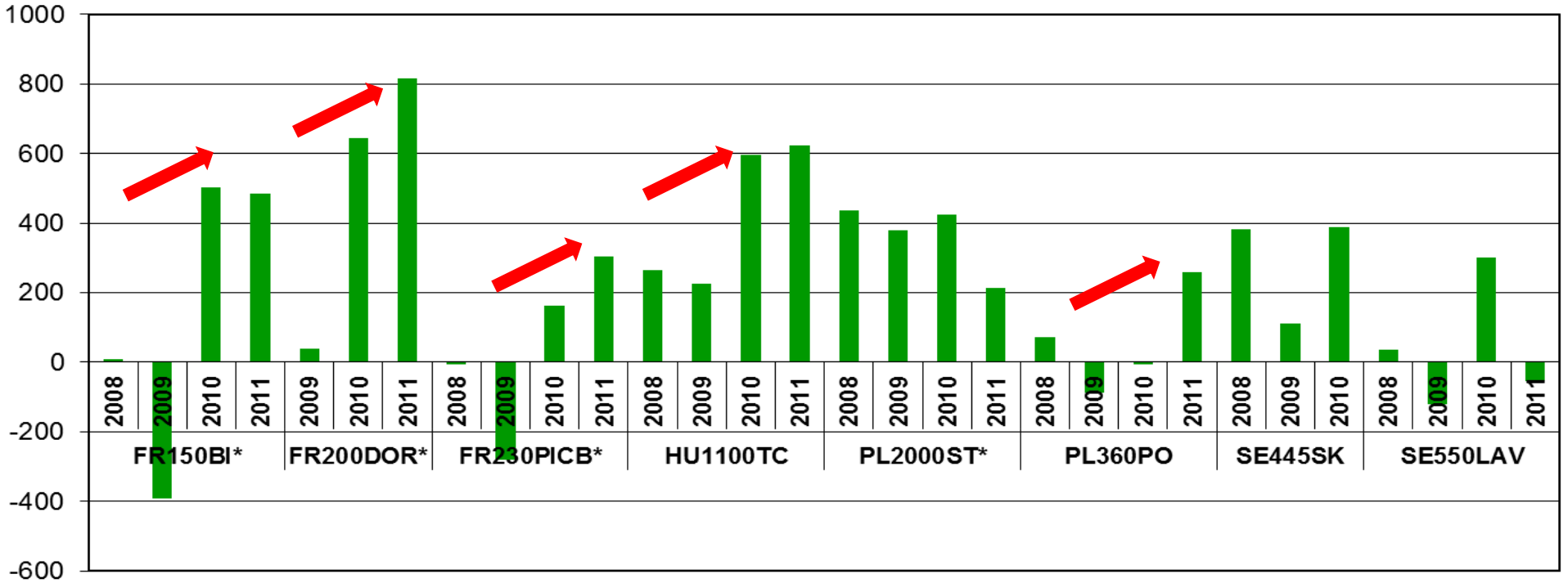
1. **Evolution of ground rents from arable production for *agri benchmark* farms from 2008 to 2011?**
2. **Incentives for**
   (a) intensification and boost of output?
   (b) expansion of arable land use?
3. **Consequences of a supply reponse for commodity markets – How sustainable are bullish commodity markets?**

Ground Rents BG, CZ, DE, DK-Farms (USD/ha; 2008 -2011)



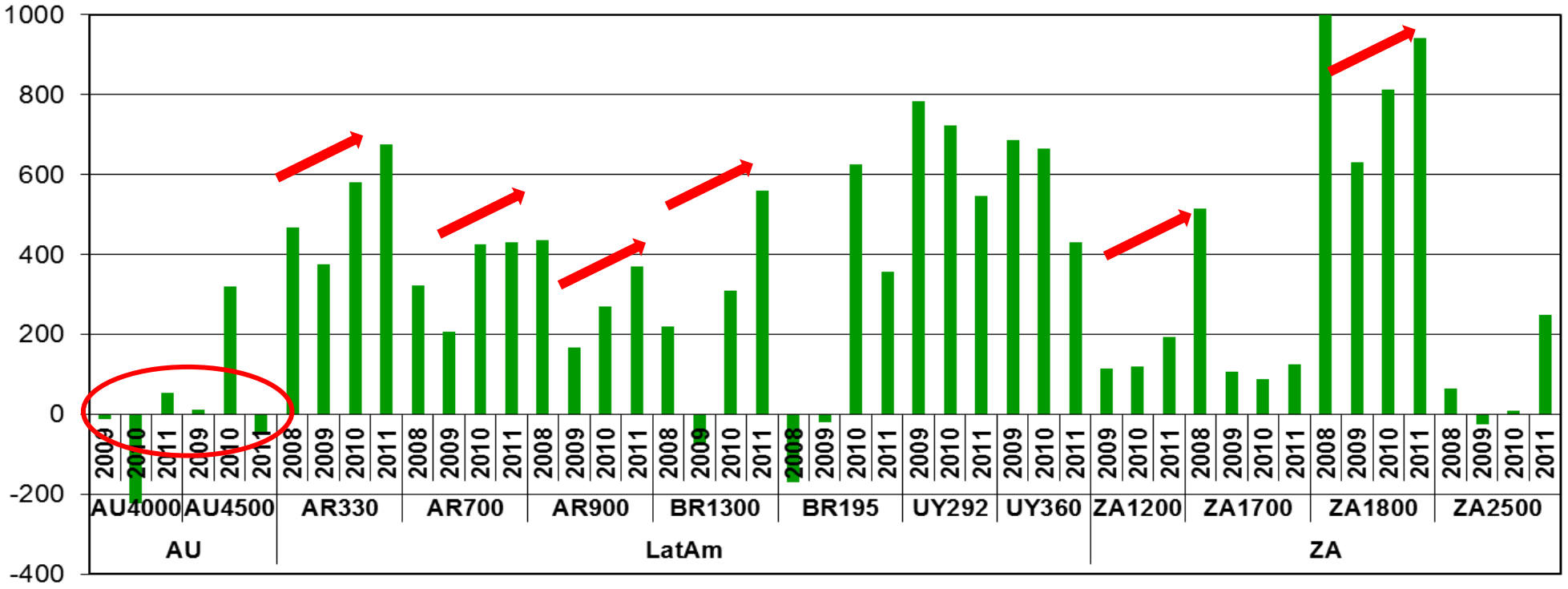
- **Except for the one DK farm, clear growth in ground rents for BG, CZ, DE & DK-farms.**

Ground Rents FR, HU, PL, SE-Farms (USD/ha; 2008 -2011)



- FR farms are strong and improved by the majority – role of industry crops?
- Large PL farm “dip” in 2011; same large SE-farm
- Small PL and SE farm strong performance in 2011

Ground Rents AU, LatAm, ZA-Farms (USD/ha; 2008 -2011)

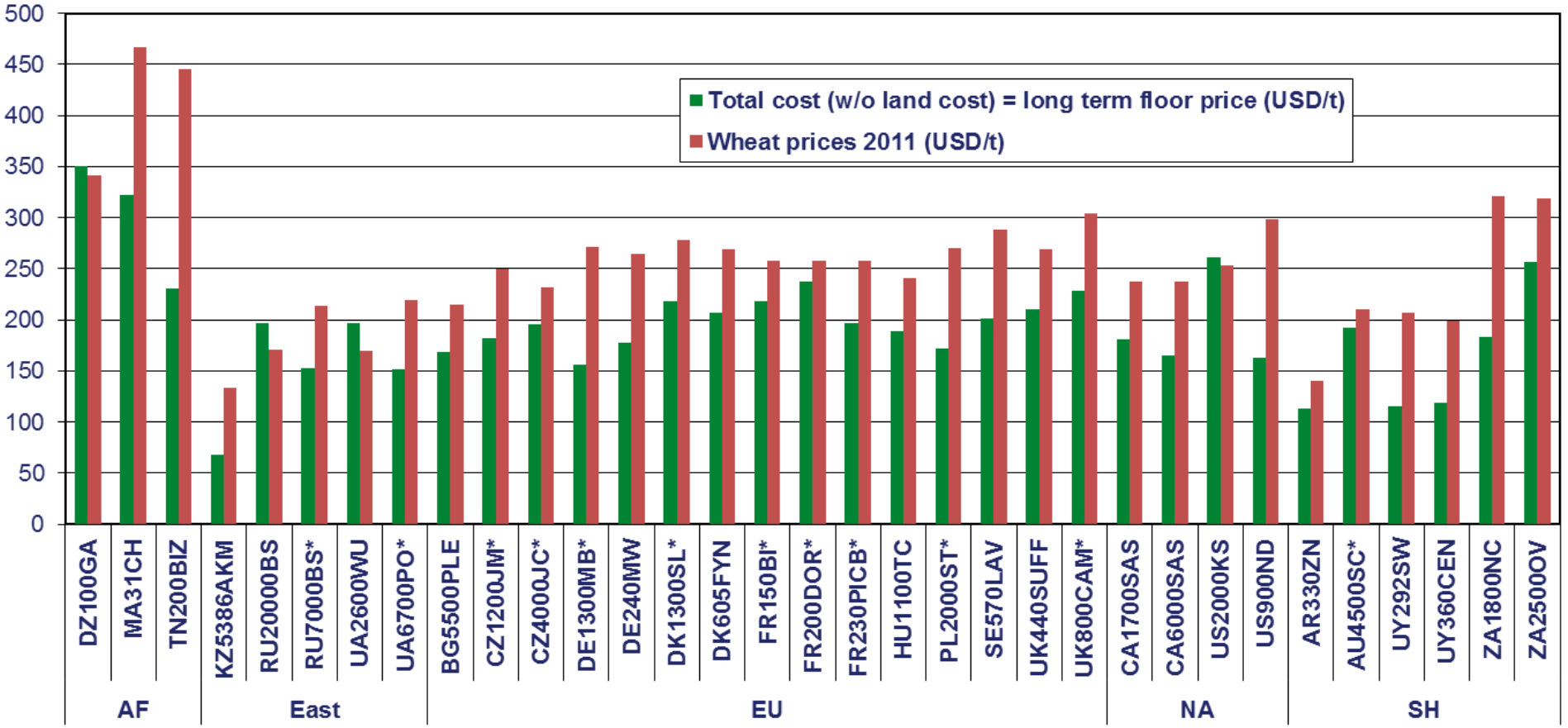


- **Except for the AU farm all other farms generated significant and very often increasing ground rents**

Concept Long Term Price Floor – Example Wheat

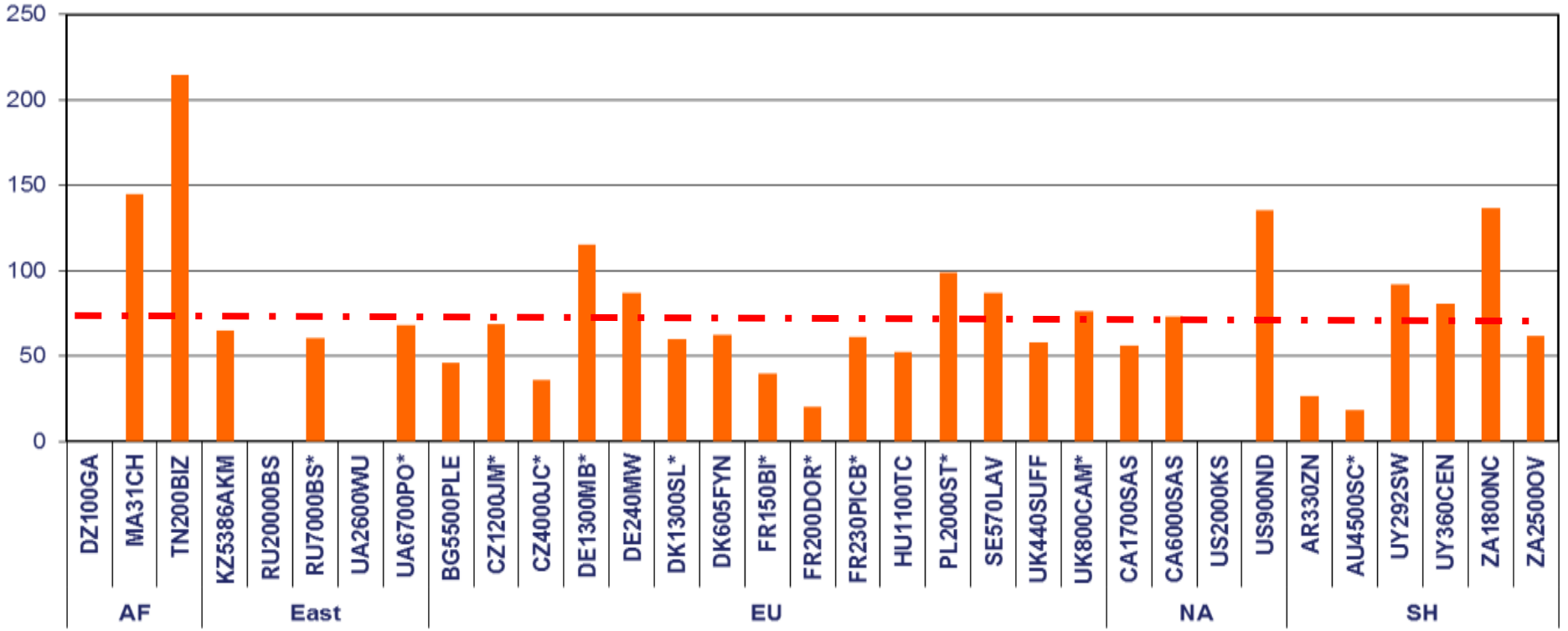
1. Question: What (wheat) price is needed to keep growers runing arable farms?
   (Assumption: similar price reduction across all crops)
2. In the long run land rents are adjustable and many growers produce on their own land.
3. A price-cost ratio leading to a ground rent of zero can be considered to be the long term floor price.
4. We know in reality growers would have to accept lower incomes from labor and capital – at least for a transition period.
5. Much lower prices than the floor price are of course possible in the short run (just cover variable cost – 60 to 80 USD/t).

Long Term Price Floor Wheat vs. 2011 Wheat Prices



- **Except for a few farms total cost significantly lower than 2011 wheat prices.**
- **2011 EU farm gate wheat prices in the range of 250 to 275 USD/t.**

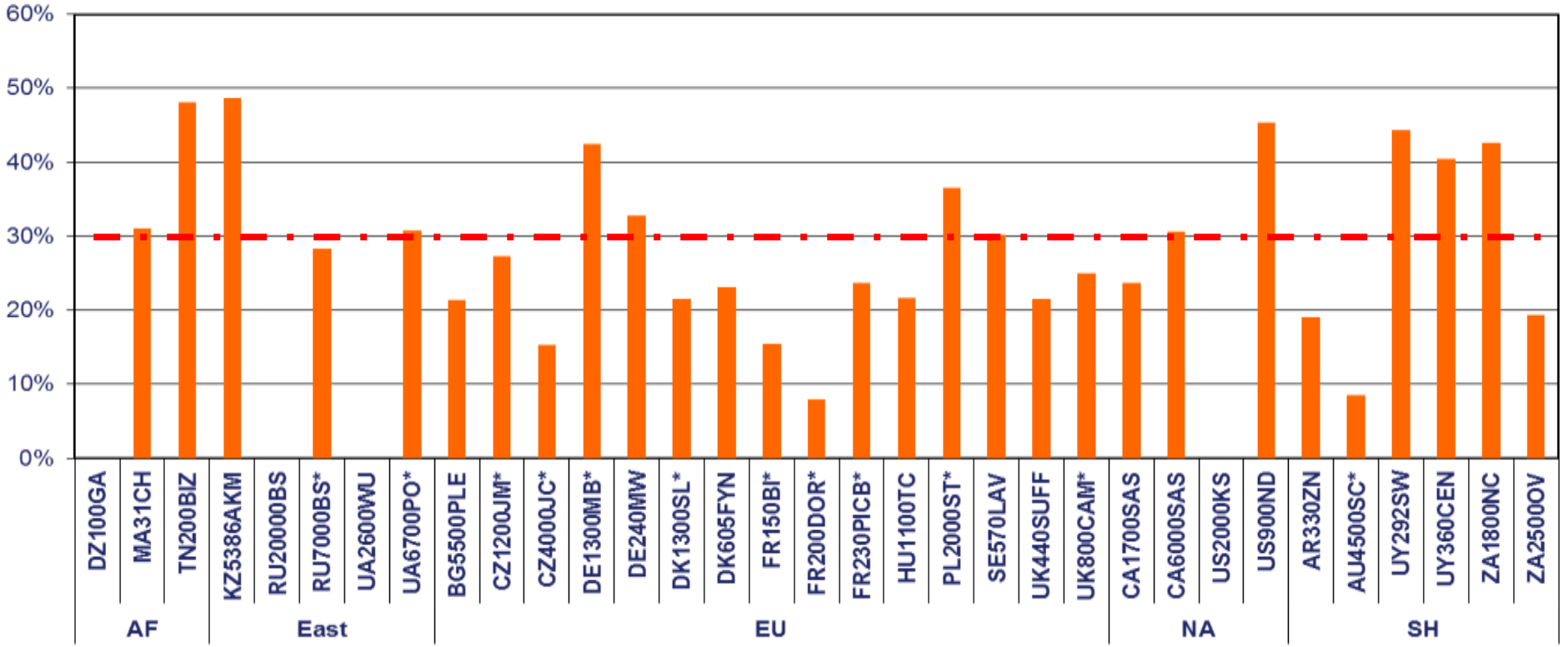
Gap Long Price Floor Wheat* vs. 2011 Wheat Prices (USD per t)



- **Roughly 50 to 75 USD/t price reduction possible for most farms**

*** Missing value: floor price < wheat price 2011.**

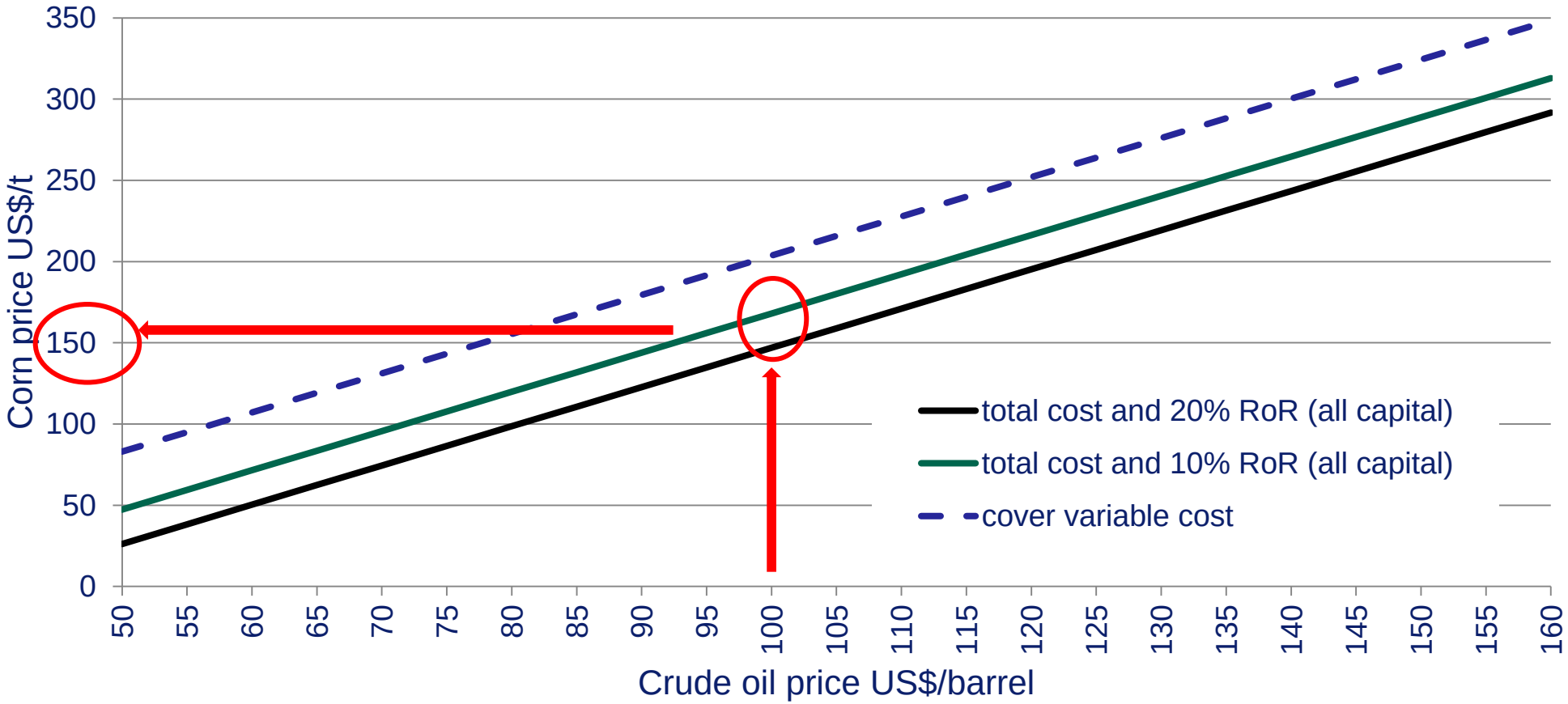
Gap Long Term Wheat Price Floor vs. Current Wheat Prices (in %)



- **Roughly 25 to 30 % permanent price reduction possible for most farms**

*** Missing value: floor price < wheat price 2011.**

Corn Equilibrium Price derived from Ethanol Plant‘s “Willingness to pay” for Corn



Source: Strohm (2011)

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Conclusions Economics of Arable Crop Production

1. Yes, we have seen significant increases in cost.
2. But, any increase in cost has been overcompensated by increasing commodity prices – hence margins and ground rents grew.
3. Increase in ground rent from arable production
   ⇨ Incentive to boost output (intensification & land use expansion).
4. If strong global supply response happens
   ⇨ much lower wheat prices : -25 to -30 % or -50 to -75 USD/t.
5. Pressure caused by lower output prices on input prices would reduce floor price even further.
6. Bushel-barrel correlation does not alter the picture.

Knowledge is our Business

Thank you for your interest

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