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Important Issues – Old and New

***Conference „Beyond the crossroads“,
Berlin, 2011-11-09/10***

Content

1 Important Issues (selection)

- Population
- Production
- Prices
- Structural change



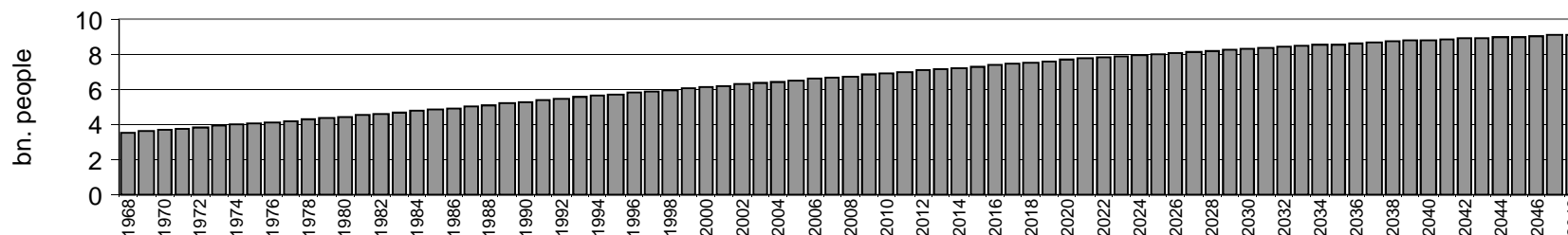
2 Conclusions & Considerations

- Towards IAASTD-2
- Global networking within *agri benchmark*

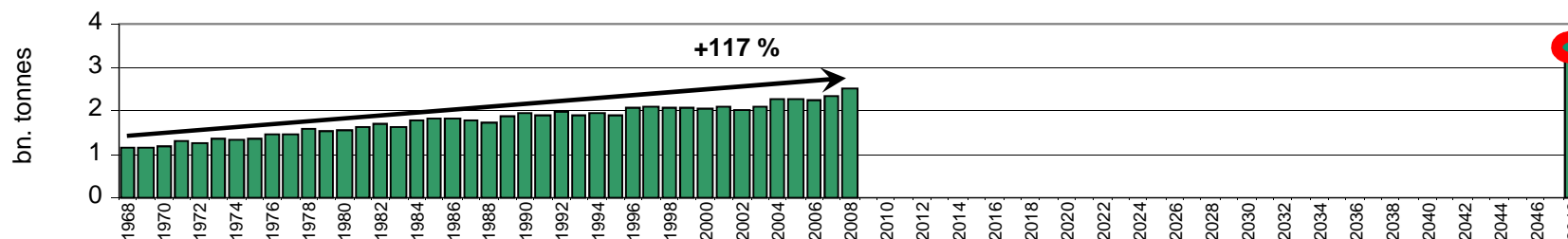


Global Trends: Last 40 years, next 40 years

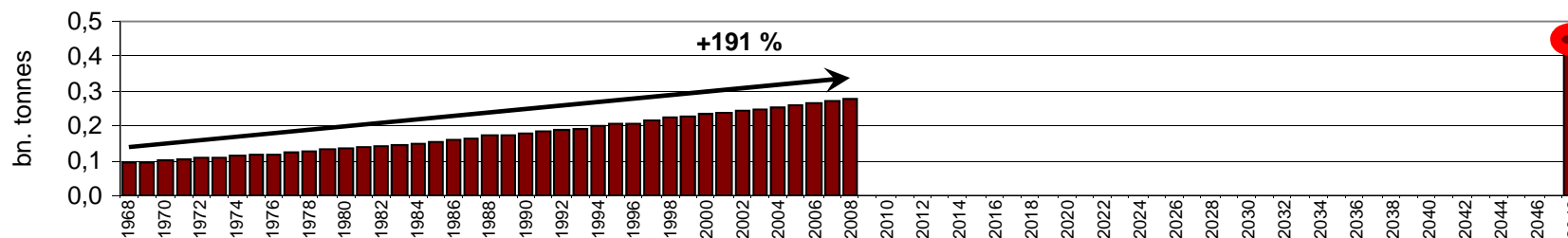
World Population



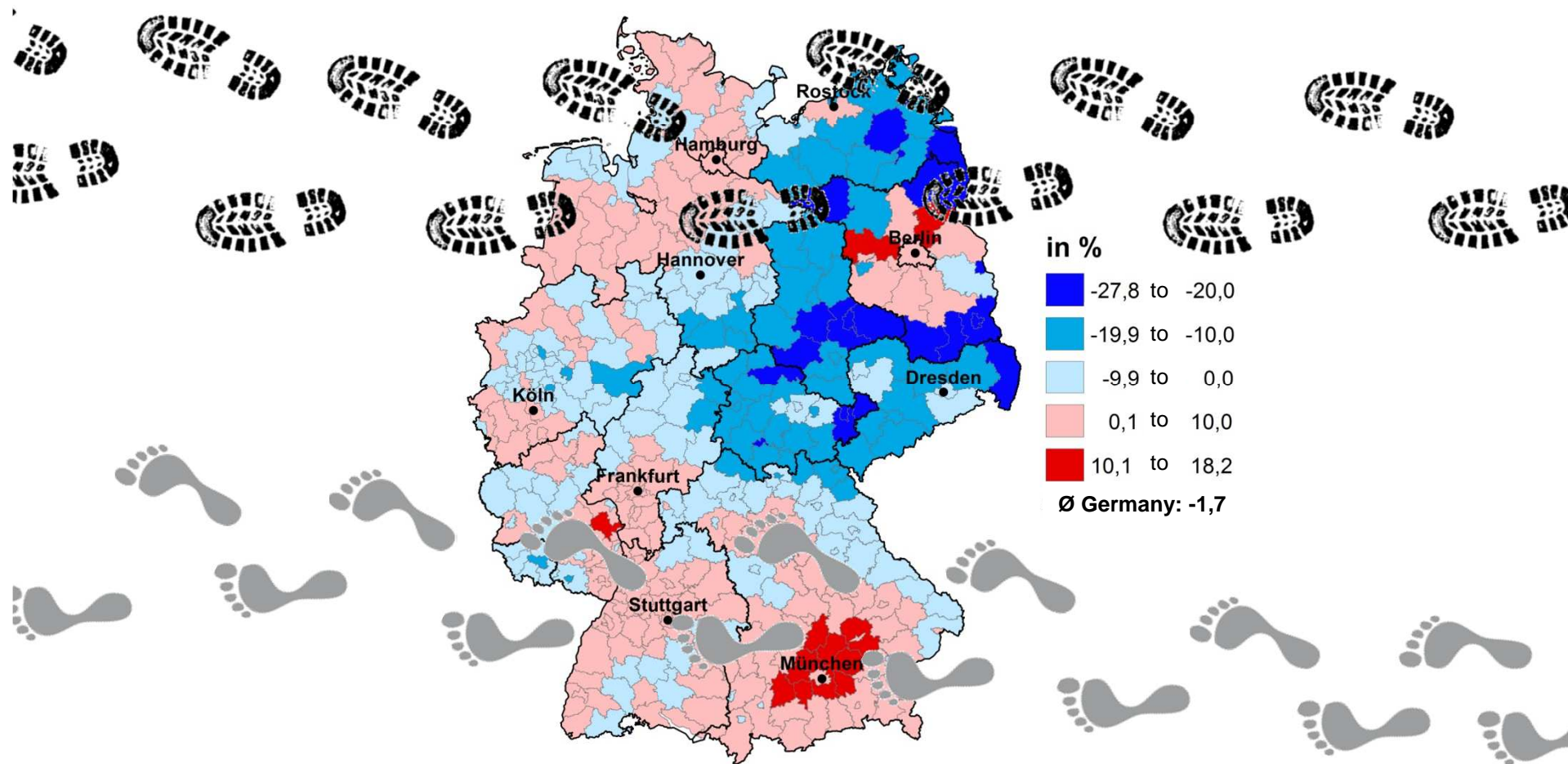
World Grain Production



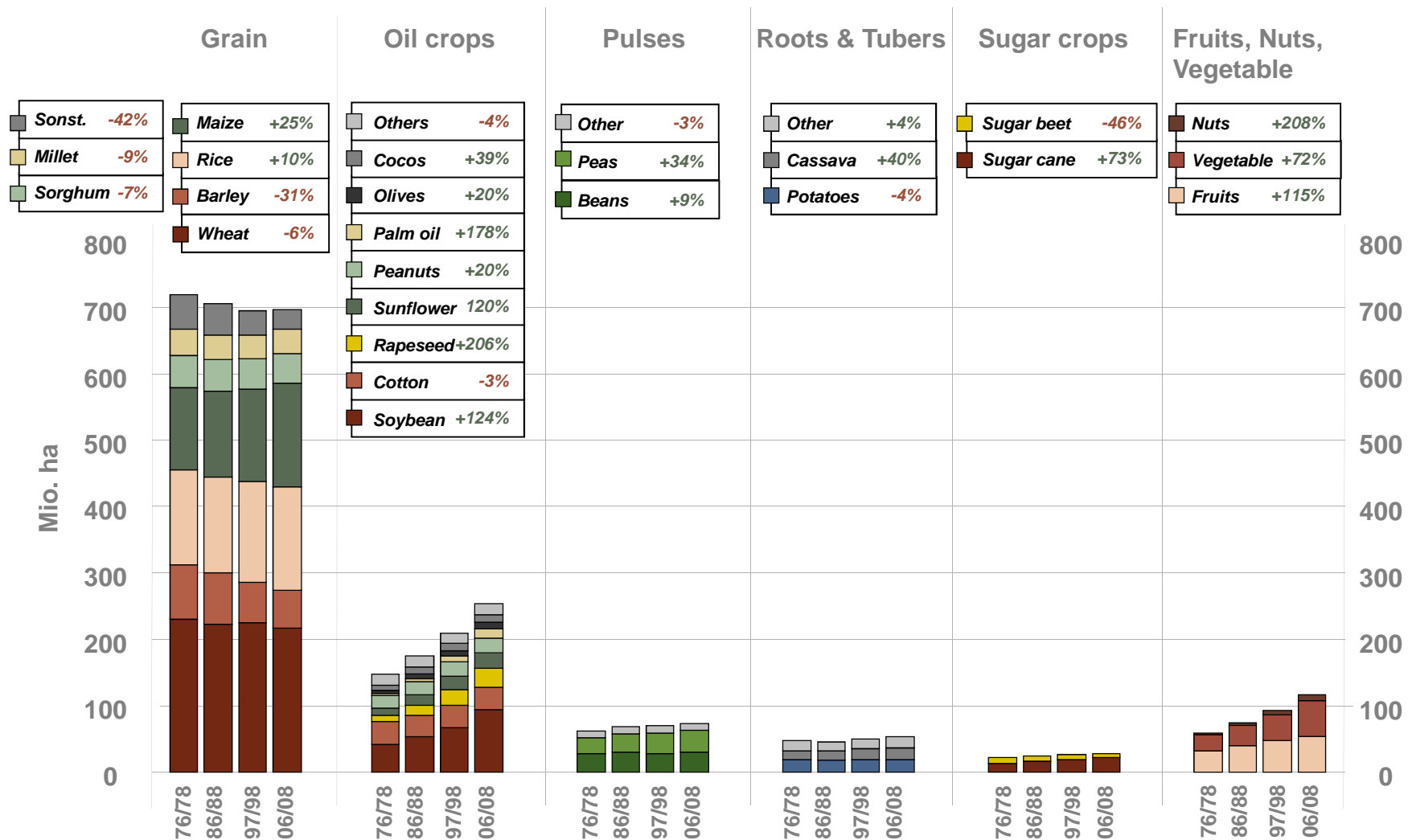
World Meat Production



Outmigration from Rural Areas Germany 2007 - 2025

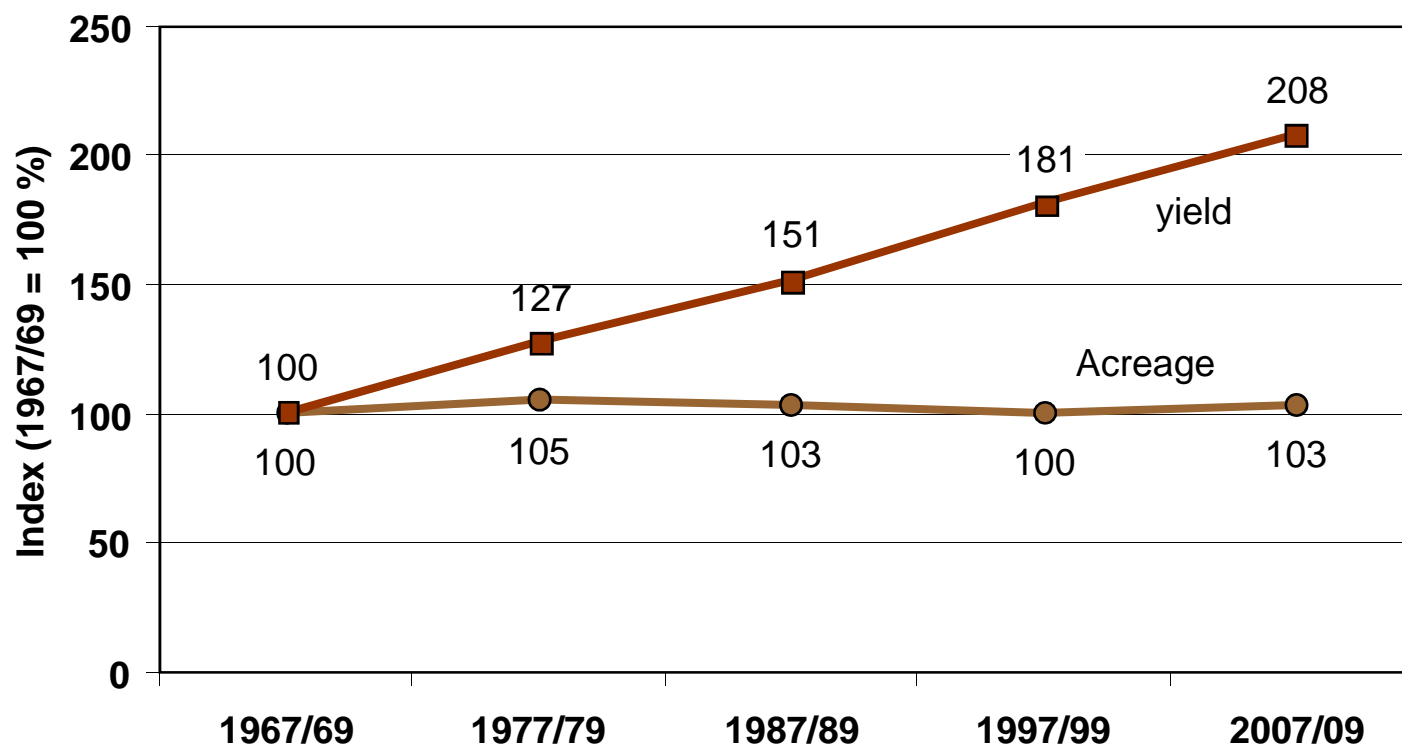


Acreage of different crops (Mio. ha, 1976/78 – 2006/08)



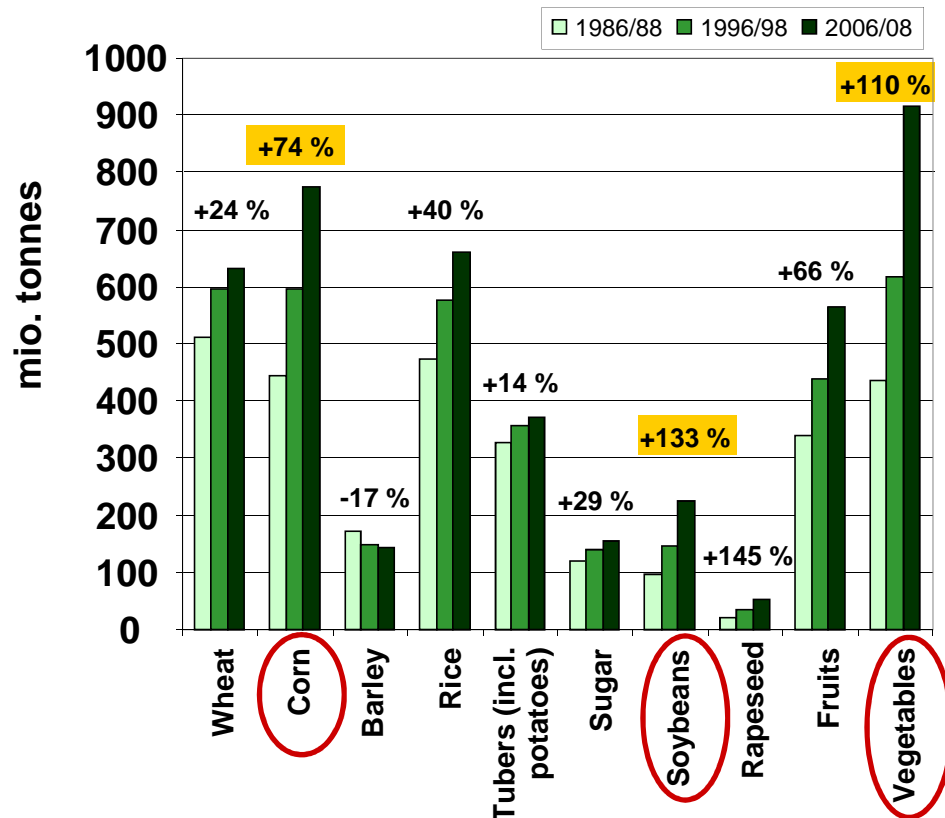
Grains: Global Acreage and Yield (1967/69 - 2007/09)

Yield (t/ha)	1,68	2,14	2,54	3,05	3,50
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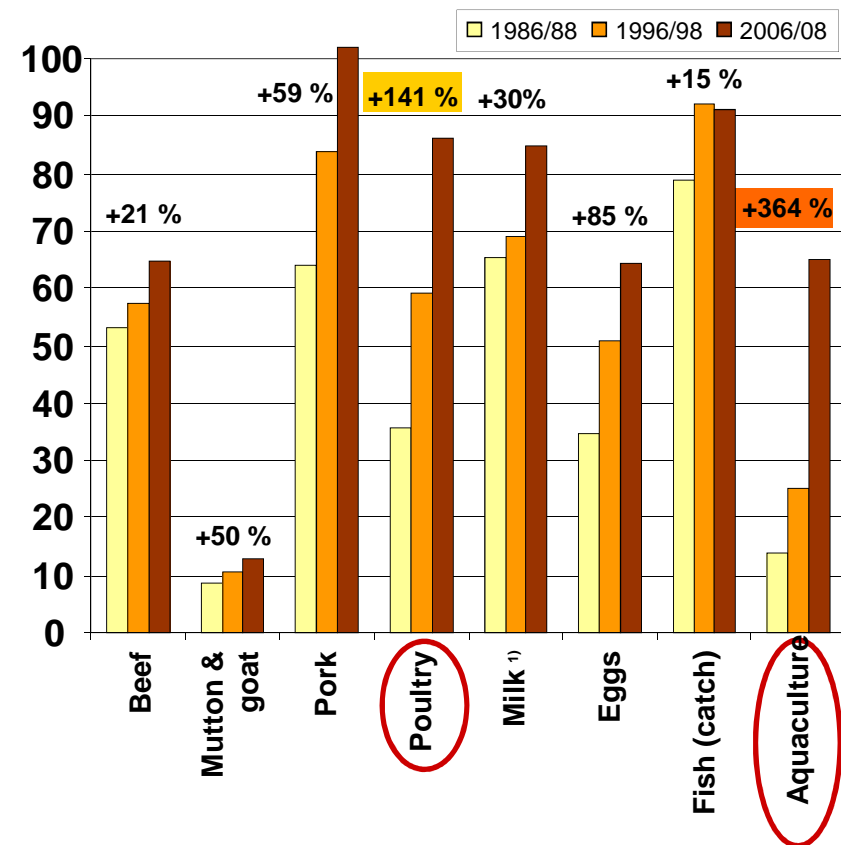


Global agricultural production, by product group

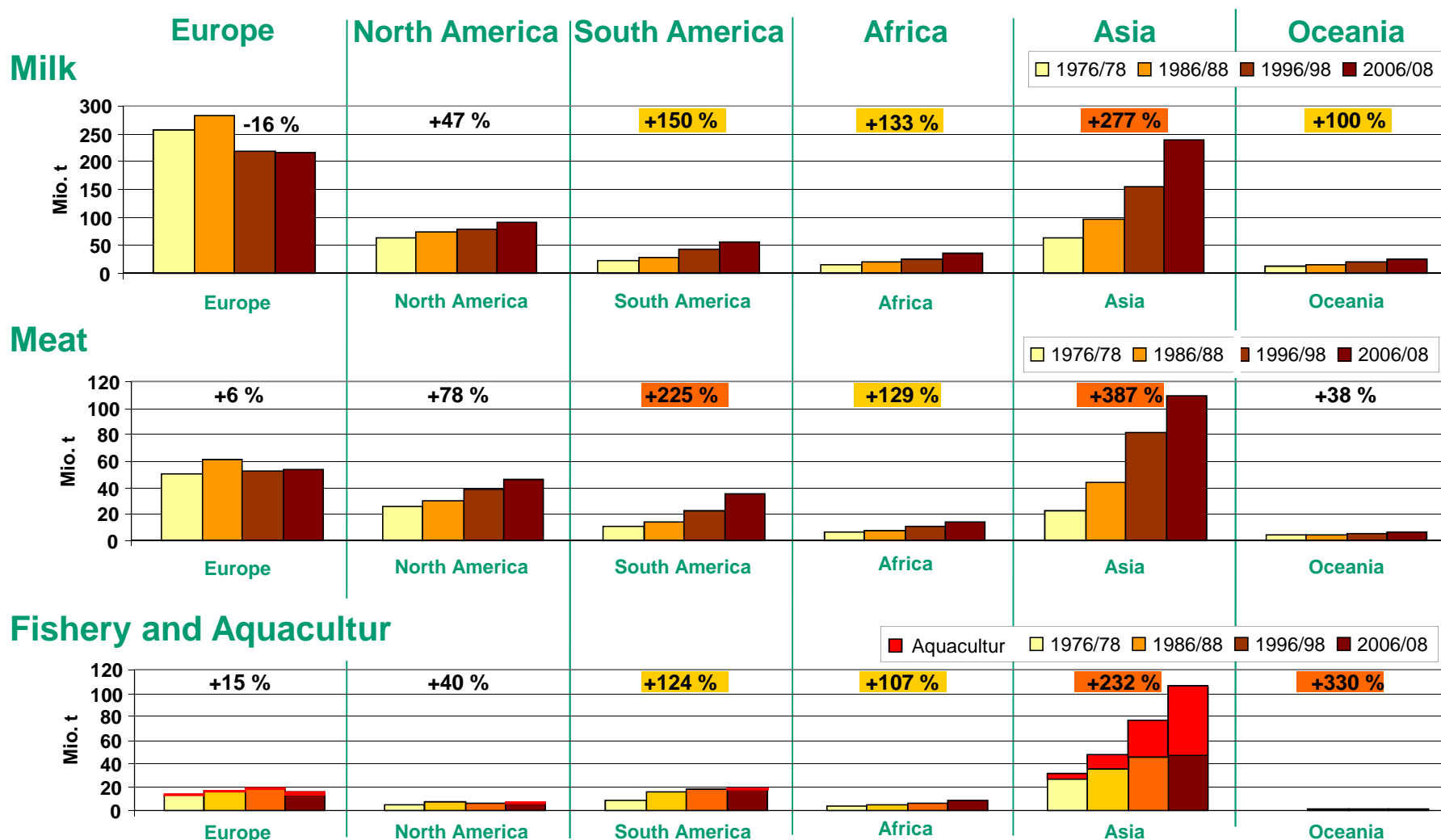
Plant production



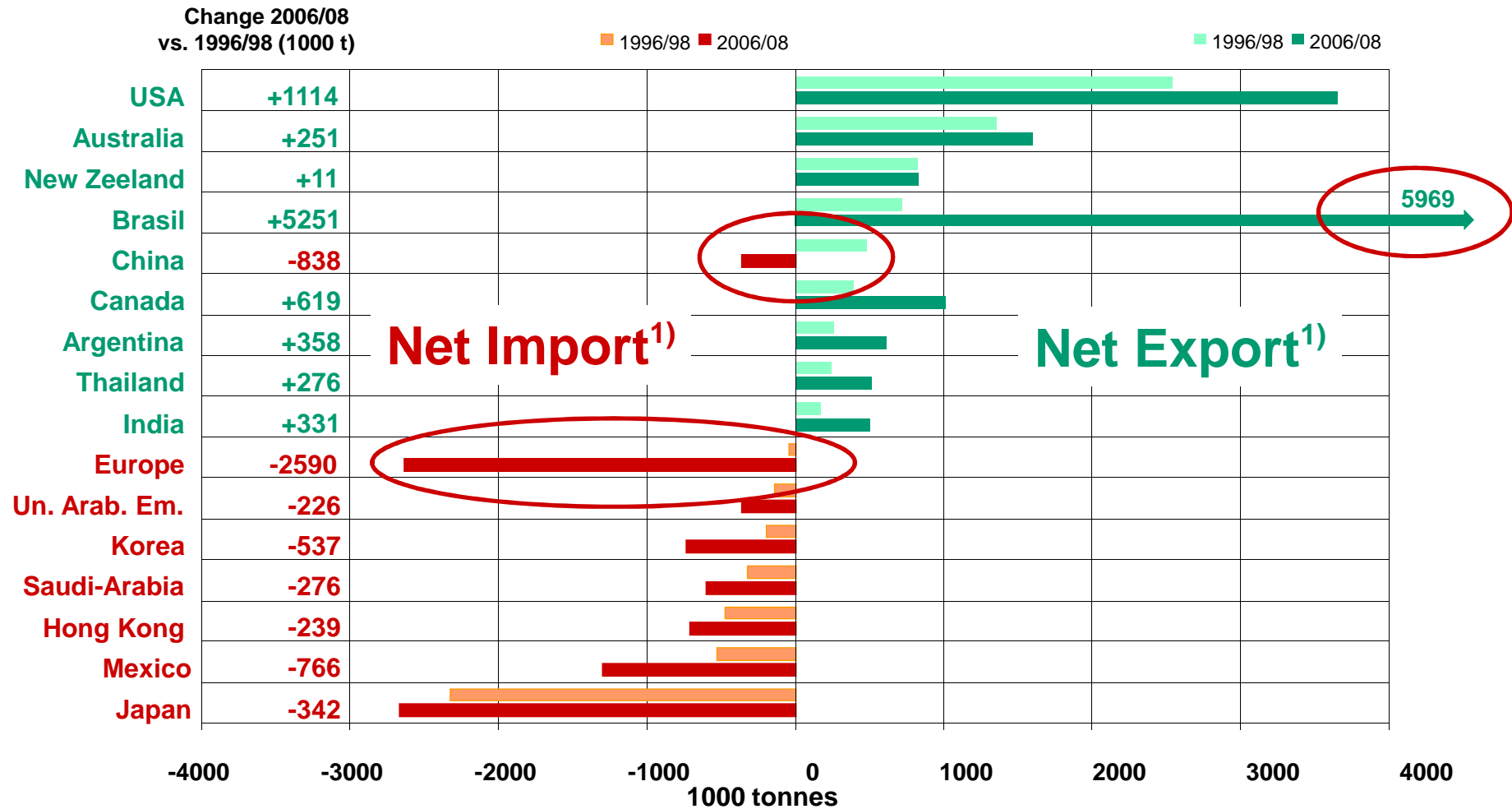
Livestock production



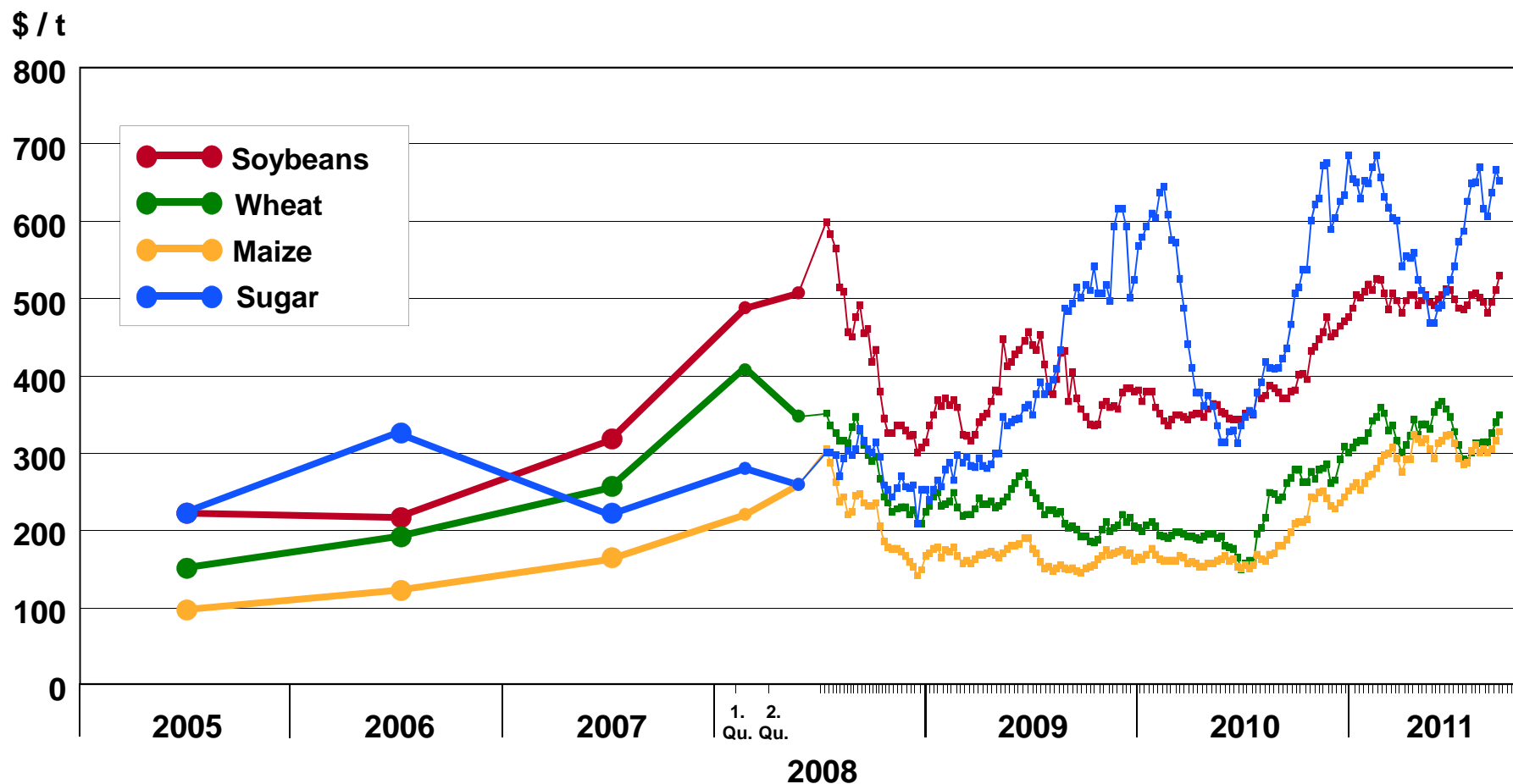
Livestock production by world region



Meat: Important net exporters and importers



World prices for selected crops, 2005 - 2011



1) Soybeans futures (first contract forward) No. 2 yellow, CBOT. 2) U.S.: No. 1 hard red winter, FOB Gulf.
 3) U.S.: No. 2 yellow, FOB Gulf. 4) CSCE contract No. 11<, nearest future position, NYBOT.

Outlook: Bioenergy can hardly be overestimated

Crude oil price ...60, 70, 80, 90, 100, ... \$/barrel

- Bioenergy has become profitable w/o policy support (in Brazil at 50 \$/b.)
- World agriculture will face increasing shortage for food & feed
- Energy prices will pull agricultural prices upwards

How far can this go?

- World energy demand: ca. 12 bn. t oil equivalent per year
- Bioenergy yield per hectare: Ø 3 t/ha oil (rapeseed 1,5 t/ha, palm 5,0 t/ha)
- 1% „world energy“ from bioenergy will need + 40 mio. ha arable land
- Arable land (currently used for food & feed): 1,5 bn. ha
- Arable land (additionally available mid-term): + 500 mio. ha (?)
- Bioenergy (w/o wood) could supply max. 15 % of world energy demand
- Constantly high crude oil prices may overstrain global agriculture
- World agriculture will face high (but fluctuating) product prices

Impact of high prices on farms

Short term

- Live becomes easier ...



Medium and long term

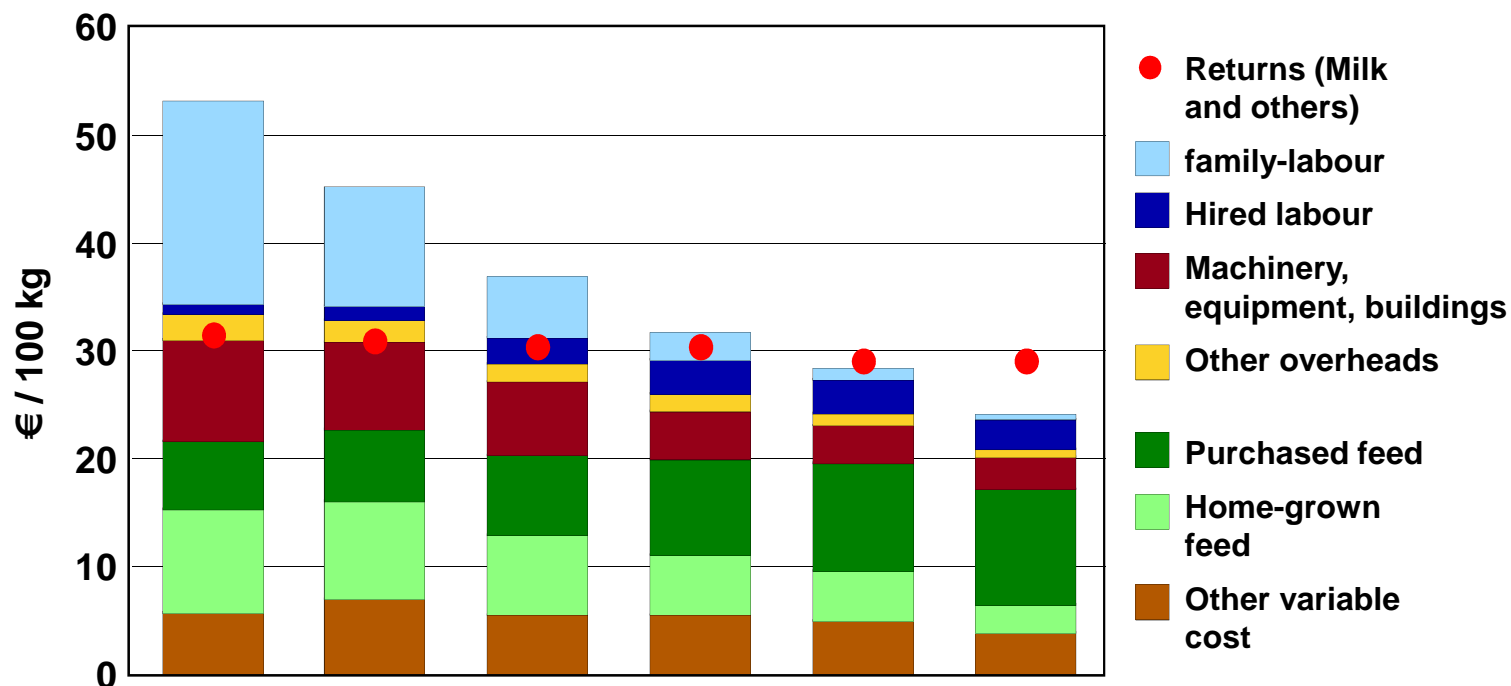
- Live becomes easier ... only for land owners 
- Competition between farmers remains unchanged



„do things right!“
„do right things!“

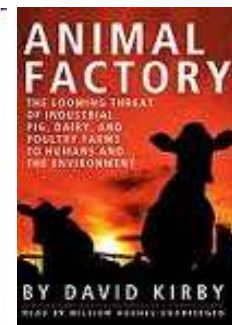
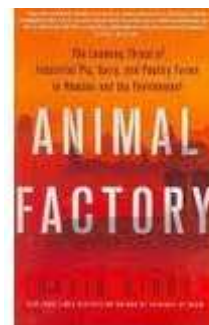
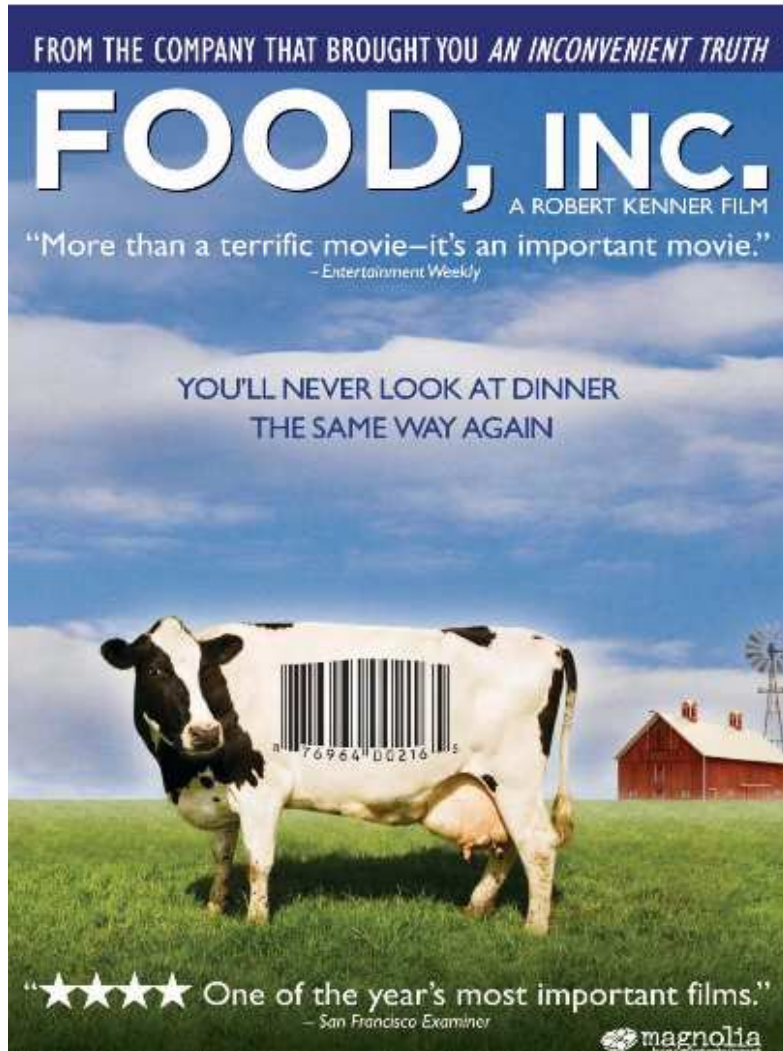
Farm size matters!

Cost and Returns from Dairy Production, USA 2005



Herd Size	<50	50-99	100-199	200-499	500-999	>999
Cows / farm	35	69	133	295	666	2.083
Milk yield (kg/cow)	6.829	7.779	8.268	8.829	9398	9.160
% farms >2 x Milking	0	4	6	23	45	44
% cows with bST	0	7	13	19	21	20

Public against big farms?!



Let's cross it out

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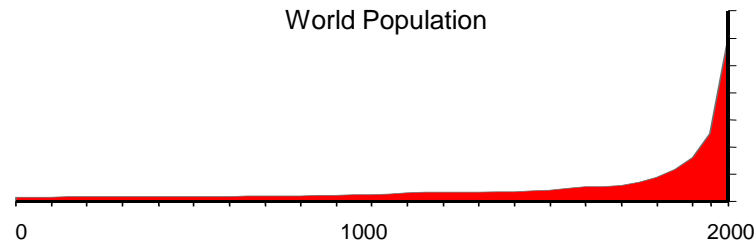
Political issues

- **Agricultural policy:** Is “business as usual” appropriate?
- **Bioenergy:** Policy needed to slow down “market-driven” bioenergy?
- **Land use:** Should “*No expansion of cropland!*” be questioned?
- **Structure:** “Anti-large-scale” is popular, but ineffective. Alternative?
- **Rural areas:** Is outmigration a political issue? Effective measures?

Strategic considerations regarding IAASTD-2

- Is “another book, similar content” a convincing target?
- Towards a network-based, regular “global sustainability report”?

Why *agri benchmark* was started (in the late 90ies)



Is it prudent to speed up, without having a „navi“?



***agri benchmark* is designed as part of a global navigation systems for the agricultural sector**

For „typical farms“ around the world, it provides up-to-date information on

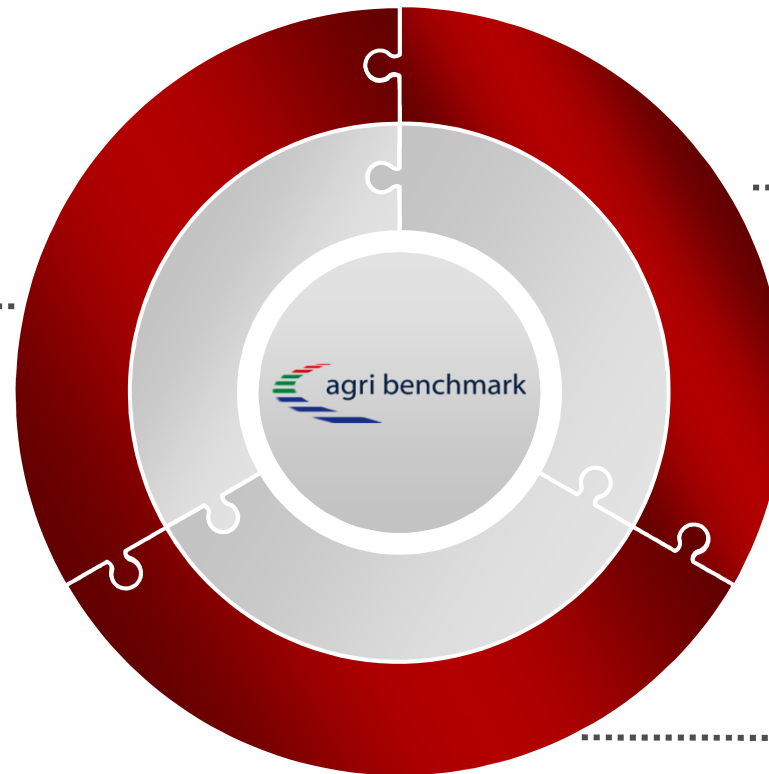
Produktion systems

Production costs

Framework conditions

The elements of *agri benchmark*

**The network
and the people**



**The results and
the benefits**

**The data and the
methods**

Example: Analysis of a crop production system

UA2250BT – Soybeans following a Forage Crop/ Conventional Tillage

March	April	May	June	July	August	September	October
	D	C	S				
		H		I	F		Hv
P K		N					(Ca)



Abbreviations

vegetation period

Machinery:

- S = Seeding
- C = Cultivator
- D = Disc Harrow
- Pl = Plough
- Hv = Harvest
- R = Rolling

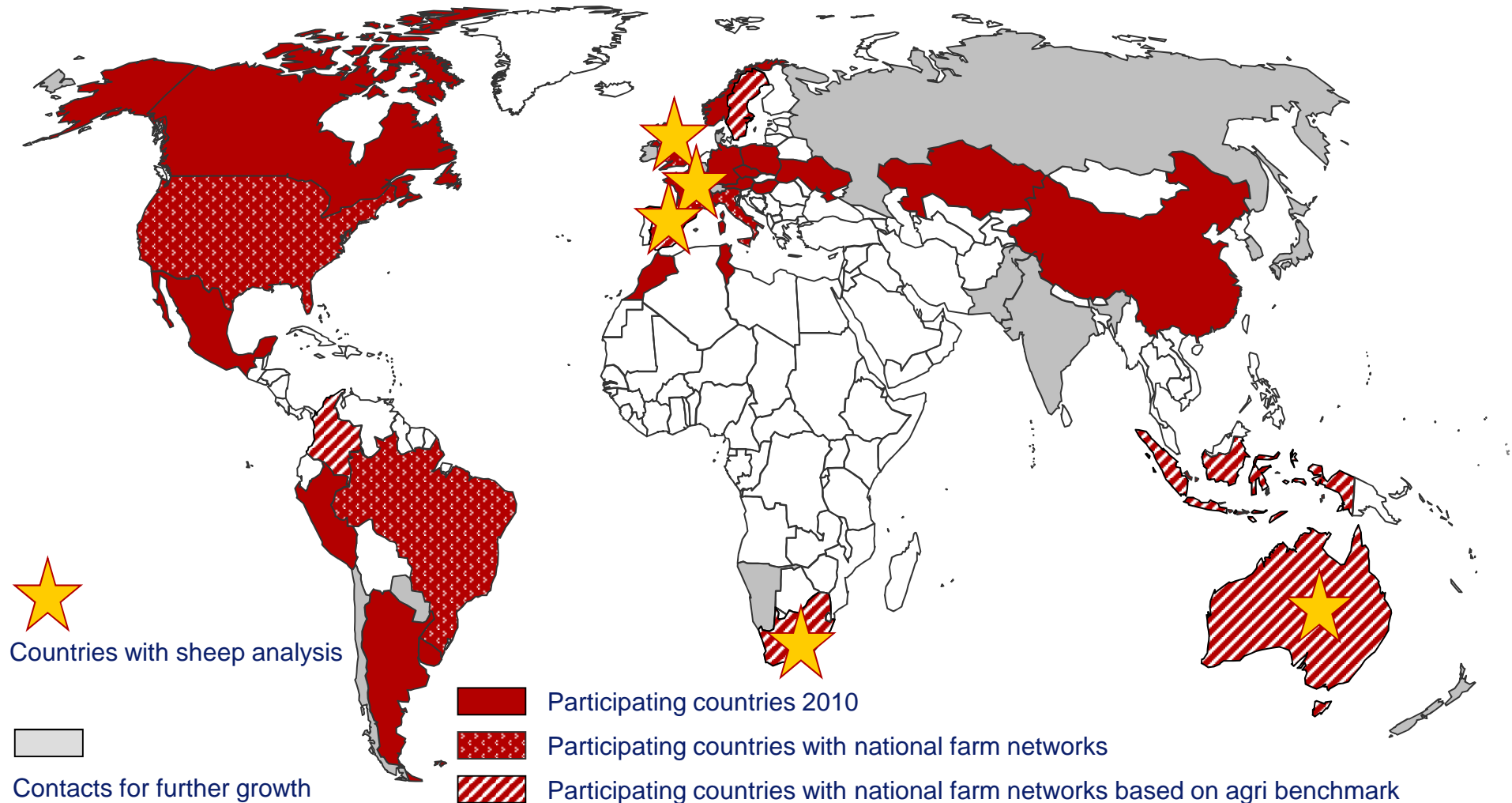
Plant Protection:

- I = Insecticide
- H = Herbicide
- F = Fungicide
- Gr = Growth Regulator

Fertilizer:

- N = Nitrogen
- P = Phosphorus
- K = Potassium
- Ca = Lime

Countries in the *agri benchmark* beef & sheep network



Global Analysis of Production Systems (agri benchmark)

I. Pasture



Pasture based systems
Southern hemisphere, partly IE, UK

II. Silage



Silage / grain / soy systems
Intensive production in Europe +
China, indoor housing of bulls

III. Feedlot



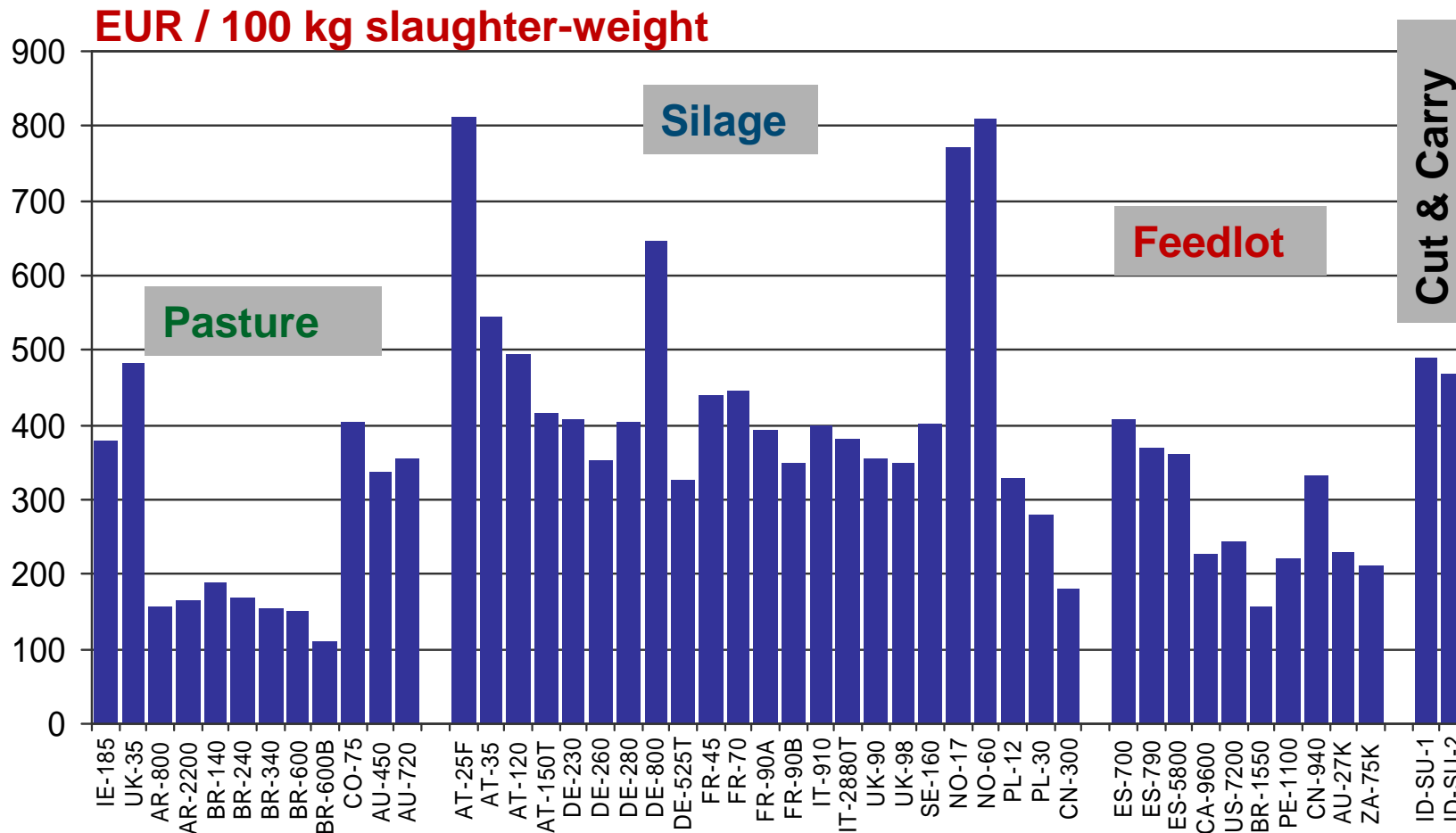
Maize / grain / hay in feedlots
esp. in USA, CAN, AUS, Spain,
feedstuffs from external sources

IV. Cut & Carry



Green-grass + hay feeding
small households in developing
countries (e.g. IN, ID, partly CN)

Agri benchmark: Turn Pictures & Stories into Figures (Beef Production Costs by Location and Production System)



Example: Evolution of beef production in Brazil

- Economic, ecological and social impact? -



agri benchmark
beef conference,
Brasilia 2008

With high product
prices, feedlots are
gaining ground in
Brazil

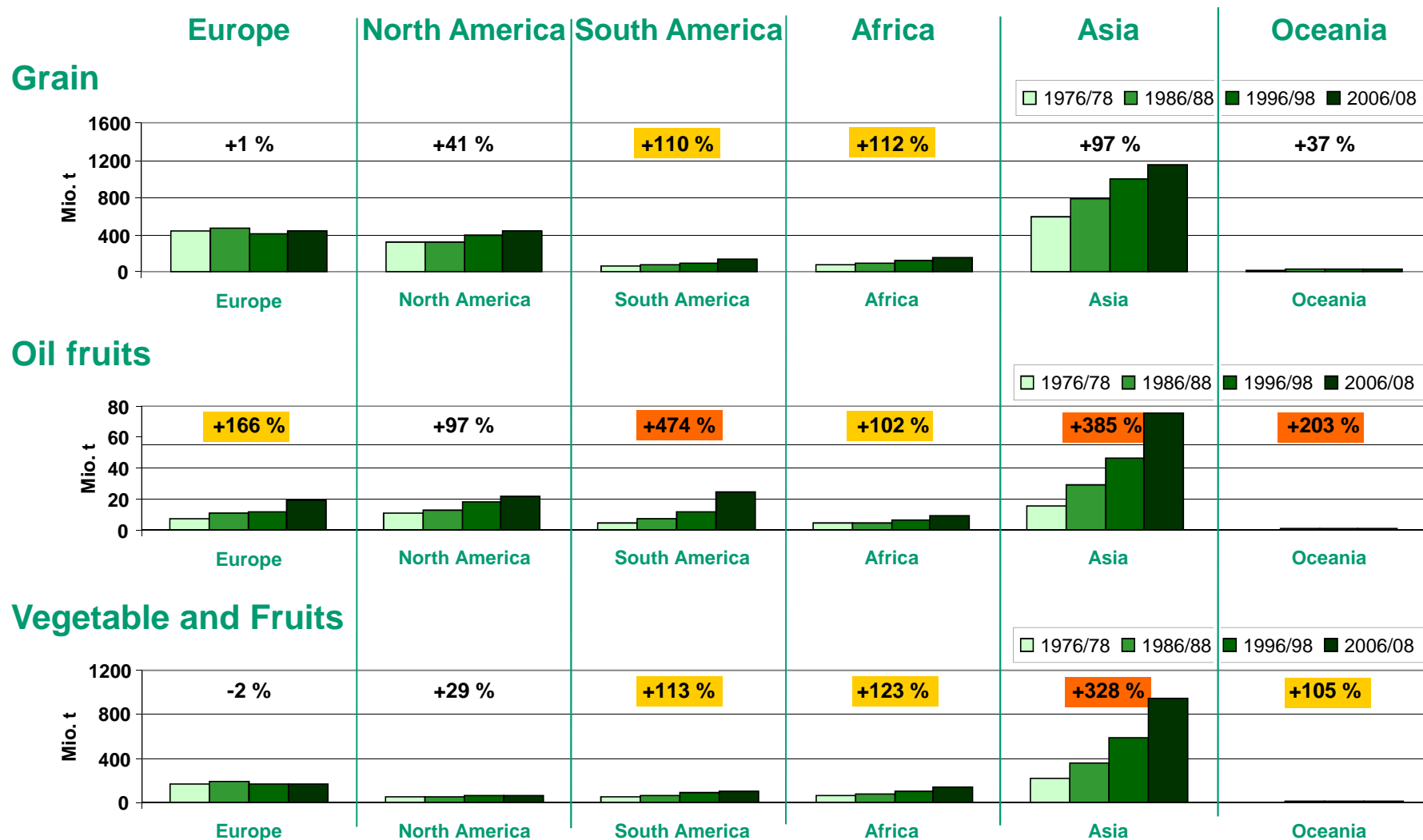


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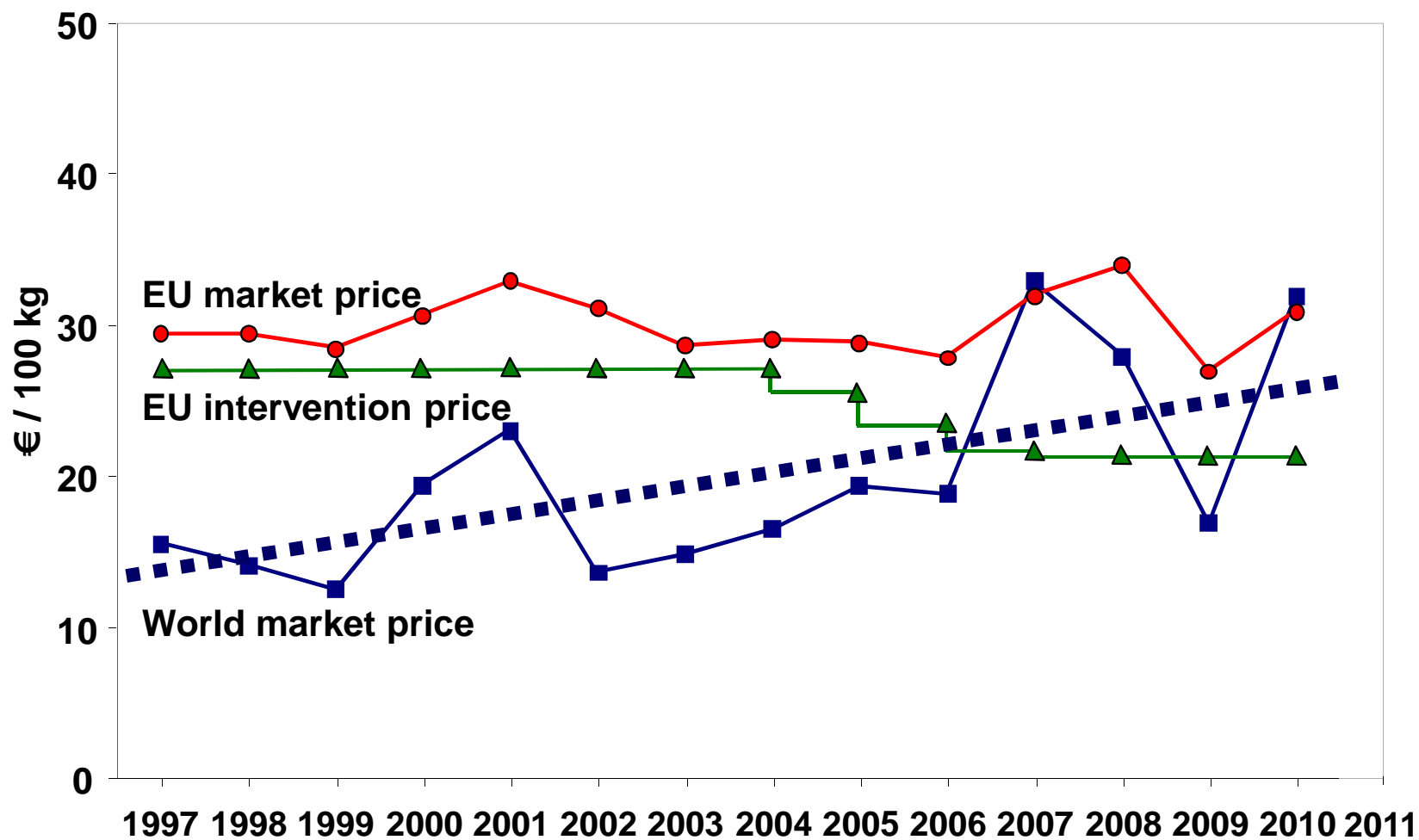
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Thank you for your attention!

Plant production by world region

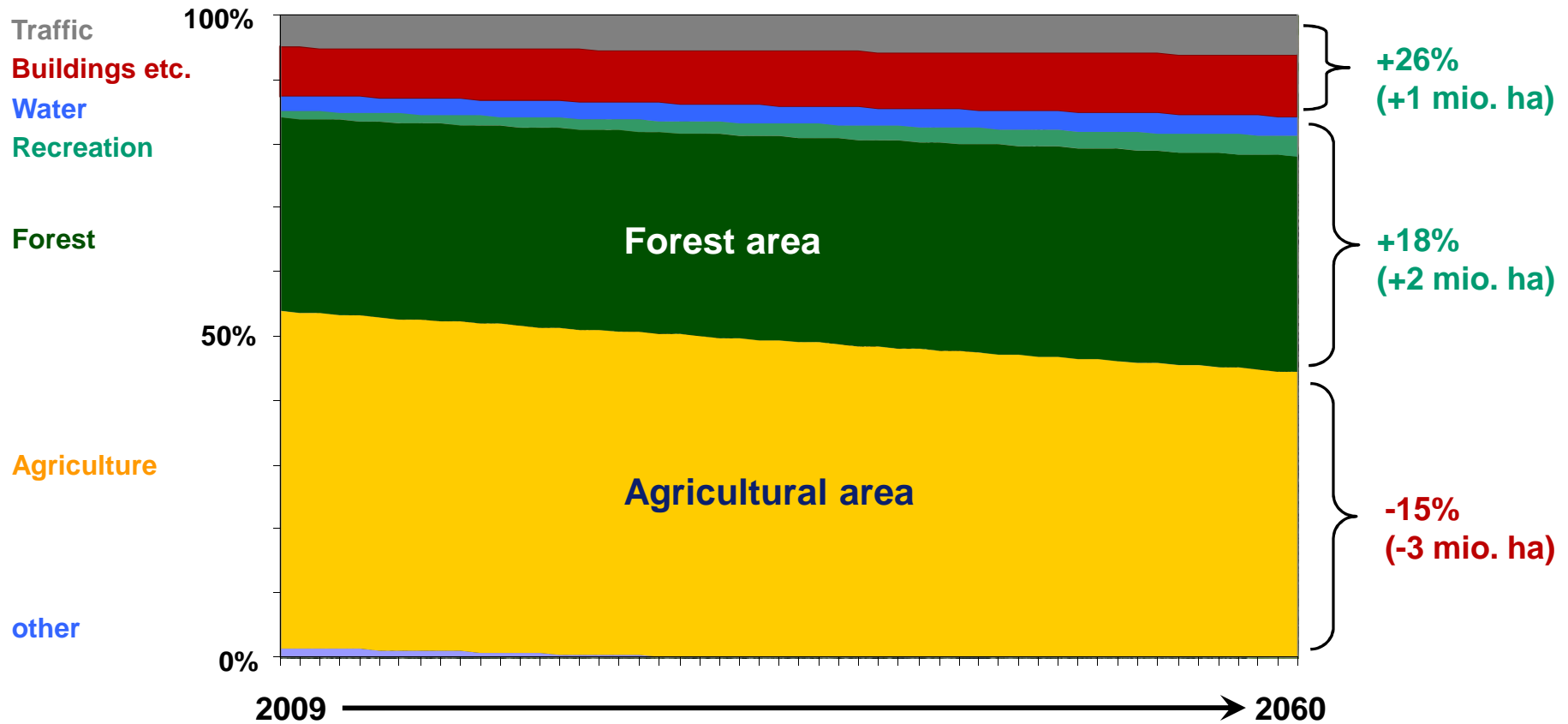


Producer milk prices, EU, 1997 - 2010



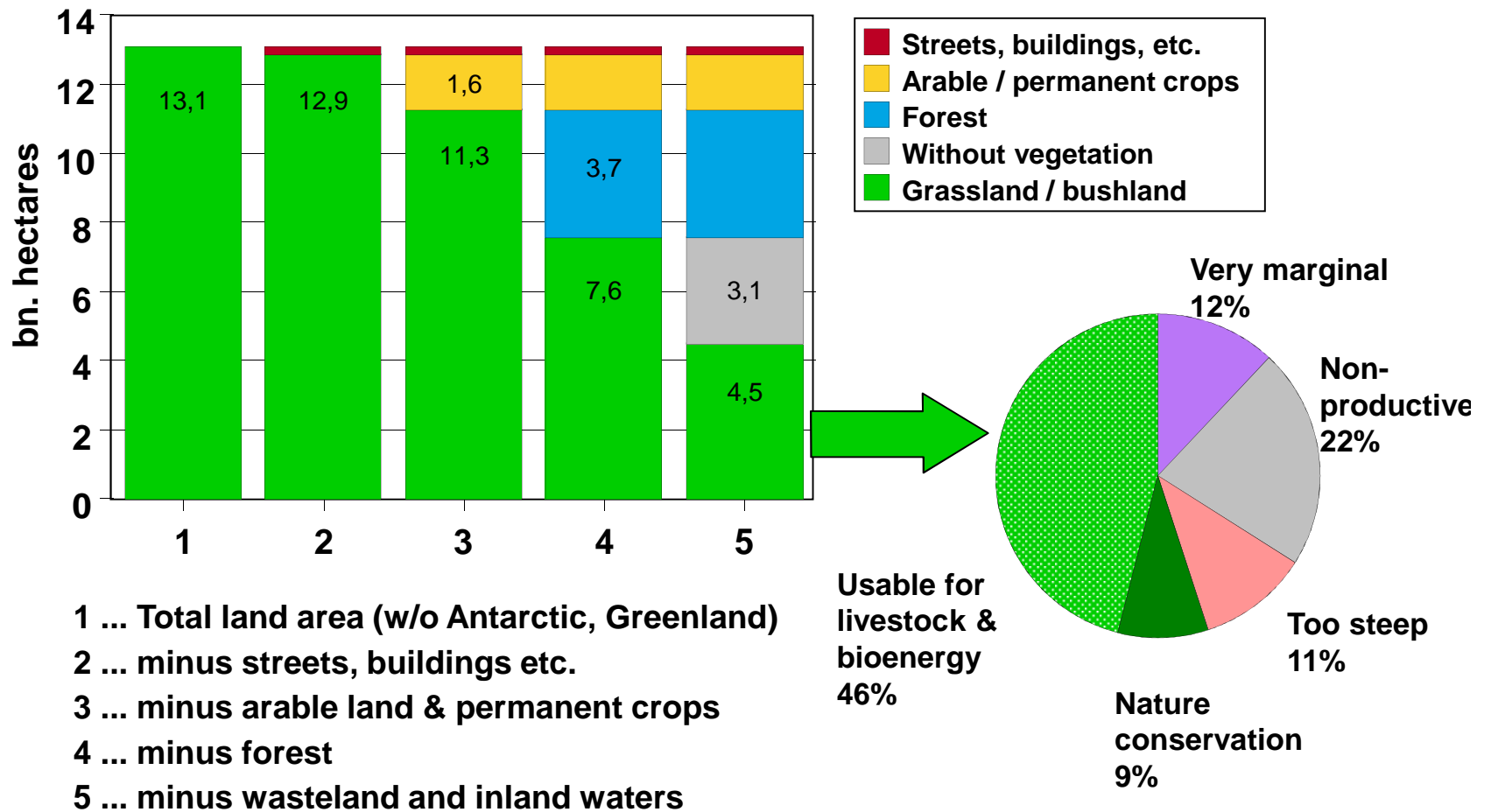
All prices for milk with 3.7% fat and 3.4% protein.

Land use in Germany – where a continuation of the 2000-2009 trend until 2060 might lead to



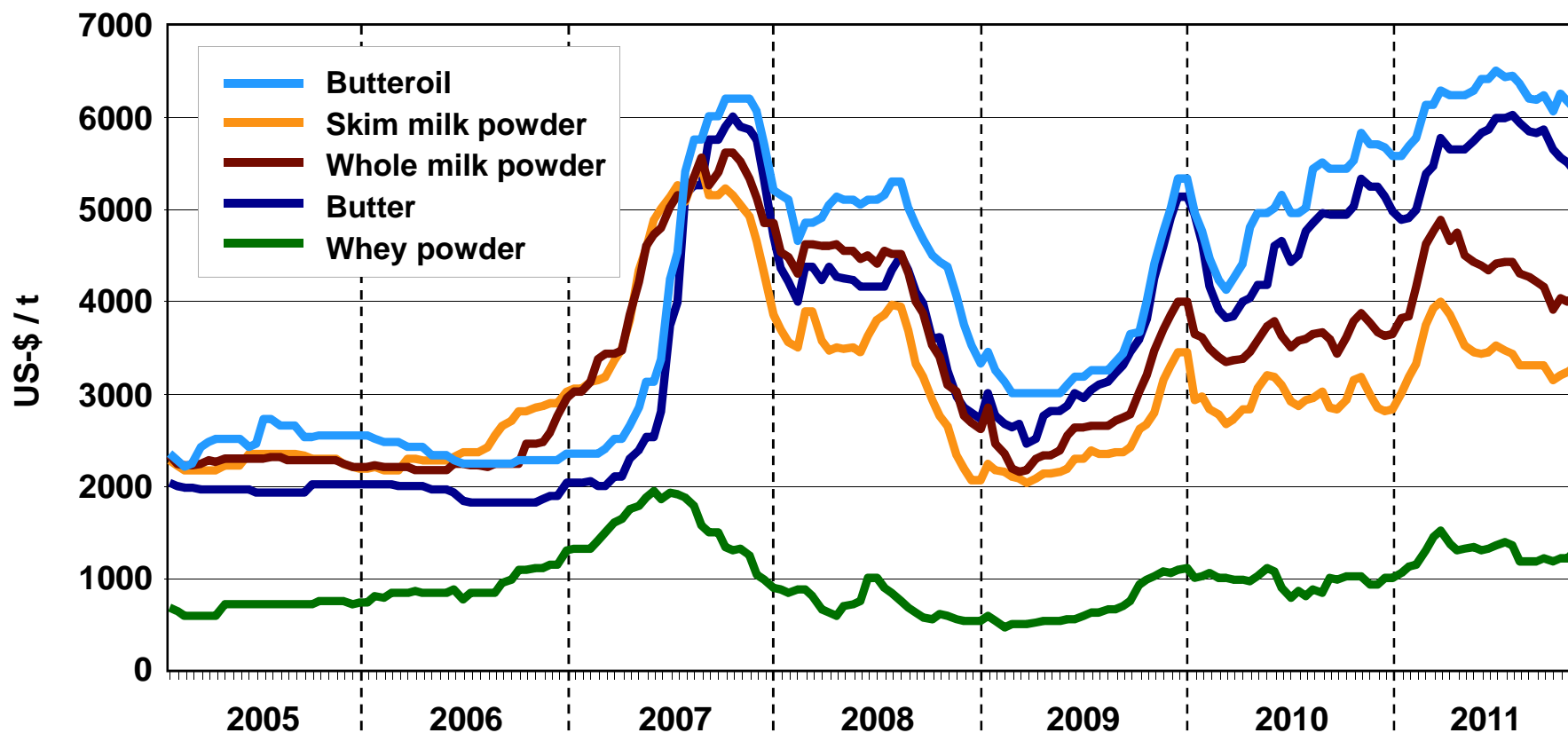
Assumptions: Linear prolongation of the development 2000-2009 until 2060. After the category „area of other uses“ has totally disappeared, the additional requirements, that have previously been covered by this source, will be covered at the expense of agricultural land.

How much land is available?



- 1 ... Total land area (w/o Antarctic, Greenland)
- 2 ... minus streets, buildings etc.
- 3 ... minus arable land & permanent crops
- 4 ... minus forest
- 5 ... minus wasteland and inland waters

World market price for dairy products, 2005 – 2011 (export price Western Europe¹⁾, 2005 – 2011, in US-\$ / tonne)



1) Average of reported max- and min-values