Effects of structural change and international trade on profitability of apple production in Europe and South Africa

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Outline

Overview of apple production in Germany, Italy and South Africa

- Production
- Farm size structure
- Markets and trade flows

Farm level analysis

- Typical farms
- Production costs
- Profitability

Conclusions

Data sources

1. **National statistics and agricultural censuses**
   - **Germany: Federal Statistical Office (www.destatis.de)**
     - yearly production surveys
     - fruit tree censuses in 2002, 2007, 2012
   - **Italy: Italian Institute for Statistics, Istat (www.istat.it)**
     - production statistics
     - agricultural censuses in 2000, 2010
   - **South Africa: Hortgro Services (www.hortgro.co.za)**
     - Hortgro Deciduous Fruit statistics
2. **International trade statistics: UN Comtrade**

Apples in Germany, Italy and South Africa

	Germany	Italy	South Africa
Share of world apple production **(%)**	1.2	3.2	1.1
Apple's share of fruit tree acreage **(%)**	90	12	14
Apple consumption ***(kg / capita / year)***	20	17.5	7.4
Trend in consumption	falling	rising	rising
National self-sufficiency of apple demand **(%)**	67	189	202

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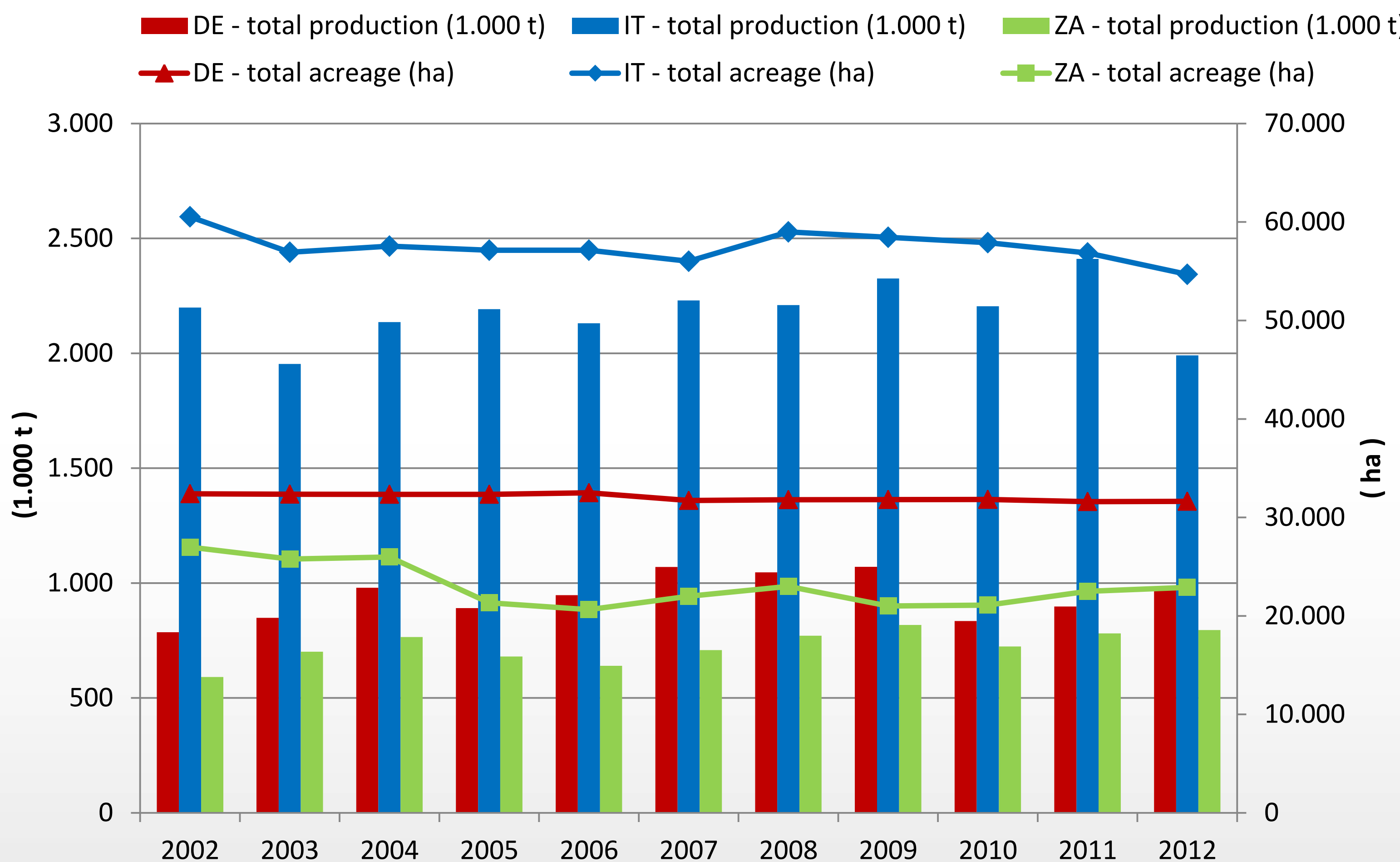
Apple acreage and production in DE, IT, ZA, 2002 - 2012



Source: FAOstat, 2013

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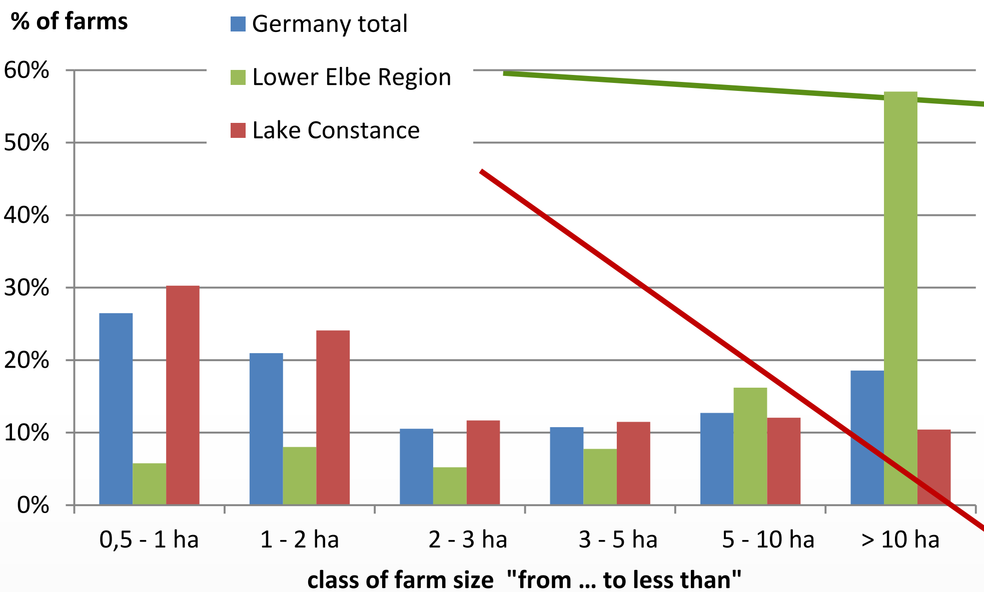
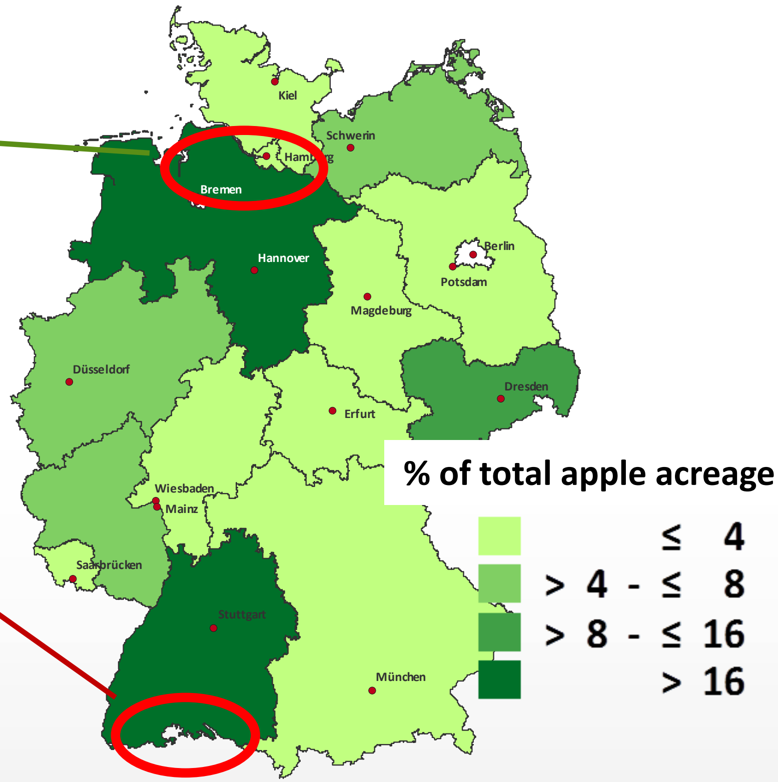
Farm structures in Germany, 2012





Average farm size increased from
3.8 ha in 2002
to 5.2 ha in 2012

Source: Destatis, 2002, 2012.

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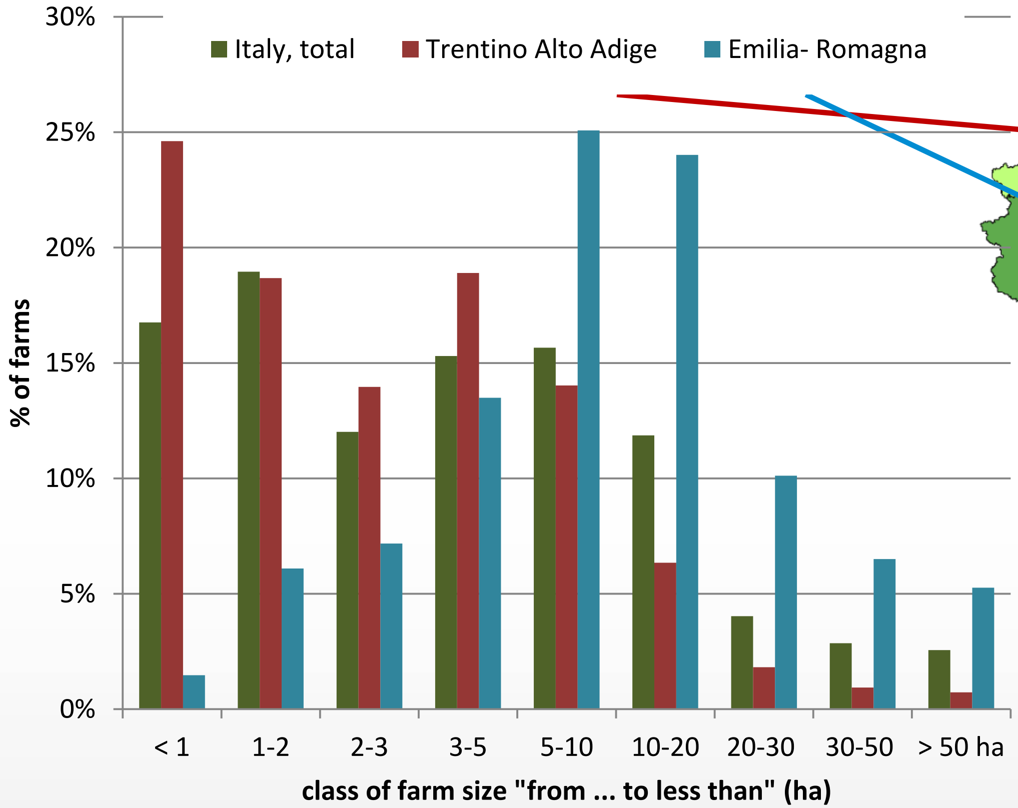
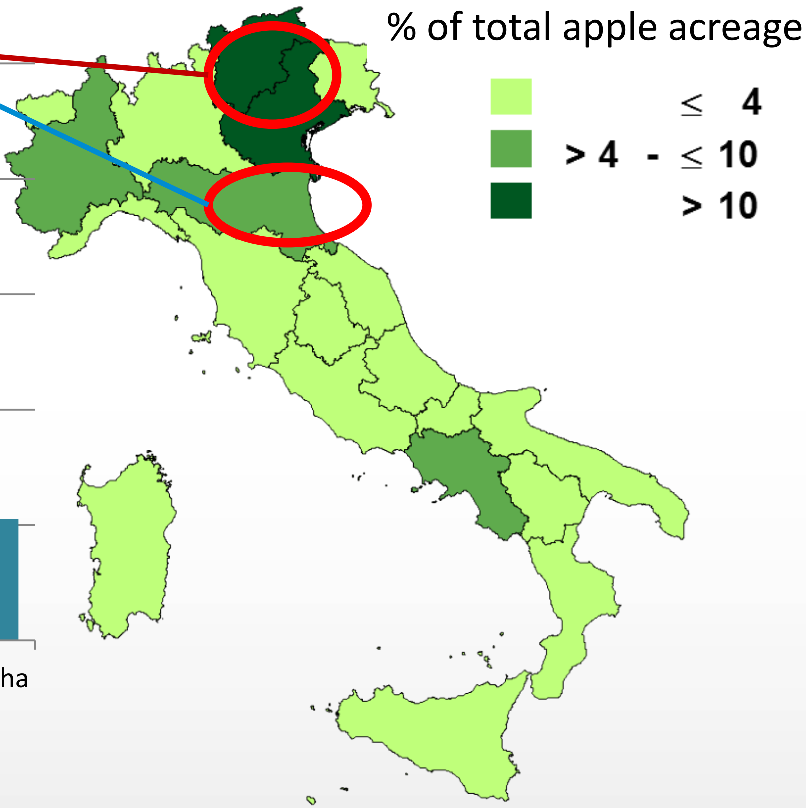
Farm structures in Italy, 2010





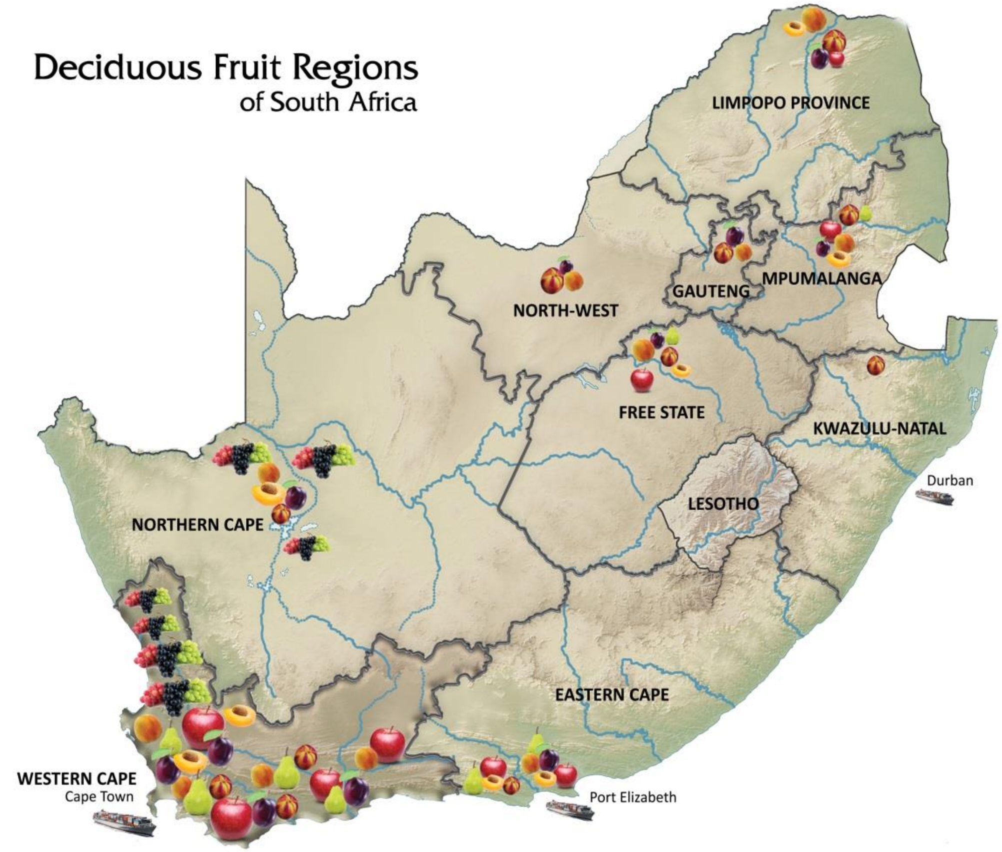
Average farm size increased from
0.5 ha in 2000
to 1.1 ha in 2012

Source: Istat, 2013

Apple production in South Africa, 2012

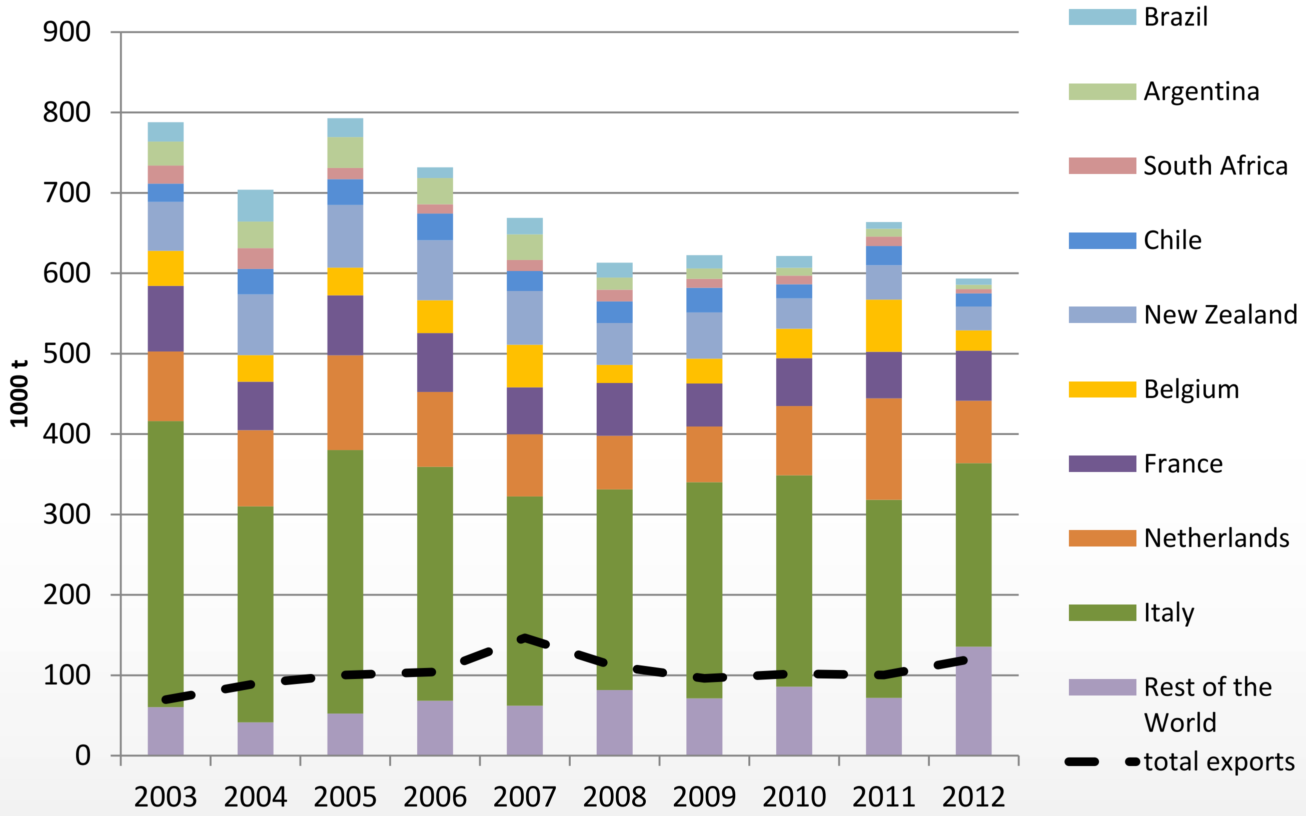
Major region: Western Cape

- 472 farms with apple production
- 46 ha average farm size
- 1,280 trees per ha average planting density (Italy and Germany > 2,000 trees)
- 33% of acreage with trees older than 25 years (7% in Germany)
- 100% increase of minimum wage from 2012 to 2014



Source: Hortgro, 2014

Germany: Imports by country, total exports (1000 t)



Imports decline since 2005

Italy – most important supplier

Southern Hemisphere imports decreasing

New Zealand – most important Southern supplier

Source: UNComtrade, 2013

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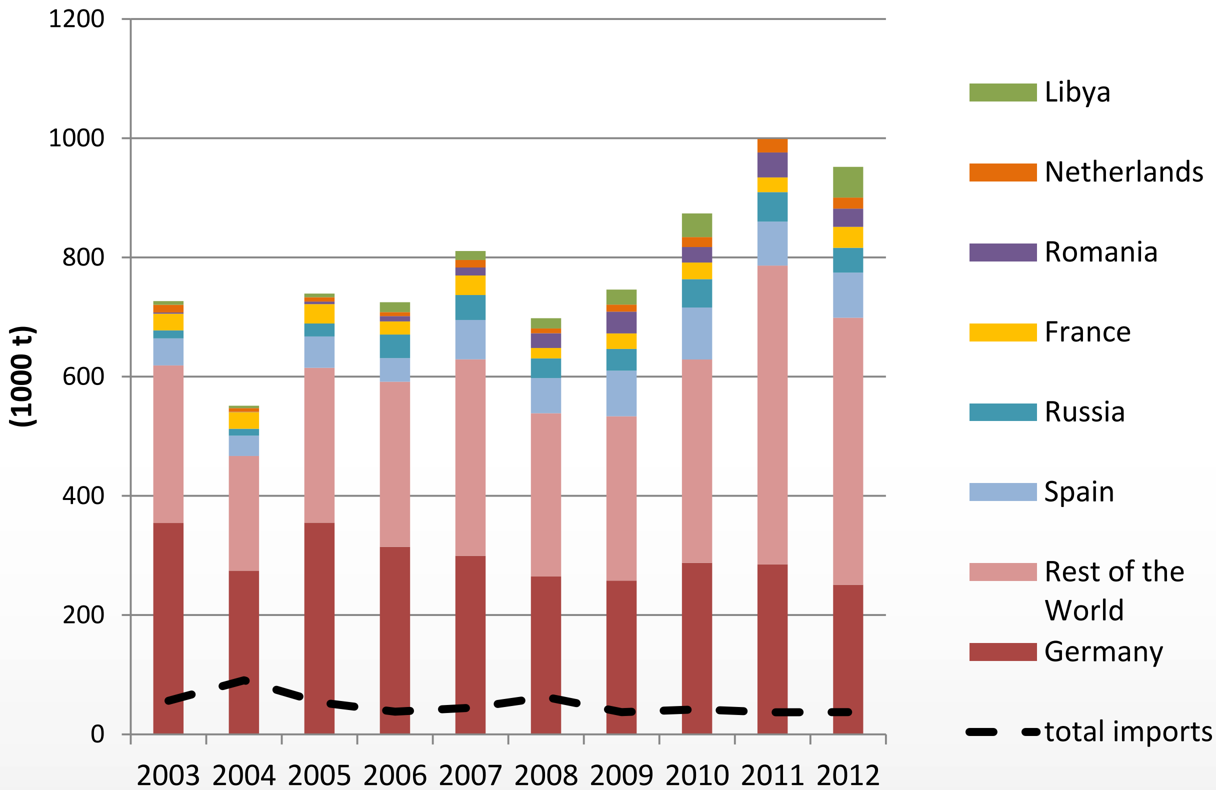
Italy: exports by country, total imports (1000 t)



Exports increased since 2008

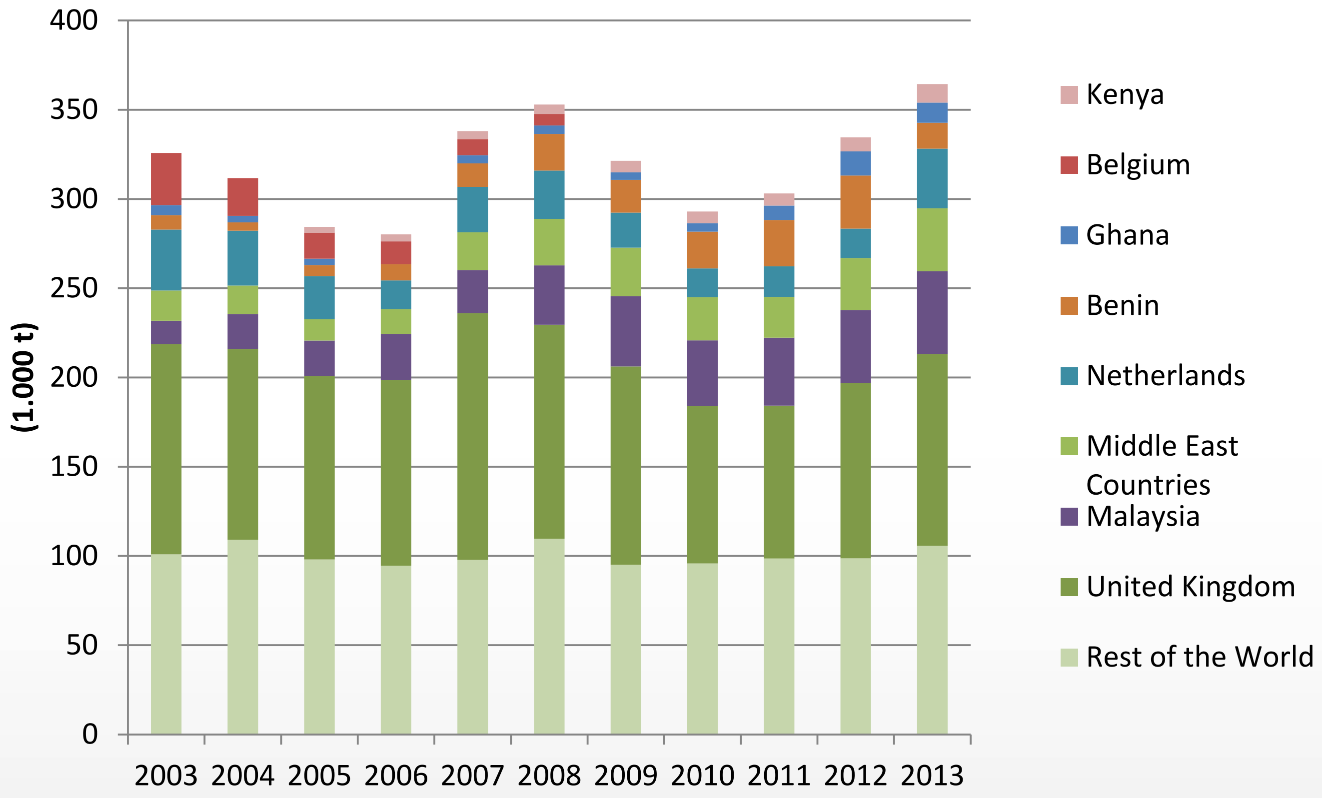
Germany – most important buyer

Consistent exports to Spain and Russia

Other countries: changing export volumes

Quelle: UNComtrade, 2013

South Africa: exports by country (1000 t)



Export volumes varying, but increased since 2010

UK and Malaysia– most important buyer

Middle East countries – increasing exports

African countries – increasing importance (Benin, Ghana, Kenya, Ivory Coast)

Source: UNComtrade, 2013

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Farm level analysis of costs and profits

- Statistics: good for overall sector description
- Competitiveness of the sector depends on viability of production on farm
- But: there is no „average farm“

→ **Typical farm approach**

- Specific for production regions and farm types (sizes)
- Generalization for group of similar farms but no individual case studies
- Analysis of cost structure, revenues, production system characteristics

Own data collection: typical farm approach

A typical apple farm

- is a virtual model based of existing farms in a specific region,
- represents a major share of apple output in that specific region,
- runs the regionally prevailing production system for apples
- reflects the prevailing combination of apple varieties, orchard composition, land and capital resources, type of labour organisation in specific region, and
- provides a full set of economic and physical data.
- is based on statistics, expert knowledge of farm advisors and farmers
- is validated in group discussions with farmers and advisors

Overview of typical farms in Germany, Italy, South Africa

Region	Typical farm	ha	average yield 2011, t /ha	3 top varieties
Germany				
Lower Elbe	DE_21_AL	21	31	Elstar, Jonagold, Braeburn
Lower Elbe	DE_41_AL	41	32	Elstar, Jonagold, Braeburn
Lake Constance	DE_15_B	15	46	Jonagold, Elstar, Gala
Italy				
Emilia-Romagna	IT_5_ER	5	49	Fuji, Pink Lady, Modi, Gala,
Trentino	IT_2.5_T	2.5	60	Red/Golden Delicious, Gala, Renetta
South Africa				
EGVV	ZA_80_EGVV	80	53	Golden Delicious, Granny Smith, Gala
Ceres	ZA_120_C	120	54	Red & Golden Delicious, Pink Lady

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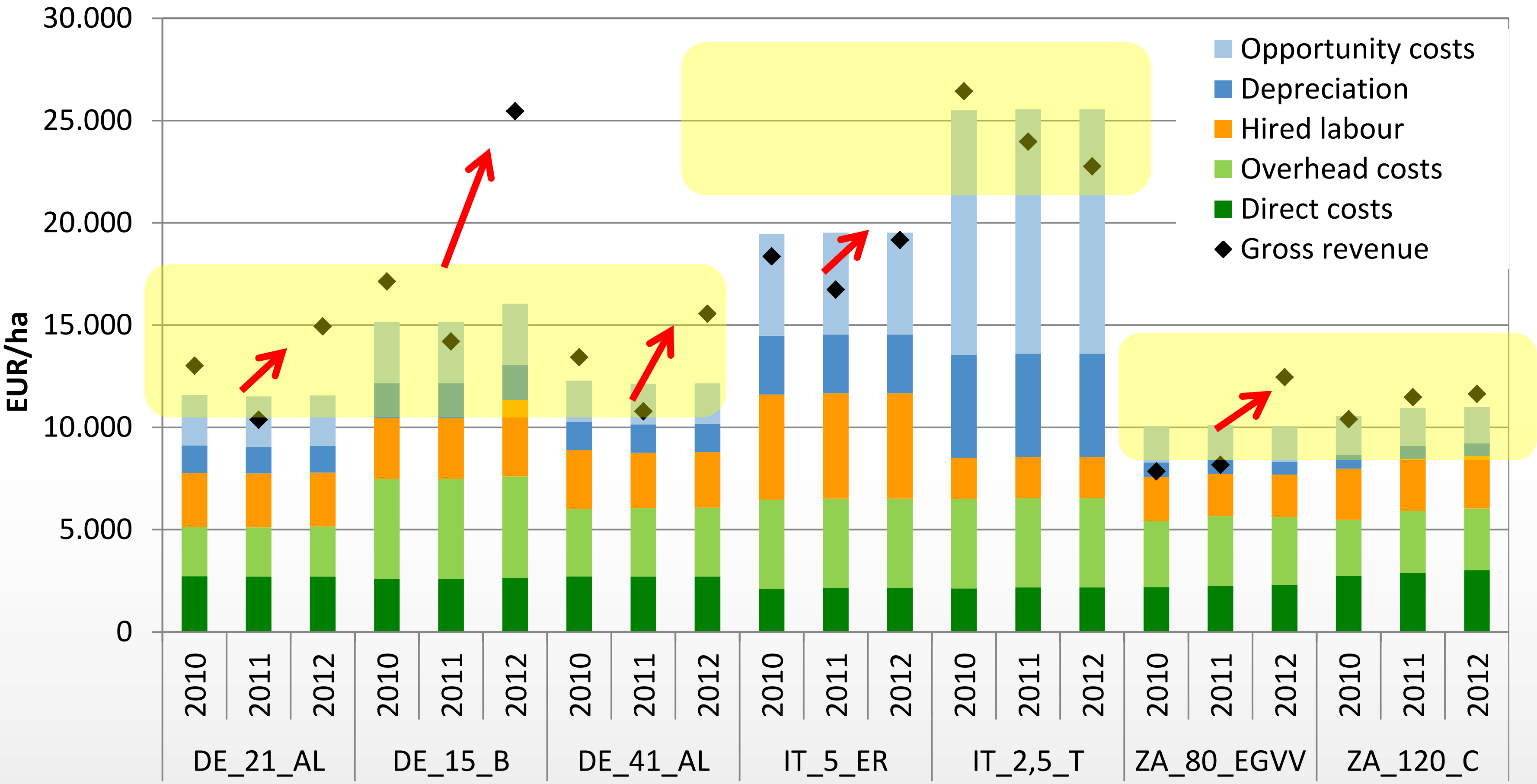
Costs and revenues per ha 2010-2012, typical farms



Source: *agri benchmark* Horticulture, 2013

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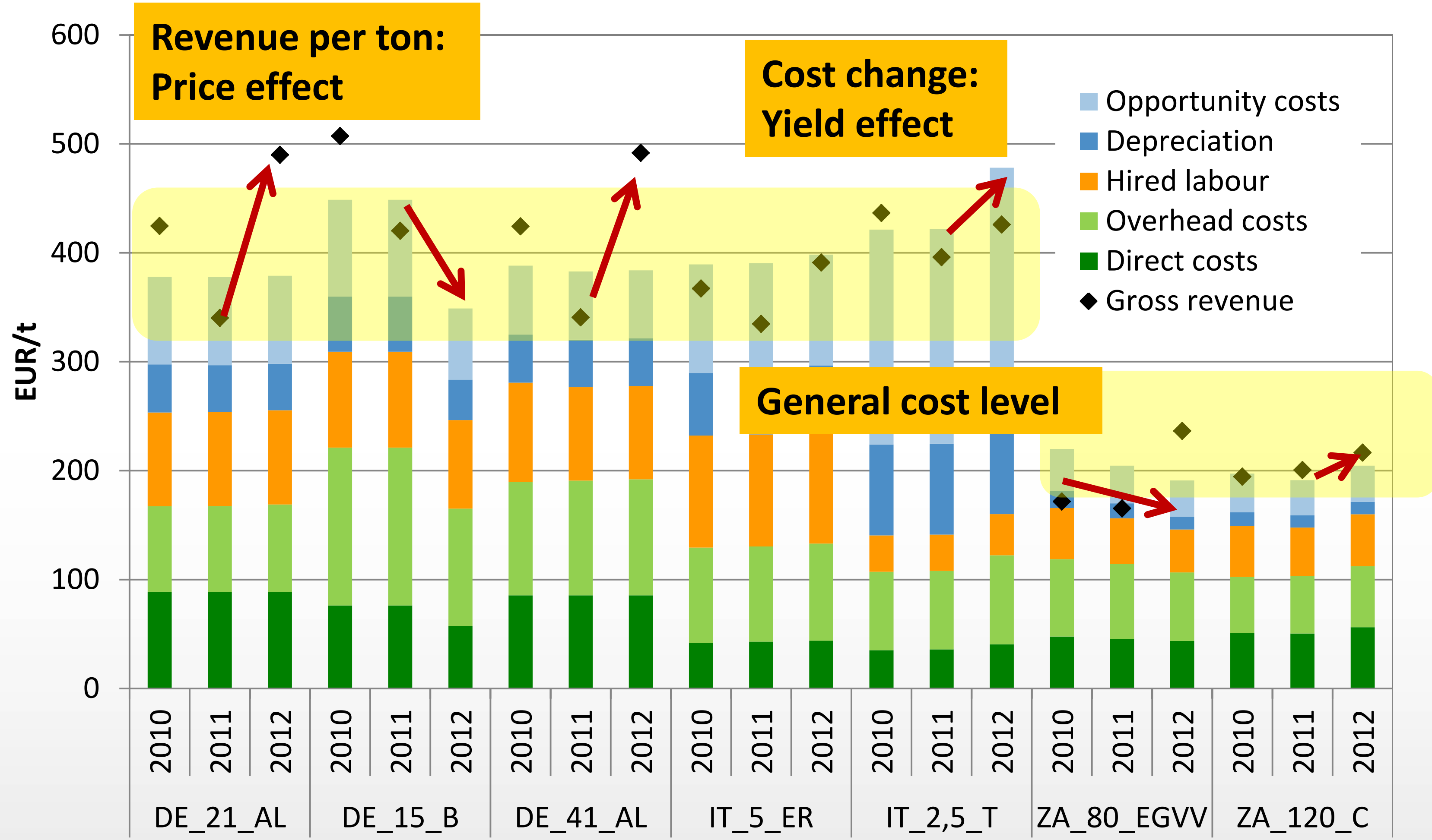
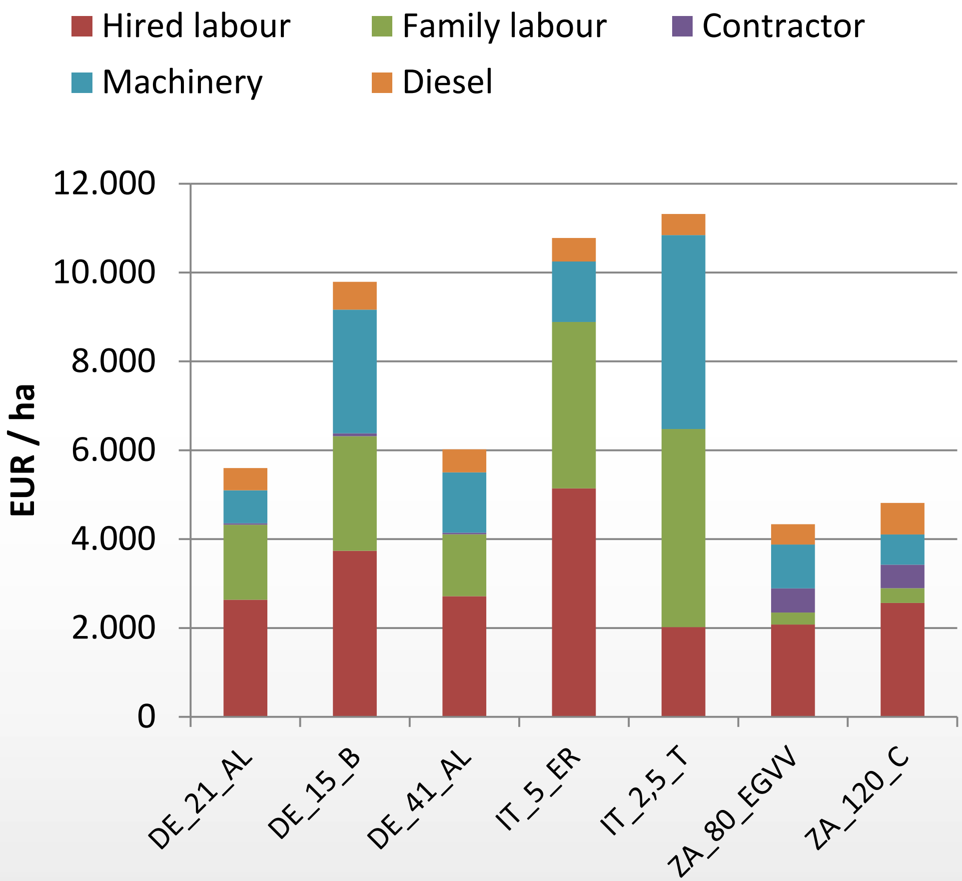
Costs and revenues per ton, 2010-2012



Source: *agri benchmark* Horticulture, 2013

Operating Costs, 2012 (EUR/ha)



Source: *agri benchmark* Horticulture, 2013

- Family labour important in Europe, particularly small farms
- Economies of scale for labour (management)
- Econmies of scale for machinery
- Low labour cost is major advantage for South Africa but will increase significantly in the next years

Conclusions

- Italy and Germany compete on German markets
- Differences in farm structures: Italy < Germany <<< South Africa
- Structural change towards larger farms in all countries
- Germany: advantage of efficient mechanization
- Italy: advantage of availability of family labour, high yields
- South Africa: advantage of low labour costs until 2012, high yields
- Differences in cost level, but similar levels of profits
- Labour costs as driving factor of structural change
- Farm level analysis contributes to explaining competitiveness
- *agri benchmark* Horticulture Network will grow – more countries, more years

Thanks for your attention

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www.agribenchmark.org

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