



Tomato – A new crop in *agri benchmark* Horticulture

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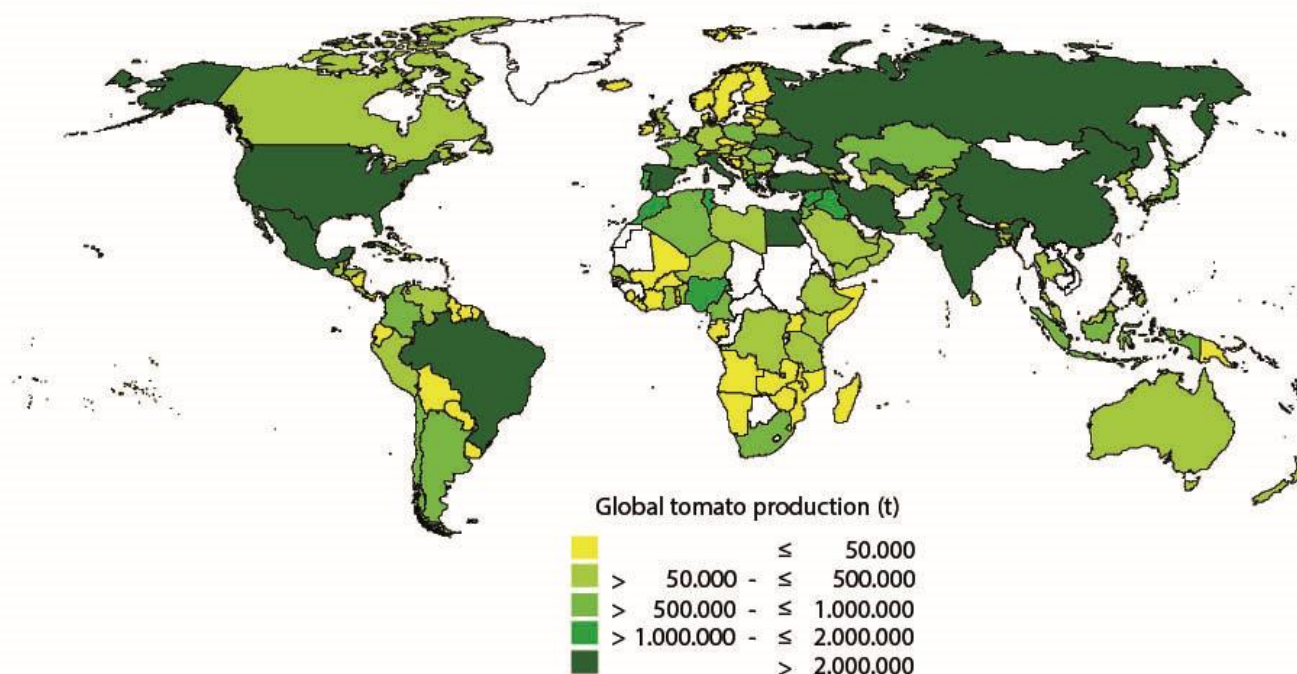
Thünen Institute of Farm Economics



San Michele all'Adige
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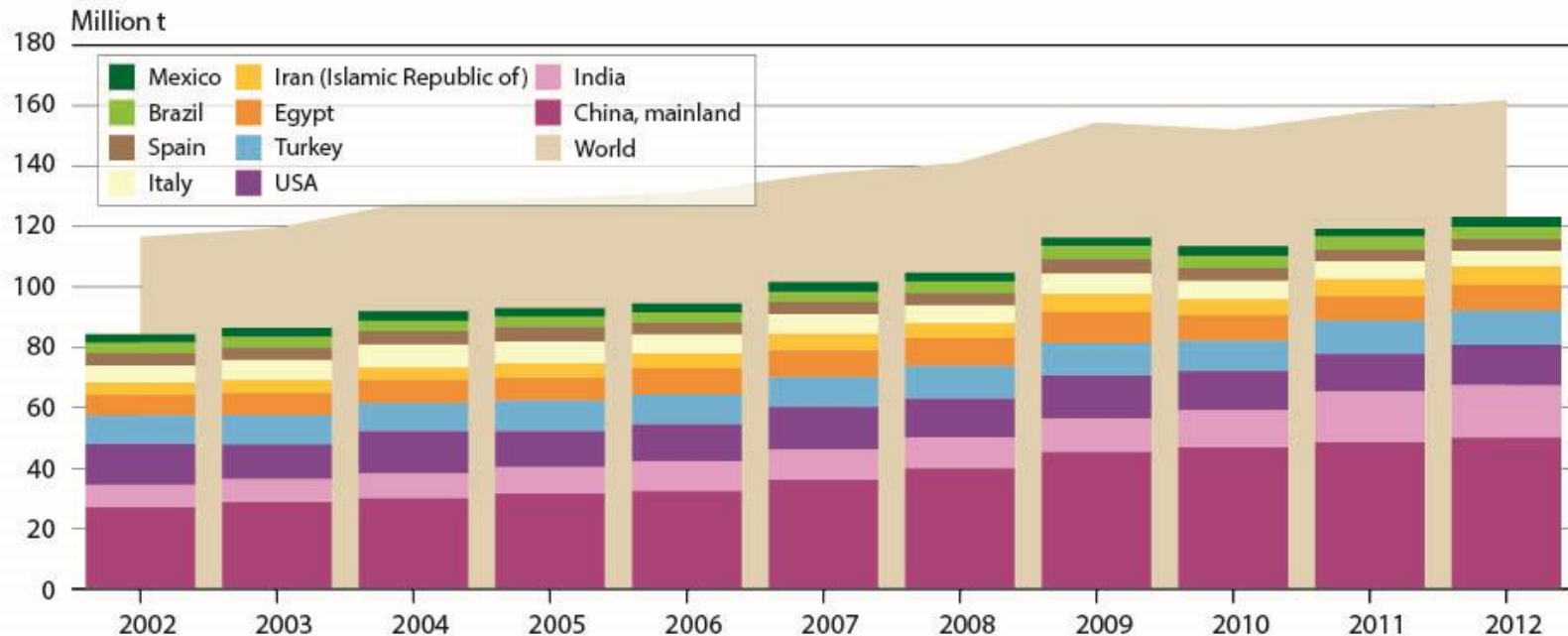
Global tomato production, 2011



Source: FAOSTAT 2012

| Country | (1 000) t |
|------------|-----------|
| China | 48.577 |
| India | 16.826 |
| USA | 12.625 |
| Turkey | 11.003 |
| Egypt | 8.105 |
| Iran | 6.824 |
| Italy | 5.950 |
| Brazil | 4.417 |
| Spain | 3.821 |
| Uzbekistan | 2.585 |
| Mexico | 2.436 |
| Russia | 2.201 |
| Ukraine | 2.112 |
| Nigeria | 1.505 |
| Tunisia | 1.284 |
| Portugal | 1.245 |
| Morocco | 1.236 |
| Greece | 1.170 |
| Syria | 1.155 |
| Iraq | 1.060 |

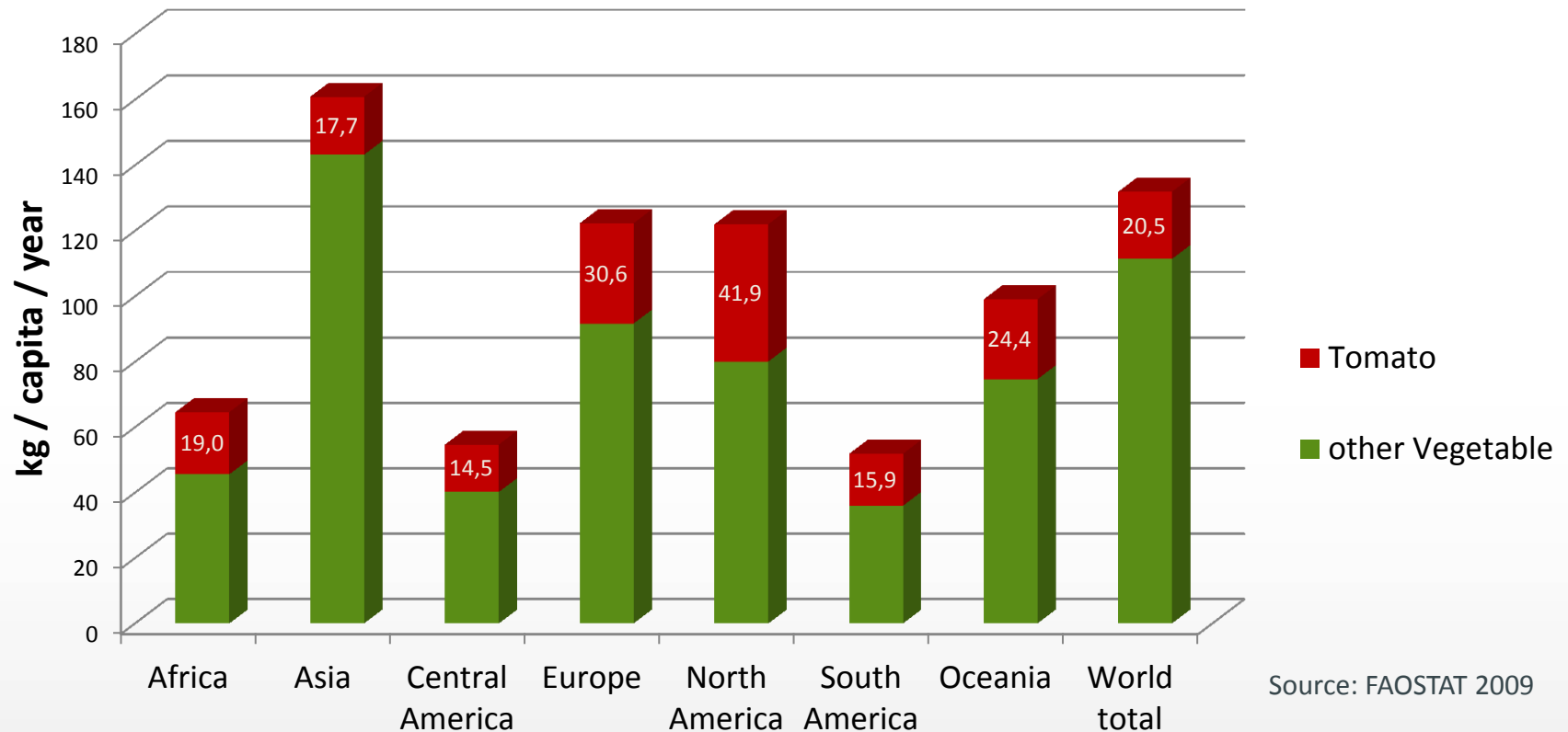
World tomato production and top-10 countries



Source: FAOSTAT 2014

- Tomato is the most important vegetable crop globally
- In only ten years, about 33 % growth in global production

Consumption of tomatoes and other vegetables, 2009

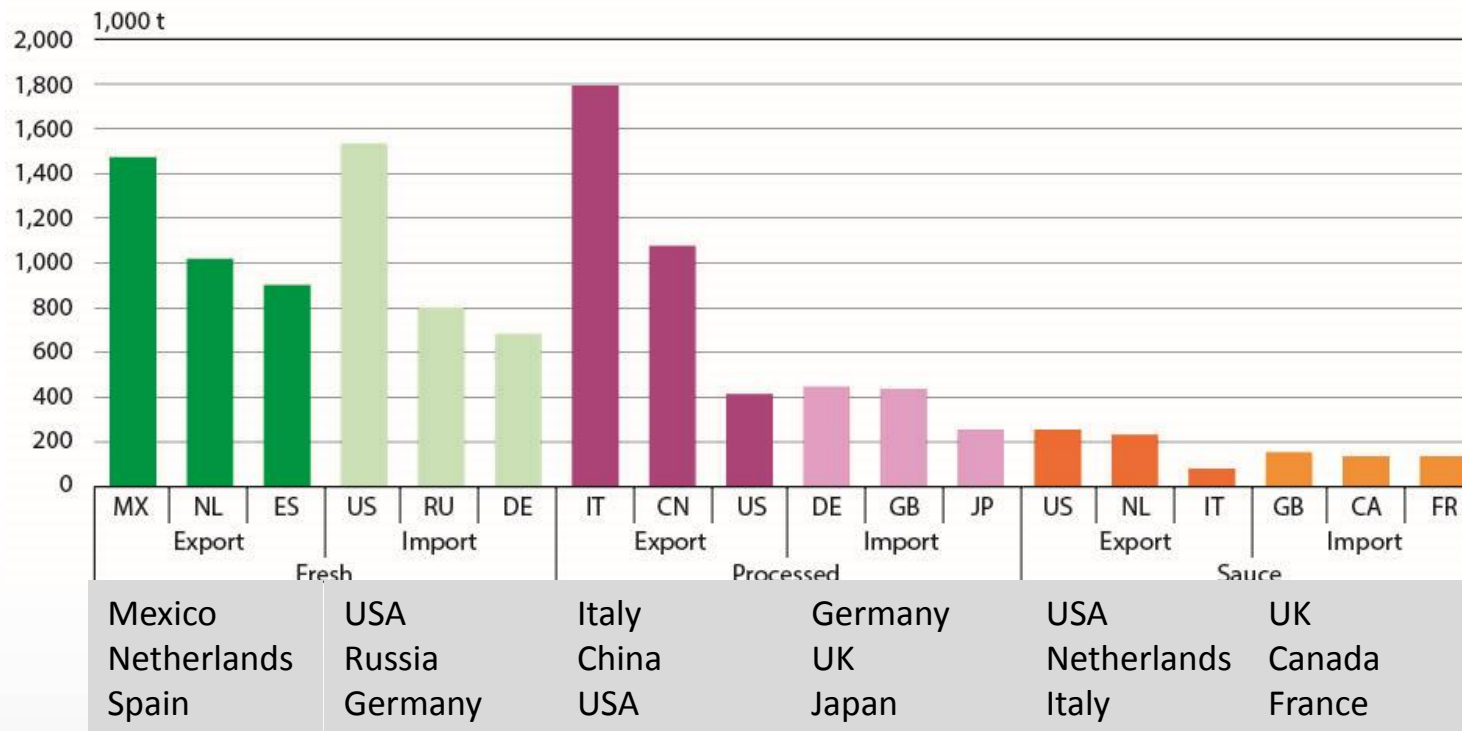


Source: FAOSTAT 2009

15 % of all vegetable consumption

In North America: 34 %; Africa & South America: 30 %; Europe & Central America: 25%

Top-3 exporting and importing countries for fresh, processed tomatoes and tomato sauce, 2012



Source: UN
Comtrade 2014

Netherlands: not in the top 20 producing countries but second largest exporter for fresh tomatoes

USA: World third producer and first importer of fresh tomatoes (export paste and sauce)

Tomato – the first vegetable crop to be included

- First typical farm established in Italy
- Contacts established in six more countries
- Differentiation between fresh tomatoes and tomatoes for processing

| | fresh | processing |
|----------|-------|--------------|
| Germany | x | |
| Italy | | Typical farm |
| Spain | x | |
| Portugal | | x |
| Algeria | x | (x) |
| Morocco | x | |
| Tunisia | (x) | x |



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Tomato production in Morocco



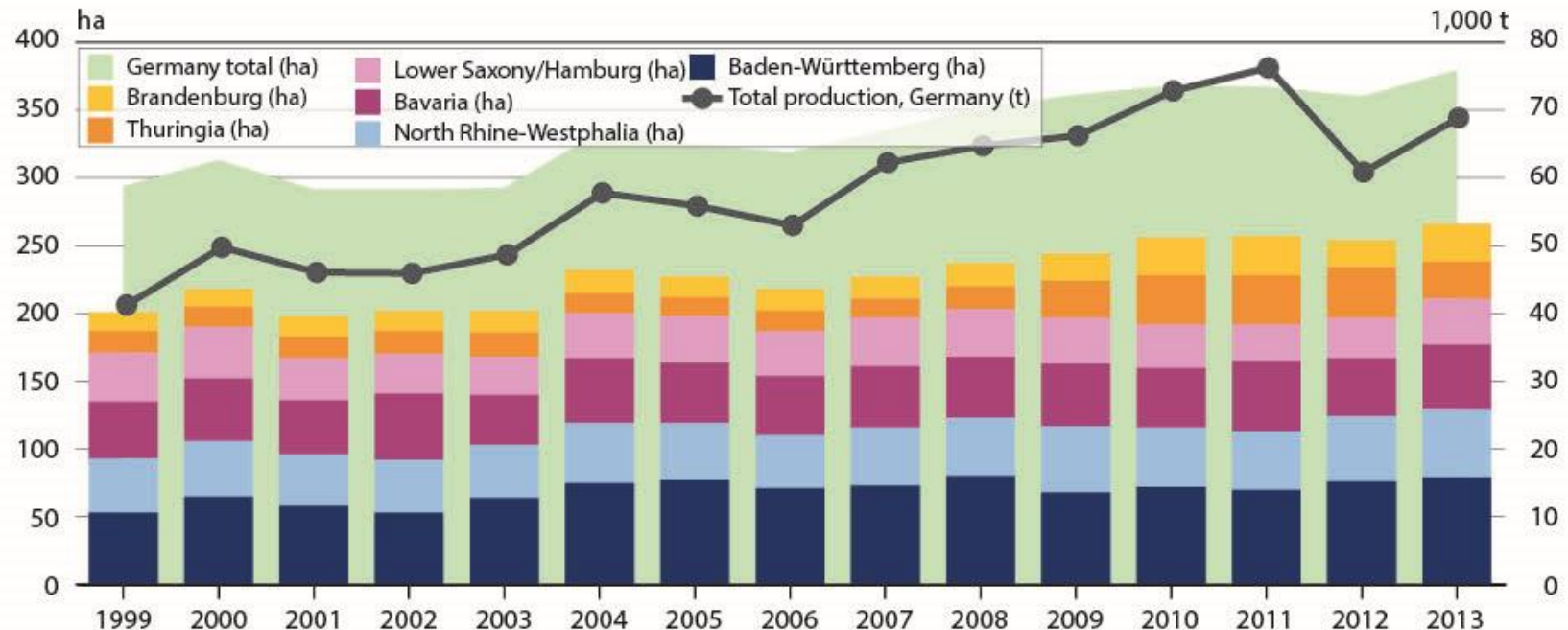
Tomatoes for export, Morocco



Fresh tomatoes
Greenhouse production in soil



Tomato area in Germany by federal state and total production, 1999-2013



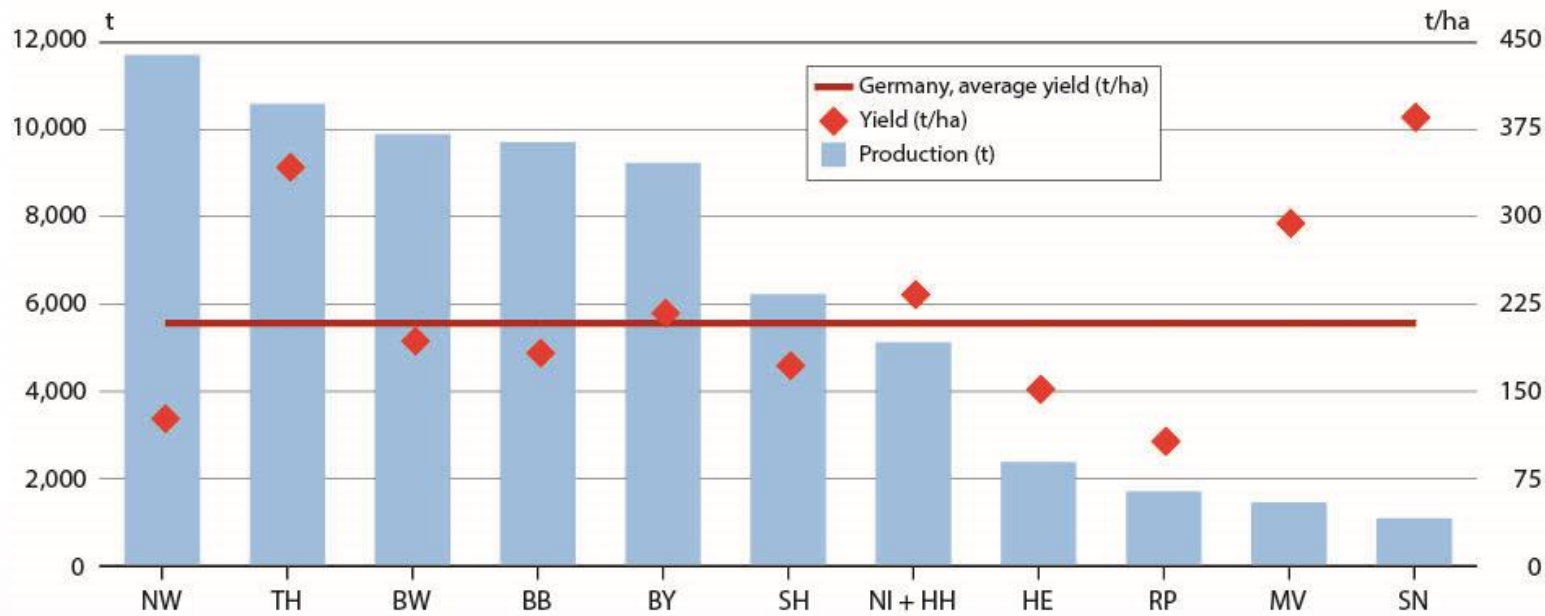
Source: Statistisches Bundesamt 2014

Only greenhouse production

Consumer preference for tomatoes from national production

Increase in production accelerated by EU subsidies to producer organisations

Tomato production and yields in Germany by federal state, 2013



Source: Statistisches Bundesamt 2014

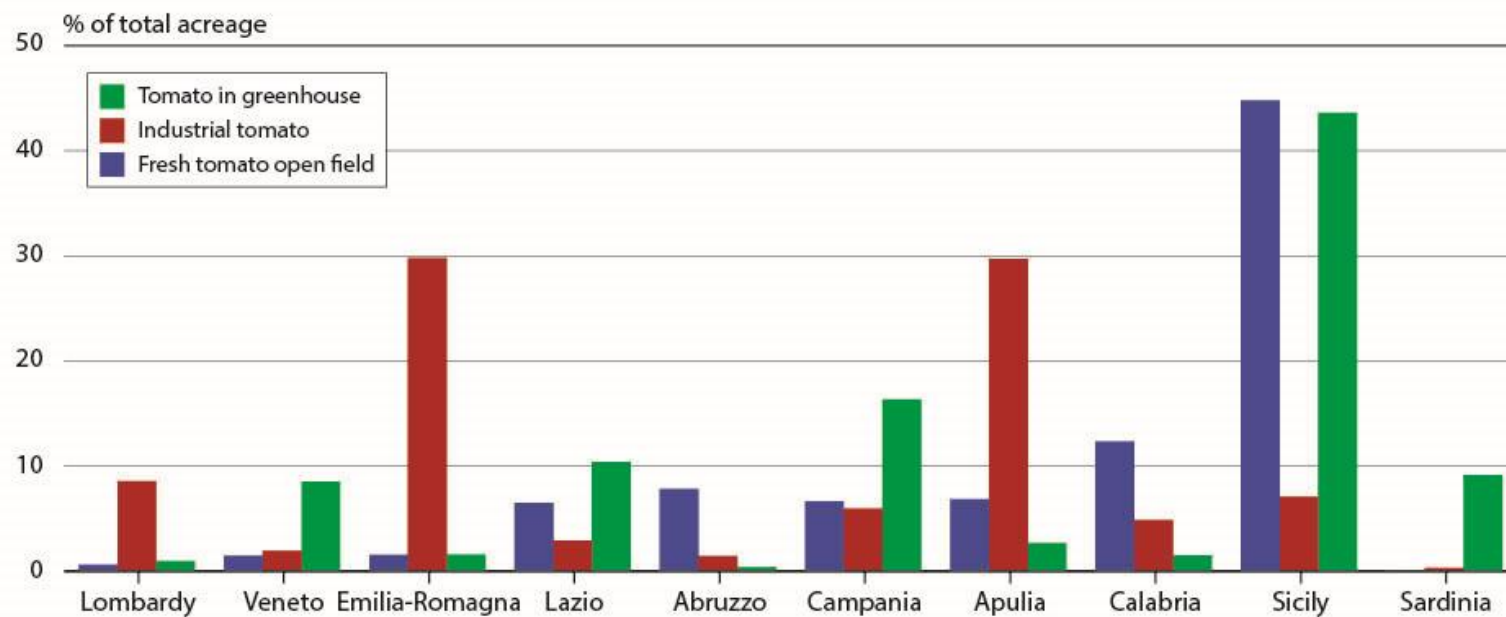
National statistics not fully consistent with federal state statistics → some uncertainty about yield levels in federal states

North Rhine Westphalia: border region to Netherlands (Straelen- Venlo)

Similar: technology, varieties, technical advisors, greenhouses

→ Strong competition

Tomato production systems in Italy by region, 2012



Source: Istat 2014

Rank 7 in global tomato production

Focus on processing tomatoes

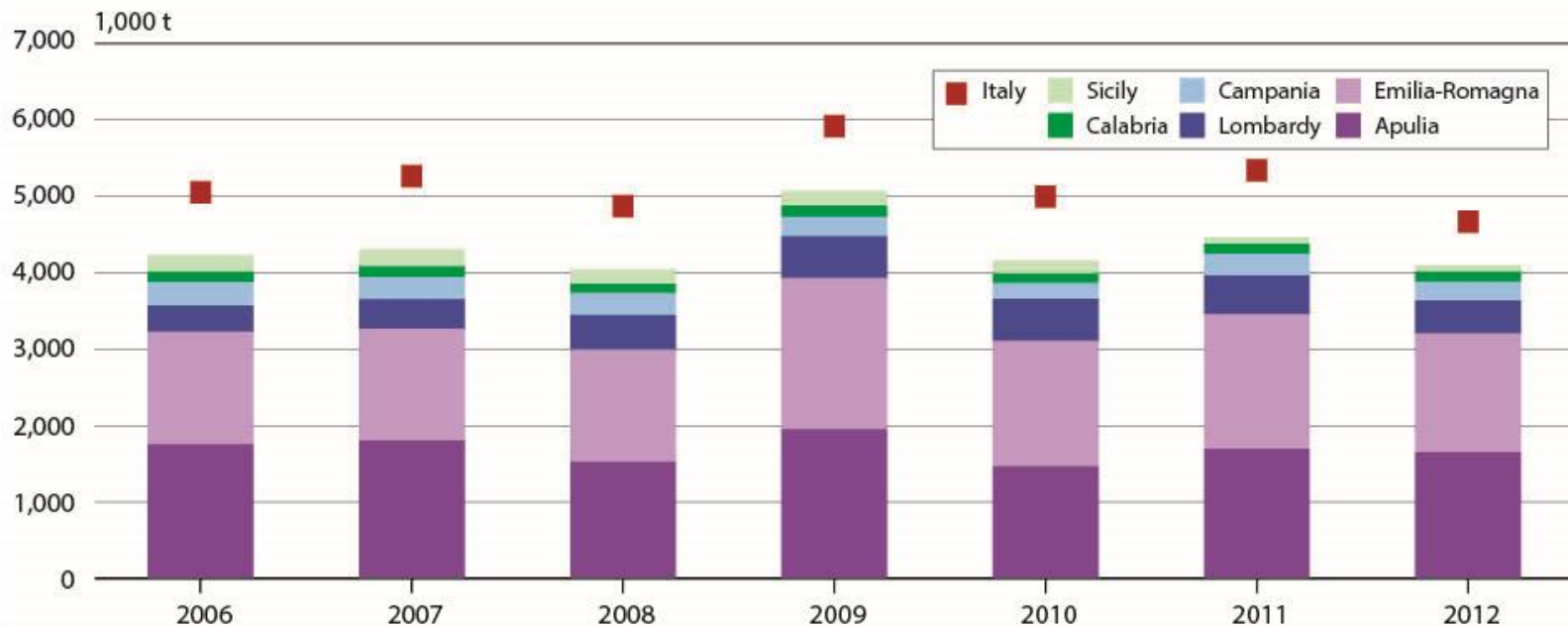
Clearly distinguished production regions and production systems (2012):

Greenhouse 6 360 ha

Industrial tomato 75 500 ha

Open field, fresh 16 300 ha

Production of industrial tomatoes by province in Italy, 2006-2012

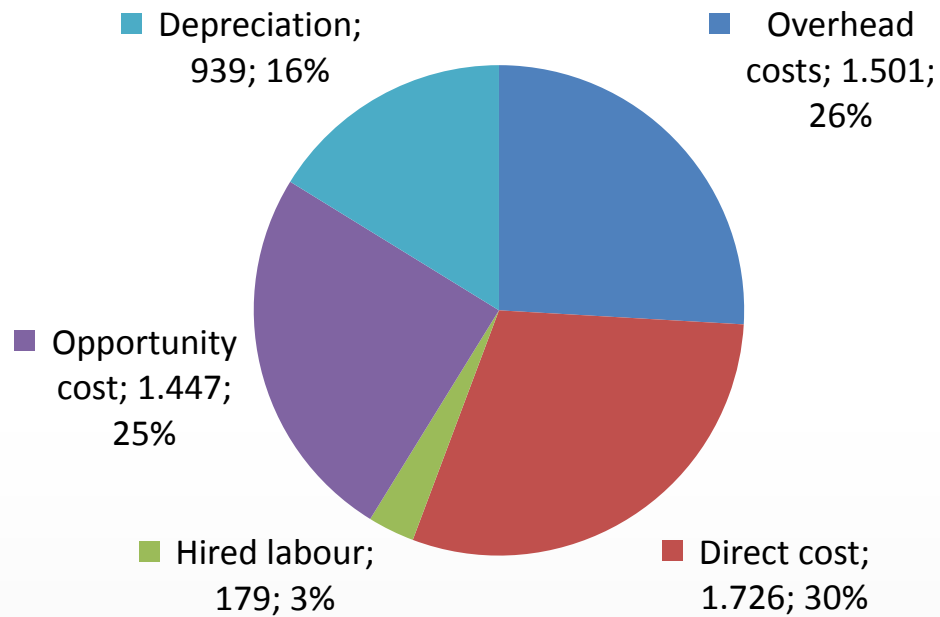


Source: Istat 2014

Factsheet typical Italian Tomato farm

| Region | Emilia-Romagna, Parma |
|---|---|
| Total farm size, ha | 92 |
| - tomato production, ha | 30 |
| - other crops (wheat, corn, sugar beets) ha | 62 |
| Yield on farm 2013, t/ha | 70 |
| Total production 2013, t/farm | 2,100 |
| Average use of plant protection products, EUR/ha | 766 |
| Average use of fertiliser, EUR/ha | 300 |
| Average rainfall, mm/year | 900 |
| Irrigated tomato fields (%) | 100 |
| Irrigation system | sprinkler |
| Legal form | Family farm |
| Decoupled payment, EU subsidies, EUR/ha | 1,200 |
| Subsidies (per farm) (e.g., for irrigation system, hailnets etc.), EUR/ha | / |
| Vertical market integration/marketing channels | Direct marketing to processing industry |
| Participation in private quality certification scheme | / |
| Family labour (hours per year) | 1,153 |
| Hired labour (hours per year) | / |
| Seasonal workers (hours per year) | 630 |
| Use of own machinery | Yes |
| Use of hired machinery / contractors / co-operative machine pool | no |
| Harvest | Mechanically with own harvester |

Profitability of Italian tomato farm, 2013



| Total costs | 2013 |
|-------------|-------|
| € per ha | 5.791 |
| € per tonne | 83 |

Planting of industrial tomatoes in Italy



Planting of industrial tomatoes in Italy



Production of industrial tomatoes in Italy



Production of industrial tomatoes in Italy



Production of industrial tomatoes in Tunisia



Production of industrial tomatoes in Tunisia



Production of industrial tomato in Portugal, 2009

| Production Zone | Tomato acreage (ha) | % | Production (t) | % | Average yield (kg/ha) |
|----------------------|---------------------|-------------|------------------|-------------|-----------------------|
| Alto Oeste | 0 | | 0 | | 0 |
| Baixo Oeste | 113 | 1% | 8 981 | 1% | 79 792 |
| Grande Lisboa | 2 314 | 17% | 207 406 | 18% | 89 646 |
| Península de Setúbal | 328 | 2% | 31 363 | 3% | 95 719 |
| Lezíria do Tejo | 7 172 | 54% | 625 903 | 56% | 87 264 |
| Baixo Sorraia | 3 373 | 25% | 245 708 | 22% | 72 847 |
| Médio Tejo Abrantes | 0 | 0% | 0 | | 0 |
| Médio Tejo Tomar | 94 | 1% | 3 113 | | 33 286 |
| All Regions | 13 393 | 100% | 1 122 473 | 100% | 83 812 |

Source: INGA-IFAP 2013

Harvesting industrial tomatoes in Portugal

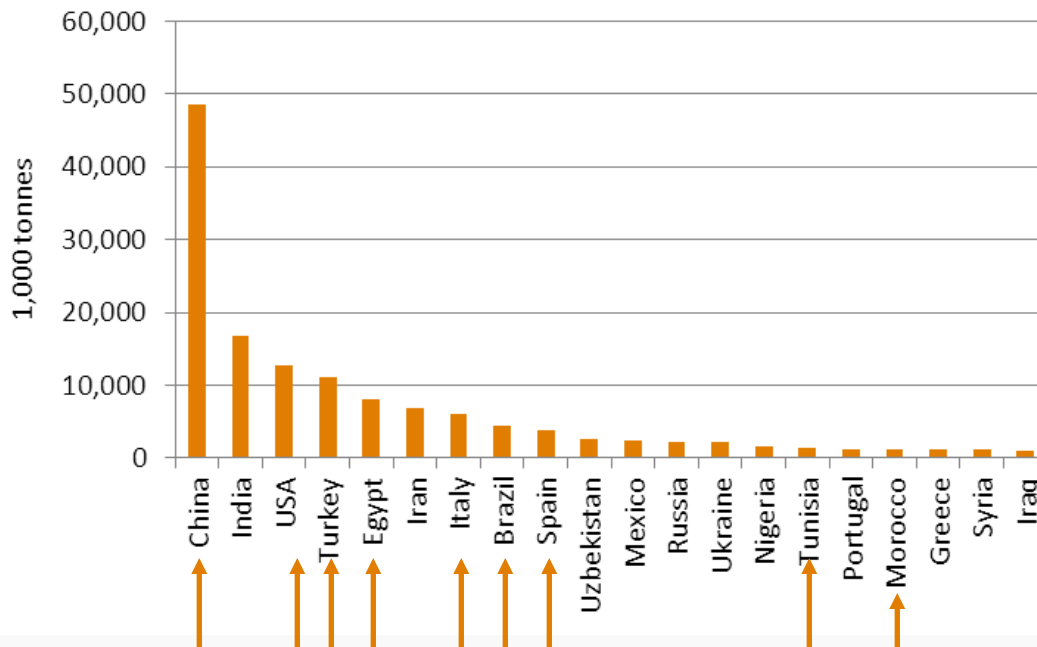


Harvesting industrial tomatoes in Portugal



Tomato - important countries globally

Tomato production in 2011 - 20 top countries



Source: FAOSTAT 2013

Focus for network establishment

Germany, Netherlands, China, USA, Turkey, Italy, Brazil, Spain, Tunisia, Morocco, Egypt, ...

Tomatoes - next steps

Tomato is extremely interesting for benchmarking!

- Large and growing market
- Grown in large diversity of climates and growing conditions
- Large diversity of production systems but competing in the market (think of fresh tomato exports from Mexico, Netherlands, Spain!)
- High value crop, availability of production technology
- Increase productivity of scarce resources water, land, labour

Next steps:

- Establish typical farms in Tunisia, Algeria, Morocco, Germany
- Follow-up with partners in Portugal (focus country of Fruit Logistica, 2015), Brazil
- Visit to Spain (University of Almeria) in October 2014
- Search for partners in USA, Turkey, Egypt, Netherlands, Mexico and China