Croatian Fruit and Vegetables Sector at a Crossroads

Opportunities for improving competitiveness

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Outline of the Presentation

- Overview of the F&V sector
- The value chain
- Business environment
- Good examples and opportunities
- Conclusions and recommendations

Overview of the F&V Sector

- Production
- International trade
- Consumption
- 6 specific products
  - Tomatoes
  - Cabbage
  - Garlic
  - Apples
  - Mandarins
  - Sour cherries

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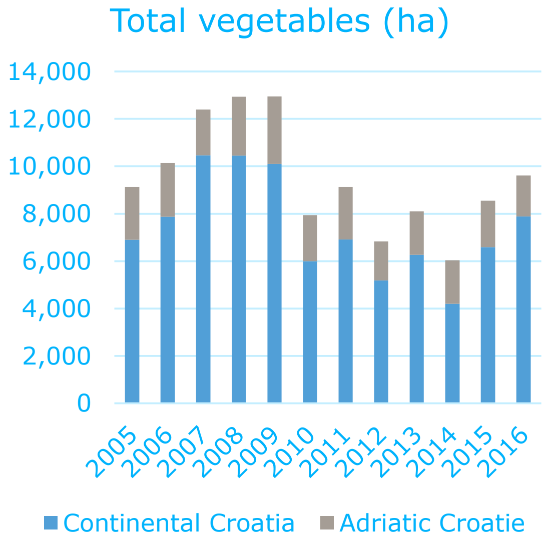
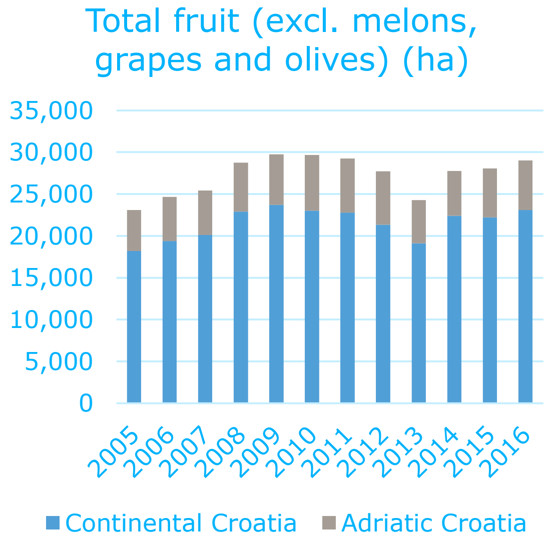
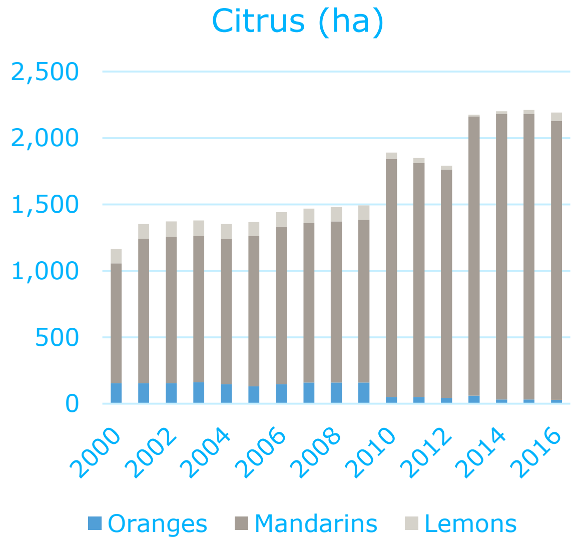
Production Area

- Total production area:
  - vegetables 9,618 ha
  - fruit excl. melons 29,452 ha (excl. grapes, olives)
  - citrus fruit 2,192 ha



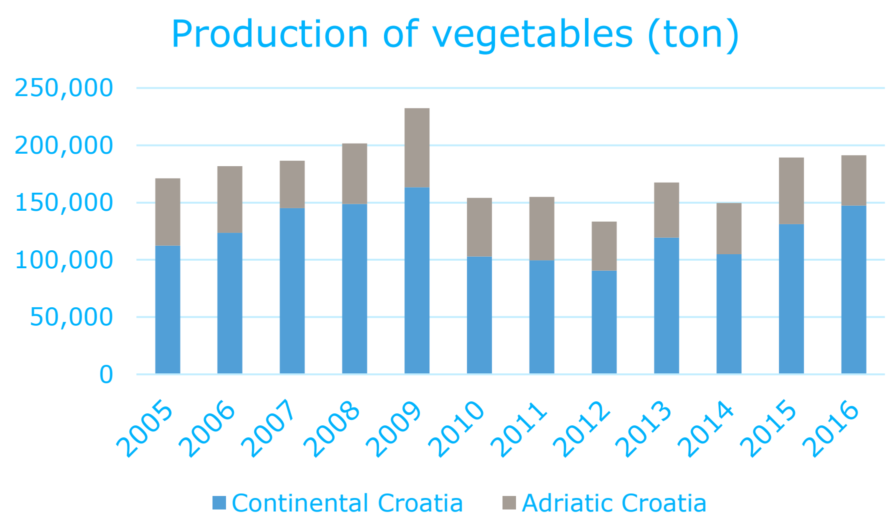


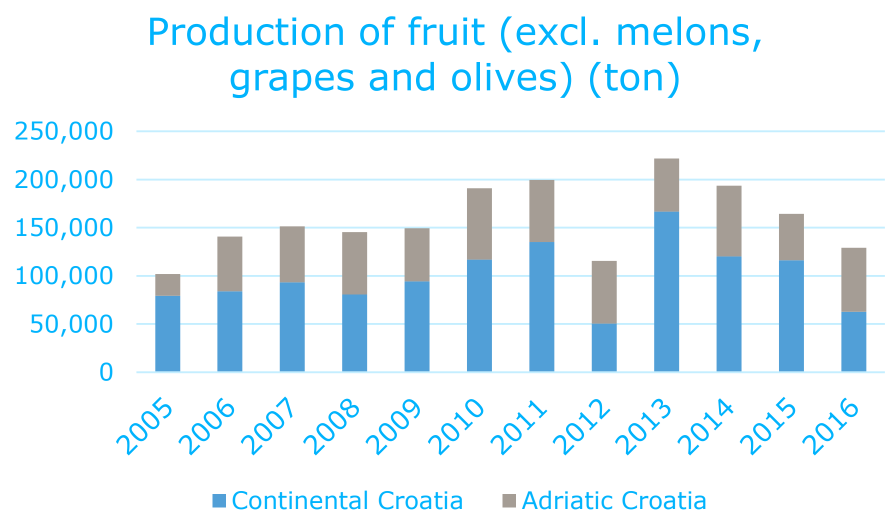


Source: Croatian Bureau of Statistics

Production Volume

- 70% production of vegetables in Continental Croatia
- Substantial decrease of volume of vegetables in 2009-2010. Increasing volume since 2015
- Fruit production is fluctuating. Frost damage in 2012, 2015, and 2016





Source: Croatian Bureau of Statistics

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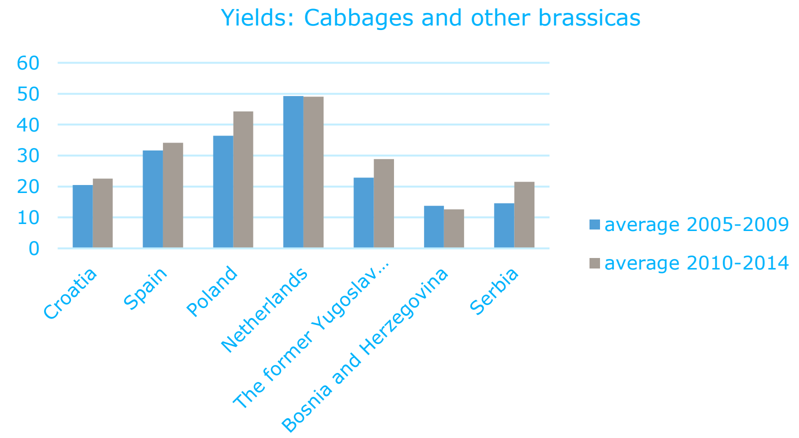
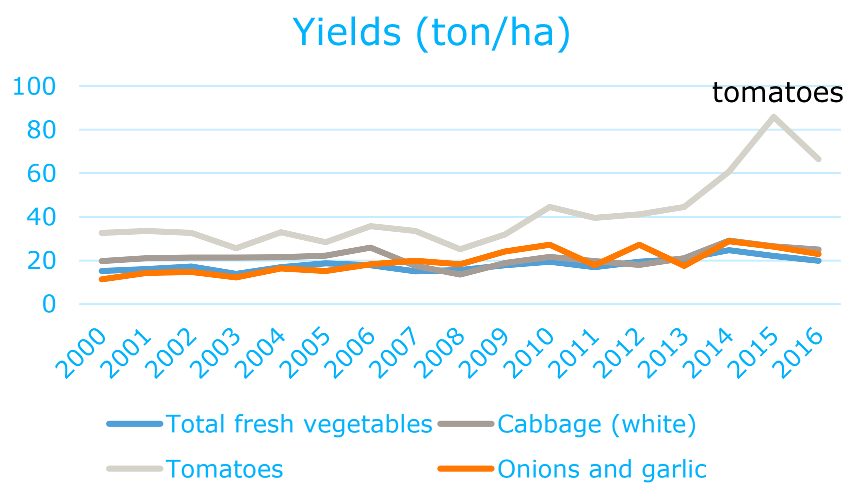
Yields

- Yields are lower than in most competing countries
- Exception mandarins, garlic
- Yields increased for most products. For tomatoes 133% between 2005 and 2016
  - greenhouses
- Onion yields also increased. Apples and mandarins seem to have increased, but harvests continue to be very much fluctuating per year



Source: FAO



Source: Croatian Bureau of Statistics

International Trade

(2015-2016)	Production (ton)	Import (ton)	Export (ton)	Self-sufficiency (%)
Tomato	33,270	12,193	5,606	83
Cabbage	35,873	5,454	1,808	91
Onions and garlic	30,561	18,459	3,419	67
Apples	73,164	18,802	27,051	113
Mandarins	43,764	6,882	30,632	219
Cherries, sour	6,881	27	1,931	138

- Self-sufficiency is high for mandarins and has increased above 100% for apples and sour cherries
- Mandarins and apples are export products. Exports of other products lower but increasing
- Price pressure from Russian imports ban

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Source: ZDS and Eurostat, calculations WUR

F&V Consumption Trends in Europe

- Consumption in the EU is relatively stable
- The highest consumption rates for fresh fruit and vegetables are in the east and south of Europe
- At retail level there is competition on price, volume and adherence to strict rules and regulations
- Differentiation possibilities on added values like quality, taste, sustainability, convenience (ready-to-eat) and other niches
- Product requirements (Food safety) are already higher in large retail than the official EU requirements

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F&V Consumption in Croatia

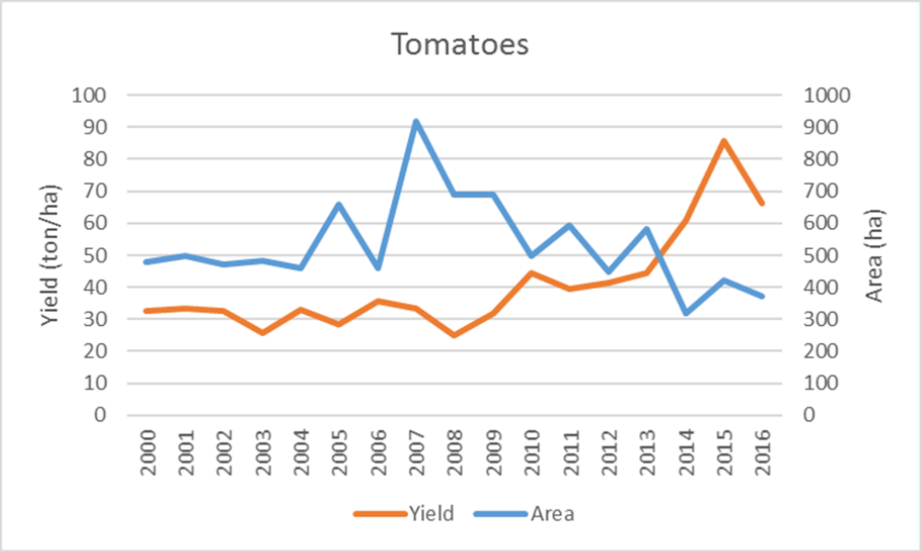
- 72.5% of Croatian population eats F&V daily. 65% eats 1 to 4 portions a day (EU average = 51%)
- Vegetables is 3.3%, and fruit 1.9% of yearly household spending
- Relatively large part of budget on food (30% compared to 12% EU average)
- Preference for locally grown products
- Croatia is a price sensitive market
- Domestic and neighbouring economies are expected to grow -> increase in consumption

Crop Specifics

- Tomatoes
- White cabbage
- Garlic
- Apples
- Sour cherries
- Mandarins

Tomatoes

- Production 33 kton
- Self-sufficiency: 83%
- Imports 12 kton, exports 6 kton
- Area decreased since 2007
- Yields improved to 65 ton per ha
- For fresh consumption and processing



Source: Croatian Bureau of Statistics

White Cabbage

- 1,150 ha, production 36 kton, yield 24 ton per ha; 80% of production in Continental Croatia
- Grown in crop rotation (e.g. potato, grain, onions)
- Most local market supply, 2-3% exported fresh
    - Processing: Sauerkraut industry (home market), delivery on contract
- Varaždin (October 2017) and Ogulin (August 2015) sour cabbages have received EU protected designation of origin (PDO)



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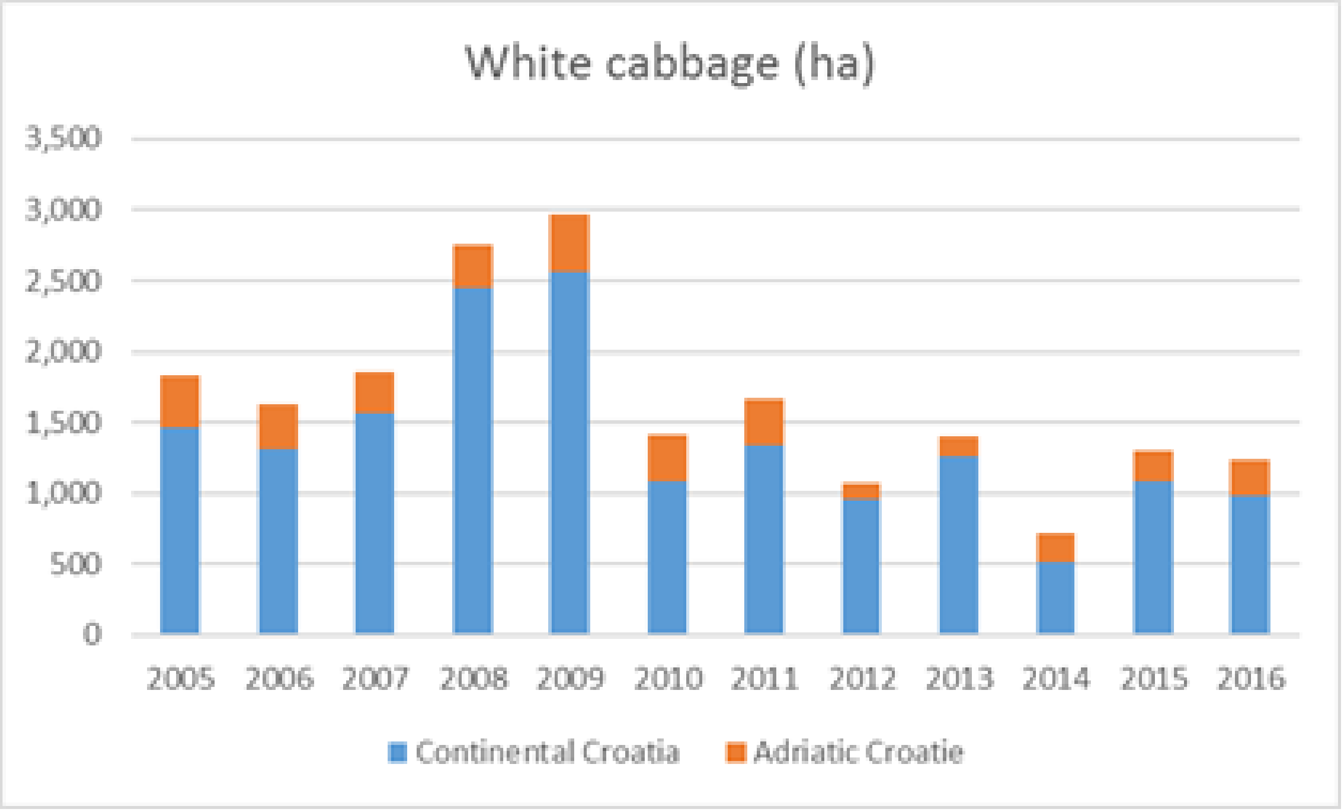
White Cabbage: area (ha)



Source: Croatian Bureau of Statistics

Garlic

- Specific variety (Allium sativum L.) with full flavour and preservability
- Production 5 kton per year
- 77% self-sufficiency, hardly any export
- Yield 10 ton per ha: good compared to competing West European countries
- Good revenues
- No big changes in yield and area

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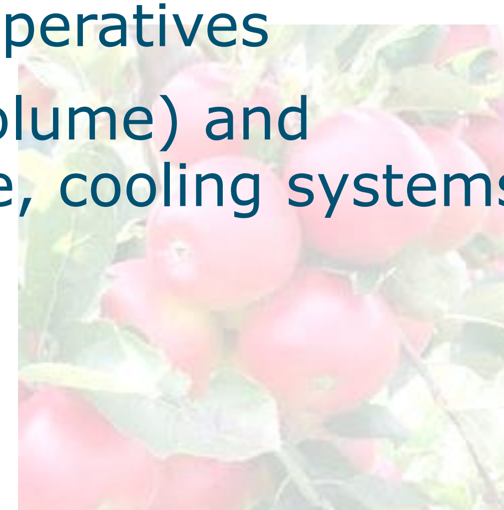
Apples

- Apple production region: Continental Croatia
- Production: 70-90 kton, 113% self-sufficiency
- Export 27 kton, import <20 kton
- Yield: 10-20 ton per ha. Low compared to EU-countries
- → prevent frost damage in the blossoms (e.g. spraying water)
- Successful producer organizations/cooperatives
    - Storage: lack of cooling (more volume) and modernisation (long term storage, cooling systems)
    - Marketing: export
- Risk: subsidy stop on school fruit



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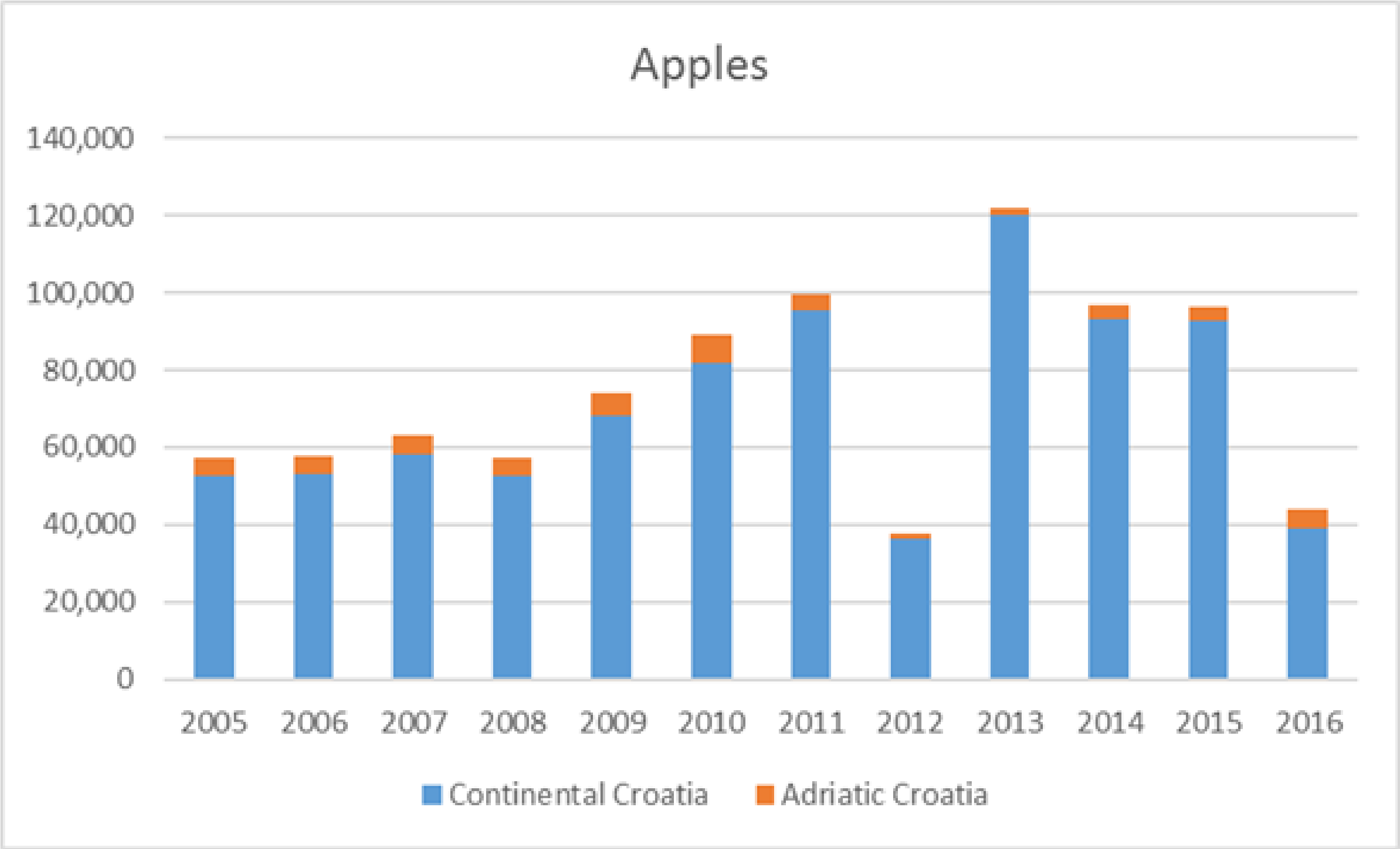
Apples: production (ton)



Source: Croatian Bureau of Statistics

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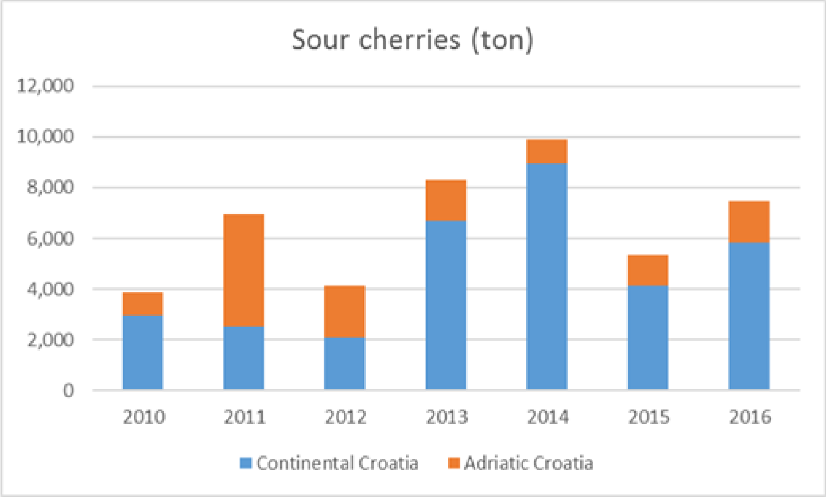
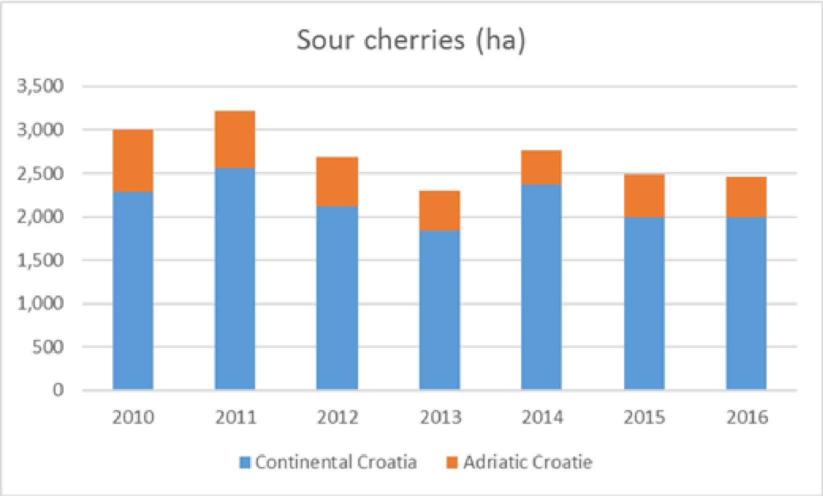
Sour Cherries

- Production 7 kton per year, strongly varying
- 138% self sufficiency
- Little international trade
- Low yields: 3 ton/ha
- Processing industry; Maraska: produces alcoholics and non-alcoholics. Successful on export markets worldwide





Source: Croatian Bureau of Statistics

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Mandarins

- Specific variety Satsuma: juicy, early
- Adriatic south: region Neretva valley. Good climatic conditions
- Production 44 kton2,100 ha mandarins; yield 25 ton/ha (20 <-> 30 ton)
- Import: 7 kton; 50-70% of production exported: neighbouring countries
- Self sufficiency: 219%
- High yield per ha compared to EU (decreasing slightly last years)
- Many small, part-time farmers

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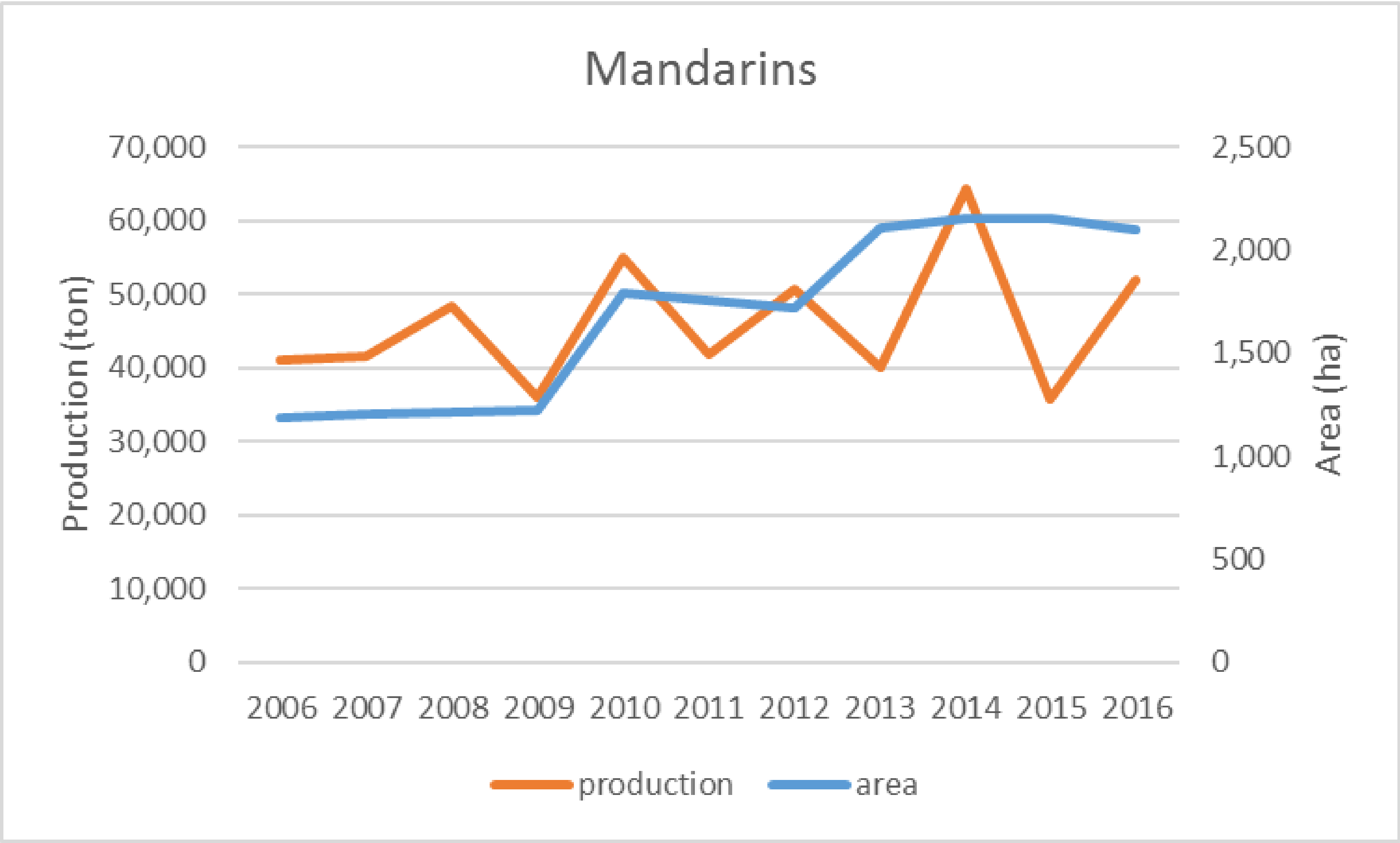
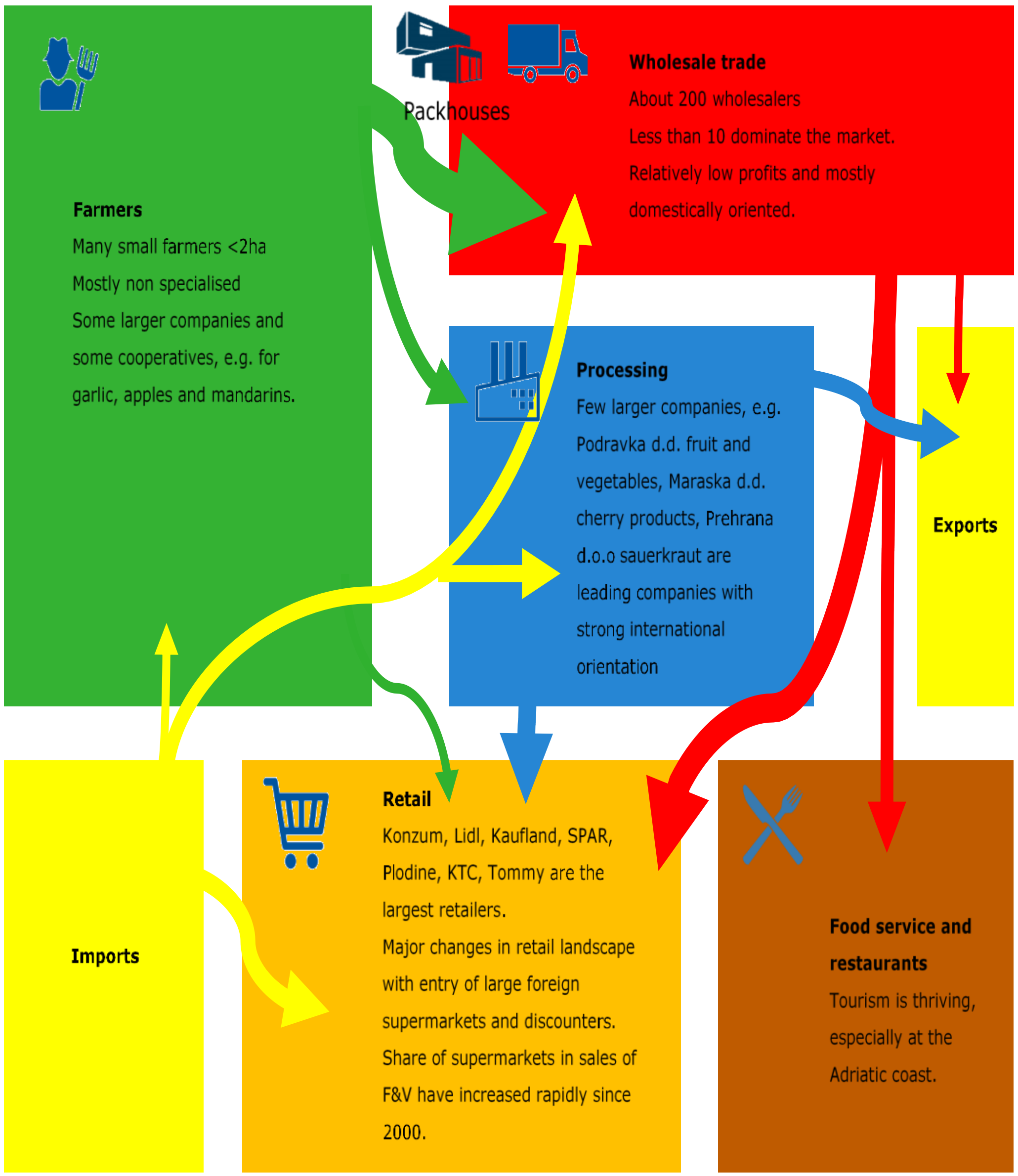
Mandarins: production (ton) and area (ha)



Source: Croatian Bureau of Statistics

The Value Chain

- Farmers
- Wholesale
- Processors
- Retail
- Cooperation



The Value Chain - Farmers

- Many small and unspecialised farms
- Smaller than competing countries like Greece, Italy, Spain and Poland. Particularly for fruit
- Family farm income per farm working unit for F&V farmers is lacking behind competing countries
- The number of farms is falling and this is especially true for smaller farms

The Value Chain - Wholesale

- 194 companies specialized with 244 mln euro turnover
- Larger companies dominate the market
- Wholesale profitability low with average profit margin fluctuating between -0.4 and 1.3% in past 5 years
- Agrokor financial difficulties
- Different types of supplier-buyer relationships and contracts

The Value Chain - Processing

- Most processed fruits and vegetables are imported
- Domestic food processing companies Ledo d.d. (Agrokor group) and Podravka d.d. are leading
- Some strong export brands (e.g. Podravka, Maraska)
- The growth of some processing companies has given a boost to individual farming in regions where processing facilities are located
- Processors want efficient methods of raw material supply (contract farming, integration, import)

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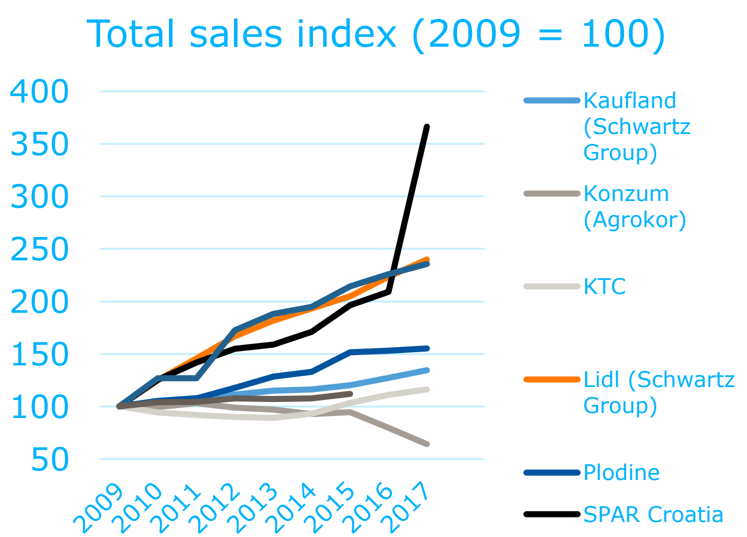
The Value Chain - Retail

- The food retail sector in Croatia has changed: market share retail increased to 70% (2000: 25%)
- Trend: market share foreign retailers increases
- Retail buys local and also imported F&V, depending on seasonality and price. Croatian F&V suppliers have to compete with foreign ‘colleagues’/competitors



Retailer	2017 market share
Agrokor (Konzum)*	20.3%
Schwarz Group (Lidl and Kaufland)	14.3%
SPAR International	8.3%
Plodine	6.6%
Tommy	3.9%
KTC	2.4%

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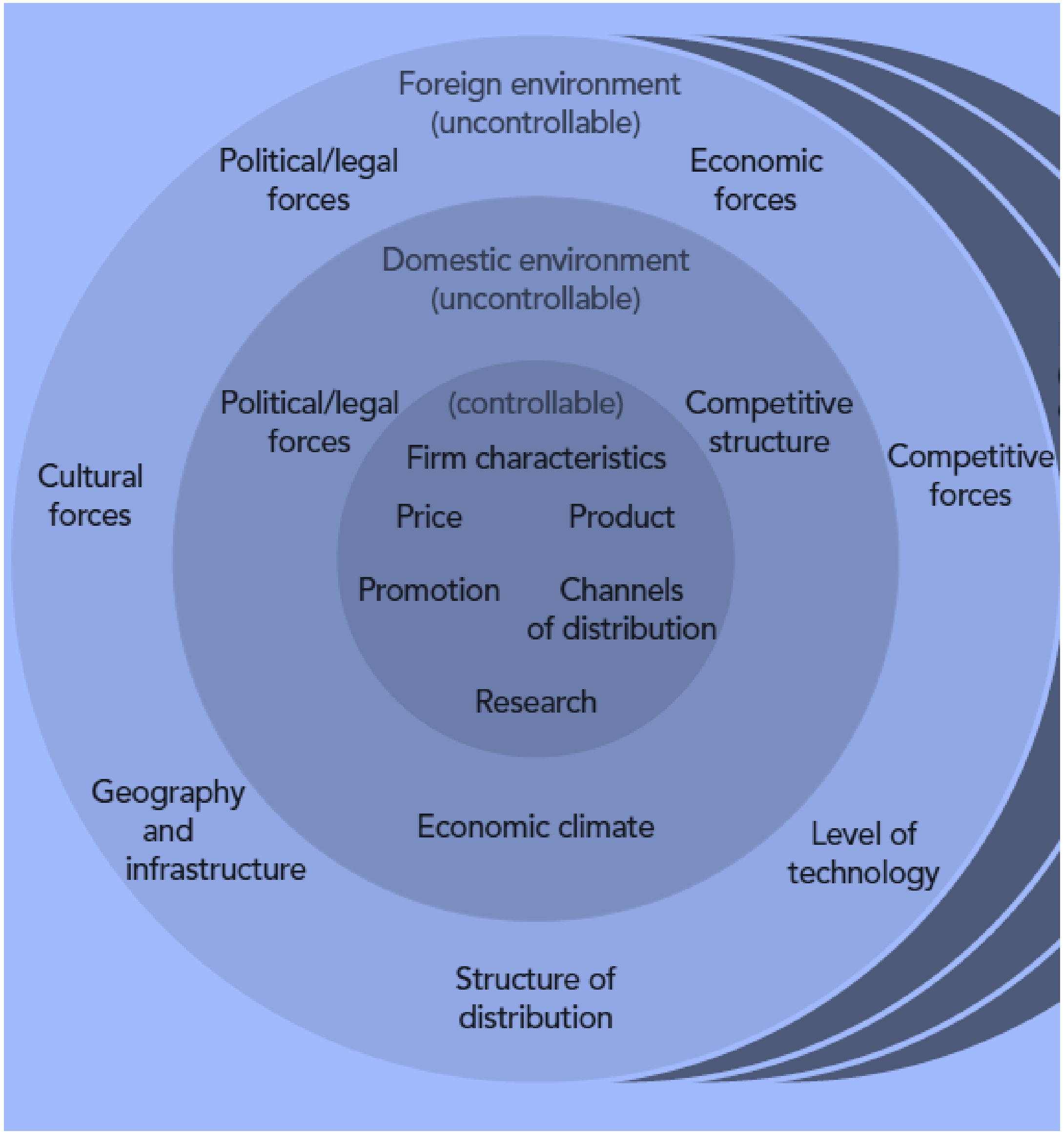
Source: IGD Retail Analysis

The Value Chain - Cooperation

- In 2016 there were 1,302 cooperatives in Croatia, of which 41% was active in agriculture. In 2012, 276 cooperatives were active in crop production
- In comparison to the other EU Member States the market share of cooperatives is very low
- A need for a stronger position of branch organizations and cooperation between companies, government and knowledge institutes
- Chain management and direction (Agrokor, processors, large wholesalers, supermarkets)

Business environment

- Economic climate
- Climate, land and labour
- Related and supporting industries
- Enabling environment



Economic Climate

- GDP per capita (current prices) has grown with 96% between 2000 and 2016 (average EU28 = 54%)
- The growth of tourism brings opportunities to all its supplying sectors, including agriculture and food

Inbound tourism in Croatia, bln. euro

	1995	2000	2005	2010	2011	2012	2013	2014	2015	2016*	2016*/2015
Inbound tourism in Croatia, bln. euro	1.0	3.0	5.9	6.1	6.7	6.8	7.2	7.4	8.0	8.7	8.5%

Source: UNWTO, 2016 http://www.e-unwto.org/doi/pdf/10.18111/9789284418930

- There are some good entrepreneurial initiatives, and flagship initiatives like Young Farmers Association. Room for innovations

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Climate, Labour and Land

- Good climatic conditions
- Rural areas faced outgoing migration of the population due to the fact that many surface areas were under land mines and have low profitability of production
- Croatia is rich in water. Only a small part of agricultural land requires irrigation and is covered by some kind of irrigation system
- Many small farm employees are family members, often with main employment elsewhere
- Competition for labour (other sectors, countries)
- The slow privatization of state-owned agricultural enterprises in the past has contributed to large areas of uncultivated agricultural land

Related and Supporting Industries

- Advanced technology for fruit and vegetable production is available (sometimes from foreign providers) but often not used (yet) due to small farm size and lack of money
- Croatian government plans to invest about $250 million each year through 2020 in the construction of broadband internet and ICT development in rural areas
- Croatian road infrastructure is well, railroad and air transport infrastructure scores less.
- Raw materials for agriculture can be bought at domestic providers but are relatively expensive

Enabling Environment

- For the domestic market GLOBALG.A.P. is not required by all large retail yet, from next year (2018) it is
- The Quality of Innovation shows Croatia underperforms on R&D collaboration between industry and universities (114 out of 138 countries, WEF survey)
- The credit information system and collateral and bankruptcy laws in Croatia do not grant easy access to credit
- Doing business: ‘starting a business' and ‘dealing with construction permits’ are particularly troublesome for (foreign) investors

Good Examples & Opportunities

- Slavonian apple cluster
- Young cabbage farmer
- Baranja ''Slavonski češnjak/Slavonian garlic''
- Osatina Grupa
- Podravka d.d.
- Tasty Tom
- KANZI
- Public-Private cooperation

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Example Slavonian Apple Cluster

- Arable farmers who successfully changed over to apple growers. Unexperienced in apple production before
- Supply knowledge:
  - Went to Netherlands, Austria and so on to learn. Involved people from institutions
- Large quantities available due to cluster cooperation. 80% first and second class apples
- Risk-management farm level: diversification. Not only apples but also other fruits and nuts
- Export opportunities depend on supply, varieties and period (increase volume, improve storage facilities)
- Frost years and debtors postpone investments (lack of cash) → support on investment

Example Young Cabbage Farmer from Dubrovnik Region

- Example young farmer (entrepreneur), 50 employees, agronomist
- Good potential in winter cabbage; different season compared to France and Netherlands
- Selling of products: it is more easy to sell if you are bigger and have more products
- Wants to export cabbage to Poland
- Visited fairs (Fruit Logistica) and seed supplier (BEJO Netherlands)

Example Slavonski Česnjak

- Association of garlic producers of Slavonia and Baranja ''Slavonski česnjak/Slavonian garlic''
  - ≈300 members, small producers
  - Support: education, advisory, marketing, branding (2 domestic brands), promotion on local markets/fairs, seed, packaging, meetings
- Local garlic variety: special taste which Croatian consumers prefer
- Trading area: local market, retail, no export
- Selling centralized, not individually
- Export needs volume and further professionalization

Example Osatina Grupa

- Tomato production in modern greenhouses (e.g. cherry and cocktail tomatoes)
- Circular economy: smart mix of horticulture, arable farming, livestock and biobased (biogas)
- Focus on exports and large supermarket chains

Example Mandarins Opportunities

- Extend season: e.g. late varieties, storage
- Knowledge of citrus growing, good climatic conditions (South Adriatic)
- Adriatic region: touristic region. Introduce tourists to fresh Satsuma's during season (e.g. hand out samples in Dubrovnik tourist area)
- Export Satsuma to Western Europe (e.g. Germany, UK) and also Russia after removal of the ban.
    - Do European consumers prefer Satsuma taste?
- Processing: juice, jams, distillation
- Improve farm management, entrepreneurship and cooperation
    - A specific action plan for small, part time farmers

Example innovation & Cooperation Tasty Tom (NL)

- Crash Dutch tomato export (export Germany): ‘Wasser bombe’
- Incentive for cooperation growers–seed supplier association: developed a new tasty tomato variety (1995)
- Joint venture: protected variety name and concept ©®
- Introduced brand Tasty Tom; tasteful tomatoes grown by 6 growers (niche)
- Diversification market fresh tomatoes e.g. cherry tomato, snack tomato, vine tomato, different colours and shapes,
- Successful come back export to Germany

Example innovation & cooperation KANZI ®

- Club breeds are placed under the brand name in a tight club concept and may only be grown and sold by members of the club. **KANZI ® is one of the most successful examples**
- Part of the harvest of **KANZI ®** does not meet the strict quality requirements and is sold under a different name or immediately processed
- Unlike the old free breeds like Elstar, the consumer on the shop floor is less frequently surprised with apples that have the same brand name but may differ in quality day and night

"With the best apples, the farmer does not earn money"

https://www.kanziapple.com/en/

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Example Public – Private Cooperation

- The Dutch county 'Zuid-Holland' participates in a project of enterprise Koppert Cress for storage of heat in the subsoil
- Goal: reduce CO2 emissions by about 50%
- The partnership will be undertaken to complete the two-year pilot at Koppert Cress in the next three years with the help of an innovation subsidy from the Ministry of Economic Affairs
- To realize a climate-resistant county, CO2 reduction is needed. The greenhouse vegetable sector can make a significant contribution by storing high temperature water in the subsoil

Knowledge & Experience

- Focus on exchange: Croatians growers visiting other (EU) countries for a longer period (work placement)
    - See and learn elsewhere, inspiration on the job
- Set up exchange programs
    - open a national desk (central point and website) for exchange programs
- Organise/support excursions/study tours to foreign countries like Young farmers to Italy. Also visits to international fairs (Potato Europe, Fruit Logistica, ...).
- Management development program set up by private companies (e.g. Friesland Campina)
- Exchange program for students/young entrepreneurs /officials
    - Country tables high schools

Improve Entrepreneurship

- Dutch Projects as an example: 1) Fruit Master, 2) Successor perspective
- Collaboration between research (Wageningen), bank (Rabobank) and branch organizations (NFO, NAJK)
- Focus: improve entrepreneurship
- Determine long term strategy
- Work on (future) business model
- New knowledge
- Group sessions: learn from other participants

Are you ready for change?

"Only farming on a farm is a big challenge, let alone you also have to consider how the ownership develops, who is involved and how it should be financed."

Bart Ijntema, At Rabobank he is engaged in the development of agriculture and horticulture outside the Netherlands.

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Cooperation

- Set up producers cooperative. Some advantages:
  - Collecting farm products (including transport and storage)
  - Collective bargaining (e.g. bargaining association)
  - Less costly access to finance and technology
  - Less costly technical and managerial assistance
  - Easier access to national and international markets
  - Less costly marketing branded products
- Trust and transparency needed

Conclusions and Recommendations

Main Conclusion

- Short run: improving yields, efficiency, and quality (e.g. GLOBALG.A.P., ICT, cooperation), and development of domestic supermarket channel and tourism markets
- Long run: development of export markets through development of buyers network, marketing, EU quality labels (Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI)) and export logistics

- See, adjust, and get used to the rules of the game

Recommendations – Be Competitive

- Increase yields, improve production methods, lower cost prices
  - Support by advisory service, study groups
  - Investments to reduce frost and hail damage
- Improve farm storage capacity
  - Assess current capacity and future needs
  - Buy or hire storage, set up cooperative storages
  - Bank loan guarantee for storage investments
- Improve horizontal cooperation (partnerships)
  - Set up of farmer associations
  - Use CMO instruments for production and marketing

Recommendations – Be Competitive

- Improve vertical cooperation: focus on (international) wholesalers and retailers, value adding on farm level
- Guarantee the supply of fresh fruits & vegetables during extended season
  - Larger volumes and quality, improve farm management, irrigation, early/late varieties, plastic tunnels, storage facilities
  - Set up greenhouses (gradually)
- Improve awareness and support for quality assurance systems like GLOBALG.A.P (retail requirement in Croatia from 2018). Food safety standards of European retailers are more strict already

Recommendations – Explore Markets

- Seek for niche markets on domestic market (e.g. organic, specialties for tourism, restaurants and other food service)
- Create attention for Croatian products among foreign tourists, branding, EU quality labels (PDO, PDI)
- Export promotion:
  - Activate (role of) export promotion bureau
  - Visit fairs like Fruit Logistica
  - Market research: ‘What are distinguishing characteristics of Croatian products for consumers in other countries?’

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Recommendations – Improve Professionalism

- Strengthen entrepreneurship:
  - Farmers should become entrepreneurs (e.g. risk management, focus on product differentiation, farmer & customers product co-development)
  - Support farmers to define best farm strategy
- Obligatory courses on post harvest technology and GLOBALG.A.P. for agriculture schools, BSc, MSc
- Facilitate attractiveness, use of the extension service
- Exchange programmes with foreign experts for farmers, students and public services employees

Recommendations – Remove Barriers

- Improve attractiveness of farm work:
  - Show improvements in level of mechanisation and ICT, diversity of tasks, payments, and training
- Speed up land reform and improve business climate
  - Starting a business; registering property; construction permits; getting credit
  - Stimulate cooperative economy: public-private
- Develop vision: 'Croatian F&V sector in 2030'
  - Make choices, create focus and clearness; in interaction with public sector, research, education, and other stakeholders

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Thank you