Competitiveness in the Agribusiness Environment
(from analysis to cooperative strategy development - a South Africa case study)

1st Annual Lecture of the Cooperative Central Bank
University of Cyprus
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Centre for Agribusiness
Stellenbosch University
GREETINGS FROM STELLENBOSCH UNIVERSITY, SOUTH AFRICA
My talk in a nut shell:
- Competitiveness is a necessary ingredient for agricultural existence in today's world....... If you want to manage it, you must measure & analyse it; otherwise it just remains a “good idea or theory”

The challenge:
- Designing a theoretically sound and systematic approach to measure and analyse competitive performance
Global Competitiveness measured and analysed

Insight Report

# Global Competitiveness Index

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<tr>
<th></th>
<th>Rank (out of 140)</th>
<th>Score (1-7)</th>
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<tr>
<td><strong>GCI 2015–2016</strong></td>
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**Basic requirements (40.0%)**
- 1st pillar: Institutions .............................................. 38  
- 2nd pillar: Infrastructure ............................................. 68  
- 3rd pillar: Macroeconomic environment ............................ 85  
- 4th pillar: Health and primary education .......................... 126

**Efficiency enhancers (50.0%)**
- 5th pillar: Higher education and training ......................... 83  
- 6th pillar: Goods market efficiency ................................ 38  
- 7th pillar: Labor market efficiency .................................. 107  
- 8th pillar: Financial market development ......................... 12  
- 9th pillar: Technological readiness .................................. 50  
- 10th pillar: Market size .................................................. 29

**Innovation and sophistication factors (10.0%)**
- 11th pillar: Business sophistication ................................. 33  
- 12th pillar: Innovation .................................................... 38
Stage of development

1. Factor driven
2. Efficiency driven
3. Innovation driven

- South Africa
- Sub-Saharan Africa
## Global Competitiveness Index

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### Basic requirements (20.0%)

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<tr>
<td>3rd pillar: Macroeconomic environment</td>
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<td>4.2</td>
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<tr>
<td>4th pillar: Health and primary education</td>
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### Efficiency enhancers (50.0%)

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<td>6th pillar: Goods market efficiency</td>
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<td>4.8</td>
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<td>7th pillar: Labor market efficiency</td>
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### Innovation and sophistication factors (30.0%)

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<td>12th pillar: Innovation</td>
<td>44</td>
<td>3.6</td>
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Cyprus Competitiveness Index

Stage of development

1. Factor driven
2. Efficiency driven
3. Innovation driven
Content & Scope

Theme: To translate COMPETITIVENESS THEORY into a useful tool for STRATEGIC AGRIBUSINESS ANALYSIS and PLANNING:

- Establish a theoretical framework of analyses
- Consider and define the business context of an industry and measure competitive performance
- Application to the SA Agricultural sector - 1961, 2005, 2008, 2016; ....some analysis on Cyprus too
- Reference a number of Fruit Industry case studies; and
- Propose future research and enquiry
Enquiry into sector/industry/firm level competitiveness?

Comprehensive economy wide views available but not much industry level enquiry:

• IMD - WORLD COMPETITIVENESS YEARBOOK
• WEF - GLOBAL COMPETITIVENESS REPORT

Agri-focused analysis? rather constrained views

• Agri-benchmarking in fruit industry - O’Rourke, production cost based.
• Marketing Decision Support Models (DSM) & Market Attractiveness Index (MAI)?
• Profits; productivity; ROI; ROR, etc.?
THE AGRI-COMPETITIVENESS ANALYSIS PROGRAMME (ACAP)
Stellenbosch University

1. Approach and process:
   • New competitiveness theory framework
   • Participative analysis & planning - stakeholders/client inputs

2. Funding (in whose interest?):
   Project based: Industry, banking sector (Standard Bank AgriBusiness), government (Western Cape Dept of Agriculture), agribusiness/commodity groupings

3. Dissemination:
   Annual Agri-Competitiveness Seminar, publications, papers

4. Selected commodities:
   30 value chain groupings; 1600 observations: Deciduous- citrus-stone fruit, wine, dates, grains, dairy, sugar, forestry, meat and game...
The theory of competitiveness: From Absolute Advantage (Adam Smith, 1776) to Competitive Advantage (Porter, 1998)

- Mercantilism; “strengthening the country” (1500-1800)

- Classical Trade Theory:
  - Absolute Advantage - wealth is created by natural endowments (Adam Smith, 1776)
  - Comparative Advantage - specialisation theory (David Riccardo, 1817)
  - Politics of Protection (J.S. Mill, 1873)

- Neoclassical models:
  - Factor Proportions Theory - TFP (Heckscher-Ohlin, 1919,1933)
  - Factor Price Equalisation Theorem - (Samuelson, 1948)
Theoretical framework:

- Challenges to Comparative Advantage:
  - Leontief Paradox - opposing the H-O Theory (V. Leontief, 1953)
  - Wealth through Economies of Scale (Krugman, 1979; Lancaster, 1979)

- New Competitiveness Theory:
  - Competitive Advantages - wealth through strategic choices (Michael Porter, 1990;1998); and applications:
    - Nine Factor Model (Cho, 1994)
    - Double Diamond Models (Rugman & Cruz, 1993; Moon, Rugman & Verbeke, 1995)
    - WEF (Global Competitiveness Report); IMD (WCR)
<table>
<thead>
<tr>
<th>National industry or sector researched</th>
<th>Authors or researchers</th>
<th>Proxies for measurements and/or models/frameworks applied</th>
<th>Verdicts or conclusions</th>
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<tbody>
<tr>
<td>The European agro-food system</td>
<td>ISMEA (1999)</td>
<td>RTA &amp; Porter diamond model</td>
<td>Scope for European Commission/Union integration</td>
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<tr>
<td>Hungarian agricultural-food sectors</td>
<td>Fertő and Hubbard (2002)</td>
<td>RCA and RTA</td>
<td>Hungary has a comparative advantage for 11 of the 22 aggregated product groups.</td>
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<tr>
<td>Namibian table grape production</td>
<td>Thomas (2007)</td>
<td>Porter diamond model</td>
<td>The Namibian table grape chain is relatively competitive in the international arena. Primary production in becoming more competitive.</td>
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<td>Livestock product exports from India</td>
<td>Kumar (2010)</td>
<td>Export and import analysis - nominal protection coefficient (NPC)</td>
<td>India is competitive in the export of meat products, except poultry.</td>
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<tr>
<td>China’s agricultural products</td>
<td>Qiang, Yong-Sheng and Xiao-Yuan (2011)</td>
<td>RCA and trade coefficient specialisation (TCS)</td>
<td>Ability of direct factors is strong in terms of transformation from cost advantage and price advantage into competition advantage.</td>
</tr>
<tr>
<td>Global Pear Market</td>
<td>Valenciano, Giancinti and Uribe (2012)</td>
<td>RCA</td>
<td>Geography plays a main role in competitiveness with nearby markets, as happens in markets with free trade.</td>
</tr>
<tr>
<td>Tobacco sub-sector in the Republic of Macedonia</td>
<td>Tuna, Georgiev and Nacka (2013)</td>
<td>RCA and Porter diamond model</td>
<td>The republic of Macedonia has favourable conditions and a competitive advantage for producing tobacco.</td>
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<td>Canadian wheat, beef and pork sectors</td>
<td>Sarker and Ratnasena (2014)</td>
<td>RCA and normalised revealed comparative advantage (NRCA)</td>
<td>Canada has enjoyed international competitiveness in the wheat sector, but not in the pork sector, whilst the beef sector has grown rapidly since 1992.</td>
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</table>
ACAP approach to COMPETITIVE PERFORMANCE ANALYSIS: A Five Step analytical framework

1. DEFINITION
   Contextualise and define agri-competitiveness

2. MEASUREMENT
   Empirically measure competitive performance - IF YOU MEASURE YOU CAN MANAGE

3. IDENTIFY FACTORS AND CLUSTER INTO DETERMINANTS
   Identify, through interviews with industry experts and knowledgeable stakeholders (Executive Survey), trends and major factors impacting on competitive performance

4. ANALYSE
   Establish the major Determinants of Competitiveness through the application of the “new” competitiveness theory (Porter, 1990)

5. STRATEGY PLANNING
   Develop strategies to enhance the competitiveness of Agricultural Industries in SA - Participative planning (Log Frames...)
Step 1: DEFINING COMPETITIVE PERFORMANCE

“The ability of an industry/firm/sector to attract investment and other scares resources by trading products in the global market, whilst striving to earn at least the opportunity cost of resources engaged” (Freebairn, 1987)

Notions of:
- Sustained international trade
- Scarcity; opportunity cost;
- Trends - “understand the trends and you know what is happening”
STEP 2: MEASUREMENT AND ANALYSES:

TRADE BASED MEASURES

• RCA and RTA
• Other Indices; EMS, NEI,

\[
RCA_{ij} = RXA_{ij} = \frac{X_{ij}}{X_{ik}} / \frac{X_{nj}}{X_{nk}}
\]

\[
RMA_{ij} = \frac{M_{ij}}{M_{ik}} / \frac{M_{nj}}{M_{nk}}
\]

\[
RTA_{ij} = RXA_{ij} - RMA_{ij}
\]

(Balassa 1966, Vollrath 1991)

Data:
FAO STATS -1961;
TRADEMAP -2001

STRATEGIC ANALYSIS & PLANNING

• Cost Measures
• Profitability
• Productivity and Efficiency measures

• PORTER DIAMOND; EXEC SURVEYS; FOCUS GROUPS
SA Agricultural competitiveness: long term trends (FAO Data)

RTA - Primary Agricultural Products - sustained positive, marginal

Protectionism; Subsidisation of farming

War - economy; Urbanisation
1st economic deregulation
Reduction in direct farm subs
Droughts?

Sanctions economy
Low agric subsidies
“no” agric subs
Droughts?

Madiba Magic +
Learning by doing
Sustaining Global Comp. “low agric” subs
Industry RTA’s 2001 -2015 : Agriculture, Forestry and Fisheries (ITC Data)
Industry RTA’s: Primary Agriculture vs Agro-Processing (ITC Data)
Cyprus Agricultural Industry RTA, Primary and Agro-processing RTA’s (ITC Data)
## RSA industry RTA’s : SA Grain value chains

### Codes: Blue + yellow- marginal; red - negative

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<td>110313</td>
<td>Maize (corn) groats and meal</td>
<td>5.19</td>
<td>23.95</td>
<td>13.00</td>
<td>4.09</td>
<td>121.22</td>
<td>6.79</td>
<td>1.44</td>
<td>23.66</td>
<td>34.19</td>
<td>30.17</td>
<td>24.54</td>
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<td>6.56</td>
<td>24.36</td>
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<td>2.82</td>
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<td>10.18</td>
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<td>-0.57</td>
<td>-0.02</td>
<td>0.40</td>
<td>0.88</td>
<td>0.86</td>
<td>0.07</td>
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<td>1.15</td>
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<td>1.92</td>
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<td>10.85</td>
<td>7.28</td>
<td>6.46</td>
<td>2.27</td>
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<td>4.00</td>
<td>3.83</td>
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<td>Pellets</td>
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<td>4.66</td>
<td>5.14</td>
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<td>8.56</td>
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<td>36.39</td>
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<td>-4.47</td>
<td>-9.50</td>
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<td>0.96</td>
<td>0.47</td>
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<td>Flour and meal of the dried leguminous vegetables of heading</td>
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<td>Starches nes</td>
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<td>0.11</td>
<td>0.10</td>
<td>-0.21</td>
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<td>Potato flakes</td>
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<td>Germ of cereals, whole, rolled, flaked or ground</td>
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<td>0.03</td>
<td>0.01</td>
<td>0.01</td>
<td>0.07</td>
<td>0.07</td>
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Phase 1: Regulated, constrained Competitiveness; economic sanctions

Phase 2: The Madiba Magic Period - learning the trade (1990-2001)

Phase 3: Towards becoming a global player (2001-2010)

Phase 4: Operating in a constrained competitive environment (2010-2022)
Cyprus Agricultural Industry
RTA’s: Wine and Whiskey (ITC Data)
Cyprus Agricultural Industry
RTA’s: Cheese and Fish (ITC Data)

Cyprus RTA: Cheese and Fish

Cheese products (whey, curd, blue-veined cheese, etc.)
Sea Bass & Bream
Cyprus Agricultural Industry
RTA’s: Potatoes and Citrus (ITC Data)

Cyprus RTA: Potatoes and Citrus

- Potatoes
- Citrus

Years: 2001 to 2015
Step 3: Which factors determine industry level competitive performance?

- Executive Survey (views industry leaders, investors, producers, ceo’s):
  - Identify the major operational factors affecting competitive performance (2015 Deciduous Fruit Industry Exec Survey; Wine Exec Survey, etc)

- Determine views in value chain clusters:
  - “Trade” respondents in export, trade and marketing
  - ”Agribusiness” respondents in primary production, input supply, storage, winemaking,
Economies of Scale
Exchange Rate
Location Suitability
Entry-level labour: Obtaining
Reinvestment
Local Input Suppliers: Quality
Effectivity
Cold-chain Management
Resource Competition
Quality Technology Access
Efficiency
Market Intelligence Management
Research Quality
Information flow: Customers
Regulatory Standards Comply
R&D Collaboration
Resource Base
Diversity
Private Research
Credit: Short-term
Seasonality and Availability
Expenditure R&D
Credit: Long-term
Grower-club access
Macro-economic Policy
Health
Electricity
Transaction Cost
Trade Policy
BEE Policy
Local Consumers
Technology Services: Cost
Local Market
Skilled labour: Competency
Technology Cost
Corruption
Buying Patterns
Skilled labour: Obtaining
Social Unrest
Land Reform Policy
Entry-level labour: Quality
Politicians' Trustworthiness

10%
Step 4: Determinants of Competitive Industry Performance (The Porter Diamond)
Step 4: The major determinants of competitiveness - Porter Diamond Analysis, 2015

<table>
<thead>
<tr>
<th>Porter determinants of Competitiveness:</th>
<th>Trade &amp; Value - adding (Cluster 1)</th>
<th>Agbusiness &amp; Primary production (Cluster 2)</th>
<th>Industry (overall)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Strategy, Structure and Rivalry</td>
<td>3.81</td>
<td>3.22</td>
<td>3.55</td>
</tr>
<tr>
<td>Relating and Supporting Industries</td>
<td>3.39</td>
<td>2.80</td>
<td>3.14</td>
</tr>
<tr>
<td>Production Factor Conditions</td>
<td>3.08</td>
<td>2.45</td>
<td>2.81</td>
</tr>
<tr>
<td>Demand Market Factors</td>
<td>3.01</td>
<td>2.42</td>
<td>2.76</td>
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<tr>
<td>Chance of Opportunity Factors</td>
<td>2.90</td>
<td>2.33</td>
<td>2.66</td>
</tr>
<tr>
<td>Government Support and Policy</td>
<td>2.56</td>
<td>2.07</td>
<td>2.35</td>
</tr>
</tbody>
</table>
Production factor conditions
Relating and supporting industries
Firm strategy, structure and rivalry
Government support and policies
### STEP 5 - COOPERATIVE AGENDA SETTING: SA DECIDIOUS FRUIT INDUSTRY

<table>
<thead>
<tr>
<th>Porter determinants</th>
<th>Relevant and constraining competitive factors</th>
<th>Strategic proposals</th>
</tr>
</thead>
</table>
| **Production factors conditions** | High technology cost | • Technological innovation through value chain collaboration  
• “Anticipating climate change”; water scarcity |
| **Demand/market factors** | Inconsistent quality and availability of SA stone fruit varieties in markets | • Improved consistency in supply to exports markets, standardisation and certification  
• Extended supply in export markets  
• Market intelligence to achieve preferred supplier status - what where when |
<p>| | The influence of adverse weather conditions on buying patterns of consumers (export markets) | • Redirecting market supply mechanisms |</p>
<table>
<thead>
<tr>
<th>Porter determinants</th>
<th>Relevant and constraining competitive factors</th>
<th>Strategic proposals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related and supporting industries</td>
<td>Electricity supply (including renewable energy and fossil fuels)</td>
<td>• Consistency of power supply; economising; green energy:</td>
</tr>
<tr>
<td></td>
<td>Industry’s expenditure on Research &amp; Development and innovation</td>
<td>• Institutional arrangements to create innovation through collaborative partnerships:</td>
</tr>
<tr>
<td>Government support and policy</td>
<td>Trade policy</td>
<td>• Trade promotion support:</td>
</tr>
<tr>
<td></td>
<td>Dealing with the political economy</td>
<td>• A “Stone Fruit Industry Plan (SFIP) and compact:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improved industry intelligence systems:</td>
</tr>
</tbody>
</table>
New research directions

- **Move from general to specifics:** Focus on form, place and time utilities in different markets. Market analysis - “Decision Support Models” “Market Attractiveness Index” - to identify and analyse new, lucrative markets for competitive products

- **Expand into value chain benchmarking:**
  - ID production factors constraining competitiveness at particular levels/functions in the value chain - on-farm level, processing, retail - local level comparisons and global through “benchmarking” & “double and triple” Porter diamonds.
  - and conduct intra-value chain competitiveness: Give effect to differing views of different functional groups in the chain - intra-value chain investigation; weighting of Porter factors (Kothandaraman & Wilson, 2001; Lia, & Whalleby, 2002, Angala 2015 and Boonzaaier 2015)
New research directions

▶ “Future-based Enquiry”:
- “In the business world the rear-view mirror is always clearer than the windshield” (Warren Buffet). Only historical trends analysed by RTA; Porter models.
- Move towards prognostic analysis; not only diagnostic evaluation. Scenario development and “Agri-industry Business Confidence Indexes” (Esterhuizen, 2006) to predict expected variations be explored.

▶ Agri-sector analysis:
- Focus on “winning and losing” industries to direct policy support systems
- and investment decision-making
CONCLUDING REMARKS:

1. THE AGRICULTURE SECTOR IS NOT A UNITARY SYSTEM; RATHER A SECTOR WITH COMPLEXITY & DIVERSITY WITH MANY COMPLEMENTARY, COMPETITIVE AND SUPPLEMENTARY RELATIONSHIPS; A BIT “NON SENSICAL TO TALK ABOUT AGRI-COMPETITIVENESS per se

2. CONTEXTUALISE COMPETITIVENESS PERFORMANCE IN TERMS OF THE PREDOMINANT FOCUS OF A PARTICULAR INDUSTRY AND ITS RELATIONSHIPS - COMMODITY GROUPS, TRADE ORIENTATION, MARKETS, RIVALRY, STRUCTURE, ETC - NO ONE MODEL FITS ALL

3. ENGAGE INDUSTRY VALUE CHAIN PLAYERS (GLOBAL WHERE REQUIRED) - INPUT, PRODUCER, MANUFACTURER, RETAIL - IN COMPETITIVENESS ANALYSIS AND STRATEGY DEV - SOLVE THE WEAKEST LINKS; BUILD ON STRONG POINTS.
4. USE TREND ANALYSIS TO DESIGN CONSISTENCY AND RELIABILITY IN STRATEGY/ LOBBY EFFORTS

- REFRAIN FROM OPPORTUNISTIC BEHAVIOUR FOCUSING ON “QUICK FIXES”.
- TRENDS REFLECT “SPILL-INN” DYNAMICS. i.e. Chance factors such as Westerns Europe low wine crop + SA bumper crop in 2008 = positive impact over next few years for SA wines.

6. BUILT TRUSTFUL AND TRANSPARENT INDUSTRY STRUCTURES AND RELATIONSHIPS - AVOID OPPORTUNISTIC BEHAVIOUR; SHARE INTELLEGENCE AND DATA SETS; MONITOR, MEASURE , ANALYSE.
FARM LEVEL STRATEGIES:

- Be careful for long term investments in marginally competitive industries

- Consider size and scale:

  # Large scale mega farmers - similar to industry type of considerations

  # Medium scale farmers - take a “small business” focus re cash flows and risks; link into competitive value chains; serve niche markets - GI’s; S & C

  # Smallholders - remember “efficient but poor” hypothesis: seek niche markets; link into competitive value chains - out grower schemes; consider part-time farming (divert time to activities that secure income such as off farm employment, rural tourism); rent land to larger farming firms, etc.
SOME WORDS OF WISDOM

“In today’s (agri) business, the competition will bite you if you keep running; if you stand still they will swallow you!”
(William Knutsen, Jr. Chairman, Ford Motor Company)
THANK YOU - COOPERATIVE CENTRAL BANK & UNIVERSITY OF CYPRU