Introduction to Rabobank Group

The world’s leading Food and Agriculture ("F&A") bank

- Among the world’s largest banks
- 13.5% Tier 1 Ratio
- Nearly EUR 670bn in assets
- Over 1,300 offices in 40 countries
- 52,000 employees

Global presence

<table>
<thead>
<tr>
<th>Rabobank Group operates in 40 countries around the world with Rabobank and its subsidiaries</th>
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<tbody>
<tr>
<td>Argentina</td>
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<tr>
<th>Rabobank Wholesale Rural &amp; Retail has offices in 661 locations in 30 countries</th>
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<tr>
<td>Argentina</td>
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<tr>
<th>Rabobank Foundation supports projects in 25 countries</th>
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<td>Bolivia</td>
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<tr>
<th>Rabo Development holds non-controlling interests in 18 partner banks and provides advice and support for various projects</th>
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<tr>
<td>Brazil</td>
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Commitment

- Dedicated focus on F&A
- Cooperative structure encourages long-term relationships
- Over 115 years financing agriculture

Expertise

- Bankers with local knowledge
- Specialists from "gate to plate"
- F&A Research and Advisory Group
- More than 80 F&A research analysts worldwide
1 Setting the scene
Agricultural production is driven by five key variables

Growing global population

Increasing global wealth and urbanization

Increasing animal protein consumption

Climate volatility and water scarcity

Need for yield improvement given reduced land availability

Sources: World bank, OECD, Note 1: cumulative consumption of beef, pig, poultry and sheep
Several of these underpin the industry’s long-term growth story

**Relevant Mega-Trends:**
- Changing Demographics
- Consumer Preferences (Organic, Non GMO)
- Urbanization
- Resource Scarcity (Water, Land)
- Data and Technology
- Globally Linked Markets
Farmer profits have been under pressure since the peak in commodity prices during 2013. The fall in grain prices since 2013 has led to a third year of negative row crop farm income. As illustrated by the median Midwest producer, the value of corn per acre in Iowa has dropped significantly from the peak in 2013.

Source: Bloomberg LP, Iowa State University, University of Illinois, Purdue, Rabobank, 2016
Causing a major reduction in farm inputs spending; we see returns stabilizing in 2017 / 2018

1. Reduce equipment purchases
2. Cutback/minimize fertilizer applications
3. Switch to cheaper seed
4. Negotiate for lower land costs
5. Establish planting discipline
6. Optimize yield

Operating capital dries up

INCOME PEAKS

TODAY

RECOVERY LAGS
Although crop receipts have continued to decline in 2016, the situation seems to be stabilizing.

Source: USDA, Rabobank
The issue however is that we forecast a period of low (although stable) grain prices over the next five years.
Which means that crop farming will NOT see a cycle upturn but rather an extended period of low returns.
Modest expectations from the next cycle...

**Thompson Equal Weighted Commodity Index (CCI)**

<table>
<thead>
<tr>
<th>Period</th>
<th>Magnitude</th>
<th>Duration of Rally</th>
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<tbody>
<tr>
<td>2001-2011</td>
<td>278%</td>
<td>114 months</td>
</tr>
<tr>
<td>1971-1974</td>
<td>147%</td>
<td>28 months</td>
</tr>
<tr>
<td>1977-1980</td>
<td>83%</td>
<td>39 months</td>
</tr>
<tr>
<td>1986-1988</td>
<td>39%</td>
<td>23 months</td>
</tr>
<tr>
<td>1992-1996</td>
<td>33%</td>
<td>44 months</td>
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**US Crop Cash Receipts (2000 to 2016f)**

- Source: Commodity Research Bureau Yearbook, 2016
- Source: USDA/ERS Farm Income and Wealth Statistics
The situation has punished the results of the major input providers, a key factor driving the mega-Mergers

Recent Deals

<table>
<thead>
<tr>
<th>Combination</th>
<th>Value</th>
<th>Announced</th>
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<tbody>
<tr>
<td>Bayer/Monsanto</td>
<td>$66 billion</td>
<td>2016</td>
</tr>
<tr>
<td>Agrium / Potash Corp</td>
<td>$36 billion</td>
<td>2016</td>
</tr>
<tr>
<td>ChemChina / Syngenta</td>
<td>$43 billion</td>
<td>2016</td>
</tr>
<tr>
<td>Dow / DuPont</td>
<td>$130 billion*</td>
<td>2015</td>
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</table>

Source: company reports, *Dow DuPont reflects non-Ag businesses also

Key Deal Drivers

• Structurally low farmer demand and excess supply
• The need for technological innovation to deliver value in a sustainable way
• The need/desire to transform from stand alone product sellers into integrated service providers

Themes / Transaction Rationale

• Access to new markets, technologies and expertise (ChemChina/Syngenta)
• Food security and reduced reliance on imports (ChemChina/Syngenta)
• Value creation through scale and market share (Dow AgroScience / DuPont Pioneer)
• Market dominance in key product categories (Bayer/Monsanto)
• Operational efficiencies through vertical and horizontal integration (Agrium/PotashCorp)
• Positioning for secular changes in F&A (all deals)
  ✓ Organic and non-GMO are a $50 billion market in the USA
  ✓ Its growth will further threaten demand for crop protection chemicals and other inputs
Consolidation has different implications across the value chain; distributors likely to be the most at risk

1. Growers
   Farmers could actually benefit from industry consolidation in the form of new products and service

2. Fertilizer Manufacturers
   Little expected incremental impact from the announced CPC/seed mergers, although Agrium/PotashCorp could drive smaller nutrient players to merge

3. G&O
   Little expected incremental impact from the announced CPC/seed mergers near-term although structural changes in farm inputs could undoubtedly impact the ABCDs in the long-run

4. Distributors
   Greater concentration of supplier power; thus retailers, wholesales and cooperatives will experience even greater margin pressure as input manufacturers renegotiate selling commissions and concessions
2

A Lot Else is Changing... 
Behind the Scenes
The composition of the population is changing...

- **70%** of households have no children under 18
- **27%** Single person households
- **47%** Share of women in US labor force
- **25%** Millenials have become the largest generation
- **Increasingly multicultural**
  - Asian 5%
  - Black 13%
  - Hispanic 17%
  - Native 1%
  - White 62%
- **Asians projected to become the largest immigrant group**
  - % of total immigrants:
    - 1975: Asian 11%, Hispanic 23%, Black 44%, White 59%
    - 1995: Asian 25%, Hispanic 47%, Black 25%, White 18%
    - 2015: Asian 26%, Hispanic 40%, Black 18%, White 19%
    - 2035: Asian 32%, Hispanic 34%, Black 9%, White 9%
    - 2055: Asian 36%, Hispanic 34%, Black 9%, White 9%
And technology is transforming our lives

89% of the U.S. population has internet access

77% of U.S. adults have a smartphone (99% of millennials)

1.8 billion active users globally

How people spend their time online

- Online shopping: 6%
- Video: 19%
- Surfing content: 23%
- Checking email: 24%
- Social media: 28%
- Search engines: 1%

7.6 Hrs./day

Source: Multiview

Population without access to fixed broadband

- United States: 10%
- Rural Areas: 39%
- Urban Areas: 4%

Source: FCC, 2016 Broadband Progress Report
Consumer preferences are changing as a result

<table>
<thead>
<tr>
<th>Health and wellness</th>
<th>Transparency</th>
<th>Hybrid Consumer</th>
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<tbody>
<tr>
<td>• Definition of healthy has changed</td>
<td>• Today’s consumers demand information regarding what is in their food, how it is made, where does it come from and what its environmental footprint is</td>
<td>• Emphasis on quality ingredients leads to increased demand for premium products across all categories</td>
</tr>
<tr>
<td>- means fresh, natural, organic, high protein, non-GMO, and many other free-froms</td>
<td></td>
<td>• Dichotomy: there is also strong demand for ‘value’ products. The middle ground is shrinking</td>
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<td>• Strong preference towards minimally processed and clean labels</td>
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<tr>
<td><strong>Convenience</strong></td>
<td><strong>Novelty and customization</strong></td>
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<tr>
<td>• Shorter prep times, single serve packaging, on the go alternatives, delivery</td>
<td>• Millennials in particular are looking for new and innovative experiences</td>
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<td>• Rise of snacking: no longer three sit down meals a day but snacking throughout</td>
<td>• Success of ethnic and bold flavors</td>
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<td></td>
<td>• Do-it-yourself options, personalized marketing campaigns</td>
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Consumers are moving away from ‘big brands’

Source: Rabobank, Euromonitor 2016. Big Brand >3% market share.
And driving new trends (or fads): Gluten Free

- While only 1% of the population has Celiac disease, 30% say they are trying to reduce their gluten intake
- Major grain-based categories are struggling

**Wheat Consumption in the U.S. (lbs/capita)**

**Sales volume of major grain based categories**

Source: USDA

Source: IRI
And driving new trends (or fads): Natural and organic

- Organic sales have been growing at an average annual rate of 10% for the past five years
- But many raw materials are being imported

**US Trade in Organic Products**

**Top 5 Organic Imports**

Source: USDA

Source: USDA
‘The experts’ are no longer the main source of information

- There is more information available on the internet than ever before
- Millennials trust a wide range of sources for information about which foods they should eat:
  - personal healthcare professionals (68%)
  - friends or family members (41%)
  - health, food and nutrition bloggers (33%)
  - U.S. government agencies (28%)

Are genetically modified foods healthy?  Are granola bars healthy?

3  How can ag respond
Ag sector has been extremely efficient in providing plentiful and accessible farm products to big food processors.

*Increase in Food Production, and Food Spending as a share of Disposable Income*

Source: World Bank, World Development Indicators
Most of the increase has been due to TFP growth

Source: USDA
But, what worked in the past may not now. Need to innovate...

Source: Rabobank analysis
1. Looking beyond the mainstream products

**The Long Tail theory:**
- Our culture and economy is increasingly shifting away from a focus on a relatively small number of "hits" (mainstream products and markets) at the head of the demand curve and toward a huge number of niches in the tail.
- Products that have a low sales volume can collectively make up a market share that rivals or exceeds the head.

The internet and online retailing lower:
- Search costs
- Marketing costs
- Inventory costs

Less need to lump products and consumers into a few big categories.
Long tail example in milk

Milk and milk-alternative sales, 2016

-5% CAGR 2013-16

9% CAGR 2013-16

Source: Rabobank, IRI
2. Use of Technology

**Big data** + **Technology** + **Algorithms** = **Smarter food system**

- **Big data** tells us what is happening in lots of detail.
- **Technology** collects data and automates the way things are done.
- **Algorithms** collect data and automates the way things are done.

**Data available in the world today**

90% of the data in the world today has been created in the last two years alone.

Data created in all of history: 10%
# Ag Tech investments across the supply chain

<table>
<thead>
<tr>
<th>Ag Biotechnology</th>
<th>Supply Chain Technologies</th>
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<tbody>
<tr>
<td>On-farm inputs for crop &amp; animal ag including genetics, microbiome, breeding</td>
<td>Food safety &amp; traceability tech, logistics &amp; transport, food processing</td>
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<tr>
<th>Farm IoT</th>
<th>Bioenergy &amp; Biomaterials</th>
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<tr>
<td>Ag data capturing devices, decision support software, big data analytics</td>
<td>Non-food extraction &amp; processing, feedstock technology</td>
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<tr>
<th>Robotics</th>
<th>Innovative Food</th>
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<tr>
<td>On-farm machinery, automation, drone manufacturers, grow equipment</td>
<td>Alternative proteins, novel ingredients &amp; supplements</td>
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<tr>
<th>Novel Farming System</th>
<th>Food Ecommerce</th>
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<tr>
<td>Indoor farms, insect, algae &amp; microbe production</td>
<td>Online Farm-2-Consumer, meal kits, specialist consumer food delivery</td>
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<tr>
<th>Other</th>
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<tr>
<td>Equipment sharing software, cultured leather, etc.</td>
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*Source: Agfunder AgTech Funding Report 2016*
Exponentially Improving Gene Read/Write/Edit Capabilities


- Oligo bp/$
- Seq bp/$

1E-3 1E-2 1E-1 1E0 1E1 1E2 1E3 1E4 1E5 1E6 1E7


6E6 nt/$
2E6 nt/$
3. Global linkages

**Agricultural exports, imports and trade balance**

**U.S. exports of bulk and high-value products**

Source: USDA
4. Connecting with the consumers

- Consumers want to know more about where their food comes from (most of them know very little)
  - Overwhelmingly farmers and consumers share the same values with respect to environmental stewardship and animal care
- The internet and social media provide a unique tool to generate communities around topics of interest and to bridge the communication and information gap
- The food industry needs to be seen as tech savvy and in touch
How Rabobank is helping address these challenges
1. Remaining close to farmers through cycles

Banking for Food

Banking for Food is Rabobank’s approach to addressing the global food security challenge

Our Contribution

Access to finance
Access to knowledge
Access to networks

Global Farmers

For farmers, by farmers

“Global Farmers is a community where farmers can connect, share and learn from each other (and) a great way for Rabobank to share its knowledge”

- Berry Marttin, Rabobank Executive Board
2. Working across the value chain

- **FARM INPUTS**
- **PRIMARY SECTOR**
- **TRADE & EXPORT**
- **PROCESSING**
- **RETAIL**

**Rabo Foundation**
- 25 countries
- Rabo Development
- 16 countries

**Rabo Development**
- Financial inclusion for 7.5 mln people incl. 2 mln farmers

**Rabobank Group**
- 47 countries
- 3215 client branches

Partnership
- FAO & Rabobank Foundation in Africa
3. Finding value and growth by getting closer consumers through innovation

**FoodBytes!**
FoodBytes! is dedicated to helping investors in the food industry meet new innovative companies in food-related software and applications, distribution, manufacturing, and production.

**Arlon**
Arlon Group is an investment firm with a global network that supports investments across the entire food supply chain in the Americas.

**TERRA by Rabobank + RocketSpace**
First-of-its-kind accelerator-type program bringing together the industry’s most disruptive startups and progressive corporations.

**Anterra Capital**
Anterra Capital is a specialist venture capital investor, with a dedicated focus on technology-driven companies across the food supply chain in Europe or in North America.
Thank you