Global Outlook on Agriculture

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Marketing Communication
Weather issues all over, but...

Worst drought in EU and Argentina in >20 years. Drought in Australia & issues elsewhere.
Despite Worst drought impact in EU & Argentina in >20 years

Just imagine where prices would be if all countries have a record crop…

Source: Bloomberg, Rabobank 2018
Trade Wars on the political agenda
US agri commodities heavily impacted reliant on exports

Source: USDA, Rabobank 2018
2018 WHEAT production shortfall in EU & Australia and ‘normalized’ Russian crop

*Change in production vs 2017*

Source: USDA, Rabobank 2018
Russian Wheat prices lift off again

Russian wheat prices reflect strong export demand (which are up 20% yoy to 15m t for Jul-Sep, despite a 20% lower yoy export potential of 33m t vs 40m t)

Biggest bull factor: Potential RUSSIAN export restrictions

Source: BSG, Rabobank 2018
Global Wheat with largest deficit in 15 years

But what will the year after bring?

Source: USDA, Rabobank 2018
2019 WHEAT production (assuming average yields) brings enough

Change in production vs 2017.
US wheat prices for late 2019 nice for farmers, but EU prices more realist!

Source: Bloomberg, Rabobank 2018
CORN
Corn: Record US yield, but don’t underestimate demand

Record $2/bu Wheat-Corn spread to drive corn feeding demand in 2018/19

YOY change in corn feeding globally (outside US) underestimated!

Source: USDA, Rabobank 2018
US corn balance: Bulls need yield shortfall and strong use, bears look at ASF & record yield

2017/18 saw exports underestimated by 600m bu! Will history repeat? Yes, but NO!

% Change | 16/17 | 17/18 (f) | 18/19(f) | Sep WASDE | bear 18/19(f) | bull 18/19(f)
---|---|---|---|---|---|---
Beginning Stocks | 1,737 | 2,293 | 2,002 | 14,964 | 2,140 | 2,140
Yield | 174.6 | 176.6 | 181.3 | 14,964 | 183.0 | 180.0
Production | 15,148 | 14,604 | 14,827 | | | |
**Total Supply** | **16,942** | **16,937** | **16,879** | **17,154** | **16,909** | **16,909**
MY Exports | 2,294 | 2,425 | 2,400 | 2,400 | 2,500 | 5,600
Feed Consumption | 5,470 | 5,450 | 5,575 | 5,400 | 5,625 | 5,625
FSI Consumption | 6,885 | 7,060 | 7,130 | 7,130 | 7,130 | 7,130
Ethanol Usage | 5,438 | 5,600 | 5,625 | 5,625 | 5,625 | 5,625
**Total Consumption** | **12,355** | **12,510** | **12,705** | **12,530** | **12,730** | **12,730**
**Total Usage** | **14,649** | **14,935** | **15,105** | **14,930** | **15,230** | **15,230**
Ending Stocks | 2,293 | 2,002 | 1,774 | 2,224 | 1,679 | 1,679
Stocks/Usage | 16% | 13% | 12% | 15% | | 11%

Source: USDA, Rabobank 2018
US 2019/20 corn exports with a strong start, but competition will be stiff

US exports & export sales 50% up YOY so far

Corn export potential from key exporters excl US at strong levels

Source: USDA, Rabobank 2018
In China, de-inventory is faster than expectation

*S&D indicated that Chinese ending inventory could decline to critically low levels by 2020, USDA already for 2018/19 shows stock/use >30 yr low!*

Source: MOA, Rabobank 2018
US corn and soybean prices heavily depend on exports... What if they disappoint?!

Source: Bloomberg, Rabobank 2018
SOYBEANS
US soy balance: The dark side of trade wars: potentially >1bn bu ending stocks

Contrary to Corn, USDA does not underestimate use. US soybean stocks to potentially hit more than 1bn bu!

<table>
<thead>
<tr>
<th>(Mln acres/Mln bu.)</th>
<th>16/17</th>
<th>17/18 (f)</th>
<th>18/19(f)</th>
<th>18/19(f)</th>
<th>18/19(f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning Stocks</td>
<td>197</td>
<td>302</td>
<td>395</td>
<td>438</td>
<td>438</td>
</tr>
<tr>
<td>Yield</td>
<td>52.0</td>
<td>49.1</td>
<td>52.8</td>
<td>52.8</td>
<td>52.8</td>
</tr>
<tr>
<td>Production</td>
<td>4,296</td>
<td>4,392</td>
<td>4,693</td>
<td>4,693</td>
<td>4,693</td>
</tr>
<tr>
<td><strong>Total Supply</strong></td>
<td><strong>4,515</strong></td>
<td><strong>4,715</strong></td>
<td><strong>5,113</strong></td>
<td><strong>5,156</strong></td>
<td><strong>5,156</strong></td>
</tr>
<tr>
<td>MY Exports</td>
<td>2,166</td>
<td>2,130</td>
<td>2,060</td>
<td>2,060</td>
<td>1,950</td>
</tr>
<tr>
<td>Crush</td>
<td>1,901</td>
<td>2,055</td>
<td>2,070</td>
<td>2,070</td>
<td>2,055</td>
</tr>
<tr>
<td>Domestic Consumption</td>
<td>2,047</td>
<td>2,191</td>
<td>2,208</td>
<td>2,208</td>
<td>2,193</td>
</tr>
<tr>
<td><strong>Total Usage</strong></td>
<td><strong>4,214</strong></td>
<td><strong>4,321</strong></td>
<td><strong>4,268</strong></td>
<td><strong>4,268</strong></td>
<td><strong>4,143</strong></td>
</tr>
<tr>
<td>Surplus/Deficit</td>
<td>105</td>
<td>93</td>
<td>450</td>
<td>450</td>
<td>576</td>
</tr>
<tr>
<td>Ending Stocks</td>
<td>302</td>
<td>395</td>
<td>845</td>
<td>888</td>
<td>1,014</td>
</tr>
<tr>
<td>Stocks/Usage</td>
<td>7%</td>
<td>9%</td>
<td>20%</td>
<td>21%</td>
<td>24%</td>
</tr>
</tbody>
</table>

Source: USDA, Rabobank 2018
Single digit US soybean exports to China in 2018/19?

US might ship some soybeans to Arg/Brazil but requires strong market share in rest of world

Source: IEG, Rabobank 2018
US soybean exports dilemma

The US needs either 100% market share outside of China or price back into China

US soybean exports are as big as World excl. China imports, requiring the US to gain ~100% market share or to get China back into the trade mix

Source: USDA, Rabobank 2018
Perfectly timed implementation of Chinese duties on US soybean

*China introduced duties in May, when anyway no US soybeans go to China. But…*
Total US soybean exports stronger than usual…supporting prices

US gained market share in import countries (ex China) due to price discount
How to align US exports with world excl China import pattern?

Global monthly imports excl. China of 3m to 6m tonnes per month are not enough to absorb the typical high US post harvest exports in Oct-Dec

Source: USDA, Rabobank 2018
Trade war & pricing structure:

South American soybeans at USD 400/t, while US soybeans are well below due to the 25% duty.

Spread between Brazilian and US soybean prices will prevail, but seasonally will change.

Source: USDA, Rabobank 2018
Waving Chinese imports? Or flattening Brazilian Exports?

Showing the need to get more South American soybean exports in especially Nov-Dec to China.

Almost sufficient Chinese Oct-Nov coverage.

Early harvested Parana soybeans not enough!

How to meet China’s Dec demand? Can, Ru, Ukr not enough

Source: USDA, Rabobank 2018
The World outside of the US
...can just about meet China’s demand, but only if China gets ~100% of the exports

China is expected to import 95m tonnes, equivalent to all soybeans exported by countries other than the US

Source: USDA, Rabobank 2018
The Outlook for 2019 with South American currencies under pressure

Production is being incentivised in many producing countries …but not in the US.

Source: Bloomberg, Rabobank 2018
Brazil... 4-6% acreage expansion keeps production about unchanged at 120m t, but good yields are required!!

Exports might hit 80m t vs 76m t in current season, requiring a slower crush.

Source: USDA, Rabobank 2018
Argentine export tax changes: Soybeans gain in competitiveness relative to grains

*Weak Argentine peso benefits exports, while farming costs are only 55-60% in USD (fertilizer, seed, ...) while 40-45% is in ARS (labor, fuel, ...)*

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Pre-Macri Administration</th>
<th>Macri Administration until Sep 3, 2018</th>
<th>Post Sep 3, 2018 announcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soybean (1st)</td>
<td>213</td>
<td>218</td>
<td>240</td>
</tr>
<tr>
<td>Corn</td>
<td>117</td>
<td>123</td>
<td>147</td>
</tr>
<tr>
<td>Wheat + Soybean (2nd)</td>
<td>129</td>
<td>-70</td>
<td>196</td>
</tr>
<tr>
<td>Barley</td>
<td>145</td>
<td>15</td>
<td>180</td>
</tr>
<tr>
<td>Sunseed</td>
<td>215</td>
<td>136</td>
<td>290</td>
</tr>
</tbody>
</table>

Source: Rabobank 2018

Good news for Argentine biodiesel: EU Com decided not to reinstate import tariffs on imported Argentine biodiesel (for now! Further Investigations will take place)
South American soybean production could hit a new record in 2019

Close to 200 mln tonnes of production and a 12% to 17% recovery from this year!

Source: USDA, Rabobank 2018
El Niño – A Real Threat in 2018/19?

Risk has been somewhat lowered recently, but still a factor to watch

Source: Australian Bureau of Meteorology, Bloomberg, NOAA, Rabobank 2018
Potential Impacts of a Southern Hemisphere El Niño Event

Both unfavourable and favourable impacts are possible for agric commodities

Australia
Drier and warmer-than-normal

South East Asia
Drier and warmer-than-normal

India
Often a reduction in the intensity of the Indian Monsoon

Southern US
Canada and northern US can see mild winters, while the US southern states can expect a wetter-than-normal winter

Brazil
Wetter-than-normal conditions are often experienced across southern Brazil, while northern Brazil can experience dryness.

Source: NOAA, Rabobank 2018
US change in plantings for 2019: Less soybeans, but how much?

Soy/corn price ratio at 2.3 for end 2018 and end 2019, calls for some more corn, but not a dramatic cut in soy acreage, while market actually needs a 4-5m acres cut in soybean

Source: Bloomberg, Rabobank 2018
US 2019 acreage split: Less soy, more others

US soy acreage cut not to immediately move all into corn, if trade wars stay in place & South American crops are good, a 6m acres cut is no problem at all!!

**Source:** Rabobank 2018
VEGETABLE OILS
Global oil production growth exceeds trend in recent years (CAGR 4.3%)

Production growth CAGR 4.3% in past decade

Source: USDA, Rabobank 2018
Palm oil stocks are high and soybean oil is getting cheaper due to trade wars.

**Malaysian May and Jun 2018 CPO production lowest in many years**

**Indonesia production strong, offsetting Malaysian shortfall, but it has been quite dry posing future production risk**

Source: MPOB, Bloomberg, Rabobank 2018
India: Slow veg. oil growth... due to high import duties. Especially soy oil use and somewhat consumption slowed.

2018/19 to bring rising imports due to poor cotton and peanut crop and despite soy recovery.

Source: USDA, Rabobank 2018
Chinese veg. oil imports to recover in 2019, driven by reduced soy crush

Imports of palm oil, soy oil and partly other oils to benefit from trade wars

Source: USDA, Rabobank 2018
10 year outlook for oils & meal

veg oils and soymeal

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Marketing Communication
Global vegetable oil production increased 3.5X in last 25 years, with palm rising 5X.

Will this production rally continue in the next decade?

Source: USDA, Rabobank 2018
The decrease in South-East Asian palm oil production post-2021 will result in a bullish palm oil price environment.

- **Low global palm oil price environment**: Global palm oil production increases on the back of increasing South-East Asian production.

- **Neutral to already slightly bullish price environment**: Global palm oil production decreases due to decreasing South-East Asian production, a result of replanting and old oil palm trees.

- **Bullish price environment**: Improving global palm oil production situation, as oil palm trees which were planted in Indonesia and Malaysia from 2018 to 2023 reach their young mature and mature stages.

Global palm oil consumption is required to increase more than 'long-term' consumption. Thus, low palm oil prices are needed.

Global palm oil consumption will have to decline from previous years, as global production decreases.

Global palm oil consumption will decrease more than 'long-term' consumption in order to adjust for global palm oil supply availability.

Other vegetable oils will fill the difference between palm oil base-case consumption and 'long-term' consumption.

Source: United Nations, Chinese Ministry of Agriculture, Indonesian Directorate General of Estate Crops MPOB, USDA, Rabobank 2018

Agri Commodity Markets Research
China Soybean demand growth slowing, even if the trade wars would be resolved.

Source: USDA, Rabobank 2018
EU Rapeseed production maxed out, soy on the rise

An almost flat outlook for EU rapeseed production in next 10 years

Source: USDA, Rabobank 2018
Consumption growth by region & key drivers

Source: USDA, Rabobank
India’s import growths of vegetable oils to slow to 25m t for 35m t consumption

Palm oil to pose the biggest absolute increase, but to lose shares to soy & sun

Sources: USDA, Rabobank 2018
Africa: Imports to rise by $\frac{1}{3}$rd through 2030 from 9m t to 12 m t

The gap between vegetable oil consumption and production is widening, 2010-2030f

Source: Rabobank 2018
Rising African Vegetable Oil Imports in Next Decade

Source: Rabobank 2018
Global soymeal use rose by 75m t
...or ~50% in the past decade

How much will the global soymeal demand rise in the next decade?

Source: USDA, FAO, Rabobank 2018
Global meat & aquaculture growth
...is slowing in next decade (+56m t vs +84m t)

Adding 56m t of meat production or +15% in 10 years

Source: USDA, FAO, Rabobank 2018
Global meat & aquaculture growth

...is slowing in next decade (+56m t vs +84m t)

Representing a 1/3rd slower growth compared to previous decade

Source: USDA, FAO, Rabobank 2018
Global meat & aquaculture growth...is slowing in next decade (+56m t vs +84m t)

Poultry forecast to growth 55% less in next decade, pork and aquaculture 26% less

Source: USDA, FAO, Rabobank 2018
Global soymeal use to rise by only 50-55m t
...or ~22% in the next decade

How much will the global soymeal demand rise in the next decade?

Source: USDA, FAO, Rabobank 2018
Future exports of soymeal to grow...at similar level as in the past Despite a decline of global soymeal consumption growth

*Change of global soymeal use 2006/08-2016/18 vs 2016/18-2026/28*

- Past Decade:
  - Based on meal imports: 8.5 million tonnes
  - Based on domestic crush: 67 million tonnes

- Future Decade:
  - Based on meal imports: 9.0 million tonnes
  - Based on domestic crush: 52 million tonnes

Source: USDA, FAO, Rabobank 2018
US Soybeans

...despite the China setback, long-term production is expected to rise

Source: USDA, Rabobank 2018
Brazilian soybean production
...is expected to reach 157 m tonnes planted in 45.5m hectares in 2027/28

*Brazil's soybean production and acreage forecast, 2000/01-2027/28f*

Source: USDA, Rabobank 2018
Argentine soybean production
...is expected to reach 68 m tonnes planted in 22m hectares in 2027/28

Argentina’s soybean production and acreage forecast, 2000/01-2027/28f

Source: USDA, Rabobank 2018
The Wildcards: India

Rising domestic meal demand turns the country soon into a net importer either of soybeans or of soymeal

Source: USDA, Rabobank 2018
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Where happened the growth
...and did crushing at origin or destination rise most?

Additional soymeal demand by country from 2006/08 to 2016/18 (mln t)

Regions with soymeal use decline over past decade (ttl -5.6m tonnes)

Source: USDA, FAO, Rabobank 2018
Wildcards: Alternative Meat

*If it tastes like meat and looks like meat, it might not be meat…*
Veggie meals won’t kill your feed business
...but will slow the future growth

Despite strong consumption growth of alternative proteins, volumes are forecast to stay below 1% of meat production volumes, 2016-2022

Source: Rabobank 2018
• **Key drivers in 2019 for global vegoil tradeflows**

• Vegoil supplies in global markets are likely to remain high in 2018/19; Indonesian CPO production more than compensating for slightly lower y-o-y Malaysian production, US is expecting record high soybean crop; and locally in India, thanks to decent monsoon, domestic oilseed and vegoil supplies are likely to remain better y-o-y.

• Trade war and crude oil are likely to continue dictating the global vegoil prices in coming season. Any upsurge in brent crude prices could trigger higher CPO consumption; or MPOB palm pricing has to go down from current levels to trigger demand recovery (but with current pricing, low scope for further price drop).