Global Oil Supply, Demand and Price Outlook

With Special Emphasis on Palm Oil

POTS Iran on 6 Febr 2017

Thomas Mielke, ISTA Mielke, Oil World, Global Market Research on Oilseeds, Oils and Meals

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Palm oil is the Price Leader for Oils and Fats Worldwide

Monthly Prices of 2 Oils
cif Rotterdam in US-$ / MT

Monthly Prices from Jan 1973 until Jan 2017

'74 '76 '78 '80 '82 '84 '86 '88 '90 '92 '94 '96 '98 '00 '02 '04 '06 '08 '10 '12 '14 '16

- Palm oil crude
- Rape oil

Palm oil is the Price Leader for Oils and Fats Worldwide
World Exports 2016 in Mn T:

- Soya oil 12.0
- Palm oil 43.7
- Palmkern oil 3.0
- Coconut oil 1.6

Today consumers in the world need about 63 Mn T of palm oil per year

### World Net Exports of Oils and Fats (1000 Mt)

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundnuts........</td>
<td>775</td>
<td>752</td>
<td>505</td>
<td>544</td>
<td>1 380</td>
<td>1 296</td>
<td>1 047</td>
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<tr>
<td>Groundnut oil.....</td>
<td>125</td>
<td>119</td>
<td>165</td>
<td>121</td>
<td>290</td>
<td>240</td>
<td>272</td>
</tr>
<tr>
<td>Total, as oil....</td>
<td>466</td>
<td>450</td>
<td>431</td>
<td>360</td>
<td>897</td>
<td>819</td>
<td>733</td>
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<tr>
<td>Cottonseed oil...</td>
<td>199</td>
<td>187</td>
<td>217</td>
<td>138</td>
<td>416</td>
<td>325</td>
<td>256</td>
</tr>
<tr>
<td>Cottonseed oil...</td>
<td>103</td>
<td>116</td>
<td>120</td>
<td>73</td>
<td>223</td>
<td>189</td>
<td>248</td>
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<tr>
<td>Total, as oil....</td>
<td>135</td>
<td>146</td>
<td>155</td>
<td>95</td>
<td>290</td>
<td>241</td>
<td>289</td>
</tr>
<tr>
<td>Soybeans..........</td>
<td>1 171</td>
<td>1 742</td>
<td>3 919</td>
<td>5 390</td>
<td>5 090</td>
<td>4 133</td>
<td>5 146</td>
</tr>
<tr>
<td>Soybean oil......</td>
<td>1 260</td>
<td>1 156</td>
<td>3 641</td>
<td>1 137</td>
<td>601</td>
<td>275</td>
<td>519</td>
</tr>
<tr>
<td>Rapseed oil......</td>
<td>607</td>
<td>417</td>
<td>7 608</td>
<td>520</td>
<td>1 575</td>
<td>737</td>
<td>1 142</td>
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<tr>
<td>Total, as oil....</td>
<td>150</td>
<td>126</td>
<td>175</td>
<td>46</td>
<td>325</td>
<td>172</td>
<td>171</td>
</tr>
<tr>
<td>Sunflowerseed oil</td>
<td>9</td>
<td>4</td>
<td>11</td>
<td>8</td>
<td>20</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Total, as oil....</td>
<td>9</td>
<td>4</td>
<td>11</td>
<td>8</td>
<td>20</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Sunflowerseed oil</td>
<td>1 217</td>
<td>89</td>
<td>147</td>
<td>113</td>
<td>234</td>
<td>202</td>
<td>226</td>
</tr>
<tr>
<td>Total, as oil....</td>
<td>45</td>
<td>62</td>
<td>91</td>
<td>46</td>
<td>136</td>
<td>108</td>
<td>81</td>
</tr>
<tr>
<td>Sesame...........</td>
<td>68</td>
<td>85</td>
<td>129</td>
<td>76</td>
<td>197</td>
<td>161</td>
<td>140</td>
</tr>
<tr>
<td>Total, as oil....</td>
<td>44</td>
<td>40</td>
<td>28</td>
<td>30</td>
<td>72</td>
<td>70</td>
<td>74</td>
</tr>
<tr>
<td>Olive oil$........</td>
<td>1 055</td>
<td>1 152</td>
<td>1 175</td>
<td>1 157</td>
<td>1 176</td>
<td>1 185</td>
<td>1 200</td>
</tr>
<tr>
<td>Totals: Seeds....</td>
<td>3 476</td>
<td>2 983</td>
<td>5 123</td>
<td>3 294</td>
<td>8 599</td>
<td>6 277</td>
<td>7 004</td>
</tr>
<tr>
<td>Oils.............</td>
<td>647</td>
<td>577</td>
<td>799</td>
<td>438</td>
<td>1 446</td>
<td>1 009</td>
<td>1 349</td>
</tr>
<tr>
<td>Combined, as oil.</td>
<td>1 486</td>
<td>1 319</td>
<td>1 856</td>
<td>1 159</td>
<td>3 344</td>
<td>2 478</td>
<td>2 869</td>
</tr>
</tbody>
</table>

**Palm**

- Copra..............| 633           | 838           | 909          | 809          | 1 542             | 1 647             | 1 580             |
- Coconut oil.......| 119           | 111           | 152          | 157          | 273               | 268               | 194               |
| Total, as oil....| 525           | 648           | 740          | 675          | 1 265             | 1 323             | 1 025             |
- Palm kernels.....| 331           | 348           | 348          | 368          | 679               | 716               | 740               |
- Palm kernel oil..| 22            | 25            | 29           | 29           | 51                | 54                | 53                |
| Total, as oil....| 178           | 189           | 192          | 202          | 370               | 391               | 401               |
- Palm oil.........| 253           | 285           | 277          | 274          | 530               | 559               | 586               |
| Totals: Seeds....| 964           | 1 186         | 1 257        | 1 177        | 2 481             | 2 363             | 2 320             |
| Oils.............| 394           | 421           | 465          | 460          | 859               | 881               | 833               |
| Combined, as oil.| 956           | 1 122         | 1 209        | 1 151        | 2 165             | 2 273             | 2 192             |
Monthly Prices of 4 Oils (in US-$/T)

- SBO Dutch
- Sun oil EU
- Rape oil Dutch
- CPO cif R'dam

January 2014 until Jan 2017

+49%
PRICES: Changes from a Year Ago
(in US-$ per tonne)

CPO, fob Indo.
Palm stearin, fob Mal.
Soy oil, Arg.
Sun oil, Black Sea
Rape oil, Rott.

Oct/Jan 15/16
Oct/Jan 16/17

+39%  +50%  +19%  -3%  +14%
+84%

MALAYSIA: Crude Palm Oil Futures Close
First position in Malaysian Ringgit/T

Prices from 1 April 2016 until 3 Feb 2017

Apr May Jun Jul Aug Sep Oct Nov Dec Jan
2200 2300 2400 2500 2600 2700 2800 2900 3000 3100 3200 3300

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17 OILS & FATS: World Production (Mn T)

- Palm oil
- Soya oil
- 4 Animal Fats
- 9 Other oils
- Rape oil
- Sun oil

Years: 95/96, 98/99, 01/02, 04/05, 07/08, 10/11, 13/14, 16/17F
17 OILS & FATS: World Exports (Mn T)

- Soy, Rape, Sun Oils
- 4 Animal Fats
- Palm Oil
- 9 Other

Graph showing the export trends of different types of oils and fats over various years.
Below-average growth in palm oil exports means also much below-normal increase in total veg. oil exports.
Palm oil has become the by far most important vegetable oil for consumers in many countries, primarily in - Asia - Africa - C. & S. America

But the supply shortage made it necessary to ration demand.

In fact, palm oil usage has declined in several countries.
Palm Oil Production 1980 - 2017
in Major Countries (MnT)

2016:
-7% = -4.3 Mn T

1998:
-5% = -0.8 Mn T

Effects of El Nino
In 2016 the average annual oil yield fell to 19-year low

In 2017 yields will recover, but remain below average (more male & less female flours, i.e. still less than normal fruit bunches)
Unusual setback of production in 2015/16 …

…declines in palm oil & rapeseed oil could not be compensated

8 Veg. OILS: World Production
Change From Year Ago in Mn T

World Production of 4 Major Oils
Change on Year in Mn T
Price competitiveness versus other veg oils deteriorated
SUNFLOWER OIL: Exports of Key Countries (Mn T)

Major supply boost mainly in Oct/March 2016/17

Growing demand for high-oleic sunflower oil
Palm oil developed large premium versus energy prices

Annual Price Premiums Palm Oil vs Crude Mineral Oil (US-$/T)

Monthly Prices of Palm Oil & Crude Mineral Oil (US-$/T)

Annual average premiums/discounts from 2003 until 2016

Monthly prices from Jan 2003 until Jan 2017

Crude mineral oil

Palm oil, crude

Ja03 Ja05 Ja07 Ja09 Ja11 Ja13 Ja15 Ja17
Steep increase in production in 2016/17…

… extremely low stocks (-5.4 Mn) decisively curb supply and demand growth in 2016/17
Outlook for 2016/17:

Very big increase in world production by 10-11 Mn T in 2016/17

of which:

- Palm oil . . . +5.7 Mn (vs -3.9)
- Lauric oils +0.7 (vs -0.75)
- Soya oil . . . +2.4 Mn (vs +2.6)
- Rapeseed oil - 0.8 (vs -1.4)
- Sunfl. oil . . +1.56
- Groundn. oil +0.5
- Cotton oil . +0.07

World supplies of oils & fats will remain tight in Oct/March 2016/17. Higher prices.
PALM OIL: World Production Changes

Quarterly, Change on year in Mn T

Oct/Dec 2013 until July/Sept 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Change on Year in Mn T</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013/14</td>
<td></td>
</tr>
<tr>
<td>2014/15</td>
<td></td>
</tr>
<tr>
<td>2015/16</td>
<td></td>
</tr>
<tr>
<td>2016/17</td>
<td></td>
</tr>
</tbody>
</table>
Outlook Jan/Mar 2017:
With palm oil stocks down about 3.8 Mn T from a year earlier in early Jan 2017,
the prospective year-on-year production growth by 1.3-1.4 Mn T will be more than offset,
resulting in a further decline of world supplies by 2.4-2.5 Mn T in Jan/Mar 2017 versus a year earlier.
The Legacy of a Severe Production Deficit…

…Major Reduction in Stocks of Palm Oil, Rapeseed Oil and Others.
World production seen up by 6.5 Mn T in 2017.

World stocks of palm oil very low and down by 3.8 Mn T from year ago as of 1 Jan 2017.

<table>
<thead>
<tr>
<th>PALM OIL</th>
<th>World Production (Mn T) and Yields (T/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Production</td>
</tr>
<tr>
<td>Indonesia</td>
<td>35.00*</td>
</tr>
<tr>
<td>Malaysia</td>
<td>20.00*</td>
</tr>
<tr>
<td>C&amp;S America</td>
<td>4.19*</td>
</tr>
<tr>
<td>Africa</td>
<td>2.55*</td>
</tr>
<tr>
<td>Oth ctrs.</td>
<td>3.02*</td>
</tr>
<tr>
<td>WORLD</td>
<td>64.76*</td>
</tr>
</tbody>
</table>

+6.5 Mn T  -4.3 Mn T
Impacts from soybeans and other oilseeds
In 2016/17:
Soybeans:
World 333 Mn T
(up 21 Mn)
USA 117 Mn T
(up 10 Mn)

Global Production of 10 Oilseeds

2016/17 -- 540.7 Mn T

10 Oilseeds - - 540.7 Mn T

Soybeans 62%
Rapeseed 11%
Sunseed 9%
Cottonseed 7%
Groundnuts 6%
Copra & Palmkernels 4%
Other 3 Oilseeds 2%

10 years earlier
India accounted for
9% of world oilseed
production and China
for 13%

Other ctries 14%
SOYBEANS

Record yield and soybean output in the USA in 2016

But global dependence on US soybeans and products increasing in 2016/17

In Sept/Feb 2016/17 US soybean exports soaring to 46.3 Mn T (up 6 Mn T), thus 73% of world exports

<table>
<thead>
<tr>
<th></th>
<th>16/17F</th>
<th>15/16</th>
<th>14/15</th>
<th>13/14</th>
<th>12/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Op. stocks</td>
<td>5.35</td>
<td>5.19</td>
<td>2.50</td>
<td>3.83</td>
<td>4.61</td>
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<tr>
<td>Crop.</td>
<td>117.21</td>
<td>106.86</td>
<td>106.88</td>
<td>91.39</td>
<td>82.79</td>
</tr>
<tr>
<td>Imports</td>
<td>.78*</td>
<td>.66</td>
<td>.93</td>
<td>2.10</td>
<td>1.01</td>
</tr>
<tr>
<td>Exports</td>
<td>57.80*</td>
<td>52.74</td>
<td>50.20</td>
<td>44.65</td>
<td>36.17</td>
</tr>
<tr>
<td>Crushings</td>
<td>52.70*</td>
<td>51.33</td>
<td>51.16</td>
<td>47.38</td>
<td>45.97</td>
</tr>
<tr>
<td>Other use</td>
<td>3.32*</td>
<td>3.28</td>
<td>3.77</td>
<td>2.77</td>
<td>2.45</td>
</tr>
<tr>
<td>End. stocks</td>
<td>9.52*</td>
<td>5.35</td>
<td>5.19</td>
<td>2.50</td>
<td>3.83</td>
</tr>
<tr>
<td>Stocks/usage</td>
<td>8.4%</td>
<td>5.0%</td>
<td>4.9%</td>
<td>2.6%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>
Soybean Area - change on year (Mn ha)

- Argentina
- Brazil

Year:
- 07/08
- 08/09
- 09/10
- 10/11
- 11/12
- 12/13
- 13/14
- 14/15
- 15/16
- 16/17

Values:
- -1
- -0.5
- 0
- 0.5
- 1
- 1.5
- 2
- 2.5
- 3
- 3.5
FLOODED as of 18 Jan 2017  (in 1 000 ha )

BUENOS AIRES  1063
SANTA FE      821
CORDOBA      483
           2367

THEREOF (estimated):
SOYA         1000
CORN         1000
OTHER        367
Soybean Crop Trend Since 74/75 (Mn T)

U.S.A.

Argentina, Brazil & Paraguay
We still anticipate a recovery in world soybean stocks in 2016/17. Production to exceed consumption, despite recent downward revisions in the USA and Argentina.

Or will the losses in Argentina be greater?

A shortage in soybeans may arise in 2017/18, if the excellent 2016 yields in the US cannot be repeated.
Daily futures from 5 Apr 2016 until 2 Feb 2017

- March 2017 position
- 50-day moving average

CBOT: Daily Soybean Futures (c/bu)
In Jan/Dec 2016 China imported:

83.7 Mn T of soybeans

3.8 Mn T of rapeseed
Further boost in world soybean crushings required in 2016/17, because  
1) rising demand  
2) still insufficient palm oil supplies  
3) tightness of other seeds  
4) low stocks of vegetable oils  

This is creating a surplus in oil meals, and has raised the oil share
World Production of 17 Oils & Fats

2016/17F - - 213.5 Mn T

- Soya Oil 25,0%
- Palm Oil 29,9%
- Rape Oil 11,5%
- Sun Oil 8,3%
- PKO&CNO 4,6%
- Others/An.Fats 20,8%

1991/92 - - 83.5 Mn T

- Soya Oil 20,1%
- Palm Oil 14,2%
- Rape Oil 11,4%
- Sun Oil 9,9%
- PKO&CNO 5,2%
- Others/An.Fats 39,3%

Up 156% in 25 years

Average annual increase of 5.2 Mn T

Palm oil account for 40% of the increase (+2.1 Mn p.a.)
Impacts from biodiesel
Substantial Growth in World Demand of Oils/Fats ! !

**Average demand growth in past 5 seasons:**
- Total: +6.4 Mn T per year
- Biofuel: +1.6 Mn T
- Food/other: +4.8 Mn T

**17 Oils & Fats : World Consumption**

Total Usage in Mn T

- **biofuel**
- **food and other**

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Febr 6, 2017

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Policy Measures Boosting Use of Soya Oil & Palm Oil for Biodiesel Production in 2016

**Soya Oil Use for Biodiesel (Mn T)**
- U.S.A.
- Argentina
- Brazil

**Palm Oil Use for Biodiesel (Mn T)**
- Malaysia
- Thailand
- Indonesia
- EU-28

- **+1.2 Mn T**
- **+1.7 Mn T**
### BIODIESEL: World Production by Country (Mn T)

<table>
<thead>
<tr>
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<th></th>
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</thead>
<tbody>
<tr>
<td>EU-28</td>
<td>12.40*</td>
<td>12.35*</td>
<td>12.37</td>
<td>12.20*</td>
<td>10.65</td>
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<tr>
<td>U.S.A.</td>
<td>6.20*</td>
<td>5.85*</td>
<td>4.90</td>
<td>4.80</td>
<td>4.72</td>
</tr>
<tr>
<td>Argentina</td>
<td>2.55*</td>
<td>2.63*</td>
<td>1.81</td>
<td>2.58</td>
<td>2.00</td>
</tr>
<tr>
<td>Brazil</td>
<td>3.80*</td>
<td>3.36*</td>
<td>3.46</td>
<td>3.00</td>
<td>2.56</td>
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<tr>
<td>Colombia</td>
<td>.49*</td>
<td>.45*</td>
<td>.51</td>
<td>.52</td>
<td>.50</td>
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<tr>
<td>Singapore</td>
<td>.88*</td>
<td>.86*</td>
<td>.82</td>
<td>.76</td>
<td>.79</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.20*</td>
<td>3.00*</td>
<td>1.16</td>
<td>2.92</td>
<td>2.60</td>
</tr>
<tr>
<td>Malaysia</td>
<td>.60*</td>
<td>.50*</td>
<td>.67</td>
<td>.60</td>
<td>.47</td>
</tr>
<tr>
<td>Thailand.</td>
<td>1.10*</td>
<td>.98*</td>
<td>1.03</td>
<td>.99</td>
<td>.93</td>
</tr>
<tr>
<td>Oth. ctries.</td>
<td>3.00*</td>
<td>2.94*</td>
<td>2.89</td>
<td>2.94*</td>
<td>2.65*</td>
</tr>
<tr>
<td>Total</td>
<td>34.22*</td>
<td>32.92*</td>
<td>29.62</td>
<td>31.30</td>
<td>27.87</td>
</tr>
</tbody>
</table>

**Change in**
- EU-28: +1.30*
- U.S.A.: +3.30*
- Argentina: -1.68
- Brazil: +3.43
- Colombia: +3.29

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**World Production of Biodiesel (Mn T)**

![Bar chart showing world biodiesel production from 2005 to 2017F.](chart.png)
Concluding Statements

In 2016/17 oils & fats stocks still drop relative to annual consumption.

A second year (2017/18) without severe weather problems is required to bring oils & fats stocks to more comfortable levels.

Oilseeds would tighten in case of an Argentine soya crop of close to 50 Mn T
I expect a further rally in Jan/March 2017, with crude palm oil in Rotterdam likely to peak soon near US-$ 840

Crude palm oil (fob Indon) may peak at US-$ 800

Arg soy oil to peak at 840

Prices seen declining from March or April onward. The weakness should be limited at first but then be enforced in 2nd half 2017 and accelerate in 2018
Price decline ahead. In Apr/June 2017 average prices of soya oil and palm oil may fall $40-50 below the Jan/Mar 2017 average.

Apr/June 2017 forecasts:
- RBD palmolein 715 (Ja19: 768)
- Arg soyaoil fob 760 (Ja19: 819)

Average 2018 vs 2017 vs 2016:
- Palmolein 650 vs 710 vs 674

But the price low in 2018 could be US $600 or slightly less, reducing the crude PO futures at the BMD to or below 2400 Ringgit.
Lauric oil prices set to decline in the next 12 months on account of:
- recovering production
- relatively inelastic demand

Premiums of lauric oil prices versus palm oil are set to narrow in 2017
Thank You
for Your Kind Attention!