Malaysian Palm Oil & its Role in Global Oils & Fats

Food Applications of Palm Oil

July 18, 2019
Lahore, Pakistan
Global Oils & Fats Production (‘000 MT)

Source: Oil World

<table>
<thead>
<tr>
<th>Year</th>
<th>Palm oil</th>
<th>Soybean oil</th>
<th>Rapeseed oil</th>
<th>Sunflower oil</th>
<th>Other Oils</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>165,319</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>172,833</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>180,624</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>187,552</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>189,989</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>202,023</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>206,775</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>204,825</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>221,980</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>230,040</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Oil World
Oils & Fats Production (Comparison 1990 vs 2018)

1990: 80.89 million

2018: 230.04 million MT

Source: Oil World
## Oils & Fats Trade (Comparison 1990 vs 2018)

<table>
<thead>
<tr>
<th></th>
<th>1990 ('000 MT)</th>
<th>(%)</th>
<th>2018 ('000 MT)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palm oil</td>
<td>8,429</td>
<td>36.22</td>
<td>50,130</td>
<td>56.88</td>
</tr>
<tr>
<td>Soybean oil</td>
<td>3,294</td>
<td>14.15</td>
<td>11,130</td>
<td>12.63</td>
</tr>
<tr>
<td>Sunflower oil</td>
<td>2,126</td>
<td>9.13</td>
<td>10,130</td>
<td>11.49</td>
</tr>
<tr>
<td>Rapeseed oil</td>
<td>1,613</td>
<td>6.93</td>
<td>4,940</td>
<td>5.60</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>15,462</strong></td>
<td><strong>66.43</strong></td>
<td><strong>76,330</strong></td>
<td><strong>86.60</strong></td>
</tr>
<tr>
<td>Cottonseed Oil</td>
<td>302</td>
<td>1.3</td>
<td>130</td>
<td>0.15</td>
</tr>
<tr>
<td>Groundnut Oil</td>
<td>318</td>
<td>1.37</td>
<td>270</td>
<td>0.31</td>
</tr>
<tr>
<td>Sesame Oil</td>
<td>22</td>
<td>0.09</td>
<td>50</td>
<td>0.06</td>
</tr>
<tr>
<td>Corn Oil</td>
<td>360</td>
<td>1.55</td>
<td>750</td>
<td>0.85</td>
</tr>
<tr>
<td>Olive Oil</td>
<td>287</td>
<td>1.23</td>
<td>1090</td>
<td>1.24</td>
</tr>
<tr>
<td>Palm Kernel Oil</td>
<td>886</td>
<td>3.81</td>
<td>3,310</td>
<td>3.76</td>
</tr>
<tr>
<td>Coconut Oil</td>
<td>1,617</td>
<td>6.95</td>
<td>1,820</td>
<td>2.06</td>
</tr>
<tr>
<td>Butterfat</td>
<td>625</td>
<td>2.69</td>
<td>820</td>
<td>0.93</td>
</tr>
<tr>
<td>Lard</td>
<td>269</td>
<td>1.16</td>
<td>130</td>
<td>0.15</td>
</tr>
<tr>
<td>Fish Oil</td>
<td>694</td>
<td>2.98</td>
<td>910</td>
<td>1.03</td>
</tr>
<tr>
<td>Linseed Oil</td>
<td>184</td>
<td>0.79</td>
<td>110</td>
<td>0.12</td>
</tr>
<tr>
<td>Castor Oil</td>
<td>178</td>
<td>0.76</td>
<td>620</td>
<td>0.70</td>
</tr>
<tr>
<td>Tallow/Grease</td>
<td>2,070</td>
<td>8.89</td>
<td>1,800</td>
<td>2.04</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>7,812</strong></td>
<td><strong>33.57</strong></td>
<td><strong>11,810</strong></td>
<td><strong>13.40</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>23,274</strong></td>
<td><strong>100.00</strong></td>
<td><strong>88,140</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

*Source: Oil World*
Oils & Fats Net Importers / Exporters

Source: Oil World
Demand Scenario

- IMF forecasts that China’s GDP will grow in 2019 at 6.6%, 0.2% lower than 2018’s estimate.
- Worldometers, an independent company projects that China’s population will grow by 0.35% or 5.0 million to 1.42 billion.
- In line with the expected higher consumption, we forecast that China’s domestic oils and fats disappearance is expected to increase by 0.251 million tonnes to 38.202 million tonnes in 2019.
- Consumption will again be driven by the growing affluence of China’s middle class, in addition to the country’s growing rate of urbanization.

- Population growth will continue to drive India’s oils and fats consumption amidst expected rise of Indian vegetable oil requirements based on the increasing trend of consumption and declining domestic production.
- Rabi crops is expected to be affected by dryness will decline due to the dry spell that will continue since December 2018.
- Palm oil will continue to fulfil India’s supply and demand gap despite changing tax structure as price competitiveness and logistic proximity are seen as advantages of palm oil against its competitors.
**Demand Scenario**

- The Middle East region will remain as a net importer of oils and fats as despite higher domestic production in 2019, it can cater to less than 45% of consumption.
- According to the IMF, economic growth in the Middle East is projected to rise to 1.9 percent in 2019.
- Per capita consumption ranges from 20 – 33 kg but there is a huge disparity for countries like Yemen, Ethiopia, Sudan, Somalia and Eritrea where per capita consumption is less than 10 kg.

- According to the IMF and the Sub – Saharan African region is expected to have overall economic growth of 3.8%, on par with the global forecast of 3.7%.
- Domestic oils and fats will be insufficient to meet demand and will continue to depend on imports to meet demand.
- Sub-Saharan oils and fats imports have increased from 5.72 million MT in 2014 to 6.25 million tonnes in 2018 with palm oil contributed a major portion of that increase from 5.1 million MT to 6.1 million MT.

- The EU is highly dependent on imports of oilseeds to meet the demand for food, feed and industrial uses that include bio-fuels production.
- Vegetable oils consumption in the last decade have been driven by the surge of the biofuels sector.
- It is projected that the share of vegetable oils in the biofuel complex to drop in favour of waste oils and residues. In the EU biofuels sector, rapeseed oil accounts for the largest share of vegetable oils usage (around 62%), followed by palm oil (around 33%).
Supply Scenario

- USA’s oils and fats production for 2019 is forecast at 21.5 million MT
- Soybean production is forecast to increase to 124 million MT mainly due to increase of yield from 47 to 52 bushels per acre.
- Consumption is forecast to reach 23.5 million MT as biodiesel production is forecast to reduce due to the low crude oil price
- Imports are forecast to be at 5.28 million MT fuelled by higher than expected domestic demand

- Brazil soybean crop in 2019 is projected at a record 122 million tons
- Yield is forecast at 3.07 tons per hectare, which is above the 5-year average.
- Oils & fats consumption is forecast to reach 10.6 million MT, up by 516,000 MT or by 4.7%
- Brazil’s main exports of soybeans are to China, while the main destination for their soybean oil is India

- In 2019, Argentina is forecast to produce 56 million MT of soybean due better weather conditions
- Oils & fats production is forecast to exceed 10 million MT in 2019 as crushings are expected to increase to meet meal demand
- Domestic oils & fats consumption is forecast at 4.2 million MT while exports are forecast at 6.12 million MT
Supply Scenario

- Malaysian palm oil production in 2018 was 19.52 million MT and is forecast to increase to 20.2 million MT in 2019.
- The marginal increase is due to ageing trees and a possibility of El Nino in 2019 that will impact the palm oil production.
- Palm oil export is forecast to exceed 17 million MT by end of 2019.
- India and China are expected remain as the largest destinations for Malaysian palm oil exports while Middle East, EU and USA will remain as other major destinations.

- Indonesian production is forecast to reach a record high of 42.8 million MT in 2019 due to improving weather conditions as well as newly maturing areas.
- Consumption is forecast to reach 12 million MT level due to demand in the food sector and the need for higher energy consumption, underpinned by its mandatory B20 biodiesel policy.
- India is Indonesia’s largest export destination followed by the EU and China.
Palm Oil & Global Food Security
3 MAJOR DRIVERS OF FOOD DEMAND

1. Population Growth
2. Increasing Incomes and Urbanisation
3. Changing Diets

Feeding an additional 2 billion+ people by 2050 is no small task and will take the collective efforts of many stakeholders to achieve this huge but attainable goal.

World Population in Billions 1900-2050
Source: UN World Population Report, 2018

Average Daily Calorie Intake 1900-2050
Source: FAO/World Resources Institute, 2010

Through a combination of waste and spoilage, about 1/3 of all edible food produced worldwide annually is lost.

33%
1.4 Billion Tonnes

This loss equals approximately 1.4 billion tonnes a year, which is enough to feed the world’s 800 million+ undernourished people.

Source: World Resources Institute, 2019

AS A SUSTAINABLE CROP, OIL PALM WILL PLAY A CRITICAL ROLE IN HELPING TO FEED THE WORLD AS IT IS:

10x
Most productive of the 10 major oilseed crops

Efficient
High output to input energy ratio

Versatile
Used in 1000’s of food products worldwide

YIELDS ARE KEY and will increase with:

Research & Development
Smart Technology
Soil Management
Pest Control

Beef is EXTREMELY inefficient to produce taking a much higher amount of grain and water than other animal proteins.

7kg Grain + 43,000 liters of water = 1kg Beef

Grams of animal-based protein per capita per day

1970: 23
2010: 32
2050: 36

Source: FAO/World Food and Agricultural Organisation, 2013

To meet population and dietary demands, 60% more food will be needed by 2050.

Source: Climate Change, Agriculture and Food Security, 2015

To most population and dietary demands, 60%, more food will be needed by 2050.

% of Total Land Surface Covered By:
- Forest/Mountain/Desert
- Cropland
- Meadows and Pastureland
- Oil Seeds

Source: UN Food and Agricultural Organisation
According to an estimate, global human population will grow to over 9 billion by 2050.

Food and Agriculture Organization of the United Nations (FAO) estimates the world will have to produce about 60 to 70 percent more food in the next 35 years,

The gap projected demand and supply will continue to widen.

Source: Oil World / MPOC Estimates
Production Growth of 4 Major Edible Oils

Source: Oil World
Average Yield per Hectare Comparison

Harvested Area (mil ha) vs. Production (mil tonnes), 2017

Source: MPOB / Oil World
Palm Oil Contribution in Global Consumption

1. **Source of food (global food security):** 80%

2. **Oleochemicals:** 15%

3. **Biofuel:** 2%

4. **Renewable energy source:** Potential Remains Largely Untapped through Palm Biomass

Source: Oil World
THE MALASYIAN PALM OIL
Major Milestones in Palm Oil Industry in Malaysia

1930
- Development of oil palm estates started to gain pace, led primarily by Elmo Darby, Guthrie, Glenmon, United Plantations and Harrisons & Crosfield.

1968
- Malaysia overtook Nigeria as the world’s largest exporter of palm oil.

1980
- The Palm Oil Research Institute of Malaysia (PORIM) was established.

1986
- The Malaysian Palm Oil Research and Development Council (MPOC) was established to promote and market Malaysian palm oil.

1990
- Significant investments in diversification and R&D to drive more growth and increasing exports from the palm oil industry.

1995
- The Malaysian Palm Oil Association (MPOA) was established.

2000
- Following a merger of PCOR in 1999, the Malaysian Palm Oil Board (MPOB) was established.

2006
- First commercial grade biodiesel plant began operations.

2008
- Malaysia became the first country in the world to produce and export certified sustainable palm oil (CSPO).

2010
- The palm oil and rubber sectors were identified as one of the 12 National Key Economic Areas (NKEAs) under the Malaysian Government’s Economic Transformation Program.

2011
- The Malaysian palm oil industry recorded RM83.26 billion in exports; the highest to date.

2014
- The Malaysian Palm Oil Certification Council (MPOCCC) was established.

2017
- The Malaysian Palm Oil Board introduced certification schemes.
Palm Oil Contribution to Malaysian Economy

Malaysian Palm Oil and Products Export Values Share 2018 - RM67.49 billion

GDP 2017 - PERCENTAGE SHARE BY KIND OF ECONOMIC ACTIVITY
(CONSTANT 2010 PRICES)

- 54.5% Services
- 23.0% Manufacturing
- 11.4% Agriculture
- 8.4% Mining and quarrying
- 8.2% Construction
- 4.6% Oil Palm
- 18.4% Other Agriculture
- 7.3% Forestry & Logging
- 5.6% Fishing

Source: Annual Gross Domestic Product 2010-2017

Oleo Chemicals 21.8%
Palm Oil 62%
PKO 6.3%
Biodiesel 2.2%
Finish 4.2%
Others 1.1%
PKC 1.7%
Malaysian Palm Oil Major Export Destinations – 2018

Source: Oil World & MPOB
Malaysian Palm Oil Complementing Our Lives
➢ Rising global demand for oils and fats will not be easily met with limited arable land.

➢ Palm oil is without a doubt the ultimate oil when it comes to affordability, sustainability and economic development.

➢ Palm oil industry has and will continue to provide affordable and sustainably produced edible oil in the future.

➢ Palm oil is expected to continue if not grow in its role of meeting global oils and fats demand.

➢ Malaysia is undoubtedly the global leader in palm oil industry and the pioneer in this industry.

➢ Palm oil is still the preferred crop to plant in Malaysia.