Journal of Oil Palm & The Environment 2011, 2:15-24 doi:10.5366/jope.2011.03

A Fair Trade Approach for Promoting Food Security and Ensuring Supply Sustainability in Oils & Fats Trade

Yusof Basiron*

Abstract

Escalating world population requires more food. Planet Earth is already burdened to meet this challenge due to the omnipresent scarcity of arable land and increasing cumulative pollution loads. In order to obtain maximum yield output, limited land resource must be used rationally by cultivating crops of choice with the highest yield per hectare. An example in the oils and fats sector is oil palm. In addition, the introduction of unfair trade practices and regulations applied to the oils and fats trade, disguised in the form of environmental requirements such as limiting deforestation, can lead to lower food production and consequently drive up food prices; thus, threatening food security.

Keywords

Food security, fair trade, oils and fats, palm oil, sustainability

JOPE 2011, 2:15-24

1. Introduction

The recent increase in oils and fats prices may signal the beginning of a long term imbalance in the supply and demand for these commodities. Assuming current growth trends will continue into the future, the projections, as shown in Figure 1, indicate that the supply of oils and fats will lag behind demand trends beginning 2010. Demand is driven by population growth which can be assumed to grow steadily in line with past rates and improvement in income. It is expected that on a per capita basis, future generations will

consume oils and fats as much, if not more, than the current population.

The capacity of suppliers to produce sufficient oils and fats to satisfy growing demand may be limited due to various reasons. These include a lack of suitable agricultural land¹; slow production expansion by imposition of stringent production certification schemes^{2,3,4}, government policies⁵ and insufficient improvement in yields of oilseed crops⁶. This may cause a widening gap between supply and demand. To reduce this gap, the market will need to re-establish equilibrium by allowing price to increase, thus simultaneously stimulating an increase in production and a reduction in demand. Producers must be assured of an opportunity to produce more oils and fats to meet shortages but they must also be equally assured of "fair trade and market access" as a motivation to increase production.

Address: Malaysian Palm Oil Council, 2nd Floor, Wisma Sawit, Lot 6, SS 6, Jalan Perbandaran, 47301 Kelana Jaya, Selangor, Malaysia.

Email: Yusof Basiron (yusof@mpoc.org.my)

*Corresponding Author

Published: 1 June 2011

Received: 10 May 2011

Accepted: 26 May 2011

This article is available from: <http://www.jope.com.my>

This is an Open Access article which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

Global Supply and Demand of Oils & Fats

A 20 year outlook

Global - Supply and Demand Scenario

Figure 1- EMERGING GAP IN GLOBAL SUPPLY & DEMAND OF OILS & FATS

2. Limits to growth

An exponential growth in demand is not likely to be matched by a similar increase in supply in the long term because there are limits to production capacities. This phenomenon is not only applicable to oils and fats but also to other commodities. Studies⁷ have shown that the world may see growth of many commodities reaching their peak in about 20 years and subsequent decline is inevitable as shown in Figure 2. Proponents of such studies argue that the continuing population expansion, exhaustion of natural resources, and a cumulative increase of pollutants are the main drivers for limiting future growth leading to catastrophic declines.

In order to prevent this catastrophe, mankind must react within the next ten years before the limits to growth reach their peaks. For oils and

fats, the expected onset of growth limits indicated by persistent shortfall in supply relative to demand as shown in Figure 1 is probably already occurring. Prices will therefore continue to escalate in the future while accommodating short term fluctuations. The same argument applies to other commodities and, thus, their prices are also expected to increase persistently. For commodity producing countries such as Malaysia, 2010 saw prices of rubber, palm oil, timber, cocoa and pepper undergoing significant increases. While the high prices contributed to an economic boom for Malaysia (7.2 % of GDP growth in 2010)⁸, there is an underlying fear that the shortage of agricultural land will continuously limit Malaysia's future ability to increase the country's commodity supplies.

The Basic Limits to Growth Model

Figure 2 - LIMITS TO GROWTH LEADING TO CATASTROPHIC DECLINES (SOURCE: MEADOWS, 1992) ⁷

3. Short term outlook of global oils and fats supply and demand

The high prices of oils and fats experienced in 2010 may unfavorably affect consumers through escalating food prices. Major producers of palm oil experienced declining production because of El Nino induced dryness in the early part of 2010 and flooding in the latter part of the year, especially in Malaysia. Even though Malaysia's palm oil production declined by 3.4% to 16.9 million tonnes in 2010 (compared to 17.5 million tonnes in 2009), total revenue earned by the country from exports of palm based products increased by RM 10 billion from RM 49.9 billion in 2009 to RM 59.9 billion in 2010⁹. Palm oil stocks in Malaysia were reduced from 2.2 million tonnes in 2009 to 1.4 million tonnes in 2010.

Generally, crop failure due to drought or flooding as experienced in 2009 and 2010 in Russia, Argentina and Brazil reduced supplies and stocks of grains and oilseeds. The subsequent demand on land allocation to replenish supplies is not easily met because new land expansion is limited. Every year the world population will increase by between 70 and 80 million¹⁰ and additional demand for oils and fats to feed the population will increase by an estimated 2.5 million tonnes. An additional 2.5 million tonnes increase in demand for oils and fats will be generated from improved per capita income of the world population. The resultant 5 million tonnes of additional oils and fats supply per year can only be produced by

either cultivating 10 million hectares of new land for soya-bean or 1 million hectares of oil palm. If the task to supply the additional 5 million tonnes of oil is divided equally between palm and soya-bean oil, annual expansion of oil palm cultivation will have to be half a million hectares while soya planting will need to expand by 5 million hectares.

The availability of new land for oil palm and soya-bean cultivation to the scale indicated above is severely restricted. This is due to lobbying by environmental NGOs (ENGOS), limitations imposed by the World Bank¹² and certain EU governments pressuring to limit deforestation especially in developing countries, combined with the potential implementation of a deforestation moratorium in some producing countries such as Indonesia and Brazil. The supply shortage problem will be further compounded in subsequent years, if targets set for expansion of annual planted areas are not met or the annual total production of oils and fats falls below expectations due to weather or other inhibiting factors.

A global oils and fats supply and demand model developed at the Malaysian Palm Oil Council (MPOC) that comprises the aggregation of regional supply and demand quantities has predicted that the stock to usage ratio of oils and fats in general and palm oil in particular will continue their declining trend for a second consecutive year in 2011 (Figure 3). This suggests that prices will continue to remain firm at least for the first half of 2011. It will take a major improvement in

CPO Price and Stock Usage Ratio

Figure 3 – STOCK USAGE RATIO AND PRICE TRENDS FOR PALM OIL

supply to replenish stocks which have been depleted for two consecutive years.

In 2011, it will be important to monitor the performance of major producing and consuming countries and how adverse weather, if any, will derail production trends. Most oils and fats producing countries are already involved in mandatory biodiesel programs. The availability of oils and fats for the export market will be further curtailed if supplies are diverted for domestic consumption to fulfill the mandated biodiesel market. Brazil and Argentina have already implemented biodiesel mandates that may limit export availability of their soya-bean oil. Columbia has become a net importer of oils and fats as more locally produced palm oil is used for biodiesel production.

4. Net export availability of oils and fats

For many years, countries have been facing shortages in domestic supply to fulfill their oils and fats needs. This has resulted in many countries becoming chronic importers of oils and fats. The major net importers are usually countries with a large population such as China, India, Pakistan and the EU. This indicates that agricultural land for oilseed cultivation is limited. Many other countries are also habitual net importers although on a

smaller scale. Cumulatively they constitute significant net importers in the global oils and fats trade.

Fortunately, there are a few countries producing excess oils and fats which have been able to meet the needs of net importers. As shown in Figure 4, only Malaysia and Indonesia are major net exporters of oils and fats, mostly in the form of palm oil and palm kernel oil. Argentina and Brazil are minor net exporters of mostly soya-bean oil. Brazil may be a major exporter of soya-bean but the oil subsequently produced by the importing country is mostly consumed domestically and does not appear as a net export statistic. Since both Argentina and Brazil are involved in mandatory blending of biodiesel which will consume more soya-bean oil as a raw material, the net exports of soya-bean oil from these countries will be reduced further.

Net oils and fats imports have undergone a steady increase, indeed almost doubling from 24 million tonnes in 2000 to 47 million tonnes in 2010 as shown in Figure 5. In future, net importing countries will continue to, at least, sustain the growth rate in net imports of oils and fats as self-sufficiency is difficult to achieve. This is, partly, because priority will also be given to land for oil-seed cultivation which will be required for allocation in the growing of grain crops.

Net Importing and Exporting Countries for Oils & Fats (2010)

Figure 4 – NET IMPORTS AND NET EXPORTS OF OILS AND FATS

Net Importing Countries of Oils & Fats

Figure 5 - NET IMPORTS OF OILS & FATS DOUBLING IN TEN YEARS

A reverse trend may occur for the net exporters of oils and fats. As more biodiesel is produced in Brazil and Argentina, less oils and fats would be available for net export. Similarly, as more pressure is applied by ENGOs on developing countries to limit their production of palm oil through moratorium on

deforestation, the availability of oils and fats for net exports would be reduced. This suggests that a gap will start to develop between net exports and net imports in the next few years as shown in Figure 6. Prices would likely rise to bring the net imports in equilibrium with net exports.

Emerging gap projected in future trends of net imports and net exports of oils & fats

Figure 6 - EMERGING GAP BETWEEN PROJECTED FUTURE TRENDS IN NET IMPORTS AND NET EXPORTS IN OILS & FATS

5. Fair opportunities for developing countries to expand production to facilitate net exports of oils and fats

With the potential long term shortages of oils and fats to meet increasing world demand, there are significant opportunities for all countries to enhance their capacities to produce and export oils and fats. This can only take place if a fair trade regime exists to enable unimpeded access for oils and fats exports globally. Presently, the most viable crop capable of participating in the net export market is palm oil. This is due to its high yield (Figure 7) and the least land required to produce a target quantity of oil (Figure 8), making oil palm the most sustainable crop to participate in the export trade. Oil palm thrives in the equatorial belt of the world where the tropical climate is conducive to generate high yields. The equatorial belt is also made up of developing countries which would benefit greatly in terms of income if they could produce and export palm oil to meet the world's demand especially to overcome the

impending future shortages of oils and fats supply.

Concern over deforestation has led to unfair restrictions on imports of palm oil in the EU and USA for example. The proposed imposition of stringent certification for sustainability on investment in oil palm cultivation by the World Bank¹¹ would reduce the expansion and development of the palm oil sector. The misleading claims made by ENGOs may result in reduced investments in oil palm cultivation. Therefore, any future shortfall in palm oil supply will require the opening of 10 times more land and forest area to grow soya-bean to produce the same target quantity of oils and fats. This suggests that the unfair and unsubstantiated allegations levelled at palm oil linking it to deforestation may eventually lead to much more deforestation when the world has to depend on other low yielding crops as seen in Figure 7 to overcome the projected future supply shortages.

Palm Oil Yield vs Other Oilseeds

Figure 7 – OIL PALM YIELD COMPARED WITH OTHER OILSEED CROPS

Although the oil palm share of cultivated land area was only 14.9 million ha out of 969 million ha of world grain and oil seed area or 1.5% in 2009, it supplies 75% of global net export availability. Since 1971, oil palm has only added 12 million ha while other oil crops have increased their cultivation area by 114 million ha

Figure 8 - OIL PALM SHARE OF WORLD GRAIN & OIL SEED AREA (SOURCE: FAO) ¹²

6. Sustainability of oil palm cultivation

The total harvested area in 2008 was 14.7 million ha for oil palm cultivation. Both Indonesia and Malaysia accounted for over 85% of global palm oil supplies. This was only 0.30% of the total world agriculture land (Table 1). ENGOs concerned over deforestation due to agricultural area expansion need to note that oil palm cultivation will not impact world deforestation in any significant way, as a share

of 0.30% of world agricultural land used for oil palm cultivation is a very conservative size which falls within the legitimate right of the two developing countries to use part of their land area for agriculture. A comparison of forest area between developed and selected developing countries including Malaysia and Indonesia clearly shows that these developing countries have a generous percentage of forest reserves which can cater to the needs

for biodiversity conservation adequately (Figure 9).

Carbon emission from overall agriculture is reported to contribute to 17% of greenhouse gas (GHG) emission due to cumulative effects of emission from deforestation and other decomposition processes¹⁴. The major source (57%) of global emission is attributed to the burning of fossil fuels. The oil palm share of global agricultural land of 0.30% indicates that its share of global emission is $0.30 \times 0.17 = 0.051$ of global emissions.

Even if the oil palm planted area is doubled, it would not dramatically contribute to global warming as alleged by the ENGOS. An increase of 0.051 % of GHG emission spread over 50 years of plantation development is rather insignificant. In reality, the carbon sequestering effect of oil palm trees may further reduce or mitigate the already relatively minute emissions of the oil palm industry. Deforestation avoidance effect resulting from the importation of palm oil is an additional beneficial contribution that is often ignored, especially in the indirect land use change (ILUC) effect of oil-seed production. As most countries are dependent on net imports, they

will avoid land from being deforested by a factor of 10 times if palm oil is imported. Otherwise they have to grow soya-bean using 10 times more land (presumably through deforestation) to substitute the same quantity of palm oil. The carbon emission saving value for palm oil when used as biofuel is relatively high. Studies^{16, 17} conducted in Holland by using the EU methodology have found an emission saving value of 62 % compared with petroleum diesel. Using the US methodology, a study by a US researcher¹⁸ shows a higher emission saving of 70%. These values are much higher than the threshold level of 35% and 50% required for biodiesel to be accepted in the EU and US respectively as shown in Figure 10. Unfortunately, a punitive value of 19% emission saving value has been arbitrarily assigned to palm oil by the EU in their Renewable Energy Directive (RED)¹⁹. Such low value has been deliberately calculated to bar the entry and use of palm biodiesel in the EU market. Such a barrier has no justification and clearly contravenes the WTO provisions as it discriminates treatment of 'like' commodities of foreign origin imported into the EU for biodiesel.

Cultivated Area of Oil Seeds in the World (2008)		
Land Use Type	Total Area (million ha)	As % of Area
Total Agricultural Land	4883.7	100
Oilseeds	259.5	5.31
Soyabean	96.5	1.98
Rapeseed	30.7	0.63
Sunflower	25.0	0.51
Oil Palm	14.7	0.30
Coconut	11.5	0.24
Other Oilseeds	81.1	1.66
Malaysian Oil Palm *	3.9	0.08

Source: FAO¹² * MPOB¹³
 Note: a-Oil Pal Cultivation comprises 5.7% total land area planted with oil seeds & 0.30% of world agricultural land

Table 1: OIL PALM CULTIVATED AREA COMPARED WITH TOTAL AGRICULTURAL LAND

Forest Sustainability

Palm oil helps save forests in many developing nations

Figure 9- FOREST AREA OF DEVELOPING & DEVELOPED COUNTRIES (SOURCE: FAO¹⁵)

Figure 10- CARBON EMISSION VALUES OF PALM OIL EVALUATED USING EU AND US METHODOLOGIES

7. Conclusions

The world is potentially facing a shortage of oils and fats in the medium to long term and more opportunities exist for developing countries to supply such a shortfall. Such opportunities will also generate jobs and increase income of the population. Unfortunately, many of the anti-development campaigns propagated by the ENGOs and certification systems required by certain countries e.g. EU and some international organizations such as World Bank are creating unfair trade barriers especially for the importation of palm oil from Malaysia and Indonesia and other developing countries. A fair trade approach should instead be universally promoted so that the much needed increase to meet the shortfall in oils and fats supply could be encouraged. This will prevent the early occurrence of shortages which could induce inflation on food prices. This in turn would affect billions of low income consumers especially in developing countries.

Palm oil is the most suitable oil to help solve the future shortages. Its high yield will require minimum utilization of additional new land compared to the planting of low yielding oil-seed crops. Palm oil is also shown to provide the most sustainable option as its can contribute to a greater level of carbon emission savings. With palm oil, there is also a significant deforestation avoidance effect which allows for a greater percentage of forests to be conserved in both producing and importing countries.

If fair trade and access to oils and fats importing markets are denied, the world may have to depend on low yielding oil sources which will have a counterproductive effect of accelerating deforestation, increasing the rate of carbon emission and suppressing development in developing countries. This will eventually lead to job losses and a consequential perpetuation of poverty.

References

1. <http://one-simple.ideacom/Environmental1.htm>: Population and arable land.
2. Ogg, D (2009). Sustainable management of oil palm: an over-view of the RSPO certification process. Proceedings of International Planters Conference, ISP, Kuala Lumpur, 127-146.
3. Weber, D (2008) The RSPO scheme for palm oil producers. The 6th Roundtable Meeting on Sustainable Palm Oil, Bali, Indonesia.
4. <http://www.responsiblesoy.org/> : Round Table on Responsible Soy Association
5. Food Standards Amendment (Truth in Labelling Palm Oil) Bill 2009. Australia Senate Community Affairs Legislation.
6. Mohd Basri Wahid (2009) Sequencing the oil palm genome: The beginning . Proceedings of PIPOC 2009, Kuala Lumpur,
7. Meadows, D et al (1992) Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future. Chelsea Green Publishing, www.chelseagreen.com
8. Bank Negara Malaysia (2011) Annual Report 2010, pp61.
9. Malaysian Palm Oil Board (2011) Review of the Malaysian oil palm industry 2010, pp95.
10. <http://www.freeworldacademy.com/globallder/trends.htm>: The world in 2030.
11. The World Bank & International Finance Corporation (2011) The World Bank Group Framework & IFC strategy for engagement in the palm oil sector, pp91.
12. <http://www.fao.org/corp/statistics/en>: FAOSTAT.
13. MPOB (2009) Malaysian oil palm statistics 2008 28th Edition. Malaysian Palm Oil Board, Ministry of Plantation Industries & Commodities, Malaysia, pp190
14. IPCC (2007) Climate change 2007 Synthesis report downloaded from <http://www.ipcc.ch/ipccreport/ar4-syr.htm>.
15. FAO (2004) Global Forest Resource Assessment Update 2005. Food and Agriculture Organization of the United Nations, Rome.
16. van Zutphen, J and R.A. Wijbrans (2007) The CO₂ and Energy Balance of Malaysian Palm Oil, Current Status and Potential for Future Improvement, CarbonCapital Solutions , pp45.
17. van Zutphen, J and R.A. Wijbrans (2008) The CO₂ and Energy Balance of Biodiesel derived from vegetable oils, CarbonCapital Solutions , pp37.
18. Unnasch, S., B. Riffel, R. Wiesenberger and S.T. Sanchez. (2010) Life cycle analysis of biodiesel from Malaysian palm oil, Life Cycle Associates, LLC, pp50.
19. Commissioner of the European Communities (2007) Directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources, pp61.