

**COMMENTS ON DRAFT DOCUMENT:  
DIET, NUTRITION AND THE PREVENTION OF CHRONIC DISEASES**

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We would like to draw your attention to the WHO/FAO Expert Consultation draft report entitled "Diet, Nutrition and the Prevention of Chronic Diseases". We are very concerned on the statement on page 11 of the main document and page 25 of the Annex 4 document.

The two statements:-

*"Palm oil is becoming the main fat diets of South East Asia and is likely to remain the major source in the coming years. This merits careful attention because of the health concerns attached to it".*

*And "palm oil in its present composition raises cholesterol and total/HDL ratio"*

are inaccurate and bias against the global palm oil industry.

Such statements implicate palm oil as "harmful or even dangerous" to human health. If such statements are adopted by the international and national health institutions all over the world, the consumption of palm oil globally may be affected. This could result in miseries and threatened livelihoods of several million people in Malaysia and possibility tens of millions in Indonesia, Thailand, Philippines, Nigeria, Colombia and New Guinea. It is very important to note that palm oil contributed to 21% of the total world's fats and oils consumption (Oil World 2002) and 45% of the world's fats and oils traded (Oil World 2002). Any advocacy by renowned and esteemed institutions like WHO and FAO would affect the energy balance of millions of lives.

We strongly object to the above statements because they discriminate against palm oil vis-a-vis other oils. Firstly there are insufficient scientific evidence to use such statements as a general guideline for the whole world. In the document, all the references were made on studies that were conducted in the US and some European countries. Only one Indian study (Ghafoorunissa, 1994) was quoted in the text and this

study does not refer to the detrimental intake of palm oil. Studies conducted elsewhere other than those conducted in the US and Europe were not referred to; yet this document was meant for every country in the world! We would like to list out the human studies that were conducted but not quoted in the text. All showed that palm oil diet does not increase the risk of CHD. They are:-

- In the presence of sufficient amounts of C18:2n-6 fatty acids, high palmitic acid diets do not have any effects on serum lipoprotein profiles as well as the rates of endogenous synthesis of cholesterol in both normal and hypercholesterolemic Canadian subjects. (Clandinin, et. al, 2000)
- A double blind crossover study (Sundram 1997) showed that palm olein-rich diet is identical to oleic-acid rich diet. Trans fatty acid rich diet performed the worst by elevating total cholesterol, 'bad' LDL-cholesterol, lipoprotein (a) and depressing 'good' HDL-cholesterol relative to oleic acid, stearic acid, lauric and myristic acids rich diets.
- A study by a group of researchers from the Institute of Nutrition and Food Hygiene, Beijing, China compared the effects of palm oil, soybean oil, peanut oil and lard (Zhang et al., 1997a; Zhang et al., 1997b; Zhang et al., 1995). They showed that palm oil has the effect of decreasing total blood cholesterol and 'bad' LDL-cholesterol and increasing the level of 'good' HDL-cholesterol. Soya bean oil and peanut oil had no effect on the blood cholesterol but lard increased the cholesterol levels. Among those hypercholesterolemic subjects, palm oil diets lower the cholesterol levels.
- A study on Pakistani adults showed that those given palm oil rich diets performed better than sunflower oil. Palm oil increased HDL-cholesterol and Apo A-1 levels. Hydrogenated cottonseed oil behaved the worst by raising serum triglycerides and lipoprotein levels. (Farooq et al., 1996)
- A comparative study in young Australian adults showed that the total blood cholesterol, triglycerides and HDL-cholesterol levels of those fed on palm oil (palm olein) and olive oil were lower than those fed on the usual Australian diet (Choudhury, Tan and Truswell, 1995). They showed that young Australian adults fed on palm oil diets had the same total blood cholesterol, triglycerides and 'good' HDL-cholesterol levels as those fed on olive oil.
- Study conducted on healthy Indian subjects (Ghafoorunissa et al., 1995) showed that palm olein and groundnut oil have comparable effects. Both oils do not induce hypercholesterolemia.
- Sundram et al. (1992) performed a dietary intervention study on a free-living Dutch population that normally consumes diets high in fats. Using a double blind crossover study design consisting of two periods of six weeks of feeding, the normal fat intake of a group of 40 male volunteers was replaced with 70% of

palm oil. The palm oil diet did not raise serum total cholesterol and 'bad' LDL-cholesterol, and caused a significant increase in the 'good' HDL-cholesterol and a significant reduction in 'bad' LDL-cholesterol.

- The effect of palm olein and of canola oil on plasma lipids was examined in double blind experiments in healthy Australian adults. Palm oil performed better than canola oil in raising the 'good' HDL-cholesterol (Truswell et al., 1992).
- A cross-over feeding study showed that the blood cholesterol, triglycerides, HDL-cholesterol and LDL-cholesterol levels of palm olein and olive oil diets were comparable (Ng et al., 1992).
- A Malaysian study (Ng et al., 1991) was conducted to compare the effects of diets containing palm oil (olein), corn oil and coconut oil on serum cholesterol. Coconut oil raised serum total cholesterol by > 10% whereas both corn and palm oil diet reduced the total cholesterol; corn oil diet reduced the total cholesterol by 36% and palm oil diet by 19%.
- A similar cholesterol-lowering effect of palm oil was observed in 110 young adults in a study conducted in Malaysia (Marzuki et al., 1991). The study compared the effect of palm oil with that of soybean oil. Subjects fed on palm oil (olein) and soy oil for five weeks, with a six-week washout period, had comparable blood cholesterol levels.

Secondly, more than 50% of the world's consumption of fats and oils is in form of solid fats. The use of solid fats is a necessity especially in the making of biscuits, breads, buns, cakes and pastries. Invariably, the food industry hydrogenates liquid oils to convert it to solid fats. In the process, trans fatty acids are formed. As quoted in Annex 4 of the text, trans fatty acids are detrimental to health. Solid fats made from palm oil however do not require hydrogenation, and thus palm fats are trans-free.

Food prepared using palm fat is definitely healthier as many studies showed that trans fatty acids are worse than saturated fats (Annex 4). Trans fatty acids raise the LDL-cholesterol, lower the HDL-cholesterol and increase the Lp(a), a very powerful risk factor for ischaemic heart disease (Mensink & Katan, 1990; Nestel et al., 1992; Zock & Katan, 1992; Mensink et al., 1992; Wood et al., 1993 & Aro et al., 1997). Several findings showed that trans fatty acids might be related with human fetal development. Two European studies showed significant associations between low birth weights and the content of trans fatty acids in the blood (Koletzko, 1992a; 1992b; Jendryczko et al., 1993). The uptake of essential fatty acids (EPA) by the fetus may be impaired by trans fatty acids. Trans fatty acids may also affect the metabolism of EPA of the fetus that could result in poor development of the fetal organs and tissues.

How can the world's demand for solid fats be satisfied if all fats are to be trans-free? Palm oil is one of the obvious choice for making trans-free fats. One may argue that trans-free solid fats could be made by inter-esterifying blends of oils with fully

hydrogenated fats. However, such processes are more expensive than just using the natural palm fats. There are also many potential hazards of hydrogenation plants and environmental pollution of catalyst waste especially in a technologically backward nation.

Thirdly, in the cardinal rule of nutrition, "There is no such thing as good nutrient or bad nutrient; it is good diet and poor diet that is vital in ensuring optimal nutrition". A good diet can be achieved when there is variety, adequacy and wholesomeness and is physically, psychologically, socially, culturally and religiously acceptable to the population. Is it right to advocate people to refrain from consuming certain fats and oils without referring to these issues? A wider perspective of food and the environment should be studied carefully before any health statements, could be made on certain food.

Fourthly, a new paradigm in nutrition and health has begun which has to do with the phytonutrients in fats and oils. Fats and oils, contain not only triglycerides which provide calories, but are rich sources of phytonutrients such as carotenoids (among the oils, red palm oil is only oil that contain natural carotenoids), tocopherols, tocotrienols (palm oil has one of the highest amounts of tocotrienols), phytosterols, co-enzyme Q10 etc. Phytonutrients such as tocotrienols have been demonstrated to have potent anti-oxidant properties (Serbinova et al., 1991), reduced cholesterol levels (Qureshi et al., 1988, 1991, 1995, 1996 & Tan et al., 1991), regress carotid stenosis (Kooyenga et al., 1997), delay atherosclerosis progression (Theriault, Chao & Gapor, 2002), protect the skin against light-induced oxidative stress (Thiele et al., 1997) and cancer prevention (Kato et al., 1985; Komiyama et al., 1989; Sundram et al., 1989; Wan Zurinah et al., 1991; Rahmat et al., 1993, Nesaretnam et al., 1998; McIntyre et al., 2000a, 2000b & Sylvester et al., 2001). There are sufficient evidence to show that red palm oil which contain abundant amount of carotenoids and tocotrienols could be use for undernourished children and pregnant and lactating women to improve their Vitamin A status (Rukmini, 1994; Nagendran et al., 2000; Narasinga Rao, 2000; Scrimshaw, 2000; van Stuijvenberg & Benadé, 2000; Lietz et al., 2000; Benadé, 2001, Delisle, Zagré & Quedraogo, 2001; Lietz et al., 2001 & Narasinga Rao, 2001).

Finally, palm oil presents the most sustainable option amongst edible oils due to its high yields. For instance, the yield of palm oil is 6 times or more per hectare than the commonly used edible oils (calculated from data derived from Oil World 2002). In line with the Working Group recognition that " *the Consultation articulated a new platform, not just of dietary and nutrient targets, but of a concept of human organism's subtle and complex relationship to its environment .... The discussion took into account those ecological issues, and societal and behavioral aspects ....* ", it is hope that WHO would not discourage the world to use palm oil as part of the normal healthy diet as palm oil vis-a-vis other oils, is the most productive oil. Palm oil could satisfy the world's oils and fats demands without straining the earth's limited land and energy resources.

Thank you.

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