

NEWS FEATURE:

Fat is an environmentalist issue

Health impacts have been excluded from assessments of palm oil production but they could alter governments' view of the industry.

Elisabeth Jeffries

Palm oil has brought Malaysia a great deal of prosperity. In 2011, the industry was the fourth largest contributor to the country's economy, accounting for RM53 billion (US\$16.8 billion) of Malaysia's gross national income. Palm oil creates hundreds of thousands of jobs and is responsible for 61.8% of export value (www.palmoilworld.org/sustainability.html). Malaysia itself is a major consumer.

But does this oil, rich in saturated fats, cause disease in the population? Nobody knows. For one thing, the financial costs of saturated fat consumption on health services have always been disconnected from palm oil production, both in Malaysia and nearby palm oil producing countries Indonesia and Thailand. For another, the precise effect of palm oil on health is unknown. But the consumption of palm oil may play a role in cardiovascular illness in those countries. It is, of course, a concern already noted down the supply chain in major consumer markets such as France, where agribusinesses and politicians have hit out at the soaring palm oil industry. In 2012, for example, a member of the French Senate attempted unsuccessfully to levy a tax on foods containing palm oil.

However, a new rear-guard action aimed at palm oil could come not from politicians concerned about voters, but from doctors concerned about producers. At least, that might be a long-term outcome of new investigations financed by the charitable health foundation the Wellcome Trust on the combined impact of palm oil on the economy, health, land use and emissions of Thailand. Bhavani Shankar, professor of international food, agriculture and health at the School of Oriental and African Studies Centre for Development, Environment and Policy, University of London, points out that health has been excluded from economic assessments.

"If I just look at the economic aspects of palm oil, say, it looks like a fantastic deal to me. Its impact on the economies of Malaysia and Thailand and Indonesia will be a very



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positive story. But that's a very, very partial picture. When I look at the other aspects, I start to realize those economic benefits have to be traded off against substantial environmental and health disbenefits," he says.

Dubbed 'green gold' by some, palm oil can justifiably be compared to another controversial substance, crude oil, arousing some of the same acquisitive instincts for the same reason; to get rich quick. Just as petrol benefits from unusual energy density, so palm oil is heavy with saturated fats — the palm fruit pulp contains half saturated and half unsaturated fats. Meanwhile, 82% of the palm kernel is saturated fat and the rest unsaturated. By contrast, rapeseed, sunflower and soybean contain up to 15% saturated fat. The oil palm offers extraordinary yields of 3.8 tonnes of oil per hectare as a global average, and nearly 6 tonnes per hectare in the best plantations in Southeast Asia. That compares with around 0.5 tonnes per hectare for rapeseed, sunflower

and soybean (A. Rival and P. Levang *Palms of Controversies: Oil Palm and Development Challenges* CIFOR, 2014; <http://go.nature.com/kPH5Hr>).

"The land is nearly free of charge — only symbolic government fees are required; it needs cheap labour, and the crop matures and produces within three years of planting. Oil palm plantations are the most profitable form of business in the oil palm sector, more than downstream industries," explains Krystof Obidzinski, agricultural scientist at the Center for International Forestry Research (CIFOR), a non-profit scientific facility based in Indonesia. The crop is easy to plant and manage and brings dividends quickly. Investments get repaid immediately. "You make pure profits for the next 20 years, by which time palm trees are too old and need to be replanted. There is no other crop in Indonesia/tropics that comes anywhere near close to this sort of cost efficiency and profitability," he says.

Thus, oil palm plantations benefit from a 35–45% profit margin. By comparison, palm

crushers and mills obtain a 3–9% margin in Indonesia and Malaysia according to M. R Chandran, advisor to the Roundtable on Sustainable Palm Oil (RSPO; a cross-industry initiative launched in 2004). In addition, oil palms are easy to plant: “If one were to follow the guidebook, they require fertilizer and pesticides. But farmers usually cut corners on those. They also use substandard genetic breeds and the palms are sturdy and easy to manage,” says Krystof Obidzinski.

By extension, producing governments have benefited too, with subsequent improvements in standard of living for their population (if one excludes potential health costs). As in most countries, these are not integrated into headline economic indicators. Medical experts have long delivered remedies to illnesses caused by environmental damage, such as asthma, cholera or psychological distress from flooding and homelessness. But the proactive and more preventative approach to its industrial causes motivated by health considerations is a newer tool perhaps only previously used in relation to tobacco.

If used, this preventative approach could have a profound effect, as the industrial causes of greenhouse-gas emissions are far wider than those of smoking. As pointed out by Sarah Molton, strategy executive at the Wellcome Trust, “various different government departments work in silos.” Thus health policymakers have tended to plan away from macroeconomic or environmental policy. “What’s been lacking is [the consideration] of cultural and societal determinants of health,” she says.

In its new Sustaining Health programme, however, the Wellcome Trust seeks to redress this imbalance alongside other leading health groups such as the Lancet Commission and World Health Organization. Each now acknowledges the causes of climate change and its impacts on health and wellbeing. Any industry can create greenhouse-gas emissions, and emissions can lead to illness, so industry can be unhealthy.

Thus according to Bhavani Shankar, the health and broader social impacts of palm oil in particular merit further investigation, but have been ignored: “What counts is the economic advantage in most places,” he says. The project, which specifically examines Thailand, suggests a switch away from palm oil would have a knock-on effect on a range of governmental matters — not only

emissions but wider economic questions from property to retirement planning. Awareness of these impacts, he suggests, could alter government policy:

“Suppose you decide you want to reduce palm oil consumption through a tax for example, consumption patterns are likely to shift so you go from palm oil to say sunflower or soybean oil, and when that happens and brings about a health benefit or change, your morbidity in the population alters, hospital expenditures and the age at which people die rises or falls. And when you have these big changes you pick up things like pension effects.”

That in turn could bring about a switch in a government’s agricultural policy. Shankar indicates that the government of Thailand, the third largest palm oil producer in the region, may be more receptive to a sustainable approach to palm oil policy, although its position thus far has been typical of most countries: “It’s fair to say that the economic interests are paramount, and the trade and ministry of agriculture are the ones determining Thai palm oil policy. In Thailand, it’s very tightly controlled and chaired by the deputy prime minister who is on the palm oil committee. They get together regularly to make decisions on palm oil. They might take soundings in other forums and so on but there is no-one from the ministry of health present,” he says.

However, Thailand has so far gone down a different path from its neighbours. “They have stayed very small. Most palm oil production comes from relatively small farms, disused rice paddies, orchards and so on and there hasn’t been that massive forestry you have seen in Indonesia and Malaysia.”

Among the shifts the team is exploring is new or different oil production. Rice bran oil, a by-product of the Thai rice industry, is a possibility. Produced from the husk used as cattle feed, the oil is comparatively low in saturated fats. “One policy could be: can you encourage this industry and give it a tax break? The government routinely intervenes in rice in Thailand. It’s a huge sector,” says Shankar. Instruments to alter the trajectory of palm oil in favour of an alternative source could include, for instance, reducing the protection of local producers from low pricing or changing import tariffs.

Some of the assumptions behind the palm oil question have yet to be settled, however, and this has encouraged the

stigmatization of the crop. Saturated fat is the most common weapon used against palm oil because it can raise cholesterol, but the reasoning behind this view may be too generalized. According to Dariush Mozaffarian, an expert in saturated fat at Tufts University, Boston, USA, some scientists only look at a slice of the evidence, examining a particular type of cholesterol known as LDL (low-density lipoprotein). Mozaffarian says that taking the bigger into account leads to different conclusions: “If you put all the evidence together, saturated fat looks neutral,” he says.

In the case of palm oil, he suggests that a great deal more work needs to be completed. The oil offers some advantages: for example, it does not need to be hydrogenated when processed so is unlikely to produce so-called trans fats, substances harmful to human health. “There are other compounds in some oils, such as in extra virgin olive oil, which are beneficial. Palm oil is a vegetable extract which contains other compounds not studied,” he points out. All tropical oils have been subject to research on the short-term effect on cholesterol, but none on the long-term-effects on health.

“Saturated fats can lead us astray — we don’t care about cholesterol level but about health and disease. We can’t make something stick on tropical oils until long-term studies take place,” says Mozaffarian. Nevertheless, he advises caution on palm oil. “What are you comparing it to? If you compare it with canola, extra virgin olive oil or soybean, it may be less satisfactory. But if you are comparing it to butter or lard you find it no worse or better,” he says.

Conclusions on palm oil could take many years to emerge. So it looks unlikely that governments in Southeast Asia (as well as countries in Africa that are developing the industry) will take health impacts into account. Similarly, the RSPO pays more attention to palm oil production than consumption effects. “The governments are largely of the opinion that economic considerations like GDP, growth and poverty alleviation far outstrip environmental externalities. They are aware of the environmental problems and associated NGO pressure and are taking some corrective steps/policies... However going beyond this is unlikely,” comments Krystof Obidzinski. □

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