



**The sustainable  
palm oil choice**



**WAGENINGEN**  
UNIVERSITY & RESEARCH

## Summary of the webinar

### **‘The vegetable oil conundrum: How to meet future vegetable oil demand while staying within planetary boundaries’**

**Date: 23 November 2021**

#### **Background**

On 23 November the Sustainable Palm Oil Initiative (SPOC) and Wageningen University & Research presented a webinar on **‘The vegetable oil conundrum - How to meet future vegetable oil demand while staying within planetary boundaries’**. The webinar was organised with the aim to ground the discussion in science, while targeting a wide audience from beyond science, including industry, civil society and policy-makers.

#### **[Presentation of James Fry](#): Forecasts of World Vegetable Oil Output & Demand: Can we keep up?**

Dr. James Fry from LMC International presented current and future trends of production and demand of major vegetable oil crops palm oil, soybean, rapeseed and sunflower.

- He showed that palm oil area expansion is slowing and yields in Indonesia seem to have plateaued while in Malaysia they seem to decline. **Oil palm is no longer going to be the leading source of vegetable oils over the coming years.**
- **The new leading vegetable oil crop in the next 10-15 years will be soybean**, with Brazil being the leading producer of soybean in terms of area.
- As governments transition away from fossil fuels, this will drive up demand for biofuel, resulting in increased demand for vegetable oils.
- While James forecasts an annual demand growth rate of vegetable oils of 2.5% for the coming 15 years, soybean is expected to grow as much as 3.5% per year with massive area expansion in South America, if policies do not change.

## Presentation of Erik Meijaard: Impact and trade-offs in vegetable oil production

Dr. Erik Meijaard provided insights into the impacts and trade-offs of vegetable oil production for planetary boundaries and what is needed to produce vegetable oils within the planetary boundaries.

### **1. Meeting future vegetable oil demand within planetary boundaries requires major changes in the system:**

- The concept of planetary boundaries defines an area of a safe operating space for humanity to thrive if we stay within these planetary boundaries.
- Dr. Erik Meijaard from Borneo Futures showed how we are already exceeding four of nine planetary boundaries globally: biosphere integrity, land system change, freshwater use and nitrogen flows.
- The areas where these boundaries are exceeded coincide with production areas of major vegetable oils like soybean, palm oil, sunflower.
- In order to produce current and future demand for food and vegetable oils within the planetary boundaries we would need a U-turn in the system requiring cultural and technical change to allow us to produce enough for 10 billion people in the long-term.
- This will require spatial redistribution of (vegetable oil) crops, differences in management, addressing yield gaps, shifting towards less resource-demanding diets and reducing food waste.

### **2. Oil palm can play an important role for meeting vegetable oil demand within planetary boundaries:**

- A comparison of vegetable oils shows that oil palm has the highest yields among all vegetable oils, so that it can produce the same amounts of oil on smaller areas compared to other crops such as soybean.
- As a perennial crop, oil palm can also guarantee permanent vegetation on a plot allowing for higher biodiversity within the planted area compared to annual crops.
- Yet, as a crop grown in the tropics where terrestrial biodiversity is highest, expansion of oil palm can have severe consequences for biodiversity.
- **A back-of-the-envelope calculation shows that if we are to meet future demand for vegetable oils through soybean, then an additional area equivalent to 35-40 times the size of the Netherlands will be needed as compared to a scenario that involves oil palm in the equation.**

### **3. There is no such thing as a free lunch when it comes to vegetable oils:**

- What do the different actors need to do to support moving back towards the safe operating space?
- A recent study shows: Consumers in Europe and North America don't like palm oil.

- 'But it is not that simple. People need to understand that there is no such a thing as a free lunch and that saying no to one oil means saying yes to another oil.' so Erik says. 'Everything comes at a cost, be it at the cost of land, of nutrient flows or of biodiversity. So cutting back on palm oil will not save the planet automatically and there is a need to better inform consumers and address these biases and perceptions.'
- Scientists can help provide objective analyses for land-use optimization to meet future edible oil needs, giving trade-offs and synergies between the sustainable development goals.
- Producers need to improve their practices, pay attention to smallholders and to sustainable practices.
- Policy-makers need to collaborate. There should not be finger-pointing from the North to the South as if it is only the South's responsibility to save the planet.
- It's everyone's responsibility and we should all think about our role in the discussion and where that leaves us in terms of future demand and staying within planetary boundaries.

### **Presentation of Maja Slingerland: Is palm oil cultivation possible within planetary boundary? - Yes, land-saving is the missing link**

Dr. Maja Slingerland from Wageningen University & Research provided an agronomist perspective about how palm oil production can be met within planetary boundaries and what the practical implications can be in the production areas to meet future demand sustainably.

- In a recent [study](#), it was analyzed whether Indonesia's target of producing 60 Million tonnes of palm oil by 2035, an increase by almost 20 Mt CPO from 2018, can be met without further expanding into high carbon areas. A mixed scenario of intensification (yield increases) and controlled expansion into low carbon areas would result in lowest carbon emissions compared to business-as-usual and high intensification scenarios.
- Pressure on forest and high carbon areas can also be reduced with integrated systems where young oil palm plantations are also used for other crops like banana or pineapple and older plantations are combined with cattle grazing. This way land can be saved and income generated for oil palm smallholders.
- It is estimated that such integrated systems could help reduce global deforestation by 1-2%, and deforestation in Borneo and peninsular Malaysia by 10-23%.
- Integrated systems can increase biodiversity and reduce greenhouse gas emissions.
- The story is different for agroforestry systems or intercropped systems with mature oil palm, where these systems result in yield penalty compared to monocultural systems leading to more land required to produce the same quantities of oil.
- Land-use planning is key to achieve sustainable palm oil production within the planetary boundaries.
- Therefore we need to think about land-saving as a sustainability criterion in the investment portfolios, in the certification systems and in trade, because the benefit of land -saving is both in carbon sequestration, and preventing carbon loss and biodiversity loss, which would provide three advantages in one go.

## Discussion and questions from the audience:

- **Is the growth in these crops opportunistic or driven by known demand?** Annual vegetable oil crop farmers may grow based on price signals, but this is not possible for perennial vegetable oil crop farmers like oil palm farmers, which have to invest in planting oil palm in year one, while returns will only come years later. Similarly, investment in fertilizer has the highest effects in year 3. Yet, effects can already be observed earlier showing that even with the existing planting material there is scope for oil palm smallholder farmers to benefit from oil palm intensification.
- **We need to take a global perspective:** We need to see things in a more global perspective, especially if it comes to land needs. We should not only focus on avoiding further degradation of natural ecosystems, primarily in the tropics, but we also need to fix what we have broken ourselves, this is a major challenge in Europe.
- **On the protein transition:** If soybeans have to pick up growth in vegetable oil demand, we need a lot more soybean, but will produce more than 4x extra tonnage of meal, which the world doesn't really demand. Therefore the meal price will fall, but soybean prices must rise by more than enough to compensate soybean farmers for the fall in meal price. So for every 1 USD fall in meal price means you need a 4.5 USD increase in soybean oil price and that will benefit all vegetable oils.
- **Non-food uses of vegetable oils with biodiesel being the mega one:** Behind all the projections of future vegetable oil demand is the continuing growth of vegetable oil use for biofuels, since fuels will increasingly come from renewable sources. E.g. in the EU vegetable oil use for biofuel is still growing despite the cap for 2030. But also in other countries like Latin American and African countries, there is a rise in demand for biofuels grown domestically.
- As long as we have biofuel demand rising, this is creating a demand for vegetable oils. Electrification in passenger vehicles but not in heavy vehicle fleets. Until there will be electric heavy vehicle fleets the only alternative is renewable diesel.

## Recommendations for European actors:

- Consumers can start by choosing sustainable soy and palm oil. Do not ban palm oil and use another oil because you probably create more problems than you will solve. We need a worldwide cap on biofuels. And industry and certification systems should really go for less land use not only for palm but also for other crops.
- It becomes clear that the problems in this sector are complex and we barely start to understand them. While people want simple answers, Erik warns: 'For every complex problem there is an answer that is clear, simple and wrong.' quoting Henry Louis Mencken. We tend to forget about the complexity but simple answers, as they are often used in the polarized debate around vegetable oils, will not get us there.
- Governments should recognise that we should be trying to give incentives for carbon saving rather than having mandates on biofuels, etc. For palm we need mechanisation to make it competitive as lack of labour is a big problem in the sector.