



XX OIL PALM
International Conference

THE TRANSFORMATIVE
POWER OF OIL PALM

THE WORLD OF OLEOCHEMICALS

Presentation by

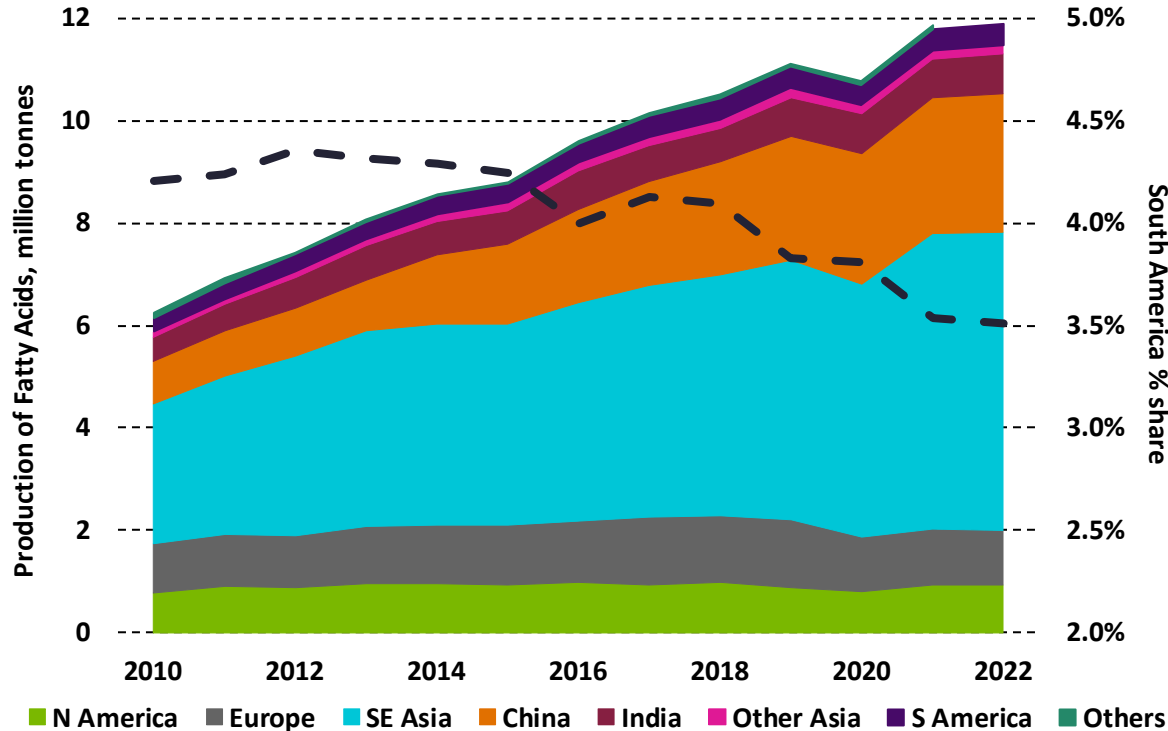
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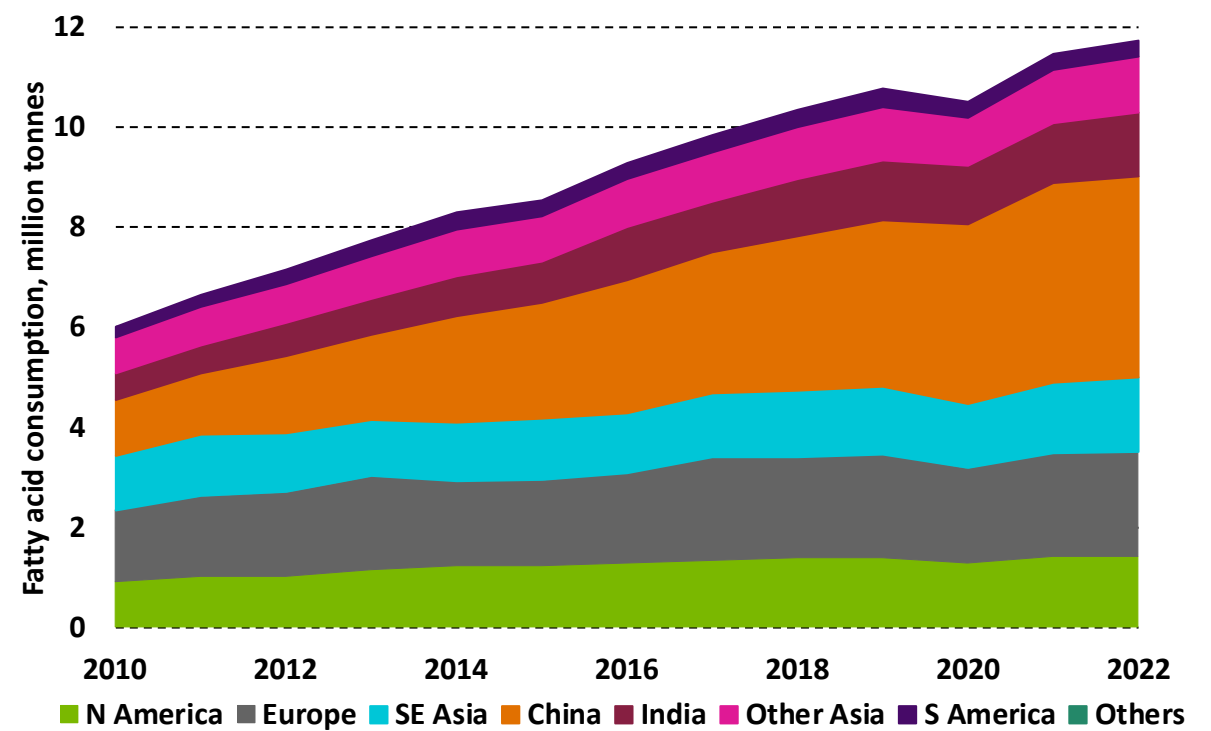
The supply and demand for fatty acids and alcohols

The availability of local cost-competitive palm oil and palm kernel oil (PKO), assisted by export taxes that favoured oleochemical production, made South East Asia the supplier of half the world's fatty acids. South America provided only 3.5-4.5% of the total, and it came mainly from Argentina from soybean oil with its own export tax incentives. Fatty acid demand growth was driven mainly by China's chemical sector, much of whose final output was ultimately destined for export in a processed form, using the fatty acid as an input.

The production of fatty acids by country/region, 2010-2022



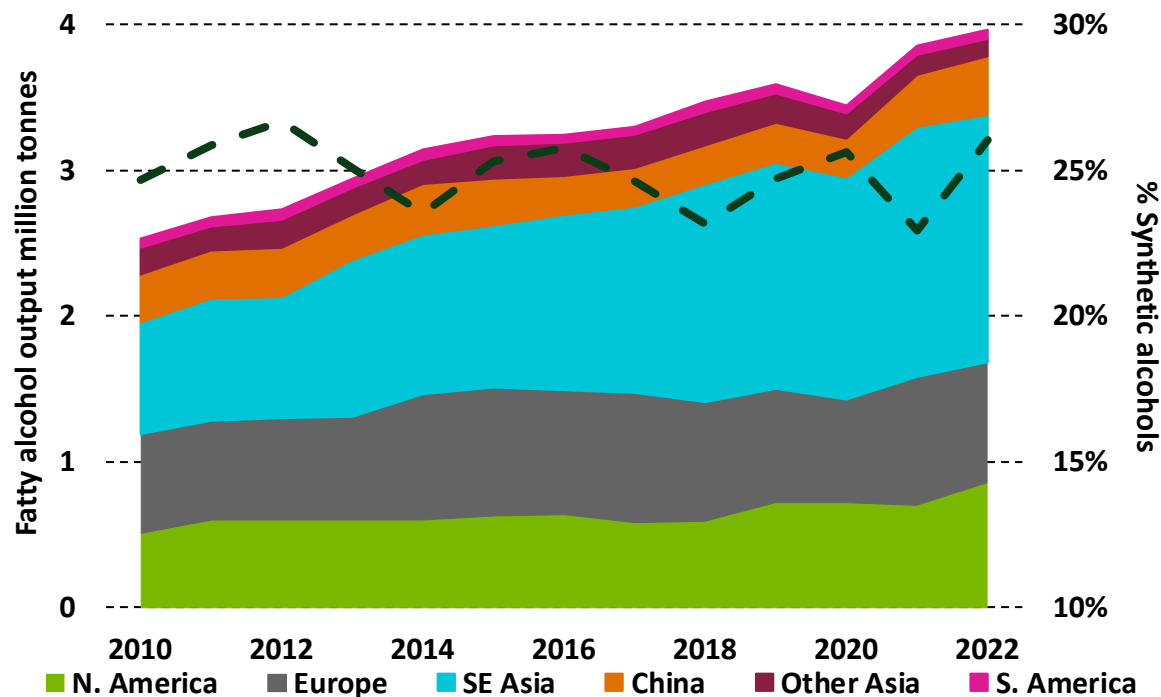
The consumption of fatty acids by country/region, 2010-2022



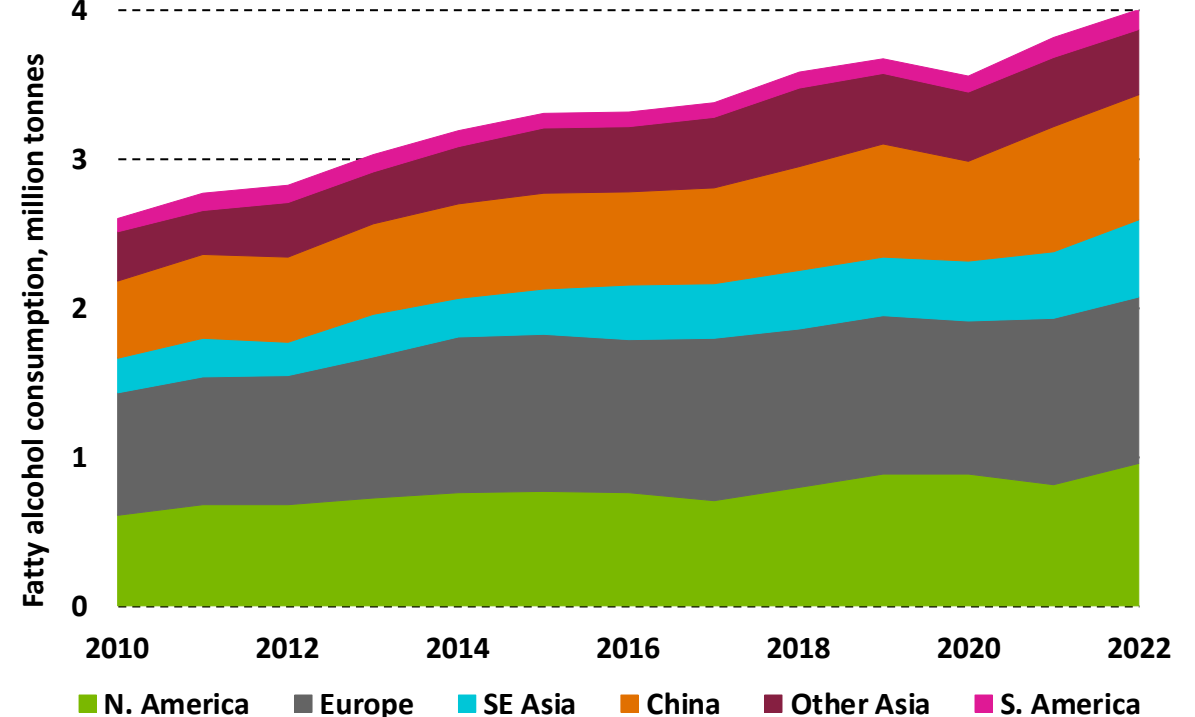
The fatty alcohol picture has strong similarities with that for acids, with South East Asia providing around half world output, based primarily on local PKO. The U.S. has a well developed petrochemical (synthetic) industry built on cheap natural gas. The synthetic share of global fatty alcohol production has fluctuated around 25%.

Fatty alcohol demand is spread evenly among the major industrialised regions of the world. This is partly due to the ethoxylation process using ethylene oxide, an explosive, whose production is concentrated near end-consumers.

The production of fatty alcohols by country/region, 2010-2022



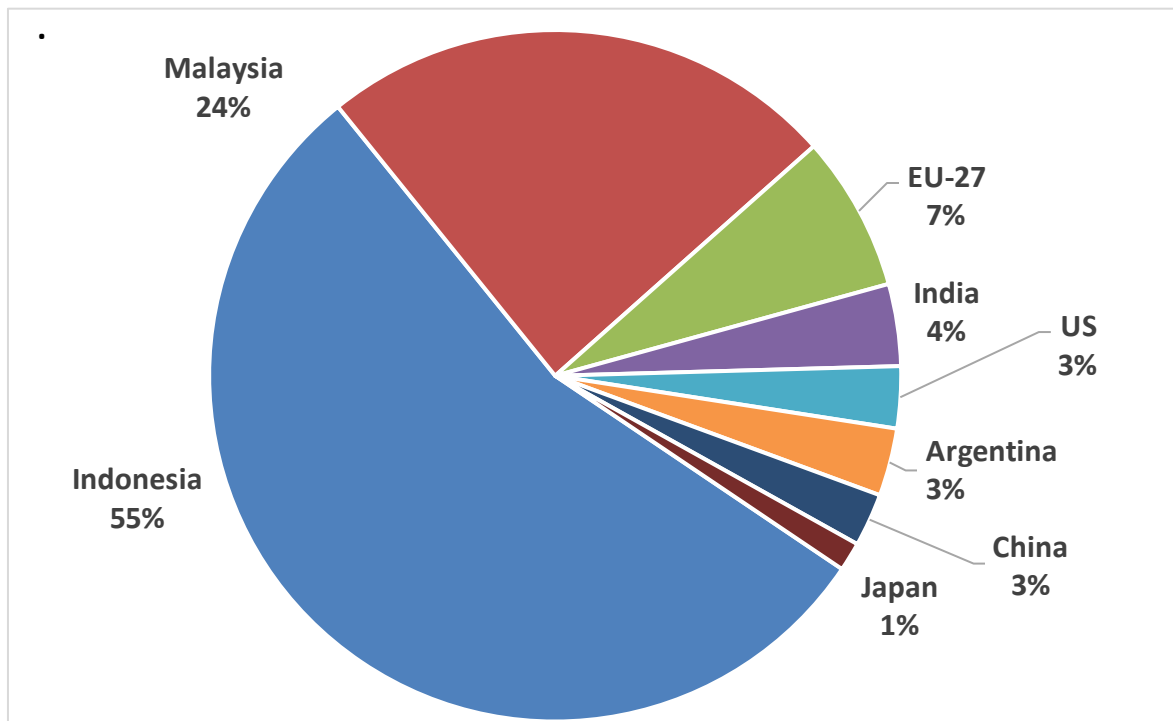
Fatty alcohol consumption by country/region, 2010-2022



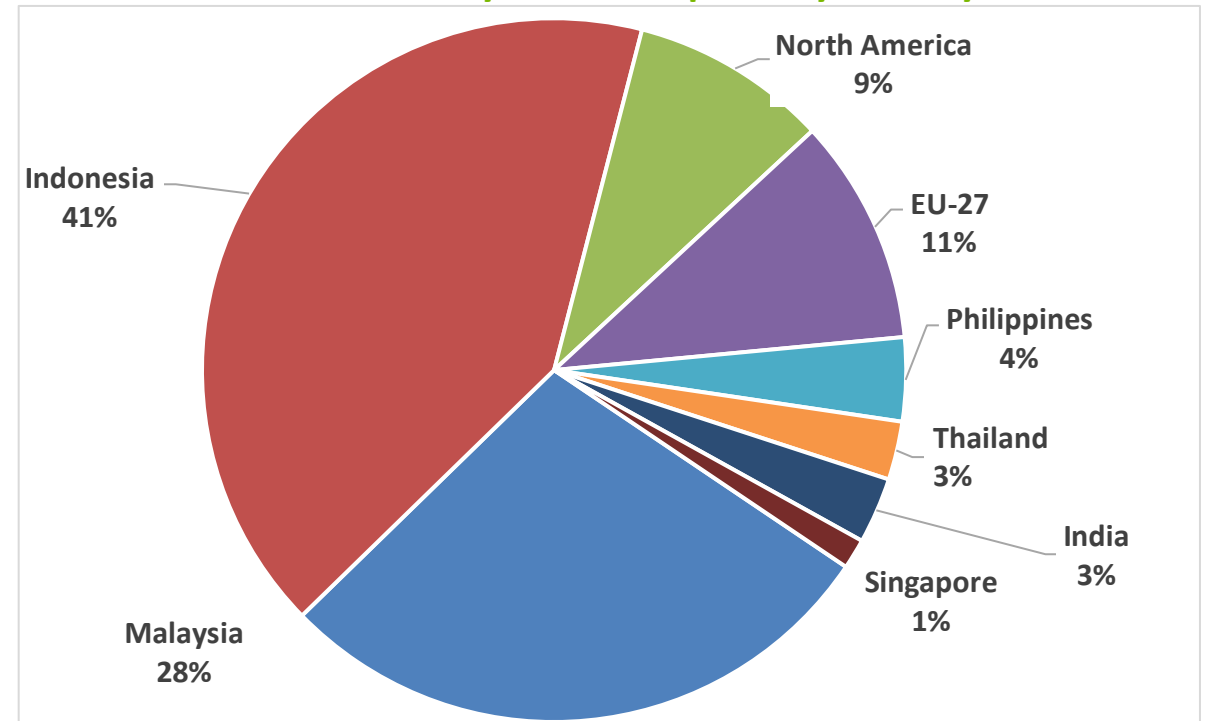
The importance of Indonesia and Malaysia as exporters of fatty acids and alcohols is demonstrated by these two diagrams which might, in part, be a reflection of South East Asia's limited capacity for adding value to these oleochemicals and exporting higher priced end-products using fatty acid and alcohols as inputs.

Argentina is the only Latin American country to feature in either diagram though Brazil has a significant fatty alcohol plant whose output is processed further inside the country and its exports of final products do not appear in the right diagram.

Shares of world fatty acid exports by country, 2021



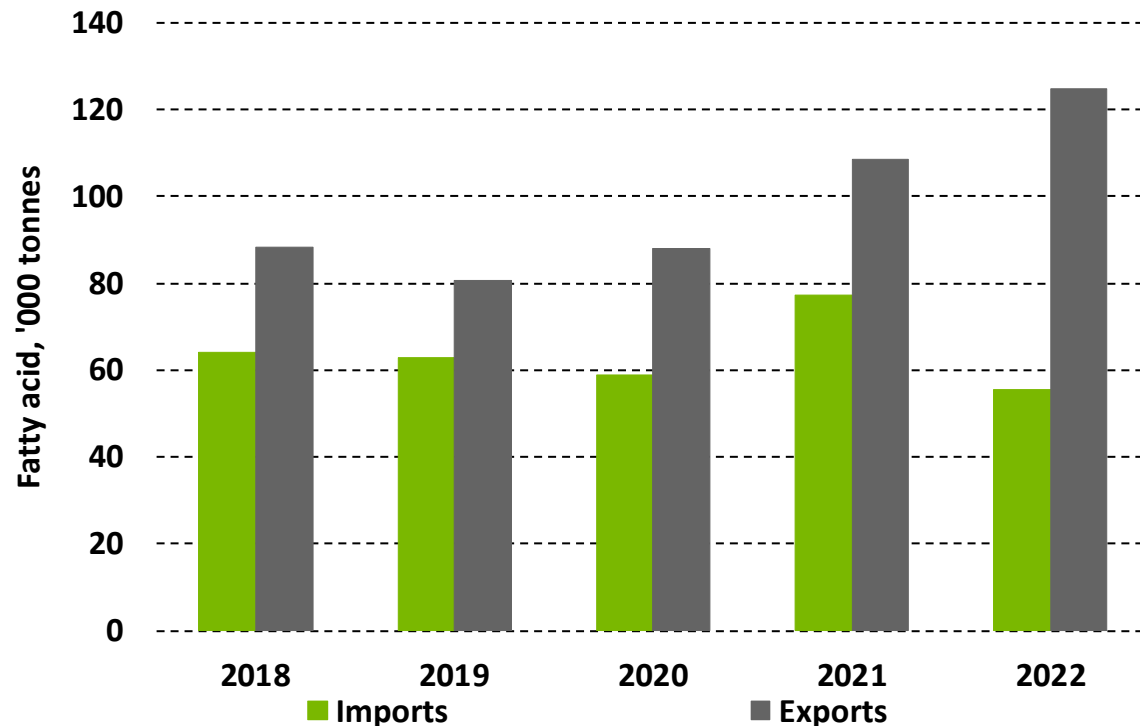
Shares of world fatty alcohol exports by country, 2021



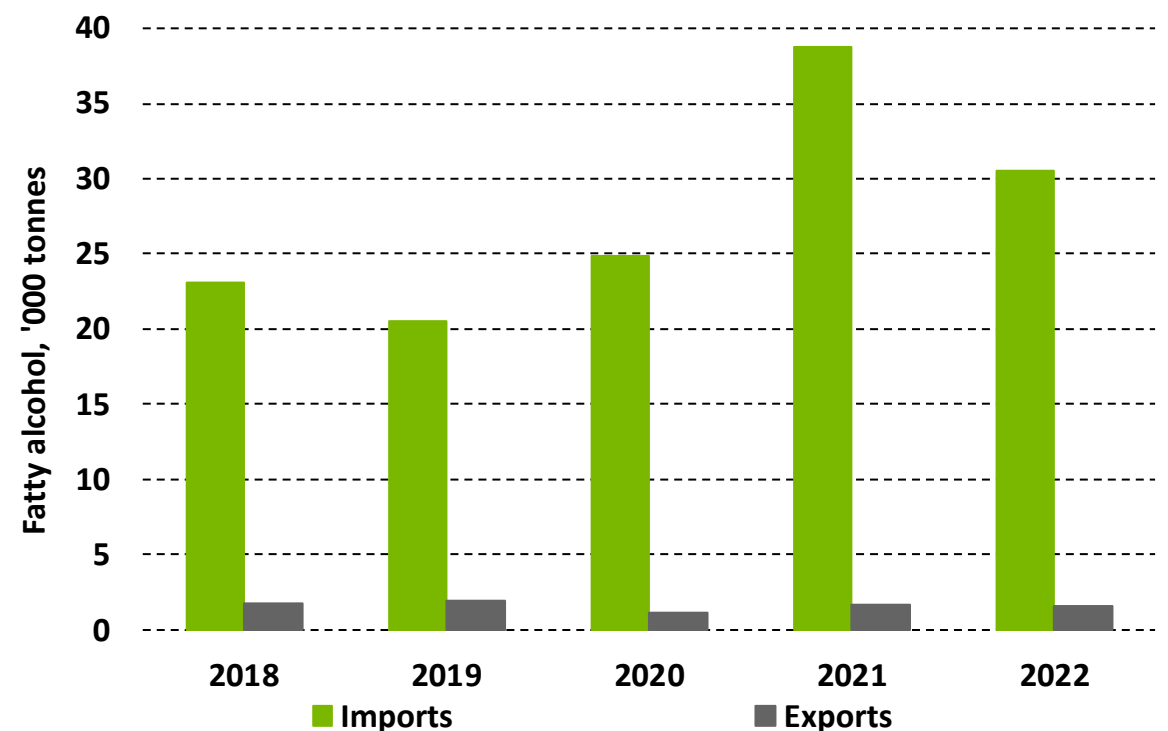
Focusing on Latin America, the region's foreign trade in fatty acids and alcohols is summarised in these two diagrams. The region is a net exporter of acids, but it is clear when the trade in individual fatty acids is analysed that the oils used as feedstocks are not palm or PKO, but tallow and soybean oil.

The fatty alcohol trade balance confirms the weakness of Latin America's oleochemical sector. Without palm-based oleochemicals, it is a large net importer of alcohols, some of which are synthetic alcohols from the U.S.

Latin American imports and exports of fatty acids, 2018-2022

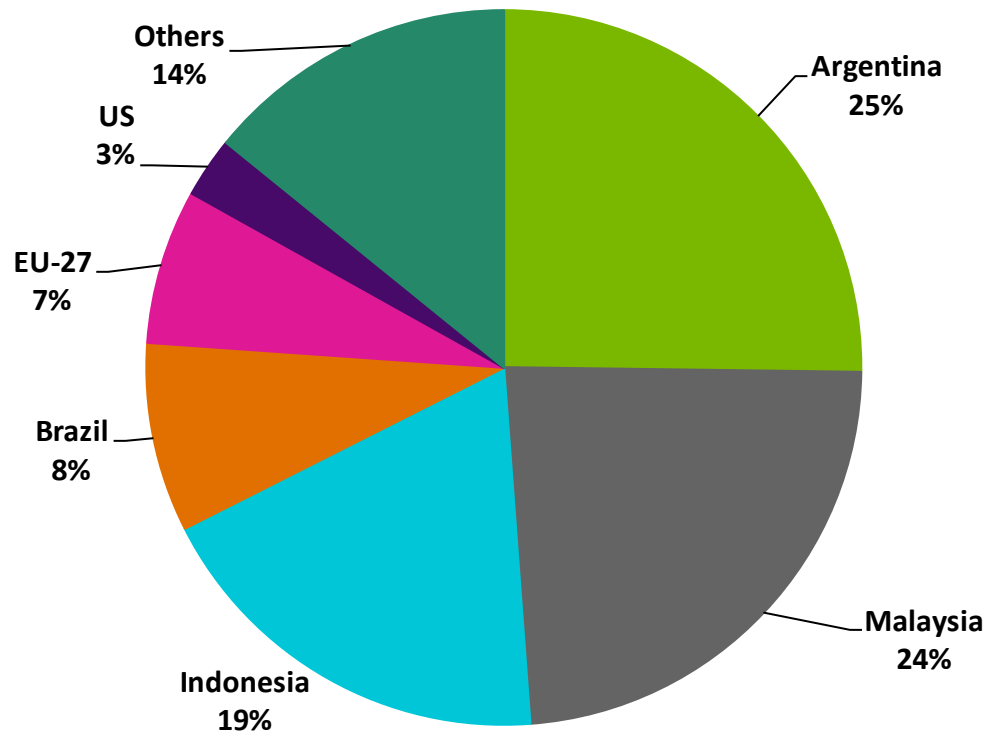


Latin American imports and exports of fatty alcohols

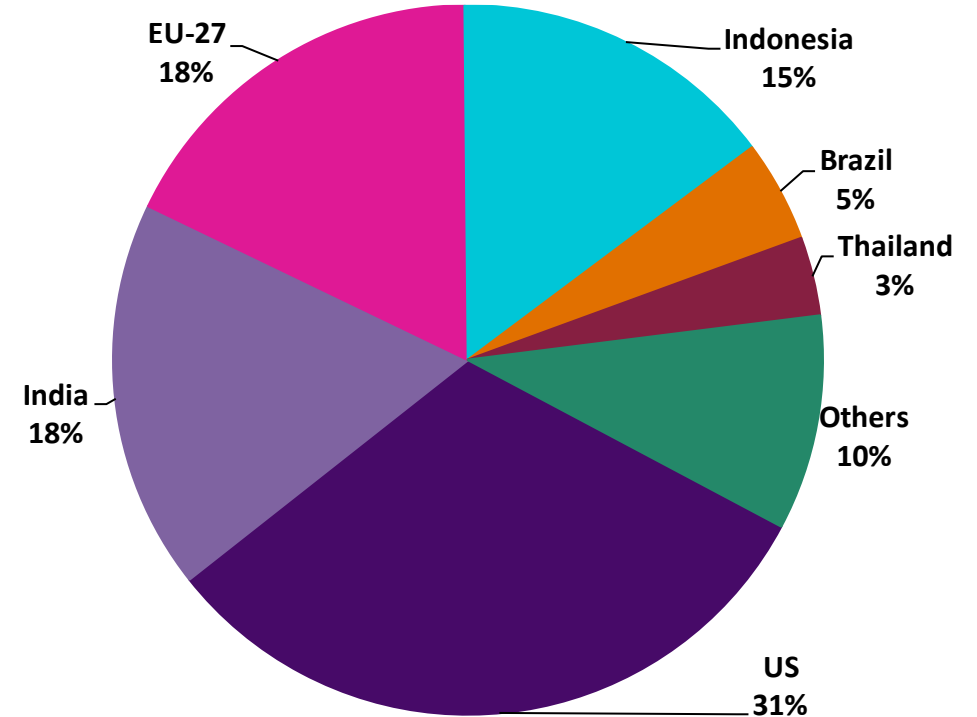


The composition of Latin American fatty acid and alcohol imports by origin during the first half of this year confirms the importance of South East Asia in the supply of acids, although Argentina was (just) the largest single supplier. For alcohols, the largest foreign providers are two synthetic alcohol producers, the U.S. and EU. The question always asked when Latin America is discussed is: why isn't the region a producer? Exports of palm and PKO from Colombia in particular are large enough to support a commercially viable acid and alcohol industry.

Latin American fatty acid imports by origin, Jan-Jun 2022



Latin American fatty alcohol imports by origin, Jan-Jun 2022



THE FATTY ACID MARKET

- Fatty acid production is three times that of fatty alcohol and output of both is dominated by South East Asia, with oil palm providing palm stearin for acids and PKO for alcohol.
- Tallow was originally the main feedstock for acids and is still the main one in the U.S. and EU; but, their biofuel policies define tallow as a low carbon feedstock. As we will see, this pulled tallow to a premium over stearin, increasing palm's attraction as a raw material.
- Latin America does not yet produce palm-based acid; yet it is number 2 region for palm oil. It can provide certified sustainable supplies of oil currently exported mainly as CPO.
- Therefore, fatty acid capacity is expected to develop here, partly as an alternative export product as the EU reduces its CPO imports and also as a means of adding value to local palm oil production, while benefiting from the high price of tallow in the U.S. and EU.
 - Developing new markets for local oil palm should be a key priority.

THE FATTY ALCOHOL MARKET

- Fatty alcohol was originally relied on coconut oil (CNO) to provide the medium chain C12-C14 fatty acids, which are an essential feedstock for fatty alcohol production.
- Palm kernel oil is the only alternative lauric oil, differing from CNO in its chemical composition in having a slightly lower proportion of valuable short chain C8-C10 acids.
- PKO output is now double that of CNO worldwide and it is also valued for producing fatty acids as a co-product that can be sold as acids, not alcohol, alongside sales of alcohols.
- As with fatty acids, alcohols offer Latin America a way of progressing from exports of crude PKO to a product with sustainability credentials valued highly in the EU and U.S.
- Right now, the most price-competitive alternative to lauric derived natural alcohols is U.S. synthetic alcohol exploiting low priced natural gas.
 - As long as end-users favour natural products, PKO's market is safe,

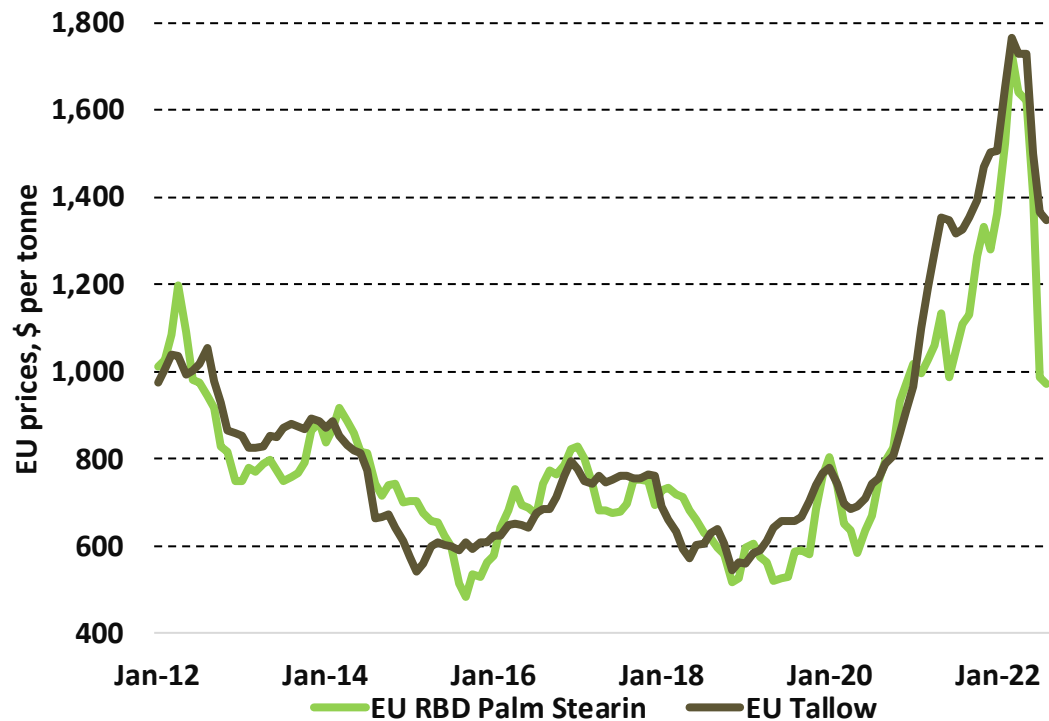


The behaviour of key prices

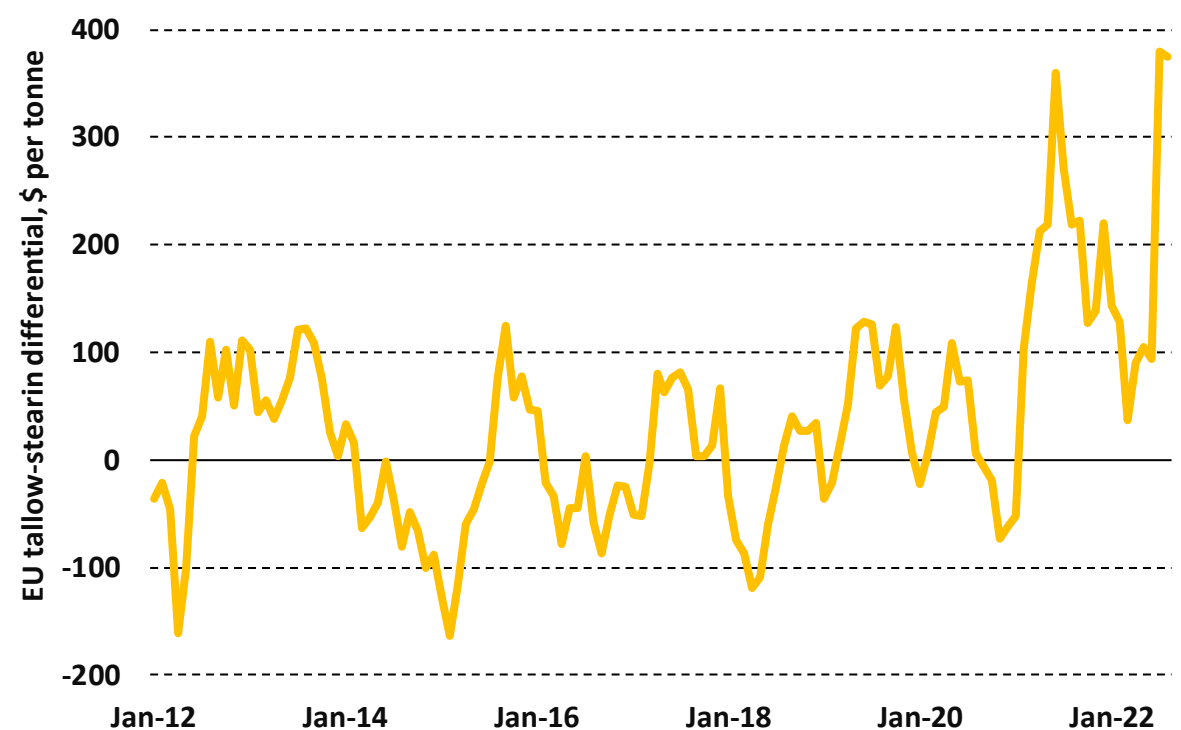
A key prices for fatty acid producers in their raw material supply are those of tallow and palm stearin. Today, tallow enjoys special incentives in EU and U.S. biofuels. It is “double-counted” (one litre of tallow biodiesel counts as two in meeting the mandate) in the EU. In the U.S. it receives a much higher carbon value under the Californian Low Carbon Fuel Standard.

Although tallow was traditionally the favoured feedstock for acids in these two markets, stearin is becoming steadily more price competitive and is making steady gains as a feedstock since the price disadvantage for tallow is expected to grow.

Biofuel incentives have pulled EU tallow above palm stearin



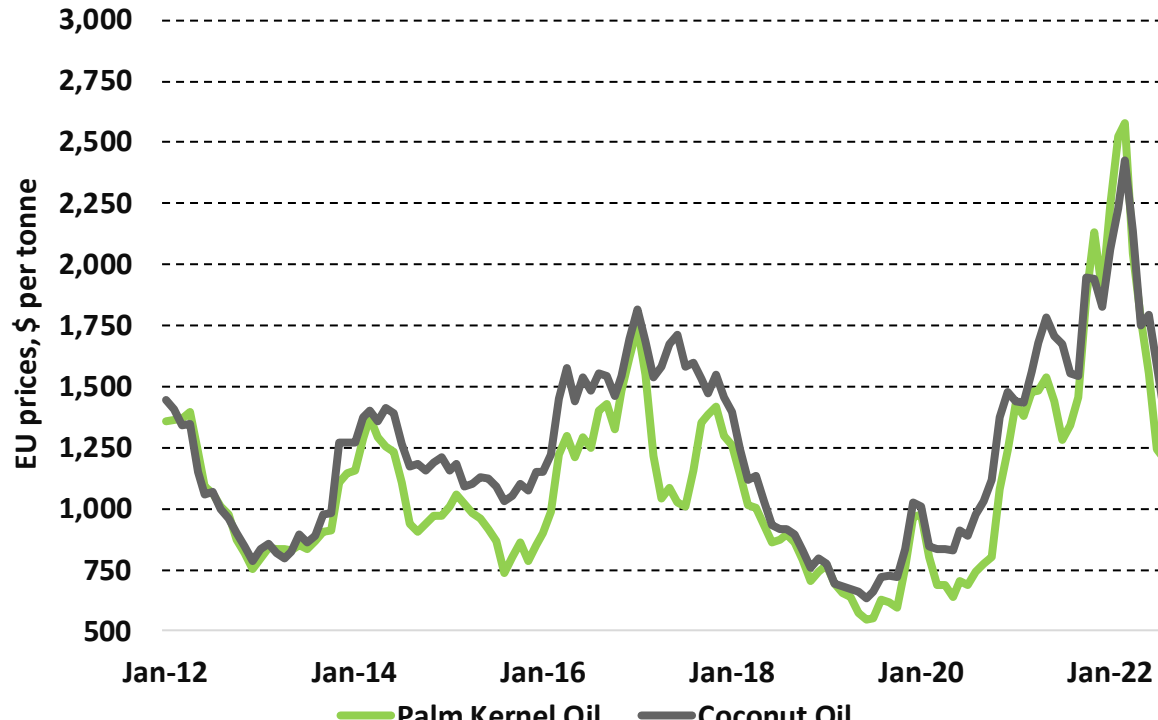
The tallow premium over stearin has grown considerably



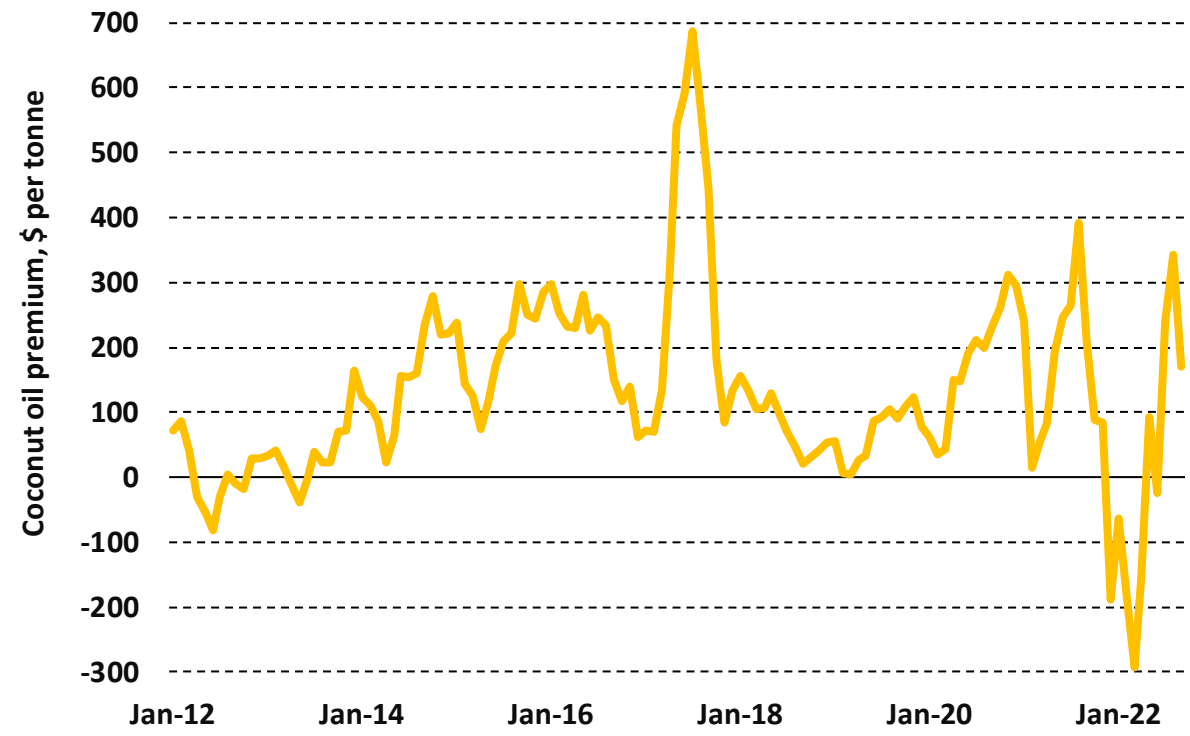
The key prices for natural, as opposed to synthetic (fossil fuel-derived), fatty alcohol producers in their raw material choice are those of the two lauric oils, coconut oil and palm kernel oil.

Coconut oil has more of the valuable short chain (C8-C10) fatty acids than PKO, which normally push the CNO price above PKO, but its output has big swings from year to year with minimal underlying growth in world production. Although CNO usually commands a premium over PKO, Indonesia's recent export controls pushed CNO well below PKO for a while.

Coconut and palm kernel oil prices are very closely linked



The CNO premium over PKO is typically very volatile



OLEOCHEMICAL FEEDSTOCK PRICES

- Today oil palm is the main raw material for fatty acid and alcohol production worldwide. It has captured these markets thanks to its price-competitiveness against alternative feedstocks.
- For fatty acids, the main competitor for palm oil is tallow; but the world supply of tallow grows only slowly and the new demand from the biofuel industry which judges tallow to be a low carbon feedstock has pulled the price of tallow well above that of palm stearin.
- For fatty alcohols, there are only two plant-based raw materials, palm kernel and coconut oils. Synthetic alcohols from petrochemical complexes are an alternative.
- CNO has two advantages: it has more high value C8-C10 fatty acids than PKO, and because the coconut area is not growing, it is considered to be a sustainable product.
 - Since CNO supplies are tight, RSPO certified PKO is gaining ground.



Implications for Latin American oil palm



LATIN AMERICA'S FUTURE ROLE IN THE WORLD OF OLEOCHEMICALS

- The anti-oil palm rhetoric from Europe means that Latin American exporters, led by Colombia and Guatemala, cannot be happy to rely on Europe to continue to import a large share of their palm and palm kernel oils, which are exported primarily in a crude, unrefined form.
- In Europe and the U.S., the commercial pressure to switch away from tallow fatty acids on the grounds of cost opens a door to palm-derived acids.
- The opportunities for PKO in fatty alcohols arise because the future growth of world CNO supply will not keep pace with the expansion of natural fatty alcohol demand.
- Latin American producers able to supply certified sustainable PKO to local alcohol plants will be well-placed to meet demand emerging from buyers previously reliant on CNO.
 - Latin America clearly has good reasons to consider oleochemicals.



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Thanks