INDUSTRY INSIGHTS

# From fryers to flyers: Can fried chicken oil redefine aviation?

Imagine this: the oil you use to fry your chicken nuggets today could fuel the plane you board tomorrow. Once dismissed as waste, used cooking oil (UCO) is now a key player in Sustainable Aviation Fuel (SAF), a crucial innovation in the fight against climate change. While the concept sparks hope, the critical question remains: Can SAF scale to meet global demand for greener skies, and at what cost?

This transformation extends beyond aviation. It redefines waste, challenges energy norms, and demands collaboration across industries. Yet experts caution that achieving SAF's potential requires deeper scrutiny and broader, collective efforts.

## Aviation's carbon challenge

As global air travel demand soars, the aviation industry faces mounting pressure to decarbonize. Aircraft engines demand high-energy-density fuels, leaving battery power viable only for short flights. This reliance on fossil fuels positions aviation as a significant contributor to climate change, responsible for nearly three percent of global $CO_2$ emissions. Without intervention, this figure will climb as passenger numbers double by 2050.

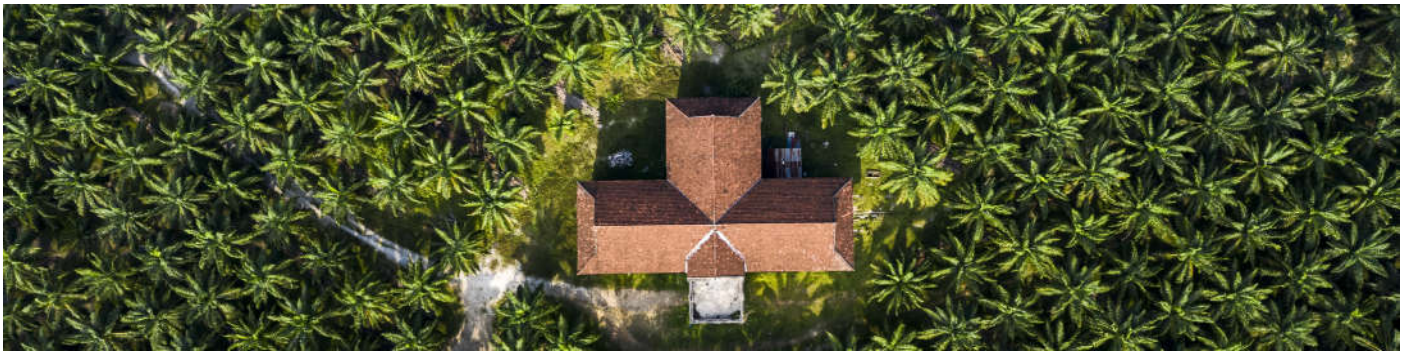
SAF offers a lifeline. By processing waste oils like UCO into high-performance jet fuel, SAF reduces lifecycle emissions by up to 80 percent compared to conventional fuels. However, it currently accounts for less than 1% of global aviation fuel use, underscoring the gap between potential and reality.

The challenge is not aviation's alone. It's a cross-industry dilemma demanding fresh thinking about resource management, innovation incentives, and shared responsibility.

## SAF: A circular solution or a distraction?

SAF embodies the circular economy, transforming waste into energy and reducing reliance on fossil fuels. Milestones like Airbus's 2022 A380 flight using 100% SAF highlight its potential to revolutionize aviation. Yet scaling production presents serious challenges. Global supplies of UCO and similar feedstocks are limited, and growing demand risks driving up costs or encouraging unsustainable practices like deforestation for oil crops.

Critics question whether SAF, while promising, might overshadow the need for broader systemic changes in aviation, such as developing hydrogen-powered planes or implementing regulatory measures to curb air travel. These considerations highlight the complexities of making aviation sustainable.



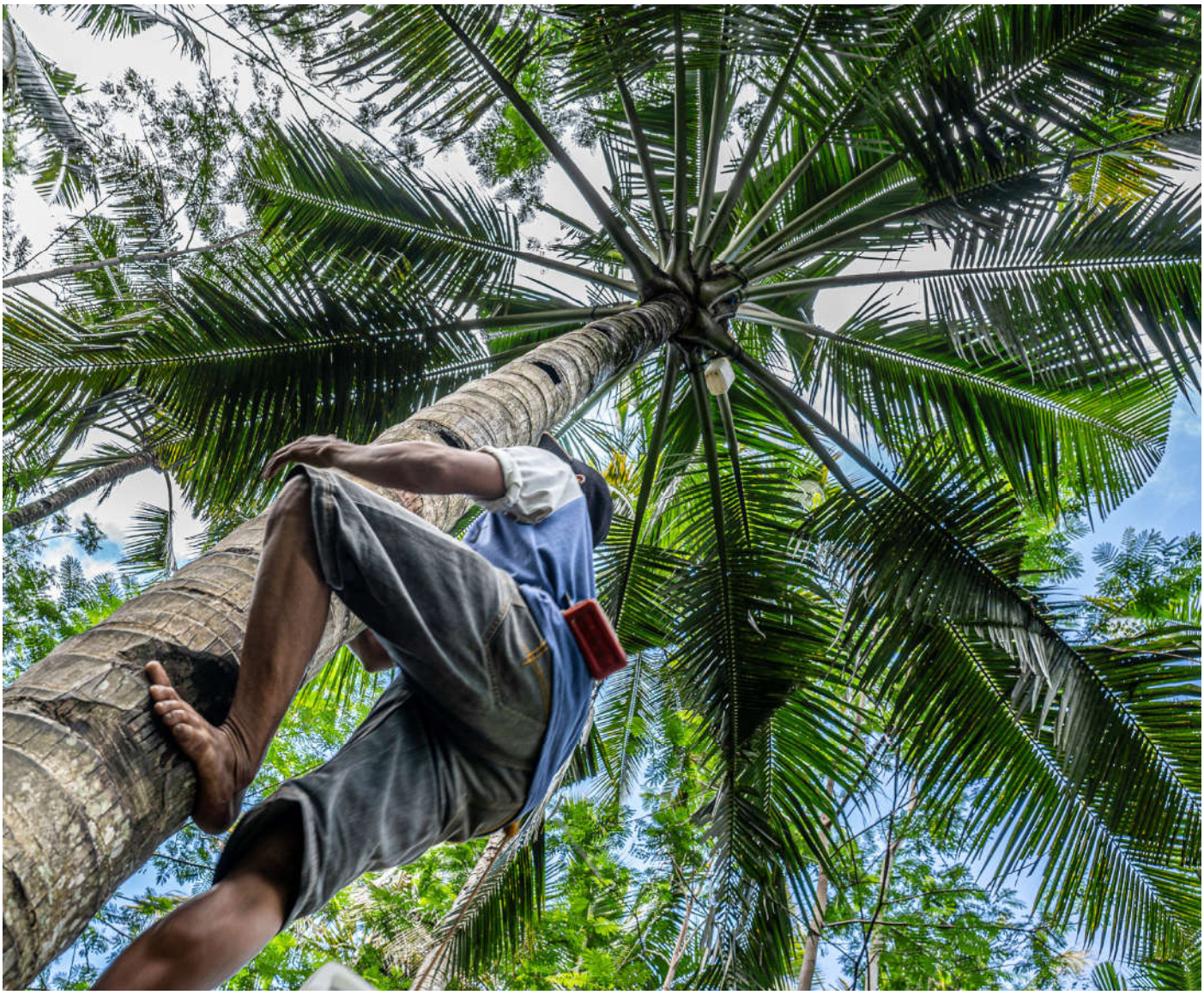
## The Philippines and coconut-based SAF

The Philippines, a leading coconut oil producer, is leveraging this resource to position itself as a regional leader in SAF production. **Major General Roy Devesa (Retired), Deputy Administrator for the Research and Development Branch of the Philippine Coconut Authority (PCA)**, explains, "Coconut oil stands out as an ideal SAF feedstock due to its abundance, versatility, and ability to meet SAF qualification standards." By expanding plantations and improving farming efficiency, the PCA aims to meet rising global demand while aligning with international sustainability goals.

A partnership with Japan's Manryu Co. Ltd. further underscores this potential. "By increasing coconut yields and enhancing processing techniques, we aim to address the high costs of SAF production and position the Philippines competitively in the global market," says Devesa. This collaboration focuses on refining biodiesel processes for SAF and scaling production to establish the Philippines as a global SAF leader.

As demand for coconut oil rises, balancing SAF production with food security remains critical. Devesa emphasizes the PCA's approach:

**"Our focus is on boosting productivity within existing coconut lands rather than expanding into new areas. This ensures we meet both food and energy needs while safeguarding agricultural sustainability."**



Modernizing plantations, replanting senile trees, and implementing advanced farming techniques are central to this strategy. "We're addressing challenges like pests, diseases, and climate impacts to ensure the long-term sustainability of coconut production," Devesa adds. Collaboration among government agencies like the Department of Energy and the Department of Agriculture ensures a unified approach, integrating SAF development with national economic and environmental goals.

## Expanding the vision: Regional collaboration

Beyond its domestic efforts, the Philippines is exploring regional partnerships to advance SAF innovation and supply chain efficiency. "Collaborative research with neighboring nations can improve production methods and drive down costs," notes Devesa. "The Philippines' abundant coconut resources and tropical climate uniquely position it to lead regional SAF initiatives."

SAF's rise reflects a broader movement to rethink waste and its value. By transforming byproducts like UCO and coconut oil into renewable energy, industries are proving that sustainability isn't just about minimizing harm—it's about creating value.

"The PCA is committed to making the coconut industry a cornerstone of SAF production," says Devesa. "We're not only contributing to global decarbonization efforts but also boosting local economies and supporting the livelihoods of coconut farmers."

# BY THE NUMBERS

Asia Food JOURNAL

## Global Sustainable Aviation Fuel (SAF) Production Growth

*Source: International Air Transport Association (IATA)*

### 2023

Doubled to around 600 million liters.

### 2022

Doubled to around 600 million liters.

### 2024 Forecast

Expected to triple to about 1.875 billion liters, accounting for 0.53% of aviation's fuel needs.

## Philippines' Coconut Oil Production and Export Statistics

*Sources: [1]Philippine Statistics Authority, [2]ReportLinker, [3]Philippine Star*

### 2023 Exports

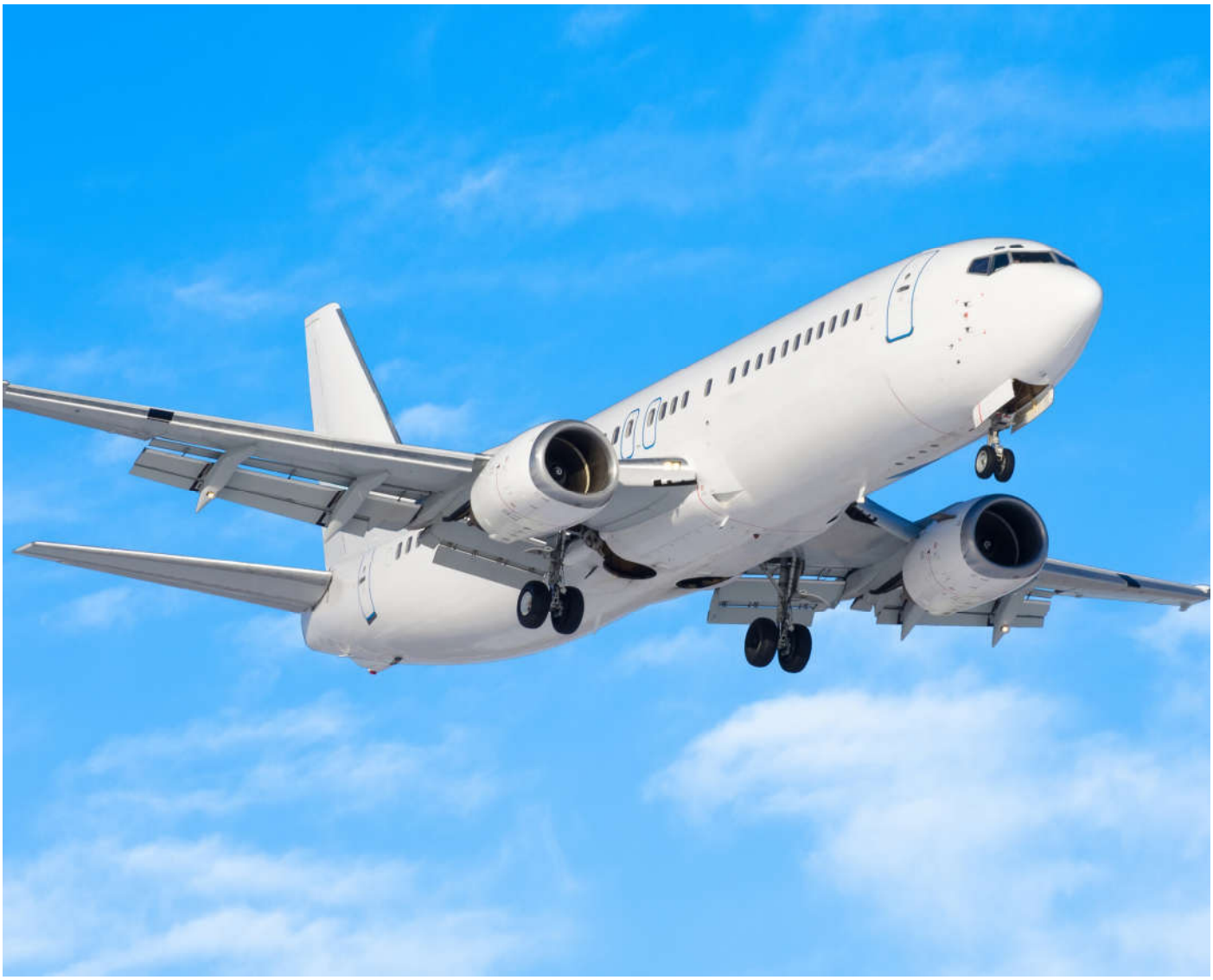
1.129 million metric tons, a decrease from 1.252 million metric tons in 2022.

### 2024 Forecast

Slight increase to about 1.3042 million metric tons, indicating stable growth.

### 2024 Production

Approximately 1.304 million metric tons.



## A sustainable future takes flight

The journey from fryer to fuel is more than a technological breakthrough—it's a call for bold collaboration. As SAF evolves, its success depends on how industries, governments, and communities work together to address the challenges of scaling production while safeguarding resources.

**"By increasing productivity, improving sustainability, and fostering regional cooperation, the Philippines is positioning itself as a leader in SAF development," Devesa concludes.**

Can waste truly fuel the future? The answer lies in collective action, with the aviation and agricultural sectors leading the way toward a cleaner, greener tomorrow.

With insights from Major General Roy Devesa (Retired) is currently the Deputy Administrator for Research and Development Branch of the Philippine Coconut Authority.