



# Circular Economy: An Opportunity for the Colombian Oil Palm Sector to Generate Added Value

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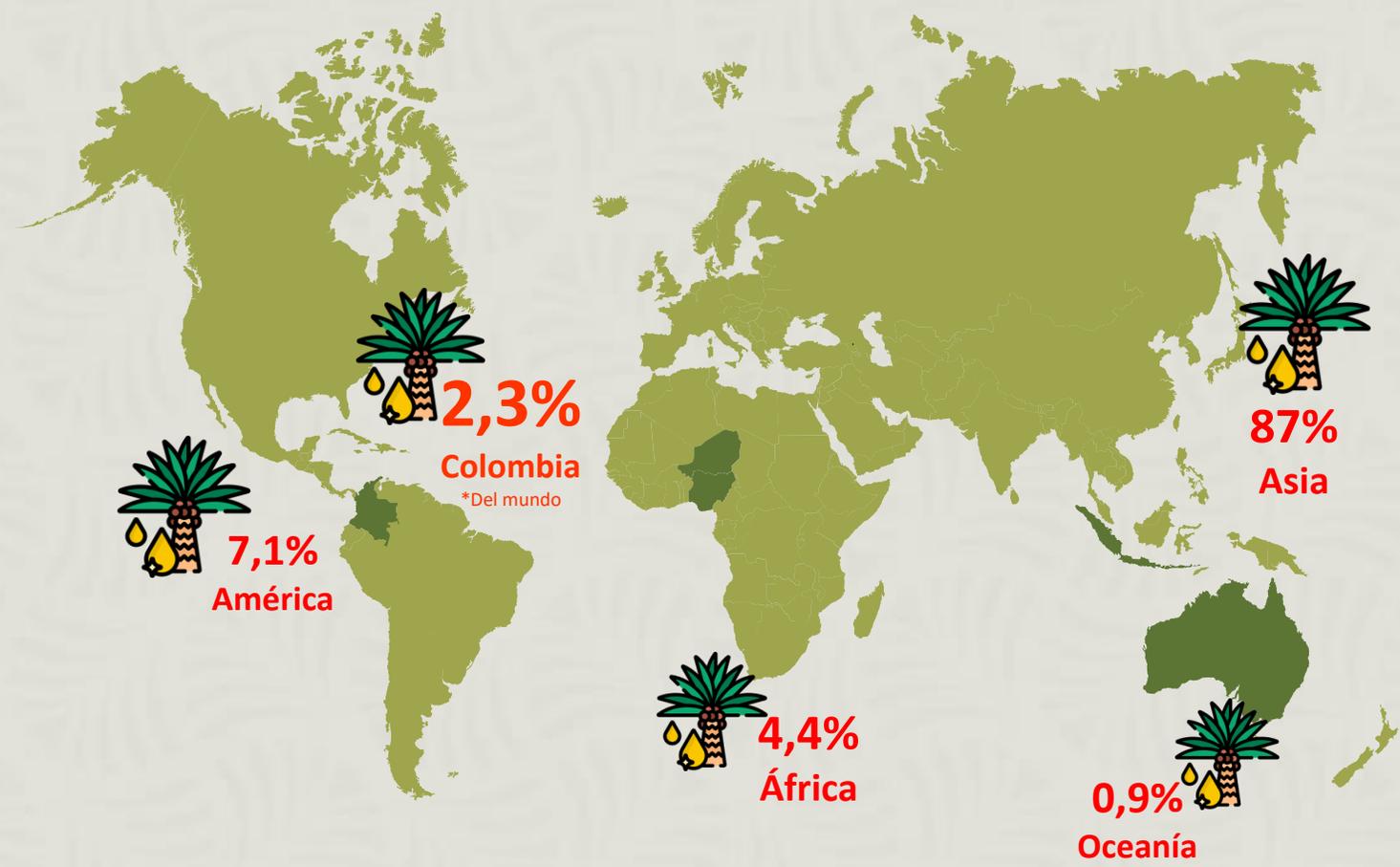




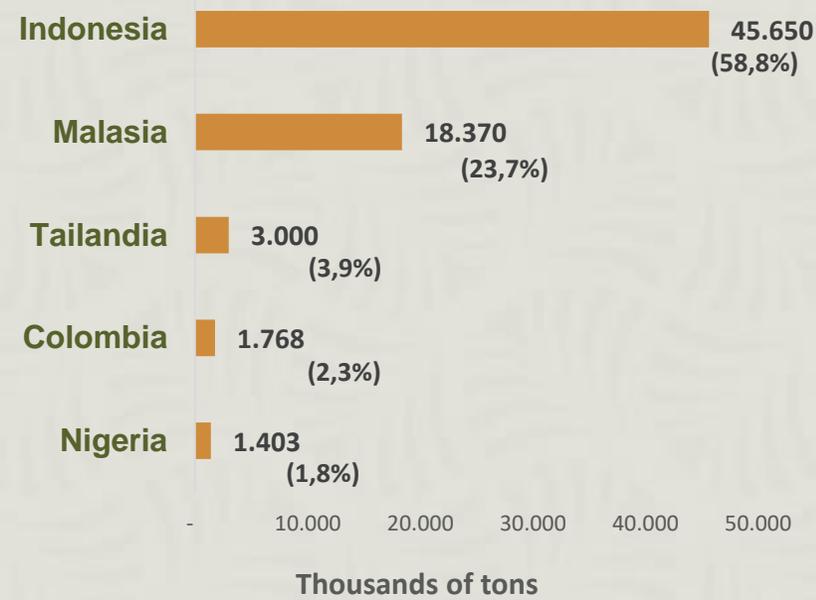
is the **Colombian National Association of Oil Palm Growers and Palm Oil Produces**

It was founded in **1962** and currently strives for the **competitiveness of the oil palm sector** and the **general well-being** of affiliated **oil palm growers, their families and communities** through a value proposition that contributes to improve the phytosanitary status, increase productivity and optimize profitability of the oil palm, consolidating palm-growing as a **sustainable business** and strengthening the **institutional framework** of the oil palm sector.

# Colombia leads the production of palm oil in the Americas, being the fourth producer in the world with a share of 2.3% of production.



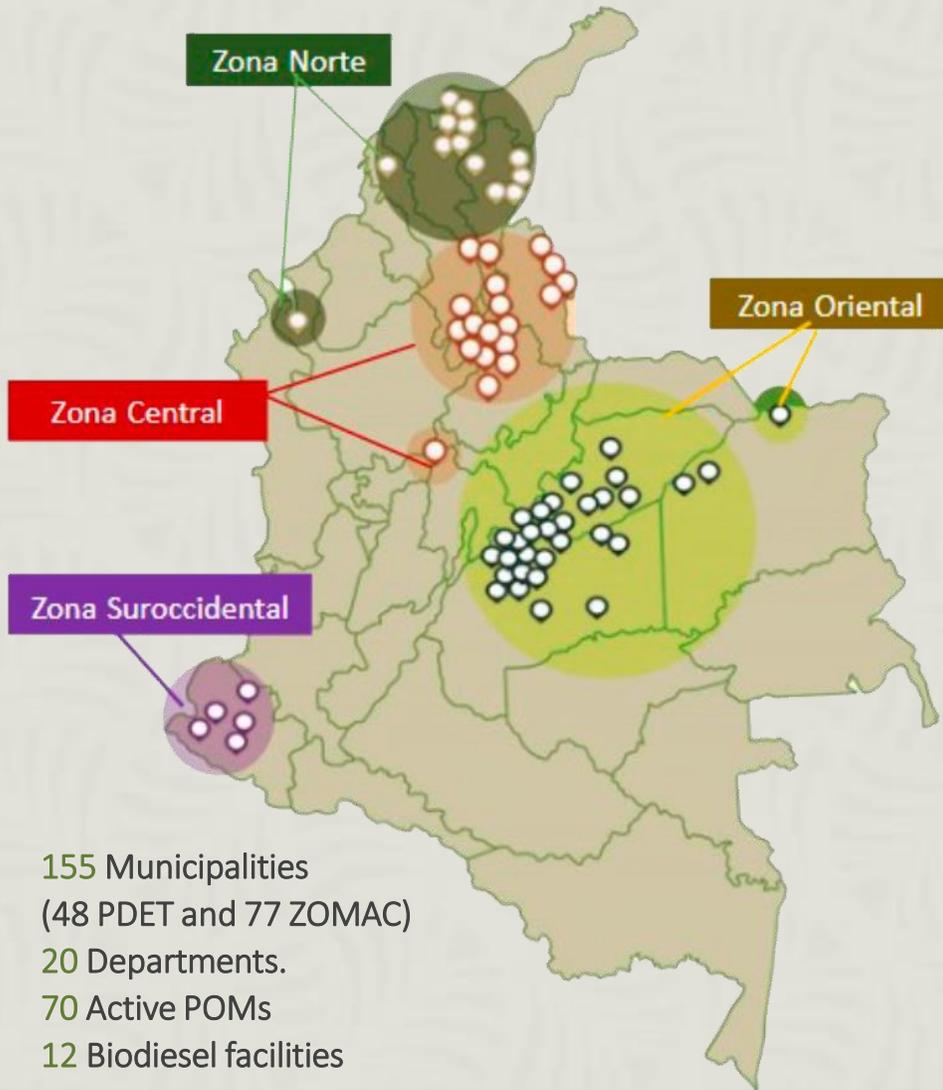
## Top five palm oil producers



Fuente: Oil World 2022.



# Colombian Palm sector at a glance



Second crop in area (577 thousand ha)



**7.000 oil palm growers**

72% Small (<20 ha) and 31% women



**17,6% of national agricultural GDP\***



Production in 2022: **1,77 million Tons**

Production value: COP 9,71 billions

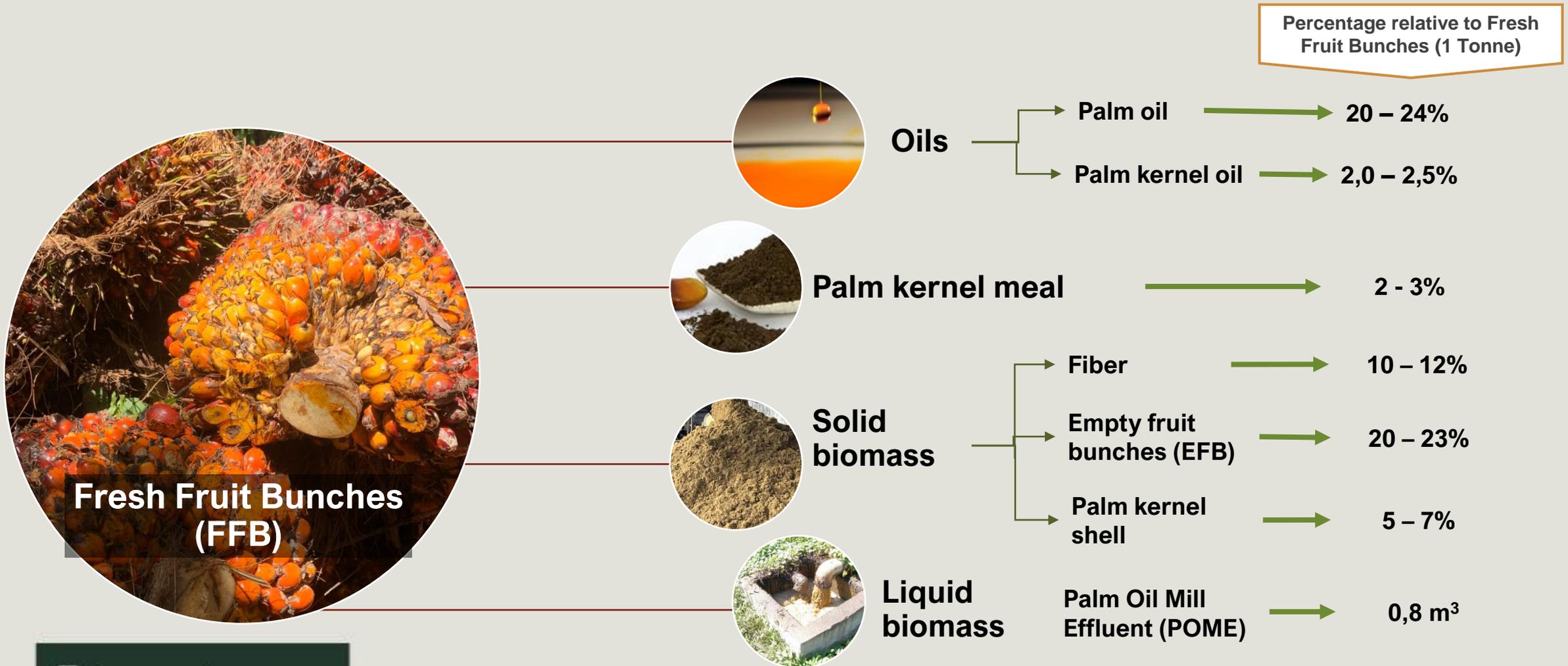


Local Market: **74%**

Export Market: **26%** - 4th of agricultural exports

Source: Fedepalma

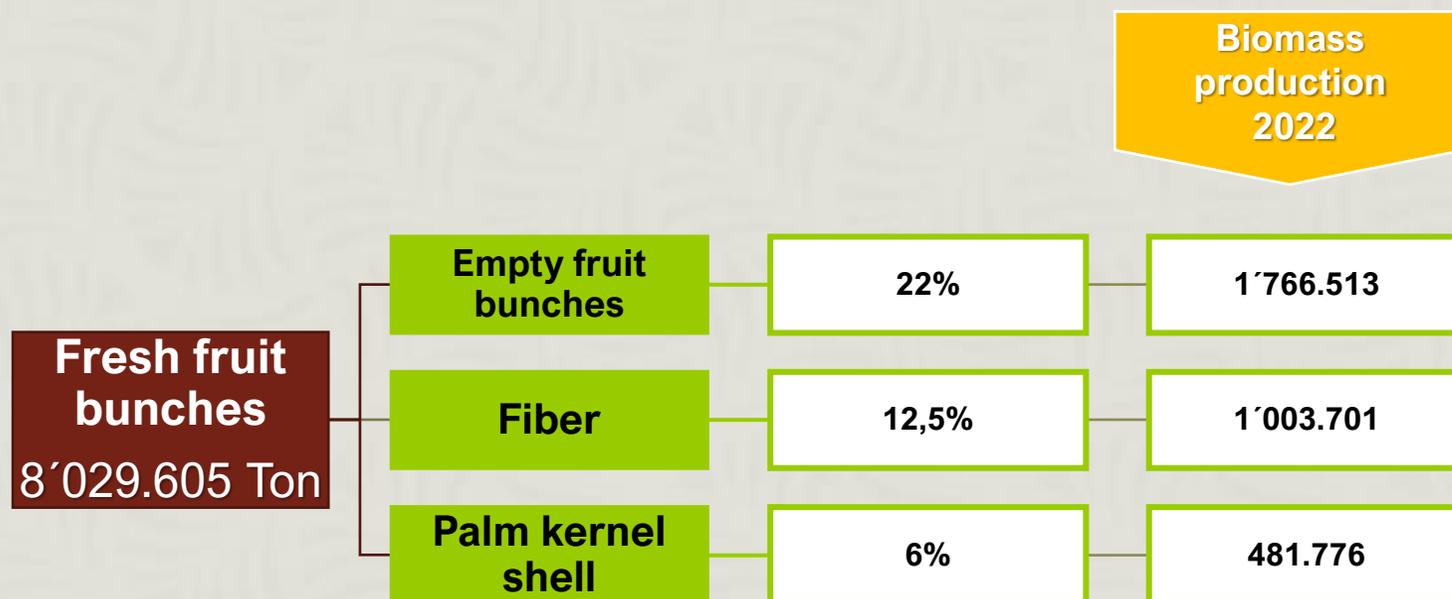
# Palm oil industry produces a lot of biomass, which hold unique characteristics to add value through different productive systems





## ADDED VALUE OF RESIDUAL BIOMASS

Biomass production is directly related to fresh fruit bunches production



# ADDED VALUE OF RESIDUAL BIOMASS

## Degree of utilization of residual biomass in the Colombian palm sector

	Agricultural use	Energy	Other uses
 <b>Empty fruit bunches</b>	Direct use 70,2% Composting 22,9%	Boiler fuel 1,8 %	5,2%
 <b>Fiber</b>	Direct use 21,8% Composting 5,7%	Boiler fuel 68,9%	3,6%
 <b>Palm kernel shell</b>		Boiler fuel 65,4%	33,6%

## ADDED VALUE OF RESIDUAL BIOMASS



**100%** of the steam is generated from residual biomass (fiber and palm kernel shell)

**25%** of POMs have energy cogeneration systems. Installed energy cogeneration capacity is **27 MW**.

The total electricity cogeneration potential is **250 MW**, by using all biomass.

## Biogas valorization

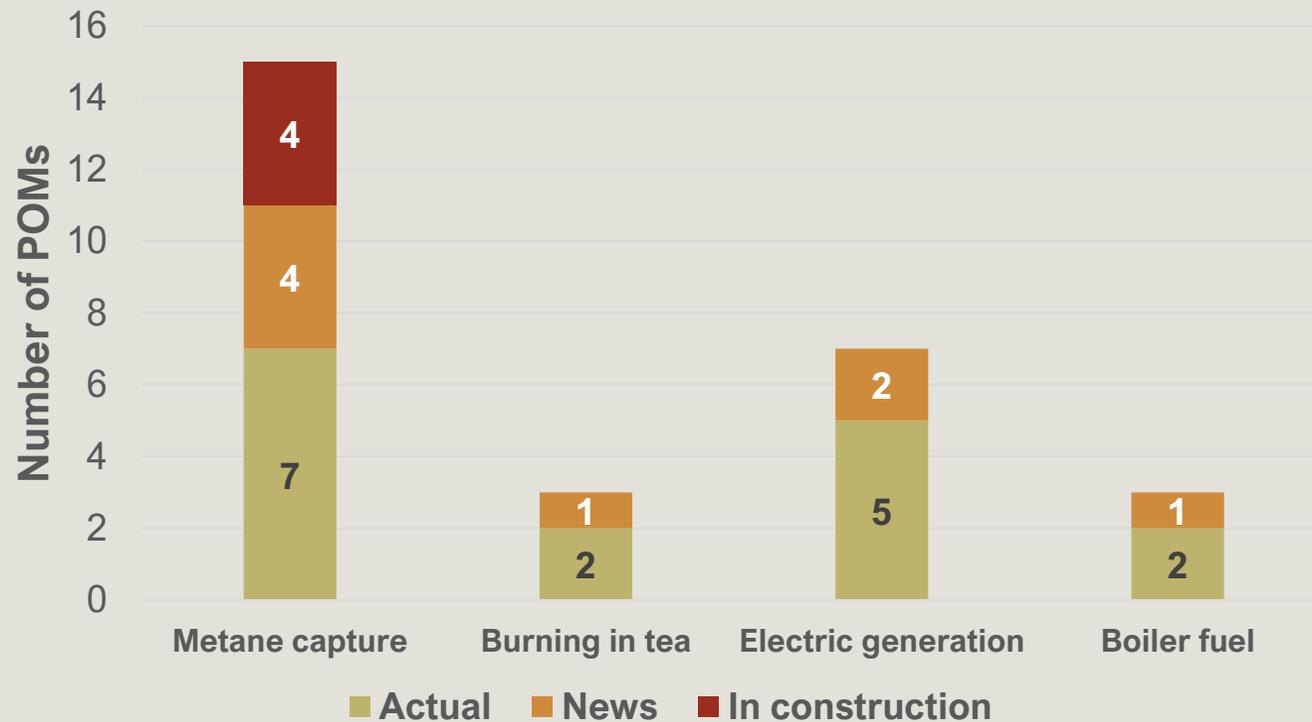
Biogas is produced from the anaerobic digestion process of the organic matter contained in the palm oil mill effluent (POME).

This gas has a **high methane content (50 – 60%)** which makes it possible to be used for energy purposes.



# Biogas valorization

## Status of implementation of biogas production and capture in the Colombian palm sector



### Currently

Biogas production  
↓  
40 million de m<sup>3</sup>/year

Mitigation CO<sub>2</sub>  
↓  
280.000 ton CO<sub>2</sub> – eq / year

Potential generation EE  
↓  
**10 MW**

# Biogas valorization



The potential for biogas production from palm oil is

**180 million m<sup>3</sup> - year**

Power generation potential of

**80 MW**

The sector has a potential to reduce GHG by capturing biogas from

**1'431.000 Ton de CO<sub>2</sub>e**



## LOW CARBON EMISSION BIOFUELS FROM PALM OIL

**Colombia is one of the first countries using biofuels.**

**Since 2008 palm biodiesel has been used blended with fossil diesel.**

**At this moment, the entire transport sector uses B10 and some private fleets uses B20 (Club de Biotanqueo)**



# LOW CARBON EMISSION BIOFUELS FROM PALM OIL

Palm biodiesel produced in Colombia significantly reduces greenhouse gas emissions



**COLOMBIAN PALM BIODIESEL**  
reduces greenhouse gas emissions between  
**83-108%**

## Reduction of Greenhouse Gases from different raw materials



44%

SOYA Estados Unidos



15%

COLZA Unión Europea



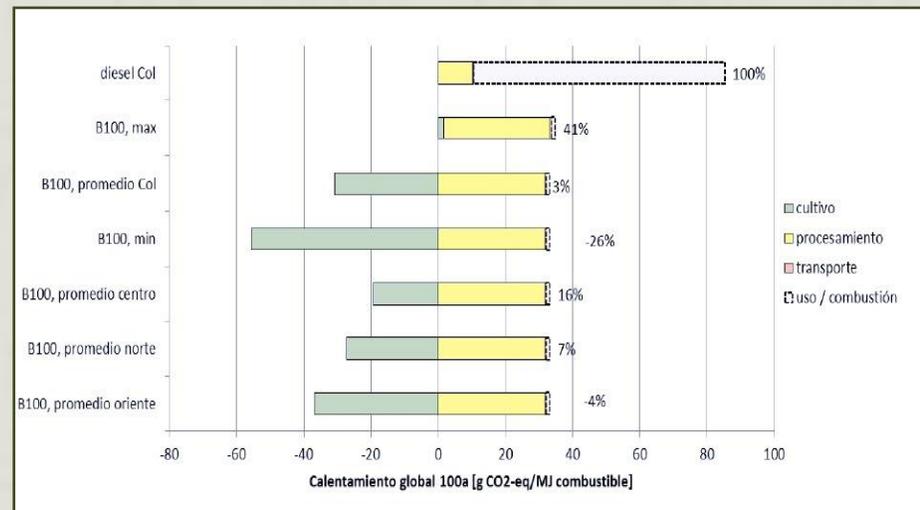
19%

SOYA Brasil



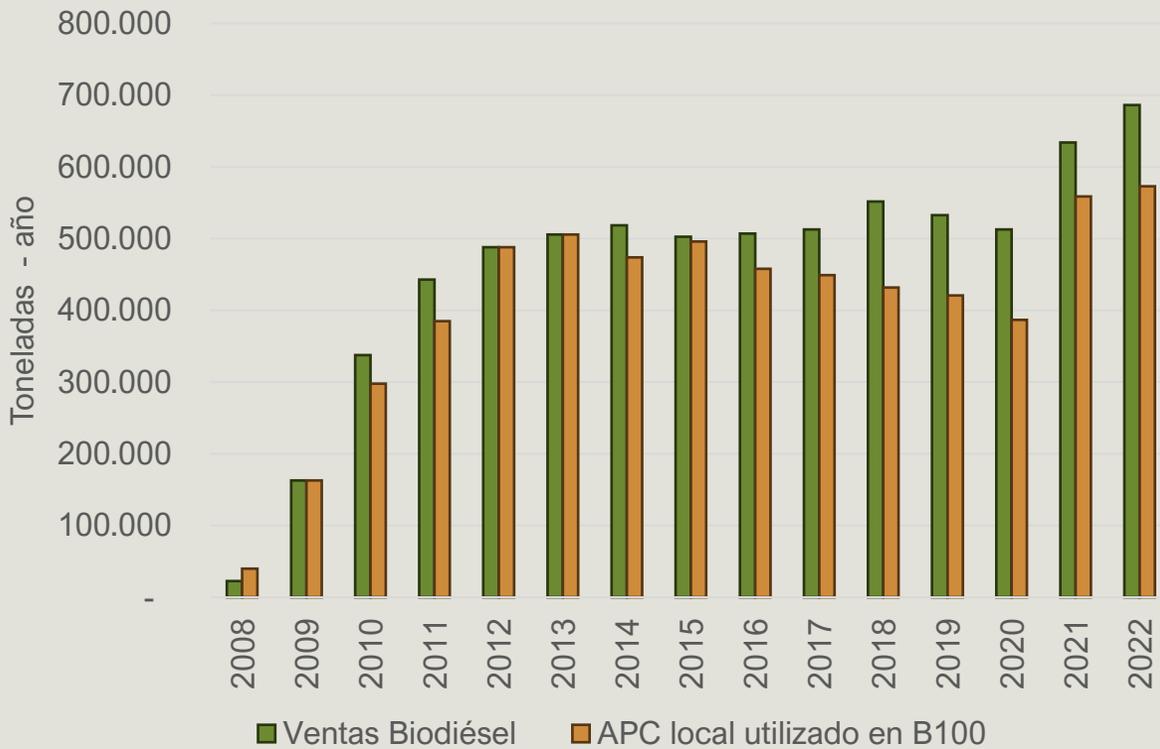
35%

PALMA Malasia



# LOW CARBON EMISSION BIOFUELS FROM PALM OIL

Evolution of biodiesel year sales and palm oil use in Colombia (2008 – 2022)



**Palm biodiesel  
generating great value for the  
country**

**Agricultural Sector Development**

**Rural employment generation**

**Environmental sustainability**

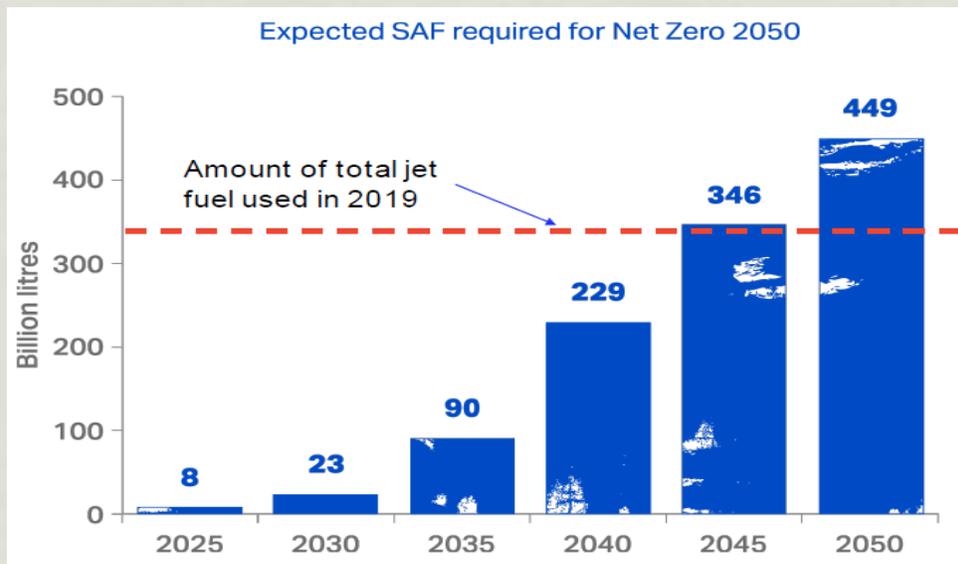
**Diversification of the energy matrix**

**Cost Benefit  
Ratio**

**3,31**  
for a B10 blend

## LOW CARBON EMISSION BIOFUELS FROM PALM OIL

Advanced biofuels (Renewable Diesel and SAF) represent an opportunity for oil and residual biomass derived from oil palm.



To access the SAF production market it is important to demonstrate that the sustainability standards established by CORSIA are met, especially the level of GHG reduction.





# The Colombian palm oil agroindustry is committed to sustainable development

CPO CERTIFIED AS  
SUSTAINABLE IN 2021

**26,3%**  
(458,700 Tons)  
of Colombia's  
crude palm oil



**24 Certified  
companies**



**4 Certified  
companies**



**28 Certified  
companies**

**In Colombia, palm oil has not been  
a driver of deforestation**



**63** Signed  
companies



MINISTERIO DE AMBIENTE Y  
DESARROLLO SOSTENIBLE



MINISTERIO DE COMERCIO,  
INDUSTRIA Y TURISMO



MINISTERIO DE AGRICULTURA  
Y DESARROLLO RURAL

**99,9%** of the area cultivated in  
oil palm in Colombia is  
deforestation-free



# Colombian Palm oil production provides quality and formal employment

**31%**  
Of the producers are women

**+197.000**  
Total Jobs

**1.5 SMLV**  
monthly salary

**+82%**  
Formal employment

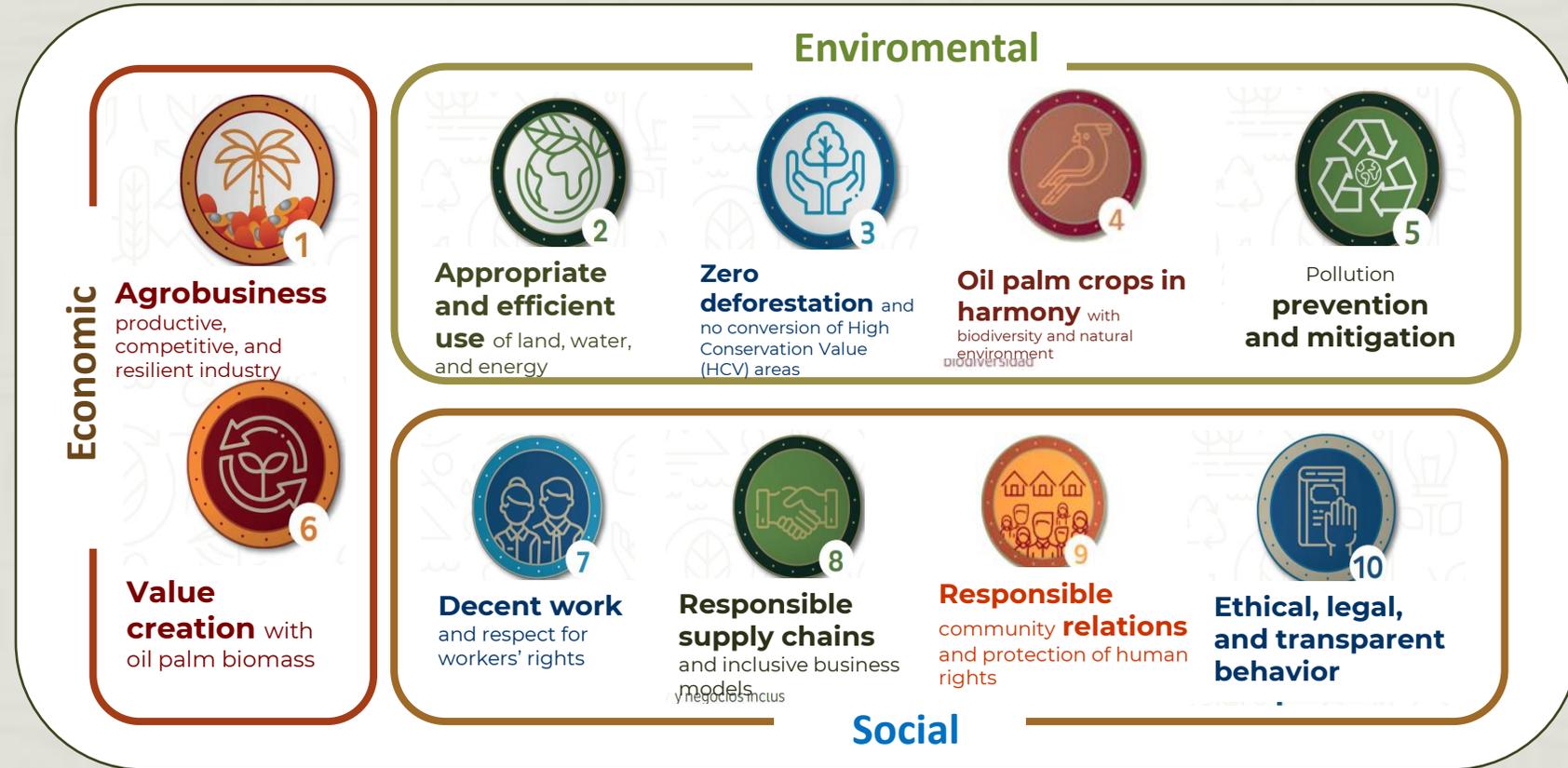
**63%**  
Workers with contracts of more than 1 year



# Aceite de Palma Sostenible de Colombia – ApsColombia

## Palm Oil Principles

- Colombia's tailor-made strategy to be a **100% sustainable and differentiated Palm Oil origin by 2030.**
- A **sustainability verification platform** that ensures sustainability of small, medium and large-scale producers.
- A multistakeholder mechanism to **connect producers and consumers, increasing transparency and value for all.**



**The circular economy approach will allow the oil palm agroindustry in Colombia to generate value and will contribute to the country's Energy Transition Strategy**

**Thank you**