

GREMCA-ISCC

journey to EUDR compliance with ISCC

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EUDR is the last frontier to Energy crops and the construction of Certified Crude Vegetable Oil Reserves in Colombia

Gremca/Daabon Group are committed with a Holistic approach to sustainability and low carbon emission of palm oil production: One compliance leads to the other



Company	Rank	Total score	Change	Total Indicators	Disclosure	Engaged	Headquarters	Landbank	Market cap	Media
Daabon Group	1	97.4%	+1.8	175		✓	Colombia	22.9 KHa	Private co.	8
United Plantations Bhd	2	96.1%	+0.9	177		✓	Malaysia	57.9 KHa	\$2,646.4M	6
SD Guthrie Bhd (previou...	3	94.8%	+1.4	184		✓	Malaysia	639.5 KHa	\$7,788.3M	85
Apical Group	4	93.3%	-2.0	117		✓	Singapore	N/A	Private co.	25
Austindo Nusantara Jaya...	5	92.8%	-0.5	168		✓	Indonesia	154.7 KHa	\$155.7M	24
Wilmar International Ltd	6	92.3%	-0.5	185		✓	Singapore	350.9 KHa	\$14,733.6M	181
Goodhope Asia Holdings...	7	91.9%	+0.6	184		✓	Singapore	97.9 KHa	Private co.	34
R.E.A. Holdings plc	8	91.5%	+2.8	167		✓	United Kingdom	75.6 KHa	\$45.8M	3
Dharma Satya Nusantara...	9	91%	+0.6	167		✓	Indonesia	135.4 KHa	\$788.5M	7
Musim Mas Holdings Pte...	10	90.9%	-1.0	185		✓	Singapore	179.3 KHa	Private co.	77



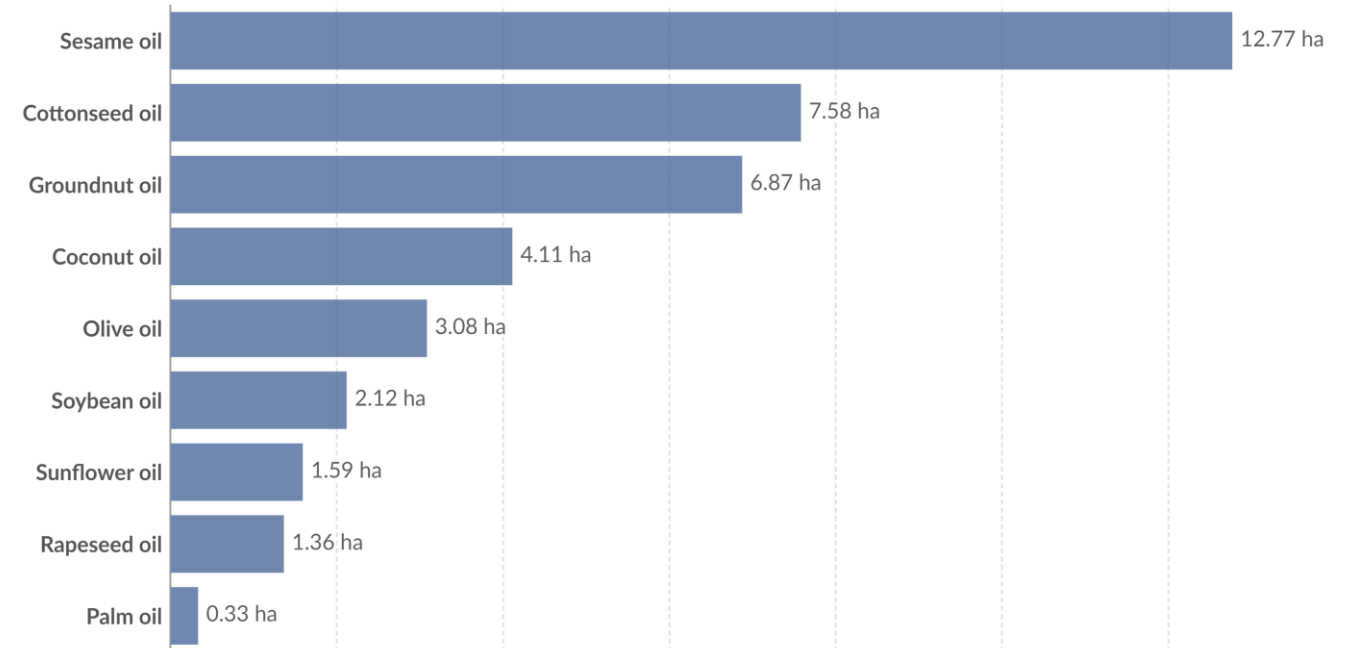

The oil from palm is the most efficient oilseed crop in terms of land use.



Area of land needed to produce one tonne of vegetable oil, World, 2021

Our World
in Data

This metric is the inverse of oil yields. It represents the amount of land needed to grow a given crop to produce one tonne of vegetable oil.



Data source: Food and Agriculture Organization of the United Nations (2023)

OurWorldinData.org/crop-yields | CC BY

Note: Based on oil production and area harvested data. Maximum yields can vary depending on the ratio of oil production to co-products (e.g. what fraction of soybeans or coconuts are used for oil production).

Oil palm has an oil production per hectare **6.4 times** higher than soybean, **4.8 times** higher than sunflower and **4.1 times** higher than canola. Palm Oil uses 9% of the land to produce 36% of the worlds vegetable oils

The Commitment: Compliance of the crude palm oil produced by GREMCA/DAABON with the ISCC standards.

There are not good or bad vegetable oils but sustainable or not sustainable oils

Carbon reduction themes	1.Greenhouse Gases (GHG) 2.Carbon Stock
Environmental , social and economic themes	3.GHG reduction permanence 4.Water 5.Soil 6.Air 7.Conservation 8.Waste and Chemicals 9.Seismic and vibrational impacts (only for LCAF)
	10. Human and labor rights 11.Land use rights and land use 12.Water use rights 13.Local and social development 14.Food security

ISCC EUDR add-on requirements

1. Deforestation-free status with cut-off date Dec 2020
2. Compliance with EUDR legality criteria
 - Land use rights
 - Environmental protection
 - Forest-related rules
 - Third parties' rights
 - Labour rights
 - Human rights
 - FPIC
 - Tax, anti-corruption, trade and customs regulations
3. Physical segregation of EUDR-relevant material



Colombia defined a country strategy 20 years ago to commit to biofuels with mandatory blends.

This prepared for the challenge of achieving all ISCC certifications including the first ISCC-EUDR certification

GREMCA: The path to certification

Carbon reduction (1-3)

The group signed the climate pledge to decarbonize by 2040

GREMCA reduces up to 80% of all production emissions

1. Green House Gases/Reduction Permanence:

- By capturing and converting all possible methane into energy GREMCA produces 1,5 MW
- By fertigation (50% of used land) and biomass reincorporation we reduce more than 20% the use of chemical fertilizers
- Through our own biomass we produce our steam requirements
- Our solar installations produce 3 MW

2. Carbon Stock/GHG reduction permanence

- The group has invested in a 50,000-ton per year biomass pelletization plant. Our pilot is producing a high-quality biochar pilot produce with over 78% fixed carbon and we expect to start industrial production in 2026/27



GREMCA: The path to certification

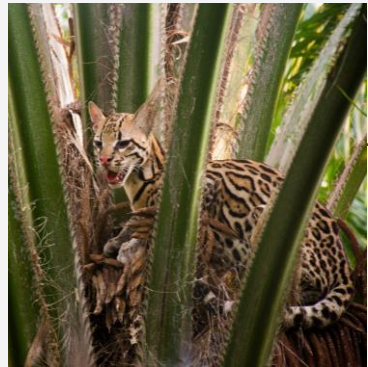


Social/Legal compliance (10-11)

- Workers, since the 90's, are significant shareholders and have a permanent seat in the board- as well as the labor union
- Non child labor with modern enforceable laws and above average legal wages
- Certified small growers account for 15% of planted land of the mill
- Proven legal land use rights
- Compliance with all water use permits + efficient use of water resources
- Social responsibility with a 90-students school
- **Gremca is the first in the world to receive FSS certification:** to demonstrate **Human Rights Due Diligence** and commitment to the **SDG 2**

GREMCA: The path to certification

Enviromental issues/Non-Deforestation (3-8)



- 50% of our areas use fertigation and are fully automated saving more than 70% of normal water use and 20% in chemical fertilizers
- Land rehabilitation by reincorporating all biomass
 - Each cycle we reincorporate all the biomass in excess of 300 tons per hectare
 - We incorporate 30,000 tons of compost yearly
- We comply with mosh moah standards



- In 2012 GREMCA and the daabon group achieved EPA compliance
- All our production polygons are public and within EUDR compliance with continuous and automated drone and satellite-based control and GFW for land use change. We monitor over **10,000** hectares
- **On going EUDR certification: Polygons validated awaiting audit**

GREMCA: The path to certification

In GREMCA we have invested heavily in the best agricultural practices and the introduction of AMPO (American Vegetable Oil) hybrid, clone varieties and Macauba to foster productivity

These measures are gradually increasing our yield from a range of **3 to 4** tons to a range of **8 to 12** tons of crude oil per hectare

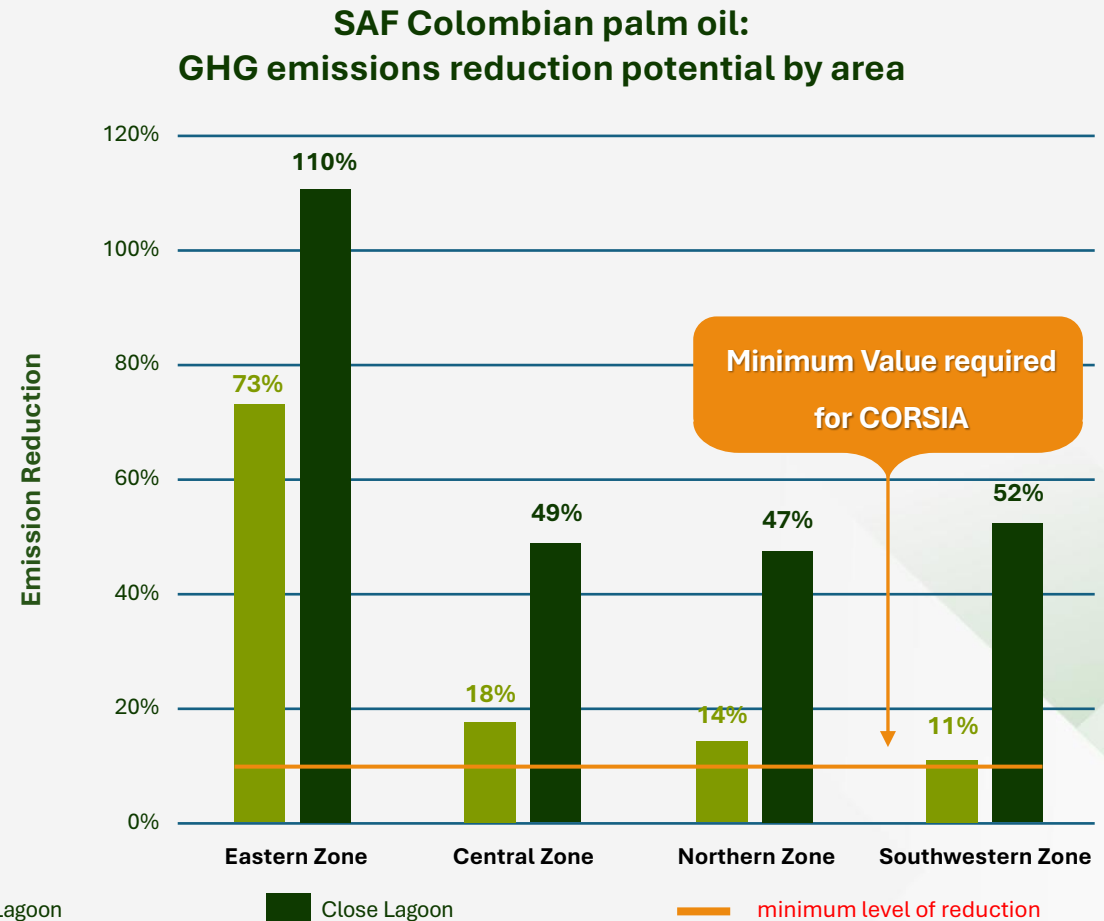


GREMCA is but one example of the Colombian palm oil sector's commitment to sustainable, low-carbon, non deforestation production



Palm-related deforestation: 198 km² (0.03 %)

Fuente: World Bank. Life Cycle Analysis on the Production Chain of SAF and Renewable Diesel from Oil Palm and its Crop Residues in the Orinoquía Region and Colombia (English). Washington, D. C.: World Bank Group, in process of publication.



WORLD EFFICIENT LAND USE

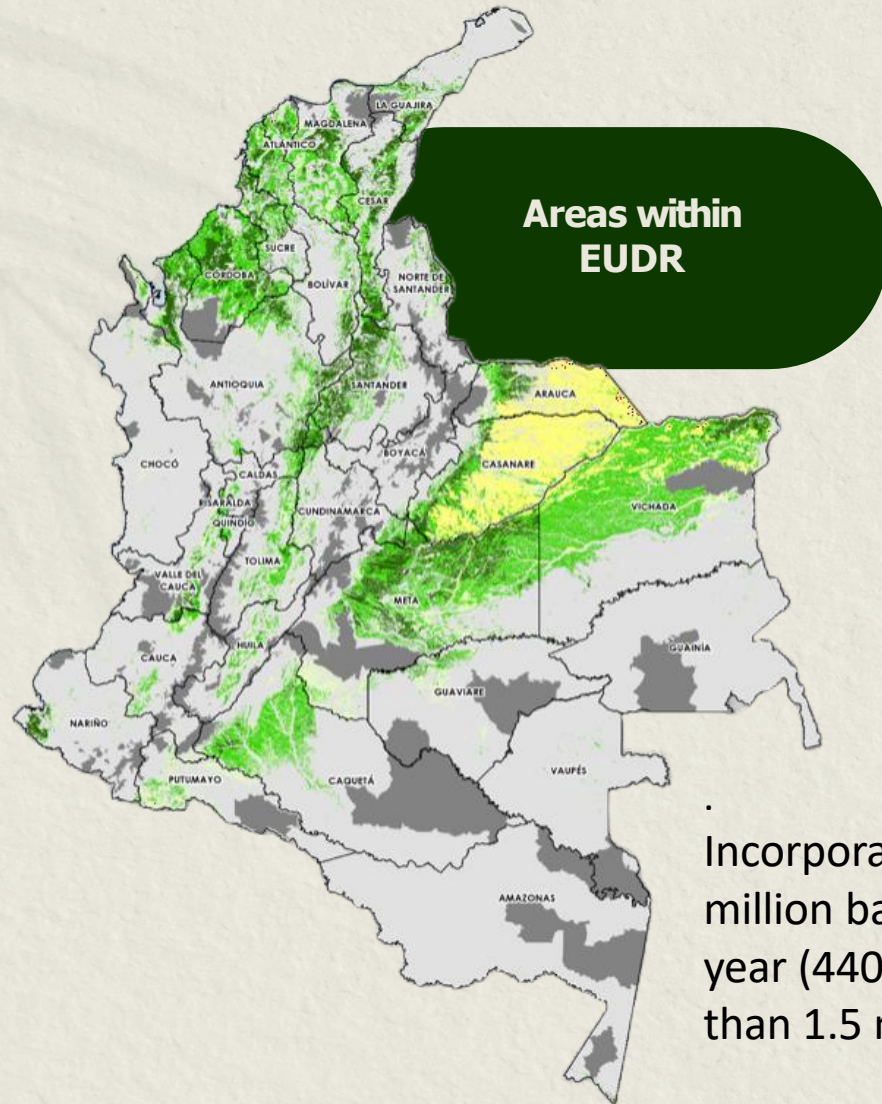
By 2050, the world will need:

- 80 million extra tons of vegetable oils for food.
- 360 million tons for SAF
- 400 million for other uses-coprocessing, biodiesel etc

Given productivity gains and that there is a large “land bank” of about 10 mm Km² of marginal land (or 1000 mm Ha) in tropical zones that could be used to grow sustainable, highly productive energy crops (ref 13)

CPO could meet a considerable amount of this demand by using a fraction of the land other vegetable oils require.

GROWTH POTENTIAL IN COLOMBIA WITHIN EUDR CERTIFICATION



Agricultural Frontier of Colombia

40 millón hectars (2018), of which only 7.8 millon are in use



Incorporating EUDR potentially compliant land we could produce 605 million barrels per year (77 million tons) of the 2.9 billion barrels per year (440 million tons) the world needs including SAF. Creating more than 1.5 million direct jobs and 3.5 million indirect jobs

Fuente: UPRA (2018)

In Colombia the ISCC path is a fundamental step within a country strategy so that **Colombia** can become an efficient, **sustainable and sizable certifiable producer for the worlds Food, Biofuels and Biorefining markets.**

The studies show that Colombia, by 2050, has the potential to **incorporate more than 220 million barrels per year (30 million tons) a year of sustainable certified Crude Vegetable Oil, of which half could be produced with an associated ILUC value of cero through unused land and yield increase, creating more than 1.5 million direct jobs.**

All with social sustainability and low carbon intensity of production. potentially negative (given its biochar possibilities)

All in compliance with EUDR parameters

The ISCC Challenge towards world wide EUDR- ISCC certification

- **Harmonize the cut-off dates within other ISCC certifications without jeopardizing the NDPE assurance**
- **End user acceptance**
- **Sufficient auditors to gain traction**

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