
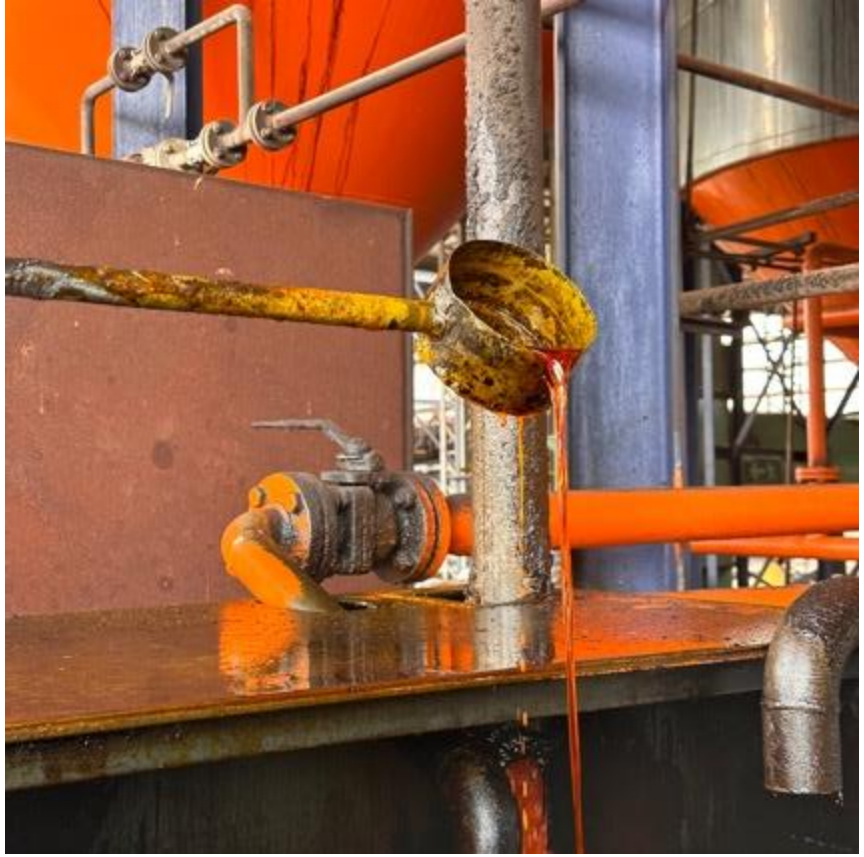


ISCC & World Bank on Palm-Based SAF/Renewable Diesel Production Project

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ISCC Regional Stakeholder Committee Latin America
Online, August 13th, 2024

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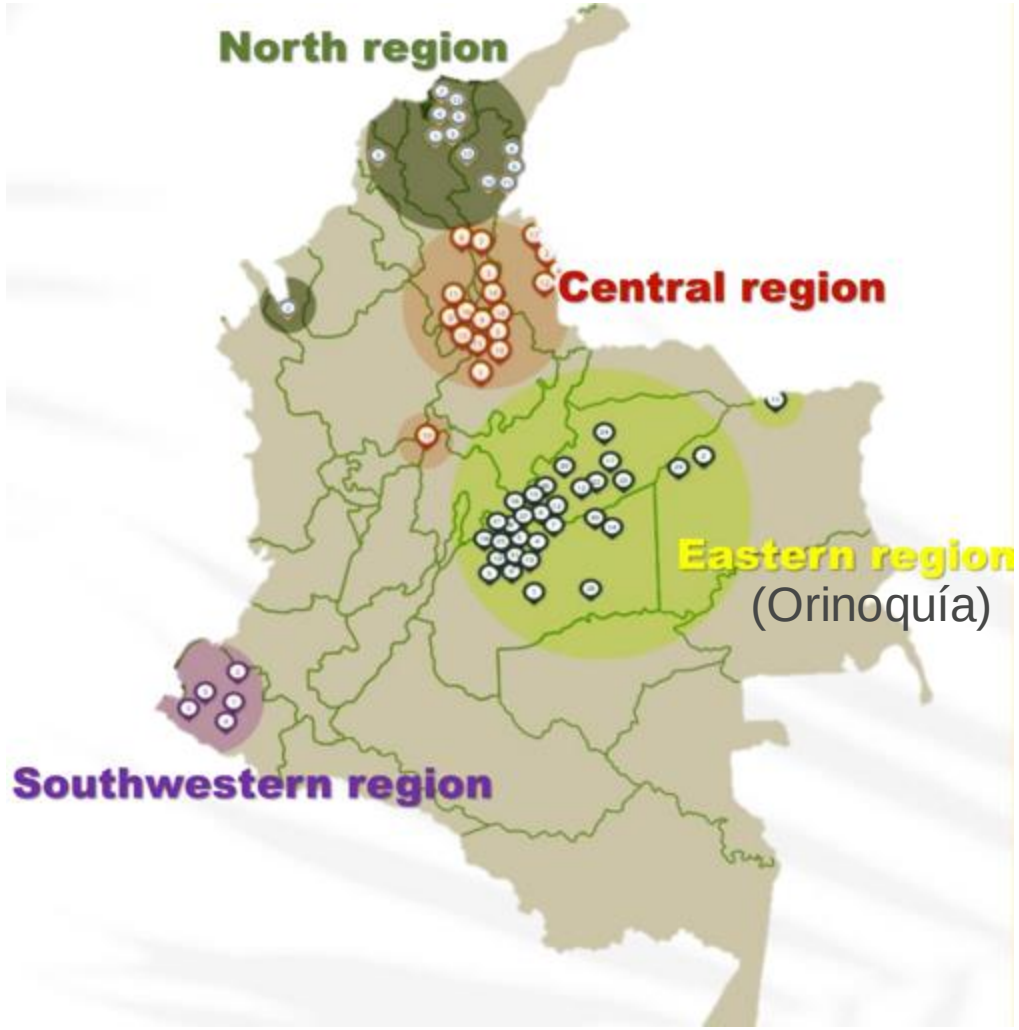
01 Project Overview

“Life cycle analysis (LCA) of the production chain of Sustainable Aviation Fuels (SAF) and Renewable Diesel (RD) from oil palm and its crop residues”

Background: the palm sector in Colombia



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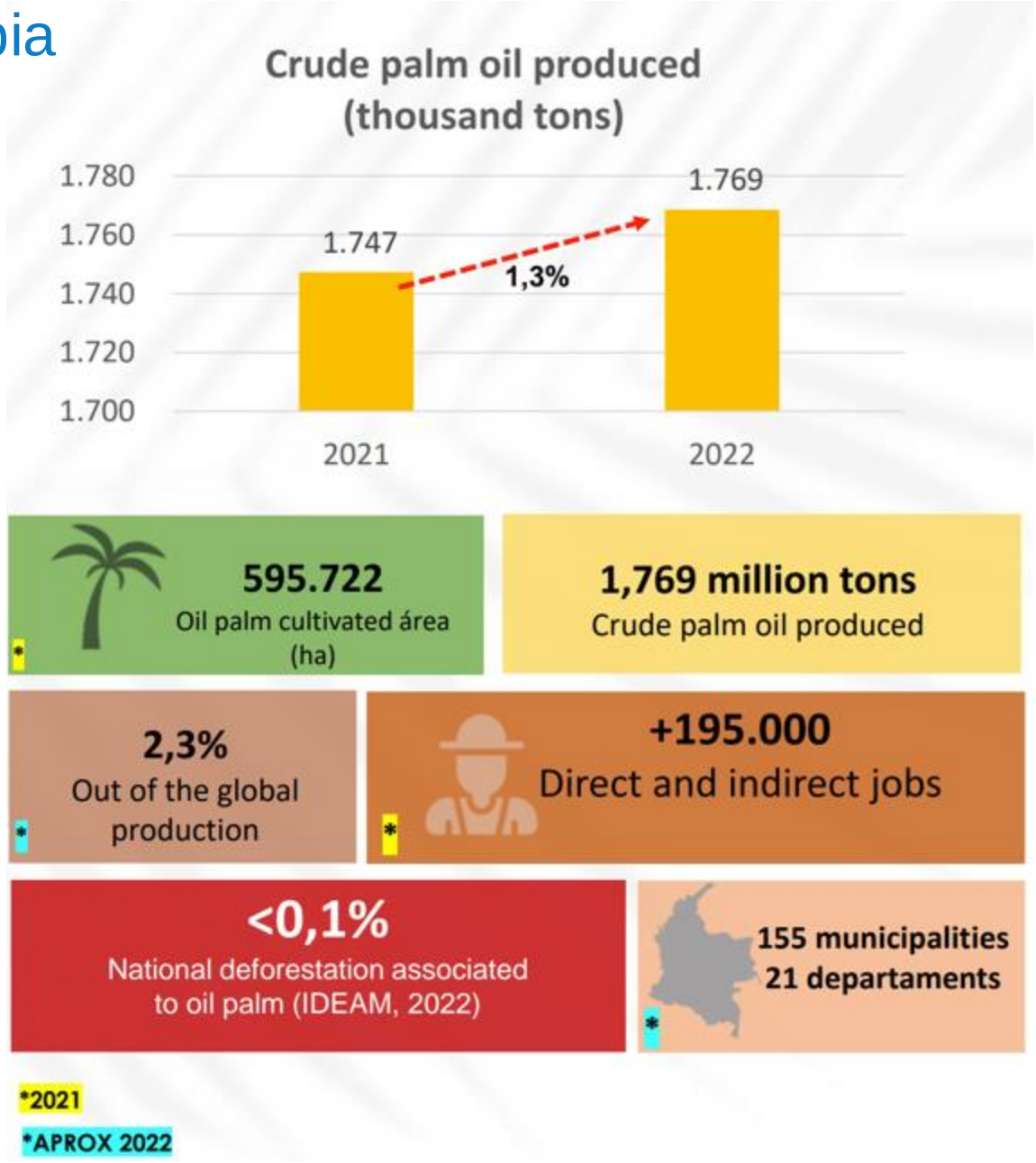
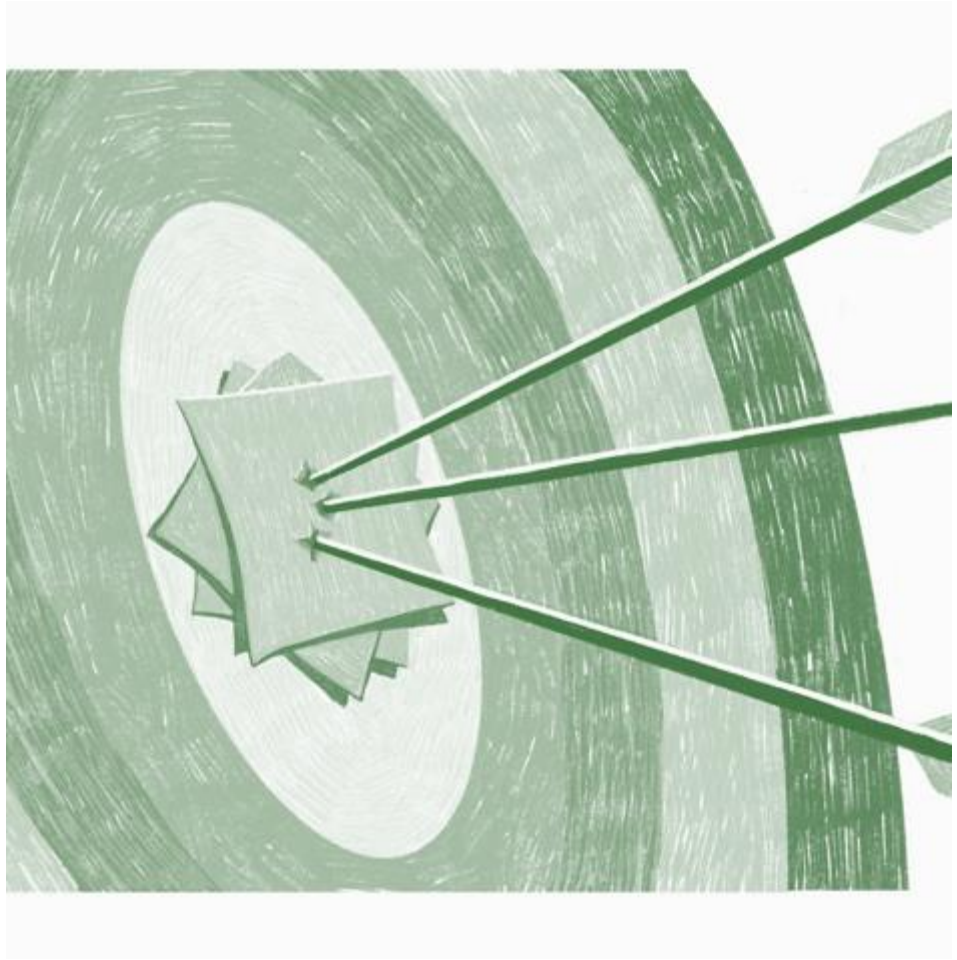


Project objectives



ACTIVITY 1

- Identify promising SAF and RD supply chains for palm oil and (palm) residues produced in Colombia
- Assess the environmental impacts and benefits of the production and use of SAF and RD (LCA)
- Explore the certification potential on EU REDII and CORSIA markets

ACTIVITY 2

- Analyze the land use change in palm areas
- Define the carbon balance of SAF/RD production chains

ACTIVITY 3

- Engage relevant stakeholders of the palm-oil sector in Colombia
- Collect feedback and integrate them into the study to improve the results

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The approach

Life Cycle Analysis

- *Identification of promising pathways (HEFA, Fisher Tropsch, Co-processing)*
- *Environmental impact and benefits assessment of the production and use of:*
  - *palm oil in different regions of Colombia,*
  - *SAF via different technologies,*
  - *renewable diesel (RD)*
- *GHG values calculation under REDII and CORSIA*
- *Assessment of SAF competitiveness in comparison to RED II and CORSIA requirements*

Carbon Balance Assessment

- *Land Use Change (LUC) Assessment following the Renewable Energy Directive (EU) 2018/2001 (RED II) and CORSIA specifications*
- *Suitability Assessment*
- *Carbon Balance results for SAF and RD pathways under REDII and CORSIA methodologies*

Compliance assessment

- *Identification of certification requirements*
- *ISCC EU and ISCC CORSIA certification potentials for palm-based SAF and RD pathways*

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02 Main takeaways of the study

Main takeaways of the study

Process emissions

From the LCA perspective

- SAF produced via CPO from oil mills with closed pond systems can achieve significant emission savings, in all the regions and pathways considered
- Closed POME treatment is highlighted as the most important element in emission reduction

From CORSIA perspective

- Considering closed POME pond treatment, it is possible to meet the GHG emission reduction requirements set by CORSIA
- While GHG values demonstrate Colombia's potential for SAF production, certification shall be done for individual sites with actual data

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Main takeaways of the study

LUC/ILUC emissions

Land Use Change Assessment and Carbon Balance

- The results of the LUC assessment, focusing on conversions of forest, shrubland, and grassland to palm, are the input to determine the GHG emissions associated with LUC.
- The LUC values show similar patterns in the palm regions, under CORSIA, with the Orinoquía showing negative GHG emissions.
- The carbon balance highlights that the palm-based fuels produced in the Orinoquía region meet the GHG emission requirements (CORSIA).
- The ILUC value for Colombia to be used under CORSIA is missing.

Main takeaways of the study

Compliance assessment

Colombian feedstock as well as SAF producers are in a favorable position towards CORSIA certification

- The automated deforestation assessment showed either **low or medium deforestation risk** for all analyzed areas, with no area considered as high risk.
- While compliance of individual plantations still needs to be confirmed in individual audits, this already provides a **positive overall picture for many plantations in view of future compliance**.

CORSIA

Availability of ILUC value for Colombia required!

- The analysis has revealed an overall positive and promising picture for the Colombian palm sector, both in terms of low deforestation risk and compliance with GHG emission savings requirements.
- The ICAO calculation of a Colombia-specific ILUC value for palm is key.
- Low LUC risk certification under CORSIA is an interesting option for hybrid palm oil.
- All certification shall be at individual level.

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03 Recommendations and next steps

Recommendations

- Swift application to ICAO for the calculation of a Colombian-specific ILUC value for palm
- Decrease the consumption of fossil energy carriers
- Facilitate the conditions for investments in green technology
- Adopt sustainable agricultural practices in palm plantations
- Create awareness and educate operators on sustainable practices

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Roadmap for the future of SAF/RD in Colombia

Next steps

- Support and facilitate the dialog with ICAO to obtain the ILUC value
- Substantiate the request with the findings of this LCA study
- Assist companies in their own GHG calculation and improvement
- Support in the certification process

ISCC/MEO future perspectives and follow up projects in the sector

- Potential pilot certification for palm-based SAF produced in Colombia
- Potential for low LUC risk certification under CORSIA
- Assistance on ISCC individual certification
- GHG values calculation under CORSIA

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Many thanks for your attention

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