



Colombian sugarcane industry

XXXII ISSCT Centennial congress



British Society of Sugar Technologists
Annual general meeting
April 10th, 2025

Nicolás Javier Gil
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Agenda

the sugarcane that inspires
us, **innovation for
sustainability**

-  **01.** Colombian sugarcane industry
¿Who are we?
Solutions and products for sustainability
-  **02.** XXXII ISSCT Centennial congress

Agenda

the sugarcane that inspires
us, **innovation for
sustainability**



01. Colombian sugarcane industry

¿Who are we?

Solutions and products for sustainability



02. XXXII ISSCT Centennial congress

WE ARE A SECTOR WITH

150

years of **HISTORY** generating
prosperity in the country

An agro-industry that is increasingly



Diversified



Sustainable



Close to the
communities



💡 ¿Who are we?



Our
allies



Cenicaña: Colombian sugarcane research center



Our Mission

We contribute to the sustainable development of Colombia through innovation in the sugarcane agroindustry.

How is it financed?

0.65%

contributions of total
sugar and EtOH sales

¿What do we have and what we do?



Breeding
Program



Agronomy
Program



Factory
Program

275

among technicians, professionals, M.Sc., PhD.
& postdocs

21

Research areas & services

17

Laboratories

Services:

- 01 Technology transfer & training
- 02 Analytics
- 03 Computer science and telecommunications
- 04 Knowledge management
- 05 Agrometeorology
- 06 Superintendency

Data of the Colombian Sugarcane agroindustry



Planted area
585,639 acres

491,633 Acres

Harvested Area in the Cauca River Valley

Productivity index

52.2

Ton of cane per acre

5,75

Ton of Sugar per acre

69%

of the productive units have less than 129 hectares

135

acres is the average size of the land

51
Municipalities

5
Departments/states

Departments/states

- Caldas
- Risaralda
- Quindío
- Valle del Cauca
- Cauca
- Meta

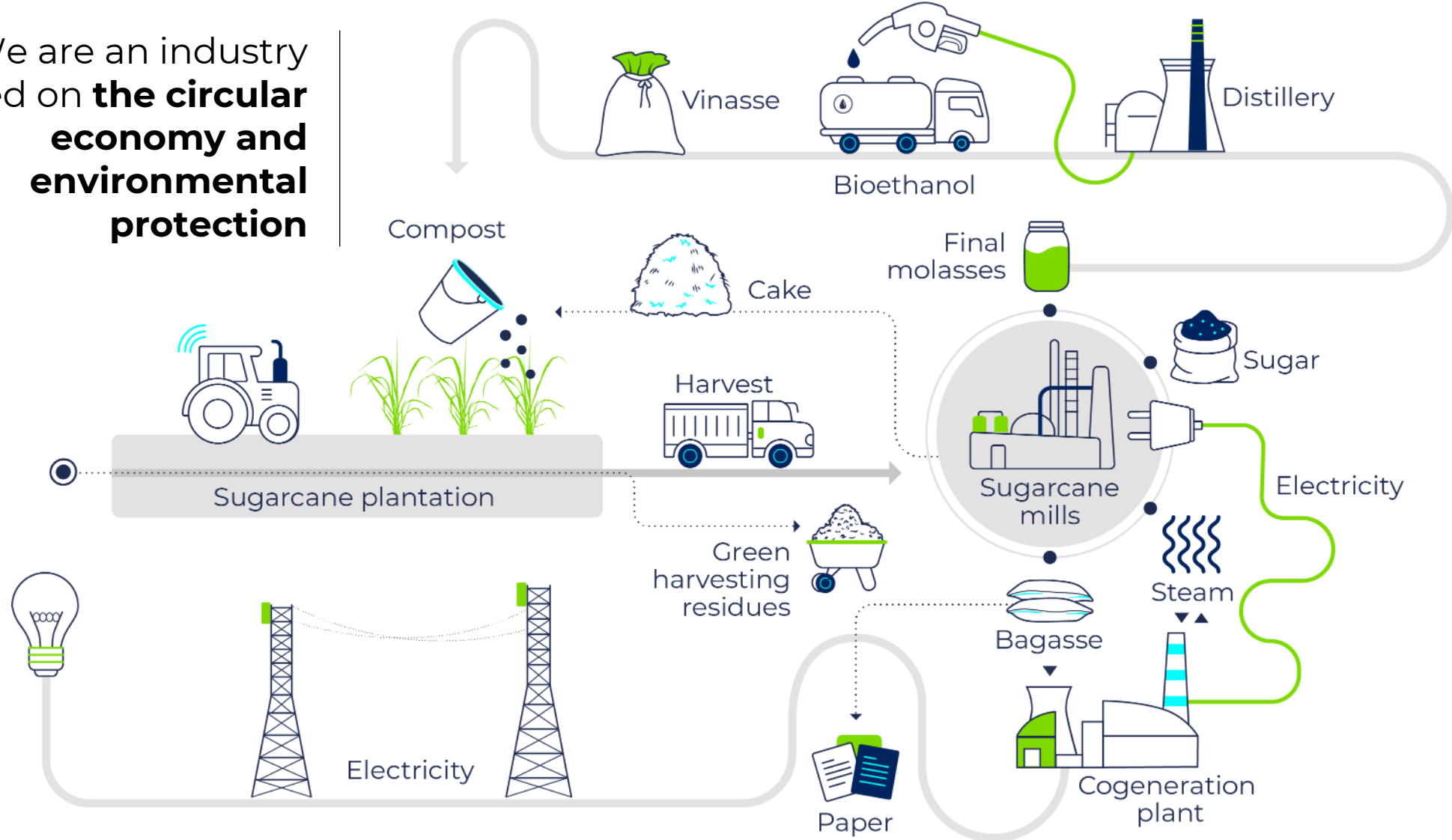
75%

of the lands belong to to 3970 cane growers

25%

of the land belong to the 14 sugar mills

We are an industry
based on **the circular
economy and
environmental
protection**





The activity of the Sugarcane sector



15

Sugarcane
Processing
Plants

14 that produce
sugar

14 cogenerate
power

6 make sugar
and ethanol



They are all co-
generators of
energy

286 thousand
Workers linked to activities in
the sector

1747 GWh
of cogenerated electricity

7.4 million
net tons of bagasse for paper
production and electrical,
thermal and mechanical energy*

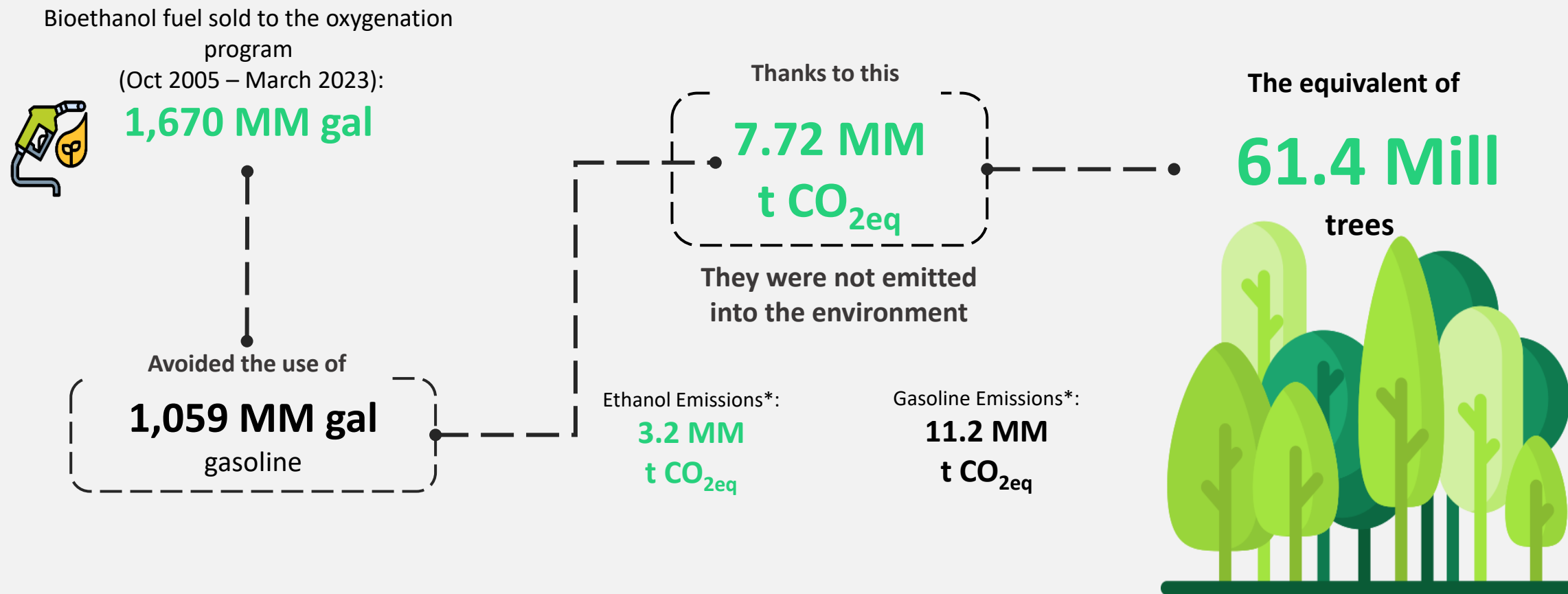
2.4 million
net tons of sugar produced

197 thousand
tons of final molasses
produced

382,000 million
liters of bioethanol produced for
the government's gasoline
oxygenation program in Colombia

Production of organic fertilizers -
minerals

Mitigation of emissions associated with bioethanol





Solutions and products for sustainability



We develop products for more sustainable sugarcane production

- Cultivars
- Technology



Site Specific Agriculture®

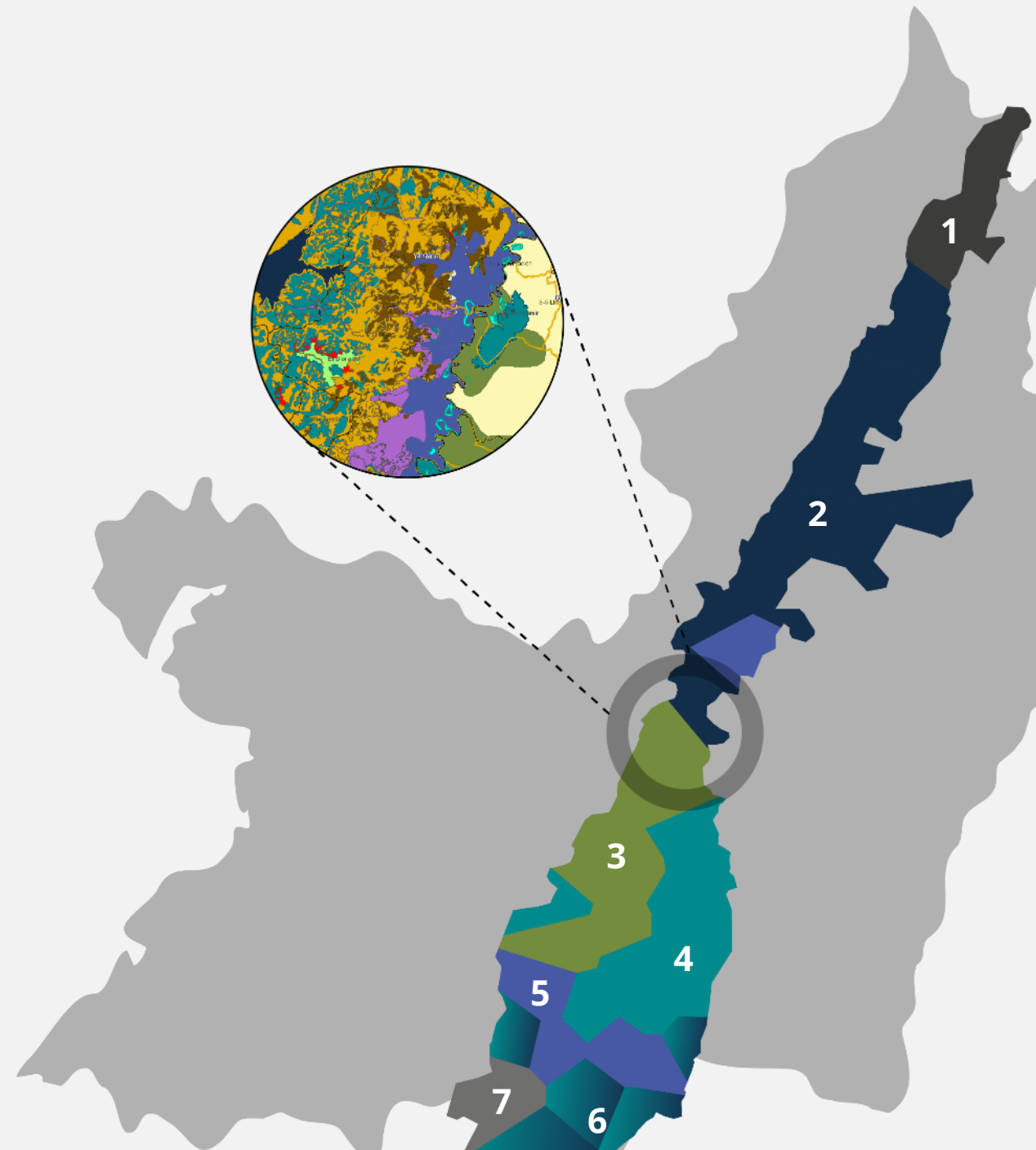
Cultivar selection & Agronomic Practices according to the spatial and temporal conditions of the field where the cane is grown.



167 Agroecological zones
In the Cauca river valley

3 Mega environments of selection:
Dry, humid, and foothill

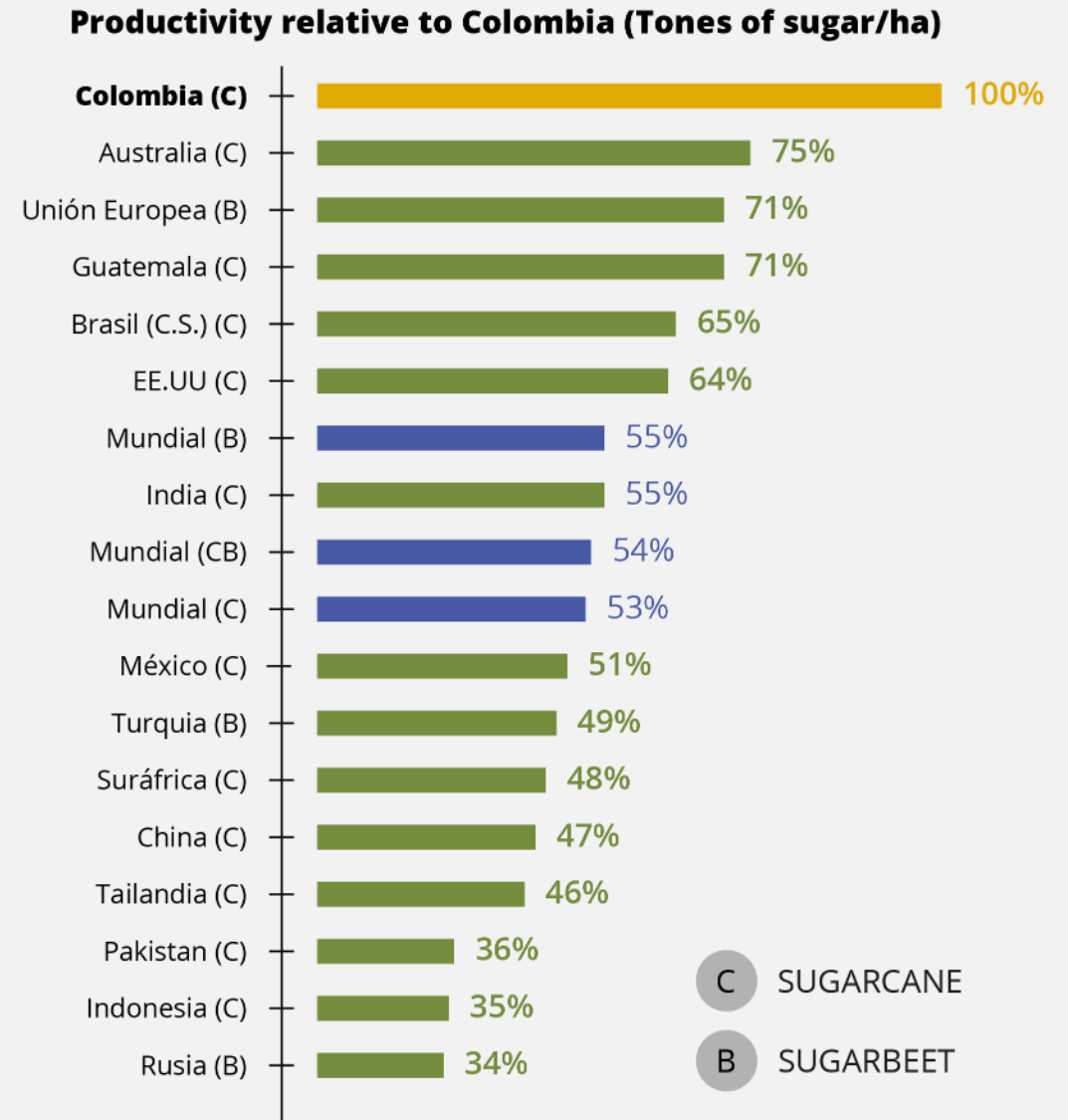
7 Climatic zones



The Colombian sugar industry is the most productivity in the world

Sugarcane growers, sugarcane mills and Cenicaña are working together to improve innovation, research, development and transfer technology.

Fuente: Informe Anual Asocaña 2019



Web and mobile APPs



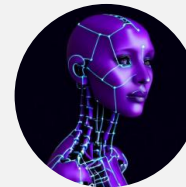
Geoportal

field information maps for SAA.
Resources and services are based on
geographic information
(**Benchmarking**).



CeniClima

Weather **forecasting**.



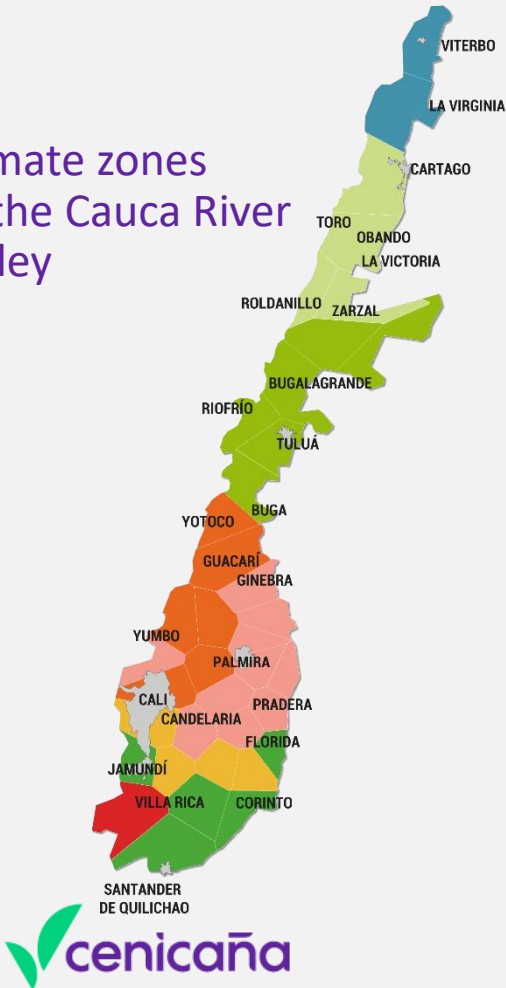
ANA, IA

Integrated decision-making system
(**Productivity predictions**)



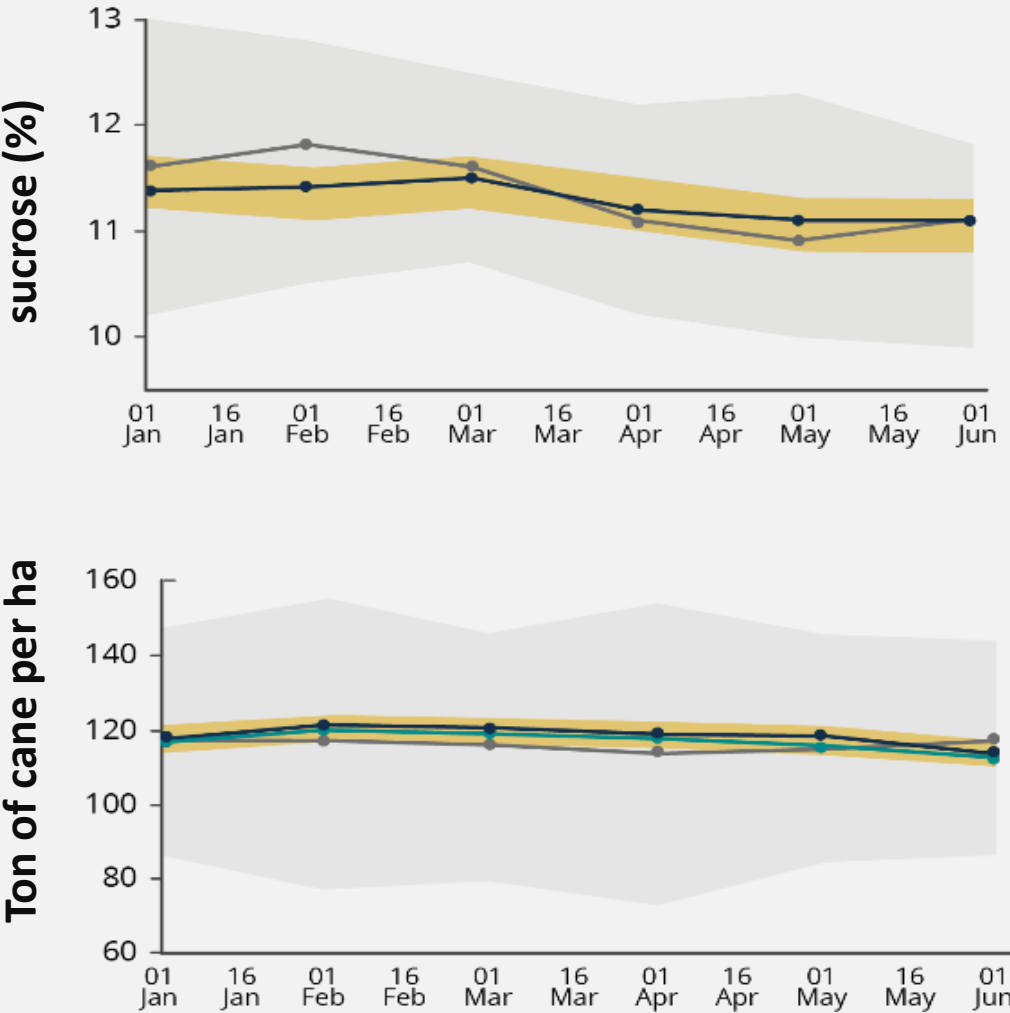
ANA, AI

Climate zones of the Cauca River Valley



ZONE	
1	North
2a	North - Subzone 2a
2b	North - Subzone 2b
3	Center West
4	Center East
5	South Central
6	South
7	Guachinte

Productivity projections Regional forecast of TC and sucrose recovery



Networks for Agroindustry 4.0

Automated Weather Network (AWS, 37)

Internet of Things Network (IoT)

Real-Time Kinematic Network (RTK)

River basin network Hydrographic

Air Quality Network

30

Years of information records

12

Types of IoT devices

90

Available Cartographic Layers

+550

Rain pluviometers - IoT "gotas network"

07

Real-Time Monitored Stations

 cenicaña

Data Type

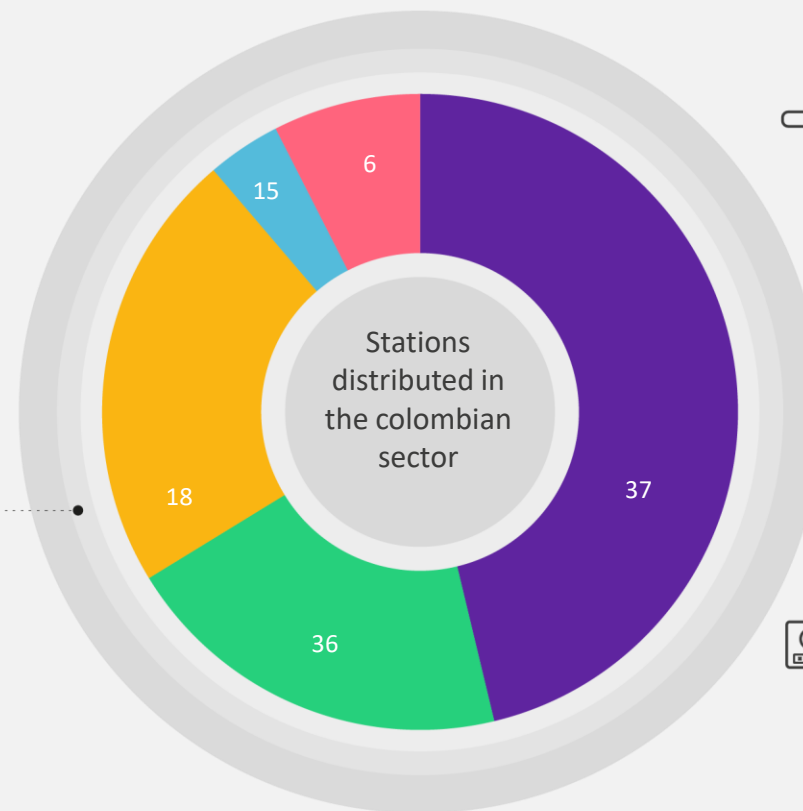
Meteorological


Real-time geopositioning

IoT sensors


Hydrological


Air pollution



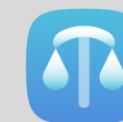
 Collecting and transmitting agribusiness data

 Secure data

 Cenicaña: manages infrastructure and databases

 Applications under user profiles and passwords

Tools & Developments - APPs



GeoPortal

GRT

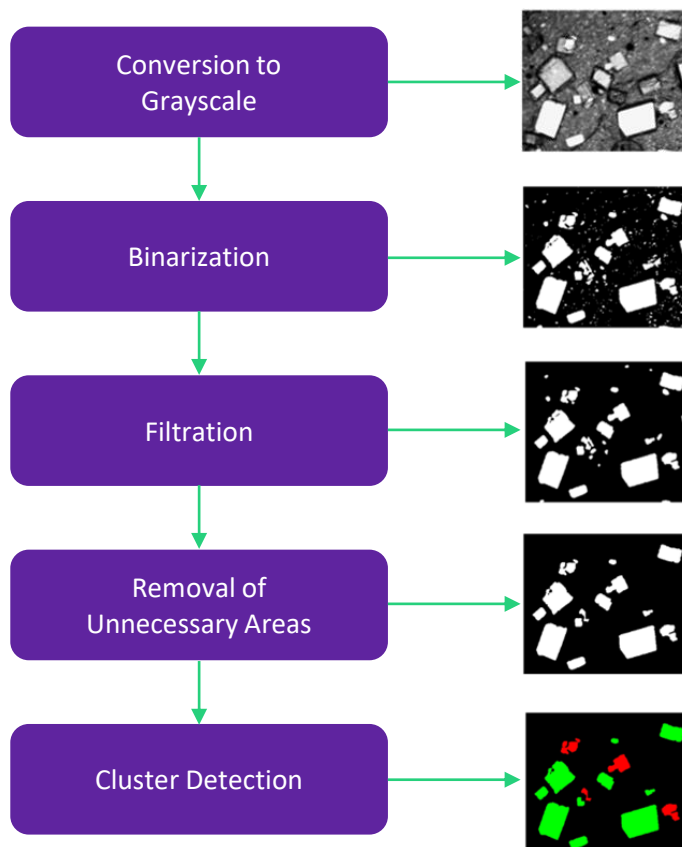
CeniClima

Water balance

Sinpavesa

GeoWatersheds

Detection

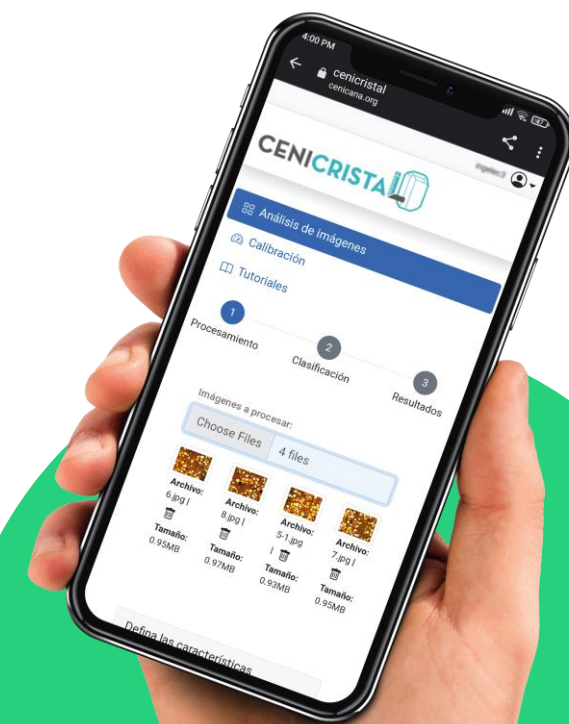


Computer Vision

Web tool based on digital image processing techniques for detecting, classifying and measuring the sizes of sugar crystals.

Why is it important? In crystallization, it is essential to observe, measure and control the growth of the crystals, since they define the quality of the sugar.

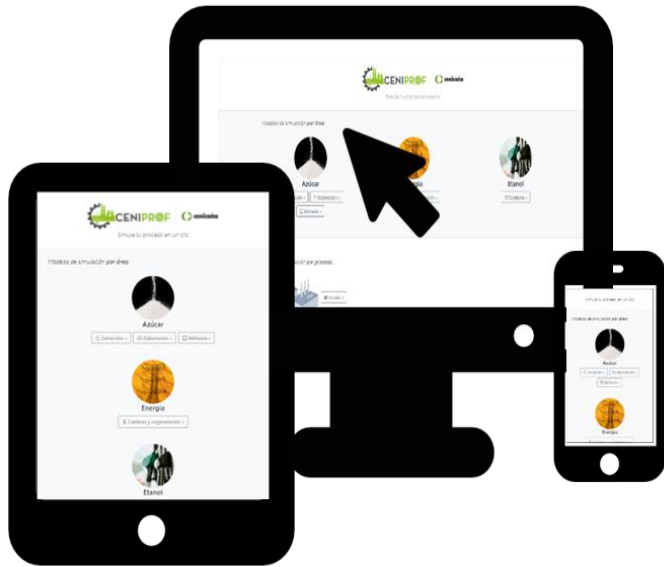
- Versatile web version
- Available at 12 mills in the sector
- Processing times < 30 sec
- Measurement reliability





WEB Version

Available to our donors and researchers



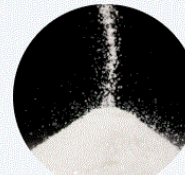
Supported Browser
(Chrome, Mozilla Firefox, Microsoft Edge,
Opera)

Simulate your processes and energize change.

- Mass & Energy Balances
- Technical-economic projections

A tool that facilitates decision-making in a comprehensive **sugar, electric power and ethanol production** environment that maximizes technical and economic benefits.

Sugar



Azúcar

🔪 Extracción »

🏭 Elaboración »

🚚 Refinería »

Power



Energía

🔥 Calderas y cogeneración »

Ethanol



Etanol

🍷 Destilería »

Enhance the value of data

Integration of technologies



01

Data Platform
DataCane

02

KPI generation

03

Data Analytics

04

Data Governance



Developed by cenicaña

Agenda

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01. Colombian sugarcane industry

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02. XXXII ISSCT Centennial congress



XXXII
ISSCT
CENTENNIAL
CONGRESS
CALI - COLOMBIA
Digital - Innovative - Sustainable

Cali, Colombia

XXXII ISSCT

CENTENNIAL CONGRESS

2025

PRECONGRESS

22 and 23 August 2025

CONGRESS

24 to 28 August 2025

POSTCONGRESS

30 and 31 August 2025

Organize:



...



tecnicaña



INTERNATIONAL SOCIETY OF SUGAR CANE TECHNOLOGISTS

It is the society that brings together scientists, technologists, and administrators, as well as institutions, companies, and corporations involved in the technical advancement of the sugarcane industry and its by-products.

Attendance and participation in the congress, workshops, and events are strictly limited to society members.

31 congresses held at
three-yearly intervals.

**Members from over
70 countries.**

ISSCT membership is valid for a three-year period, from February 2023 to August 2025, upon completion of the 32nd ISSCT Centennial Congress 2025.



CONGRESS ORGANIZING COMMITTEE



President of the Congress
Nicolas Gil

Vice President of the ISSCT - Executive Committee
Cenicaña Factory Processes Program Director.



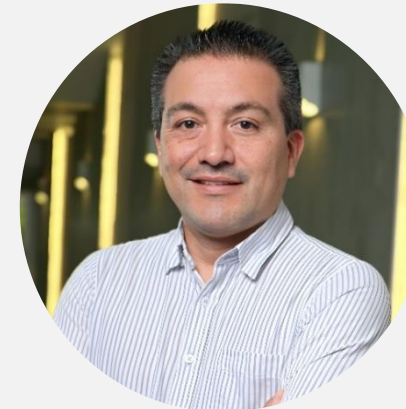
Vice President of the Congress
Claudia Calero

President of Asocaña.



Vice President of the Congress
Freddy Garcés

General Director of Cenicaña.



Vice President of the Congress
Johan Martínez
Director of Renewable Energy and
New Business of Asocaña.



Honorary President of the Congress
Álvaro Amaya

Former General Director of Cenicaña.



Treasurer of the Congress
Guillermo Rebolledo
President of Tecnicaña.



Secretary of the Congress
Álvaro José Correa
Former President of Tecnicaña.



Coordinator of the Congress
Martha Caballero
Executive Director of Tecnicaña.



Postcongress:

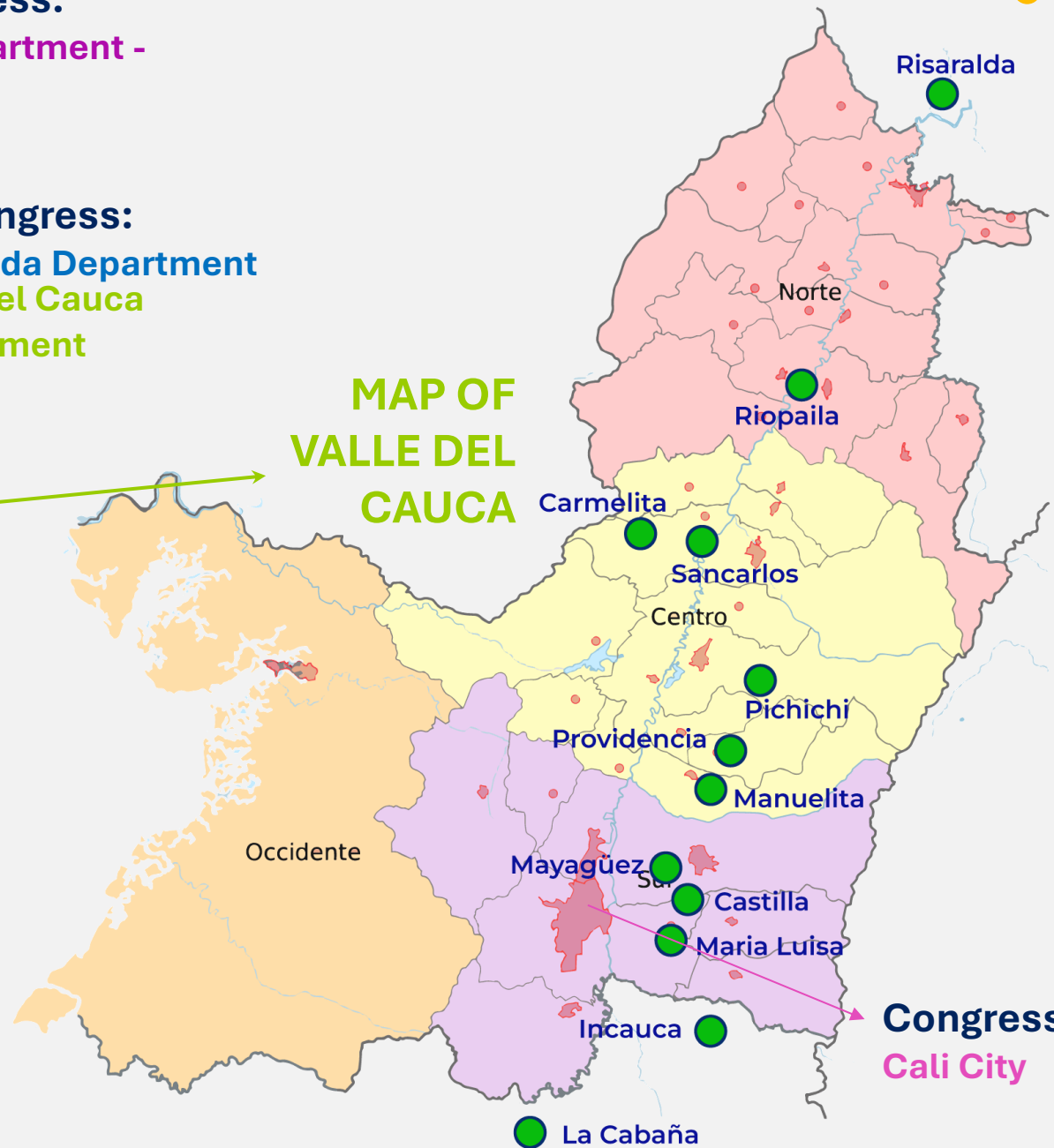
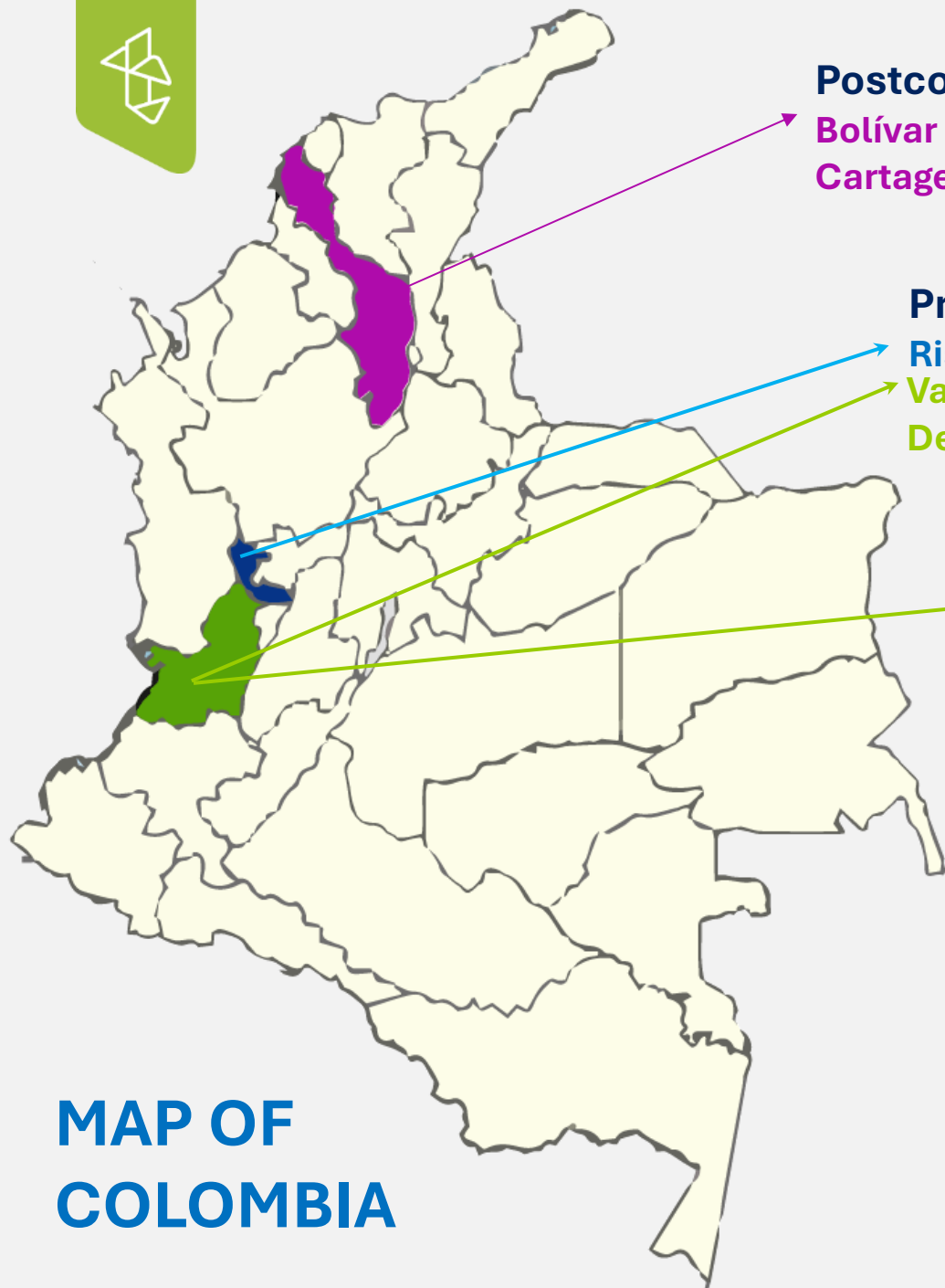
**Bolívar Department -
Cartagena**

Precongress:

**Risaralda Department
Valle del Cauca
Department**

MAP OF VALLE DEL CAUCA

MAP OF COLOMBIA



Congress
Cali City

International Connectivity

CALI

International Airport
Alfonso Bonilla
Aragón (Col)

62

International flights
Per week

International
direct flights

Panama, Chile, United States,
Spain and Aruba



BOGOTÁ
International Airport
El Dorado

893
International flights
Per week

Brazil, Mexico, USA, Ecuador, Panama, Spain, Peru, Chile, Argentina, Canada, Netherlands, Turkey, United Kingdom, Germany, Switzerland, France, among others...

MEDELLÍN
International Airport
José María Córdova

222
International flights
Per week

United States, Panama, Mexico, Dominican Republic, Peru, Spain, Costa Rica, Ecuador, Puerto Rico, Chile, Curaçao and Aruba.

CARTAGENA
International Airport
Rafael Núñez

93
International flights
Per week

United States, Panama, Peru, Costa Rica, Dominican Republic and Canada.

PEREIRA
International Airport
Matecaña

13
International flights
Per week

United States and Panama

Connectivity



Congress ´s airlines and hotels



AIRLINES:



HOTELS:



[Click here for more information.](#)

USD 280

Pre-Congress tour

August 22 and 23, 2025



600

International
Attendees



6

Visits per day:
Cauca, Valle del
Cauca, and
Risaralda



Accompanying
Persons Programme,
Valle del Cauca and
Eje Cafetero

Visits to sugar mills and the
Sugarcane Research Center -
Cenicaña.

ZONE 1:

Centre and South

Day 1: 22 August 2025

Cenicaña	Field - Factory
Mayagüez	Factory
Providencia	Field - Harvest
Incauca	Factory

Day 2: 23 August 2025

Mayagüez	Field
Incauca	Field
Providencia	Factory
Manuelita	Factory





TOPICS:

1. Our Path to Decarbonisation.
2. Diversification and Biofuels for a Greener Valley.
3. Connectivity and Digital Agriculture for a More Sustainable Region.
4. The Impact of Sustainable Technology Adoption in Agroindustry.
5. Colombian Sugarcane Varieties for the Production of Sugar, Panela, Energy, and Biofuels.

FACTORY



1. Milling: Preparation and Extraction
2. 100% Mechanical Harvesting Management in a Refining Process
3. Alcohol Production and Added Value from Vinasse: Additives for the Construction Industry and Others
4. The Golden Era of Paper in the Search for Sustainable Packaging



FIELD – HARVEST

1. **Sustainability:** Advanced Irrigation, Sustainable Practices, Compost Application
2. **Harvesting:** Collection Equipment Powered by Natural Gas, Ethanol-Diesel, and Electric Fuel
3. **Precision Agriculture**

FACTORY

1. Preparation and Milling Station
2. Strategies to Become the Sugar Mill with the Lowest Water Consumption
3. Evaporation and Crystallisation
4. Distillery



FIELD – HARVEST

1. Development of a Strategic Irrigation Plan: High-Frequency Irrigation with Controlled Water Levels
2. Use of Drones for Fieldwork and Crop Optimisation
3. Ecological Park: Bird Restoration and Characterisation, and Sustainability through the Expansion of Organic Farming Areas
4. Predictive Models for Sucrose and TCH

FACTORY

1. Heating Technologies: Plate, Slat, and Tubular Heating Technologies
2. Visit to the Preparation and Milling Station
3. Use of First-Effect Multi-Calandria Evaporators



FIELD – HARVEST

1. **Fleet Control Operation:** Telemetry, Wagon Maintenance Management, and Drive Master
2. **Mechanised Harvesting:** Mobile Dispatch, SCI Colombia, and Optimisation Matrix
3. **Mechanised Planting**

FACTORY

1. **Cogeneration:** Incauca SAS, the Largest Cogeneration Plant in the Country, Steam and Energy Generation
2. **Anhydrous Alcohol Production:** Raw Material Pre-Treatment, Mix Preparation with B and C Molasses, Continuous Fermentation, Distillation and Dehydration – Vinasse Management
3. **Compost Production:** Production of Biocane Powder and Biocane Soil Conditioner from Sugar and Alcohol Processing Residues; the Largest Organic Fertiliser Production Plant in Latin America, Third Largest in the Americas.

ZONE 2:

North

Day 1: 22 August 2025

Risaralda	Field
Riopaila Castilla	Factory

Day 2: 23 August 2025

Riopaila Castilla	Field
Risaralda	Factory



Information of Pre-congress hotels in Pereira



Movich Pereira



Sonesta Pereira





FIELD – HARVEST

1. Varieties
2. Sucrose
3. Maturation
4. Precision Agriculture Technologies (LiDAR, GIS)
5. Solinftec – Efficiency Improvement
6. Comprehensive Fuel Control
7. ASONORTE: Collaborative Management for Agricultural Production and Sustainability in the North of Valle del Cauca

FACTORY

1. Cane Preparation with Heavy-Duty Shredder
2. Long-Tube Modular Evaporator
3. Coffee Husk as Boiler Fuel
4. Cogeneration
5. Effluent Treatment – PTARI



FIELD – HARVEST

1. **High-Performance Mechanical Harvesting:** Operations to Increase Harvester Efficiency
2. **Zero Stomping:** Machinery Modifications to Reduce Cane Stalk Damage
3. **Fertigation:** Application of Vinasse as a Potassium Source
4. **Canteriser:** Simultaneous Subsoiling, Residue Management, Polishing, and Furrowing with Automatic Pilot

FACTORY

1. **Vinasse Evaporation in the Distillery:** Falling Film and Forced Circulation Evaporators
2. **Cogeneration:** Energy Business Enablers
3. **Continuous Pans for A and B Massecuite**
4. **Water Consumption in the Factory:** Successful Reduction Initiative



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XXXII ISSCT Congress

August 24th - 28th 2025



EXPECTED

ATTENDEES



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Congress venue

A venue operated by a team of professionals who provide effective solutions to their clients. **At the Valle del Pacífico Events Center** your ideas and businesses come to life.



15
Years of
experience



3,1
million
of visitors



Catering



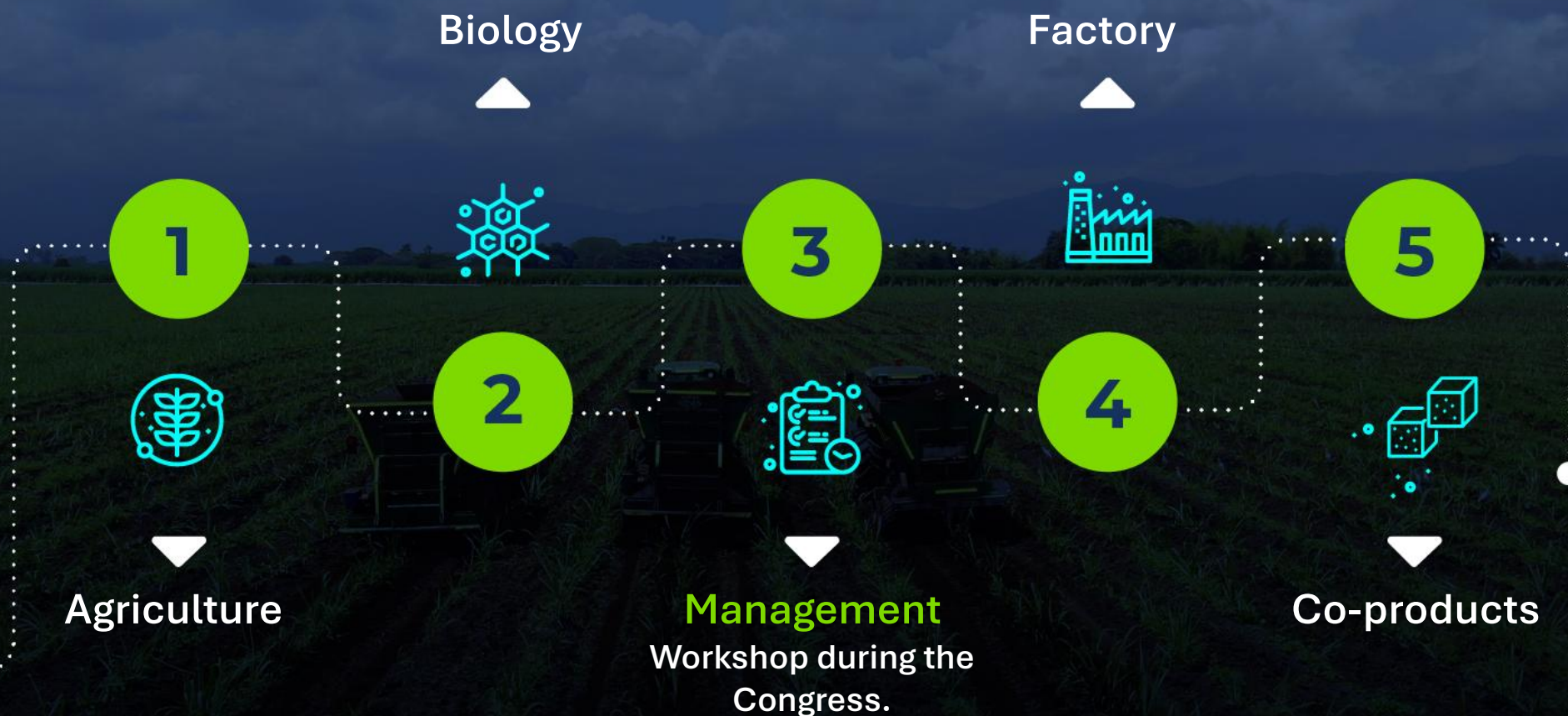
20
Bus parking



900
Vehicles
parking

More than
1.200
Events
organized

CONGRESS COMMISSIONS



*To date, 413 abstracts for papers and posters have been received.



General Topics

The upcoming Congress of the International Society of Sugar Cane Technologists (ISSCT) focuses on **Sustainable, Innovation and Digital**, bringing together experts, professionals, and technicians from around the world.

GENERAL TOPICS (Preliminary):

- 1.Plant health and applied biotechnology
- 2.Innovation and automation in the sugar agroindustry
- 3.Utilization of co-products and sustainability
- 4.Agronomic management and soil and water conservation
- 5.Sugar quality and optimization of industrial processes

Social and cultural events



Sunday
AUGUST 24, 2025

OPENING COCKTAIL



Tuesday
AUGUST 26, 2025

CULTURAL EVENING

An event where we will show to the world our cultural and gastronomic richness.



Thursday
AUGUST 28, 2025

FAREWELL DINNER

CELEBRATION OF
THE ISSCT CENTENARY





CONGRESS REGISTRATION FEES



Registration

USD
1.250

03/31/2025

USD
1.350

05/15/2025

USD
1.650

07/30/2025

USD
1.850

After
08/01/2025

INCLUDES:

- Participation in the academic agenda
- Lunch and snacks
- Transportation: Airport - Hotel – Airport, Hotel – Venue - Hotel
- Congress proceedings
- Welcome kit
- Participation in social and cultural events
- Access to trade exhibition

*Includes Colombian tax rate.

Electronic payments: Credit card or bank transfer



500 USD

Post CONGRESS

Tour

30 and 31 August 2025

INCLUDE:

- Ground Transportation: From the hotel in Cali to Cali's airport, from Cartagena's airport to the hotel, and for the technical visit.
- Meals: Dinner on Friday, snacks and lunch during technical visits, and lunch on Sunday.
- Bilingual Guide

***Not included: Flights from Cali to Cartagena and accommodation in Cartagena**

Cartagena



Post-Congress Agenda



Friday, August 29th, 2025

In the late afternoon and evening, enjoy a short tour of Cartagena's historic center, followed by dinner at a local restaurant, with your accompanying person.



Saturday, August 30th, 2025

Post-congress participants will take part in a technical visit to the Port Area or a Fertilizer Plant.



Sunday, August 31st, 2025

Along with the Accompanying Program group, participants will enjoy a beach day at Palmarito. Typical lunch will be provided there.



PRECONGRESS

USD
300

CONGRESS

USD
550

POSTCONGRESS

USD
450

Congress accompanying program



August 24th - 28th 2025



[Click here for the agenda](#)



The Colombian sugarcane agroindustry invites you to be part of the congress and centenary of the ISSCT





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Thanks

njgil@cenicana.org



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