GHG MANAGEMENT & REDUCTION PROGRAM

Updated as of May 2025

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GHG PROGRAM

Commitment & Target

GHG PROGRAM
OUR COMMITMENT

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GENERAL COMMITMENT

Since our inception we have been working with a sustainable production model through which we generate food and renewable energy, while fixing carbon in the soil and identifying initiatives to reduce our carbon emissions.

In our **Environmental Policy** we state our commitment to contribute to mitigate climate change by measuring our carbon emissions and implementing measures to reduce them.

In 2021, we created our **ESG Committee** to analyze and monitor the impact of sustainability trends on our business. During the ESG meetings, we analyze the environmental, social, economic and governance impacts for each of our businesses, with the issue of climate change and carbon emissions being the most thoroughly studied.

"In this decade of action until 2030, where the world must accelerate sustainable solutions to reduce global GHG emissions, it is important to be vocal about our efforts and ambitions. In this line, we reinforced our commitment to the Paris Agreement and the United Nations 2030 Agenda by setting our 2030 target to reduce 20% our carbon intensity. Achieving this milestone while navigating such an adverse weather context, shows that ESG is a cornerstone of our business model and is embedded in our day-to-day decisions." – **Mariano Bosch, Adecoagro CEO**

We are aligned to the Paris Agreement, aim to be carbon neutral by 2050 and have a target to reduce 20% our carbon intensity by 2030

CLIMATE CHANGE AND CARBON AT THE HEART OF OUR ESG COMMITTEE

ESG COMMITTEE CARBON-RELATED RESPONSIBILITIES

- Comprehend Greenhouse gases (GHG) role for our planet and our living conditions; understand the carbon balance of our own organization, while being able to analyze and detect carbon emissions reduction opportunities in each business.

- Have the sole authority and responsibility for setting carbon footprint reduction goals for each business, and to define investments in our businesses that consider new technologies to strengthen the development of an evolving sustainable and efficient production model.

- Supervise the management of the rest of the environmental resources that affect us and that we address since our inception: soil, water, energy, effluents, waste, biodiversity, among others.

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CARBON TARGET

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CARBON INTENSITY TARGET

We have a key role in supplying food and renewable energy to a growing population in a way that preserves natural resources and the environment, so we reinforced our alignment to the Paris Agreement and the United Nations' 2030 agenda by defining a decarbonization target.

BREAKING DOWN OUR TARGET*

TARGET

20% reduction

In our carbon intensity by 2030

Intensity
net emissions relative to the company's total production volume

Base year: 2021
Target year: 2030

Scope
scope 1 and 2 emissions, net from carbon sequestration and removals

Soil Organic Carbon -SOC
not included as there are still ongoing technical discussions regarding its calculation

Methodology
Carbon balance estimated following GHG Protocol and ISO 14064 guidelines

* Our target was defined in 2023 and disclosed in 2024.

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CARBON INTENSITY TARGET

PROCESS OF SETTING THE TARGET

We set a target that is challenging but achievable, and fully aligned with our expectation for financial and operational growth. Decarbonizing our operations is embedded in our day-to-day decisions.

Interdisciplinary taskforce

Comprised of representatives from our technical and financial teams.

In-house Calculator

The estimation of net emissions was made in-house, utilizing a calculator validated by carbon experts.

Long-term financial projection

Internal tool showing our growth expectations by segment > we leveraged on this tool to estimate our production and net emissions.

Sustainable projects

Definition of projects that would enhance efficiencies in our operation, with a financial return, and help us reach our target.

We validated our analysis and outcome with our ESG Committee

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CARBON TARGET

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CARBON INTENSITY TARGET

ROADMAP TO ACHIEVING OUR TARGET

For each of our business segments we identified projects with **attractive financial returns**, which will contribute to **reduce our carbon emissions** – either through higher efficiencies or greater removals. Projects are related to the following aspects:

Renewable Energy Generation, Use and Efficiency

Biomass Reutilization

Farmworks Efficiency

Use of Biological Inputs in Replacement of Chemical Products

Enhancement of Precision Agriculture

Effluent Management

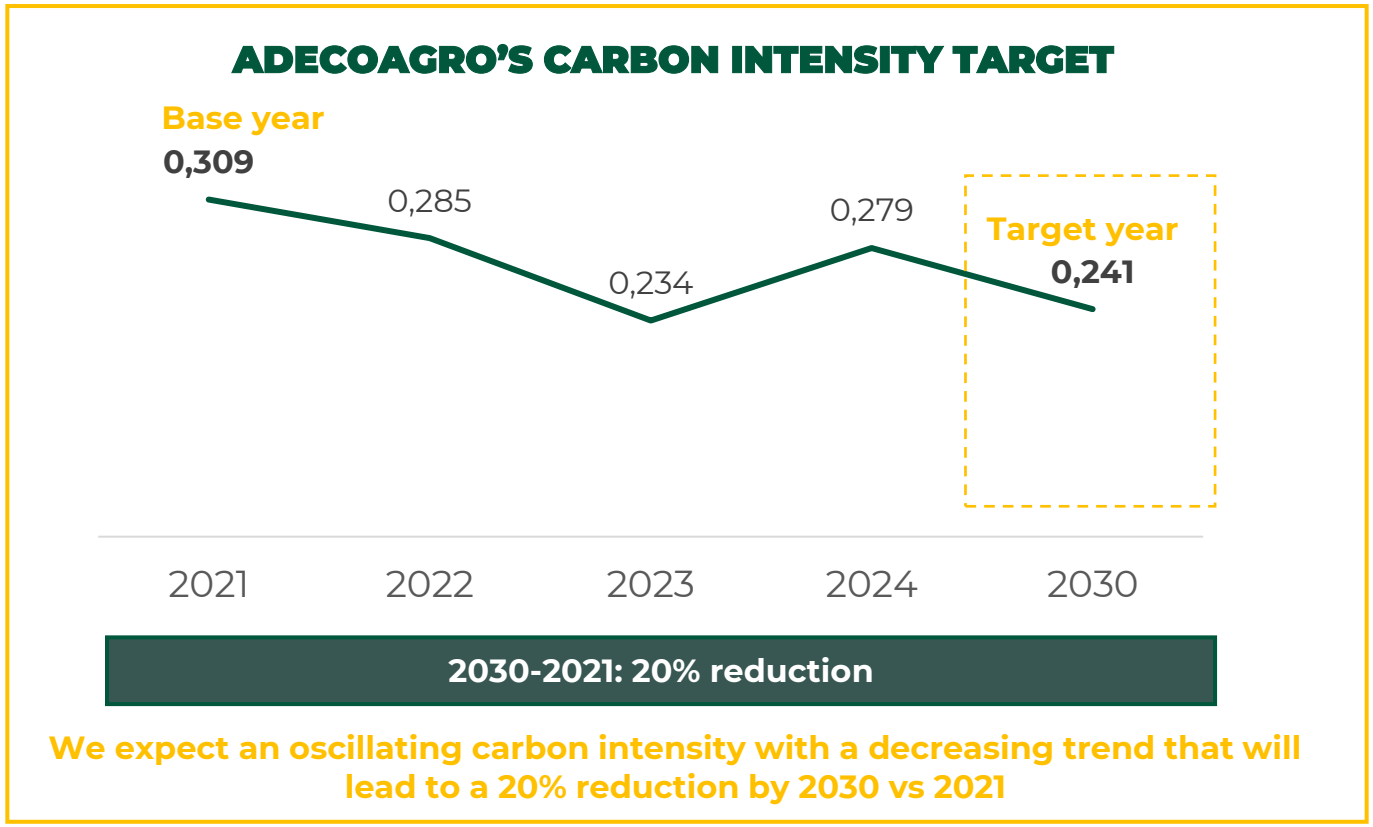
In addition, we expect to efficiently expand our food production volume by investing in our value chain and adopting innovative production techniques.

GHG PROGRAM
CARBON TARGET

CARBON INTENSITY TARGET

PROGRESS MADE TOWARDS OUR TARGET

Our target was developed during 2023 and communicated externally in March 2024. The progress made towards our target is disclosed on an annual basis in our Integrated Report.



CARBON BALANCE

GHG emissions measurement

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MEASUREMENT AND MONITORING

TRACK RECORD

We started measuring our carbon balance already in 2009, and kept improving to make our methodology and estimations more robust:

2009-2010: first calculation for some operations in Argentina

2015-2017: all own operations in Argentina & Uruguay

2018-2019: all own operations in Argentina, Uruguay and Brazil (2 reports)

2020: full Adecoagro's operations (2 reports)

2021: full Adecoagro's operations (Integrated Report + 2 Sustainability Reports) > ***new*** SOC sequestration

2022: full Adecoagro's operations > ***new*** methodology adjustments and improvement in SOC sequestration

2023: full Adecoagro's operations > ***new*** carbon intensity target!

2024: full Adecoagro's operations > progress disclosure

OUR CARBON BALANCE SCOPE

SCOPE 1: emissions under company control

SCOPE 2: emissions from electricity purchased

SCOPE 3: emissions from the value chain*

CARBON REMOVALS AND SEQUESTRATION: pastures, natural areas and forestation.

SOC: we estimated but not included it as there are still ongoing technical discussions regarding its calculation

*currently not included in our carbon balance figures. Estimation under process.

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CARBON BALANCE

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METHODOLOGY

STANDARD AND GUIDELINES

We follow **GHG Protocol and ISO 14064** guidelines allowing our carbon balance to be comparable and auditable by external parties

SOIL CARBON SEQUESTRATION

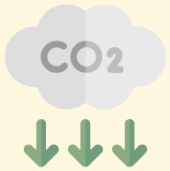
- Globally, **Soil Organic Carbon** is under review in almost all methodologies
- Currently there is huge variability on potential carbon sequestration estimations
- In our case, this is the most critical point, as it may have great potential to offset GHG
- We developed a SOC sequestration calculator and though we are estimating it, we are not including it in our latest carbon balance figures and carbon intensity target since there are still ongoing technical discussions regarding its calculations

CARBON FOOTPRINT

- We measure our **carbon footprint**, which represents our net GHG emissions per ton produced
- Carbon footprint is disclosed in our Integrated Reports and Sustainability Tracker – available here

REAL-TIME MEASUREMENTS – PILOT TRIAL IN SAN JOAQUIN FARM

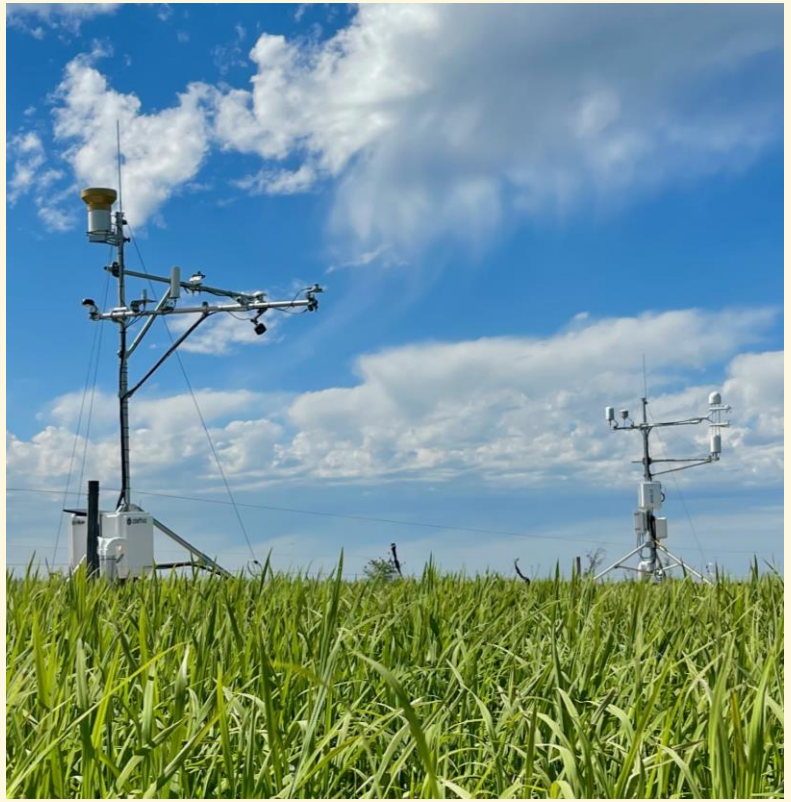
Did you know...?



We are working together with **Alethia**, a climatech startup, to **measure real-time GHG emissions** (carbon dioxide and methane) in our rice operations.

Our pilot project at San Joaquin farm includes the installation of **advanced sensors** that measure emissions at a field level, with the ability to extrapolate the data across the site using Alethia's intelligence, powered by supplementary **sensor-based measurements and satellite data**.

This initiative positions us as **pioneers in real-time GHG measurements**, with results expected by 2025. The project will help us assess how our sustainable practices could generate carbon credits on an annual basis. Based on the results, we will determine the project's progress and its potential implementation across additional rice fields.



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ZOOM IN TO CARBON SEQUESTRATION: BIODIVERSITY MANAGEMENT

OUR BIODIVERSITY MANAGEMENT CONTRIBUTES TO GHG REDUCTION

- In 2024, we managed to **fix around 200 thousand tCO2e** with pastures, natural areas and forestation.
- **82 k ha of natural areas** contributing to carbon sequestration in 2024.

BIODIVERSITY MANAGEMENT

Through our Biodiversity and Ecological Impact Management we manage natural areas that contribute to carbon sequestration.

In Adecoagro, we are committed to protect the natural areas of our farms and preserve biodiversity.

We develop initiatives aimed at preserving natural areas and the species that inhabit our lands, so that production may coexist with biodiversity and with the representative environments of each of our facilities.

We regularly conserve and monitor hectares defined as of high biodiversity value.

35,049 hectares
of high biodiversity value in 2024

Thanks to the monitoring of high biodiversity value areas we have identified, over the years, the presence of several species of fauna. The presence of these species in our natural areas reflects how our sustainable practices lead to a healthy state of our lands.

CARBON CYCLE
ECOSYSTEM SERVICES

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A NEW APPROACH FOR AGRIBUSINESS

NEW PARADIGM

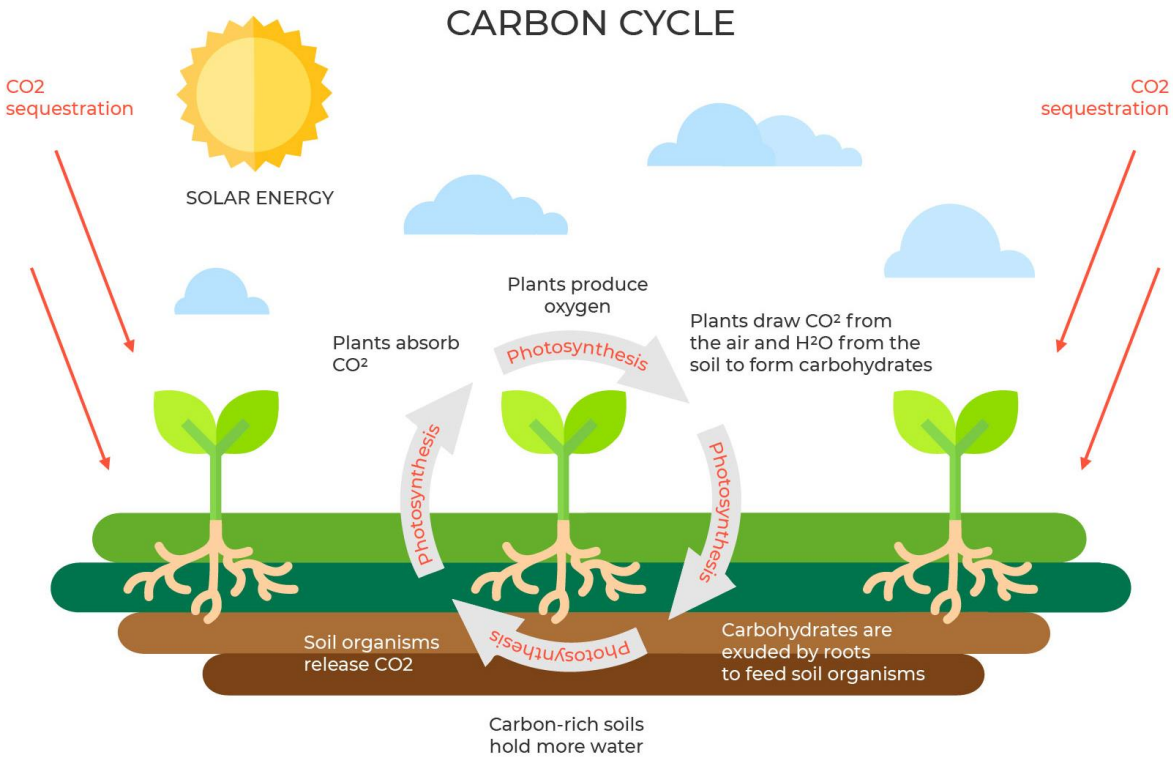
Apart from food and renewable energy, land has to deliver ecosystem services

OUR POSITION

Through our Sustainable Model, we are able to adapt our operations to such trend

OUR STRATEGY

To enhance Carbon sequestration, and to reduce chemicals usage



Surface litter, plant exudates, roots and mycorrhizal fungi are pathways by which CO2 enters the soil carbon pool

Every year, through the +580k hectares under management, we capture almost 17 million tCO2e through photosynthesis, part of which remains in our products and as Soil Organic Carbon.

OUR LOW-CARBON INTENSITY BUSINESSES – A snapshot

LOW CARBON-INTENSITY PRODUCERS
WHAT DOES IT MEAN?

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LOW CARBON-INTENSITY

We produce **low-carbon intensity products**, with our commitment to enhancing sustainability in every stage of our value chain. **From the farm to the consumer table, sustainability is at the core of what we do.**

Every year we capture 17 million tCO2e through photosynthesis, part of which remains in our products and as Soil Organic Carbon. If we were able to prove that as little as 10% of the carbon we fixate through photosynthesis per year remains as SOC, we would already be a net sequestering company.

Nevertheless, and in line with our sustainable DNA, **we implement sustainable practices** across the different stages of our **vertically integrated businesses**, that contribute to having **low-carbon intensity businesses**.

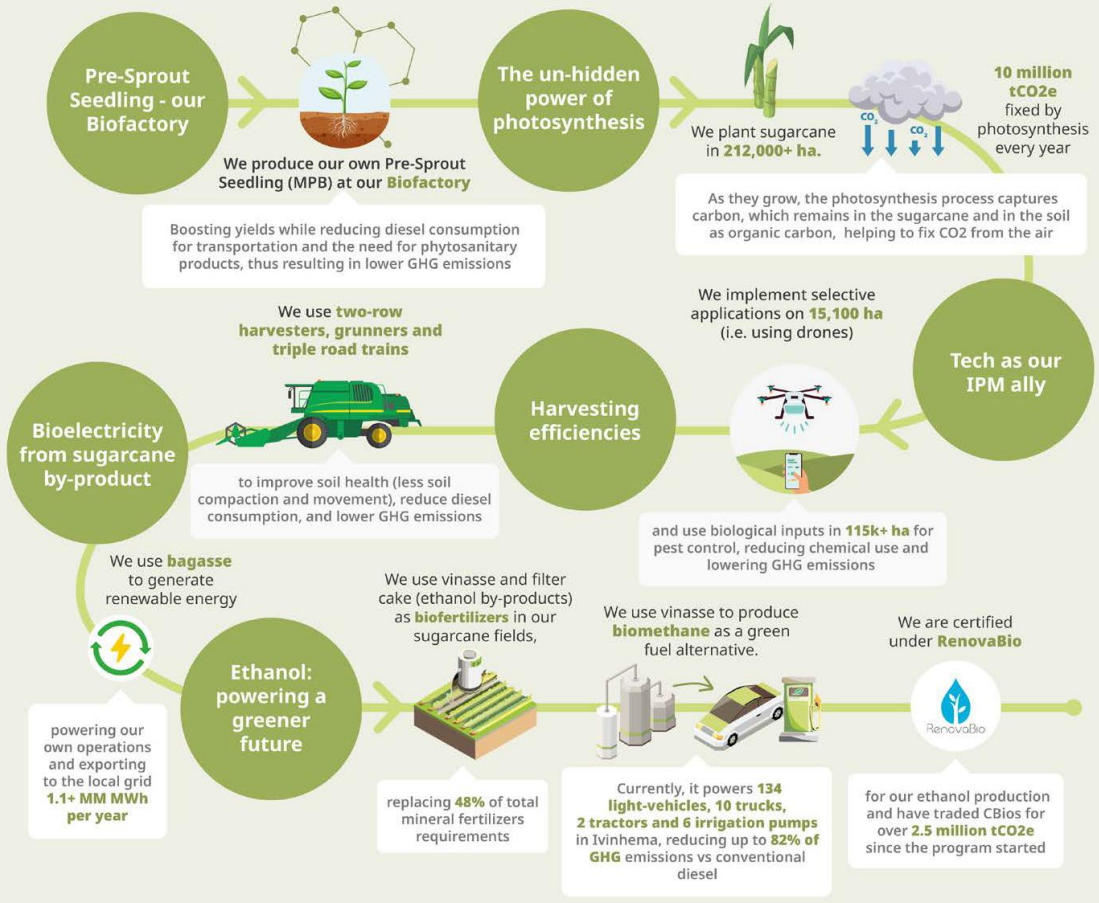
Carbon intensity measures the GHG emissions in tCO2e per ton of production. It is the most accurate metric to measure our efficiency and our sustainable approach.

(Please refer to the next slides to see our low-carbon intensity businesses in detail)

LOW CARBON-INTENSITY PRODUCERS

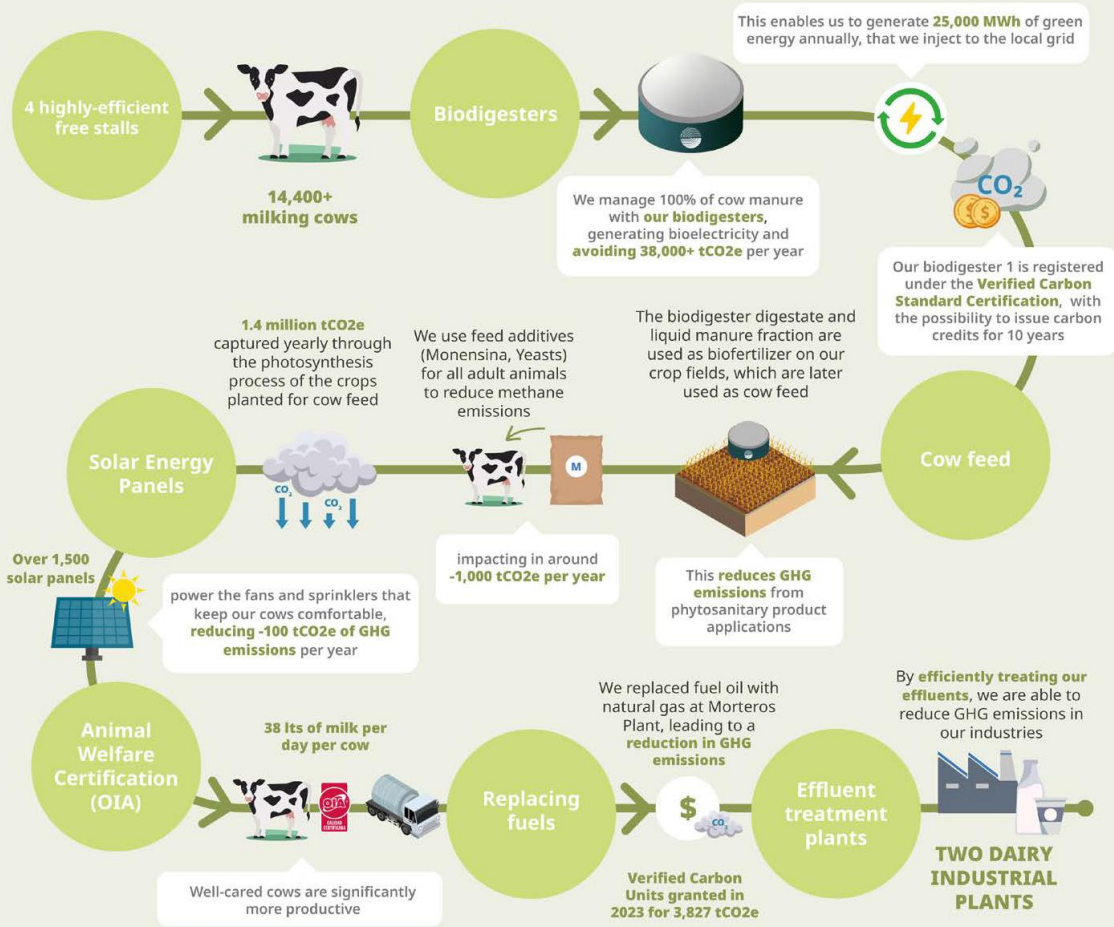
OUR PATH BY BUSINESS

Meet our low-carbon intensity SE&E Business



SE&E CARBON INTENSITY 0.259

Meet our low-carbon intensity Dairy Business



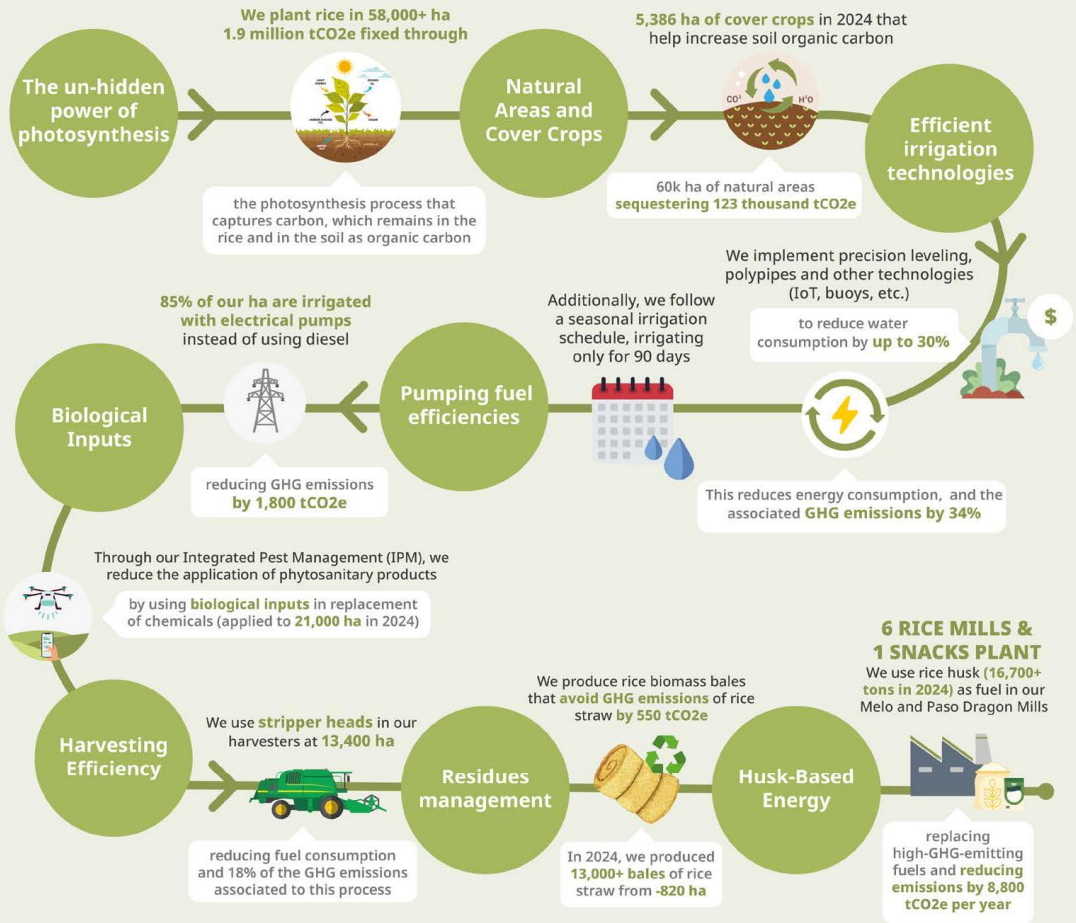
DAIRY CARBON INTENSITY 0.266

Note: Carbon intensity as net tCO2e per ton of production

LOW CARBON-INTENSITY PRODUCERS

OUR PATH BY BUSINESS

Meet our low-carbon intensity Rice Business



RICE CARBON INTENSITY 0.888

Note: Rice includes our Cattle activities.

Meet our low-carbon intensity Crops Business

CROPS CARBON INTENSITY -0.025

Note: Carbon intensity as net tCO2e per ton of production

REDUCTION PROGRAM

CROPS Business initiatives

CROPS BUSINESS
OVERVIEW

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WHERE ARE WE NOW?

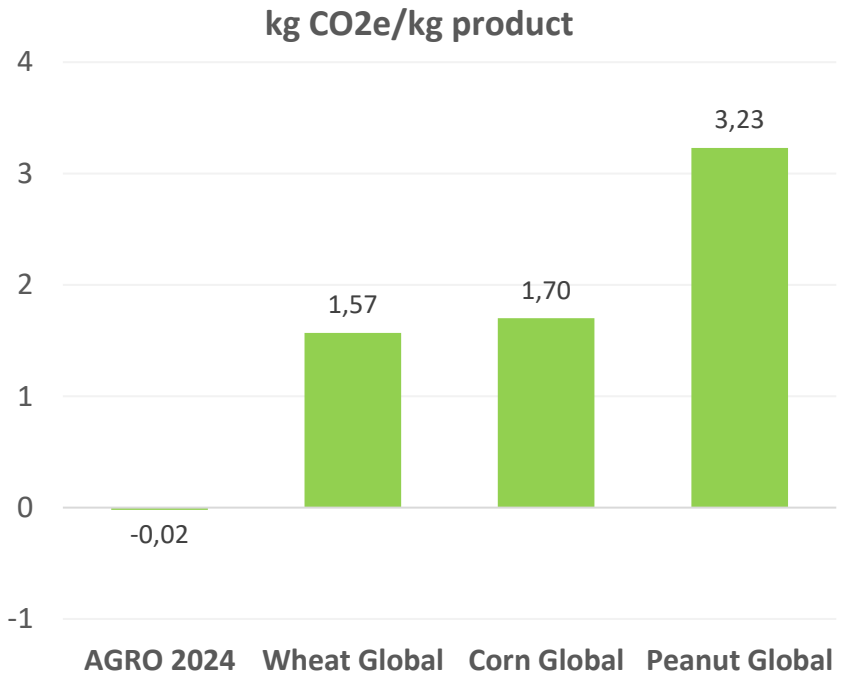
OUR CROPS BUSINESS IS ALREADY A NET CARBON SEQUESTER*

- This considers the whole Crops business (farms and industries)
- When comparing to global values we have a tremendous advantage
- Our Crops Industries comprise relatively clean processes

STRATEGY AND OPPORTUNITIES

- We are planting cover crops, which besides of agronomic benefits fix more Carbon to the soil
- We are evaluating alternatives to increase N-fertilizers efficiencies (type, rate, application, etc.)
- We are assessing methodologies that would be able to include additional SOC
- We are revising calculation Factors for Oxidation of residues, as we believe they should be lower for No Till

CARBON INTENSITY – AG PRODUCTS



Note: We are not estimating specific Carbon Footprint per product yet

(*) AGRO includes Full Crop Business and Scopes 1 & 2

Source: Our World in Data, global averages

* Does not include scope 3 emissions

CROPS BUSINESS

MEDIUM TERM WORKING LINES

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EXTERNAL INITIATIVES

ARGENTINEAN NEUTRAL CARBON PROGRAM

The goal is to develop a local-adapted methodology for different food chain products.

ROUND TABLE ON RESPONSIBLE SOYBEANS (RTRS)

The aim is to develop a Carbon Footprint calculator for Soybeans in Argentina. We participated in this initiative in 2020.

BAYER AND VITERRA IGARIS PROGRAM

The objective is to promote good practices for carbon sequestration for traditional crops (corn, soybean, wheat) with focus on soil carbon. We are participating with 100 ha field as test plot; the program is expected to last 3 seasons before presenting results.

OUR SUSTAINABLE MODEL: MAIN INITIATIVES FOR GHG REDUCTION

We implement different sustainable practices and technologies that help us reduce the GHG emissions of our crops business

Sustainable crops business model: main initiatives for GHG reduction

Regenerative agriculture

We implement different technologies and practices for the sustainable development of our fields and that help to reduce GHG emissions. Some of these are:

- No till
- Cover crops
- Crop rotation
- New crops
- Integrated Pest Management
- Biological inputs

New technologies

We implement and continuously analyze new technologies to enhance our sustainable models and contribute to GHG emissions reduction. Some of these include:

- Precision farming
- Yield maps
- Agronomic trials
- Using crop biomass to produce renewable energy

CROPS BUSINESS
GHG REDUCTION

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REGENERATIVE AGRICULTURE

NO-TILL

- Improves soil health: carbon, nutrients, water, microbiota
- Reduces agrochemical usage: pesticides, fertilizers
- Reduces diesel consumption
- Enhances GHG balance: reduces GHG emissions

NEW CROPS & CROP ROTATION

- Includes new crops in our rotations
- Intensifies our rotation and reduces fallow time, while generating commercial opportunities
- Improves use of nutrients, enhances soil biodiversity and reduces our general Footprint
- Reduces dependency on traditional crops
- Allows vertical integration and reach final customers

CROPS BUSINESS
GHG REDUCTION

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REGENERATIVE AGRICULTURE (CONT.)

COVER CROPS

- Reduces herbicide use and increases carbon balance
- Fixes nitrogen, reduces hydric and wind erosion, improves soil stability
- **~ 26,300 ha in 2024**

INTEGRATED PEST MANAGEMENT (IPM)

- Generates efficiency in the use of agrochemicals while reducing fuel consumption
- Reduces the environmental impact by using more friendly agrochemicals
- Guided with an indicator called EIQ-Environmental Impact Quotient
- Uses biotechnology and some agronomic practices, to reduce the use of pesticides
- Adopts **selective application**, to reduce herbicide use up to 80% of the conventional rate (**8,000 ha in 2024**)

BIOLOGICAL INPUTS

- Applying biological inputs that help to fix nitrogen in the soil reduces the requirements and application of chemical fertilizers such as urea, thus reducing GHG emissions (**88,600 ha of soybeans in 2024**).

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GHG REDUCTION

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INTRODUCING NEW TECHNOLOGIES

PRECISION FARMING AND YIELD MAPS

- Collecting agronomical information, such as Yield maps, soil analysis, satellite images and soil moisture
- Using Big Data analysis to assess all that information and define different productive areas for each field
- **100%** of crop area with yield maps
- In 2022-23 and 2023-24 seasons we used **Variable Rate Application of seeds and fertilizers** in ~35K and ~59K hectares, respectively

AGRONOMIC TRIALS

- We are implementing agronomic test plots in many fields
- We use the information of those tests to adjust next-season technology
- The main parameters under research are plant population and crop nutrition

GENERATING ENERGY WITH BIOMASS

- Using peanut biomass to produce electricity would impact in a reduction of the electricity purchased to the grid, reducing scope 2 emissions

Project under analysis
Not implemented yet

REDUCTION PROGRAM

DAIRY Business initiatives

DAIRY BUSINESS
OVERVIEW

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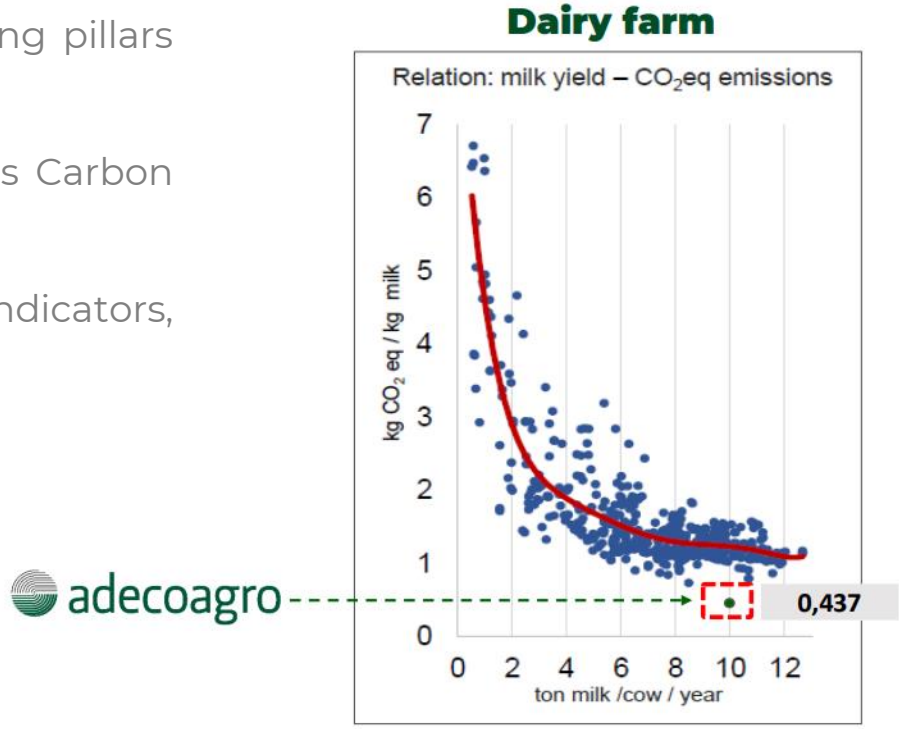
WHERE ARE WE NOW?

CURRENT STATUS

- We already have a very solid **Sustainable Business Model**, with strong pillars (economic, environmental and social)
- As methane is inherent to cow biology, the most challenging topic is Carbon Balance
- Nevertheless, thanks to our sustainable model and high productivity indicators, we are already delivering a very **Low Carbon Intensity milk**

CHALLENGES AHEAD

- We are on the lookout for **opportunities to reduce methane** emissions
- That is why we are constantly searching for emission reductions, in both **operational and R&D levels**



Source: IFCN 2021; AGRO figures for 2023 Dairy farm

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OUR SUSTAINABLE MODEL: MAIN INITIATIVES FOR GHG REDUCTION

We implement different sustainable practices and technologies that help us reduce the GHG emissions of our dairy business

Sustainable dairy business model: main initiatives for GHG reduction

Renewable energy generation

We generate renewable energy based on cow manure management and natural resources:

- Biodigesters
- Solar panels

Replacing high GHG-emitting fuels

We implement green alternatives or more efficient technologies to replace fuels :

- Fuel changes
- Carbon credits
- Water heating
- Biogas

Cow feed & biofertilizers

We use biofertilizers in crops fields for dairy cattle feed:

- Biological inputs
- Precision Agriculture
- Biofertilizers

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RENEWABLE ENERGY GENERATION: BIODIGESTERS

OUR BIODIGESTERS

- We produce electricity from the cow manure at our free stalls.
- Our biodigesters produce biogas (with high methane content), which is then converted into electrical energy and injected into the grid, avoiding the GHG emissions associated with conventional cow manure treatment methods.
- ISO 14001:2015 certification.
- International Verified Carbon Standard certification for Biodigester 1 (Biodigester 2 under analysis).

ENHANCEMENTS AND LESSONS LEARNED WITH OUR BIODIGESTER N°2

- Designed by our own teams based on the know-how acquired from our Biodigester 1 and the experience with our sugarcane business' biodigester.
- Including improvements that led to an installed capacity of 2 MW and an energy generation potential of 17,500 MWh per year.

TECHNICAL GROUPS – R&D

- We established an internal group with members of our Argentinean and Brazilian teams.
- Due to price scenarios, in Brazil we aim to use biogas as transport fuel, and in Argentina, we use it to produce electricity.
- We promoted the creation of a technical group with other companies.

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CUTTING-EDGE TECHNOLOGY: OUR BIODIGESTERS

Under a **circular economy model**, our biodigesters obtain biogas from cow manure, that is then used to generate bioelectricity through power generators. The bioelectricity is injected into the local grid, and the organic matter remaining from the process returns to the fields as biofertilizer for the crops sown for cow feed.

Main benefits of our biodigesters:

Soil Management: Thanks to biofertilizers we reduce the use of chemical fertilizers and improve soil carbon.

GHG Emissions Reduction: By processing cow manure and converting biogas (highly concentrated in methane) into bioelectricity, we reduce GHG emissions.

Renewable Energy Generation: We have a potential to generate around 25,000 MWh yearly that are injected into the local grid.

Other Benefits: By managing cow manure we help to reduce the odor.

By the end of 2024, thanks to our biodigesters:

- **-38,000 tCO2e annually**
- **10 years of carbon credit eligibility***
- **500,000+ tons of animal manure processed since origin**
- **3.4 MW of installed capacity**
- **25,000 MWh of electricity generation potential per year**
- **70,000+ MWh generated since origin**

* for Biodigester 1.

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RENEWABLE ENERGY GENERATION: SOLAR PANELS

SOLAR PANELS

- Currently, we have **1,550 panels** in Free stalls #3&4, which help us to reduce emissions by **100 tCO2e** per year
- These panels power fans and sprinklers used to ensure our cows' comfort and welfare.
- Additional solar panels could be installed on farms and industries, reducing emissions by **2,000 tCO2e** per year
- Already assessed projects: Dairy Farm #1 & 2 (0.4 MW), Chivilcoy Facility (1.2 MW)
- The feasibility of these projects' implementation will depend on the pricing

REPLACING FUELS: FUEL CHANGE & CARBON CREDITS

FUEL CHANGE & CARBON CREDITS POTENTIAL

- At the end of 2020 we have switched from Fuel Oil to Natural Gas in Morteros facility
- We participated with this project on a brand-new Carbon Credit initiative of Cordoba State Government, who granted us with Verified Carbon Units that we were able to trade in 2023 for a total of **3,827 tCO2e**.

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GHG REDUCTION

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REPLACING FUELS: POTENTIAL PROJECTS

WATER HEATING

- Introducing technology that pre-heats water used in the industrial boilers could reduce the energy consumption, and therefore the associated GHG emissions.

EFFLUENTS

- Using water from the grid for industrial processes requires no treatment, thus reduces the generation of effluents and results in lower GHG emissions.

BIOGAS AS TRANSPORT FUEL

- We are evaluating potential scenarios to use biogas as the main source of fuel for transportation. We started discussion for an R&D project with a local Gas company.

Project under analysis
Not implemented yet

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COW FEED: REDUCING METHANE

METHANE & FEED MANAGEMENT

- Improvements on feed efficiency can reduce methane emissions.
- We are using feed additives in all adult animals (Monensina, Yeasts) that help reduce methane, impacting in around 1,000 tCO2e less per year

95% of the methane is expelled through mouth and nostrils

BIOLOGICAL INPUTS IN FIELDS FOR COW FEED

- Applying biological inputs in our corn and wheat fields that help to fix nitrogen in the soil would impact in lower requirements and application of urea, potentially reducing the emissions generated by the use of fertilizers

PRECISION AGRICULTURE FOR UREA APPLICATION

- Using precision agriculture in the application of urea at our corn and wheat fields would reduce the amount of urea applied, potentially reducing the emissions generated by the use of fertilizers.

Project under analysis
Not implemented yet

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BIOFERTILIZERS: CURRENT SITUATION

BIOFERTILIZERS USAGE

- On a daily basis we collect all the manure from 14,400 milking cows in our Dairy Farms (370 K tons per year)
- Everything goes back to the fields as biofertilizers; part of it passes first through the Digesters.
- In 2024, we used these biofertilizers in **4,150 hectares**, generating savings from displaced chemical fertilizers

BIOFERTILIZERS: R&D WORKING LINES

BIOFERTILIZERS – NUTRIENT ENHANCEMENT

- As we are doing in our SE&E business, we are looking for alternatives to enrich nutrients of biofertilizers
- This will help us to better distribute NPK on fields, and replace more fossil fuel-based fertilizers

BIOFERTILIZERS - SOLID FRACTION

- Pelleting: add nutrients to enhance biofertilizers value and to facilitate application
- Granular: use solid fraction as carrier for NPK, adding value and helping to expand to large scale
- By enhancing 100% of solid fraction, we could produce 26,000 tons/year of biofertilizers

Project under analysis
Not implemented yet

REDUCTION PROGRAM

RICE Business initiatives

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OUR SUSTAINABLE MODEL: MAIN INITIATIVES FOR GHG REDUCTION

We implement different sustainable practices and technologies that help us reduce the GHG emissions of our rice business

Sustainable rice business model: main initiatives for GHG reduction

Efficient irrigation technologies

We implement technologies that lead to lower water requirements for production, less energy consumption and lower associated GHG emissions.

- Precision levelling and polypipes
- Drones
- Satellite images
- Buoys, levels and hoses
- IoT nodes

Regenerative agriculture

We implement different practices and technologies for the sustainable development of our fields and that help to reduce GHG emissions. The most relevant for rice are:

- Managing the use of N fertilizers
- Cover crops

Biomass solutions

We implement and analyze the use of the rice production biomass to produce renewable energy

EFFICIENT IRRIGATION TECHNOLOGIES

IRRIGATION TECHNOLOGIES

- **97%** of our water consumption corresponds to our rice fields.
- We already have efficient irrigation technologies in place such as **precision leveling** (**zero level)** and **polypipes** that help to reduce water consumption for irrigation by up to 30%.
- In 2024, **100% of our own rice fields hectares were irrigated using efficient-irrigation technologies** (84% when including leased area).
- The reduction in water consumption results in energy savings (lower cost and GHG emissions).
- These technologies allow us to perform a better irrigation management, leading as well to a more controlled irrigation calendar scheme potentially reducing GHG emissions derived from the irrigation process

Sustainable Production	Advanced Technology	Less Water	Savings in energy	Less GHG emissions
High performance with lower use of resources	Zero level Polypipes Drones, IoT, etc.	Up to 30% reduction in water consumption	Associated to consumption for irrigation	Due to lower energy consumption

For further information please refer to our latest Integrated Report or to our Water Management Program.

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REGENERATIVE AGRICULTURE – PHYTOSANITARY PRODUCTS

N-FERTILIZATION

- N-Fertilizers generate emissions due to losses of N2O when applied to fields, being N2O an extremely powerful GHG.

- We make our fertilization decisions upon holistic analysis based on: soil analysis, field quality, rice variety, growing conditions, etc. Thanks to this, we are able to adjust and reduce N doses of urea per hectare, for example, leading to a **reduction in GHG emissions.**

BIOLOGICAL INPUTS

- Applying biological inputs in replacement of chemical pesticides reduces GHG emissions. In 2024, we applied biological inputs to **21,000 ha of rice (36% of total rice area).**

Did you know...?

The use of biological inputs **reduces costs by 16%** per lot and significantly **reduces the EIQ** from 41.76 to **1.04** when compared to lots with chemical pesticides application

Note: EIQ is a numerical value used to assess the environmental impact of pesticides, being 0 the best possible value for the environment

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REGENERATIVE AGRICULTURE – COVER CROPS

COVER CROPS

- We are currently trying Ryegrass at some of our rice farms
- Ryegrass is used for rice-cattle rotation, with the goal of “cleaning” the rice fields (weed control, seed purity)
- We are assessing other cover crops such as Crotalaria to be tested in our farms

BENEFITS EXPECTED

- To enhance weed and pest control
- To protect soil from rain and wind erosion
- To enhance rice-residue decomposition and to facilitate field preparation
- To increase Soil Organic Matter (Soil carbon)

Regenerative Agriculture

RICE BUSINESS
GHG REDUCTION

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BIOMASS SOLUTIONS WITH ENERGY GENERATION

HUSK-BASED

- We have switched from wood to rice husk as fuel for drying in our Melo and Paso Dragon Mills (Uruguay). This fuel replacement leads to a reduction in GHG emissions of **8,800 tCO2e**.

BIO-CHARCOAL

- Rice straw could be used to manufacture bio-charcoal domestic uses (heating, cooking) or industrial uses (power generation)

ETHANOL

- We are analyzing second generation technology with rice straw as feedstock, and the potential of rice straw to generate ethanol.

Project under analysis
Not implemented yet

BIOMASS SOLUTIONS TO AVOID GHG EMISSIONS

BIOMASS SOLUTIONS – COLLECTING THE RESIDUES

- We are analyzing different alternatives to use ricefield residues (straw) that would avoid GHG emissions associated to rice straw.
- We are working together with contractors in collecting efficiently the rice straw
- In 2024, we produced **13,000+ biomass bales with 1,830+ tons of rice straw from 820 hectares**.

Rice biomass bales

REDUCTION PROGRAM

SE&E Business initiatives

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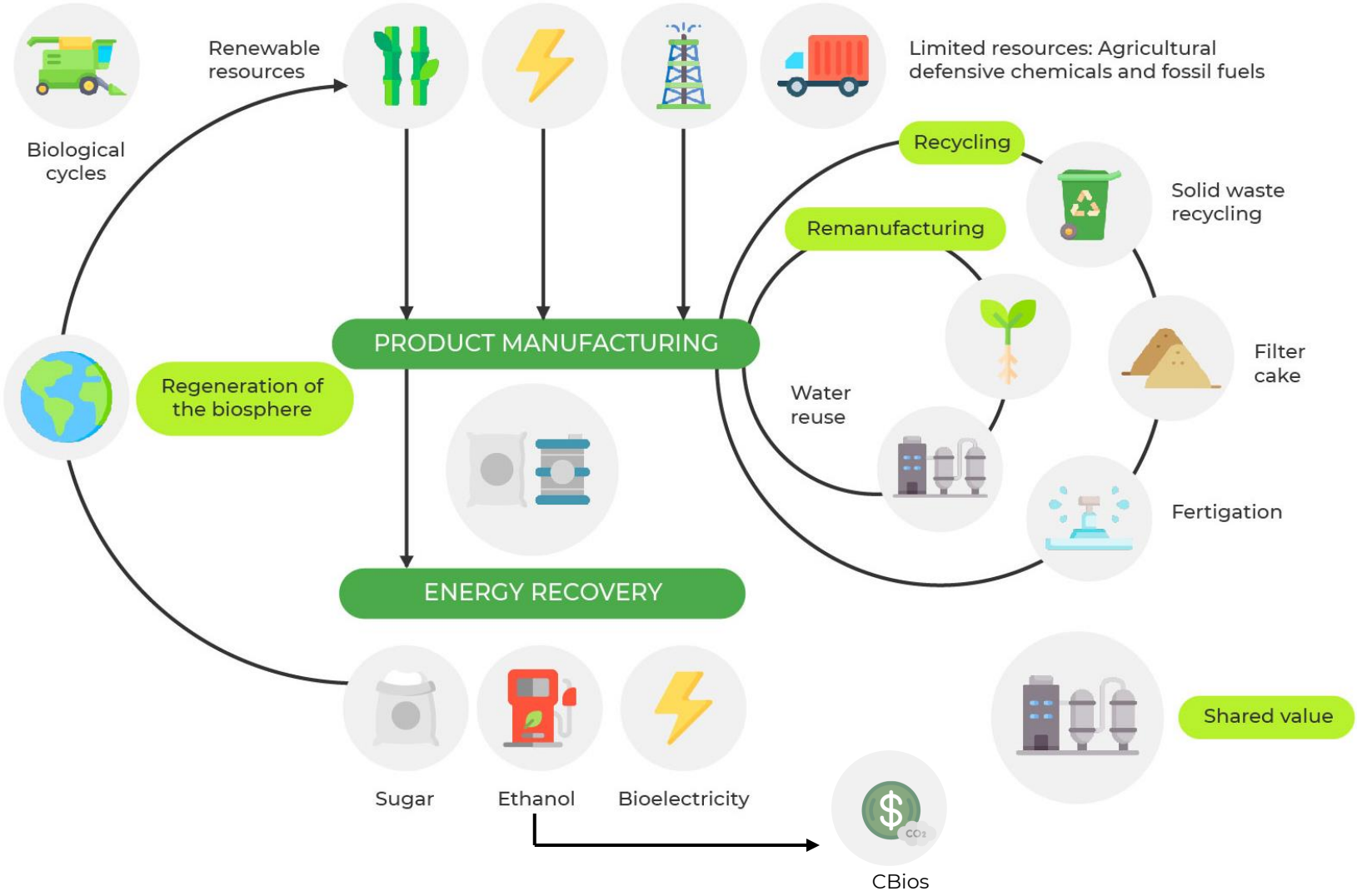
CIRCULAR ECONOMY – SUGAR, ETHANOL AND ENERGY

Our **Sugar, Ethanol & Energy** business is one of our most sustainable and circular production models.

We extract TRS from sugarcane, which allows us to produce either **sugar** or **ethanol** (and sell **carbon credits - CBios**). Furthermore, we leverage the by-products from both sugarcane and ethanol production to generate **bioelectricity**, **biogas**, and/or **biomethane**, which are partially used to power our mills

Other by-products are also used as **biofertilizers** for the fields where we grow the sugarcane, completing the cycle.



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OUR SUSTAINABLE MODEL: MAIN INITIATIVES FOR GHG REDUCTION

We implement different sustainable practices and technologies that help us reduce the GHG emissions of our sugar, ethanol & energy business

Sustainable SE&E business model: main initiatives for GHG reduction

RENEWABLE ENERGY - RELATED

Renewable energy: Ethanol & Cbios

We produce ethanol from sugarcane, and we are part of the Renovabio program through which we issue Carbon Credits (Cbios)

Renewable energy: Electricity

With the bagasse (by-product of sugarcane) we generate renewable electricity that we partially use in our Mills helping to reduce GHG emissions

Renewable energy: GAS-REC & Biomethane

We produce biogas from the vinasse (an ethanol by-product) which represents a clean energy alternative

Production efficiencies

Implementing production efficiencies while reducing costs, fuel consumption and/or lowering GHG emissions

Bio-inputs & innovation:

Using biological inputs and innovative technologies in our sugarcane fields

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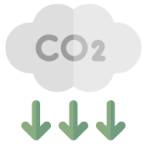
RENEWABLE ENERGY: ETHANOL & CBIOS

- We produce **ethanol** from sugarcane and have a capacity of production in our Mills of **888,541 m3** (2024)**.**
- With the production of ethanol, we contribute to reducing energy dependence on fossil fuels, and to **reduce GHG emissions** associated to these.
- We are part of the **Renovabio** program and were the first biofuel producer to issue and trade **carbon credits** (Cbios*) in Brazil.

Ethanol production



We produce ethanol from the most efficient source in the world (sugarcane), grown in the most efficient sugarcane-producing country.

Compared to gasoline, sugarcane-based ethanol **reduces greenhouse gases by more than 87%.**

Sustainable Aviation Fuel (SAF)

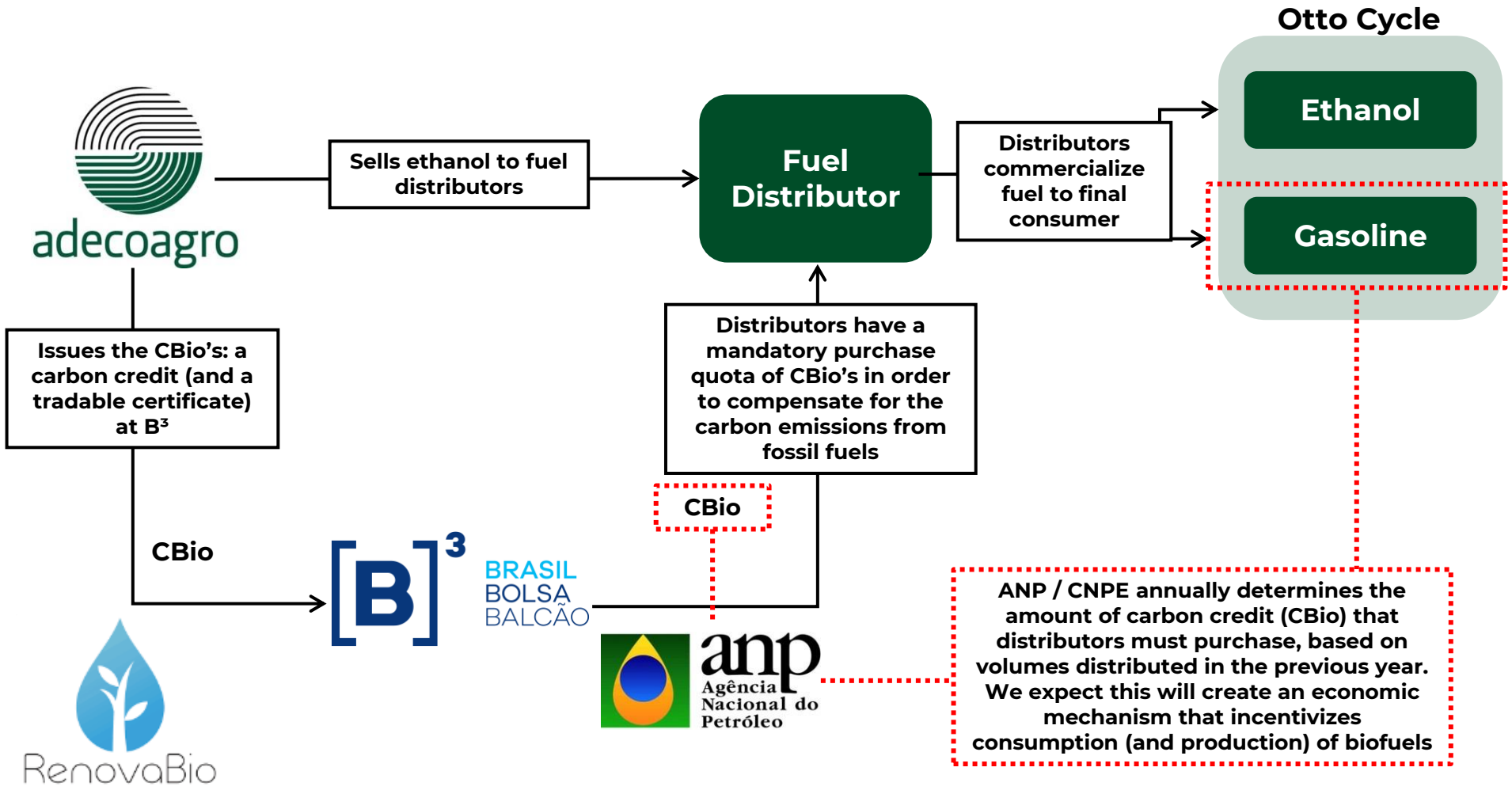
In 2024, we received the ISSC CORSIA Plus certification at our Angelica unit for ethanol production intended for SAF. This is another contribution to decarbonizing and transitioning towards clean energy, considering SAF has the potential of **reducing GHG emissions by 80%** compared to traditional fuels.

Carbon credits (Cbios)

Since the program started in 2020, we traded over **2.5 million Cbios* worth USD 33.5 million**.

*(Cbio = 1 Ton CO2e). Values refer to 2020-2024 period.

RENOVABIO: ZOOM INTO THE PROGRAM



Source: MME / EPE / CNPE

RENEWABLE ENERGY: BIOELECTRICITY

RENEWABLE ELECTRICITY GENERATION AND EXPORT

- We generate electricity from **sugarcane byproducts**, such as bagasse.
- We are one of the largest exporters of bioelectricity in the industry.
- The electricity we generate in our cluster meets our **own demands**, and the surplus (~65% in 2024) is **sold to the grid.**
- This is equivalent to an amount sufficient to supply a city of almost **1 million inhabitants**.
- Renewable electricity **reduces considerably GHG emissions** compared to non-renewable fuels.

With an **installed capacity** of:

- Production: 246 MW (1.7 million MWh per year)
- Export: 167 MW (1.1 million MWh per year)

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RENEWABLE ENERGY: BIOGAS & BIOMETHANE

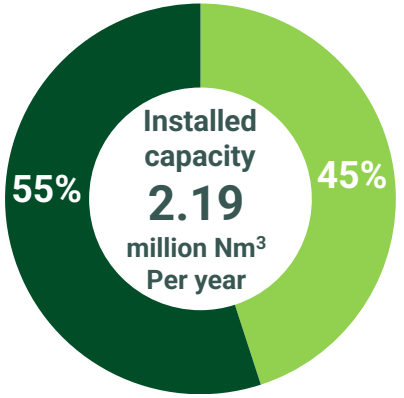
- We produce **biogas** from concentrated vinasse, which is a by-product of ethanol production. Biogas can either be used in the production of **renewable energy** or it can be converted into **biomethane** after being cleaned and compressed

- Since 2023, we are using biomethane to power vehicles at our Ivinhema Mill: in 2024 we powered **130+ light vehicles, 12 trucks/tractors and 6 irrigation pumps**, reducing GHG emissions.

	Biogas	Biomethane
Production capacity	**500** Nm³/hour	**275** Nm³/hour
Annual production*	**3,98** Million Nm³	**2.19** Million Nm³

*considering 7,950 hours (331 days)

Our current ability to use biomethane as a substitute for diesel and ethanol



Potentially converting more vehicles and equipment or selling the surplus

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RENEWABLE ENERGY: BIOGAS

Producing **biogas** from concentrated vinasse: green logistics

GREEN LOGISTICS - REPLACING DIESEL CONSUMPTION WITH BIOFUELS

100% of our Light Vehicles in Ivinhema powered by biomethane produced in our mills

Our mid-term objective is to quintuple biomethane production (equivalent to 15 million liters of diesel) to power our SE&E business vehicles, trucks and motor pumps. Green financing of the project in place.

Our long-term objective is to produce the equivalent to replace 50-60 million liters of diesel to power our vehicles, trucks and motor pumps.

Did you know?

In 2024, besides of using biomethane for our light vehicles, we have use it to power **irrigation moto pumps** (6), **trucks** (10) and **tractors** (2), **replacing over 260,000 lts of diesel and 175,000 lts of gasoline consumption**

PRODUCTION EFFICIENCIES – REDUCING FUEL CONSUMPTION

COST-EFFICIENT GREEN INITIATIVES

Guided by our sustainable mindset, we identify several initiatives that have both an economic and environmental benefit for our business.

REDUCING FUEL CONSUMPTION

- We are incorporating new vehicles that improve sugarcane harvest logistics, such as **two-row harvesters, grunners and triple road trains**
- This allows us to increase the time efficiency of our logistic process when moving cane from the field to the unloading area. These implementations enabled us to **save up to 46% in diesel** consumption, reducing GHG emissions associated.
- We plan to continue working on the renewal of the vehicles of our fleet, according to their life cycle.

Project under analysis
Not implemented yet

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PRODUCTION EFFICIENCIES - BIOFERTILIZERS

REPLACEMENT OF CHEMICAL FERTILIZERS

- We use concentrated vinasse and filter cake (two industry by-products) to replace **90% of our potassium fertilizer requirements, which represents as well 48% of total mineral fertilizer requirements.**

- The main advantages include the replacement of mineral fertilizers with organic fertilizers, adding organic matter to the soil, savings in diesel and cost reductions.

- Adjusting the doses of nitrogen and soil correction fertilizers applied in sugarcane fields to enhance efficiency and productivity.

Project under analysis
Not implemented yet

SE&E BUSINESS
GHG REDUCTION

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BIO-INPUTS & INNOVATION

SELECTIVE SPRAYING

- We use **drones** in sugarcane fields for the application of herbicides, only in necessary areas.
- This reduces the economic and environmental impact of herbicide use, by reducing cost and GHG emissions related with this type of products.
- We are also analyzing GIS and AI based monitoring of weeds to create weed mapping and prescription

Other selective-spraying projects

- Install video-camera to film sugarcane fields
- Train the Algorithm to detect weeds accurately
- Install Selective Sprayer equipment

Project under analysis
Not implemented yet

CONTROL OF CANE BORER

- We use insects to control cane pest “broca”. “Cotesia” wasps are “sprayed” over the plantations
- We are trying drones instead of manual operation, enhancing efficiency and efficacy

COVER CROPS

Cover crops enhance weed and pest control, protect soil from rain and wind erosion, complete soil preparation process and increase Soil Organic Matter (Soil carbon)

In 2024, our SE&E business had **+33,600 ha of cover crops**

CLIMATE-RELATED RISKS

Physical and Transition

CLIMATE-RELATED
RISKS & OPPORTUNITIES

CLIMATE-RELATED RISKS & OPPORTUNITIES

We have identified the **physical** and **transition climate-related risks and opportunities** associated to all our businesses (Sugar, Ethanol & Energy, Rice, Dairy and Crops).

PHYSICAL

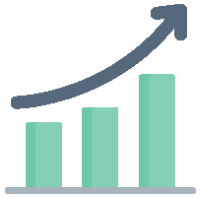
ACUTE

Extreme weather events

CHRONIC

Change in climate patterns

TRANSITION



POLICY & LEGAL

Regulatory requirements

TECHNOLOGY

New technologies ahead

MARKET

Changes in Customer behavior and markets

REPUTATION

Stakeholders' concerns

Note: our analysis is based on the TCFD framework.

CLIMATE-RELATED RISKS & OPPORTUNITIES: PHYSICAL

PHYSICAL

ACUTE

Extreme weather events

Risks

- Extreme weather events such as floods, fires, droughts and frosts could reduce crop yields, quality and production volume. This could also lead to an increase in production costs to preserve the health of the crops affected.
- These extreme weather events could also damage our own and our supplier's infrastructure interrupting the normal operatory of our businesses.
- Another possible risk is related to the feed of our cow-herd. The lower availability of crops for cow feed could increase the costs associated with our Dairy business.

Opportunities

- If the supply of the products we sell in markets where we have presence is restricted by these weather events, it could lead to an increase in their prices.
- Our geographic and product diversification acts as a natural hedge against weather risks, generating a competitive advantage versus other players.
- We are already implementing different technologies that prepare and help us to get through different weather events and their associated risks. Some of these technologies are: no-till, drones, satellite images, precision agriculture and efficient irrigation technologies (precision levelling, polypipes).

CLIMATE-RELATED
RISKS & OPPORTUNITIES

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CLIMATE-RELATED RISKS & OPPORTUNITIES: PHYSICAL

PHYSICAL

CHRONIC

Change in climate patterns

Risks

- Rising mean temperatures could affect some crops yields, such as corn and wheat. It could also accelerate the water evaporation process from the soil, resulting in a higher demand of water irrigation that would increase the costs for our fields.
- Rising mean temperatures could accelerate the proliferation of plagues and plant diseases, increasing the requirements of phytosanitary products and leading to higher production costs.
- Rising mean temperature could affect the health of our cow-herd.
- Rising mean temperature could affect our agricultural employees during the field-work.
- Changing precipitation patterns may negatively affect our crops yields and quality.

Opportunities

- If the supply of the products we sell in markets where we have presence is restricted by these weather events, it could lead to an increase in their prices.
- Our geographic and product diversification acts as a natural hedge against weather risks, generating a competitive advantage versus other players.
- We are already implementing different technologies that prepare and help us to get through different weather patterns and their associated risks. Some of these technologies are: no-till, drones, satellite images, precision agriculture and efficient irrigation technologies (precision levelling, polypipes).
- Rising mean temperature could enhance yield productivity in colder areas, benefiting some of our current locations; additionally, new crop growing areas could arise as business opportunities for Adecoagro

CLIMATE-RELATED
RISKS & OPPORTUNITIES

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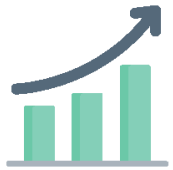
CLIMATE-RELATED RISKS & OPPORTUNITIES: TRANSITION

TRANSITION



POLICY & LEGAL

Regulatory requirements

Risks

- Enhanced emissions-reporting obligations could increase the costs associated to human resources for the compliance with information and validation requirements.
- Increased regulations or implementation of taxes related with our main production inputs, such as water, fertilizers or fuels, could increase our production costs.
- New regulations related with green traceability could increase production costs.

Opportunities

- We are already selling carbon credits and could increase the quantity sold.
- As an agribusiness company, we manage more than 560K ha of land that act as a carbon sink. When policy makers regulate carbon credits and value soil organic carbon as a solution to global warming, we could be benefitted with a higher availability of carbon credits for sale.
- New regulations (such as sustainability-linked finance) could benefit companies implementing and adopting sustainable practices, which could positively affect our businesses.
- New regulations related with green traceability impacting in costs, could be mitigated because of the structure of our business models. Thanks to our control of the value chains, we could leverage new developments and early adopt new technologies leading to the mitigation of costs and enhancement of our productivity ratios.
- New regulations penalizing fossil fuels could increase our sales of ethanol.
- Enhanced emissions-reporting obligations could give us a competitive advantage versus other players that have not our reporting experience yet.

CLIMATE-RELATED
RISKS & OPPORTUNITIES

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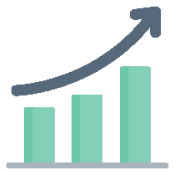
CLIMATE-RELATED RISKS & OPPORTUNITIES: TRANSITION

TRANSITION



TECHNOLOGY

New technologies ahead

Risks

- Implementing new green technologies could increase the capital expenditure.
- Implementing new green technologies could have an implementation risk leading to unsuccessful outcomes.

Opportunities

- The implementation of new green technologies could lead to higher efficiency in our production model.
- Since we have already advanced technology in place, we have a competitive advantage and would face a lower transition cost. Some of these technologies are: biodigesters to produce renewable energy such as biomethane and bioelectricity.
- We are already implementing technologies for the use of by-products of our businesses to generate renewable energy such as biomethane/biogas, SAF and electricity; and as biofertilizers for our fields.
- We are assessing the implementation of new technologies to use other by-products such as rice husk or peanut biomass to generate renewable energy for our own use or for sale (reducing our costs or increasing our sales).
- We are already relevant producers of ethanol and electricity and could experience a higher demand of our products with a positive impact in sales.

CLIMATE-RELATED
RISKS & OPPORTUNITIES

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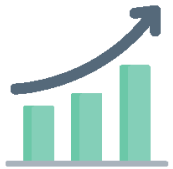
CLIMATE-RELATED RISKS & OPPORTUNITIES: TRANSITION

TRANSITION



MARKET

Changes in customer behavior and markets

Risks

- Changing customer behavior could reduce our sales if they prefer our competitors in terms of sustainable practices-price value balance.
- An increase in the cost of some materials could lead to a higher production cost for our businesses. However, the use of advanced technology helps us to mitigate this cost.
- Fluctuations in market prices for our products could adversely affect our financial condition and results of operations.

Opportunities

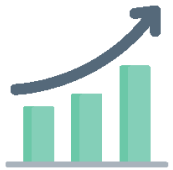
- We are already playing the “energy transition” game as ~30%* of our sales are related to ethanol and bioelectricity, with biogas well advanced in our pipeline.
- As producers of ethanol, biomethane and renewable electricity, changing customer behavior could increase our sales.
- As we produce the main raw materials we process in our industries, we would not be affected by an increase in the cost of raw materials, gaining a competitive advantage versus other companies.

* 2019-2023 average

CLIMATE-RELATED
RISKS & OPPORTUNITIES

CLIMATE-RELATED RISKS & OPPORTUNITIES: TRANSITION

TRANSITION



REPUTATION

Stakeholders' concerns

Risks

- Stigmatization of agricultural and dairy businesses or increased stakeholder concern could affect the sales levels and value of our products.

Opportunities

- Being a company that produces sustainable products such as ethanol, biomethane and renewable electricity, and having sustainable development models in the rest of our businesses (dairy, sugar and crops) we could have a competitive advantage if consumer preferences change towards low-carbon products, leading to an increase in our sales.

- We are already providing full traceability for most of our products (i.e., rice and peanut), and selling it to the most demanding customers worldwide, guaranteeing and informing them on the product life-cycle.

GHG MANAGEMENT & REDUCTION PROGRAM

Please CLICK HERE to access our Sustainability website

Please CLICK HERE to access our 2024 Integrated Report

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consultas@adecoagro.com
www.adecoagro.com