

INNOVABILITY 2022: IOD PATHWAY TO THE FUTURE

HOW WE ARE REIMAGINING
CHEMISTRY TOGETHER TO
CREATE A BETTER WORLD

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**WE REIMAGINE CHEMISTRY TOGETHER
TO CREATE A BETTER WORLD**

WE ACT RESPONSIBLY AND ETHICALLY

**WE SEEK RESULTS THAT
IMPACT THE FUTURE**

**WE OPERATE WITH AWARENESS
AND RESPECT**

WE VALUE RELATIONSHIPS

WHO WE ARE

FOREWORD

**MESSAGE FROM THE
ADMINISTRATION**



Larissa Rodrigues

We reimagine chemistry together to create a better world

Who we are

Indorama Ventures Integrated Oxides & Derivatives (IOD) segment is part of Indorama Ventures Public Company Limited (IVL), a world-class sustainable chemical company, and together with PET and Fibers segments serves major customers in diversified end-use markets. Following the core strategy, develops innovative products for customer needs, making great products for society.

“IOD wants to be a company that adds value and generates less negative impact on the world we live in and, at the same time, a place where people achieve these same goals within the company”.

Alastair Port, CEO

“IVL strongly believes that sustainability is a mindset that drives everything we do as a business, with an aim to positively impact the environment, society, and economy.”

Mr. Yash Lohia, Chairman of the IVL ESG Council





Max Deluge

Foreword

2022 was one of the most important in Integrated Oxides and Derivatives' (IOD) history. We left behind the significant challenges brought about by the pandemic, and we set off on a new stage in our journey. Among the most important events of the year was the acquisition of Oxiteno, a leader in surfactants in South America also with worldwide presence. Our joining of forces will be essential for us to continue leading the surfactant market in the Americas, in addition to expanding our expectations of operating in Asia and Europe.

We connect chemistry to make a better world.

It was also a decisive year for expanding our commitments to the planet through the launch of our sustainability strategy. Supported by IVL's 2030 Vision and aligned with UN 2030 Sustainable Development Goals (SDGs), we expanded our targets and created new work plans that will allow us to continue to develop products and services in line with the needs of the society.

In the subsequent pages, you can follow our journey throughout 2022 and see our main results¹.

Enjoy your reading!

¹The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.

Message from the administration

We became better to make a better world

2-22

2022 was an exceptional year and milestone for IOD. A year that certainly entered the history of our division due to the challenges faced, but mainly because of the success achieved. We closed the year with fantastic financial results. We completed the acquisition of Oxitenio. We integrated the companies smoothly and successfully, unifying the best in each and placing us at a new level in the global chemical industry. IOD has become an even greater powerhouse and more recognized by our customers and the market. We continue to be strong in building the future of our business.

In this past year, we combined the best in sustainability at Oxitenio and IOD. Inspired by our purpose of “Reimagining chemistry together to create a better world,” we reaffirm our commitment to sustainability through our 2030 strategic plan, with goals that will leverage our business based on three aspirations: to decarbonize and promote eco-efficiency in our operations, develop more innovative and sustainable products, and ensure a future-ready organization.

Innovation is an essential pillar of our business and supports our overall plan. We continue to enhance our operations and practices to foster innovation as a key driver for our company’s differentiation. We are committed to rethinking the status quo and developing innovative and sustainable solutions. This journey has already started, as we are focused on reducing our carbon footprint and evaluating opportunities to replace fossil with renewable sources.

There are many challenges, but rethinking our attitude towards the chemistry we provide, which impacts society, will help us develop a faster and more robust innovation system, effectively co-creating with customers and the supply chain.

To attain the goals set forth, addressing our operational excellence, digitalization, and our people and culture strategies are also essential. We remain committed to

developing roadmaps, identifying resources, and enabling functional support to further our progress toward achieving our strategic goals. We could not make this happen without our people. At IOD, the employees are our greatest assets, and we value a diverse environment when we encourage our teams to be their best version.

Our chemistry touches billions of people daily, and we are proud of the path taken so far and convinced of our role in building a better world for future generations.

Alastair Port
Executive President



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Last year was very good for us. We set a profitability record for India, with our plant operating at a high rate and several initiatives tied to other local manufacturers to fill the gap in our core offerings. We also made remarkable advances in energy savings and created a recycling program in our manufacturing units. Another significant accomplishment for our operation during 2022 was being among the winners of the latest National Energy Conservation Awards 2022, the more extraordinary acknowledgment in this field in India. The award ceremony was in December, attended by the country's president, Draupadi Murmu, among other officials. And the higher point of the year was the purchase of Oxiteno. Beyond just increasing our product list and extending our portfolio, the merger allows us to collaborate and think about the future of both companies. This new era of IOD, and Oxiteno opens a new avenue for collaboration between manufacturing teams and increases our position in the region.

Samir Rawal
APAC (India and Asia)
Regional Business Director



We began 2022 enthusiastically awaiting the closing process for Oxiteno. After these months together, we are becoming more familiar with each other's cultures and our business processes, differences, and similarities by creating strategies that will help us achieve and extract the most value we can from bringing the two companies together. For 2023, we will look to optimize and maximize our existing capacities, focusing on growing and optimizing in our current regions and expanding worldwide. We want to go deep within our existing portfolio and take advantage of Oxiteno's strengths in R&D and innovation to bring those best practices to the U.S. By combining, IOD will better serve the market with new products and innovations to keep up with the demand of our customers, as well as continue our journey in the sustainability field from a bio-based product offering.

Joel Saltzman
CEO North America



2022 in Australia presented both challenges and exciting opportunities. We introduced record number of new products at our Botany Australia plant, working in close partnership with our customers and supply partners. Our team continued in their dedication to drive synergies and improve efficiencies, to ensure we continue to service our customers as a long-established local manufacturer. The arrival of Oxiteno brought exciting synergies across our global business, opened opportunities to work with new partners, and brought new perspectives related to green products and the sustainability strategies set for 2030. We look forward to continuing this movement in 2023, working with our customers, partners, and suppliers for a sustainable future.

Elizabeth Tasdelen
Australia and New Zealand
Regional Business Director

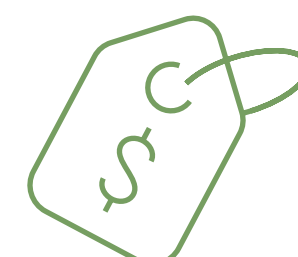


2022 was a great year for South America. The purchase and integration of Oxiteno by IVL ran smoothly. The process was very well planned and executed with great collaboration across the areas. Because of that we started to capture synergies and best practices very quickly. The company is now much stronger with clear leadership position in the Americas in our main product lines. We are all learning fast from our new colleagues, and we set together challenging goals for the years to come. Certainly, all our stakeholders will benefit from this stronger consolidated IOD. The year of 2023 starts with new challenges and a different business environment. We will continue to execute our Sustainability Consolidated Strategy with great opportunities in all the areas of the company and together with our business partners. We are launching exciting new products such as biosurfactants and green ethylene derivatives that will help us accelerate our sustainability journey. We will continue our actions focused on safety and environment, green energy, supply chain excellence, life cycle analysis, cost competitiveness, digital technologies, inclusion and well-being of employees and many other areas. We will continue to execute our plans, always taking safety as the top priority for the company. We made great progress in 2022, and there is a lot more to come in 2023.

João Benjamin Parolin
CEO South America

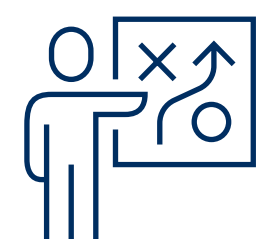
2022 highlights

Acquisition of Oxiteno finalized in April. The company becomes part of the Integrated Oxides and Derivatives (IOD) business segment of Indorama Ventures and expands its global presence in the surfactants market

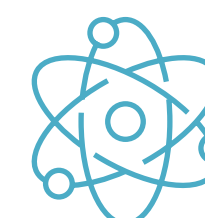
 Total sales volume
16%
higher than in 2021

 Core EBITDA (\$/T) increased
61%

 Core EBITDA margin
17%

 New IOD sustainability strategy launched in August

 **New office and laboratory**
in Shanghai (China) opened in September

 **New Technology Center** in The Woodlands, USA opened in November

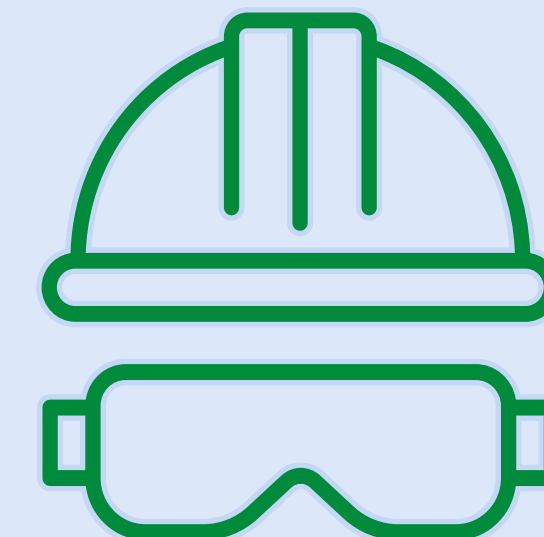

Pacto Global Rede Brasil
In partnership with the UN Global Compact Network Brazil, Votorantim Cimentos, Imagine 2030 and Hand Talk, the quiz “What 2030 are you building today?” was launched in Brazil, based on the UN Sustainable Development Goals.

[Click here to play.](#)

5-year best performance for both People Safety and Process Safety within IOD globally.

Zero process safety tier 1 or 2 events in Mexico region.

Port Neches, Dayton and Clear Lake obtained RC 14001 certification; and Clear Lake obtained ISO 50001.



Global IOD safety performance finished 2022 in the top quartile of American Chemistry Council (ACC) medium companies.

ISO 45001 certification for Coatzacoalcos, Guadalajara San Juan del Rio plants and FSSC 22000 Food Safety Certification for Mauá unit.

We
reimagine
chemistry together
to create a better world



Hemyle Rangel

We reimagine chemistry together to create a better world

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We are IOD², a leading chemical intermediates and surfactants producer with a diverse range of products in growth markets - a result of the incorporation of Oxiteno into the Integrated Oxides and Derivatives business segment of Indorama Ventures Public Company Limited, one of the world's leading sustainable chemical producers with a global manufacturing presence in the Americas and Asia-Pacific.



Click here to access our institutional video of acquisition of Oxiteno

With eighteen plants and 8 R&D centers³, an experienced management team, a solid history of environmental governance, and expertise in innovation in green chemistry, IOD stands today as an even stronger and more strategic company, which will boost new business while caring for the well-being of millions of people.

Carolina Ramos

²Oxiteno S.A. Indústria e Comércio, Oleoquímica Comércio de Produtos Químicos Ltda., Empresa Carioca de Produtos Químicos S.A., Oxiteno Argentina S.R.L., Oxiteno México S.A. De C.V., Oxiteno Europe B.V., Oxiteno Uruguay S.A., Oxiteno Colombia SAS, Oxiteno Netherlands B.V., Oxiteno Shanghai LTD and Oxiteno USA LLC (Oxiteno USA was sold on October, the consolidated results of this company cover the period from January 1, 2022 to October 31, 2022).

³Hattiesburg/Mississippi (USA), The Woodlands/Texas (USA), Guadalajara/Jalisco (Mexico) Mauá/São Paulo (Brazil), Brussels (Belgium), Mumbai/Maharashtra (India), Melbourne/Victoria (Australia) and Shanghai/Jiangsu Province (China)

Where we are

2-1



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We are in the business of manufacturing and providing surfactants and specialty chemicals that are key end markets of Crop Protection, Home & Personal Care, Coatings, Energy & Resources and Performance Products.

18 operations 9 countries 3,700 employees 8 R&D Centers

Our 2030 Sustainability Strategy, aligned with IVL's commitments*, is sustained by three aspirations: decarbonize and promote eco-efficiency in our operations, develop more innovative and sustainable products, and ensure that any level of the organization is prepared for new ways of working to achieve our goals. This plan was discussed and conceived by the top leadership in the strategic committee to meet the commitments of all employees through targets and actions.



Click here to access IVL's Sustainability Commitments



We grow sustainably

Humanity is facing countless challenges in terms of food, drinking water, energy, health, and mobility. And by 2030, when we will have over eight billion people living on the planet, these challenges will be even greater. Chemistry will play a critical role in addressing these issues, providing innovative and sustainable solutions.

As part of IVL, at IOD, we believe that thinking about sustainable development means ensuring the perpetuity of our business and leaving a legacy for the future. Inspired by our purpose of "reimagining chemistry together to create a better world", we have developed a strategy that will guide our operations in the coming years.

Sustainability Governance

For sustainability to really be in the company's culture, and to roll out the strategy, we must have a robust governance. For this, we count on a sustainability area, which develops, organizes, and works with other areas to leverage the themes, acting as an internal consultant. We also have the strategic committee, formed by the IOD top leadership which meets periodically to ensure that Sustainability is at the core business; approve the strategy, goals and public commitments and ensure the necessary resources and engagement to advance and deliver on the segment's commitments.

Besides that, we have the tactical and operational groups that develop action plans and implement it to address the strategy. It is important to mention that all our employees play an essential role in applying sustainability concepts in their day-to-day work.

Find out about our progress on the next pages.

IVL sustainability governance

IOD sustainability governance

Mission: integrating sustainability into the company's culture so as for it to permeate all decision-making practices and processes

Sustainability area

- Act as an Advisory Support on the topic of sustainability within the segment.
- Implement and manage the Governance of Sustainability at IOD.
- Promote the segment's sustainability strategy and define guidelines in conjunction with the Departments, in order to reduce the negative impacts generated against sustainable practices.
- Identify how Sustainability can help the markets to meet their goals.
- Train and engage internal and external stakeholders.
- Support internal and external communication on the topic of Sustainability.
- Represent the segment in forums and commitments on Sustainability.
- Map out trends and actively pioneer initiatives on the topic of Sustainability.

Members

Sustainability Strategic committee

Sustainability Tactical and Operational Groups

Sustainability Culture

- President
- Region CEOs and business directors
- Tactical and operational sponsors
- Sustainability

- Global Sponsor
- Regional Strategic members

- Employees

Roles and responsibilities

- Ensure that Sustainability is at the core of the business
- Approve the strategy, goals and public commitments
- Ensure the necessary resources and engagement to advance and deliver on the company's goals/commitments
- Define and implement the roadmaps ensuring that targets are met
- Report the progress of goals and roadmap
- Engage the necessary areas to fulfill the plan
- Be aware of IOD's Sustainability Strategy and apply it in their daily life, practices and processes

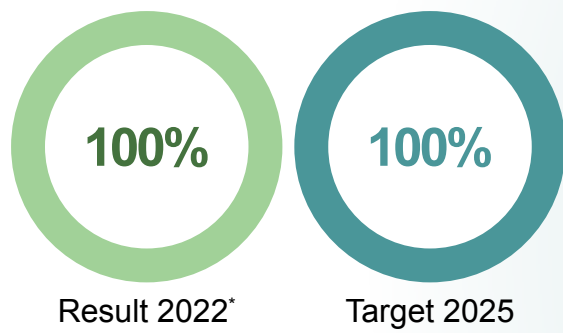


Decarbonize and promote eco-efficiency in our operations

Waste

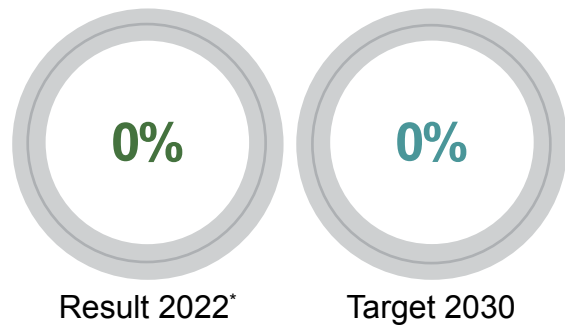
90%

of waste diverted from landfill by 2025



10%

reduction in waste generation per ton produced by 2030



Brazil



Holding workshops at industrial units to identify possible waste reduction projects.

The Tremembé unit started selling by products that were previously discarded as waste, contributing to the target's achievement while also securing a financial benefit. Instead of paying R\$ 450 per ton of waste to discharge it, the unit now sells the byproduct for R\$160. In this way, 450 tons of what was treated as waste will now be sold as product.

*The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.

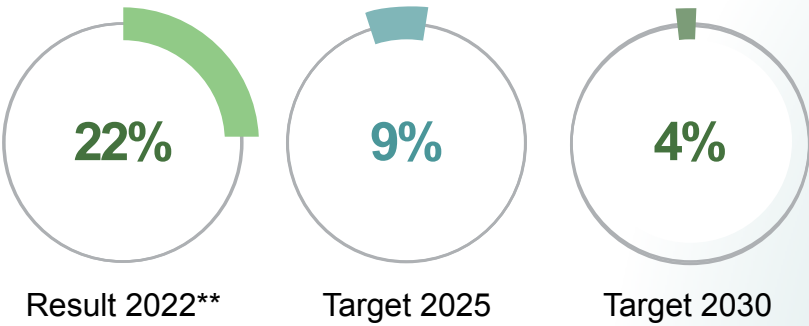
Water

Advanced water management for **100% of industrial plants** located in areas of water stress (RCP 8.5) classified as extremely high by 2025 and classified as high and medium-high by 2030

Under construction*		
Result 2022**	Target 2025	Target 2030

10%

10% reduction in water withdrawal intensity⁴ by 2025 and 20% by 2030.



*For this target, it was defined that the first water management plan will be developed in 2023 as a pilot.

**The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.

Units in water stress areas have already been mapped.

In the last quarter, mass and energy balances were performed for Camaçari and Mauá plants in Brazil with the aim of identifying improvement points in the units' measurement systems.

⁴Water discharged to the source of extraction at same or better quality will be deducted from the water withdrawn for calculating the intensities.



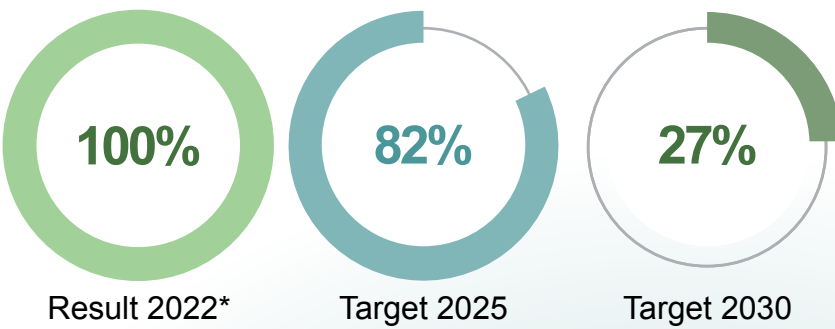
Decarbonize and promote eco-efficiency in our operations

Energy



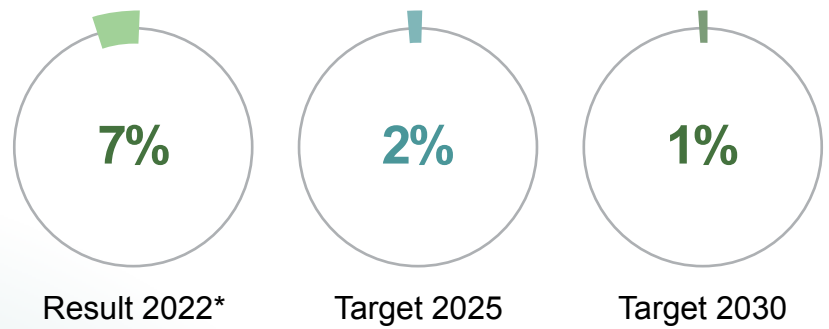
5%

reduction in energy intensity by 2025 and 15% by 2030



10%

energy sourced from renewables by 2025 and 25% by 2030

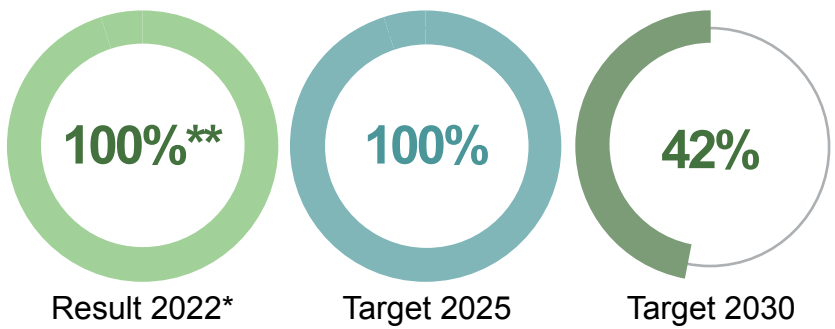


GHG Emission



12%

reduction in GHG Scope 1 and 2 intensity by 2025 and 30% by 2030.

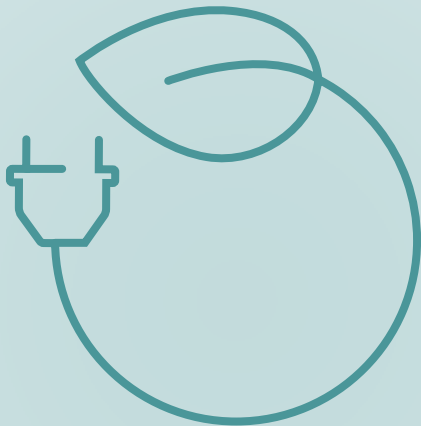


*The 2022 results are compared with the internally defined check-point for this period, not the expected 2025 or 2030 targets.

**For this target, it was defined that the development of the action plan will start in 2023.

The North America operation stood out in energy performance in 2022.

Port Neches continues to advance in energy reduction initiatives, such as optimizing the cracker.

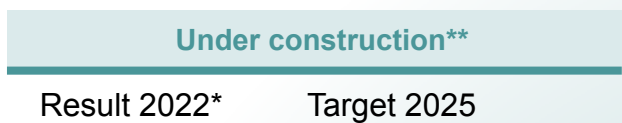


The Clear Lake unit in the U.S. already sources part of its electricity from renewable sources. Teams are currently looking into expanding this project to other plants in the region.

The Lake Charles operation was shut down from October to mid-December, and it moves into full operation in 2023 it is expected that its energy efficiency will improve.

*The 2022 results are compared with the internally defined check-point for this period, not the expected 2025 or 2030 targets.

Build an action plan to reduce absolute **GHG scope 3 emissions** in partnership with strategic suppliers for IOD category 1 by 2025.



Performed the IOD industrial plants diagnostics on GHG absolute contributions and intensity.

Ongoing discussions with companies to use captured CO₂ as a raw material for new chemicals.

On-going negotiations on EO carbon dioxide capture project at Port Neches.

Decarbonization project pipeline built.

Quantification of GHG reductions per project is underway.



Communities

100%

of operations with local community engagement, impact assessments, and/or development programs implemented by 2025.



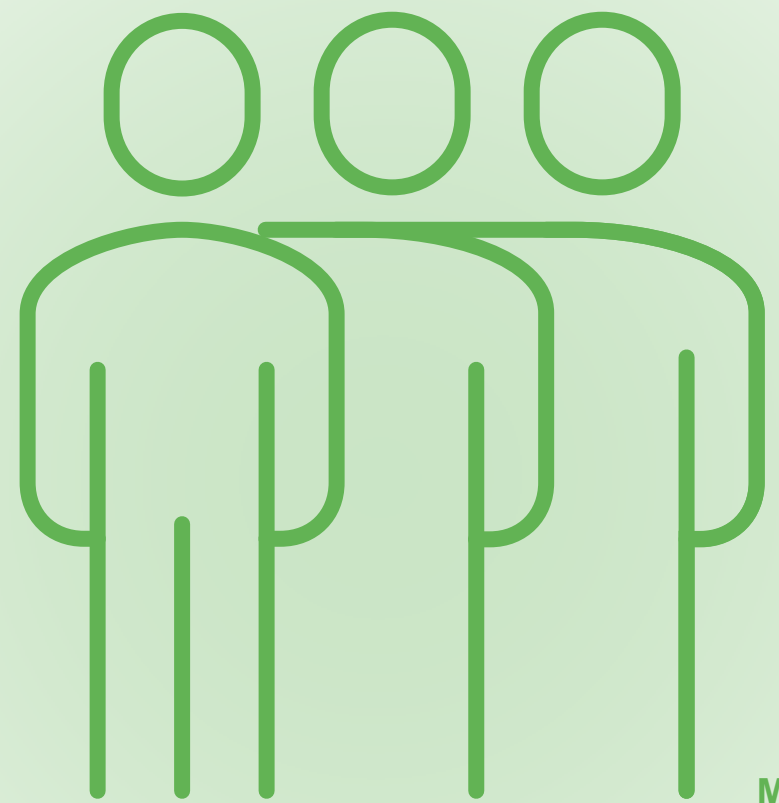
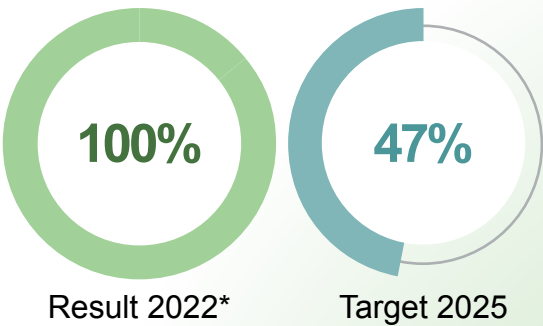
**Los resultados de 2022 se compararon con el punto de control definido internamente para ese período, y no con las metas esperadas para 2025 o 2030.*



Larissa Rodrigues



Future ready organization



Definition of focal points represented by one or more employees from each production unit.

Smallholders palm producers project idea: Winner of the IVL Shared Value Award.

Seven sites⁵ with social projects implemented in 2022.

More than 8,000 hours of volunteer work.

More than 500 volunteer positions.

More than 50,000 people benefited from social projects.

Responsible sourcing

95%

critical suppliers assessed on their Sustainability performance by 2025

Under construction**	
Result 2022*	Target 2025

Have a risk mitigation plan in place for **100% of critical suppliers** classified below the IOD sustainability performance requirements.

Under construction**	
Result 2022*	Target 2025



**The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.*

***The platform to measure sustainability performance for suppliers will be defined for 2023. Once the tool is defined, it will be possible to measure the achievement of the targets.*

Monitored by Oxiteno Legacy, the year 2022 ended with 91% of critical suppliers having been evaluated on the Ecovadis platform, and 100% of them had action plans.



Development of a tool to assess the criticality of suppliers (1,911 suppliers evaluated in the pilot phase in South America).

Progress in negotiations to join the Together for Sustainability and use of Ecovadis to evaluate suppliers.

Definition of KPI targets in progress (2023-2030).

⁵For the theme of communities, 15 operational units are considered. Camaçari is counted only as one because the neighborhood is the same (Camaçari, Oleoquímica and EMCA). Clear Lake and Chocolate Bayou are not considered because they are units that operate automatically and are part of larger industrial parks.



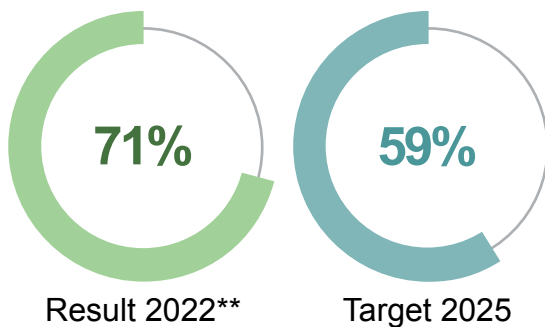
Future ready organization



Diversity

50%

women in top and senior management by 2030*



*Senior manager level (level 37) and higher

**The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.



Well-being and development

Promote employee well-being reflecting in a **10% increase** in engagement survey results by 2025.

Under construction**

Result 2022* Target 2025

*The 2022 results are compared with the internally defined check-point for this period, not the expected 2025 or 2030 targets.

**The employee engagement survey is not conducted annually; therefore, the achievement of the target can only be measured after carrying out a new survey.



Linglin Li

We completed 97% of our proposed actions related to well-being, such as promoting livestreaming on nutritional, physical, chronic and mental health conditions, defining action plans within the medical areas, and publishing booklets on quality-of-life topics and on pregnant women and babies.

Launch of the Nutritional and Psychological Guidance Program in Brazil.

Regarding our development area, we completed 74% of our proposed action plans, including the launch of our internship track, our talent analytics program, and mentoring and leadership development programs and institutes, in addition to our Mobility Policy.

Launch of the EAP (Employee Assistance Programme) in Uruguay, Argentina, and Colombia.





Future ready organization

Coordination and execution of Process Safety and segment-level audits.

Increase use of Intelix as a common IVL IT platform for EHS metrics and incident management.

Completion of the 2nd Behavioral Safety assessment at Oxiteno's legacy units in South America and Mexico.

Completion of the 2022 Emergency Response drills and Crisis Management in South America and Mexico.

A plan of harmonization and communication of IVL policies, procedures and standards is in progress, with priority of compliance and the IVL Golden Safety Rules.

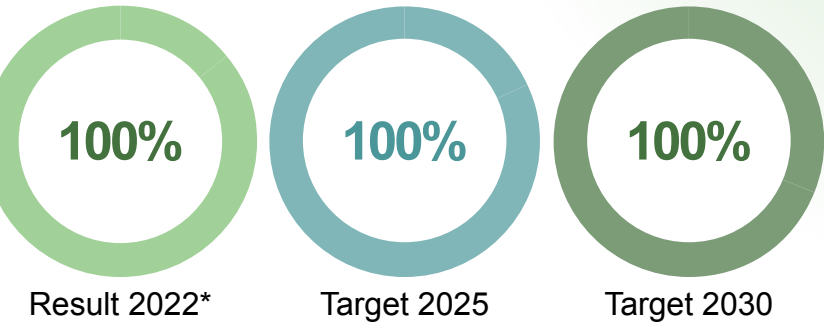
We keep the practice of a EHS Monthly call involving all EHS teams around the globe, with topics of interest, recognitions, lessons learnings, sharing of best practices, and the path forward.

**The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.*

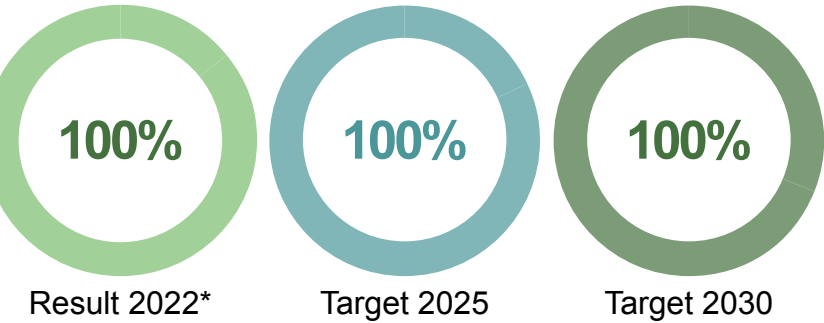


Safety

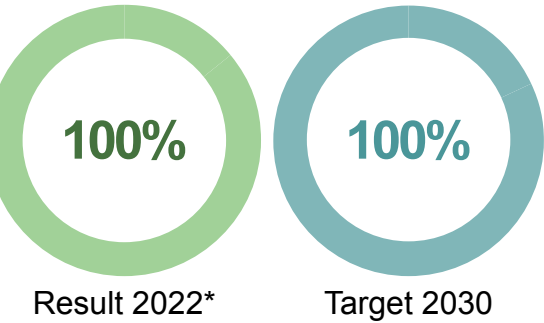
Reduce the accident rate (TRIR) to **<0.4 per 200,000 work hours** by 2025 and **<0.3** by 2030



Reduce the lost time injury rate (LTIR) to **<0.2 per 200,000 work hours** by 2025 and **<0.15** by 2030



Reduce process safety events (PSE rate) in TIER 1 to **<0.1 per 200,000 work hours** by 2030.



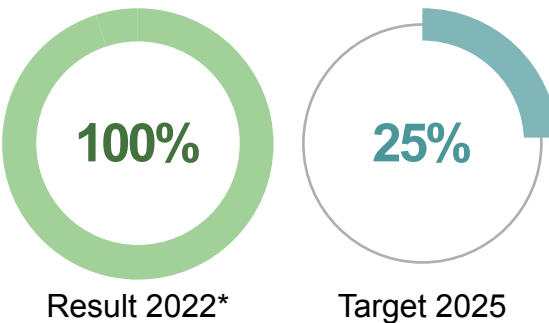
Governance

\$30million

investment in ESG Ventures by 2030.

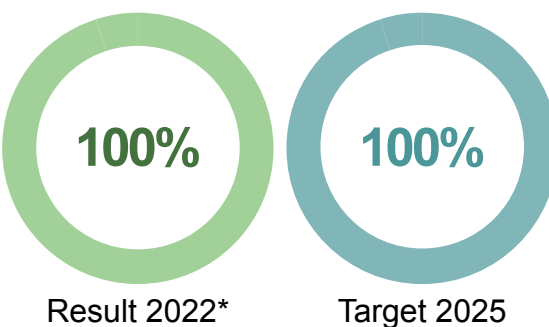
Under construction**		
Result 2022*	Target 2025	Target 2030

Have a homogeneous and consistent Ethics Program in all regions of operation by 2025.



80%

of employees complete the IVL Corporate Governance Manual training every two years by 2030.



Júlio Cesar e Gaspar Moreira

**The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.*

***In 2022, structuring activities were conducted (such as the definition of the investment pipeline and the development of a new ethics program) so that the targets can be measured in the coming years.*

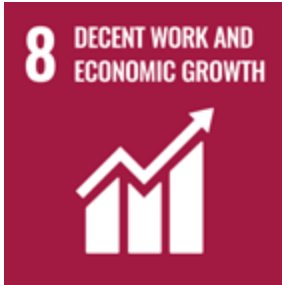


We reimagine chemistry together to create a better world



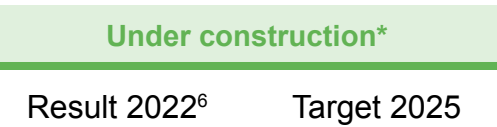
Innovative and sustainable products

Product portfolio



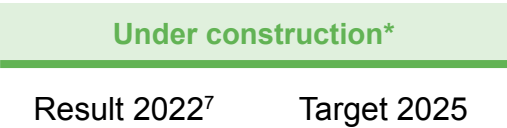
15%

revenue from sustainable products by 2025*



50%

of new products launched from 2025 and beyond classified as sustainable*



**Use the PSA (Portfolio Sustainability Assessment) and LCA (Life Cycle Assessment) methodologies as official tools to measure the sustainability performance of products.*

Completed the last PSA evaluation cycle as Oxiteno: 115 products in application for HPC and 74 products in Phase 3 of the development pipeline, considering Energy & Resources, HPC, CROP, Oil&Gas, and Coatings.

⁶The 2022 results are compared with the internally defined checkpoint for this period, not the expected 2025 or 2030 targets.

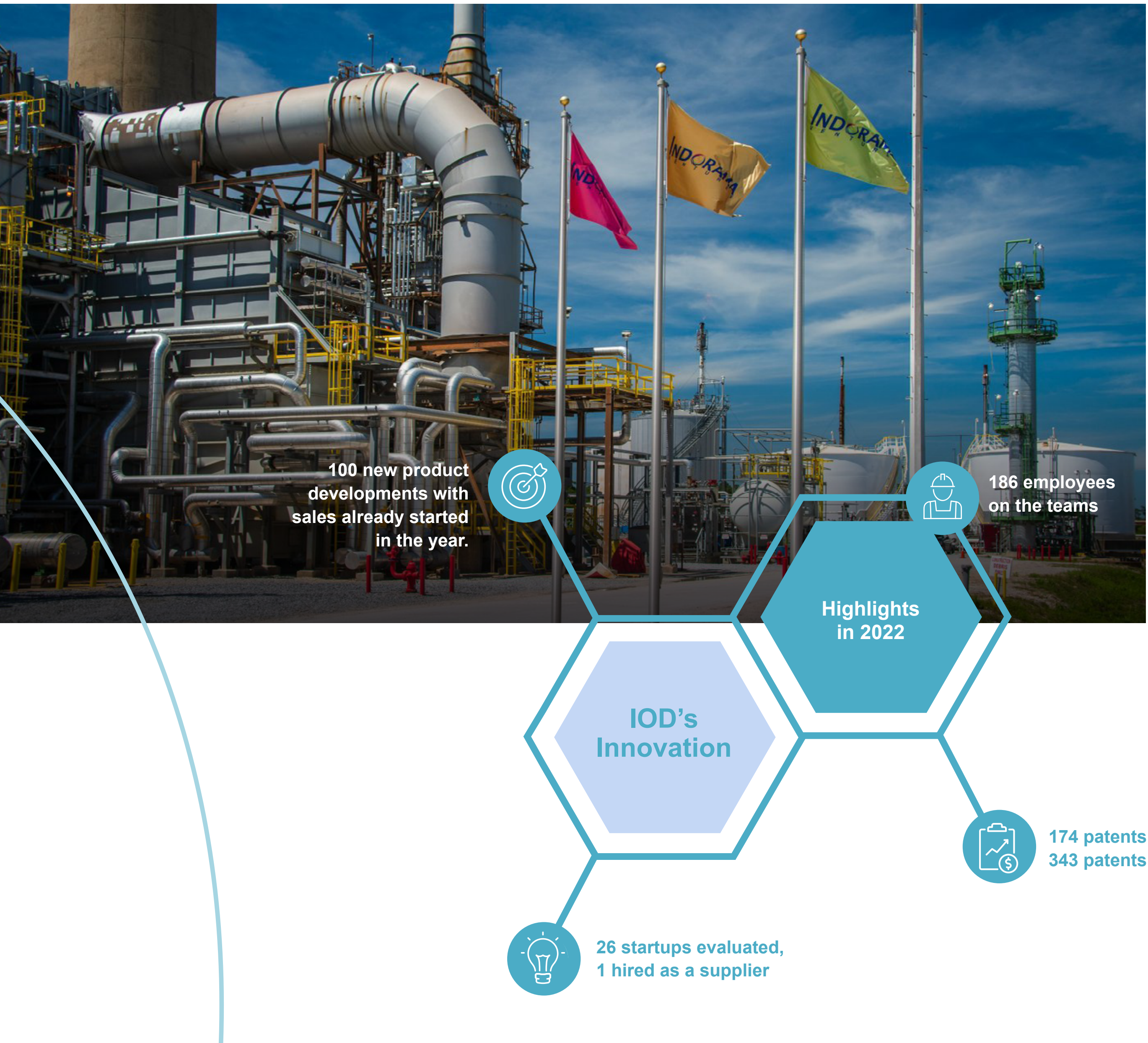
⁷In 2022, work was carried out to improve the methodology and classification of products. Once the methodology and classification are defined, it will be possible to measure the achievement of the targets.

PSA methodology update on WBCSD's exclusive new guide for the chemicals industry.

In 2022, more than 72 product life cycle assessments were carried out internally, 58 of which focused on the carbon footprint, all at the request of customers.

Finalized the adjustments to the methodology, which will now be in accordance with the World Business Council for Sustainable Development - WBCSD guideline for the chemicals sector and will also bring the rating metrics closer to those practiced by the market.





Innovability is the future

Innovation and sustainability go hand in hand in our strategy and business vision. That's why we work in partnership across the value chain, from suppliers to consumers, to develop more sustainable products and services. And now, IOD and Oxiteno, which already had innovation at the core of their individual activities, are traveling this path together. Innovability (Innovation + Sustainability) is the only pathway for the future.

We manufacture and supply surfactant and chemical specialties solutions for our customers, who use our products in their final consumer formulations. We purchase raw materials from various suppliers and manufacture our own surfactants to serve the main end markets where we operate, such as crop protection, home and personal care, paints and coatings, refineries, fuels, lubricants, and textiles.

We work with industry leaders in most of these markets, and our customers use our products to formulate their end products, which perform important functions such as dispersing, wetting and emulsifying, among many others.

Our Innovation area is shared between Brazil, the United States, Mexico, India, China, Australia and Belgium. Between 2021 and 2022 alone, IOD opened three new laboratories and R&D centers in The Woodlands (USA), Mumbai (India), and Shanghai (China). Equipped with the most advanced systems and instruments to move research forward, the new units will be critical in the development of new products, applications, and customer support. In 2022, we invested alongside the Global R&D Centers located in Brazil (Sao Paulo) and the United States (Mississippi) and three Research & Development Laboratories in Mexico (Guadalajara), Belgium (Brussels), and China (Shanghai), IOD's Innovation structure is ready to research new products, propose new solutions, support the establishment development programs guided by the society needs to create a better world.



Begona Besada

In **2022**

IOD had six more patent grants than expected.

For **2023**

IOD expects about 17 more grants.



Horacio Diaz

Inova Talentos

IOD has an area dedicated to discovering opportunities for improvement from new knowledge, creative ideas, or solutions. The goal is to generate value for the business, clients, suppliers, employees, and society through increasingly sustainable products and processes.

With Inova Talent Program, created by the well-known Brazilian institutions Euvaldo Lodi Institute (IEL) and National Council for Scientific and Technological Development (CNPq) in 2013, we could bring together companies in research, development, and innovation with recent graduates of the academy. The participants

are young talents who find a professional opportunity with scholarships in innovation lasting up to two years, funded by the program. In 2022, at IOD, we started 15 new projects in the areas of R&D (Coatings, Process and Technology Development, Performance Products, Oil & Gas), Regulatory Affairs, Innovation Management Office, and Advanced Research Platform. During the year, we had 28 active researchers conducted full-time innovation research. From its implementation at Oxiteno in 2016 until December 2022, 39 researchers participated in the program, 11 of which were hired.

New innovation centers

In 2022, we opened two new technology and innovation centers. In September, IOD's APAC (India and Asia) region opened a sales office and an R&D laboratory in Shanghai, China. In November, The Woodlands, Texas, USA, opened the Indorama Ventures Technology Center (IVTC).

IVTC works to expand research and development in surfactants and specialty chemicals and was one of the great achievements of the innovation area last year. In addition to IOD, the center will also support IVL's Fibers and PET segments.

In parallel with the R&D center in Mumbai, which opened in 2021, the new space in China represents an important step in the company's expansion into the Asian market through the development of specialty products in the personal care, cleaning, agrochemicals, energy, lubricants, and coatings segments.



Vivek Tembhre

IOD R&D Centers & Application Labs

Country	Location	Employees
Brazil	Mauá (Sao Paulo)	114
USA	The Woodlands (Texas)	40
Mexico	Guadalajara/(Jalisco)	11
India	Mumbai (Maharashtra)	8
Australia	Melbourne (Victoria)	7
USA	Hattiesburg (Mississippi)	5
Belgium	Brussels (Brussels-Capital Region)	3
China	Shanghai (Jiangsu Province)	2

New challenges, new markets

One of IOD's strongest ambitions in 2023 is to continue investing in innovation, looking for ways to improve our partnerships with start-ups or other companies in search of high value-added solutions that are increasingly specialized and developed to solve the needs of our consumer markets and of the planet.

Among the most important projects for next year is the construction of a solvent factory for lithium batteries at an IOD plant in the United States. The idea is that this new unit, which will be developed in partnership with a company yet to be chosen, will supply the industry for this type of battery in North America, driven by the significant growth in the development of electric vehicles (EV) in this region.

This new plant will produce ethylene carbonate and its chemical derivatives, which are essential components in the electrolyte solutions used in lithium batteries. The main raw materials, purified ethylene oxide and carbon dioxide, will be supplied by IOD, which is part of the company's strategy to increase exposure to end markets, technologies, and the range of the specialty portfolio, which will increase opportunities for IOD in end-market applications.

Innovation case studies

Social Innovation and Entrepreneurship Challenge

Launched in early 2022, the **Challenge** invited companies, universities, associations, research institutes, and startups to propose innovative solutions that minimize the Social and environmental faced by communities near the company's operation and **support local development with sustainable, creative, and efficient projects.**

We established two requirements for the Challenge. One is that participants develop solutions to meet one or more of the four priority causes defined: **Combating hunger and poverty, Education, Entrepreneurship, or Income generation.** The second, and very important, requirements was that the project prove its ability to be financially sustainable.

Several actors from the external ecosystem responded to the first Social Innovation and Entrepreneurship Challenge. A total of 33 projects were registered: 10 were selected for the second phase, and two finalists went to Pitch Day with the heads of Innovation, Sustainability, Supplies, and Process Technology.

The winner of the first edition was the startup Toca, which won (USD 19K) and will be monitored by our Innovation and Sustainability team for 12 months to implement the pilot project: Renova Mamona.

To learn more about the project, see the Suppliers section.

ULTRASOLVE® H line

We developed Ultrasolve® H for application in Flexographic Printing Inks, approved by several customers in Brazil, Peru, Colombia, Mexico, Argentina, South Africa, India, and Australia. Ultrasolve® H offers high efficiency as a solvent retardant during application in printing inks where less solvent is required compared to traditional solvent retardants. It is a solvent with low toxicity and low odor, and it promotes low retention in the application in flexible plastic packaging. It is also in accordance with the main regulations of the food packaging market. In 2022, sales revenues for printing inks were USD 1.75 M, with a total volume of 642 tons.





**We
act
responsibly
and ethically**

Our purpose of reimagining chemistry together to create a better world is applied in all areas of our company, including in our way of dealing with our stakeholders. Values such as Ethics, Development, and Commitment are part of our 2030 Sustainability Strategy and are an integral part of our Future Ready Organization pillar in the Sustainability Strategy. We work within a solid framework and adopt the best practices in the global market, guided by ethics and transparency.

**Michael Franiatte, Martina Piponkova,
Natalija Horvat, Dragana Ivanovic**



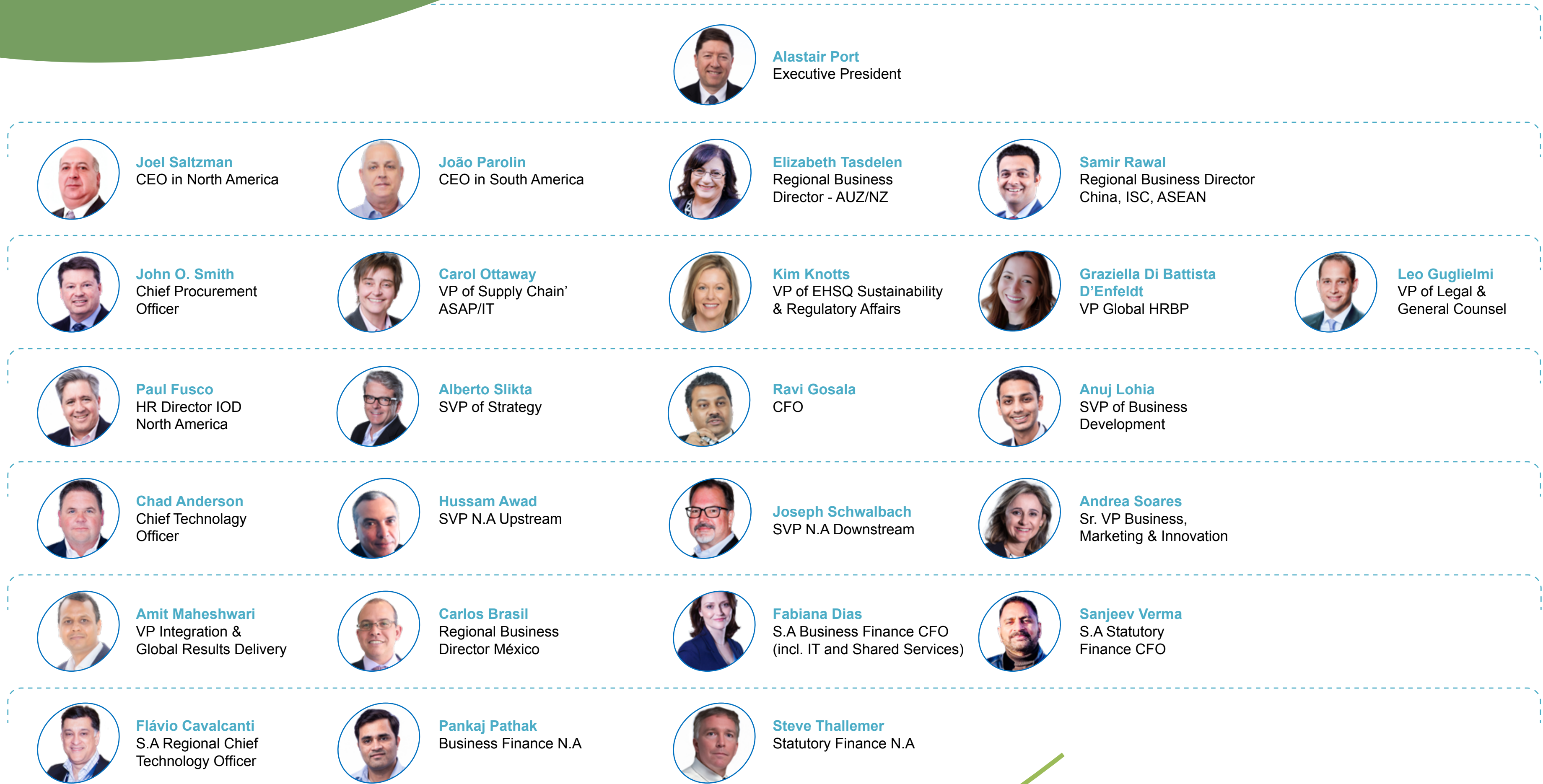
We act responsibly and ethically

Governance structure

IOD has an organizational structure divided into five regions (North America, South America, Oceania, Europe, and Asia) with the support of regional CEOs, who report directly to the company's Executive President.

Organizational Structure

Continuous strengthening of IOD's diverse and fully empowered management team supported by central enabling functions



IVL enabling functions

Corporate Communications

Business Continuity

Sustainability

EHS

IVEX

Digital



Click here to learn more about the governance structure of IVL

Ethics and Compliance

2-5, 3-3

The ethical and integral way in which we operate and deal with all our stakeholders is directly related to sustainability. Among the many cooperative efforts carried out in 2022, IOD and Oxiteno took some important steps in terms of compliance. Two committees were created, one for South America and the other for North America, Australia and India, that act as sponsors to the Compliance Program and are responsible for the validation of the disciplinary measures suggested by the Compliance Team.

Each committee is made up of the region's CEO, the most senior representative from the HR division, the Vice President Legal and General Counsel for IOD. These policies are in the implementation and maturation phase, and the objective for 2023 is to extend the program across IOD and make it even more robust and comprehensive.

As part of our 2030 Sustainability Strategy, we are committed to creating a seamless and consistent ethics program that can be implemented in every region where we operate by 2025. Another target is to have 80% of employees complete the IVL Corporate Governance Manual training every two years by 2030. In 2022, there were no confirmed cases of corruption in our operations.

205-3

Communication and training about anti-corruption policies and procedures

2022			
Communication	%	Communicated people	Total people
Employees (total)	81	1,666	2,064
Training	%	Communicated people	Total people
Employees (total)	78	1,603	2,064

205-2, 2-7

Only Oxiteno legacy employees were considered.

Operations assessed for risks related to corruption

The company focused on online (OxiEducation) and in-person training; distributed materials related to the topic, such as the Corporate Governance Manual; and maintained the Ethics Channel for receiving reports of possible misconduct.

205-1	2022
Total operations of the organization ⁸	17
Number of operations assessed for risks related to corruption.	16
% of operation	94%
Total number of incidents of discrimination and corrective actions taken	0
Number of incidents of discrimination and corrective actions taken regarding employees	0
Number of incidents of discrimination and corrective actions taken to all excluding employee	0
406-1	0
Incidents of violations involving rights of indigenous people	0
411-1	

⁸We consider Camaçari as only 1 unit (Camaçari + OLC and Emca) for Ethics and Compliance.

Bhavna Rank

Ethics Channel and Conduct*

2-26

Available to all our stakeholders, the channel receives all types of reports for suspected violations to the IVL's Corporate Governance Manual and other internal norms, as well as laws and regulations related to the organization's activities and business.

The channel can be accessed via the QR code and is also available to third-party workers.



Click here

Reports can also be made using the telephone numbers below:

Brazil: 0800 300 4513
U.S.: 1-800-250-8971
Mexico: 800-099-0215
Uruguay: 0004 1359 85732
Argentina: 0800-345-1357
Colombia: 01-800-5185271
Belgium: 0800 72 550
China: 10-800-130-1061
India and Australia: coming soon



Indorama also has an official whistleblower hotline in place which can be accessed at whistleblower.indoramaventures.com or by email to ethics@indorama.net.

* The whistleblower channel is being expanded to all IOD and should be done by the end of May 2023.

**We
seek**
results that
impact the future

Taise de Jesus

Economic performance

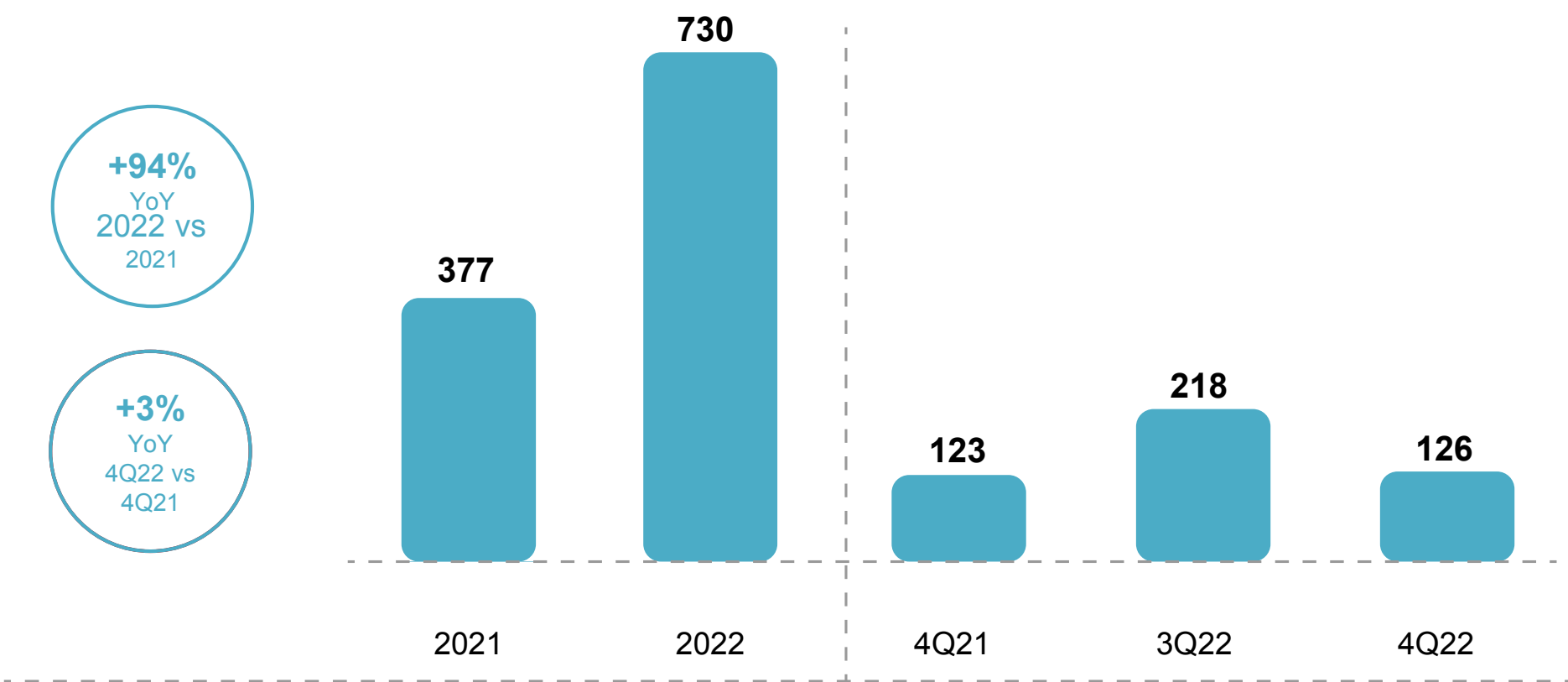
3-3

Despite all the challenges imposed by 2022, our financial results were impressive in all markets where we operate. Despite the impacts brought about by the pandemic, such as the breakdown of global supply chains, and the high energy costs caused by the conflict in Ukraine, we were able to maintain our investment in innovation and focus our efforts on creating the future. The merger of the IOD and Oxiteno teams proceeded smoothly in all regions, representing a new horizon for IVL, and expanding its portfolio of specialty products and geographic operations.

201-1

2022 & 4Q 2022 Results – Integrated Oxides and Derivatives

Integrated Oxide & Derivatives Core EBITDA (\$M)¹



Note: (1) Core EBITDA excludes IVOL performance till end of 2021; (2) ROCE is calculated based on net operating capital employed (NOCE) and annualized core EBIT, for this purpose, only 2021, IVOL EBIT values and capital employed are moved to extraordinary items; (3) Int. Downstream includes surfactants, PO/PG, EOA/LAB, Purified EO, Ethylene and others; (4) Int. Intermediates includes EG, MTBE and Ethylene
Source: IVL Analysis

South America

In addition to consolidating the acquisition of Oxiteno, in 2022 we entered into an agreement in the area of bio surfactants, which should begin commercialization in 2023. For this year, the launch and commercialization of products based on green ethylene is also planned in partnership with the Brazilian company Braskem. Another important point in the search for more sustainable processes is a study on the implementation of steam generation systems using electricity.

In the Human Resources area, the work-from-home policy was implemented as a definitive policy after the success experienced during the pandemic. Under the current system, employees have the opportunity to work in a hybrid format. A new location for the headquarters in Sao Paulo is also being studied as part of our efforts to invest in the well-being of our employees.

The company has been working hard to strengthen its commitment to diversity with the signing of a commitment to increase the presence of women in management positions, one of the fundamental points of the 2030 Sustainability Strategy.

North America

The year 2022 in North America started off with the consolidation of the acquisition of Oxiteno, the main strategic objective for the year. During the first ten months, processes, teams, and systems were determined, making it possible to put into practice the previously identified strategies in the creation of specific business tactics to extract the value of merging the two companies. As a leader in the production of ethylene oxide and ethoxylates in South America, Oxiteno did not yet have a large footprint in the United States, a region where IOD already had an established position. In this way, the two companies became even stronger together.

Thus, the addition of Oxiteno's plants in Mexico and the U.S. to IOD represented a significant advantage for the supply of raw materials in the region. Likewise, we will be able to extend our presence in Mexico, which will make us even more competitive in that market. The Oxiteno plant in Pasadena, Texas, will be instrumental in accelerating our surfactant growth plans in the United States.



Alicia Lopez

Aside from the merger, the results were significant in the region. Even with the expected inflation and the continued effects of the conflict in Ukraine, the company intends to continue investing in innovation to repeat these marks in 2023. Proof of this was the opening of the new R&D center in The Woodlands, where IOD's head office is located. With an investment of USD 18 million, the new facilities will be instrumental in expanding research and development into surfactants and specialty chemicals, as well as supporting IVL's Fibers and PET segments.

Another highlight is the manufacturing of solvents for lithium-ion batteries at one of IOD's existing plants in the United States, which is one of the company's major projects for 2023 and for the coming years, and around which we have placed the highest expectations.



Prashant Pathak

India

APAC is a high-growth region that consumes nearly 40% of the world's surfactants. Despite our still small presence, with only one plant in India, the results for 2022 were very good, with the plant operating during 100% of the year.

This year, we also completed the necessary procedures and received the permits to make our new laboratory in Mumbai fully operational. We are now able to offer innovation and support not only to customers in India, but also to customers in Pakistan and Bangladesh on the Indian subcontinent, as well as those in Southeast Asia. We also opened a new R&D lab in China, which is up and running to serve customers in Japan, Korea, Taiwan, and China and will be a key platform for innovation in the region.

Another important point for the operation was the integration with the new professionals and processes that came from Oxiteno. Sharing and alignment between the teams were and will continue to be key for expanding the production and development of surfactants in all regions where IOD operates.

Other important sustainability gains were receiving a permit from the local pollution board, allowing us to expand our capacity by 45,000 tons; receiving an energy conservation recognition from the government of India; and the team's excellent work identifying projects that reduced our carbon footprint. We also developed a recycling project, whose target was set at US\$ 3 million, and we reached US\$ 4 million in savings in the region.

Australia

2022 was a very challenging and exciting year for the Australian operation. Even with the high energy costs that impacted the country due to the conflict in Ukraine, we reached our financial goal. The energy issue imposed some challenges on us, such as carrying out studies on the use of steam in our boilers, something that we are taking very seriously for 2023 and for the future.

In terms of safety performance, we had no injuries at our plant, which was considered an important achievement. We were coming off an exemplary track record that unfortunately was broken in 2021, and resuming this level of safety means a lot for our operation.

When we talk about innovation, the team in Australia developed around nine new products in partnership with some of our customers. We also support many of them in the development of their specific innovations, prices and terms, efficiency, and water savings in an effort to put our entire value chain on the same level when it comes to sustainability.

Regarding regulatory changes that are taking place in Australia and New Zealand, the exchange of expertise with the Oxiteno team was decisive for us to reach crucial targets. We also talked about the life cycle assessment of our products in order to address the many concerns customers have about this topic. The results of all these synergies had excellent effects on our day-to-day activities.

In 2023, we want to reach our targets for the year regarding results and sustainability, but we also want to go beyond. We are working together with our key customers and partners on new solutions that cater to our people and our community.





Ordilei Fidelis

Ensuring product safety communication from development to commercialization

All company products have a Safety Product Safety (SDS) available to employees, contractors and customers. SDS is a corporate document that contains safety information about each product and it is based on product composition, physicochemical properties, toxicological tests and ecological studies. SDS is communicating all physical, health, and environmental hazards related to a specific product allowing definition of protective measures and safety precautions for handling, storing, and transporting the chemical. Committed with safer products the company is authoring this document since the product development and is reviewing it in a periodic way to reflect the most updated information available to our employees, partners and customers.



Our target for 2025 is to have at least 15% of our revenue come from sustainable products and 50% of products launched from 2025 and beyond to be classified as sustainable.

Our chemistry touches billions of lives everyday

Home Care, I&I and Personal Care

Our broad portfolio of multi-functional solutions aim to enhance your home, personal care and cleaning formulations.



Coatings

Our pigment and universal dispersion technologies can enhance various water-borne, solvent-borne, and UV-curable systems to create high performance coatings & inks.



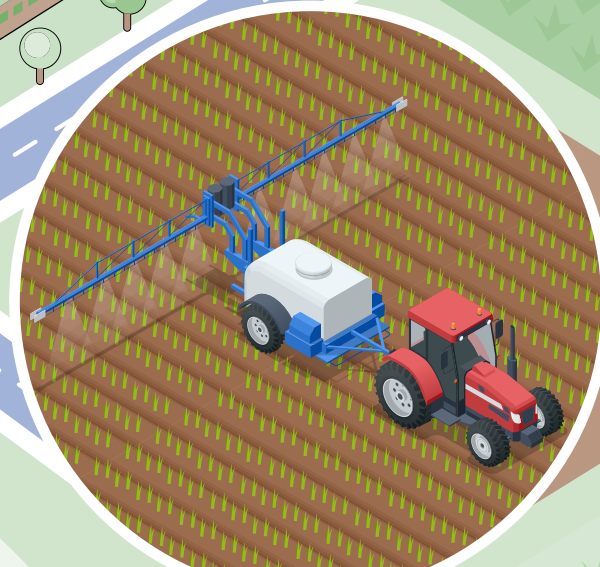
Energy & Resources

Our products are used in a variety of applications throughout the oil production industry — from production chemicals, such as corrosion inhibitors, demulsifiers and paraffin dispersants; to drilling additives; and repair systems for cementing failures.



Performance Products

Portfolio of products that serve different markets through functionalities, like solubilizers, detergents, emulsifiers / demulsifiers, wetting agents, foam / antifoam agents, dispersants and solvents.



Crop Solutions

We supply additives for use in major agrochemical market segments including crop protection products, animal health, home and garden, professional, and tank mix adjuvants.

We seek results that impact the future

Chemistry for a better world

Crop Solutions

We work in a systemic way to integrate chemistry, biology, and agronomy for the development of unique and complete solutions that will lead the pathway towards the agriculture of tomorrow, bringing the best of the Crop Protection tools and maximizing its efficacy on the field helping growers to grow more with less resources. Investing on promising and innovative technologies that will support growers to produce more and better.

What we produce:

Solvents, dispersants, emulsifiers, wetting agents, surfactants and tank mix adjuvants.



Crop Protection

Innovative solutions for all types of crop protection formulations; complete and versatile portfolio of formulation aids; high performance technologies for high-loaded and combo formulations



Tank Mix Adjuvants

Complete portfolio of technologies for oil-based adjuvants, wetting agents, drift control and tank mix compatibility



Crop Enhancement

Components for liquid and solid fertilizers; adjuvants and solutions for irrigation water management; solutions that enhance the effectiveness of foliar fertilization



Biosolutions

Focus on understanding trends and market needs on this novel technology; additives and adjuvants for bio stimulants; formulants that improve bio-based products delivery

We seek results that impact the future

Chemistry for a better world

Home Care, I&I and Personal Care

At IOD, we continually seek innovative solutions to offer safe and sustainable products that benefit and protect the health and well-being of our consumers and the environment. With a broad portfolio, in-depth knowledge in formulations and close partnership with our customers, developing customized solutions that can enhance performance in cleaning and streamline resources in formulations. We produce an extensive line of anionic, non-ionic, and amphoteric surfactants that feature in virtually all categories of cleaning products. For the Personal Care segment, we produce from surfactants to rheological modifiers and emollients. These solutions enhance formulations, adding benefits such as greater stability, spreadability, and sustainability.

What we produce:

Anionic surfactants, non-ionic surfactants, amphoteric surfactants, rheological modifiers, emollients, conditioning agents, alkylpolyglucosides, alcohol ethoxylated and propoxylated, alkanolamides, amine oxides, betaines, castor oil ethoxylates, copolymers of ethylene oxide and propylene oxide, ethanolamides, fatty amine ethoxylates, glycerins, glyceril esters, glycol and glyceryl stearates, isethionates, linear alkylbenzene sulfonic acids, mineral oils, natural alcohol ethoxylates, nonylphenol ethoxylates, fatty alcohol and fatty acids, solvents, sorbitan esters, polysorbates, sulfates and ether sulfates sulfosuccinates, surfactant solutions, synthetic alcohol ethoxylates, polyethylene glycols.

We seek results that impact the future

Chemistry for a better world

Coatings

We develop solutions that cater to architectural, automotive, industrial, printing inks and adhesives markets. Our solutions yield products that have low toxicity, low odor, low content of volatile organic compounds (VOC) and are increasingly efficient with high performance.

What we produce:

Additives (surfactants that help both in the manufacturing process and in product performance), building blocks (alkoxylated polyalcohols and functional monomers used in various paint formulations and used to fine-tune coatings performance), coalescents (fundamental in the latex film formation), emulsifiers (solutions in surfactants for emulsion polymerization and resin emulsification added to increase their stability, making them stable and homogeneous), and solvents (pure molecules that are highly compatible with several polymers and that controls the evaporation rate of paints).

We seek results that impact the future

Chemistry for a better world

Energy & Resources

The substantial improvement in global living standards in recent decades has created an increasing demand for diverse, sustainable sources of energy. Used across major energy sectors, our broad range of products helps our customers meet this rising demand by maximizing safety, production, and efficiency while reducing emissions and costs.



Oilfield Technology

High-performance solutions for all stages from drilling to production in onshore and offshore operations, always looking for cleaner technologies with a focus on optimizing drilling productivity, better performance in well intervention operations, and protecting equipment used in the exploration and production of oil and gas.

What we produce: from drilling additives, such as lubricants and well-cleaning agents, stimulation additives with solutions for hydraulic fracturing flowback aids and non-emulsifiers, production optimization supplying demulsifiers and foamers, flow assurance & asset integrity that offer paraffin inhibitors, corrosion inhibitors, and others.

Gas Treating

Gas dehydration & gas treatment solvents remove undesirable compounds from refinery and natural gas streams to make their products safe for domestic or industrial use and to meet tough emissions requirements. Also known as gas conditioning, gas treating uses amine solutions to absorb unwanted acidic gases such as hydrogen sulfide and carbon dioxide.

What we produce: ethanolamines, H₂S scavengers, and others.

Mining

We develop products to improve mining efficiency which optimizes work in explosives & drilling, mineral processing, and water treatment.

What we produce: frothers used in mineral flotation, depressants, dispersants, coagulants, and others.

Fuels and Lubricants

Lubricating Oil Additives (LOAs) focus on LAB & derivatives for the additives market for auto vehicles, engine oil, compressor oil, hydraulic fluids, greases, metalworking, turbine, compressor, gear oil

What we produce: dispersants, detergents, antiwear/antioxidants/inhibitors, VII, and others.

We seek results that impact the future

Chemistry for a
better world

Performance Products

Depth technical knowledge in chemistry allows us to offer a comprehensive portfolio of products that serve different markets through functionalities, like solubilizers, detergents, emulsifiers / demulsifiers, wetting agents, foam / antifoam agents, dispersants and solvents.



The markets that
we serve are:

Industrial applications:
Construction, Leather,
Textile, Pulp & Paper, Plastics,
Biofenery, Metalworking

Nutrition & Health: Food,
Flavor & Fragrances,
Pharmaceuticals, Feed, Animal
Health

Functional Fluids: brake fluids,
coolants.

What we produce:
Alkoxlyates, esters &
derivatives, oleochemicals,
solvents, glycols,
ethanolamines,
mineral oils, coalescents,
brake fluids, PEGs.



**We
operate
with awareness
and respect**



Marcos Bonazini
e Bruno Veiga



Murillo Hortolan

We incorporate everyday sustainable and innovative initiatives into our approach to chemistry, managing our product portfolio and operations efficiently and reliably. Our decisions are based on pillars and targets outlined in our 2030 Sustainability Strategy Plan, ensuring that sustainability is present in all stages of the process.

We monitor topics such as the use of water, energy, waste treatment, effluents, and greenhouse gas emissions at all our units around the world. Data tracking is done using a dedicated ESG software accessible by all units to report their numbers directly.

We understand that climate change, waste, and lack of resources represent risks to these resources' availability, which can affect both the continuity of our operations and the lives and prosperity of our value chain.

Therefore, sustainable practices, reducing waste generation, and investing in innovative solutions promoting resource conservation and resilience are essential. By doing so, we can mitigate the risks posed by these challenges and ensure the continuity of our operations while promoting the well-being of our stakeholders.

Our teams monitor the risks related to extreme weather events such as storms, hurricanes, extreme temperature variations, water balance, and availability of energy. We assess each scenario and develop improvement and mitigation plans to deal with such risks.

Water efficiency and effluent treatment

3-3

Water is an essential element in our production process, and it is treated responsibly to minimize impacts on the environment. Our production process depends on water, whether in heating or cooling systems or in steam generation. We monitor the withdrawal and consumption of water in all our industrial units, and the environmental targets related to this are monitored on a monthly basis.



Water care

Our 2030 Sustainability Strategy establishes that, by 2025,

100%

of the industrial plants located in water-stressed areas (RCP 8.5) classified as extremely high will have an advanced water management plant, and that there will be a 10% reduction in water withdrawal intensity. By 2030, the plants in water-stressed areas classified as high and medium-high will also have an advanced water management plan, and withdrawal is to be reduced by 30%.

	2020		2021		2022		
Water withdrawal (thousand liters)	Fresh water	Other types of water	Fresh water	Other types of water	Fresh water	Other types of water	Total
Total water withdrawn by sources	24,951,609.5	0.0	27,256,669.1	0.0	32,807,400.5	0.0	32,807,400.5
Surface water (includes rainwater)	20,003,877.2	-	22,805,021.7	-	23,082,522.0	-	23,082,522.0
Subterranean water	4,734,348.3	-	4,227,593.5	-	6,013,519.1	-	6,013,519.1
Sea water	-	-	-	-	-	-	0.0
Produced water	-	-	-	-	-	-	0.0
Third party water	213,384.1	-	224,053.8	-	3,711,359.4	-	3,711,359.4
Collection in areas of water stress (Note: the reported volumes are part of the total collection)	16,719,167.6	0.0	19,785,148.0	0.0	21,304,963.4	0.0	21,304,963.4
Surface water (includes rainwater)	16,681,541.6	-	19,749,692.0	-	20,649,790.1	-	20,649,790.1
Subterranean water	-	-	-	-	44,539.0	-	44,539.0
Sea water	-	-	-	-	-	-	0.0
Produced water	-	-	-	-	-	-	0.0
Third party water	37,626.0	-	35,456.0	-	610,634.3	-	610,634.3

303-3

Water discharge

All IOD units are located in areas where the relevant authorities have established standards for water discharge, whether through legislation or operating permits for the units. To ensure compliance with these standards, all water discharge parameters are measured and monitored, and internal performance indicators related to this topic are established to assist in management.

The effluents generated in the chemical process are monitored for volume and discharge standards to ensure compliance with the applicable legislation. The reports with these data are sent to the environmental agencies in a monthly basis.

The units treat all their effluents and dispose of them in accordance with the standards required by law. They also have a permit for disposal of fresh water. As for the units located in industrial complexes where treatment is outsourced, the contracts are established according to production feasibility and in accordance with environmental standards.

It is worth noting that water discharge intensity was reduced from 5.57m³/ton of production to 3.74m³/ton, mainly due to the acquisition of Oxiteno and the projects implemented in IOD units to reduce water consumption intensity.



Angela Lewis

Innovation technology of a sanitization process with lower water

In Brazil, some products are micro-susceptible and need a process of the bulk road transport sanitization to guarantee all the specifications of the product to the client. During 2021, we developed a new technology that avoids using 90% of water to sanitize those vehicles and, in 2022, about 30% of the road transport operations were carried by bulk vehicles that were sanitized by this new technology. More than 1.222 tons of water were saved in this project, and more sanitizers are being homologated in 2023 to increase this technology to more clients.

Water discharge (thousand liters)	2020		2021		2022*		Total
	Fresh water	Other types of water	Fresh water	Other types of water	Fresh water	Other types of water	
Total water discharge	14,995,645.6	7,160.2	14,971,289.8	8,678.3	16,478,467.5	49,830.2	16,528,297.7
Surface water	13,922,033.9	-	13,924,415.1	-	14,168,542.3	-	14,168,542.3
Subterranean water	-	-	-	-	-	-	0.0
Sea water	-	-	-	-	-	-	0.0
Third party water	1,073,611.7	7,160.2	1,046,874.7	8,678.3	2,309,925.1	49,830.2	2,359,755.3
Discharge of in water stress zones (Note: thereported volumes are part of the total catchment)	12,768,951.0	7,160.2	13,924,415.1	8,678.3	12,666,843.4	8,881.2	12,675,724.6
Surface water	12,768,951.0	-	13,924,415.1	-	12,658,900.0	-	12,658,990.0
Subterranean water	-	-	-	-	-	-	0.0
Sea water	-	-	-	-	-	-	0.0
Third party water	-	7,160.2	-	8,678.3	7,853.3	8,881.2	16,734.5

*Oxiteno data compiled as of April 2022.

Energy efficiency

3-3, 302-1, 302-2

Most of our units consume natural gas in the boilers and use residual gases from other production processes, hydrogen, and alcohol as sources for steam generation. Consumption is monitored and tracked monthly in all plants and focused on the optimization of consumption; a significant part of the investments accomplished by the company has as its objective the improvement in the process performance, emphasizing the steam mesh, boilers, and furnaces, besides searching the transition of the energetic matrix for cleaner sources, whenever possible.



Recognized Initiatives for Energy Conservation

Our facility in Ankleshwar, India, was one of the winners of the latest National Energy Conservation Awards in 2022. Organized by the Ministry of Energy, this recognition was presented at a ceremony in December, attended by the country’s president, Draupadi Murmu, among other officials. The plant ranked third for its initiatives such as the replacement of conventional fans used in the cooling tower with high-efficiency ones, improvements in the boiler’s water heating system, and the installation of LED lighting throughout the plant, among others.



All IOD units follow the guidelines of the legislation in force in each region where they operate. Furthermore, all operations in Brazil and Mexico are ISO14001 certified, and the operations in the United States (except Lake Charles and Pasadena) are RC 14001 certified. Besides that, Clear Lake is 50001 certified.

Energy consumption (GJ)	2020	2021	2022
• Fuel oil		1,395.52	150,868
• Natural gas	26,939.30	14,574.00	29,694.46
• LPG			5,291
• Diesel	29,122	33,121	93,655
• Gasoline	9,873	10,220	12,975
• Other			558,787
• Fuel Mix	7,106.78	18,539.69	16,755.77
• Process Liquid Fuel			1,739.64
• Hydrogen	1,809.15	2,737.96	2,611.97
Bioethanol			28
• Direct energy sold	731,797	783,039	987,965
Total Indirect energy consumption (electricity, cooling, steam purchased from outside of IVL group)	3,101.86	2,599.76	5,975.00
Electricity purchased from conventional sources (e.g. natural gas, coal, nuclear, heating oil)	717,453	602,130	1,491.75
Purchased steam	2,384.41	1,997.63	4,483.25
Total direct electricity sold	403,182	492,366	647,579
Total steam sold	328,615	290,673	340,386
Total energy consumption	38,264.29	39,107.22	56,610.47

In 2022, there was the acquisition of Oxiteno, which added 12 industrial units to IDO. Overall, there was a decrease in production of IOD due to market demand, with less charge, plants tend to work with lower energy efficiency. Besides, through the year, MEG production decreased considerably, which decreases absolut emissions, but increases emissions intensity. Also, in 2022, the IVOL (Lake Charles) unit came back into operation after 2 years of intermitent operation.

302-1

Emissions



3-3

We have set a target to reduce our Scope 1 and 2 emissions of GHG by 12% by 2025 and by 30% by 2030. Similarly, we are committed to building an action plan to reduce absolute Scope 3 greenhouse gas emissions, in partnership with strategic suppliers, by 2025.

Absolute emissions have increased in 2022 due to Oxiteno's acquisition. In intensity, Scope 1 emissions were 0.90 tCO₂ eq/ton of production in 2020 and in 2022 this number has decreased to 0.81, mainly because of Oxiteno's lower GHG intensity and part of its emissions being placed in Scope 2, through the purchase of steam.

In order to reduce the emissions in the production of ethylene oxide, part of the gases produced are sold and used as raw materials in other production processes in operation such as Camaçari and Mauá. The Botany unit, from legacy IOD has historically sold part of its CO₂ produced by the Ethylene Oxide (EO) reaction, in 2022 the quantity sold corresponded to about 43% of the CO₂ produced. Port Neches our biggest EO production unit is now developing a project to capture the CO₂ produced, the destination is still under discussion, but there are discussions with beverage companies and with companies that can convert this CO₂ into new chemicals.

Direct (Scope 1) GHG emissions

GHG emissions (tCO ₂ e)	2020	2021	2022	Gases included in the calculation
Direct emissions (Scope 1)	2,729,632.04	2,762,445.02	3,253,757.59	CO ₂ , CH ₄ , N ₂ O
Biogenic CO ₂ emissions	-	-	2.25	CO ₂

305-1

Energy indirect (Scope 2) GHG emissions

GHG emissions (tCO ₂ e)	2020	2021	2022	Gases included in the calculation
Indirect emissions (Scope 2) resulting from the purchase of energy	468,509.03	385,140.73	420,631.18	CO ₂ , NH ₄ , N ₂ O
If applicable, inform the calculation base year	-	-	-	-
Justification for choosing the base year, emissions in that year significant changes that justified the restatement of emissions data for that year	-	-	-	-
Inform how the emissions data were consolidated (by shareholding, financial control or operational control)	-	-	Operational control	-

305-2

GHG emissions intensity

Intensity of GHG emissions	Unit	2020	2021	2022
Direct emissions (Scope 1)	tCO ₂ e	2,729,632.04	2,762,445.02	3,253,757.59
Denominator	tons	3,017,563.83	3,190,511.31	4,003,299.63
GHG intensity	tCO ₂ e/tons	0.90	0.87	0.81
Indirect emissions (Scope 2) resulting from the purchase of energy	tCO ₂ e	468,509.03	385,140.73	420,631.18
Denominator	tons	3,017,563.83	3,190,511.31	4,003,299.63
GHG intensity	tCO ₂ e/tons	0.16	0.12	0.11
Direct emissions (Scope 1) + Indirect emissions (Scope 2) resulting from the purchase of energy	tCO ₂ e	3,198,141.07	3,147,585.75	3,674,388.77
Denominator	tons	3,017,563.83	3,190,511.31	4,003,299.63
GHG intensity	tCO ₂ e/tons	1.06	0.99	0.92

305-4

Gases included in the calculation: CO₂, CH₄, N₂O



Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions

	2020	2021	2022*
NOx	579.4	719.0	1,365.6
SOx	6.9	5.9	103.0
Volatile Organic Compounds (VOC)	1,269.5	237.0	1,306.5
CH ₄	-	-	752.0
Particulate Matter (PM)	145.0	92.4	111.5

305-7

*Oxiteno data compiled as of April 2022.

Waste Management



3-3, 306-3, 306-4, 306-5

At IOD, the waste from all industrial units is monitored and is part of the environmental performance indicators, which are analyzed on a quarterly basis. Waste generation is avoided whenever possible, although this is not always feasible given the nature of the business. Waste indicators are monitored every quarter, and the company is continually seeking to identify opportunities to improve processes.

Waste is stored at appropriate sites and undergoes characterization (when necessary) and classification processes for proper destination. IOD conducts training and maintenance audits of service providers responsible for final destination, always with the authorization of the relevant environmental agency.

We have several initiatives in place to avoid waste generation, in the following order of priority: 1. non-generation; 2. reduction; 3. reuse; 4. waste treatment; 5. final destination, aiming to reduce waste treatment costs, increase eco-efficiency rates, and prevent environmental liabilities.

The company promotes recycling of and energy recovery from waste (co-processing), using incineration as an alternative or, as a last resort, disposing of it in qualified industrial landfills.

Our target is to reduce waste generation intensity by 10% by 2030 and divert 90% of waste from landfills by 2030. To achieve this target, we have conducted workshops with industrial units to identify possible waste reduction and circular economy opportunities. In 2022, a project with the capacity to reduce waste generation by approximately 400 tons was implemented, adding value to a byproduct that was previously disposed of as waste.

In 2022, we had an increase of 20.8% in the production of hazardous waste, and of 38.2% of non-hazardous waste. This increase is due to the acquisition of Oxiteno by IOD. The acquisition also increased waste intensity (total waste/production), since Oxiteno manufactures more specialty chemicals that are produced in smaller batches (more packaging) and require stricter specifications (filtering, off-spec products), while IOD-legacy has greater mass production.

For 2023 the company will again take part in the Young SDG Innovators program, with a project theme: Recycling of construction materials at the Mauá operating unit.

Waste management (t)

		2020	2021	2022*
HAZARDOUS WASTE	Waste generated	54,248	67,168	81,194
	Waste diverted from disposal	404	71	592
	Preparation for reuse	-	-	-
	Recycling	404	71	592
	Other recovery operations	-	-	-
	Waste directed to disposal	53,844	67,097	80,664
	Incineration (with energy recovery)	50,549	66,353	78,455
	Incineration (without energy recovery)	1,485	295	276
	Landfills	81	84	305
Other disposal operations ⁽¹⁾	1,730	364	1,594	
NON-HAZARDOUS WASTE	Waste generated	27,260	21,369	29,533
	Waste diverted from disposal	145	360	3,604
	Preparation for reuse	-	-	-
	Recycling	145	360	3,604
	Other recovery operations	-	-	-
	Waste directed to disposal	27,115	21,008	25,928
	Incineration (with energy recovery)	3	-	1,257
	Incineration (without energy recovery)	-	-	186
	Landfills	7,498	5,705	9,617
Other disposal operations ⁽²⁾	19,614	15,303	14,867	

¹Composting and biological treatment ²Composting and biological treatment; deep well injection

*Oxiteno data compiled as of April 2022.

We
value
relationships

Maíra Luísa Fidelis

IOD's chemistry is made up of people who contribute to building a more responsible and sustainable world together. We consider all our stakeholders – employees, communities, suppliers, and all others with whom we interact – to be an integral part of the unique formula we seek to create: a formula with more initiatives, partnerships, and positive impacts.

In 2022, our Internal Communication area played a vital role in the acquisition process of Oxiteno by Indorama Ventures and the integration of the companies, ensuring that this moment of change and uncertainty for employees happened as smoothly and transparently as possible. We launched the “Chemistry Connected” movement, reinforcing the synergies and shared values between IVL and Oxiteno, thus creating a bond between people and the new company.

Jessica Cruz
Mario Hurtado

We value relationships

The campaign's main objective was to clarify the combined companies, their biggest challenges, and their expectations for the future, in addition to assisting in integrating projects, teams, and processes. Several "Chemistry Connected" initiatives were implemented even before the conclusion of the sale, aiming to put everyone on the same page. Specific materials were produced to help the leadership position and present the new company that had just emerged. Employees were periodically updated on the progress of the process through announcements, broadcast lives with the board and Q&As on the subject.

An event broadcast live to all employees globally made the acquisition process official and celebrated. Then, roadshows were held at the industrial units, promoting an initial alignment between IVL executives and local leaders. Throughout the year, to guarantee our commitment to transparency, specific channels and projects were created to help integrate companies and teams, such as Connection Moment (a specific newscast on the subject), a fortnightly newsletter, a materials welcome message, as well as posts, marketing emails, and videos with the main updates.

Employees

Integrated Oxides and Derivatives believe a company's main asset is its people. Given this, we work to improve the employee experience, from the attraction process to the closing of a cycle, preserving respect and working to ensure equity and diversity – this is one of the pillars that underpin our strategic sustainability plan 2030.

Our projects are designed to involve the 3,798 employees spread throughout our operations, offices, and laboratories worldwide, creating a unique culture with our way of being and doing. 2022 was even more challenging because we incorporated Oxiteno into the group and established a series of actions to harmonize people management processes. This chapter will highlight activities and projects carried out in both companies and our challenge to have a single culture, a single IOD.

The first contact

We remodeled and updated our people attraction and recruitment processes, standardizing internal policies for all levels, ensuring quality and criteria for all areas and locations, focusing on more inclusive and accessible communication, and bringing more proximity and transparency throughout the selection process. We closed partnerships with specialists to ensure diversity in

the selection process. We started implementing a system that, in addition to automating the process, facilitates the governance of the selection process for all those involved. In 2022, women represented 85% of finalists in selection processes, ensuring the hiring of 60% of this public and, in line with the commitment to inclusion, 19% of the candidates were People with Disabilities.

Brazil results



Women
represent

50%

of the trainees
hired

Bianca Mishitokukado

Gateway Programs

In 2022, our internship program (implemented in Brazil and Mexico) became even more solid and connected to the mission of developing essential skills to prepare young talents, with three pillars: behavior, project development, and presentation, which address contemporary themes for career building, stimulating creativity, and giving tools for problem-solving, time management, and continuity of professional life.

We received 5,896 applications for the 2022 Intern Program, which had 33% of mixed race, 24% black, 2% yellow, and indigenous candidates – a historical record in the diversity of the candidates. There were 58 hirings and indirect investments of more than 200 thousand reais.

The trainee program is one of the most traditional in the market. Its focus is to enhance the acquisition of new knowledge and accelerate the development and careers of young talents for strategic positions in the organization through mentoring, training, and strategic projects developed through job rotation. We received over 4,000 applications, increasing our plurality in the selection process.

25.8%

mixed race

59.7%

white

9.4%

blacks

2.2%

yellow

0.07%

indigenous

0.6%

of People with
Disabilities

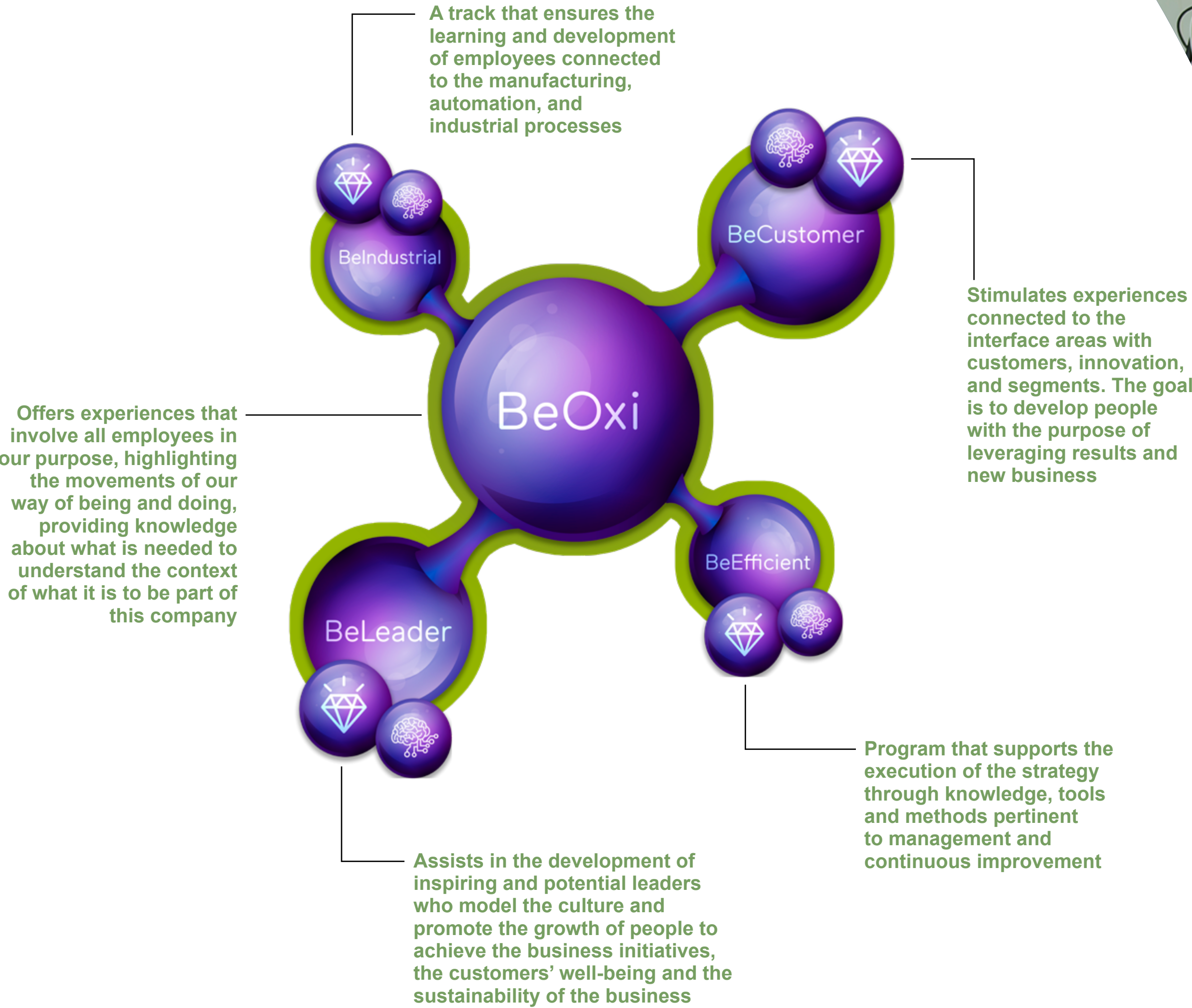
Verónica Cruz



Continuous Learning

In 2022, we continued with OxiEducation*, our concept of ensuring continuous learning and development of people, ensuring more than 69 thousand hours of training, and more than 80 thousand accesses to the platform. Our corporate university is divided into five learning centers – BeOxi, BeLeader, BeCustomer, BeIndustrial, and BeEfficient – with different tracks such as customer focus, innovation, and skills development.

Themes connected to our values, expected behaviors, and strategic challenges of the business were highlighted in the portfolio of courses and development tracks. The investments were approximately US\$ 1 million, diversified into technical, mandatory, behavioral, and leadership development pillars. The next steps will be expand the program for all IOD.



Welcome

Our concern with the candidate's experience continues beyond the selection process. The integration moment is essential to feel part of the company, welcomed, and adapted to a new culture and climate. For this reason, we take care of all the details: updating and standardizing institutional content such as the presentation, welcome kits, e-mails, and communications, check-in within 90 days, and a satisfaction survey to understand the new employee's perception of this moment.

In 2022, we obtained a Net Promoter Score⁹ of 92% (Oxiteno Brazil legacy), with emphasis on the content and facilitators of the integration, ensuring access to the necessary information for the first day.

*Online training platform available for Oxiteno legacy

⁹Tool that helps measure the level of employee satisfaction

Post-M&A Perception Survey

Promoting a healthy environment for people and teams to develop their work is a strategic indicator in the PEOPLE pillar. To ensure this follow-up, we conduct surveys that monitor the engagement of all employees and in 2022, with the acquisition process, we conducted a specific survey to assess the perception of employees about this new moment of the organization.

More than 1,100 respondents gave their perceptions about the pillars of well-being, development, rewards, culture, and leadership. A valuable tool for maintaining well-evaluated processes; and improvements in the opportunities indicated by our employees.

The care is throughout the employee's journey and in processes of closing the cycle, voluntarily or involuntarily, we apply the exit interview and, in some cases, we provide an outplacement service, which aims to support the employee in the process of professional outplacement.

Quality of Life

Indorama has the Employee Assistant Program, and IOD foresees its implementation in all of its regions. In Brazil, we have the Quality of Life Program to monitor, measure, and promote wellbeing. The program aimed at the individual and collective quality of life of our employees and is composed of five pillars of health:



Physical Health

Offer employees ways to analyze each area related to their physical health and show them how to monitor and improve each one, taking the body to maximum performance of its functionalities.



Emotional Health

Give employees greater attention and make them reflect on stress, anxiety, and depression to live a fuller life, knowing how to respect and understand their emotions.



Wellbeing

Offer employees the possibility of analyzing their health under a broader concept, reflecting on themes related to the quality of life, wellbeing, and the social context they live in.



Self-Development

Offer employees ways of facing personal development and wellbeing issues more clearly and objectively.



Relationship

Offer employees options to reflect on how to deal with emotions from human relations inside and outside the work environment.

The initiatives include a series of actions for employees on the importance of prevention and early diagnosis of disease:

Brazil

36 newsletters during the year on prevention and health guidelines

36% adherence to the gym benefit

79% adherence to the Vaccination Campaign

18 participations in the Pregnant Women Program

64 participations in the Nutritional Program

95 participations in the Emotional Health Program

648 appointments via Telemedicine

Argentina, Uruguay, and Colombia

Implementation of the IVL Employee Support Program

Brazil results

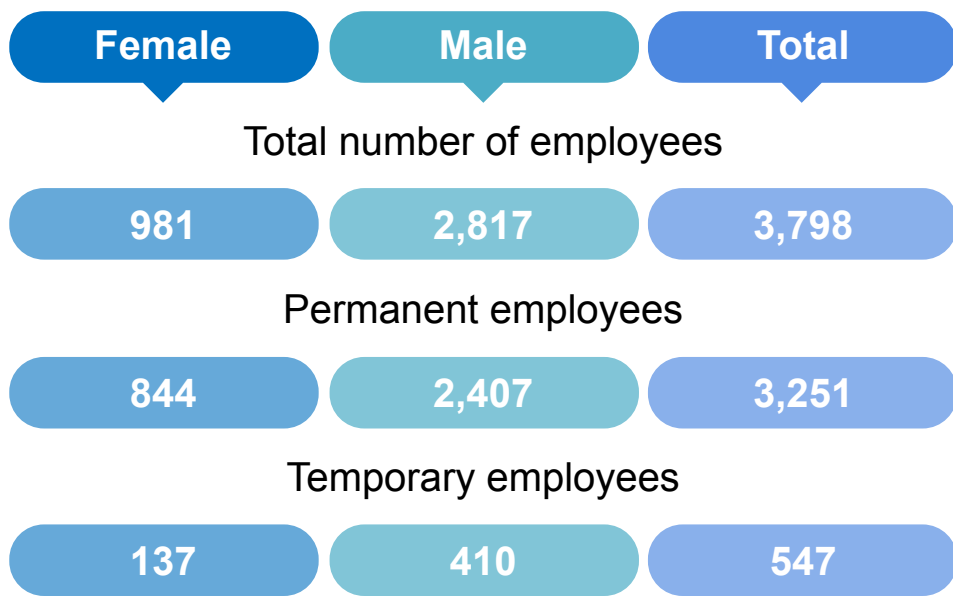
Global performance & career

3-3

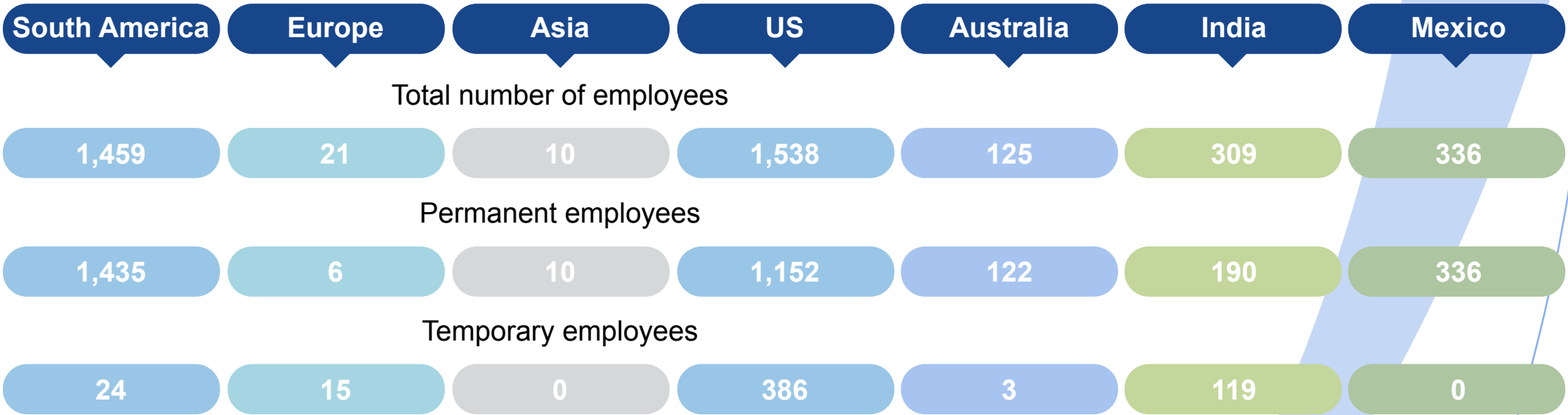
In 2022, due to the M&A process, the Performance & Career Cycle was adapted and simplified, ensuring the engagement of goals, career conversations, and structuring of the individual development plan. The employees engaged in the proposed stages, respecting the moment of each business, ensuring 84% of Individual Development Plans registered in the system and 100% of the 2022 goal closure at a global level.

This decision to maintain the process demonstrates the engagement and seriousness with which our employees face this issue. It reaffirms how people management processes support the individual and collective needs of each employee and the business.

Valuing our workforce is a fundamental pillar of our 2030 Sustainability Strategy. We focus on people management, equity, and diversity, creating an inclusive and welcoming work environment and a unique culture that promotes respect and unity among the company's employees.



2-7, 2-8



2-7, 2-8

Permanent employees - consolidated

Permanent employees-Male	2,407
Permanent employees-Female	844
Permanent employees Over 50 years old-Male	642
Permanent employees Over 50 years old-Female	137
Permanent employees 30-50 years old-Male	1,451
Permanent employees 30-50 years old-Female	518
Permanent employees Below 30 years old-Male	314
Permanent employees Below 30 years old-Female	189

Temporary employees - consolidated

Temporary employees-Male	410
Temporary employees-Female	137

Collective bargaining

Total employees covered by collective bargaining agreements	1,648
Number of consultations/negotiations with trade unions over organizational changes [unit]	27

2-30



Turnover data

401-1

Permanent Hires-Male	265
Permanent Hires-Female	157
Permanent new employees hires Over 50 years old-Male	41
Permanent new employees hires Over 50 years old-Female	19
Permanent new employees hires 30-50 years old-Male	139
Permanent new employees hires years old-Female	76
Permanent new employees hires Below 30 years old-Male	91
Permanent new employees hires Below 30 years old-Female	63
Permanent Employees Turnover-Male	238
Permanent Employees Turnover-Female	113
Permanent employee turnover Over 50 years old-Male	70
Permanent employee turnover Over 50 years old-Female	19
Permanent employee turnover 30-50 years old-Male	124
Permanent employee turnover 30-50 years old-Female	74
Permanent employee turnover Below 30 years old-Male	44
Permanent employee turnover Below 30 years old-Female	20
Voluntary Turnover-Male	174
Voluntary Turnover-Female	88
Involuntary Turnover-Male	62
Involuntary Turnover-Female	21
Number of employee laid off	61
Number of negotiations	85

Parental leave and retention

Number of employees taken parental leave	19
Number of employees taken parental leave - Male	4
Number of employees taken parental leave - Female	14
Number of employees return to work after parental leave	16
Number of employees return to work after parental leave - Male	4
Number of employees return to work after parental leave - Female	12
Retention to work (after parental leave and still employed for the next 12 months)	7.42
Retention to work (after parental leave and still employed for the next 12 months) - Male	3
Retention to work (after parental leave and still employed for the next 12 months) - Female	4.42



Training 2022

Focus Area of Training	Total no. of Participants	Male	Female	Total no. of Training Hours	Total expenditures (USD)
Mandatory programmes	125	90	35	2,000	example
Leadership Curriculum	1,607	595	1,012	4,362	168,434.30
Mandatory programmes*	22,464	9,860	12,604	88,067	200,553.55
Functional/Technical training	7,077	3,726	3,351	44,344	329,558.72

404-1

*Accumulated trainings

Diversity and inclusion

3-3, 405-1, 413-1

In our mission to Reimagine Chemistry Together to Create a Better World, the diversity of our workforce is more critical and in evidence than ever for IOD and IVL. Having a workforce that is diverse and inclusive is crucial to the quality and relevance of our work, benefiting not only our employees and stakeholders but also our shareholders and citizens worldwide. This annual report on diversity and inclusion presents workforce statistics, figures, and highlights some of our activities from 2021 to the present.

We believe that inclusion is more than simply implementing a diversity program; it's about creating a welcoming environment that values all differences and uses them to drive creativity and innovation. For this reason, we are committed to maintaining an ongoing dialogue with teams and leaders to ensure that IOD is an interactive, physically and culturally inclusive environment.

We have started our Diversity & Inclusion journey in 2020, in Brazil, by raising the awareness of our employees as well as our executives to the theme. In 2021, as we were more robust and into the strategy, we have created our four Affinity Groups (Ethnic-Racial, People with Disabilities, Gender-Women and LGBTQIA+), which supported and leveraged proactive inclusion actions within the company.

The program has started in Brazil and has been expended to some of our plants in Mexico, Uruguay, Argentina and the USA. The actions carried out have been gaining a lot of strength in the segment and will soon be revised and our expectation is to expand the program globally across all IOD.



Click here to learn more about the Together

From that moment to date, lots have been made culturally talking about and literacy-like actions. Progress have also been made, and here are some numbers. In 2021-2022, we had these macro results:

- Incremented in 41% our women in top and senior management positions, and it represents almost 30% of women in top and senior management positions in all IOD.¹⁰
- 20% more GenZ women than men.
- Lower female turnover.
- Our numbers regarding our non-white employees: we've improved our numbers in 9% and we have improved by 40% our non-white top and senior managers.
- 5 infrastructural improvements in our plants.
- We've raised the LGBTQIAP+ Flag in all our countries and factory units for 15 days.
- Replicated the UN goal for the Whole segment.

Fernando Lima



¹⁰Valid for South America management positions



While maintaining our momentum to enhance representation and reinforce a culture of inclusivity, we will persist in listening, learning, and, above all, taking action.

In 2022, we also made progress in promoting gender equality, increasing the number of women at all hierarchical levels. Through our 2030 Sustainability Strategy, we committed to having 50% of senior management roles occupied by women by 2030, and we are actively working to achieve this target. It is wise to mention that the concept of Diversity & Inclusion may vary a little bit from country to country, but most themes are cross and can be correlated, as well as complementary.

Regarding the next steps, we anticipate some challenges ahead. Presently, our primary challenge is to comprehensively understand and acknowledge the various differences that exist within the company in order to collaboratively develop and extend the program worldwide. Additionally, we face the obvious challenge of continually advancing and elevating the program's level of maturity.

In conclusion, it is crucial to note that this program fully aligns with both the company's strategic plan and our corporate objectives. Our commitment to diversity and inclusion at IOD goes beyond mere performance or promises; it is deeply rooted in our values and the positive impact it has on the lives of our employees

Edilson Pinto

Health and safety

3-3, 403-1, 403-3, 403-4, 403-9

The well-being and health of our employees inside and outside the workplace is non-negotiable. Our sustainability strategy includes commitments to reduce the Total Recordable Incident Rate (TRIR) to less than 0.4 per 200,000 work hours by 2025 and less than 0.3 by 2030. We also aim to reduce the Lost Time Injury Rate (LTIR) to less than 0.2 per 200,000 working hours by 2025 and less than 0.15 by 2030. One of our other safety goals is to reduce process safety events (PSE rate) in TIER 1 to less than 0.1 per 200,000 working hours by 2030.

In 2022, the company experienced a reduction in the number of accidents. In the same way, we exceed our expectations for Total Recordable and Lost Time Injuries by achieving incident rates more than 50% below targets.

No specific pattern was identified for the types of injuries and their causes. The routine use of utilities, lifting and moving equipment manually, and personal tasks involving chemical products were identified as potential sources of damage.

We also obtained an enterprise-level Responsible Care 14001 certification in an unprecedented 8-month window.

The integration of Oxiteno into the company’s portfolio was completed, and an EHSQ integration plan encompassing over 125 lines items was developed and is on track for completion. The EHSQ function team now includes personnel supporting multiple sites and locations in more than two-dozen areas and in as many as one-half dozen countries and diverse cultures.



Carolina Ramos, Larissa Rodrigues and Leticia Albuquerque

Employees (by 200,000 hours worked)

2022

Total hours worked	5,074,837
Total deaths	0
Death rate	0
Total of accidents (with and without leave)	5
Accident frequency rate	0.20
Accidents at work with serious consequences (total) - does not include deaths	2
Accidents at work with serious consequences (rate) - does not include deaths	0.08
Compulsory reporting accidents at work (total) - does not include deaths	5
Compulsory reporting accidents at work (rate) - does not include deaths	0.20
Lost days	59
Severity rate	2.33
Total high-potential work incidents	9
Total number of near misses	65

Workers (with activity or workplace controlled by the organization)
(by 200,000 hours worked)

2022

Total hours worked	4,945,945
Total deaths	0
Death rate	0
Total of accidents (with and without leave)	7
Accident frequency rate	0.28
Accidents at work with serious consequences (total) - does not include deaths	3
Accidents at work with serious consequences (rate) - does not include deaths	0.12
Compulsory reporting accidents at work (total) - does not include deaths	7
Compulsory reporting accidents at work (rate) - does not include deaths	0.28
Lost days	21
Severity rate	0.85
Total high-potential work incidents	7
Total number of near misses	27

The total number of employees that company provide the group Health Insurance

2,742

403-8

403-9

Corporate Social Responsibility

The Integrated Oxides and Derivatives segment of Indorama Ventures has its Corporate Social Responsibility Strategy with a framework that guides the operational sites and offices to develop actions that benefit the surrounding communities.

The purpose of this strategy is to create long-term shared value for society, focusing on three main themes: Knowledge; Community Care; and Environment. Each of the main themes has guidelines so that the operational sites can address their social actions and reach the goal established in the Sustainability Strategy.

For the IOD segment the focus was set on the expertise of the business, as chemistry. Exploring the teaching of chemistry in the communities, wellness solutions connected to the business, and environmental education also linked to science.

Knowledge Harnessing the power of education to benefit the community and the environment

Support STEM (Science, Technology, Engineering, Math) education and literacy for long-lasting social change and transformation; Promote innovation to address social challenges

Community Care

Enabling community sustainable development and prosperity

Promote the physical and mental well-being of community members; Enhance access to quality healthcare services and resources; Increase income opportunities for people in communities; Provide capability building and skill training to empower people with entrepreneurship ability to strengthen local economies; Preserve and promote art and culture

Environment

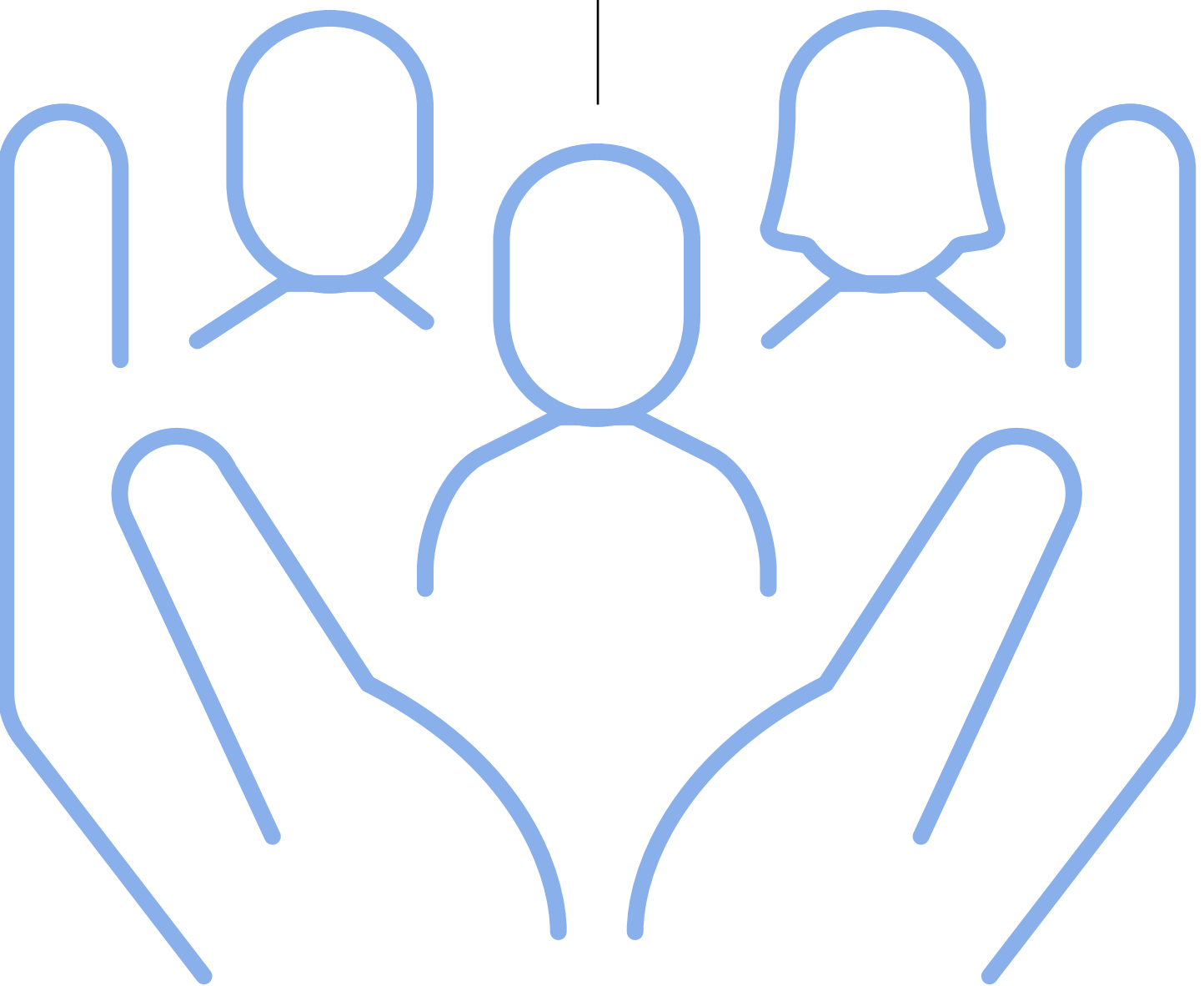
Protecting and conserving the environment to sustain our planet

Promote Reduce, Reuse and Recycle to minimize waste and encourage sustainability; Support the conservation of natural resources and the environment within the community

The actions can be put into practice through institutions and/or project proponents that have a specialized team to carry them out, or by means of a corporate volunteer. For this reason, an expansion of the Connect Volunteer Program is planned for 2023.

The program, which already takes place in 5 operational sites, counts on a specific platform (website) from Indorama so that volunteers can select the actions that most attract them. Furthermore, through the platform it is possible to collect the main social indicators.

The “Connect” Volunteer Program was on the shortlist for the “Aplauze Award”, a Brazilian award that, “seeks to recognize the performance of organizations responsible for volunteer activities that share, collaborate, and inspire a better country by producing transformative impacts on society. It is a Brazilian award organized by the Brazilian Council of Corporate Volunteering. The award has as its latest winners’ institutions such as Junior Achievement, an NGO that encourages the development of young people and that already worked in partnership with us to develop corporate volunteering actions.



Social Standards

As active members of the American Chemistry Council (ACC), the Brazilian Association of the Chemical Industry (ABIQUM), and the National Association of Chemical Industries (ANIQ) in Mexico, Indorama is committed to the tenets of Responsible Care.

All units (except those in India and Australia) have a matrix of environmental aspects and impacts. This way, all possible impacts and risks to operations are evaluated internally and externally. Each operating unit has a different matrix and, for the aspects identified as high risk, preventive action plans are established, and the operations are continuously monitored.

Communities Advisory Council

As chemical companies, there are councils or panels in every locality to broaden the channels of communication between the company and the community in dealing with environmental, health, and safety issues and, naturally, to strengthen the relationship between both parties. Actions and planning are always aimed at the most vulnerable groups in the community, taking into account the drivers of the corporate strategy.

Our social development programs

Our relationship with the communities where our plants and administrative units are located is something we value and nurture. In each of our regions, we develop social projects that aim to promote knowledge, community care and environment. Some of the main initiatives carried out in 2022 are presented below.

2022 Data	Projects	108
	Investment	US\$ 515,739.74
	Benefitted People	54,342
	Volunteers	520
	Volunteer hours	8,521



Meninas curiosas, mulheres de futuro



Maluquímica

Meninas curiosas, mulheres de futuro

The “*Meninas Curiosas, Mulheres de Futuro*” (“Curious Girls, Women of the Future”) campaign, conceived by the Força Meninas (Go Girls) platform, tells inspiring stories of women in science to children aged 6 to 17 attending public. The project arouses curiosity and encourages girls to take up careers with low female representation – especially in the sciences, technology, engineering, arts, and mathematics – through theatrical performances and hands-on workshops.

Beneficiaries: 3,825

Locality: Mauá (BR) and Suzano (BR)

Maluquímica

An interactive theatrical production, free of charge, that reinforces the importance of caring for the planet, presenting chemistry in a playful way as an instrument for preserving life.

Beneficiaries: 2,669

Locality: Mauá (BR) and Suzano (BR)

2nd Children’s Book Fair of Salvador

A children’s literary event intended to value the writer, combining literature with artistic and cultural performances and making their work better known to the public and critics. In addition, the book fair was designed to encourage reading and promote Brazilian authors among children, adolescents, and adults, contributing to the development of a sensitive, critical, and responsible public. The event will feature a contest called “*Química no Cotidiano*” (“Chemistry in Everyday Life”), aimed at children and adolescents from public schools in the region. The contest encouraged them to present projects in public, and awarded prizes to the top 3 projects.

Beneficiaries: 1,000

Locality: Salvador (BR)

Modernization of the “Dona de Mim” project bakery

Dona de Mim is a project of the NGO Recanto Tia Célia, which aims to professionalize local mothers in courses such as: baking, confectionery, sewing, manicure, handicrafts, and informatics.

The company, in partnership with its client Bunge, equipped the bread-making and confectionery classroom, turning it into the community’s first bakery. In addition, a master class was held at Bunge’s academy for the women participating in the baking and confectionary classes.

At the end of the project, the students’ résumés were distributed with the region’s trade union so that they could be distributed to Bunge’s partner bakeries.

Beneficiaries: 25
Locality: Mauá (BR)



Dona de Mim



Mulheres na Cor

Mulheres na Cor – Women in Color

AkzoNobel’s social transformation program for women in vulnerable situations in the Paraisópolis favela in São Paulo. SENAI (National Service for Industrial Learning), the largest professional education complex in Latin America, is the training partner and provided technical classes to prepared women to work as professional painters. Indorama sponsored the project by funding scholarships to these women and mentoring through our volunteer program “Connect”.

Beneficiaries: 14
Locality: Sao Paulo (BR)

Trilha das Descobertas

The *Trilha das Descobertas* (Trail of Discoveries) project consists of training and learning tracks for teachers using ludopedagogical material prepared by Evoluir (the company that proposed the project). In addition, the participating schools receive educational collections filled with toys, fabrics, traditional games, and costumes, among other items, providing sensory, aesthetic, relational, physical, and cognitive experiences.

Beneficiaries: 1,063
Localities: Tremembé (BR) and Triunfo (BR)

Touch-A-Truck / Beaumont Children’s Museum

Touch-A-Truck and STEAM (Science, Technology, Engineering, Art, and Mathematics) is held at the Beaumont Children’s Museum in Port Neches. This is a unique opportunity for children to explore vehicles of all types (used in public service, emergency response, utilities, construction, transport, and delivery) in a single place. Participants will also take part in a variety of STEAM activities intended to spark an interest in science, mathematics, and engineering in children. They can interact with the vehicles and learn more about their favorite trucks in a safe and supervised environment.

Beneficiaries: 2,000
Locality: Port Neches (USA)

Fish-O-Rama - Port Neches Operations

Promoting STEAM education in our local school districts, recycling in our community, and strengthening IOD’s presence in our community are the goals of this program, promoted by IOD.

Approximately 170 boats were out fishing in the Fish-O-Rama tournament, and more than 900 people attended the Captain’s Dinner for a fun evening with food, beverages, prize drawings, auction packages, and entertainment. In all, 95 sponsorships and more than \$ 472,000 were raised to enhance recycling and STEAM programs to encourage education in Southeast Texas school districts.

Beneficiaries: 900
Locality: Port Neches (USA)

National STEAM Day

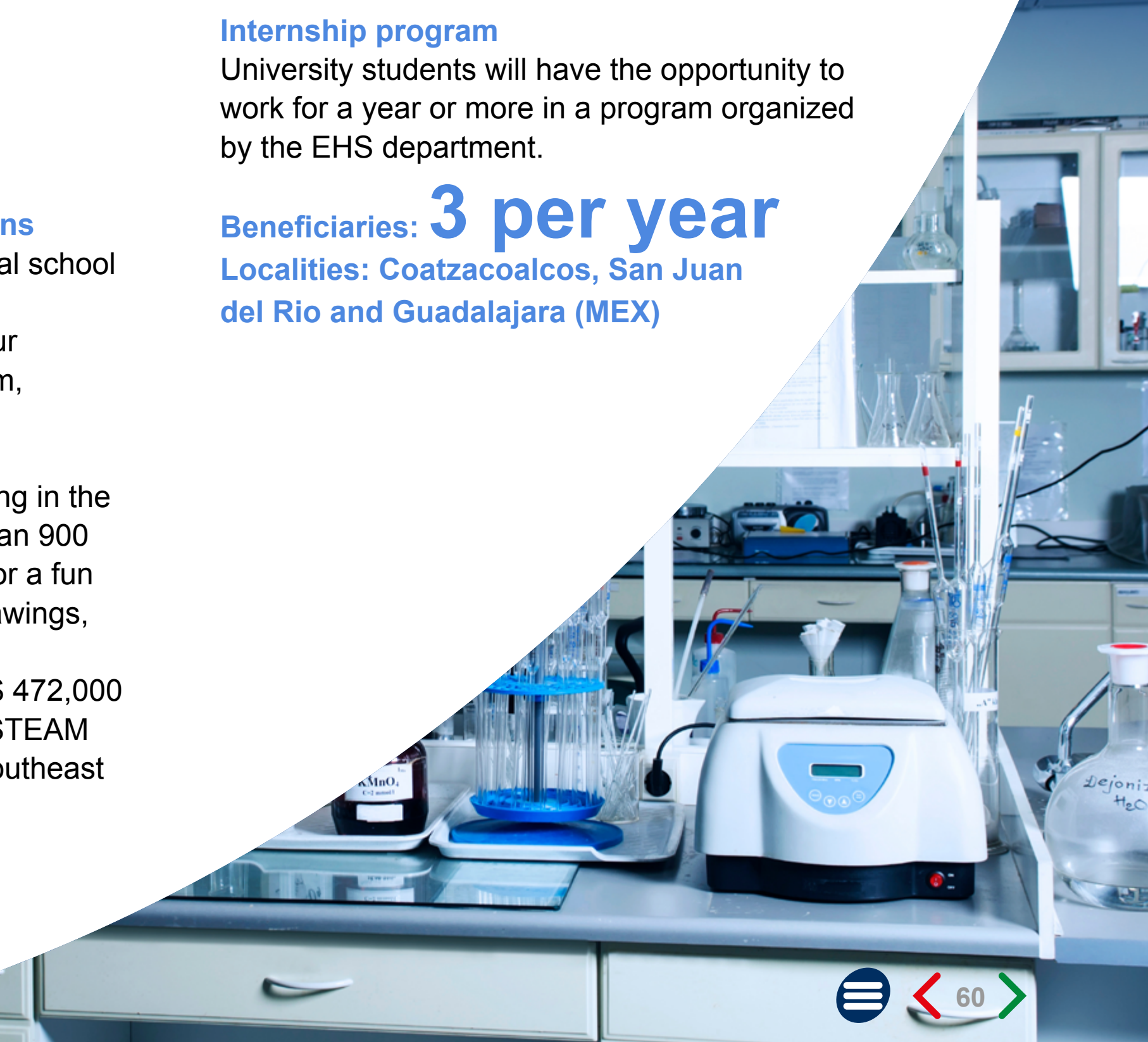
To promote STEAM education in our community and schools, we organized a day with STEAM activities at our Environmental Education Center. A total of 50 third and fourth grade students from Highland Park Elementary participated in the activity and learned about circuits, forces, viscosity, chemical reactions, recycling, and sludge.

Beneficiaries: 50
Locality: Port Neches (USA)

Internship program

University students will have the opportunity to work for a year or more in a program organized by the EHS department.

Beneficiaries: 3 per year
Localities: Coatzacoalcas, San Juan del Rio and Guadalajara (MEX)



Suppliers

3-3, 2-23, 2-24, 204-1, 308-1, 414-1

For IOD, being responsible includes taking care of our value chain. Therefore, when defining the objectives for this pillar, we seek to ensure that the supply of our raw materials is done sustainably by mapping the needs for adjustments in the targets to be met, considering the best ESG practices of our suppliers.

IOD Procurement function manages the Strategic Contracting and Procurement of all Goods and Services on a global basis. The Procurement processes ensure that the supplier selection process encapsulates critical selection criteria that emphasizes suppliers' alignment with our focus on Safety, Environment. All our contracts have a section on Supplier Responsible Sourcing Policy which contains guidelines around Ethical Conduct, Animal Welfare, Conflict Minerals, Responsible Sourcing, Combating Forced Labor and Product Stewardship.

To ensure good sustainability practices from our suppliers, we count on the use of an evaluation platform and, by 2025, we want 100% of our critical suppliers to be participating in the evaluation program.

Spend 2022

204-1

Total spend 2022:

US\$ 3.67 billion

North America Region:

US\$ 2.55 billion

South America Region:

US\$ 0.96 billion

Asia Pacific Region:

US\$ 0.17 billion



Raquel da Silva

Thus, we initially developed a Supplier ESG Risk assessment tool to assess supplier criticality. This tool factors in the key ESG criteria like raw materials, sourcing option, commodity specific risk, origin risk, regulatory requirements, customer requirements, risk related to specific suppliers, spend / volume, ease or complexity of substitution and business continuity impact from supply or service disruption.

The South America pilot has already had 1,911 suppliers assessed. The next step concerns the definition of a common platform for the entire segment for supplier evaluation. Throughout

2022, we worked on developing a draft tool for this ESG assessment of critical suppliers. For the Oxiteno legacy, considering the use of the EcoVadis platform that was already employed, we closed 2022 with 91% of critical suppliers having an assessment performed, and 100% of those with a score lower than expected with action plans defined. The expectation is that by 2023 we will have the ESG evaluation platform defined, thus being able to monitor the achievement of the goals set for 2025 and 2030.

Change in Ecovadis

Indorama Ventures participates in the annual EcoVadis assessment to evaluate the company's sustainable practices and ensure it can meet key customers' requirements across the different business segments and operations, and IOD is part of this evaluation. In 2023, the company achieved the Gold Medal with a score of 77; higher than 2022's score of 75. Indorama Ventures ranked in the 99th in its industry of all assessed companies worldwide, with above industry-average performances in all four assessment areas, including environment, labor & human rights, ethics, and sustainable procurement.

At the end of 2022, Indorama Ventures started the process of participating as a TfS member with Ecovadis as its supplier monitoring platform. Now in 2023, our application has been accepted, Oxiteno was already using this platform and, in the year 2022, evaluated 223 suppliers, 102 of them being critical suppliers. In addition, it designed action plans with 100% of these suppliers that were being assessed with a score of 45 point or lower.



Click here to learn more about the Ecovadis index

Our relationship with suppliers is based on respect and ethics. Thus, we have established a way of working that takes into consideration not only criteria such as price or delivery time, but also important elements such as the relationship between the IOD and the supplier, quality, safety, service level, reputational evaluation, and sustainability applied along its production chain. The contract signed by our suppliers includes clauses on ethics, social responsibility, safety and environmental protection, as established in Indorama's Responsible Sourcing Policy.

Suppliers must take a precautionary approach towards environmental challenges, undertake initiatives to promote greater environmental responsibility, and encourage the

development and use of environmentally friendly technologies. Regarding Human Rights Policy, we promote ethical conduct and prevent human rights violations in accordance with the Company's corporate values.

In our operations, we are dedicated to both protecting and embracing human rights as embodied in the Universal Declaration of Human Rights and its two corresponding covenants, The International Covenant on Civil and Political Rights and The International Covenant on Economic, Social, and Cultural Rights. The Company will avoid infringing on human rights, avoid complicity in human rights abuses by others, and comply with the laws of the countries in which it does business. IVL is committed to continuously improving the Human Rights Policy to meet the highest standards.



[Click here to learn more about our Responsible Sourcing Policy](#)

John Clements



Roundtable on Sustainable Palm Oil (RSPO) and No-deforestation, No-peat and No-exploitation (NDPE) Practices

12 of the 13 IOD production units that process palm kernel oil, and its derivatives are RSPO certified. In addition, one distribution center and one office are also certified. Therefore, all these facilities can produce, process, and commercialize Mass Balance certified products. Every six months, we perform the traceability of our suppliers' mills and update stakeholder complaints related to the topic in a public format on our website.

IOD is concerned about this chain's challenges, such as labor analogous to slavery, child labor, deforestation, and development in peatland areas. The company requires its suppliers to follow NDPE (No Deforestation, No Peat, and No Exploitation) practices. Failure to follow these practices may condition suppliers to undergo the company's Consequences Policy, as seen in our Responsible Sourcing Policy for Palm Chain.

In 2022, 109 million tons of raw material from the palm chain were purchased - 43% of this raw material was certified to RSPO standards.



[Click here to learn more about our Responsible Sourcing Policy for Palm Chain](#)

Action for Sustainable Derivatives: transitions Questionnaire on Traceability

IOD and Oxiteno (previously) participate annually in the Transitions questionnaire to verify best practices in traceability in the palm oil chain. In 2022, with the merger of the companies, the questionnaire was studied and answered by a larger group of stakeholders, collecting each company's information and expertise.

	IOD score	Oxiteno score
2021	59	80
2022	75	82

For the following years, there is the expectation of answering jointly as IOD. Still, even if separated, verifying an increase in the score was already possible, showing the commitment and improvement in the palm supply chain practices.

Increased confidence in the value chain

In 2023 Oxiteno signed a Supplier Credit Agreement with Itaú Bank that includes ESG-linked credit, making it the first chemistry company in Brazil to have this agreement with ESG stamped. As part of the agreement, the company and suppliers participating in the program must present an Ecovadis evaluation yearly. Itaú commits to providing better price rates for this credit agreement. This initiative offers more attractive rates for suppliers meeting the program's requirements, ranging from 5 to 10 basis points. It is worth noting that these numbers will improve since it is a new agenda in Brazil's Central Bank incentive.

The ESG Investing Awards 2023 (UK) recognized Itau BBA with two categories acknowledging the best funds, research, and products that meet the ESG demand worldwide. The banking and industry sectors face mounting pressure to meet fast-changing needs in ESG Issues. New and evolving regulations call for greater transparency and disclosure of ESG-related data. Investors and stakeholders are increasingly scrutinizing investment decisions' effects on the climate and society. Consumers are also holding banks to higher ESG standards.

Successful Partnership

IOD understands the scenario of social vulnerability of the communities surrounding its facilities, developing and sponsoring projects that address neighborhood development. In 2022, we launched the 1st Social Innovation and Entrepreneurship Challenge. We see innovation as a cross-cutting theme, the way to generate more sustainable solutions that will have less socio-environmental impact.

The winning project was from the startup TOCA (a company specialized in the development of programs, projects and

actions of socio-environmental responsibility) with the objective of implementing three Agroforestry Systems consorted with castor oil plant cultivation in communities in the city of Camaçari, in the state of Bahia, Brazil, training 30 small farmers on entrepreneurship, techniques and practices for soil use and agro-ecological management, considering factors such as: low cost for the small producer, simplicity of implementation, easy replicability and environmental preservation.

The implementation of the pilot project will be monitored for 12 months and the evolution and impacts of the project will be monitored with a digital cloud platform for online systematization of technical data and information about the participants reached, allowing the analysis of social and environmental indicators on a regular basis.

In addition to developing the community by generating income through agroforestry system developments, the castor-oil plantation plays an indispensable role in this system. IOD is the main consumer of castor oil in Brazil, so besides the social and environmental issues, the project also generates the development of a culture necessary for the company's business, thus also allowing the responsible supply of this culture, since the process will be mapped to ensure the absence of deforestation and respect for human rights.



Anggrainie
Tielens

A highlight in the CDP

To promote changes that reduce their environmental impact, companies must share their actions throughout the entire value chain, and this is what we do at IVL. In 2022, IVL was among the 8% best-rated companies for supplier engagement on climate change, based on the latest disclosure of the Carbon Disclosure Project (CDP). This is an important milestone for the company on our journey toward a better world.

Delivering profitability in synergy with societal values

To optimize operational logistics, we use a distribution center located in Guarulhos (São Paulo, Brazil). One of the operations involves the transportation of 19 tons per year of packaged cargo coming from Tremembé, our operational site also located in São Paulo, a trip of more than 140 km.

The study of this process indicated the possibility of using a larger trailer (from 28 tons capacity to 38 tons). This change in equipment reduced the emission of more than 47 tons of CO₂ annually in this operation.

In early 2023, we started a negotiation for gas-fueled transportation, with high delivery performance and reduced CO₂ emissions. In addition to being operated by diverse drivers (women and LGBTQIAP+). The intention is to employ people who have difficulty in entering this market.

About the report

2-3

After the incorporation of Oxiteno into the Integrated Oxides and Derivatives (IOD) business segment of Indorama Venture Limited (IVL), this is the first report that includes the main results of the segment in the period of January 1st to December 31, 2022. This document is based on Global Reporting Initiative Standard guidelines and encompasses all IOD operations around the globe (except where indicated in the information).

To determine the central themes to be addressed in this document, as well as the indicators to be reported, we based ourselves on our 2030 strategy and the three pillars that comprise it: Decarbonize and promote eco-efficiency in our operations, Future ready organization, and Innovative and sustainable products.



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Associação Brasileira das Indústrias Químicas (ABIQUIM)	Brazil																																																																																																																						
Associação Brasileira de Normas Técnicas (ABNT)	Brazil																																																																																																																						
Associação Brasileira dos Fabricantes de Tintas (ABRAFATI)	Brazil																																																																																																																						
Associação Brasileira de Engenharia Automotiva (AEA)	Brazil																																																																																																																						
Associação Brasileira dos Defensivos Genéricos (AENDA)	Brazil																																																																																																																						
American Chamber of Commerce (AMCHAM Brasil)	Brazil																																																																																																																						
Associação Nacional de Pesquisa e Desenvolvimento das Empresas Inovadoras (ANPEI)	Brazil																																																																																																																						
Associação Brasileira dos Distribuidores de Produtos Químicos e Petroquímicos (ASSOCIQUIM)	Brazil																																																																																																																						
Centro das Indústrias do Estado de São Paulo (CIESP)	Brazil																																																																																																																						
Comitê de Fomento Industrial do Polo de Camaçari (COFIC)	Brazil																																																																																																																						
Comitê de Fomento Industrial do Polo do Grande ABC (COFIP-ABC)	Brazil																																																																																																																						
Comitê de Fomento Industrial do Polo do Rio Grande do Sul (COFIP-RS)	Brazil																																																																																																																						
European Network of Research And Innovation Centres And Hubs In Brazil (Enrich In Brazil)	Brazil																																																																																																																						
Associação Brasileira de Automação (GS1)	Brazil																																																																																																																						
Instituto Brasileiro de Petróleo, Gás e Biocombustíveis (IBP)	Brazil																																																																																																																						
NTC & Logística (NTC)	Brazil																																																																																																																						
Pacto Global da Organização das Nações Unidas - Rede Brasil	Brazil																																																																																																																						
Rede Empresarial Brasileira de Avaliação de Ciclo de Vida (Rede ACV)	Brazil																																																																																																																						
Sindicato Nacional da Indústria de Componentes para Veículos Automotores (SINDIPEÇAS)	Brazil																																																																																																																						
Association	Country																																																																																																																						
Sindicato Nacional da Indústria Animal (SINDIRAÇÕES)	Brazil																																																																																																																						
Sindicato das Indústrias Químicas no Estado do Rio Grande do Sul (SINDIQUIM)	Brazil																																																																																																																						
Sindicato das Indústrias de Produtos Químicos para Fins Industriais, Petroquímicas e de Resinas Sintéticas de Camaçari, Candeias e Dias D'Ávila (SINPEQ)	Brazil																																																																																																																						
Sindicato das Indústrias de Produtos Químicos para Fins Industriais e da Petroquímica do Estado de São Paulo (SINPROQUIM)	Brazil																																																																																																																						
Asociacion de Combustibles Eficientes de Latinoamerica (ACELA)	Global																																																																																																																						
Council for LAB/LAS Environmental Research (CLER)	Global																																																																																																																						
Roundtable on Sustainable Palm Oil (RSPO)	Global																																																																																																																						
Asociación de Industriales de El Salto A.C (AISAC)	Mexico																																																																																																																						
Asociación Nacional de Fabricantes de Pinturas y Tintas (ANAFAPYT)	Mexico																																																																																																																						
Asociación Nacional de la Industria Química (ANIQ)	Mexico																																																																																																																						
Cámara Nacional de la Industria de la Transformación (CANACINTRA)	Mexico																																																																																																																						
Instituto Mexicano de Ingenieros Químicos AC (IMIQ)	Mexico																																																																																																																						
Sociedad de Químicos Cosmetólogos de México AC (SQCM)	Mexico																																																																																																																						
Asociación de Industrias Químicas del Uruguay (ASIQR)	Uruguay																																																																																																																						
Unión de Exportadores del Uruguay (UEU)	Uruguay																																																																																																																						
American Coatings Association (ACA)	USA																																																																																																																						
American Chemistry Council (ACC)	USA																																																																																																																						
American Cleaning Institute (ACI)	USA																																																																																																																						
American Fuel & Petrochemical Manufacturers (AFPM)	USA																																																																																																																						
Association of Bayport Companies (ABC)	USA																																																																																																																						
Center for Chemical Process Safety (CCPS)	USA																																																																																																																						
Council of Producers & Distributors of Agrotechnology (CPDA)	USA																																																																																																																						
Household and Commercial Products Association (HCPA)	USA																																																																																																																						
International Pharmaceutical Excipients Council (IPEC Americas)	USA																																																																																																																						
Lousiana Chemical Association (LCA)	USA																																																																																																																						
National Association of Chemical Distributors (NACD)	USA																																																																																																																						
Personal Care Products Council (PCPC)	USA																																																																																																																						
Texas Chemical Council (TCC)	USA																																																																																																																						

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GENERAL GRAPHIC DESIGN COORDINATION
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SUPPORT
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WRITING, EDITING, PROOFREADING, AND GRI CONSULTING
Ability Sustentabilidade e Comunicação

GRAPHIC DESIGN AND LAYOUT
Azul Publicidade

PHOTOGRAPHY
Image Bank
IOD archive
Ricardo Carneiro
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