



VALUING IS WHO WE ARE

2022

SUSTAINABILITY REPORT



SUSTAINABILITY REPORT 2022



1. OVERVIEW



2. OUR IDENTITY



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4. FOR SOCIETY: GROW



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1. OVERVIEW

SUSTAINABILITY REPORT 2022



1.1 MESSAGE FROM THE BOARD OF DIRECTORS

Adding value is part of us

The Navigator Company sees its relationship with society as a positive dynamic, freely accepting its responsibility, as a business, to contribute to a more sustainable paradigm of development. As a hub for the endeavours of tens of thousands of people, with whom it shares and promotes not just value, but also know-how and experience, Navigator seeks to be a driving force for creating a positive impact. This is a constructive attitude that brings with it an essential idea: that of adding value to the best we have, to ensure prosperity and lasting success.

Adding value is part of us. On the basis of inclusivity and a willingness to rise to challenges that face us all, and armed with a long-term vision, that we confidently reaffirmed over the course of 2022. This was a year in which we renewed our efforts to achieve our corporate purpose, taking decisions that reflect our belief that “it is people, their quality of life and the future of the planet that inspires and motivates us”.

At Navigator, we have embraced this motivation and strive daily to develop our positive impact. We deploy the best of our talents, skill, experience and resources to honour our commitment, inscribed in our purpose, to creating sustainable value for society, leaving a better planet for future generations, through natural products and solutions that are sustainable, recyclable and biodegradable, that help to sequester carbon and produce oxygen, that protect biodiversity, improve the soil and combat climate change.

This is a pro-active stance, and one mindful of the constant changes in the world in which we live, prompting us to mobilise our whole organisation and to foster dialogue with all those who interact with it. This was the spirit in which, in the final quarter of 2022, we conducted a review of the material topics in our 2030 Responsible Business Agenda, in line with “double materiality” principles, as prescribed by the Global Reporting Initiative (GRI) and anticipating the European Commission’s Corporate Sustainability Reporting Directive, which entered into force at the start of 2023.

Our sustainability strategy is guided and given coherent form by our purpose, centred on people and the planet, as materialised in the two main action areas in that 2030 Agenda - “For Society” and “For the Climate and Nature”. This focus on people and the planet is what ensures that the company’s efforts remain directed at the areas where it can achieve the greatest positive impact.

Adding value for society

One dimension of The Navigator Company’s responsible business strategy is its impact on society. Our goal of contributing to a more decarbonised society means that we attach value to the crucial role of well-managed planet forests in the transition from a linear fossil-based model with no future, to a circular bioeconomy model, which is climate-neutral and beneficial for nature.

Great strides were made in this direction in 2022, with presentation of the results of the Inpactus project, the largest ever investment to date in Portugal in an R&D projects in the forest-based bioeconomy, and also with the momentum of the From Fossil to Forest agenda, approved under the RRP, centred on the twin aims of development and marketing



packaging solutions based on eucalyptus fibre, to substitute plastic packaging materials currently in use. During 2022, we laid the foundations for producing e-SAFs, sustainable aviation fuels made from green hydrogen and biogenic CO₂ obtained from recovery of forestry waste for energy, as well as from wood by-products.

We accordingly pressed ahead with a capex programme strongly geared to meeting our commitments in the 2030 Responsible Management Agenda and took real steps towards creating a new generation of sustainable bioproducts, promoting decarbonisation of the economy and reducing our dependence on fossil resources.

And because “adding value is part of us”, we shared the results achieved in 2022 with our Employees, by increasing pay incentives and investing in developing career paths able to respond to the demands of the market and the aspirations of our people.

Determined to protect fundamental rights, we published our Human Rights Policy. This sets out our commitment to promoting respect for human rights and employment rights in our operations, and to working for respect for these rights throughout our value chains. We reject any kind of discrimination and instead value diversity, gender equality and inclusion. We have also overhauled our channel for reporting irregularities, now known as the Whistleblowing Channel, an independent service for reporting any irregular practices, in breach of Navigator’s rules of good conduct, in keeping with the principles of anonymity, confidentiality, safeguarding and non-retaliation in relations with reporters, as well as complying with data protection and information security rules.

Adding value for the Climate and Nature

The planted forests we manage over roughly 106,000 hectares up and down the country are the source not only of goods and services valued by the market, but also of positive externalities boosted by our sustainable management practices, such as carbon sequestration, production of oxygen, promotion of biodiversity, protection of the soil, regulation of heavy rains and the creation of landscape amenities - a range of ecosystem services which are increasingly valued by society, although not yet duly remunerated by the market.

Using this model, well-managed planted forests reduce the pressure from the demand for forestry products on areas of native woodlands, allowing these areas to be managed solely for conservation and protection.

In 2022, 12.3% of the forests under Navigator's management corresponded to Conservation Interest Areas. This was also the year in which the number of species and sub-species identified, catalogued and protected in the forests under our management increased to around 900 for flora, and 252 for fauna. Our dedication to biodiversity conservation is just one feature of the forest sustainability strategy pursued by Navigator, combining research and monitoring with continuous and systematic field work, in an endeavour we believe to be unrivalled by any other institution in Portugal.

These constant efforts to add value to forests in all their dimensions can be seen up and down the country in the hands-on work by our teams in the field, striving to improve forests and empower producers, and providing them with technical support free of charge. Our initiatives are part of our consistent and long-term investment in forestry research, development and innovation, seeking to add value to forests, to adapt them to varying conditions and terrain and to a changing climate, to combat diseases and pests, and to take this expertise to people in the countryside where, in combined efforts with thousands of forestry producers, it is possible to evolve, grow and generate wealth for the regions in which we operate throughout Portugal.

In recognition of our contribution to Sustainability, particularly in the field of climate action, we were ranked at Leadership level by CDP (Disclosure Insight Action), with a score of “A” for Climate and “A-” for Forestry. This has further added to our commitment to manage climate risks and the risk of biodiversity loss, as well as our responsible forestry management and investment in a low-carbon economy. We also won praise in 2022 from the Science Based Targets



initiative (SBTi) for our ambitions targets for reducing greenhouse gas emissions, by 63% for scope 1 and 2 emissions, and by 37.5% for scope 3, by 2035, taking 2020 as the baseline. This organisation also highlighted Navigator's contribution to attainment of the goals of the Paris Agreement. In a further success, the annual ratings published by Sustainalytics in late January 2023 again classified Navigator as a low risk company for investors, and recognised its status as an ESG Industry Top-Rated company.

The soundness of our company, and our investment in sustainable growth, based on ethical and transparent procedures, are the best guarantee that we will honour our commitment to create a positive impact for Society.

And that is our true value.

Ricardo Pires

Chairman of the Board of Directors

António Redondo

CEO



1.2 2022 IN NUMBERS

FOR SOCIETY: GROW



RESPONSIBLE GOVERNANCE

2,000

Employees with training in internal compliance policies

0

Confirmed cases of corruption and of discrimination

up **7.7%**
from 2021

Women hired

CREATING SUSTAINABLE VALUE

2.54 B€

Direct economic value generated

2.12 B€

Direct economic value distributed

40%

Financing with sustainable features

RESEARCH AND INNOVATION

12.3 M€

Investment in RDI¹

20

Patents submitted by RAIZ

TALENT MANAGEMENT AND DEVELOPING HUMAN CAPITAL

3,246

Employees²

17% Women

83% Men

185.2 M€

Employee pay and benefits

95%

Employees on permanent contracts

¹ Navigator's total RDI expenditure based on the eligible amount for SIFIDE (the figure stated is for 2021 as the final figure for 2022 will only be established in July 2023).

² Includes Employees of Portucel Moçambique. For the purposes of this report, we present consolidated environmental and social indicators for 3,115 Employees.



41

Training (hours/Employee)

20.342 training hours for
Interns/Bursary holders

110

Young people in the Talent
Attraction Programme

73%

Integration rate for vocational
internships

HEALTH, SAFETY AND WELL-BEING

93%

Internal employees included under
Occupational Health and Safety
Management System³

1,857

Employees included under
Occupational Health Programme

7.3

Overall frequency rate for
accidents at work⁴

SUPPLY CHAIN

More than

7,300

Suppliers

73% Portuguese

COMMUNITY RELATIONS

1.75 M€

Investment in the community

More than

19,000

People reached by initiatives to
promote forestry literacy⁵

6,500

Participants in Forest of
Knowledge project

101,000

Copies of Dá a Mão à Floresta
(Give the Forest a Hand) and My
Planet magazines

³ There are various activities in the organisation, in particular Forest Management, Wood Supply and RAIZ, which do not fall under ISO 45001. However, activities in these sectors are subject to the same principles and procedures.

⁴ Includes figures for direct Employees and external Employees.

⁵ More than 7,000 children and 12,000 teenagers and adults.



FOR THE CLIMATE AND NATURE: ACT



CLIMATE CHANGE AND CO₂ SEQUESTRATION

949,536 tCO₂e
(down 2.5% on 2021)
Emissions (scopes 1 and 2)

28.2%
Reduction in direct EU ETS⁶ CO₂
emissions in relation to 2018
(baseline)

0.182
tCO₂e/t produced
(down 2.0% on 2021)
GHG emissions intensity

6.1 M tCO₂
(up 3.4% on 2021)
Accumulated stock in our forests

SUSTAINABLE FOREST MANAGEMENT

105,733 ha
Forest area under management⁷

68%
Certified wood purchased

87%
Wood suppliers with chain-of-
custody certification

4.73 M€
Investment in forest fire
prevention and support for
firefighting

BIODIVERSITY CONSERVATION

12.3%
of area managed
Conservation interest zones

41 ha
Reforestation with native species
to convert inappropriate
production forests

71 ha
Area covered by ecological
restoration

⁶ EU ETS – European Union Emissions Trading System

⁷ As well as 955 ha of forests in Galicia (Spain) and around 14,000 ha in Mozambique.



WATER MANAGEMENT

down **4.7%** on
2021 Water intake volume

14.7%

Reduction in specific water use
(m³/t) in relation to 2019
(baseline)

19.1

m³/t produced
Specific water use

84%

Water returned to environment

ENERGY AND RAW MATERIAL MANAGEMENT

41,165,471 GJ
Energy consumed

76%

Consumption of primary energy
from renewable sources

12.0 GJ/t

(down 3.9% on
2021)

Energy intensity

5,372,917 GJ
(up 3.8% on 2021)
Energy sold

5,156,843 t
(down 1.8% on 2021)
Raw materials consumed

90%

Renewable raw materials

1.59 t/t produced
(down 2.4% on 2021)

Intensity of materials
consumption

CIRCULAR ECONOMY

410,692 t
(up 3.2% on 2021)
Waste produced

28,395 t

Sands sent to construction sector

11%

percentage of waste sent to
industrial landfill



1.3 HIGHLIGHTS

FOR SOCIETY: GROW



OUR 2030 AGENDA AND ROADMAP

- Double Materiality Analysis
- Navigator puts its name to new BCSD manifestos

RESPONSIBLE GOVERNANCE

- Sustainability Forum – "Bioeconomy: the Path to a Sustainable Future"
- Approval of Human Rights Policy

CREATING SUSTAINABLE VALUE

- Early stage of implementation of TCFD recommendations
- Alignment with the European Taxonomy
- New bond issue – Sustainability Linked Bond

RESEARCH AND INNOVATION IN FOREST-BASED BIOECONOMY

- Application to RRP encompasses forest based solutions
 - *Impactus* results in 37 new patents
 - Innovative tissue product featuring improved capacity to absorb food oils and grease
-



TALENT MANAGEMENT AND DEVELOPING HUMAN CAPITAL

- **Future Leaders Forum: voices and ideas to shape the future**
- **New courses for industrial production technicians**

HEALTH, SAFETY AND WELL-BEING

- **Ergonomics Project**
- **Preventive medicine programme in Mozambique**

SUPPLY CHAIN

- **Support for suppliers in wood and biomass market**

COMMUNITY RELATIONS

- **Biodiversity Conservation classroom in Mozambique**
- **Forests for Families at Jamor Sports Centre**

FOR THE CLIMATE AND NATURE: ACT



CLIMATE CHANGE AND CO₂ SEQUESTRATION

- **Green aviation fuel on horizon**
- **CDP names Navigator as a leader on climate action**
- **SBTi approves decarbonisation targets up to 2035**

SUSTAINABLE FOREST MANAGEMENT

- **Updating maps of response times of terrestrial fire fighting resources**
- **Forestry Producers' Meeting**

BIODIVERSITY CONSERVATION

- **Zambujo reCover Project: forest rehabilitation and soil protection**



- **Launch of new website: *Biodiversity by The Navigator Company***

WATER MANAGEMENT

- **New evaporation line at the Aveiro Industrial Complex**

ENERGY AND RAW MATERIAL MANAGEMENT

- **New gas and green hydrogen boiler at the Setúbal Industrial Complex**
- **Energy efficiency projects at industrial complexes**

CIRCULAR ECONOMY

- **Ash experimentation areas approved by the Portuguese Environment Agency**



1.4 AWARDS AND PUBLIC RECOGNITION

RATINGS



Score: 16.5
Ranked 8th out of 75 Paper & Forestry companies

The annual ratings published by Sustainalytics again classified Navigator as a low-risk company for investors and recognised its status as an ESG Industry Top-Rated company. Navigator's rating and excellent ranking are important facts that reflect its ongoing efforts to integrate sustainability as a priority in its business model its capacity to anticipate and manage ESG risks in the conduct of its operations.⁸



[READ HERE](#)



Climate

Score: A ("Leadership" level)

Inclusion in the Climate A List published by CDP (Disclosure Insight Action) has put Navigator in the Leadership class (with a score up from A- to A). This is important recognition of steps taken by the Company to cut emissions, reduce climate risks and develop a low-carbon economy.

Forest

Score: A- ("Leadership" level)

In the second year that we took part in the CDP Forest ranking, we improved our score from B to A, putting us at Leadership levels.



[READ THE SCORE LISTS HERE](#)

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OTHER PUBLIC RECOGNITION

Navigator 2030 Agenda recognised as good business practice

The SDGs Observatory in Portuguese Companies⁹ has identified Navigator's 2030 Agenda, and the materiality analysis process leading up to its design, as an example of good corporate practice in integrating SDGs into business strategies. It also drew attention to the Premium Programme for eucalyptus growers, as a practical instance of working towards SDGs 15 and 12.

 [READ HERE](#)

WBCSD Reporting Matters 2022

WBCSD – World Business Council for Sustainable Development recognized Navigator's 2021 Sustainability Report for being structured around the overall trends most affecting the Company. Special praise was earned for mapping the challenges associated with the material topics identified and discussion of risks and opportunities, as well as for the clear and concise presentation of progress made (in line with the principle of "conciseness & alignment").

 [READ HERE](#)

Papies Grand Prize 2022

My Planet magazine won the 2022 Papies Grand Prize. This is a contest that highlights the best print media projects in Portugal, and the prize was given for the tenth edition of the magazine, featuring a fresh format, more pages, stories and inspirational reporting, all celebrating biodiversity.

Amoos Air Sense™

Amoos Air Sense™ toilet paper – with built-in fragrance 'micropearls', activated by contact with skin – was named as a 2023 Five Star product, in the toilet paper category.

 [READ HERE](#)

⁹ The Observatory is an initiative of CATÓLICA-LISBON in partnership with BPI Fundação "La Caixa" and Fundação Francisco Manuel dos Santos.



2. OUR IDENTITY

SUSTAINABILITY REPORT 2022



2.1 PURPOSE

People, their quality of life, and the planet's future are what inspire and move us.

We want to share with society not only our outcomes, but also our knowledge, experience and resources, in the search for a better future.

This is why we are committed to creating sustainable value for our shareholders, and for society at large, making a better planet to hand down to future generations through sustainable products and solutions that are natural, recyclable and biodegradable, and that contribute towards carbon sequestration, oxygen production, the protection of biodiversity, soil formation, and the fight against climate change.



HEAR ABOUT [OUR PURPOSE IN OUR PEOPLE'S WORDS](#)



2.2 MISSION, VISION AND VALUES

MISSION

To be a global company, admired for the innovative and sustainable way it transforms the forest into products and services that contribute to people's well-being.



VISION

Extend to other business areas the leadership achieved in printing and writing paper and so raise Portugal's international profile.



VALUES



TRUST

We believe in people, we accept everyone's contribution and we respect their identity. We are committed to development, cooperation and communication.



INTEGRITY

We are guided by principles of transparency, ethics and respect when dealing with each other and with others.



ENTERPRISE

We are passionate about what we do, we like to get out of our comfort zone, we have the courage to take decisions and to accept risks in a responsible way.



INNOVATION

By expanding our knowledge and creative potential, we can together achieve the impossible.



SUSTAINABILITY

Corporate, social and environmental sustainability is our business model.



EXCELLENCE

We believe in quality, efficiency, safety and rigour in everything we do.



2.3 OUR BUSINESS VENTURES

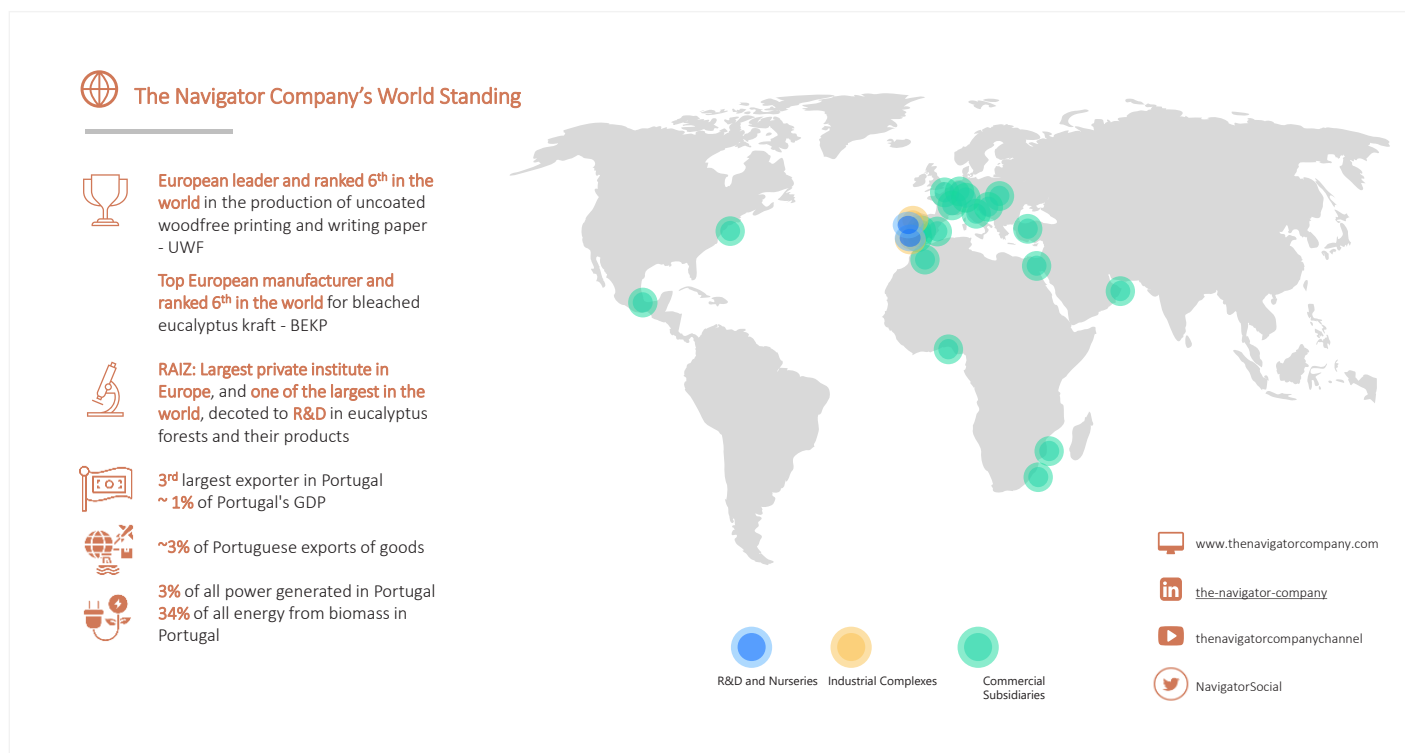
We are an integrated forestry, pulp, paper, tissue, sustainable packaging solutions and bioenergy producer.

The Navigator Company operates a vertically integrated forestry business, with its own forestry research institute, and is responsible for planting vast areas of woodlands in Portugal (1.2% of the country's area), 100% certified under the FSC® and PEFC™¹⁰ schemes.

Our operations are based at large-scale up-to-date mills, where the state-of-the-art technology makes the Company a benchmark for quality in the sector.

We have annual production capacity for 1.6 million tons of paper, 1.6 million tons of pulp and 130 thousand tons of tissue, as well as rated power production capacity of 375.5 MW.

With a business model based on research and technological innovation, we are today a household name throughout the world.



Our products are sent to more than 130 countries over five continents, with a special focus on Europe and the US, giving us the broadest international base of any Portuguese company.

¹⁰ FSC® – Forest Stewardship Council® (License n.º FSC® - C010852); PEFC – Programme for the Endorsement of Forest Certification schemes (License n.º PEFC/13-23-001).

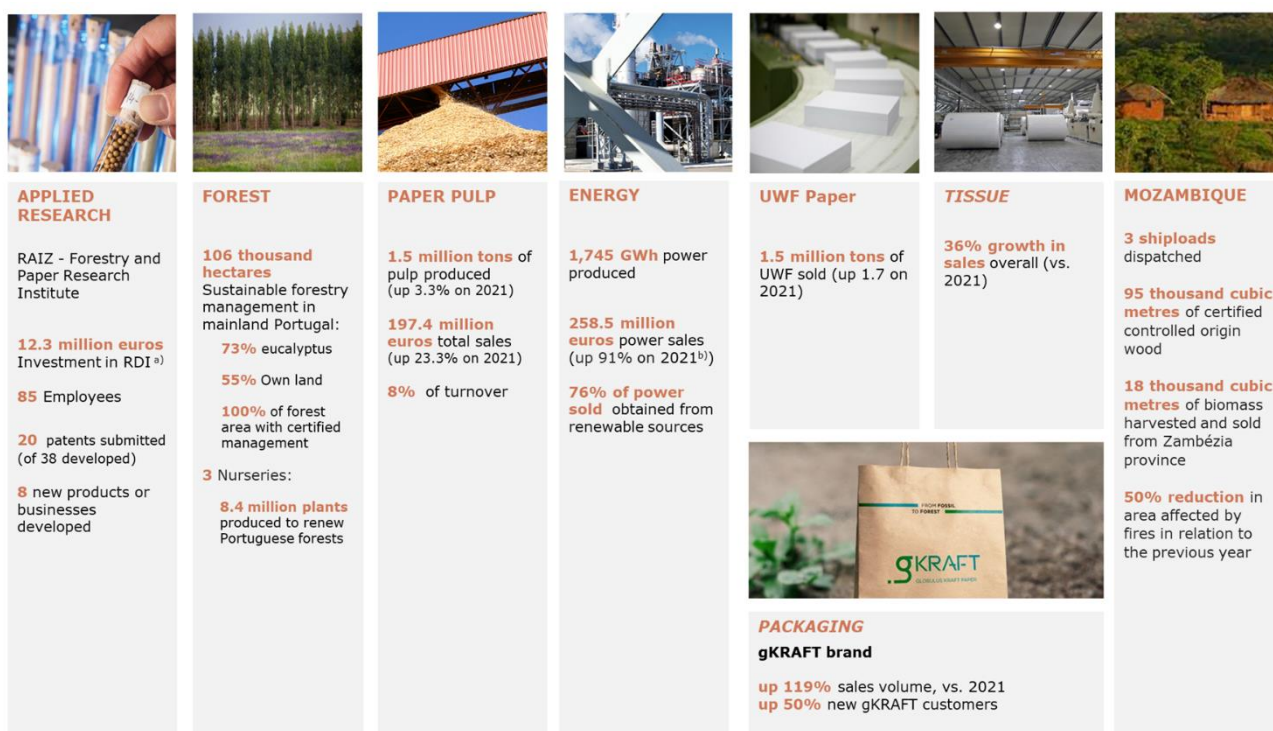


The Company is represented around the world by an international network of commercial subsidiaries, whose function is to bring us closer to Clients and Consumers, developing a better feel for their needs and quickly finding the solutions they are looking for.



LEARN ABOUT OUR PAPER PRODUCTION PROCESS, FROM FORESTRY RESEARCH THROUGH TO PAPER MANUFACTURE AND DISPATCH

At The Navigator Company we play a structurally important role in the Portuguese economy, thanks to our vertically integrated business model.



^{a)} Navigator's total RDI expenditure on the basis of the eligible amount for SIFIDE (the figure stated is for 2021 as the final figure for 2022 will only be established in July 2023)

^{b)} In 2022, entire power output from renewable co-generation facilities sold on the market

Research and Development (R&D)

RAIZ, our forestry and paper research institute, works in three areas of R&D: forestry, industrial/technological and specialist services to support operational areas, education and knowledge sharing, with a view to promoting sustainable development and the bioeconomy based on eucalyptus forests.

A number of projects were started, consolidated and completed in 2022 at this R&D and knowledge transfer centre, mostly funded by The Navigator Company in partnership with three Portuguese universities. A landmark achievement this year was conclusion of the Inpactus project, featuring total investment of € 14,6 million euros. This project has enabled us to register 37 new patents and launch 4 new paper products on the market.

Forest

In 2022, we recorded the largest area of planted forests in the last 22 years and renewed our sustainable forestry management certificate. We pressed ahead with investment in programmes to encourage good forestry practices, recovery of burned areas, as well as ecological restoration, forest rehabilitation and soil protection (Chap. 5.2 e 5.3).



In the field of R&D, one of the highlights was the knowledge generated by rePLANT, a programme for developing innovative technological solutions for forestry issues. This was crucial for the application submitted – transForm – for funding under the Recovery and Resilience Plan (Chap. 4.3).

Pulp

In 2022, pulp sales accounted for 8% of our turnover (compared to 11% in 2021).

Although pulp output was 3.3% up on the previous year, at 1.5 million tons produced, more pulp was incorporated into paper, with the result that a smaller volume was available for sale. This ended up being offset by the rise in prices, leading to an increase of 16% in turnover in this area.

Driven by the imbalance between demand (up 1.3% on the previous year) and supply, hampered by macroeconomic factors (strikes, droughts, fires and logistical issues), prices in the Pulp market rose to all-time highs.

Demand for short fibre rose 2.7%, with eucalyptus short fibre leading the way, up 7.8% on 2021. In contrast, demand for long fibre dropped by 1.8%.

Energy

Energy sales stood at 258.5 million euros, with more than 70% derived from renewable sources.

Sales in value surged by 91% in relation to the previous year, due to the fact the renewable cogeneration facilities sold all their output on the market, as did the combined cycle natural gas power plant in Setúbal, which had previously only sold part of its electricity output. This increase in power sales benefited from the higher market prices observed internationally, up by around 50% on the previous year, for the Portuguese area of MIBEL (Iberian Electricity Market).

In another important development, Navigator's industrial units participated in the Regulation Reserve Band Market, a service provided to the operator of the Portuguese national grid by major power consumers, which are on standby to reduce consumption in the event of an anomaly in the national grid. This market mechanism resulted in earnings in 2022 of approximately 7.3 million euros.

Printing and writing paper

Our UWF sales totalled 1.5 million tons (up 1.7% on 2021), reflecting the Company's endeavours to respond to its Customers' needs (especially its traditional and regular customers). This led to a sharper increase in sales in Europe (up 20% in volume) than in other markets. As a result, 2022 was the best year for European sales since 2016, and turnover in this region grew by 74%, thanks to price rises.

In the rest of the world, the fact the sales volume fell by 26% in relation to the previous year meant it was necessary to optimise volume management, with a focus on countries where we enjoy a strong presence, and to adopt a more selective approach to orders and Customers. These moves resulted in an improved product mix, which was our best ever in markets outside Europe and North America, corresponding to a 25% increase in turnover (setting a new record), despite the reduction in volume.



Tissue

Tissue business continued to perform well thanks not only to growth of 1.8% in the global market, in relation to 2021, but also to higher prices in this business.

Against this backdrop, Tissue sales grew in value by 36% overall and by 38% for finished products. Sales in the At Home channel led the way, up by 5%, as the Company secured new Clients and consolidated its existing position, enabling sustainable diversification of its sales activity.

Sales of Navigator brands also grew by 9% across all channels and markets, accounting for 28% of Finished Products (tons) – as compared to 26% in 2021.

There was a focus on operational efficiency, increasing production capacity and improving the quality of the products delivered, as well as a drive for innovation and the launch of products tailored to market trends:

- Amoos Air Sense™ toilet paper, incorporating fragrance micropearls – 2023 Five Star Product, in the toilet paper category (launched in 2021);
- Amoos Calorie Control™ kitchen roll, produced using a technology that creates tiny air pockets inside the paper, boosting absorbancy (launched in 2022).

Packaging

In this segment, the growing Customer base has borne witness to the quality of our products, especially under the gKraft brand.

Sales of this brand grew by 22% over budget and more than doubled the result in 2021.

Business development was strongest in the bag segment, with sales growing 32% in volume and 73% in value, thanks to a broader Customer base, thanks to efforts pursued since 2017, and to our capacity to grow orders books.

Mozambique

Portucel Moçambique pressed ahead with operations to harvest and export eucalyptus wood from Manica province, and dispatched three shiploads in 2022, corresponding to approximately 95 thousand cubic metres of wood, with controlled origin certification (Chap. 5.2).

In Zambézia province, where the company has a significant part of its forestry assets, the operation concentrated on maintaining these plantations, including monitoring and management of areas hit by extreme climate phenomena occurring at the start of the year, and also on the harvesting and sale of biomass, totalling approximately 18 thousand cubic metres.

In the two provinces, new eucalyptus plantations were established over an area of 400 hectares, with replanting corresponding to close to 270 hectares. Portucel Moçambique's various business activities resulted in 2022 in payment of taxes and contributions to the Mozambican state of approximately 650 thousand dollars.



OUR BRANDS

In addition to the quality, innovation and sustainability factors associated with our brands, we offer our Customers and Consumers an additional guarantee in the form of the forestry certification label and/or EU Ecolabel on our products.

Sales of certified products (Ecolabel, FSC® or PEFC) have grown to represent a significant proportion of total sales, and we can point to the excellent progress in UWF paper, where in 2022 they increased by 15.7% in relation to the previous year.

	2021	2022
UWF	55.72%	71.40%
Pulp	77.23%	79.76%
Tissue	99.95%	99.48%
Packaging	56.00%	56.69%

UWF Paper

Our brand portfolio divides into office paper brands and brands for the printing industry.

Navigator brand paper has consumers in more than 130 countries and has been part of our customers' lives for thirty years. A number of events were held in 2022, in several countries, to mark this historic milestone.

We invest continuously in improving product characteristics, seeking to respond to our Customers' needs. By way of illustration, we are stepping up our sales operation in certain geographical regions, in particular in the United States.

In the professional printing sector, we have continued to promote and consolidate our brands, such as the Navigator Profession sub-brand. Recent launches of professional products - Navigator Premium Books, Navigator Premium Writing and Navigator Premium Envelopes - have proved to be a success in the books and notebooks market.

In office paper, an important development was the launch of Navigator Carbon Neutral, as a way of ramping up our response to the environmental concerns of our Customers.



LEARN MORE ABOUT [NAVIGATOR'S UWF PAPER](#)



Discovery: webinar on sustainability

As part of the repositioning of the Discovery brand in terms of sustainability, Navigator organised a webinar in 2022 entitled "Discover Forests, Sustainability and Paper".

This brand is only available in grammages of 70 g/m² and 75 g/m², meaning it uses less resources and generates less waste.

This event highlighted the advantages of recyclable and biodegradable products, sourced from certified and renewable forests, attracting 362 registrations and attended online by 281 people.



LEARN MORE ABOUT ["DISCOVER FOREST, SUSTAINABILITY AND PAPER"](#)

From the perspective of association with charitable causes, our Pioneer brand, sold in more than 105 countries, maintained its support for organisations fighting breast cancer.

Pioneer continues to inspire trust

In line with Navigator's long-standing commitment to having a positive impact on society and individuals, the Pioneer brand continued in 2022 to support efforts to fight breast cancer, through its partnership with iMM-Laço Hub, and once again organised the Pioneer Inspire Hope initiative.

In Breast Cancer Prevention Month, in October, 1,300 flowers made from Pioneer paper were presented to researchers at iMM-Laço Hub, Navigator employees cancer patients and their families at Lisbon's Hospital Santa Maria.

Since its inception in 2005, Pioneer's support for breast cancer research has involved investment of 480 thousand euros.



LEARN MORE ABOUT [PIONEER INSPIRE HOPE](#)

gKRAFT (Globulus Kraft Paper)

We've elevated the concept of Kraft paper.

The launch of the gKRAFT brand in 2021 personifies a new generation of packaging papers featuring excellent levels of performance, printing quality and functionality, meeting the highest standards of safety and hygiene.

The raw material used to produce this paper means it is more recyclable and at the same time uses less wood per ton of paper produced, thanks to the use of *Eucalyptus globulus fibre*. This raw material means that 50% less wood is used per packaging volume (tons) - in comparison with *Pinus Taeda*, *Pinus sylvestris* -, at the same time as ensuring the production of packaging that is safe, hygienic and faster to compost, requiring 20% less time than competing products using pine.



LEARN MORE ABOUT [gKRAFT - THE NEW STATE-OF-THE ART PACKAGING PAPER](#)

Amoos

The tissue sector has invested in innovation, with several products offering disruptive features, such as: Amoos Air Sense (toilet paper), Amoos Naturally Soft (napkins and toilet paper), Amoos Aquactive (multipurpose) and Amoos Calorie Control (kitchen roll).



LEARN MORE ABOUT THE BRAND [Amoos](#)



3. OUR APPROACH TO SUSTAINABILITY

SUSTAINABILITY REPORT 2022



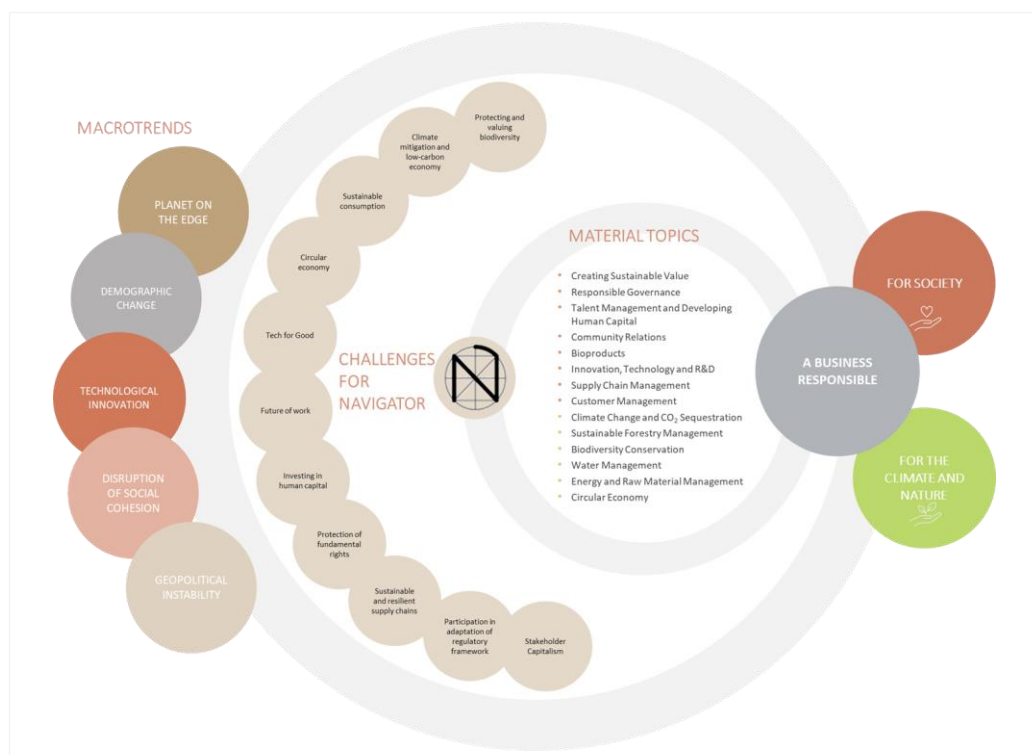
3.1 GLOBAL TENDENCIES AND CHALLENGES FOR NAVIGATOR

At The Navigator Company, we keep careful track of the global situation and what it may mean, in order to bolster our strategy and enable us to operate and navigate successfully and sustainably through an uncertain future.

The disruption brought by a pandemic which has lasted almost three years, now joined by the current political and economic challenges - slowing economies, high inflation, the continued war in Ukraine and rising costs for energy, logistics and raw materials - has shown how important it is for companies to anticipate risks (and opportunities), and to adapt to the changes and rifts emerging in an increasingly volatile world.

As we travel towards a future with more than 9 billion people in 2050¹¹, the world faces unprecedented challenges - the climate emergency, nature in crisis, growing inequality and social unrest.

In order for future generations to enjoy a good standard of living, within the limits of the planet, we need a transformative vision and to work for intergenerational equity. Governments, civil society and business need to join forces, play the role needed of them and change the systems that have created the challenges we now face. It is time for urgent action and for shouldering responsibilities, so we can help make profound changes in these systems, to make our economies and societies more resilient, sustainable and inclusive.



¹¹ WBCSD – Vision 2050: Time to Transform (<https://timetotransform.biz/>)



At Navigator we are aware of the role that falls to us in working towards this vision of the future, as a prime mover in the Portuguese economy and a bioindustry on the right side of the future. We are aware that the global situation may bring risks, as well as opportunities, impacting our ability to create value in the short, medium and long term.

With a value chain that stretches around the world, the Company's success relies on its monitoring of these challenges. For this reason, the starting point for the design of Navigator's 2030 Agenda was an analysis of the main macrotrends and challenges that could potentially influence the Company's business, directly or indirectly.

It is important to stress that our responsible approach is underpinned by our Corporate Purpose and the Company's 2030 Agenda. In order to ensure that our Responsible Business Agenda remains up-to-date in this context of constant change, we conducted a double materiality analysis in 2022 (Chap. 3.2). In the course of this analysis, we sought to review/update our previous assessment, and identified new macrotrends and challenges for the Company. assessment, and identified new macrotrends and challenges for the Company. This analysis was based on WBCSD reports on the review of "Vision 2050", the global mapping of risks issued annually by the World Economic Forum (WEF) and the annual publication of SustainAbility, a think tank in the field of sustainability, setting out the main trends in this area for corporate activity.

The process also involved analysing two relevant reports on the issue of sustainable finance in the forestry sector: PRI- An introduction to responsible investment in forestry and ESG Equity Barometer H1 2022, from Euronext.

To the macrotrends previously identified – planet on the edge, demographic changes, and technological innovation - we added disruption of social cohesion and geopolitical and economic instability. It is our view that the five global tendencies are interconnected and interdependent, acting as "driving forces" which give rise to various challenges for our business and industrial sector.

As a result, in response to the evolving global context, we have added three more sustainability challenges to the eight we identified last year: protection of fundamental rights, participation in adaptation of the regulatory framework and promotion of Stakeholder capitalism.






Selection of these trends and challenges, combined with the double materiality analysis, which involved listening to internal and external Stakeholders, enabled us to identify new material topics (Chap. 3.2), leading to a redesign of Navigator's 2030 Responsible Management Agenda.

The following table sets out the findings of this analysis, identifying the material topics associated with the challenges facing our business, and the main risks and opportunities identified. A description is also provided of the main initiatives we are pursuing in response to these.

In the near future we will undertake an internal exercise to explore and integrate the findings of the double materiality analysis, with regard to the risks and opportunities that we face.



MACROTRENDS IDENTIFIED AS RELEVANT

PLANET ON THE EDGE 	DEMOGRAPHIC CHANGES 	TECHNOLOGICAL INNOVATION 	DISRUPTION OF SOCIAL COHESION 	GEOPOLITICAL AND ECONOMIC INSTABILITY 
<p>Existential threats to the Earth and human life, biodiversity loss and climate change all point to the planet's limits. These are joined by the scarcity of resources, deforestation and pollution, which accelerate degradation of the environment and the emergence of zoonotic diseases (epidemics and pandemics), of which COVID-19 is the most recent example.</p> <p>More frequent and more severe climate phenomena will bring suffering and migration, resulting in costs and economic losses.</p> <p>Increasingly severe water stress may affect two thirds of the world population by 2025², and generate geopolitical conflicts over access to water.</p> <p>Soil and land degradation will have a material impact on farming in many regions.</p> <p>Air quality will remain a concern in many cities, with severe consequences for public health.</p>	<p>The world's population is growing, ageing and increasingly urbanised. Demographic changes increased migratory flows and the growth of megacities puts additional pressure on natural resources.</p> <p>Demographic factors are impacting economic development, due to both the ageing of the population, and intergenerational differences.</p> <p>The inversion of demographic pyramids in some parts of the world may lead to the failure of social security systems and the need for older generations to stay in work.</p> <p>As power shifts from baby boomers to millennials and Generation Z, reflecting different experiences and perspectives, companies will be challenged to stay relevant in their purpose, and to invest more and take greater care of their human capital, on which their ability to compete depends.</p>	<p>New technologies, such as digitisation, automation, Artificial Intelligence (AI), Blockchain and BigData will allow companies to accelerate and expand their positive impact on sustainable development of the economy and society. Key technologies in different areas - from biotech to renewable energy - will undergo exponential development.</p> <p>New technology has implications for the future of work. New jobs will be gained, but old jobs will be lost, which entails learning new skills, and refreshing the old.</p> <p>Greater dependence on cybernetics and data systems. Added vulnerability to cyber attacks. The risk of new levels of data snooping and manipulation in the service of profits and power.</p> <p>The risk of growing digital inequality in access to networks and critical technologies.</p>	<p>Increasing social divisions, uncertainty and anxiety.</p> <p>Increased inequality within and between countries, together with the erosion of trust in institutions, is fuelling a wide range of protest movements, and could potentially lead to polarisation of domestic politics, populist and nationalist sentiment and authoritarian regimes.</p> <p>Feelings of anxiety, depress, loneliness and stress, in response to the pandemic and an uncertain future, can undermine social cohesion.</p> <p>Rising inflation, loss of purchasing power and structural deterioration of job prospects and/or living standards for people of working age could lead to crises in employment or livelihoods, and to the erosion of employment rights.</p> <p>Differences in access to technology and digital skills increases the risk of the gap between "rich" and "poor", challenging social cohesion.</p>	<p>Geopolitical instability, economic downturn, shifts in power and consequent move away from multilateralism.</p> <p>Increased global tensions, through geo-economic and military conflicts. Trade tensions will probably remain a feature of the geopolitical scene for the rest of the decade. The centre of gravity in the global economy is shifting to Asia, but also to Africa and Latin America.</p> <p>Nationalisation of resources and competition between States for control of vital raw materials will potentially become an increasingly important factor in international relations, with a consequent impact on supply chains, which will tend to shorten.</p> <p>Higher interest rates, together with a drop in earnings in real terms, are leading to economic recession.</p>



CHALLENGES FOR NAVIGATOR

CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Protecting and valuing biodiversity</p> <p>Biodiversity loss is one of the most pressing global crises of our times and has been identified by the World Economic Forum (WEF) as one of the most severe global risks over a timeframe of 10 years. Wildlife and ecosystem protection, conservation and restoration have a crucial role to play in securing benefits in terms of climate regulation, availability of resources and other environmental and social services.</p> <p>Alongside this growing recognition of the importance of Nature to business, of its dependence and impacts, new solutions and partnerships have emerged to halt biodiversity loss (looking at the value chain), to integrate financial valuation of ecosystem services and to promote nature-based solutions</p>	<ul style="list-style-type: none"> • Climate change and CO₂ sequestration • Bioproducts • Management of supply chain • Biodiversity conservation • Responsible governance (human rights; risk management and business continuity) • Circular economy • Water management • Sustainable forest management • Innovation, technology and R&D • Energy and raw material management 	<ul style="list-style-type: none"> • Restrictions on forestry production / unavailability of land to increase forested area / loss of area available for eucalyptus production (e.g. new uses) • Forest fire risk (with impact on loss of productive area and biodiversity) • Changes to regulatory framework on land use (e.g. European Strategy for Biodiversity) 	<ul style="list-style-type: none"> • Strengthen the sector's credibility and reputation in order to increase acceptance by society • Provide incentives for forestry producers to adopt best practices • Contribute to reduction in number/intensity of forest fires • Complementary agro-forestry projects, conciliating production forests with other forms of land use 	<ul style="list-style-type: none"> • Sustainable management of Navigator's forests through certification under FSC® and PEFC schemes • Programmes supporting Forestry Producers and improvement of eucalyptus forests • Dissemination of good forestry practices through our own channels and sector events • Action and resources for fire prevention and to support firefighting • RDI activities and investment in bioproducts • Forest renewal activities • Projects for forest literacy and biodiversity conservation, and forging partnerships • Commitment with Conservation and monitoring activities to which we are committed in connection with Act4nature Portugal



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPPORTUNITIES	OUR RESPONSE
<p>Climate mitigation and low carbon economy</p> <p>Failure to take climate action (mitigation and adaptation) remains one of the main risks identified by WEF, in both the short and the long term, and it has again pointed to the need for greater commitment and action.</p> <p>Climate events will become more frequent and more severe (as the "new normal"). Political action is starting to be taken on climate issues around the world, along with a stricter regulatory framework in the European Union.</p> <p>The low-carbon economy is at the heart of post-pandemic recovery plans. The development of new technologies (e.g. carbon capture solutions) will be accelerated, new jobs will be created and new energy sources (e.g. hydrogen) and new opportunities will be explored</p>	<ul style="list-style-type: none"> Climate change and CO₂ sequestration Bioproducts Management of supply chain Biodiversity conservation Circular economy Water management Responsible governance (risk management and business continuity) Sustainable forest management Innovation, technology and R&D Energy and raw material management 	<ul style="list-style-type: none"> Reduction of emission limits (EU ETS) Biomass ceasing to be considered a sustainable alternative to fossil fuels Shortfalls in availability of raw materials and energy as a result of price variations and also disruptions to supply chains Restrictions resulting from regulatory framework on raw materials used in producing pulp and paper Forest fire risk (with impact on loss of productive area and biodiversity) Restrictions on forestry production / unavailability of land to increase forested area / loss of area available for eucalyptus production (e.g., new uses) 	<ul style="list-style-type: none"> Substitution of fossil fuels by renewable fuels (e.g. biomass and hydrogen) Investment in and/or development of business models recognised as more sustainable (in line with European Taxonomy) Process optimisation and financial savings from specific strategies for each resource Investment in R&D Strengthen the sector's credibility and reputation in order to increase acceptance by society Provide incentives for forestry producers to adopt best practices Increase in revenues due to greater demand for products and services with low GHG emissions 	<ul style="list-style-type: none"> Company's Roadmap for Carbon Neutrality and submission of decarbonisation targets to SBTi (Science Based Targets initiative) Sustainable forest management Investment in systems and technologies that minimise environmental impacts and promote improved energy efficiency Gradual elimination of consumption of fossil-based energy and investment in alternative and renewable energy sources (e.g. photovoltaic solar, biomass, green hydrogen) Production of renewable energy RDI activities and investment in bioproducts Analysis of positive contribution of our agroforestry assets as a carbon sink Alignment with the TCFD initiative and European Taxonomy



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Circular economy</p> <p>Regulatory developments and consumer pressure relating to sustainable production and consumption, scarcity of resources, supplier chain volatility and the imminent threat of climate change are leading companies to develop more circular business models that create and secure business value, whilst at the same time being beneficial for the planet.</p> <p>There is also a growing need to measure circularity, using new tools, standards and frameworks.</p>	<ul style="list-style-type: none"> • Bioproducts • Climate change and CO2 sequestration • Supply chain management • Creating sustainable value • Circular economy • Water management • Responsible governance (risk management and business continuity) • Customer management • Sustainable forest management • Community relations • Innovation, technology and R&D • Energy and raw material management 	<ul style="list-style-type: none"> • Changes to regulatory context for waste management • Impossibility of reclassifying certain wastes as by-products (costs associated with processing of waste) • Changes in patterns of consumption and purchasing power of users • Restrictions resulting from legal and regulatory framework in Portugal • Lack of standardised methods for quantifying environmental footprint of products (for example, metrics for measuring circularity of raw materials) • Management of social conflict over rival claims to water • Changes to regulatory context for water use 	<ul style="list-style-type: none"> • Increase rate of circularity • Strengthen competitive position in response to customer and consumer preferences • Establishing new RDI partnerships and projects • More efficient use of water resources in industrial and forestry production processes, using innovative solutions • Process optimisation and financial savings from specific strategies for each resource 	<ul style="list-style-type: none"> • Optimisation and improvement of industrial processes - efficiency in use of resources, processes and treatment systems • Recovery of waste and reincorporation of by-products in Navigator processes • Promoting industrial symbiosis • RDI activities and investment in bioproducts • Establishing partnerships • Participation in Circular Bioeconomy Alliance platform • Participation in the CTi (Circular Transition Indicators) tool, enabling us to apply circularity metrics to UWF paper • Improving scientific and technological expertise in forest-based circular and digital bioeconomy



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Sustainable consuption</p> <p>Growing consumer awareness, activism and demands, especially among younger generations. Demand for healthier and more sustainable products, openness to new consupumption models – digital, shift from ownership to sharing. Consumers who are more aware and demand information that is clearer, more transparente and traceable.</p> <p>Increased production of packaging as alternative to plastics (in particular, single use plastics).</p> <p>Emphasis on the role of companies in raising consumer awareneww and disigning solutions which are more sustainable and competitive in terms of costs.</p>	<ul style="list-style-type: none"> • Bioproducts • Climate change and CO₂ sequestration • Biodiversity conservation • Supply Chain Management • Creating sustainable value • Circular economy • Water management • Responsible governance (risk management and business continuity) • Customer management • Sustainable forest management • Innovation, technology and R&D • Community relations • Energy and raw material management 	<ul style="list-style-type: none"> • Changes in patterns of consumption and purchasing power of users • Reputational damage and loss of Customer loyalty 	<ul style="list-style-type: none"> • Development and/or expansion of goods and services featuring low carbon or bioproducts • Strengthen the sector's credibility and reputation in order to increase acceptance by society • Changing patterns of consumption due to growing demand for sustainable solutions, with a smaller carbon footprint, rewarding companies with a strong sustainability profile • Build stronger and closer ties, through direct communication channels 	<ul style="list-style-type: none"> • Products with forestry certification label and/or EU Ecolabel • RDI activities and investment in bioproducts • gKRAFT range packaging products furthering the transition to more sustainable solutions • Innovative tissue products: <ul style="list-style-type: none"> ○ Amoos Naturally Soft (unbleached eucalyptus kraft pulp) ○ Amoos Aquactive (produces soap bubbles when wetted) ○ Amoos Air Sense™ (with floral fragrance capsules) ○ Amoos Calorie Control (improved capacity to absorb food oils and grease) • Forest literacy projects



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPPORTUNITIES	OUR RESPONSE
<p>Tech for good</p> <p>COVID-19 has once again highlighted the importance of technology and of leveraging digitisation, bringing about new ways of working, socialising and selling. This development raises issues relating to digital fairness and access and other problems associated with technological advances. Faster digital transformation in order to improve business resilience and sustainability performance, creating solutions for a number of social and environmental problems. Financing opportunities for companies to leverage the technological revolution, enabling them to invest in decarbonisation, in the bioeconomy, in mobility and in digitising their processes and ways of working.</p>	<ul style="list-style-type: none"> • Climate change and CO₂ sequestration • Bioproducts • Circular economy • Water management • Sustainable forest management • Innovation, technology and R&D • Energy and raw material management 	<ul style="list-style-type: none"> • Risks resulting from the use of artificial intelligence technologies, robotics and IoT in industrial processes (cybersecurity) • Lack of financial support for R&D and investment in innovation • Bioproducts less economically competitive than fossil-based products 	<ul style="list-style-type: none"> • Development of new technologies and opportunities for: business improvement, expansion and diversification, and improved environmental performance • Investment in new technologies for improved environmental performance • Increase in revenues due to greater demand for products and services with low GHG emissions 	<ul style="list-style-type: none"> • New Digital Technology Division taking a broad approach to topics related to Industry 4.0 and digital transformation in all operational areas • Investment in systems and technologies that minimise environmental impacts and promote improved resource efficiency • RDI activities and investment in bioproducts • gKRAFT range packaging products • Innovative tissue products



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Investing in human capital</p> <p>People as one of industry's most valuable assets. The pandemic underlined the S in ESG, with a particular emphasis on Employee well-being, health and safety. It also accelerated new ways of working and of handling the relationship between businesses and their Employees (e.g. more flexible, remote, integration with working, personal and family life).</p> <p>Worsening mental health as one of the risks identified by WEF in the near term, with an impact on the productivity of companies.</p> <p>In order to retain and engage with Employees, companies will have to promote a better connection between work and their purpose, and create more diverse and inclusive working models and environments, in particular to motivate younger generations.</p> <p>Greater attention paid by companies, but also by investors and financial institutions, to detailed information on human capital.</p>	<ul style="list-style-type: none"> • Responsible governance (human rights; diversity, equity and inclusion; ethics and transparency; risk management and business continuity) • Talent management and development of human capital • Health, safety and well-being 	<ul style="list-style-type: none"> • Waning capacity to attract and retain young talent • Disalignment between Employee and company expectations • Lack of clear policies and goals in the field of Diversity, Equity and Inclusion • Increase in accidents and occupational diseases • Reputational damage 	<ul style="list-style-type: none"> • Improved work-life balance • Increased capacity to attract and retain talent • Optimisation of employer branding processes, internally and externally • More investment by leaders in integrating and developing their teams 	<ul style="list-style-type: none"> • Providing opportunities for Employees to develop their professional lives and careers • Creation of customised development plans • Investment in training and the options offered by the Learning Center • Promotion and empowerment of new leaders • Nurturing the spirit of enterprise • Improved conditions in terms of pay and bonuses • Benefits plans and pension fund • Mobilising Employees around Company's Purpose • Promoting employability and attracting young talent • Resources for providing safe working conditions • Occupational health and preventive medicine programmes



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPPORTUNITIES	OUR RESPONSE
<p>Future of work</p> <p>Ongoing advances in robotics, artificial intelligence and machine learning are launching a new era of automation, as machines start to rival or surpass human performance in various working activities. Debate about adapting people and jobs to this new era, and the skills of the future</p> <p>The pandemic speeded up the shift to digital, and this has created a need to upskill and prepare human capital for new functions and work processes.</p>	<ul style="list-style-type: none"> • Talent management and development of human capital • Responsible governance (diversity, equity and inclusion) • Creating sustainable value • Health, Safety and Well-being 	<ul style="list-style-type: none"> • Waning capacity to attract and retain young talent • Disalignment between Employee and company expectations • Lack of clear policies and goals in the field of Diversity, Equity and Inclusion • Risks resulting from the use of artificial intelligence technologies, robotics and IoT in industrial processes (cybersecurity) 	<ul style="list-style-type: none"> • Improved work-life balance • Increased attraction and retention of talent • Optimisation of employer branding processes, internally and externally • More investment by leaders in integrating and developing their teams • Development of new technologies and opportunities for improving, expanding and diversifying business 	<ul style="list-style-type: none"> • Internal succession mapping to ensure sustainability at different functional levels in future • Employee development plans • More flexible remote working (part-time) • Investment in training and the options offered by the Learning Center • Commitment to creating digital skills • Mobilising Employees around Company's Purpose • Promoting employability and attracting young talent



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPPORTUNITIES	OUR RESPONSE
<p>Resilient and sustainable value chains</p> <p>The Covid-19 pandemic and the imperative need for economic recovery have put the resilience of value chains to the test and added to the urgency of examining their sustainability. Difficulties in importing raw materials and exporting products, as a result of successive disruptions to supply chains (including strikes, shortages, protectionist policies and other factors).</p> <p>Stakeholders continue to put pressure on companies to improve management of their supply chains, paying special attention to respect for human rights and the environment. Expectations of greater maturity in programmes and initiatives implemented by companies, and of greater transparency and improved assessment of supply chain performance in terms of sustainability.</p> <p>Transition from soft law to hard law, with increasingly strict regulatory frameworks holding companies liable for their impacts on the value chain.</p>	<ul style="list-style-type: none"> • Climate change and CO₂ sequestration • Supply chain management • Biodiversity conservation • Responsible governance (human rights; ethics and transparency; risk management and business continuity) • Circular economy • Water management • Sustainable forest management • Community relations • Health, safety and well-being • Energy and raw material management 	<ul style="list-style-type: none"> • Shortfalls in availability of raw materials and energy as a result of price variations and also disruptions to supply chains • Restrictions resulting from regulatory framework on raw materials used in producing pulp and paper • Process optimisation and financial savings from specific strategies for each resource • Human rights violation in supply chain (e.g. child labour) undermining company's reputation and image • Shortcomings in due diligence processes for environmental and social assessment of suppliers • Forest fire risk (with impact on loss of productive area) • Restrictions on forestry production / unavailability of land to increase forested area / loss of area available for eucalyptus production (e.g., new uses) 	<ul style="list-style-type: none"> • Shorter supply chains and industrial clusters • Diversification of suppliers and raw materials • Strengthen the sector's credibility and reputation in order to increase acceptance by society • Stronger ethics and compliance practices in the company, including policymaking, empowerment, sharing of knowledge, and internal and external audits (due diligence) of suppliers on socio-economic and environmental matters • Provide incentives for forestry producers to adopt best practices • Establishing new R&D partnerships and projects 	<ul style="list-style-type: none"> • Code of Conduct for Suppliers • Strategy of partnership with Suppliers (e.g. increasing energy, resource and transport efficiency, looking for alternatives to fossil-based energy and contributing to decarbonisation goals) • Sustainable management of Navigator's forests through certification under FSC® and PEFC schemes • Promoting chain-of-custody certification of all our wood suppliers • Programmes supporting Forestry Producers and improvement of eucalyptus forests • Dissemination of good forestry practices through our own channels and sector events • Eligibility criteria, for supply of raw materials • Optimisation of inbound wood flows • Partnership with Suppliers to encourage production of energy from biomass • Commitment to alternatives to road transport (e.g., rail and maritime)



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Protection of fundamental rights</p> <p>The response of businesses to Covid-19 and movements such as #BlackLivesMatter, #MeToo, has increased the attention paid to human capital. Companies have come under scrutiny, from a wide range of Stakeholders, in relation to topics such as unfairness, racism, harassment or other types of discriminatory practices.</p> <p>Expectations concerning respect for human and employment rights are broadened to include value chains, on the light of recent regulatory developments (transition from soft law to hard law). More than just securing a social license to operate, companies will have to work actively to build relationships of trust and create social value with Employees and Communities, and also speak out and take action against injustice.</p> <p>Diversity as a competitive factor - diversity, equity and inclusion programmes and practices are being reassessed and expanded. Funds take greater interest in social and governance issues for ESG investments.</p>	<ul style="list-style-type: none"> • Supply chain management • Responsible governance (human rights; diversity, equity and inclusion; ethics and transparency; risk management and business continuity) • Talent management and development of human capital • Community relations • Health, safety and well-being 	<ul style="list-style-type: none"> • Violation of human rights envisaged in Employee Code of Conduct, undermining the company's credibility, reputation and image • Human rights violation in supply chain (e.g. child labour) undermining company's reputation and image • Lack of clear policies and goals in the field of Diversity, Equity and Inclusion • Increase in accidents and occupational diseases • Reputational damage • Limitation of social license to operate 	<ul style="list-style-type: none"> • Increased attraction and retention of talent • Improved work-life balance • Establishing partnerships with local associations in collaborative projects to improve quality of life for communities • Increased engagement with Local Communities (industrial and forestry sectors) • Improved well-being for Employees and local Communities • Ensure implementation of responsible business practices • Stronger ethics and compliance practices in the company, including policymaking, empowerment, sharing of knowledge, and internal and external audits (due diligence) of suppliers on socio-economic and environmental matters 	<ul style="list-style-type: none"> • Responsible business conduct, based on ethics, responsibility and transparency • Codes of ethics and conduct (Employees and Suppliers) • Human Rights Policy • Gender Equality Plan • Whistleblowing channel • Working conditions which are fair, safe and promote Employees' health, well-being and development • Collective bargaining instruments • Investment in training



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Participation in adaptation of regulatory framework</p> <p>Regulation creates the stable, predictable and fair conditions on which business depends in order to invest, compete and prosper. Companies must support the design of policies that provide incentives for sustainable transformation. Business must adjust to new European regulations and new ways of dealing with global changes. Challenges such as climate action, diversity, equity and inclusion, human rights, among others, will be subject to more consistent rules, and companies, by working in partnership, will be key to this process. In view of evolving and increasingly strict regulatory frameworks, companies must be more transparent, using their advantage to shape policies, regulations and standards in order to address the challenges of sustainability in the long term.</p>	<ul style="list-style-type: none"> • Climate change and CO2 sequestration • Supply chain management • Biodiversity conservation • Creating sustainable value • Responsible governance (human rights; diversity, equity and inclusion; ethics and transparency; risk management and business continuity) • Circular economy • Sustainable forest management 	<ul style="list-style-type: none"> • Risk that regulatory changes in Portugal, as a result of political decisions, relating to tax, environmental or economic matters, will have a significant impact, directly or indirectly, on Navigator's operations and/or results • Uncertainty about the impact of policies under the EU Green Deal, such as the European strategies for forests, biodiversity, emission transition system, sustainable products and European Taxonomy • Uncertainty about the impact of regulations associated with European Taxonomy on the perceptions of capital providers 	<ul style="list-style-type: none"> • Market opportunities generated by the policies under the EU Green Deal may create competitive advantages for companies that manufacture and market demonstrably sustainable products 	<ul style="list-style-type: none"> • New Public Affairs Division • Monitoring of the most pressing topics on the political agenda in Europe, Portugal and Mozambique • Advocacy initiatives in relation to regulatory, environmental and social matters • Collaboration on research and issuing technical reports • Participation in sector associations and events, in Portugal and internationally • Organisation of events, visits and debates around topics of structural interest to the Company and sector



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
<p>Stakeholder Capitalism</p> <p>Necessity of meeting the needs of Companies' different Stakeholders. In contrast to the prevailing model of maximising short term profits for Shareholders, Stakeholder Capitalism is based on creating long term shared value, considering not only Shareholders, but also Customers, Employees, Communities and Suppliers, among others.</p> <p>Business model will be redesigned to respond to pressure from society and markets and there will be a growing need to apply new metrics to assess impact. Companies must lead the way in reinventing capitalism to ensure that the power of private enterprise and competitive markets can be harnessed to support social, environmental and business prosperity in the long term.</p>	<ul style="list-style-type: none"> • Supply chain management • Creating sustainable value • Responsible governance (human rights; diversity, equity and inclusion; ethics and transparency; risk management and business continuity) • Talent management and human development • Customer management • Community relations • Health, safety and well-being 	<ul style="list-style-type: none"> • Reputational risks from miscellaneous sources (e.g. corruption, Human Rights, environmental disasters, ...) • Shortcomings in procedures to assess corruption risk in operations • Limitation of social license to operate (local communities and Portuguese society) • Uncertainty about the impact of policies under the EU Green Deal, such as the European strategies for forests, biodiversity, emission transition system, sustainable products and European taxonomy • Uncertainty about the impact of regulations associated with European Taxonomy on the perceptions of capital providers 	<ul style="list-style-type: none"> • Build stronger and closer ties, through direct communication channels • Stronger ethics and compliance practices in the company, including policy-making, empowerment, sharing of knowledge, and internal and external audits • Strengthening corporate credibility and reputation by focusing on ethical issues, and not merely on compliance with laws and regulations • Ensure implementation of responsible business practices • A more robust investment policy, including climate risks, costs associated with carbon emissions, analysis of social and environmental impacts of projects, including post-implementation monitoring • Establishing partnerships with local associations in collaborative projects to improve quality of life for communities • Increased engagement with local communities (industrial and forestry sectors) 	<ul style="list-style-type: none"> • Navigator's Purpose • 2030 Responsible Business Agenda • Sustainability governance structure with involvement of external Stakeholders (Sustainability Forum, Environmental Council and Community Monitoring Committees) • Stakeholder communication and engagement mechanisms • Finance for sustainable development • Sharing value with Stakeholders • Responsible business conduct, based on ethics, responsibility and transparency • Reporting of information and internal reflection on WEF Stakeholder Capitalism metrics



CHALLENGE	ASSOCIATED MATERIAL TOPICS	MAIN RISKS	MAIN OPORTUNITIES	OUR RESPONSE
			<ul style="list-style-type: none"> • Increase in revenues due to greater demand for products and services with low GHG emissions • Market opportunities generated by the policies under the EU Green Deal may create competitive advantages for companies that manufacture and market demonstrably sustainable products 	



3.2 MATERIALITY

Committed to ensuring that the Company's efforts remain focused on areas where it can have the greatest impact, we conducted a double materiality analysis.

In 2022, we updated Navigator's material topics in order to align our approach with the current global situation. We therefore conducted a double materiality exercise, anticipating the transposition into Portuguese law of the Corporate Sustainability Reporting Directive of the European Commission, and also taking into account the requirements of the new GRI Universal Standards (Global Reporting Initiative), the transition to which had already started in the Company's report of the previous year.

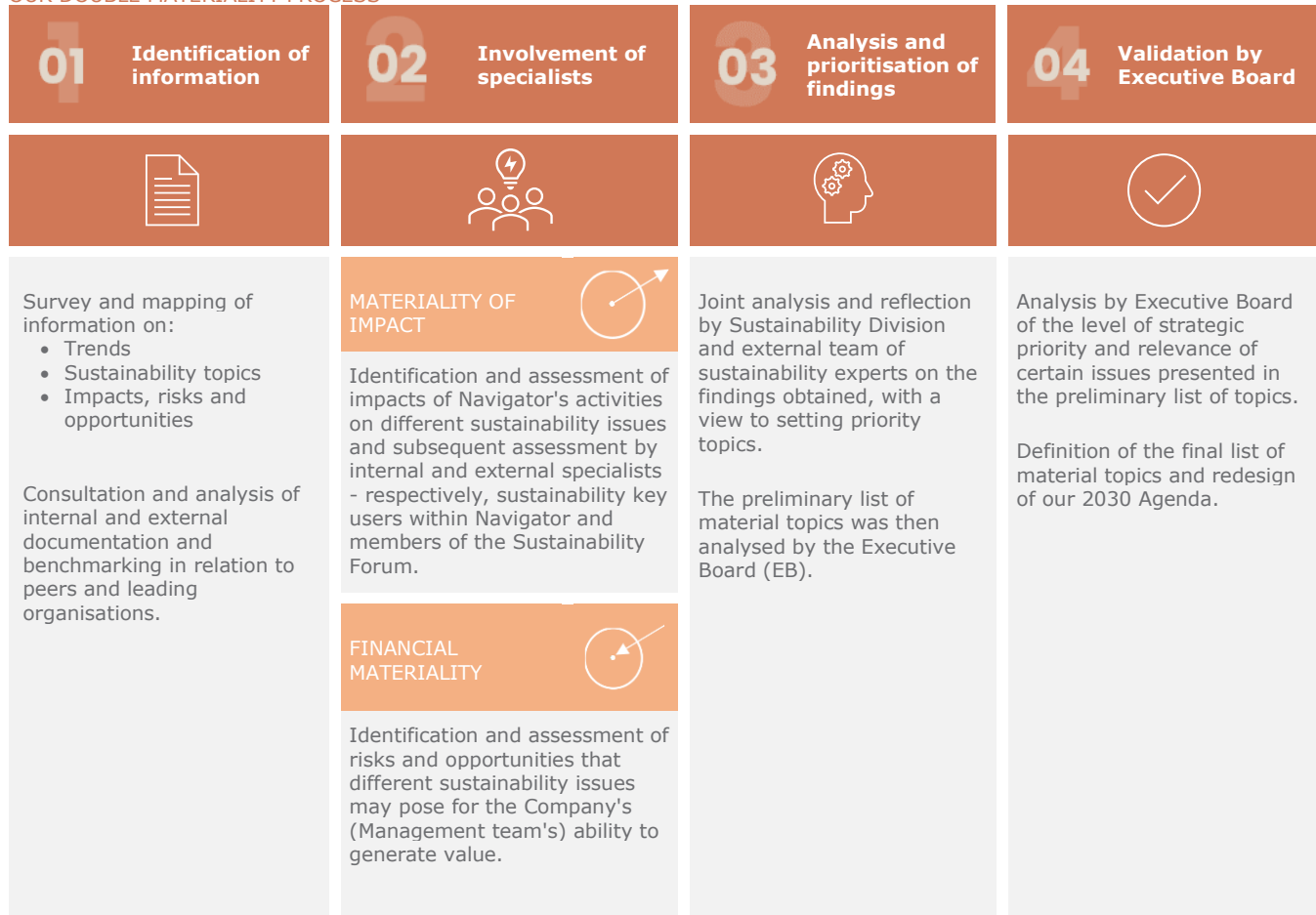
The methodology used was based on the guidelines published by EFRAG (European Financial Reporting Advisory Group), available at the date the process started. This involved two distinct analyses, one of the external impacts of Navigator's activities (inside out perspective - materiality of impact), and the other of the risks and opportunities resulting from the external context, which affect or may affect Navigator's generation of value (outside in perspective - financial materiality).

The starting point for this exercise was the detailed analysis conducted from 2019 to 2020, involving at that time more than 540 Stakeholders, both internal and external, with a process of strategic reflection and with an analysis of macro trends and business challenges.

Review of the topics entailed a process in four stages, involving more than 50 people, internal and external, specialists in their occupations and businesses, as well as the Executive Board and an external team of experts on sustainability issues.



OUR DOUBLE MATERIALITY PROCESS



Impacts, risks and opportunities were identified over the course of the listening process, and then assessed, using a specific methodology, in order to establish their relevance/significance.

The findings of these two analyses (materiality of impact and financial materiality) were cross-referenced in a matrix format, giving rise to a list of topics which was calibrated by the Executive Board in the light of the Company's strategic ESG priorities.

Strategic Issues 	<p>Includes the materials topics which represent a strategic priority for the Company. These topics are closely connected to our business model and are fundamental for our development. They are the issues that require the most attention and focus on action.</p>
Relevant Issues 	<p>Includes topics relevant to creating value in the medium and long term. Most of them were already included in our 2030 Agenda and were being addressed through the development of policies, setting of targets, management of specific projects and other measures. They correspond to the issues to monitor and manage in connection with our activities and Agenda 2030.</p>



OUR LIST OF MATERIAL TOPICS

A Business Responsible

For Society

For The Climate and Nature

Strategic Issues

- Talent Management and Developing Human Capital
- Community Relations

- Climate Change and CO2 Sequestration
- Water Management
- Sustainable Forestry Management
- Energy and Raw Material Management

Relevant Issues

- Creating Sustainable Value
- Responsible Governance*
- Bioproducts
- Innovation, Technology and R&D
- Health, Safety and Well-being
- Supply Chain Management
- Customer Management

- Biodiversity Conservation
- Circular Economy

* This topic brings together the issues of risk management and business continuity, ethics and transparency, diversity, equity and inclusion, and human rights

Navigator's 2030 Agenda (Chap. 3.3) has been adjusted to reflect this strategic review and to provide a framework for managing, monitoring and reporting the Company's performance on the current material issues.



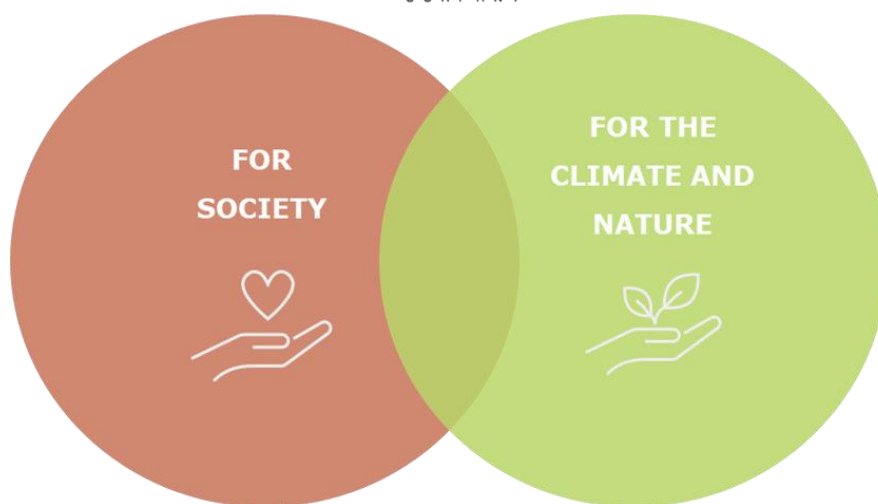
3.3 OUR 2030 AGENDA AND ROADMAP

Our 2030 Responsible Management Agenda, anchored in the concept of “Creating Value Responsibly”, was designed with the aim of increasing the Company's positive contribution, in the long term, creating value and sustainable growth in a changing world.

At The Navigator Company we have embraced management based on Ethics, Responsibility and Transparency. In fulfilment of our purpose - centred on people, their quality of life and the future of the planet - we are responsible for forest-based products that contribute to sustainable development and to the well-being of Society, in alignment with the United Nations 2030 Agenda.

In view of the challenges and opportunities facing the whole world in the 2020-2030 timeframe, our strategy is based on a governance structure which seeks to achieve economic success, in a fair and balanced way, responding to the interests of our Shareholders and encouraging them to cooperate. We have accordingly mapped out a position that seeks to

2030 AGENDA – A BUSINESS RESPONSIBLE



ASSOCIATED MATERIAL TOPICS

- Creating Sustainable Value
- Responsible Governance
- Talent Management and Developing Human Capital
- Community Relations
- Health, Safety and Well-being
- Bioproducts
- Innovation, Technology and R&D
- Supply Chain Management
- Customer Management
- Climate Change and CO₂ Sequestration
- Sustainable Forestry Management
- Biodiversity Conservation
- Water Management
- Energy and Raw Material Management
- Circular Economy



boost value creation - maximising our performance, contributing to the resilience of our business and our corporate reputation and image, and paving the way for sustainability to feature as a strategic competitive advantage.

Revision of 2030 Agenda

To ensure that the Company's efforts remain focused on areas where it can have the greatest impact, we have conducted a double materiality analysis (Chap. 3.2).

This exercise enabled us to conclude that the previous material topics remain relevant. Nonetheless, a number of changes emerged in response to the dramatic events of the past three years, and these were significantly influenced by economic developments at global level, and the challenges resulting from global sustainability trends (Chap. 3.1). The main changes are:

- The importance of water management, separately from energy and raw material management;
- Biodiversity conservation as a topic in its own right;
- The (re-)emergence of two new topics – Supply chain management and Customer management;
- The increased importance of responsible business conduct, by establishing a responsible Governance topic, bringing together the issues of risk management and business continuity, ethics and transparency, diversity, equity and inclusion, and human rights, the last two of which are new topics.

Our 2030 Agenda was reconfigured in accordance with the topics identified in the double materiality exercise. Keeping the focus on management of a responsible business, it is now organised around two strategic action areas, reflecting the two dimensions of our purpose, People and the Planet:

- 1) For Society;
- 2) For the Climate and Nature.

2030 Roadmap

At Navigator we believe it is essential to have a long-term plan of action that points us towards honouring the commitments set out in our 2030 Agenda. To achieve this, we have given our aspirations material form in the 2030 Roadmap - a tool that enables the Company to steer and monitor the course it takes over time, guiding the creation of sustainable value.

The 2030 Roadmap consists of 15 commitments drawn up in collaboration with the Company's various operational sectors. These 15 commitments are joined by a series of goals that we believe have the potential to generate a significant impact in the priority areas of our 2030 Agenda.

As a corporate management tool, the Roadmap is not static, and so an annual review is conducted which can result in fine tuning of some of the goals established, in line with possible new capital projects undertaken by the Company.

In 2022, our focus remained on achieving the goals we have set ourselves and our performance results are set out in the following table.



In view of the findings of the double materiality analysis, conducted in the final quarter of 2022, and the adjustments made to the 2030 Agenda, we plan to launch an internal reflection process in 2023 to define new commitments and goals to be included in our Roadmap.

Alignment with sustainability on a global scale

Mindful of international and national events in the domain of sustainability, and in line with the position we have staked out, we put our name in 2022 to two new manifestos launched by BCSD Portugal on the issue of Climate and Biodiversity.

Navigator puts its name to new BSCD manifestos

As a member of BCSD Portugal we put our name to two new manifestos drawn up in connection with the two COPs (Conferences of the Parties) held in 2022, by the United Nations - "En Route to COP27" and "For an Agreement for Nature at COP15".

These manifestos set out to express the position taken by Portuguese companies on the issue of Climate and Biodiversity, proposing a series of measures in response to the challenges.

In relation to COP27, the manifesto calls for several measures, including funding to ensure the climate transition, making reference to the importance to the practical and concrete contribution of COP to compliance with the Paris Climate Agreement.

The main aim of Biodiversity COP15 was the adoption of a Global Strategy for Biodiversity post-2020, with the aim of halting global biodiversity loss by 2030 and promoting the recovery of natural ecosystems. The manifesto called for Biodiversity COP15 to be a turning point in recognising the importance of Nature to our lives and economies, and for urgent collective action to protect and value biodiversity and natural capital.




2030 ROADMAP

We present a status of our 2030 Roadmap regarding the progress made on each goal (Status 2022) and also where it links up with the content of this report. In addition, we announce the new goals and interim targets.





For more detail about performance in 2022, please consult Annex – Detailed 2030 Roadmap.

FOR SOCIETY			
			
COMMITMENTS	GOALS	2022 STATUS	LOCATION
Develop sustainable bioproducts, reducing dependence on fossil resources and working towards a decarbonised economy.	Develop new cellulose materials and composites, which are recyclable and biodegradable.		Chap. 4.3 Research and Innovation in Forest-Based Bioeconomy
	Develop biofuels, bioplastics and biochemicals from waste forestry biomass.		
Promote scientific and technological co-creation in the field of the bioeconomy and bioproducts.	Strengthen partnerships with universities and technology centres in Portugal and abroad.		
	Promote advanced training, in collaboration with universities: 30 doctorates by 2030.		



COMMITMENTS	GOALS	2022 STATUS	LOCATION
	Promote registration of intellectual property: 25 patents by 2030.	●	
	 TARGET SURPASSED - GOAL REFORMULATED 50 patents by 2030.		
	 NEW GOAL Promote projects on a co-creation basis with external organisations - with a view to tapping the economic value of knowledge generated through R&D: 15 projects completed by 2030.		
Promote improved yields, resilience and sustainability in Portugal's forests.	Develop genetically improved clones and seeds, with gains of 30-50% in yields and resilient to climate change.	○	
	Propose biological solutions for combating the main diseases and pests in Portugal's eucalyptus forests.	○	
Develop innovative, competitive and sustainable products.	Develop innovative and distinctive paper products (pulp, UWF paper, tissue paper, packaging).	○	
Promote development and upskilling of human capital in line with the Company's present and future needs.	Reach 80% of Employees with development plans customised to their needs and professional plans, in alignment with Navigator's succession needs.	○	Chap. 4.4 Talent Management and Developing Human Capital
	 INTERIM TARGETS REFORMULATED <ul style="list-style-type: none"> 60% of all Employees with Individual Development Plan in 2025 80% of Technicians/Specialists/Managers with Individual Development Plan in 2025 		
Contribute to the skills and employability of young people in the regions where we operate.	Have active partnerships with educational institutions in all regions where we operate in Portugal, including curricular and vocational internships, as well as participation in teaching activities, events and fairs.	○	
Promote an inclusive organisational culture able to integrate internal and external challenges.	Monitor on a continuous basis the main motivational stimuli for Employees to arrive at more appropriate management practices, policies and processes implemented.	○	
Provide a safe and healthy environment for Employees, ensuring their well-being.	Achieve the Zero Accidents Target through continuous improvement in safety, with the new OHS Strategy 2021-2023: <ul style="list-style-type: none"> Frequency index < 2 in 2030 (internal and external Employees). Develop the Occupational Health programme up to 2030: <ul style="list-style-type: none"> Work Ability Index (WAI): 45% in 2030; Assessment of Employee satisfaction with programme > 95%. Develop the Ergonomics Action Area: 100 workstations redesigned by 2030.	○ ○ ○ ○	Chap. 4.5 Health, Safety and Well-being
Engage with national, international and local community institutional Stakeholders, listening to their expectations and aligning them with Navigator's strategy and needs.	Hold 10 events each year for interaction with representatives of relevant Stakeholder groups around the country or internationally, or five meetings of the Community Monitoring Committees in the areas around the Aveiro, Figueira da Foz, Setúbal and Vila Velha de Ródão industrial units.	○	Chap. 4.1 Responsible Governance



COMMITMENTS	GOALS	2022 STATUS	LOCATION
Develop Community relations.	Run Forest Literacy initiatives for primary school children, adolescents and adults, in order to contribute to better knowledge of Portugal's forests, and their environmental, social and economic importance, through the Dá a Mão à Floresta (Give the Forest a Hand), My Planet and Florestas.pt projects. <ul style="list-style-type: none"> No. initiatives/year (digital and in-person): 10. No. children reached/ year: 20,000. No. teenagers and adults reached/year: 40,000. 	○	Chap. 4.7 Community Relations
	NEW INTERIM TARGET  Organise a roadshow for the Give the Forest a Hand project, aimed at primary schools, by 2024.		
	Promote and disseminate technical information about forestry production, helping to share best practices, through the Forestry Producers project. <ul style="list-style-type: none"> No. initiatives/year (digital and in-person): 10. No. forestry producers reached/year: 10,000. 	○	
Promote knowledge transfer and public awareness of the economic, social and environmental importance of forests.	Implement Forest of Knowledge project, in partnership with Calouste Gulbenkian Foundation.	○	
	Implement the UNESCO RAIZ Club ¹² .	○	
	Develop the Florestas.pt platform.	○	
	NEW INTERIM TARGET  Organise a conference on the topic of Portuguese Forests, by 2025.		
	Consolidate the e-globulus platform.	○	
	Consolidate the Forestry Producers project.	○	
	NEW GOAL  Consolidate the Biodiversity By The Navigator Company project.		
	INTERIM TARGETS  <ul style="list-style-type: none"> Establish 4 partnerships by 2025. Raise the profile of Navigator's biodiversity conservation strategy by 2025 with urban adults and Portuguese NGOs. 		

FOR THE CLIMATE AND NATURE



COMMITMENTS	GOALS	2022 STATUS	LOCATION
Promote efficient use of resources, minimising our ecological footprint.	Cut specific use of water (m ³ /t of product) by at least 33% by 2030 (baseline: 2019). Specific use in baseline year: 22.4 m ³ /t	○	Chap. 5.4 Water Management
	Propose solutions that make it possible to improve efficiency in use of water in the industrial process.	○	
	Optimise energy intensity, year after year.	○	

¹² In 2022, UNESCO Club initiatives (a separate goal in the Roadmap) were incorporated into the Forest of Wisdom project.



COMMITMENTS	GOALS	2022 STATUS	LOCATION
Ensure sustainable use of soil and forestry resources, including biodiversity.	Propose solutions that make it possible to improve efficiency in use of wood in the industrial process.	○	Chap. 5.5 Energy and Raw Material Management
	Achieve 80% use of certified wood by 2030.	○	Chap. 5.2 Sustainable Forestry Management
	Promote certification of the chain of custody of all our wood suppliers by 2030.	○	
	Help reduce wildfires, guaranteeing a burned area of less than 1% of area under management by 2030.	○	
	Create positive impact on (or net gain in) biodiversity by taking action in keeping with Navigator's commitments in connection with the act4nature Portugal initiative.	○	Chap. 5.3 Biodiversity Conservation
Promote circular bioeconomy, prioritising R&D solutions.	NEW INTERIM TARGET Take action for ecological restoration of natural habitats (cork and holm oak woodlands) over 110 hectares in Zambujo estate: <ul style="list-style-type: none"> Phase 1 - start and finalise in 2023 Phase 2 - monitoring and maintenance, for partial recovery of the state of conservation of natural habitats by 2030 and total recovery (good state of conservation) by 2050. 		
	Develop sustainable applications and added value for by-products from industrial process (sludges, ash and other inorganic waste).	○	Chap. 5.6 Circular Economy
Invest in low carbon solutions leading to carbon neutrality.	REFORMULATED GOAL¹³ By 2030, send less than 10% of waste to industrial landfill.		
	Cut direct EU ETS emissions of CO ₂ from industrial complexes by 86% by 2035 (baseline: 2018) ¹⁴ . Emissions baseline year: 774,464 t CO ₂	○	Chap. 5.1 Climate Change and CO ₂ Sequestration
	Use 80% renewable energy in total consumption of primary energy by 2030 (baseline: 2018).	●	
	NEW GOAL Cut scope 1 and 2 GHG emissions by 63% by 2035 (baseline: 2020). Emissions baseline year: 937,710 t CO ₂ e ¹⁵		
	NEW GOAL Cut scope 3 GHG emissions by 37.5% by 2035 (baseline: 2020). Emissions baseline year: 958,266 t CO ₂ e ¹⁵		

Caption:

In progress, can be brought forward

In progress, as planned

In progress, with downward tendency, reflecting performance of the past two years



¹³ There are two divergent criteria for calculating the waste recovery rate: Portuguese legislation classes recovery for energy use as recovery (code R1), whilst GRI 306 (2020 version) considers it a form of disposal. In view of this, and the fact that our 2030 target was set prior to review of the GRI standards, we have reformulated our target to ensure it is aligned with the figures now reported, which are calculated using the GRI framework (2020 version).

¹⁴ Emissions reported under EU ETS (European Emissions Trading System).

¹⁵ The emissions value for the baseline year is in accordance with the figures submitted to and approved by SBTi in 2022. In relation to scope 3, the figures refers to 68% of the 6 relevant categories in Navigator's inventory.



3.4 OUR CONTRIBUTION TO THE SDGs

At The Navigator Company we are committed to taking an active part in the United Nations 2030 Agenda and to making the Sustainable Development Goals (SDGs) a reality.

In 2020, with the design of Navigator's 2030 Agenda, we analysed the United Nations' 17 SDGs and the respective targets, in order to identify our main contributions, actual and potential, to achieving them.

This process enabled us to identify three levels of contribution, depending on the degree of influence that the Company has over the success of these global goals:

Core

Generating a positive impact on these SDGs, on the strength of our 2030 Agenda, is an opportunity to create long-term sustainable value and to promote transformation of Navigator, and the sector as a whole, in order to respond to future challenges.

Supportive

The path that Navigator follows through to 2030 has an impact on these SDGs, directly or indirectly. Responding to these SDGs is an opportunity for sustainable economic growth through more responsible management of resources, generating value in communities and establishing partnerships with our stakeholders.

Others

Navigator's 2030 Agenda interacts less directly with these SDGs, although there is a potential positive contribution through the Company's commitments and business plans.

In total we identified five Core SDGs, which are strategically relevant to the Company and present a strong connection between our activities and the areas where we can generate a positive impact.



CORE SDGs



Promote inclusive and sustainable economic growth, full and productive employment and decent work for all.

Targets 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7 and 8.8



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Targets 9.1, 9.4 and 9.5



Ensure sustainable consumption and production patterns.

Targets 12.2, 12.4, 12.5, 12.6 and 12.8



Take urgent steps to combat climate change and its impacts.

Target 13.1



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss.

Targets 15.1, 15.2 and 15.5

OUR CONTRIBUTION

We are working to be a top employer, seeking to create a fairer, healthier and safer workplace for all our Employees.

Our relationship with local Suppliers and producers contributes to a stronger local economy and more resilient Communities.

We are committed to technological modernisation and innovation.

We invest in efficient use of resources, striving to uncouple economic growth from degradation of the environment.

We seek to contribute to sustainable development by boosting scientific research and improving our technological capabilities. We invest in development and implementation of innovative forest-based solutions and products, and in improving our forestry practices, helping to promote a circular and low-carbon bioeconomy. Our ambition is based on the collaborative spirit we share with our partners.

We know that to make our business more sustainable, it is fundamental to increase both circularity and our efficiency in using resources.

At the same time, we want to respond to the expectations of consumers who are increasingly sensitive to these issues, and not only to ensure that our existing products are manufactured sustainably but also to offer new products for the packaging sector, as a sustainable alternative to the use of fossil-based plastics.

We are aware that a holistic approach is required to this topic. It is crucial to strengthen the resilience of our woodlands, the source of our raw material, so that they can perform the vital function of carbon sequestration. We also need to be aware of the impact that developments in our forestry assets may have on our business, in particular on the availability of resources.

Our role in the transition to a low-carbon economy entails a commitment to a 63% reduction in our scope 1 and 2 GHG emissions by 2035, in relation to 2020, and a 37.5% cut in our scope 3 GHG 3 emissions over the same period; these targets have been approved by SBTi. It also entails investment in renewable sources, such as biomass and solar.

We are responsible for managing a vast area of woodlands in mainland Portugal (1.2% of the country's area), 100% certified under the FSC® and PEFC schemes. We are therefore concerned with preserving ecosystems and biodiversity. Practices promoting long term yields and resilience are built into our management model, ensuring at the same time that ecosystem services and natural capital are conserved.



SUPPORTIVE SDGs



Ensure availability and sustainable management of drinking water and sanitation for all.

Targets 6.1, 6.3, 6.4 and 6.6



Ensure access to affordable, reliable, sustainable and modern energy sources for all.

Target 7.2



Making cities and communities inclusive, safe, resilient and sustainable.

Targets 11.6, 11.A and 11.B



Strengthen the means of implementation and revitalize the global partnership for sustainable development.

Targets 17.16, 17.17 and 17.18

OTHER SDGs



End poverty in all its forms, everywhere.



End hunger, achieve food security, improve nutrition and promote sustainable agriculture.



Ensure healthy lives and promote well-being for all, at all ages.



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



Achieve gender equality and empower all women and girls.



Reduce inequalities within and between countries.



Conserve and sustainably use the oceans, seas and marine resources for sustainable development.



Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Following on from the new materiality analysis (Chap. 3.2) and the progress made in the first three years of our Responsible Management Agenda, our aim in 2023 is to review how we mapped out our contributions to SDGs, in line with the process of updating the commitments and goals set out in our 2030 Roadmap.

We are pleased to report that, in recognition of our 2030 Agenda and contributions to SDGs, Navigator was singled out as an example of good business practice, in the published findings of the Sustainable Development Goals Observatory.

Navigator 2030 Agenda recognised as good business practice

In its first ever [Annual Report 2022](#), the SDGs Observatory in Portuguese Companies identified Navigator's 2030 Agenda, and the process leading up to its design, as an example of good corporate practice in integrating SDGs into business strategies.

It also highlighted the Premium Programme, which works with eucalyptus growers (Chap. 5.2), as a practical example for SDGs 15 and 12, because of its impact on preserving the natural resources needed to keep the business viable.

The Observatory is an initiative of CATÓLICA-LISBON in partnership with BPI Fundação "La Caixa" and Fundação Francisco Manuel dos Santos, and monitors implementation of the United Nations 2030 Agenda by monitoring a representative group of Portuguese companies. Navigator was one of the 60 companies selected to take part in the study leading to publication of the report.



3.5 STAKEHOLDER ENGAGEMENT

We seek to align our strategy with the needs and expectations of different Stakeholders, in keeping with our goal of creating sustainable value.

The Navigator Company's responsible management strategy is designed to generate economic, social and environmental impact along the value chain, listening to and aligning the expectations of our Stakeholders with Navigator's strategy and needs.

Because "Adding value is part of us", our aim is to create long term value (Chap. 4.2) for the ten relevant Shareholder groups with which we have dealings - Shareholders, Business associations, Customers, Employees, Community, Government and Regulatory Entities, Non-Governmental Organisations (NGOs), Forest Landowners and Associations, and the Science and Technology System. The Stakeholder groups were identified at an internal workshop, with members of the Executive Committee, as part of the materiality analysis process in 2015. This mapping has been undergoing review, to keep it up to date and to ensure integration of the expectations identified in relation to the issues considered most relevant to the Company's future, and there was no change in 2022 to the Stakeholder groups identified.

We use various forms of communication and engagement, and the channels and frequency vary depending on the Stakeholder group and the needs identified. In this way we seek to consolidate trusting relationships and our social license to operate, increasing transparency and identifying possible risks and opportunities.

Communication channels used for all groups include email and the Company's website and social media, as well as the whistleblowing channel (Chap. 4.1).

The formal mechanisms for direct interaction with different Stakeholder groups include the bilateral communication channels established, such as the Community Monitoring Committees.

Community Monitoring Committees (CMC)

Held in the area surrounding each Navigator industrial unit, the CMC meetings are intended to bring the Company closer to local communities. This initiative is very important for understanding the concerns of communities, seeking to respond to their needs.

The meetings are attended by local Stakeholders most relevant and closest to the Company's activities. The Company is represented at meetings by its directors and managers from the Public Affairs, Industrial, Environmental, Sustainability and other divisions.

Various issues are addressed. Most significantly:

- Industrial processes;
- Environmental performance;
- Environmental investment;



- Sustainability strategy and planning;
- Social environment - issues relating to employment, talent management, partnerships with local educational institutions or other social impacts.

The interaction generated at these meetings facilitates joint reflection on matters relating to the life of the communities, and the feedback from CMC members is recorded for subsequent follow-up by Navigator's internal divisions. The organisations are later informed of progress or the outcomes of initiatives undertaken; an example of this in 2022 was implementation of the Noise Reduction Plan at the Aveiro Complex.

Navigator's Sustainability Forum (Chap. 4.1), an internal sustainability governance structure, also provides an important arena for dialogue. Significantly, its members took part in the double materiality process (Chap. 3.2), conducted in 2022, and attention is also drawn to the annual sessions we organise with the participation of national and international experts, to discuss subjects of relevance to the Company's business and to our Stakeholders. This year the forum debated "Bioeconomy: Road to a Sustainable Future".

Navigator also has an Environmental Council, with members drawn from academe, which is responsible for monitoring the Company's environmental performance.

Mindful of the need for continuous improvement and of our purpose of sharing our knowledge and resources with society, we created new information channels in 2022, aimed at local communities (Chap. 4.7) and forestry producers (Chap. 5.2).

Another landmark development in 2022 was the creation of the new Public Affairs Division (PAD), in response to the growing need to promote close relationships with institutional Stakeholders and to pursue advocacy initiatives in connection with regulatory, environmental and social issues.

STAKEHOLDER ENGAGEMENT MECHANISMS

SHAREHOLDERS	BUSINESS ASSOCIATIONS	CUSTOMERS	EMPLOYEES	COMMUNITY
<ul style="list-style-type: none"> • Environmental Council • Sustainability Forum • ESG performance information • ESG ratings • Investor relations • Regular reporting of financial and non-financial information 	<ul style="list-style-type: none"> • Sustainability Forum • Participation in events and management bodies of industry associations in areas such as energy, forestry and sustainable development • Meetings and visits to our mills and nurseries 	<ul style="list-style-type: none"> • Business activities • Periodic listening exercises • Advertising campaigns • Satisfaction surveys • Meetings and visits to our mills and nurseries • Specialist webinars 	<ul style="list-style-type: none"> • Pension Fund Supervisory Board • Managers' Forum • Intranet • My Planet • Navigator Forests Conference • Navigator Commercial Conference • Straight to the Top Programme • Periodic meetings between Executive Board and Workers' Committee • Collective bargaining instruments • Navigator Tour - Visits to our mills and nurseries • Family Day 	<ul style="list-style-type: none"> • Community Monitoring Committees • Give the Forest a Hand • Forest of Knowledge • Biodiversidade.com.pt • Florestas.pt platform • Sustainability Forum • My Planet • Navigator Tour - Visits to our mills and nurseries



GOVERNMENT AND REGULATORY ENTITIES	SUPPLIERS	NGOs	FOREST LANDOWNERS AND ASSOCIATIONS	SCIENCE AND TECHNOLOGY SYSTEM
<ul style="list-style-type: none"> • Advocacy activities - Public Affairs sector • Community Monitoring Committees • Sustainability Forum • Formal response to legal requirements • Meetings and response to various enquiries • Navigator Tour - Visits to our mills and nurseries 	<ul style="list-style-type: none"> • Sustainability Forum • Declarations of conformity • Technical visits to facilities of chemical raw materials suppliers • Annual Forestry Producers Meeting • Forestry Producers Magazine • Navigator Tour - Visits to our mills and nurseries 	<ul style="list-style-type: none"> • Sustainability Forum • Community Monitoring Committees • Collaboration agreements • Navigator Tour - Visits to our mills and nurseries 	<ul style="list-style-type: none"> • Sustainability Forum • Technical support and training • Annual Forestry Producers Meeting • Trade Fairs • e- globulus platform • Florestas.pt platform • Collaboration agreements • Forestry Producers Magazine • Navigator Tour - Visits to our mills and nurseries 	<ul style="list-style-type: none"> • Environmental Council Sustainability Forum • Study grants and Master's degrees • Research partnerships (RAIZ) • Cooperation agreements with universities • Forest of Knowledge • Navigator Tour - Visits to our mills and nurseries



4. FOR SOCIETY: GROW

SUSTAINABILITY REPORT 2022



4.1 RESPONSIBLE GOVERNANCE

We have positioned ourselves as a corporate group whose conduct is based on ethics, transparency and credibility. Following best international practice, we work to minimise risks (securing business continuity), promote respect for human rights and to be a fair and inclusive workplace.

OUR IMPACTS

2,000

Employees with training in internal compliance policies

0

Confirmed cases of corruption

0

Confirmed cases of discrimination

+7.7%

Increase in women hired, in relation to 2021



HOW WE MANAGE OUR IMPACTS

Sustainability governance model

We believe that only with strong governance will we succeed in taking action to address the main environmental, social and economic risks and opportunities we face – both those impacting The Navigator Company, and those we generate for our different Stakeholders. We base our action on a series of policies, codes and rules of ethics and conducts, along with management systems that support our approach to sustainability governance.

The governance structure is supported by a number of different bodies and corporate committees, each with clearly defined functions with regard to sustainability management. Powers to decide on Navigator's mission, strategy, policies and targets (including as regards sustainable development) lie with the Board of Directors.

The process of designing the 2030 Responsible Management Agenda (Chap. 3.3), published in 2021, involved strategic reflection by the Executive Board and the commitments and priority plans established in the 2030 Agenda and the Roadmap are aligned with international trends and the social and environmental challenges facing Navigator's business (Chap. 2.3).

The Executive Board has delegated management of the 2030 Roadmap to the heads of the different Company divisions and there is a team of sustainability key users who oversee the action plan established for the areas where intervention is required under the Roadmap. This team works with management staff, and with support from the Sustainability Division, to assess the Group's performance in relation to the objectives set. Any changes to the original plans are reported to the Executive Board for approval, and then made public in the Sustainability Report.

The Sustainability Division is in turn overseen by the executive director responsible for sustainability issues, enabling coordination across all other Navigator divisions and with the Sustainability Forum in order to address specific issues.

The Sustainability Forum is one of the main committees providing support to the Board of Directors. Headed by the CEO, the forum is based on a tried and tested model that involves Navigator's various Stakeholders. Significantly, the Forum has internal and external members, including leading figures linked to major Stakeholder groups, such as members of academe, NGOs, industrial associations and forestry producers' organizations. The Sustainability Forum is an arena for dialogue and meets twice a year. One of the annual sessions is internal, attended by the Forums Permanent Members (internal and external) and the second session adopts an open model, with participation by a wide-ranging group of Stakeholders. These sessions have taken on a regional flavour, seeking to reach out to local Communities, and to benefit from the cooperation between Navigator and the various municipalities where we have operations, as well as to foster collaboration with leading figures in our sphere of activity.

Participation by external Stakeholders is also a feature of the Environmental Board, which consists of four members, all of them leading academics and independent figures, of respected technical and scientific expertise, especially in the environmental areas relevant to Navigator's business. Our Ethics Committee also comprises three independent figures, appointed by the Board of Directors and charged with monitoring the rules established in the Code of Ethics and Good Conduct.

Mention should also be made of the Community Monitoring Committees (Chap. 3.5) – in Aveiro, Figueira da Foz, Setúbal and Vila Velha de Ródão – which include representatives of municipal authorities, local bodies, NGOs and universities, among others. These committees are part of a policy of openness and sharing information about the activities of the various industrial complexes, as well as seeking to learn about our partners' expectations and needs.



This governance model enables various structures across the Company to engage with sustainability issues, to incorporate an external perspective from significant Stakeholders into efforts to honour our commitment to create value sustainably (understood as a simultaneous quest for economic prosperity, environmental responsibility and a fair society) and to actively encourage all our partners and stakeholders to join us in pursuing these goals.



[LEARN MORE ABOUT NAVIGATOR'S GOVERNANCE MODEL](#)

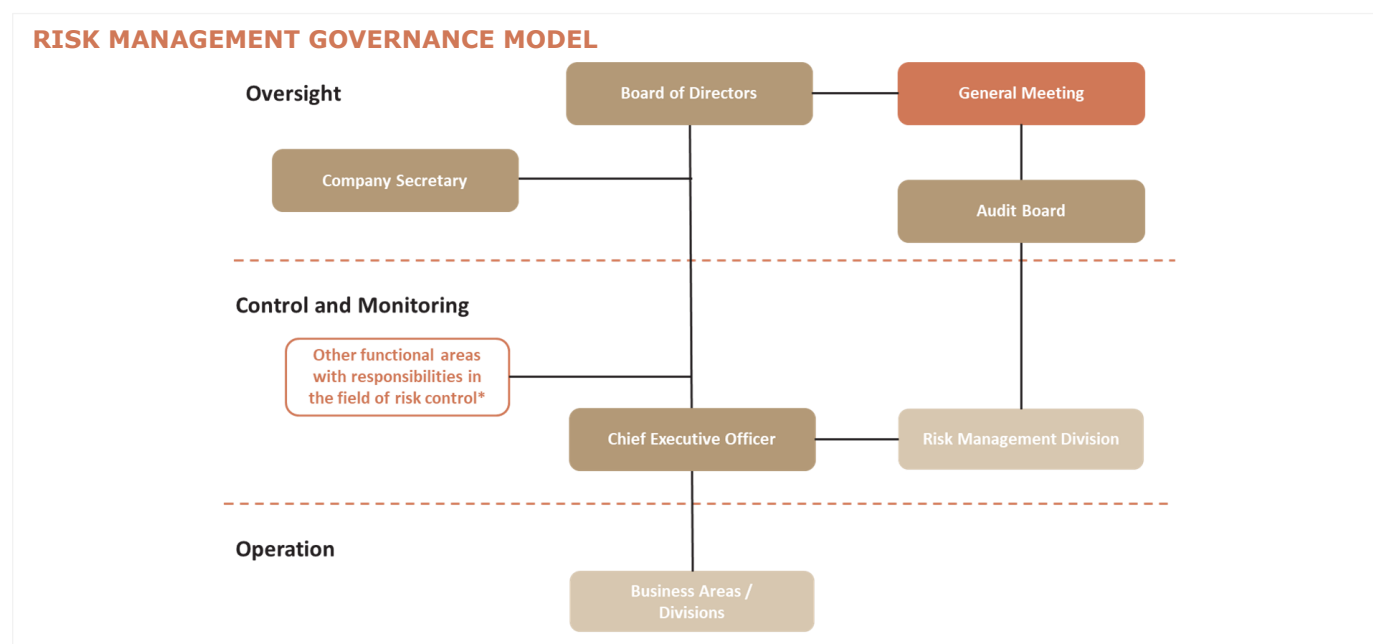
Risk management and business continuity

Risk management is a core process in our operations, insofar as it is crucial for business continuity. We work to identify, assess and manage operational, strategic and reputational risks, drawing up contingency plans, including for environmental, social and governance risks and the impact of regulatory provisions on business.

We have a system for permanent monitoring of risk management at Navigator which involves all organisational units, the Risk Management Division, the Compliance Unit and the Audit Board.

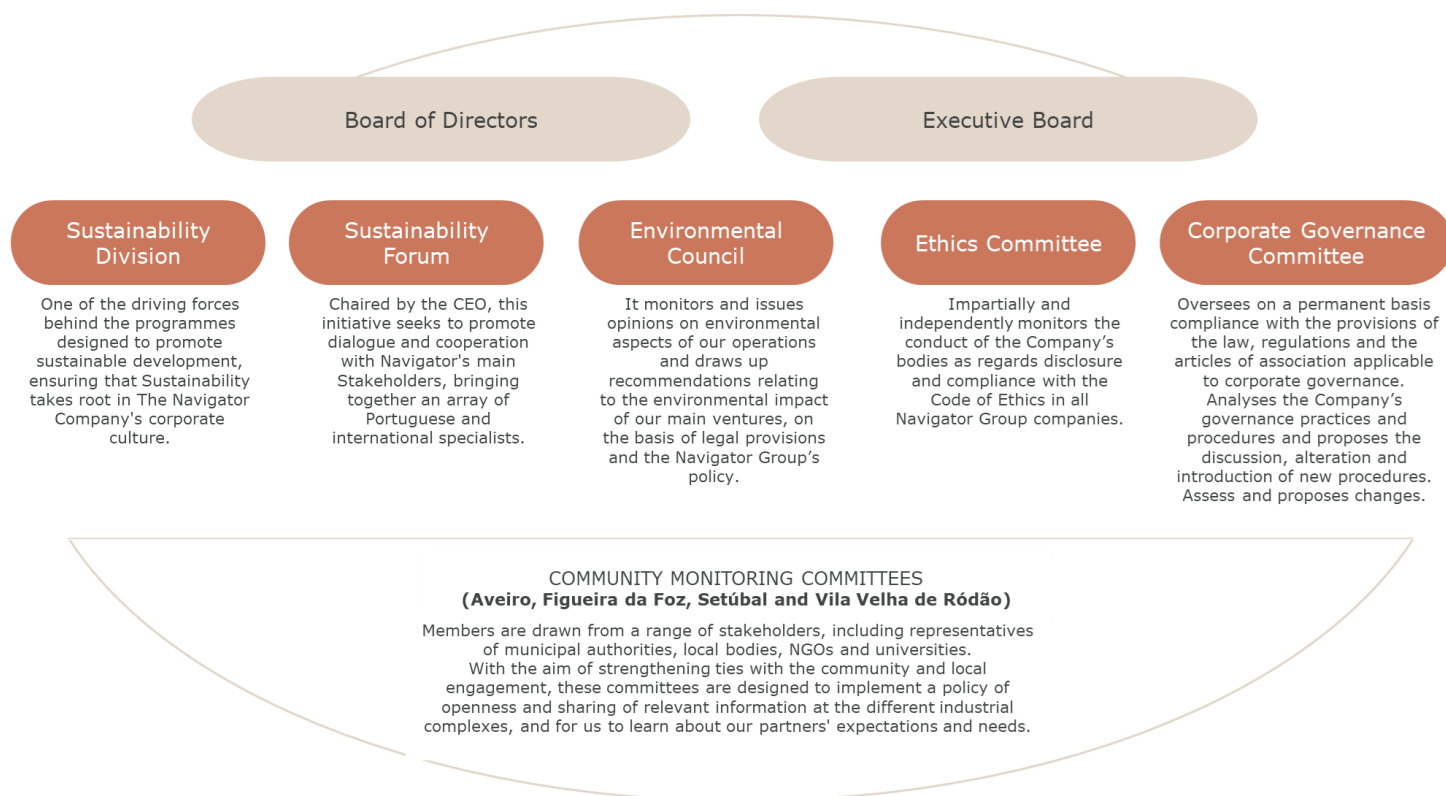
Business areas are responsible for identifying and characterising risks, defining and monitoring their indicators, and for designing and implementing mitigation measures.

There are also committees which complement the work of the Audit Board and the Chief Executive Officer in controlling and monitoring specific risks. An important role on ESG issues is taken by the Sustainability Forum, the Ethics Committee and the Corporate Governance Committee.





OUR SUSTAINABILITY GOVERNANCE STRUCTURE



Sustainability Forum

Chair: António Redondo (CEO)

Secretary-General: Teresa Presas

Internal members: António Redondo (CEO), Adriano Silveira, João Paulo Oliveira, João Lé, Fernando Araújo and Nuno Santos (Executive Directors), Teresa Presas (Non-Executive Director and Secretary General), Manuel Regalado (Non-Executive Director), and Ana Miranda, Maria da Conceição Cunha, Margarida Tomé and Joaquim Poças Martins, members of the Environmental Board

External members: Cristina Tomé, Filipe Duarte Santos, Francisco Ferreira, Francisco Gomes da Silva, José Júlio Norte, Luís Neves da Silva and Rosário Alves

Environmental Council

Chair: Maria da Conceição Cunha

Members: Ana Miranda, Margarida Tomé and Joaquim Poças Martins

Ethics Committee

Members: Henrique Trocado, Rui Gouveia and Jaime Falcão

Corporate Governance Committee

Members: Mariana Marques dos Santos, Manuel Regalado and António Neto Alves



Responsible business conduct

Our business and the standards of good conduct we have adopted respond to the ever more exacting criteria set by our Stakeholders - both internally and in interactions with external stakeholders. The key values that guide our operations are Trust, Integrity, Enterprise, Innovation, Sustainability and Excellence, and these underpin the various policies, codes and regulations established to assure the good practices associated with our operations and business. Leading examples of these are:

- [Code of Ethics and Good Conduct](#) ;
- [Humans Rights Policy](#);
- [Code of Good Conduct for Preventing and Combating Workplace Harassment](#);
- [Code of Conduct for Suppliers](#);
- [Policy for Prevention of Corruption and Related Offences](#).

The existence of robust codes of conduct and regulations, together with monitoring of higher risk areas, in collaboration with the relevant authorities, whenever necessary, has underpinned efforts to prevent and combat any type of corruption or other unlawful behaviour.

We believe that companies are responsible for building a better society, by conducting their operations and activities on the basis of a responsible corporate culture. This means we are committed to respecting Human Rights throughout our operations and value chain, and are signatories to the English and Portuguese versions of the "CEO Guide to Human Rights", published by WBCSD and BCSD Portugal, alongside other international and Portuguese companies.

Non-discrimination is expressly enshrined in our Codes of Ethics and Good Conduct for Employees and Suppliers. We see respect for human dignity as a question of fundamental rights and one of the foundational principles of the Group's culture and policy. Our Employees accordingly accept a commitment to take action and report all practices that might amount to any type of discrimination.

Because we are a Company listed on the stock exchange, we are subject to Law 62/2017 of 1 August, setting rules on balance representation of men and women on boards of directors and audit boards. In order to promote diversity within Navigator, the Board of Directors has accepted and recognized the following diversity principles as appropriate to the composition of the company bodies and management positions¹⁶:

- Inclusion of individuals with different academic qualifications and professional experience in different areas, when appropriate and relevant to exercise of the office in question;
- Promotion of gender diversity;
- Inclusion of individuals of different ages, combining experience acquired from new perspectives;
- Inclusion of individuals with life experiences in diverse geographical regions.

At Navigator we recognize the benefits of diversity in our boards and management, in particular in the Board of Directors, the Audit Board and management positions, as a way of ensuring an improved balance in their composition, enhancing the performance of each member and of each body as a whole, improving the quality of the decision making process and contributing to the Company's sustainable development.

¹⁶ For further information: Corporate Governance Report.



We are likewise committed to promoting gender equality across the Company. We recognize that contributing to the goal of parity between men and women requires a continuous focus on increasing the number of women in our staff, preparing the way internally, through improved policies and practices, for them to evolve increasingly towards leadership positions. To this end we have set up an internal working party and implemented the Gender Equality Plan 2023, which establishes measures that help to boost equal opportunities in terms of professional development and growth, supported by transparent policies based on meritocracy, as well as helping to encourage a healthy work-life balance.

With regard to Law 4/2019 of 10 January, which establishes a job quota systems for disabled persons with an incapacity greater than or equal to 60%, and requiring companies in the private sector to hire disabled people, we are at the stage of transition to ensure that we comply with our legal obligations.

WHAT WE ACHIEVED IN 2022

Sustainability governance

In order to build up the sustainability skills and expertise of our top management, a specialist consultant was brought in during 2022 to help design a training programme dealing with the Task Force on Climate-related Financial Disclosures (TCFD) and other initiatives, in the context of ESG (Environmental, Social and Governance) requirements. This training started up in early 2023 for our directors, and will also be extended to representatives of key areas in the Company.

A number of improvements have been made to our governance model in the sectors of health, safety and well-being. Because this is such an important area for Navigator, and where we need to work collectively to reduce accidents at work and protect the physical integrity of all our Employees (internal and external), committees were set up in 2022 at local, corporate and Board of Directors level, to monitor this topic more closely and regularly (Chap. 4.5).

The year also saw two meetings of the Sustainability Forum. Continuing with our decentralised model, the second event was held in Aveiro and was devoted to the topic "Bioeconomy: Road to a Sustainable Future".



FEATURED INITIATIVE

Sustainability Forum – "Bioeconomy: the Path to a Sustainable Future"

In November 2022 we held the annual open session of the Sustainability Forum, addressing the topic: "Bioeconomy: the Path to a Sustainable Future".

The event featured a varied panel of Portuguese and international speakers and an audience of Navigator's key Stakeholders, as well as being broadcast online on our YouTube channel.

A lively debate was encouraged on the potential of the forest-based circular bioeconomy and of bioproducts. The various contributions highlighted the future of this for the future of the planet, society and Navigator itself, opening up new frontiers through the development of innovative technologies and applying existing knowledge to new biologically based materials and products, capable of substituting those derived from fossil resources.

Mark Wishnie, the international keynote speaker, Chief Sustainability Officer and Head of Landscape Capital at BTG Pactual Timberland, stressed the relationship between the bioeconomy and Nature-based solutions, giving important examples of how the forestry sector can play a significant role in combating climate change.

Closing the meeting, António Redondo, Navigator's CEO, spoke of the importance of traditional industry to the emergence of new bioproducts, and drew attention to the Company's active role in building a sustainable economic model, taking advantage of the potential of its main raw material - the forest.



WATCH THE VIDEO OF THE 14TH MEETING OF THE SUSTAINABILITY FORUM



WATCH THE VIDEO ABOUT BIOECONOMY: THE PATH TO A SUSTAINABLE FUTURE



Risk management

In 2022 we renewed the team in the Risk Management Division and sought to strengthen risk management practices aligned with the Committee of Sponsoring Organizations of the Treadway Commission (COSO®) and ISO 31000. As an ongoing project, the aim is to consolidate our risk management model, including for ESG risks (climate risks, in particular) and to refine our business continuity plans.

Culture of compliance and transparency

In line with evolving best international practice, we set up a Compliance Unit in late 2021, as part of the Legal, Compliance and Public Affairs Division (LCD). The creation of the new Unit has underlined the importance of pursuing a policy for legal and regulatory compliance that sets the parameters for Navigator's activity throughout the value chain, in keeping with high standards of transparency and fairness and designed to prevent and combat wrongdoing.

Work therefore proceeded in 2022 on consolidating a corporate compliance system intended to continue ensuring that we operate within the legal requirements applicable to us and also to strengthen the ethical culture in the company and its various Stakeholders - officers, Employees and Suppliers, by providing training and information on matters of legal compliance and ethical conduct.

We have also adopted a governance model for this system which clearly and transparently identifies the responsibilities of the various parties involved in the processes associated with Navigator's business and which fosters an appropriate level of coordination and communication among them.

We have also redesigned our Whistleblowing Channel, first implemented ten years ago, in line with the new legal rules in Law 93/2021, of 20 December. The system is now called the Whistleblowing Channel, and is accessed via a new online address.

New whistleblowing channel

In 2022, we implemented a new [whistleblowing channel](#), for the reporting of irregularities by Employees, Customers, Service Providers or any other interested parties.

The issues addressed by this channel include areas such as violation of good conduct or ethical rules, fraud, corruption and related offences, protection of privacy and personal data, health and safety, and environmental protection.

The whistleblowing channel enables reports of irregularities to be submitted in an effective system, geared to swift detection, investigation and resolution, in line with the good conduct rules established by Navigator. This is an independent system for reporting any irregular practices, which guarantees the principles of anonymity, confidentiality, safeguarding and non-retaliation in relations with reporters, and well as compliance with data protection and information security standards.

In the course of 2022, six potential irregularities were reported related to logistics, human resources and health and safety at work; no cases of corruption were reported.

Training on internal policies and competition law

In 2022 we invested in training to build a stronger internal culture of compliance.

Over the course of the year, we launched several training courses, in an e-learning format, aimed at all our Employees, to underline the importance of internal policies governing Navigator's activities, making use of practical, everyday situations, to help people grasp the principles behind the policies. Prominent among the topics addressed were non-discrimination and gender equality.

The training was concluded by more than 2,000 Employees.

In addition, members of top management, directors and Employees in commercial areas received training in compliance with legal obligations in the field of competition law, through in-person classroom training and a question & answer session.



The new LCD also includes Public Affairs Division (PAD), offering an institutional response to the growing need to promote close and transparent relations with institutional Stakeholders.

New Public Affairs Division

2022 saw the creation of the Public Affairs Division (PAD). The PAD has taken charge of advocacy initiatives in relation to regulatory, environmental and social issues, with the aspiration that we can have a more positive impact on the planet and communities, preparing us at the same time for new developments in this domain.

The various activities undertaken by the PAD include:

- European advocacy, seeking to engage with a range of MEPs to address the most pressing issues on the European political agenda within the Company's field of activity - this includes Research and Development (R&D), the Carbon Border Adjustment Mechanism (CBAM), the new European Taxonomy, the Green Deal and Fit for 55.
- Within Portugal, engaging with members of the Assembly of the Republic, addressing topics such as forestry, the simplified environmental licensing system, land use planning and the various priorities of the Company's regulatory agenda.

The relationship with institutional Stakeholders has been one of mutual understanding and interest in our business activities.

Human Rights

In 2022, as part of our wider approach to developing its business, and in line with the principles established in our Code of Ethics and Good Conduct and in the Code of Good Conduct for Preventing and Combating Workplace Harassment, Navigator made a commitment to respective human rights and employment rights, by approving a new Human Rights Policy.

In this context, plans are being considered for implementing a screening tool to identify ESG risks in business partners with which Navigator has dealings.

We are pleased to stress that there are no cases of human rights violations within the Navigator Group.



Human Rights Policy



Targets 8.7, 8.8



Target 16.6

Navigator's Human Rights Policy was approved by the Board of Directors in late 2022. The policy document sets out our commitment to promoting respect for human rights and employment rights in our operations, and to working for respect for these rights at the various levels in our value chains.

The policy was drawn up in accordance with the principles established in the Universal Charter of Human Rights, the OECD Guidelines for Multinational Corporations, the Fundamental Conventions of the International Labour Organisation and the United Nations Guiding Principles on Business and Human Rights.

Measures are planned to identify the main potential risks and impacts of Navigator's activities in the field of human rights, in particular through the due diligence procedures deemed appropriate. The policy also envisages training for Employees and adoption of resolution and remediation measures.

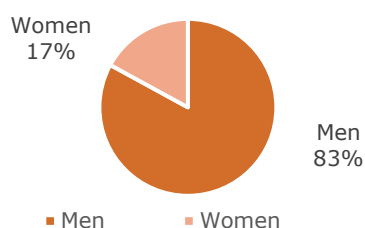
Annual plans of measures to promote and comply with the Policy are subject to oversight by the Board of Directors. The Executive Board is responsible for deciding on measures to promote and comply with the Policy and to resolve or remedy any instances of non-conformity which may be identified, and also for transparent processing of information, in particular through disclosure in the annual management report.



Diversity, equity and inclusion

Navigator's workforce is largely male-dominated, with women accounting for 17% of the Company's labour force in 2022. This is due to historical reasons associated with the industry and the operational structure - a male culture due to the physically taxing nature of most jobs in the Forestry and Industrial Sectors.

531 Women | 2.584 Men



In order to achieve greater gender equality, in its various dimensions and the Group's practices in this area, and in order to press ahead with policies to facilitate a better work-life balance, several measures envisaged in the "[Gender Equality Plan 2021-2022](#)" and a new plan was drawn up for 2023.

In this respect it is important to note that meetings held with Workers' Representative Organisations addressed issues relating to corporate practices, including the work-life balance.

Thanks to the implementation of recruitment policies geared to diversity, there was a 7.7% increase in the proportion of women in Navigator's workforce in relation to the previous year. Our short-term trainees programmes (Chap. 4.4), have also featured a growing number of female participants (27 women vs. 12 men, in 2022).

Internally, we are working on the the analysis of gender equality and diversity data and preparing a dashboard of indicators which will enable us to expand the scope of our analysis in these issues. Navigator will benefit from the combined efforts resulting from the partnership recently established with GRACE, the Responsible Business Association, giving us access to new tools to help define concepts and put them into operations, as well as approaches to promoting engagement on the part of key people in the organisation and creating an environment that facilitates greater inclusion, diversity and gender equality.

In training courses on internal policies, we address the topics of non-discrimination and gender, and specific training will be rolled out in 2023 on Gender and Diversity issues for all Navigator Employees.

Efforts to build an internal culture of equality between men and women formed the topic in 2022 of a webinar on the subject of gender equality broadcast on the Intranet and reported in the corporate magazine, My Planet. This event took place on International Women's Day and encouraged debate on the roots of gender prejudices and strategies for organisations seeking to break down barriers and facilitate equity and diversity.

Also important here are the commitments set out on this issue in the new Human Rights Policy - "Attaching value to diversity, gender equality and diversity, as a way of effectively ensuring equality of opportunities at work, including with regard to migrant workers and disabled people".

Externally, in the domain of corporate social responsibility, continued support has been given to the GirlMove Academy, an organisation focussed on the process of change, mentoring and development of young Mozambican women in order to set them on their course to leadership roles.

As a member of the governing body of BCSD Portugal, we have also taken an active part in reviewing the organisation's strategy, in order to attach greatest importance to the topic of Gender Equality and Diversity.



One of the commitments included in our 2030 Agenda is related to promoting an inclusive organisational culture. With regard to inclusive recruitment, a review is under way of processes and internal policies in the areas of recruitment, selection and onboarding, and a multidisciplinary team has been set up to assess the situation and develop an action plan. An accessibility study is being conducted at each industrial unit, along with a survey of jobs eligible for inclusive recruitment, looking in particular at risk levels associated with industrial jobs. The aim is to identify the types of disability that can be considered without undermining safety.



WHAT NEXT?

- Continued training on TCFD in the context of ESG requirements for representatives of key sectors in the Company (2023).
- Increased training in Ethics and Integrity (2023).
- Development of a Policy for Prevention of Corruption and Related Offences (2023).
- Training on Prevention of Corruption and Related Offences (2023).
- Design of internal Compliance policies, including third party vetting, prevention of money laundering and terrorist financing and compliance with international sanctions (2023).
- Implementation of third-party vetting system (2023/24).
- Review of Business Continuity Plan (2023/24).
- Review of Enterprise Risk Management system (2023).
- Execution of measures presented in the 2023 Gender Equality Plan.
 - Design of Gender Equality and Diversity training programme, aimed at all Employees;
 - Setting up an "Equality and Diversity Observatory" to support analysis and management decision-making on issues of gender equality, diversity and inclusion.
- Increased advocacy activities aimed at European institutions (e.g. European Parliament and European Commission) and domestic institutions (e.g. Parliament, Central and Local Government, ministerial departments and NGOs).



4.2 CREATING SUSTAINABLE VALUE

As a top player in wealth generation in Portugal, and in its contribution to the country's economy, we have a direct impact on the lives of thousands of people all along the value chain – including Shareholders, Employees, Customers, Suppliers, local Communities and Society in general.

OUR IMPACTS

Approximately

1%

of Portugal's GDP¹⁷

Approximately

3%

of Portuguese exports of goods¹⁶

2,536

million euros in direct economic value generated

2,123

million euros in direct economic value distributed

30,000

jobs, in direct, indirect and induced employment¹⁸

More than

7,300

Suppliers

73% of them Portuguese

Approximately

40%

of financing presents sustainable features

¹⁷ Source: Figures published by INE for 2021.

¹⁸ Source: KPMG study – 2016.



HOW WE MANAGE OUR IMPACTS

We base our growth on a production structure which sets international standards for scale and sophisticated technology, spread over four large scale modern industrial complexes in Portugal, as well as forestry operations in Mainland Portugal, Galicia (Spain) and Mozambique.

Our business strategy and results position us as one of Portugal's largest industrial concerns – we account for approximately 1% of GDP and rank as the third¹⁷ largest exporter in the country. More than 90% of our output is sold outside Portugal, with products sent to more than 130 countries.

Because our value chain incorporates home-grown natural resources from planted forests and because we create earnings and employment in Portugal, where we source most of our raw materials and services, we are the top exporting company in terms of contribution to National Value Added¹⁷. Through our business operations we generate jobs for 30,000 people, in direct, indirect and induced employment and we work with more than 7,300 suppliers, 73% of which are Portuguese.

Creating long-term value

Creating long-term value and sharing it with our various Stakeholders is built into our identity and we are mindful of the various impacts of our business on society and that our economic and financial performance cannot be dissociated from how we manage our Community relations, nor from judicious management of the resources we use, our ability to mitigate the risks entailed in our business nor, moreover, from transparent open-access communication.

As set out in our Purpose, we want to share with Society not only our results, but also our know-how, our experience and our resources, with a commitment to leaving a better planet for future generations - through natural products that are sustainable, recyclable and biodegradable, that help to sequester carbon and produce oxygen, that protect biodiversity, improve the soil and combat climate change (Chap. 5.1).

Pursuit of a responsible business, promoting sustainable development and in alignment with the United Nations Sustainable Development Goals (SDGs) is therefore set out in our [2030 Agenda](#) – Creating Value Responsibly (Chap. 3.3). Special importance is attached to our potential role in adapting to the effects of climate change, in particular through decarbonisation (Chap. 5.1), as is made clear by our commitment to achieving carbon neutrality at all industrial units by 2035.

Finance for sustainable development

We have made significant strides toward sustainable finance, through financing operations where pricing is pegged to attainment of sustainable development goals or Environmental Social and Governance (ESG) performance indicators, included in our 2030 Roadmap. These financing arrangements enable us to make a judicious selection of maturities and risk conditions, whilst the pricing mechanisms are a clear demonstration of the Company's commitment to its sustainability goals. In structural terms, the Company's financing policy provides it with sound and consistent foundations for gradual implementation of projects, enabling it to act systematically in advance of programmed events.

We have also been promoting partnership projects and applying for funding (Chap. 4.2), to leverage the transition to a low-carbon economy and to the bioeconomy, thereby boosting our contribution in this area.



Sharing value with our Stakeholders

Customers are a strategic Stakeholder for the Company's success, and we therefore invest in building a close commercial relationship and meeting their needs. Strong brands (Chap. 2.3) and sustainable products remain essential factors, which are combined with a firm commitment to innovation.

We have invested in promoting a new generation of bioproducts that offer an alternative to fossil-based materials. This entails creating innovative and distinctive products, as well as developing potential new businesses, aligned with sustainable development (Chap. 4.3). We have made major strides in our product diversification strategy, in line with market trends and sustainability challenges (Chap.3.1), an example of which is our move into the packaging business area, with a new line of packaging paper – gKRAFT –, working to reduce the use of plastics, by providing substitute materials from renewable source. In this way we add value to the entire forestry value chain, bringing out the potential of Portuguese forests to produce a diversified range of products.

We also contribute to the rural economy, through development of the regions where we operate and improving the woodlands we manage, with an impact on local Communities (Chap.4.7).

We are responsible for generating opportunities for professional growth in an array of different sectors, from forestry to manufacturing, and from research to end products. This benefits and empowers our eucalyptus growers, Suppliers and local Communities. We have a positive impact on employability and skill levels, especially among young people (Chap. 4.4) and forestry producers (Chap. 5.2), by working to share our knowledge through educational initiatives promoting sustainable forestry management and certification, with the aim of contributing to improved and better protected forests.

As the foundation of all our operations, we invest in human capital - in skills, recognition, motivation, health and welfare. We support our Employees' families and, as part of our efforts to recognise the dedication and commitment of our people to achieving positive results for the Company, we have responded to this success by awarding and increasing performance and productivity bonuses (Chap. 4.4).

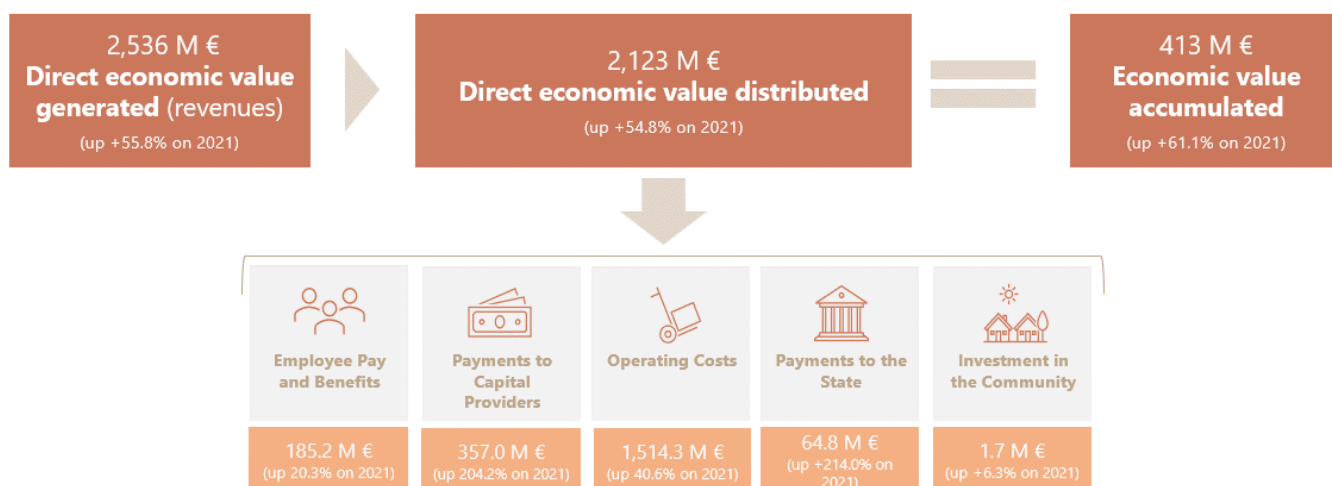


BECAUSE ADDING VALUE IS PART OF US WE CREATE LONG TERM VALUE FOR OUR MAIN STAKEHOLDERS

SHAREHOLDERS	BUSINESS ASSOCIATIONS	CUSTOMERS	EMPLOYEES	COMMUNITY
<ul style="list-style-type: none"> • Risk reduction • Optimisation of operations • Optimisation of assets • Increased revenues and distribution of dividends 	<ul style="list-style-type: none"> • Contribution to the design of shared solutions for economic, environmental and social challenges in the sector, regions and the Country. • Active participation in development projects and support for forestry producers through Biond – <i>Forest Fibers from Portugal</i> 	<ul style="list-style-type: none"> • Quality products, mostly bearing certification seals • Response to market needs • New products and services • Close relationships and trust, generating value for consumers 	<ul style="list-style-type: none"> • Stable employment • Payment of wages, performance and productivity bonuses • Benefits and support for families • Vocational training and development • Provision of safe working conditions that promote well-being • Raising awareness of healthcare and preventive medicine • Management of pension fund • Promoting a sense of purpose 	<ul style="list-style-type: none"> • Promoting the rural economy and the bioeconomy • Generating employment • Training up young talent • Community investment • Promotion of forest literacy • Adding value to ecosystem services, through sustainable forestry management and biodiversity conservation • Helping to mitigate climate change risks, through carbon sequestration and investment in renewable energy sources • Reducing the impacts from atmospheric emissions, noise and odours, and from waste generation • Reducing the impacts of liquid emissions on water availability
GOVERNMENT AND REGULATORY ENTITIES	SUPPLIERS	NGOs	FOREST LANDOWNERS AND ASSOCIATIONS	SCIENCE AND TECHNOLOGY SYSTEM
<ul style="list-style-type: none"> • Responsible fiscal policy • Helping to power Portugal's business fabric and promoting exports • Contributing to better rural development policies and to attainment of Portugal's carbon 	<ul style="list-style-type: none"> • Supplies and provision of services • Generating employment and powering development of Portugal's business fabric • Sharing values and good practice 	<ul style="list-style-type: none"> • Participation in leading NGOs in the field of sustainable forests and biodiversity conservation For example: the World Wide Fund for Nature's Forests 	<ul style="list-style-type: none"> • Technical training • Tools for promoting responsible forestry management • Large scale production of clones, contributing to more sustainable and healthier forests with improved yields • Genetic improvement of plantations 	<ul style="list-style-type: none"> • Investment in R&D • Generating and disseminating knowledge • Partnerships with Universities and Institutes to produce knowledge on a co-creation basis



<p>neutrality targets, with concrete proposals/action plans</p>	<ul style="list-style-type: none"> Support for reducing carbon footprint 	<p>Forward programme</p> <ul style="list-style-type: none"> Dialogue with NGOs in Navigator's Sustainability Forum 	<ul style="list-style-type: none"> Support for fire prevention and firefighting Solutions for controlling pests and other biotic risks to plantations Adding value to ecosystem services, through sustainable forestry management and biodiversity conservation Increased efficiency in forestry production 	<ul style="list-style-type: none"> Creating employment in science Development of bioproducts
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WHAT WE ACHIEVED IN 2022

Against a backdrop of soaring costs for energy, logistics and raw materials, we were able to rely on the flexibility, experience and expertise of our teams, who successfully stayed ahead of the situation. In particular, efforts were made to reduce our fixed and variable costs, to step up energy management programmes and to boost the efficiency of our operations, with a significant reduction in specific consumption levels in several industrial areas.

Thanks to a responsible policy of price adjustment and an effective differentiation strategy, based on boosting sales of premium products and our own prestigious and internationally respected brands, we succeeded in decisively offsetting the increases in costs.

Overall, we have done more than manage the crisis, by maintaining and even stepping up our key projects for the future, including the ambitious plan for product diversification and development, especially in Tissue and Packaging. We have pursued an investment programme strongly geared to honouring our commitments in our 2030 Agenda. No less than 35% of all capital expenditure is environmentally inspired, notably our structural projects and those set out in the Roadmap to Carbon Neutrality, as well as consistent strides towards creating a new generation of sustainable bioproducts, promoting decarbonisation of the economy and reduced dependence on fossil resources.

We have submitted and taken part in a series of applications to the Recovery and Resilience Plan (RRP) with forest-based solutions, representing investment in the order of 254 million euros (Chap.4.3).

In the context of the war in Europe, the values we espouse were paramount in our decision to suspend sales of products to the Russian and Bielorrussian markets, despite knowing that this might prove to continue indefinitely.

The results we achieved in 2022 reflect the flexibility of our business model and differentiation factors, showing an increase in turnover, which broke through the barrier of two billion euros for the first time. This result was reflected in the direct economic value distributed, which increased by 54.8% on the previous year.

Navigator's successful sales enabled it to increase personnel expenditure by 31 million euros, making it possible to increase the distribution of performance bonuses, to award a new productivity bonus for Employees and to step up the Rejuvenation Programme (Chap. 4.4).

It may also be noted that Portucel Moçambique's operations made significant strides in 2022 towards positioning Mozambique as a leading player in the forestry sector.

Portucel Moçambique - Harvest and Exporting of Wood

The process of harvesting and exporting eucalyptus wood from Mozambique is geared to creating sustainable value, supporting the Company's operations in the country in the long term. Throughout the length of the value chain, the returns from the project include:

- Skilled employment and professional advancement;
- Wealth generation and added value in the country, as well as environmental protection and investment in communities.

Our activities in 2022 resulted in approximately:

- 250 direct and indirect jobs;
- Employment for more than 1,000 people in casual and seasonal work (FTE-full time equivalent).

In addition, Portucel Moçambique contributes to the development of communities in the areas where it operates through the different elements of its Social Programme, including support for education and health infrastructures (Chap 4.7). The company also provides a healthcare programme for its workforce (Chap 4.5).



European Taxonomy

With the approval of the Taxonomy Regulation, the European Union has defined sustainable economic activities as those which: (1) contribute substantially to at least one of the six environmental goals identified in the Regulation; (2) do not significantly undermine any of the other goals; (3) and comply with all the minimum social safeguards relating to human rights, corruption, taxation and fair competition.

In response, Navigator conducted an analysis in 2022 of which economic activities are eligible, and set up an internal multidisciplinary working party to assess how far it meets the alignment criteria established in the Taxonomy Regulation. The assessment findings are available in Navigator's 2022 Management Report (page 95).

Financial reporting related to climate change

In 2022, Navigator embarked on a project to implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and designed a roadmap for developing activities that will enable it to achieve alignment with this initiative in the years ahead. The aim is to be able to integrate the TCFD recommendations into corporate strategy and risk management processes, seizing the opportunity to assess the potential financial and strategic implications of climate change and to develop appropriate responses. For further information, see the Annex to the Management Report (page 111).

Finance for sustainable development

Our financing policy has underlined our commitment to the principles of sustainable development: at year-end 2022, around 40% of our financing presented sustainable features. A new issue of sustainability linked bonds was crucial in achieving this percentage.



FEATURED INITIATIVE

New bond issue – Sustainability Linked Bond



Target 9.4



Target 13.1



Target 12.2



Target 15.2

We made a further bond issue in 2022 with a value of 150 million euros, under the Sustainability Linked Bonds Framework, with interest rates linked to three ESG indicators in our 2030 Roadmap, which are also aligned with the United Nations SDGs.

The first two indicators had been incorporated in our previous bond issues, reflecting the consistency of our policy. Eager to take this even further, the new issue included a third indicator, relating to consumption of energy from renewable sources:

Goal/Indicator	2030 Agenda and Roadmap	SDGs
Reduction in CO ₂ emissions (Scope 1 – EU ETS)	Action Area “for Climate and Nature” – Invest in low carbon solutions leading to carbon neutrality	SDG 9, SDG 13
Increased percentage of certified wood purchased on Portuguese market	Action Area “for Climate and Nature” – Ensure sustainable use of soil and forestry resources	SDG 12, SDG 13, SDG 15
Increased energy consumption from renewable sources	Action Area “for Climate and Nature” – Invest in low carbon solutions leading to carbon neutrality	SDG 9, SDG 13

Our aim is that the goals, underpinning the indicators we have embraced, should reflect and reinforce our commitment not only to carbon neutrality at our industrial complexes by 2035 (aligned with the goal of mitigating climate change), but also to optimising management of forest holdings.

In connection with sustainable finance we can also draw attention to our responsible investment policy, reflected in the review of the Pension Fund management contract which now also includes ESG criteria for investments, in addition to traditional financial criteria.



Responsible Investment Policy for Navigator Pension Fund

The aim that all our assets should be tied to environmental, social and corporate governance (ESG) criteria was boosted by the changes we made in 2022 to the management contract for the Navigator Pension Fund.

The Fund pursues a responsible investment policy, seeking to contribute to sustainability of the market as a whole in the long term. The selection process for managers included assessing how far they incorporate ESG factors into investment decision-making, and evidence that they play an active role in promoting sustainable investment.

The Fund will have the goal of achieving neutrality in greenhouse gas emissions by 2050 throughout its portfolio and will now use climate change metrics in its reporting.

External recognition of our commitment to sustainability

Our ongoing commitment to and investment in better ESG performance was reflected by external assessments by independent bodies, such as Sustainalytics, which again rated Navigator as a “Low ESG Risk Company” for investors, and in 2022 recognised Navigator as an ESG Industry Top Rated Company.

We were recognised in 2022 as a leader on climate change, obtaining a top score of “A” in the CDP Climate Change listing and improving our score to “A-” for CDP Forest, meaning we now also enjoy leadership status in this area (Chap. 5.1 and 5.2).

It is also important to note that our targets for cutting greenhouse gas emissions have been approved by the Science Based Targets initiative (SBTi) (Chap. 5.1), in recognition of our ambition to find science-based solutions for the climate challenge.



WHAT NEXT?

- Diversification and development of products, in particular in Tissue and Packaging;
- A continued focus on operational efficiency, actively managing fixed and variable costs across the organization;
- Increased productivity and energy efficiency, ensuring that our operations are sustainable;
- Activities related to the European Taxonomy (2023/2024):
 - Stronger implementation of climate risk analysis, aligned with TCFD recommendations;
 - Monitoring of publication of the criteria for the other environmental aims of the Taxonomy.



4.3 RESEARCH AND INNOVATION IN FOREST-BASED BIOECONOMY

We see our business as a force for creating a positive impact and embrace the challenge of asking ourselves daily what we can do to create a better world - contributing to solutions that respond to the challenges currently faced by Society, in particular the transition to a circular and low carbon bioeconomy.

OUR IMPACTS

12.3M€

invested in RDI¹⁹

INPACTUS PROJECT (2018-2022)

14.6 M€

Invested

8

Potential new bioproducts or businesses at the technical-economic assessment stage.

37

Patents registered

218

Researchers and Technicians

4

New products placed on market

66

Prototypes

114

Proofs of concept

147

Scientific publications

24

PhDs

45

Master's Degrees

¹⁹ Navigator's total RDI spending on the basis of the amount eligible for SIFIDE (the figure stated is that for 2021, as the final value for 2022 will only be determined in June 2023).



HOW WE MANAGE OUR IMPACTS

At The Navigator Company we believe that scientific knowledge, people with talent and expert skills, combined with innovation and technology, offer a promising foundation for a sustainable future. These are the prerequisites for developing biobusinesses and a new array of Portuguese industries that aspire to making a difference, by creating economic value in harmony with the Climate and Nature.

Innovation and technology, firmly anchored in Research and Development (R&D) activities, are the foundation of Navigator's business, ensuring that its products and processes are sustainable.

Creating Value Responsibly, the central concept in our 2030 Agenda (Chap.3.3), presupposes designing and implementing solutions that create sustainable value and competitiveness in the long term. In our 2030 Roadmap we have therefore accepted the following commitments:

- Working for improved yields, resilience and sustainability in Portugal's forests;
- Development of innovative, competitive and sustainable products;
- Fostering the bioeconomy through the development of sustainable bioproducts, reducing dependence on fossil resources and promoting decarbonisation of the economy, as well as scientific and technological co-creation in this field and in the area of bioproducts.

Mindful of the importance to our operations of scientific and technological expertise, Navigator took a pioneering step in Portugal in 1996 of setting up its own R&D centre in partnership with three Portuguese universities. This was RAIZ, our Forestry and Paper Research Institute.

RAIZ is today a private non-profit organisation, recognised as an entity belonging to the National Science and Technology System and as an Interface Centre (Technology and Innovation Centre), contributing to the competitiveness of the Company and of the sector in general, with positive impacts throughout the value chain. It is the largest private institute in Europe, and one of the largest in the world, devoted to R&D in eucalyptus forests and their products.

RAIZ' work is aligned with our purpose and aim of optimising and diversifying processes and business. The ultimate aim is to create innovative solutions able to respond to the various challenges facing forests and forest-based products.



LEARN MORE ABOUT RAIZ' RESEARCH PROJECTS

The science generated at Portuguese universities, in the field of biotechnology and the bioeconomy, has underpinned lasting partnerships that we are eager to carry forward. Our commitment to working collaboratively involves not only Stakeholders in the Portuguese science and technology system, but also international partners and leading players in our industry.

In order to advance our RDI activities, we therefore take part in networks and consortia, submitted applications to funds and external financing programmes (in Portugal and abroad), in addition to our own investment in this field.

The knowledge resulting from these activities has a real economic impact, that can be seen in the creation of innovative and distinctive products, in addition to new technology and services.

By supporting the work of a wide team of researchers, technicians and bursary holders, we are able to contribute to postgraduate training in Portugal and to generating jobs in science. We encourage the creation of intellectual property and scientific publications in the fields of forestry, pulp, paper and forest-based biorefineries.

We also place this expertise at the service of Society, through forest literacy, as exemplified by RAIZ' "[Forest of Knowledge](#)" Project (Chap. 4.7).



WHAT WE ACHIEVED IN 2022

RDI Activities

The last year saw the conclusion of the Inpactus project, addressing eucalyptus-based products and technologies, which far surpassed all the performance goals initially established. This project involved setting up a combined University-Industry platform for excellence, making it possible to implement a unique collaborative model based on the concept of co-creation, an aspect highlighted by the Organisation for Economic Cooperation and Development (OECD)²⁰. The model used in Inpactus for building knowledge has also permitted RAIZ to achieve European certification as a Business Innovation Centre for forest-based circular bioeconomy.



FEATURED INITIATIVE

Inpactus results in 37 new patents



Targets 9.2 and 9.5



Targets 17.16 and 17.17

The Inpactus project, Portugal's largest R&D programme devoted to the forest-based bioeconomy, led by Navigator, reached its end in 2022 after almost five years of research, development and innovation work. The results can be seen in 37 new patents, four new products put into industrial production, eight technical and economic feasibility studies for potential new bioproduct businesses, 66 prototypes, 114 proofs of concept and 147 scientific publications. Involving more than 200 professionals, it also provided training for highly specialised staff in the field of the forest-based bioeconomy: 24 PhDs, 45 Master's degrees and two International Guest Professorships.

With the aim of contributing to decarbonisation and a more sustainable, circular and competitive economy, the project was promoted jointly by Navigator, RAIZ and the universities of Aveiro and Coimbra, as well as involving partner institutions, such as the universities of Beira Interior and the Minho, the Higher Technical Institute, Universidade Nova de Lisboa, the Iberian Nanotechnology Institute, the RISE Bioeconomy R&D Centre (in Sweden) and the Fraunhofer Institute (Germany), and a spin-off, Satisfibre. The results of this project include:

(1) New paper products on the market:

- gKRAFT (packaging)
- Amoos Aquactive™ (tissue)
- Amoos Naturally Soft™ (tissue)
- Amoos Air Sense™ (tissue)

(2) Technical and economic feasibility studies for new processes and bioproducts:

- Bioethanol from biomass/primary sludges
- Fibre biocomposites with biopolymers
- Prebiotics from white pulp
- Bioactive compounds from biomass
- Deconstruction of biomass for producing sugars
- Bacterial cellulose from biomass sugars and respective applications
- Polyols from lignin
- Modified lignin for applications in cement

²⁰ The project was selected for participation in the Workshop "Stimulating Knowledge Transfer: Challenges and Policy Responses", held in 2017 in Lisbon, and organised by the OECD Working Party 'Technology and Innovation Policy' (TIP/OECD), in collaboration with the Foundation for Science and Technology, and supported by the Ministry of Science, Technology and Higher Education (MCTES) as part of efforts to analyse the national research, innovation and higher education system.



LEARN MORE ABOUT IMPACTUS PROJECT

Impactus was an innovative project, and a textbook example for partnerships between universities and business. It was also structurally important in affirming Portugal as a location for the new global, sustainable and competitive forest-based bioeconomy, built around the eucalyptus sector and the pulp and paper industry.

Cofinanciado por:



UNIAO EUROPEIA
Fundo Europeu
de Desenvolvimento Regional

The Impactus project has raised RAIZ' profile, affirming it as a prime mover in Portugal in adding value to innovative expertise. It was one of the Portuguese organisations with the largest number of patent registration applications in the first half of 2022.

A PhD programme at the University of Aveiro, in partnership with RAIZ and Impactus, has developed a new approach to the production of biocomposites, comprised entirely of bioproducts. This research won second place in the Blue Sky Young Researchers and Innovation Award Europe 2022, organised by CEPI (Confederation of European Paper Industries).

In 2022, the co-creation approach was boosted by RAIZ' launch of the first edition of a new Co-creation Programme for Promotion of Scientific and Technological Knowledge in the Forest-Based Circular and Digital Bioeconomy (Chap. 4.3).

Participation in RRP

The year was also marked by the applications we submitted, individually and jointly, to the Recovery and Resilience Plan (RRP), representing total investment of 254 million euros.

With funding awarded under the RRP, two projects got under way in 2022 in the Mobilising Agendas for Business Innovation component and another in the component entitled Bioeconomy:

Mobilising Agendas for Business Innovation

- **transForm** - Digital transformation of the forestry sector to a resilient and low-carbon economy. This agenda, led by Altri Florestal, is a unique Portuguese initiative with the principal aim of bringing about structural change in the Portuguese forestry sector. With technical and scientific coordination by ForestWISE (Collective Laboratory for Integrated Forest and Fire Management), Navigator and RAIZ are taking part in this project in order to contribute to more productive and resilient eucalyptus forests, through development of new genetic materials, good forestry and forest management practices.
- **From Fossil to Forest** is an agenda led by Navigator, with the aim of diversifying our business by developing packaging and cellulose-based products - sustainable bioproducts. Solutions of this type make it possible to reduce the use of fossil-based materials, such as plastic, and replace them with renewable and sustainable materials obtained from forests.

Bioeconomy

- **Be@T** - Textile Bioeconomy, has Navigator and RAIZ as participants. It is seeking to develop cellulose biocomposites with thermoplastic matrices for applications in textiles.



Navigator leads From Fossil to Forest Agenda

The From Fossil to Forest Agenda is about sustainable packaging products to substitute fossil plastics and is one of five applications to the Recovery and Resilience Plan (RRP) in which Navigator was involved in 2022. The Company is leading this consortium, with 27 Portuguese partners, including companies, universities and research centres, with a view to developing, patenting, producing and marketing packaging solutions with renewable and biodegradable materials obtained from forests.

Navigator and RAIZ are investing 81.7 million euros in the project, out of a total budget of 103.3 million euros. This initiative is planned to create 102 new jobs and to develop 17 new products.

Six lines of action are considered: brown pulps and papers for packaging, with a 20 per cent reduction in wood consumption, optimisation of mechanical properties and strength of paper, papers with sustainable barrier properties (against water and fats), development of smart papers incorporating sensors, moulded cellulose for single-use packaging, and biocomposites for application in packaging produced by injection, among other applications.

The “From Fossil to Forest” Agenda is one of Navigator’s most ambitious investments in the field of the forest-based bioeconomy, involving the design, production and marketing of innovative packaging, based on raw material sourced from planted eucalyptus forests with certified management.

The Industrial/Technological sector of RAIZ works to produce knowledge to boost the competitiveness and sustainability of our business. A major development in 2022 was the start-up of the Bioproducts Pilot Laboratory, with two projects scaled up to the piloting stage, involving bioactive foliage compounds (essential oils) and biocomposites, with bioplastics which will make it possible to develop products and test the market.

The first laboratory tests were conducted of the manufacture of moulded cellulose products using 100% eucalyptus fibre. Researchers looked at the recyclability of eucalyptus fibre and demonstrated that it outperforms other paper fibres, and the first laboratory tests were conducted of producing packaging papers with barrier properties against oils and fats, for food contact.

In 2022 we also pressed ahead with rePLANT (2020-2023), a ForestWISE project coordinated by Navigator. This initiative consists of research, innovation and knowledge- and technology-transfer activities, with a view to increasing the scale of sustainable forestry management in Portugal, making the Portuguese forestry sector more competitive and mitigating the consequences of rural fires.

In the field of forestry management and protection, major strides have been taken towards genetic improvement, which will make our eucalyptus trees more resistant to diseases and climate change, with positive impacts, including a potential increase in forestry yields.

We have made progress in fighting the pests that affect eucalyptus plantations and successfully concluded the studies backing up our application for approval to release into the wild an agent that combats one of the main pests found in eucalyptus.

In this same area, we significantly stepped up the release of a parasitoid intended to combat another pest (bronze bug), first released in 2021, and we made contact with international organisations in order to import another agent, as a potential parasitoid for another pest which has recently been found in Portugal (*Trachymela sloanei*).

Stronger clones, better adapted to climate change and diseases

Investment in the programme for genetic improvement of eucalyptus is intended to increase the production potential of Portuguese forests and to combat significant drops in yields resulting from climate change and the emergence of new pests, both in Portugal and in Spain.

Based on traditional selection methods and processes, without using genetic manipulation or transformation, this programme works to obtain improved varieties.

The latest trials, in the laboratory and in nurseries, have enabled us to identify the clones most resistant to diseases such as



Neopestalotiopsis and *phytophthora*, making it possible to avoid the preventive use of fungicides. In areas where the risk is greatest, increased yields of approximately 40 to 50% are therefore envisaged in comparison to non-selective commercial plants.

This work has involved the RAIZ team devoted to genetic improvement and protection, together with most of Navigator's operational forestry technicians. Equally important to this process was the work done by INIAV – Instituto Nacional de Investigação Agrária e Veterinária (national institute for agricultural and veterinarian research) and ISA – Instituto Superior de Agronomia (School of Agriculture) to identify respectively the diseases and pests.

Green light for introduction of biological agent to control the Eucalyptus snout beetle

A project coordinated by Navigator and RAIZ, in collaboration with the School of Agriculture and Altri Florestal has submitted a formal application to the Institute of Nature Conservation and Forests (ICNF) for release into the wild of the species *Anagonia* cf. *Lasiophthalma*.

This species has the potential to be an effective biological agent in controlling the Eucalyptus snout beetle, one of the main pests affecting eucalyptus in Portugal. It presents several environmental benefits and has no harmful effects on the ecosystem, avoiding the use of insecticides or substitution of the more susceptible clones.

The application has been approved, meaning that production will start in 2023, followed by large scale release into the wild. A 20% reduction in the damage caused by the beetle is expected.

New product placed on market

In the field of innovative tissue papers, 2002 was the marketing launch of Amoos Calorie Control™.



FEATURED INITIATIVE

Innovative tissue product featuring improved capacity to absorb food oils and grease

Amoos Calorie Control™ was launched on the market in the run-up to the Christmas season, seeking to respond to the need for healthier eating.

This product has been designed by using an innovative technology – Calorie Control™ – based on incorporating tiny structured air pockets, giving it the capacity to increase its volume without losing strength. Combined with the use of an additional layer in relation to other products, this technology enables the paper to absorb up to 25% of the calories of food immediately after frying, as well as liquids, making this a multi-purpose product. Production complies with the strict health and safety standards for food contact.



WHAT NEXT?

- As part of the RRP TransForm project (2025):
 - A wider variety of eucalyptus globulus hybrids, with several species highly resistant to drought and disease;
 - Genetic improvement of eucalyptus, maritime pine, Monchique oak and other species;
 - Preparation of detailed climate maps for the past 10 years, and also future forecasts, digital mapping of soils and validation of forestry production and hydrology models;
 - Scaling up production of new sustainable packaging materials based on cellulose fiber, with barrier properties against oils/fat and water, as well as improved mechanical properties.
- Consolidation of the Pilot Laboratory with new equipment for development of innovative bioproducts (2023).
- Integrated scaling up (from forestry operations through to end product) of production of bioactive products from eucalyptus foliage and bark (2026).
- Scaling up of production and market testing of new biocomposites (2026).



4.4 TALENT MANAGEMENT AND DEVELOPING HUMAN CAPITAL

We believe in our people as the most important asset, and so our efforts are focused on promoting their development, retention and advancement.

OUR IMPACTS

3,246

Direct jobs²¹

185.2 M€

in Employees' salaries and benefits²¹

95%

of Employees on permanent contracts

37%

of Employees have individual development plans

41

training **hours**/Employee

Social benefits equivalent to

1.11

additional salaries, corresponding to investment of approximately **6 million euros**

YOUNG TALENT

110

young people in the Talent Attraction Programme²²

73%

integration rate for vocational internships

20,342

hours of training for Interns/Bursary holders

²¹ Includes Employees of Portucel Moçambique. For the purposes of this report, we present consolidated environmental and social indicators for 3,115 Employees.

²² Includes vocational internships, trainees and summer internships.



COMO GERIMOS OS NOSSOS IMPACTOS

Talent management is one of our priorities, and responsibility is directly allocated to The Navigator Company's CEO. Responsibility for Human Resources lies with a member of the Executive Board.

The strategic importance attached to the issue has to do with the crucial role of our Employees in the Company, and for the future and sustainability of our business. It also reflects the volume of employment we provide, as part of our social and impact on the communities in the areas where we operate.

The management of our Employees is also informed by the values of stable employment, recognition and reward for merit, internal growth and career-long skills development, as well as investment in promoting their safety, health and well-being (Chap. 4.5).

We seek to meet their expectations, adopting measures that bring real benefits to people's lives. Our benefits plan has accordingly been designed to include:

- Health insurance, covering both Employees and their households;
- Life insurance, including cover for death and total and permanent invalidity;
- Pension fund (Chap. 4.2);
- Sickness benefit in addition to the sick pay provided by Social Security and the Pension Fund;
- Welfare support in the form of:
 - Healthcare, consisting of curative and occupational medicine (including social worker, psychologist, physiotherapist and nutritionist);
 - Travel to and from work;
 - Canteen service.
- Support for families, consisting of childcare allowances, educational support allowances, allowances for children with special needs and study grants;
- Financial support for Employees taking higher education courses.

Our performance management model is component of our wider strategy to build a closer relationship with our Employees. This model applies across the whole organisation and is intended to clarify performance expectations, boost feedback and promote development through continuing training.

Our Employees are all covered by the Training Plan which is part of the Careers Plan agreed, in 2021, with Workforce Representatives. The aim is therefore to promote a process of continuous learning, designed to improve their skills and adapt them to the Company's needs.

In particular, management staff are regarded as crucial for fostering a culture of development and proximity with an impact on the effectiveness of the organisation and the motivation of Employees. We accordingly seek to develop leadership skills across the organisation, with distinct programmes customised for different management levels, including a training and coaching programme.

The Company encourages professional mobility. With this aim in mind, it has expanded the range of Employee opportunities for growth and made it easier for Navigator companies and functional areas to share their experience and know-how.



We operate in a changing industry that demands high standards of technical expertise, and so one of our main challenges involves ensuring the transfer of know-how and managing in advance our future needs in the short, medium and long term.

Succession planning is used to identify future needs and develop Employee training programmes, aligned with those needs.

We take an integrated approach to managing talent and future needs, by attracting and recruiting future generations, which is seen as crucial to rejuvenating our Company and to succession planning, in the long term, for critical roles. This enables us to boost our positive impact, through partnerships with educational institutions in all the regions where we operate in Portugal.

For Employees nearing pensionable age, Navigator has set up a scheme, under its Rejuvenation Programme, for compensating Employees willing to take early retirement from the Company. This programme is designed to support them in the transition to a new phase in their lives, which may in some cases involve taking up other personal and professional challenges.

3,115 Employees

95.2% of Employees on permanent contracts

Geographical
distribution of
Employees

99.8% of Employees full time

97.6% Portugal

- 34.6% Setúbal
- 33.1% Figueira da Foz
- 17.6% Aveiro
- 7.5% Vila Velha de Ródão
- 4.8% Other

2.4% Abroad

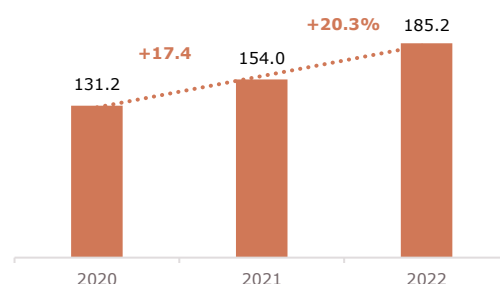
98% of Employees
covered by collective
bargaining agreements

Rate of new employee hires and rate of employee turnover*



* Includes voluntary terminations under Rejuvenation Programme

Employee salaries and benefits (million euros)





WHAT WE ACHIEVED IN 2022

Social dialogue

A labour agreement was reached in 2022 between the Company and the organisation representing the workforce. For the first time, this agreement covers a period of two years (2022 and 2023). The framework, applied to approximately 1,700 technical operatives, involves an increase in variable pay and sets a minimum entry-level salary above 1,000 euros, in 2023, for employees in the early stages of their career, including a meal allowance. Another feature of the agreement is automatic progression to the next scale when Employees receive a positive assessment in the two previous years.

For the Tissue segment, the minimum entry-level salary is 825 euros, resulting in monthly pay of 1,003 euros when the meal allowance is included.

Employee recognition and advancement

In pursuit of our policy of Employee advancement, there has been a clear commitment to salary progression plans, which culminated in increasing the performance bonus, introducing the productivity bonus, potentially corresponding to one month's salary, and a range of other measures to improve pay conditions.

Improved pay and bonuses

The year culminated in the award of performance and productivity pay at levels never previously recorded.

All Employees (technical operatives, middle and senior management) could potentially earn an annual total of 18.5 salaries, representing a substantial increase in relation to the 15.9 salaries paid on average in the past five years. An advance salary averaging 1,633 euros was paid in December, corresponding to an increase of 7%.

These measures are particularly significant in the current socio-economic context.

In addition to financial incentives, other initiatives have been adopted to promote Employee engagement with the Company. Examples of these are:

- "Grow" project – launched in 2022, this motivational project is designed to focus the organisation on its corporate Purpose and to anticipate future needs, on the basis of Employees' suggestions;
- Future Leaders Forum – for young management staff in the Company, involving them in the search for solutions to the challenges we face;
- Straight to the Top – a programme highlighting the importance of Employee engagement in improving processes and increasing operational efficiency;
- Celebration of Navigator lives – turning the spotlight on the stories and journeys of Employees completing 15 and 30 years with the Company.

With the end of the restrictions imposed by the pandemic, we renewed our efforts to reach out to families in 2022, once again opening our doors to communities for the Navigator Tour (242 participants), and organising a Family Day at the unit in Vila Velha de Ródão.



FEATURED INITIATIVE

Future Leaders Forum: as vozes e ideias que moldam o futuro



Targets 8.2 and 8.3

In order to support young management staff in the early stages of their careers, Navigator launched the Future Leaders Forum (FLF), a project for Employees with more than one year's service in the company and aged under 33 years. A total of 55 people were involved.

Meeting twice a year, this forum elects eight of its members, representing different areas, to the Future Leaders Board, which is responsible over the following six months for working on a challenge assigned by the Executive Board.

The first Future Leaders Board drew up strategies for developing new business segments in the packaging sector. The second is looking at the energy crisis, the challenges of the energy transition and the impacts of this for Navigator.

The project also involves middle management, who provide mentoring for the Future Leaders Board; this makes it possible to work towards a Company culture based on togetherness and participation, helping people to engage with our Purpose.

Straight to the Top Programme

The year culminated in the award of performance and productivity pay at levels never previously recorded.

Straight to the Top is an operational efficiency programme which in 2022 was extended to various departments at the industrial complexes and also to the Supply Chain, Wood Supply and Forestry Management sectors; these were selected in order to address the increases in variable costs for energy, wood and chemicals.

Over the course of the year, the programme brought in 35 new ideas proposed by Employees, which may potentially be implemented after an approval process. The aim is to encourage active worker involvement and participation in designing solutions to optimise processes and operational efficiency. The employees suggesting the ideas are rewarded by an incentive of up to five thousand euros, or else 5% of the potential economic gain achieved with the ideas approved and implemented over one year.

Skills development and careers management

Training activities returned on a large scale in 2022, with a total of 128,887 hours, corresponding to an average of 41 hours per Employee.

New regulations were approved on Company contributions to academic expenses, and applications are now accepted during two annual periods. This programme is aimed at all Employees seeking to invest in their education, and applies to first degrees, master's degrees, post-graduate studies and PhDs, in areas of interest to their duties in the Company or to their career advancement; seven applications were approved in 2022.

In 2022, the Learning Center, Navigator's online training platform, significantly expanded its range of specialist courses, in line with the skills programmes under the new Career Plans. A language training programme, Gofluent, was launched across the Company, currently offering 12 languages for all Employees and close family members (i.e. children and spouses).

In the technical field, an important development was the "Leader Passport", a training programme for new supervisors. These Employees man the front line in team management, and have been provided with technical and safety training appropriate to the role in Navigator, as well as giving them a broad vision of the entire business chain, and training in leadership and team management tools.

Work continued on the Expertise Programme, designed to support the careers plan created in 2021 for the maintenance, production, tissue and quality process control sectors. Work started in 2022 on implementing new upskilling



programmes, envisaged in the Careers Plan, and 213 training programmes currently under way are expected to be concluded in 2023.

In order to manage professional careers, work started in 2022 on adapting the Company's career model to the Job Family Model, in which an individual's technical career can be advanced alongside his or her management career. The aim of this initiative is to leverage internal growth, development and mobility, making it possible for Employees to plot their own course and at the same time to promote transparency and flexibility in this process; this enabled more than 70 individuals to progress to new roles in 2022.

Growing around our Purpose

The "Grow" project was launched in 2022 to focus the organisation on issues surrounding the Company's Purpose, in line with the commitments accepted by Navigator in its 2030 Agenda.

This initiative is based around three central aims:

- 1) Encouraging a sense of belonging;
- 2) Improving the ways we work;
- 3) Preparing Navigator's current and future leaders.

This project sets out to create an environment that stimulates and develops all our people. With a continued focus on achieving the highest standards, the aim is to encourage people to learn in an atmosphere of cooperation, participation, balance and well-being, in the belief that every individual, without exception, is vital to the Company's present and future success.

A series of listening sessions were held in 2022, involving around 200 people, and interviews were filmed with Employees sharing their "brand" in the Company (Chap. 2.1).

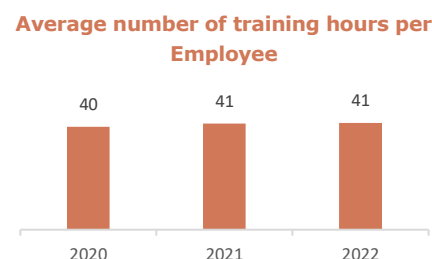
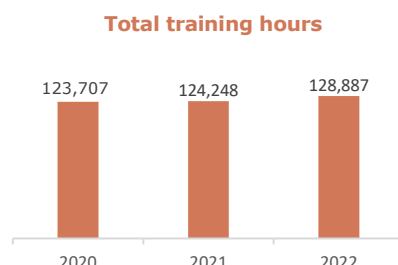




DEVELOPMENT OF HUMAN CAPITAL

37% of all Employees with individual development plans, as a result of application of the Performance Management Model
76% of all Employees in technical or management positions with individual development plans, as a result of application of the Performance Management Model

98% of Employees with performance assessment



Goal: reach 80% of Employees with development plans customised to their needs and professional plans, in alignment with Navigator's succession needs.

Promoting employability and attracting young talent

Thanks to its investment in young talent, Navigator currently has 380 Employees aged under thirty. In 2022, 53% of new hires were in this age range.

We also pressed ahead in 2022 with the strategy of integrating and developing young people, most notably through the Trainees Programme, which involves initiatives for recent graduates (first degrees and master's degrees) and for young people attending university, through summer internships, student internships and opportunities for developing dissertations in a business environment.

This programme involved organising Trainees Day, an event helping to integrate young people through the chance for direct contact with Navigator's top management.

For professional internships completed in 2022, the overall rate of integration in the organisation was 73%; the rate for permanent contracts for future operational technicians was 74%, and 70% for graduates (first degrees and master's degrees).

In this same area, we have stepped up our partnerships with Vocational Colleges, Universities and with the IEPF – Instituto de Emprego e Formação Profissional (institute of employment and vocational training). Alongside this, we took part in around twenty job fairs over the year, at universities and polytechnics, as well as organising workshops and seminars on topics related to our business and opening our doors to groups of students interested in learning about Navigator.

The N Factor: integrating interns

The talent attraction programme gave 110 young people the chance in 2022 to broaden their experience and to prepare for joining the world of work.

The Navigator Company's trainees programme - Factor N - has worked closely with academe to show that there are N number of reasons for interns to join the Company.

Depending on the applicant's academic training, several learning routes are offered - Industrial, Commercial, Technological, Corporate and Forestry.

Based on a learning-by-doing approach, the programme allows young people entering the labour market to pursue projects in different sectors of the Company.



FEATURED INITIATIVE

New courses for industrial production technicians



Target 4.4 Targets 8.5 and 8.6

In addition to promoting the professional development of our people, we have invested consistently in others with the potential to join the Company.

In order to create a course for developing knowledge and skills in the field of paper pulp production, we have stepped up our partnerships with a variety of vocational education institutions and with the institute of employment and vocational training (IEFP), in Setúbal, Aveiro and Figueira da Foz.

The course designed – “Industrial Production Technicians” – has a duration of 600 hours and includes an on-the-job component, in the form of a professional internship in the Company, with the possibility of future employment.

The programme proved extremely popular in 2022, resulting in 55 internships, and a subsequent rate of 90% for integration in the senior internship programme. More than 70% participants were eventually employed in the Company, giving a boost to our Rejuvenation Programme.



WHAT NEXT?

- Evolution from the Job Family Model to a professional careers model, in order to enable Employees to develop and grow (for Employees not covered by Careers Plans currently in place within Navigator) (2023).
- Digitisation of the Talent Review and succession management process (2023).
- Increased presence at leading universities and job fairs (16 events planned, including talks, workshops, speed interviews, matchmaking) (2023).
- Implementation of Training Planning Model (2023).
- Organisational climate study, to be conducted in the first half of 2023.



4.5 HEALTH, SAFETY AND WELL-BEING

Reflecting our commitment to the quality of life enjoyed by our people, we invest continuously in creating a safe and healthy environment for our Employees, in order to ensure their well-being.

OUR IMPACTS

1,857

Employees included under Occupational Health Programme

4,339

nutrition, psychology and physiotherapy consultations

97%

of Employees are satisfied with the Occupational Health Programme

206 instances
of sick leave
avoided through
Occupational Health Programme

14,010
hours of OHS training

262
accidents at work

7.3 Frequency
rate
for accidents at work

3,743
days of absence from work

10
occupational diseases reported

**Relating to
Ergonomics
Project**

52
workstations redesigned

134 measures



HOW WE MANAGE OUR IMPACTS

Some of the risks associated with our operations have to do with the occurrence of accidents at work and occupational diseases, with potential impacts on the lives of our people and their families, as well as on the Company's competitiveness and reputation, with the potential to undermine attainment of our goals.

Effective implementation of an Occupational Health and Safety (OHS) culture – fully integrated and disseminated to everyone, in workplaces – is one of our priorities. By conducting our business in a responsible way, we can not only cut the Company's costs, but also minimise risks to people, communities and the environment (especially those resulting from the Company's industrial units and forestry operations) as well as contribute to the continued good state of our facilities and plant.

To this end, Navigator has a [Policy for Prevention of Serious Accidents \(PPSA\)](#) – based on the principle of continuous improvement in line with the goals set out in the [Management Systems Policy](#) – and an OHS Management System certified under ISO 45001, covering 93%²³ of internal Employees and 100% of external Workers. Over the past five years, the activities of external Workers have been gradually integrated into this System, with a special focus on resident external Workers.

We have invested in resources in order to equip the Company with technical skills, tools and technology that enable us to work towards preventing accidents, whilst promoting health and well-being. Our motto is designed to promote the health and welfare of all Employees – “We all have to return home, safe and sound, to our families!”

Our Health and Safety Strategy is aimed at the three-year period 2021/23 – Mission Zero – and is based on five key ideas (diagram below). Measures have been identified in each of these areas and, depending on the capacity to implement them and their impact, these have been included in an ambitious plan involving the entire Company, from top management to sector managers, supervisors and operatives. The plan is monitored on a periodic basis by the Executive Board, the Director responsible for this area and Company Managers.



²³ There are various activities in the organisation, in particular Forest Management, Wood Supply and RAIZ, which do not fall under ISO 45001. However, activities in these sectors are subject to the same principles and procedures.



Our OHS and Occupational Medicine teams work daily on a collaborative basis to put this plan into operation. This involves assessing risks, monitoring chemical, physical, biological and radioactive agents, and also periodic joint visits to industrial units.

We also strive to raise awareness and provide training, so that our people are better informed and more aware of their own health and well-being, and teaching them to adopt safe behaviour. Workforce training has involved developing skills matrix for each job, so that we can identify, for each Employee and the tasks assigned to them, what training is mandatory and the respective validity period.

It is important to note that our Occupational Health (OH) Programme is aligned with global sustainability trends, as it seeks to contribute not only to physical well-being, but also to the mental and social welfare of our people.

The OH team consists of a psychologist, a nutritionist, a social worker and five physiotherapists, who all work in partnership with the occupational and curative medicine team, comprising 6 occupational medicine professionals, 4 curative medicine professionals and 20 nurses.

These professionals collaborate on health and welfare programmes, and in assessing and following up Employees needing help from any of the specialities offered. OH professionals accordingly take a multidisciplinary approach to prevention and to helping Employees to adopt habits and techniques that enable them to overcome difficulties originating in their working or personal lives.

WHAT WE ACHIEVED IN 2022

In 2022, we carried our OHS culture further by: (1) designing processes for integration and decision making – governance model; (2) pressing ahead with the Occupational Health Programme; (3) improving workstations with an impact on health and productivity; and (4) building up Employees' skills, sense of commitment and involvement in adopting safe practices, through training and awareness raising activities, with a special emphasis on a gamification approach.

Governance model

Design of new Health and Safety governance model

In 2022, a new governance model for Health and Safety was approved by the Executive Board (EB) and implemented. Committees have been established at local, corporate and board of directors level to look into topics related to Safety, such as good practices, benchmarking, accident rates, incident investigation, new projects, resources and investment, among other issues.

This model establishes an important channel for analysis and discussion, putting performance in this area on the agenda, and making for a more participative, fast and effective decision-making process. It envisages periodic meetings, involving more people in aligning Health and Safety strategy and thereby creating a snowball effect in programmes and initiatives, both new and under way.

Steering Committee (EB)

Performance presentations, project presentations and analysis of work in progress (quarterly meeting).

2022: 3 Sessions

Corporate Steering Committee

Monthly meeting to discuss progress on Action Plans and other relevant topics with Mill and Forestry Managers, the Human Resources Division, the Projects Division and the Central Technical Division.

2022: 6 Sessions



Local Health and Safety Committee

Fortnightly meetings led by mill, forestry and wood supply managers with participation by the management team, in order to define and monitor the performance achieved and work done.

2022:44 Sessions

Accidents at work and occupational diseases

In 2022 we recorded a higher number of accidents with sick leave than in the previous year (up 16%), and consequently a higher frequency rate (7.3).

The most frequent cause of accidents at work leading to sick leave are work-related musculoskeletal disorders (WRMSDs), which accounted for 32% of accidents in 2022. Many Employees present clinical situations resulting from poor posture, associated with tasks that are less demanding from a muscular point of view; according to the diagnosis by the physiotherapy team, these are related in most cases to ergonomic issues in the workstation. Where these root causes were identified, measures were adopted in 2022 to reduce this incidence rate, most notably through Ergonomics Project.

It should be stressed that the results of initiatives of this type are not immediate, as time is needed to implement the changes to workstations and to consolidate the learning process and adoption of good practices by Employees.

Ten cases of occupational diseases were reported in 2022. Navigator's industrial operations involves a series of risks which are constantly monitored; preventive measures are also adopted at the different industrial units. Attention is drawn to the risks of pulmonary diseases, dermatitis, musculoskeletal diseases, conjunctivitis and deafness.



FEATURED INITIATIVE

Ergonomics Project



Target 8.8

The Ergonomics Project, launched in 2019, has provided a growing response to the Company's concerns in this area.

The project involves a multidisciplinary team, consisting of ergonomics experts, physiotherapists, safety officers and Employees. Together, they assess locations where work-related musculoskeletal disorders (WRMSDs) are most prevalent, and develop ergonomic improvements to workstations and to the tasks carried out.

At the workstations redesigned, and where the changes have been completed, staff satisfaction rates are very high (over 90%) and the potential for musculoskeletal injuries has been reduced (according to the Rapid Entire Body Assessment [REBA] conducted in each case).

Postural coaching is another feature of the Ergonomics Project, raising Employees' awareness of the right way of performing certain tasks, moving loads and also how to get on or off equipment or machinery. This "postural education" work enables Employees to acquire a different sense of bodily awareness, leading them to reflect on the impact that some of their activities have on their health and well-being.



Safety Olympics

We celebrated Safety Month, in April, with the first Safety Olympics, consisting of a series of challenges in which all the Company's Employees were invited to take part.

The aims of this initiative were to:

- Expand knowledge;
- Encourage discussion of the topics chosen for debate;
- Stimulate teamwork;
- Draw attention to the importance of being careful and following procedures.

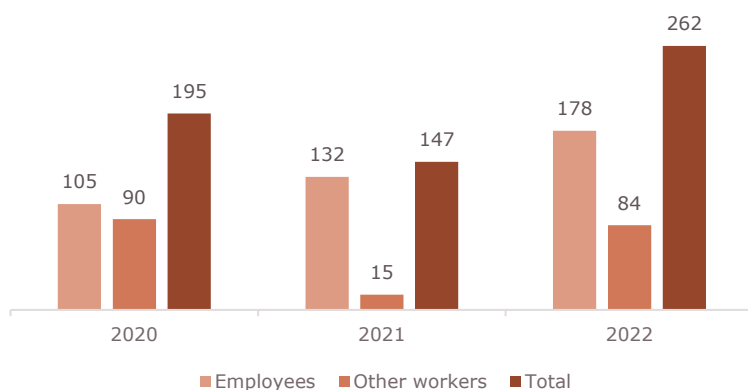
A range of activities took place over four weeks, including: questionnaires, use of photographs to identify good practices, identification of opportunities for improvement, and an escape room designed around several topics, where Employees were invited to solve the final puzzle.

The initiative reached out to 45 teams of participants and a total of 180 Employees.



ACCIDENTS AT WORK AND OCCUPATIONAL DISEASES

Number of accidents at work



Significant accidents



MAIN CAUSES

(ACCUMULATED)



Musculoskeletal



Bruising



Fractures



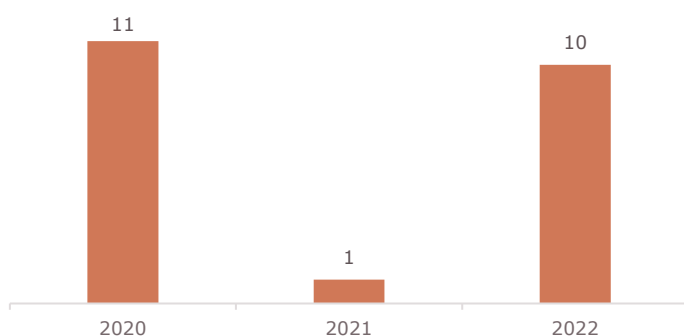
Cuts



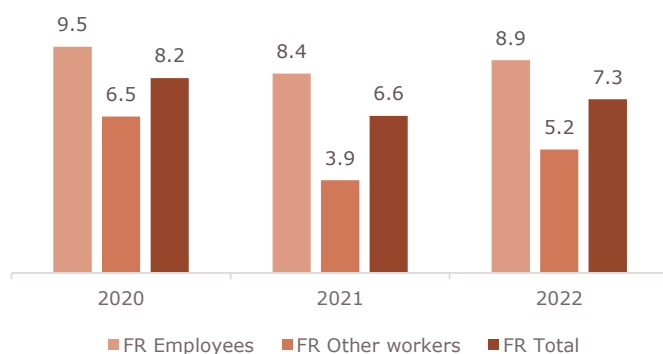
Entrapment/Crushing

	2021	2022
Musculoskeletal	50%	32%
Bruising	20%	21%
Fractures	5%	13%
Cuts	17%	12%
Entrapment/Crushing	-	9%

Number of occupational diseases reported



Frequency rate for accidents at work ⁽¹⁾



Moderate accidents



MAIN CAUSES

(ACCUMULATED)



Cuts



Bruising



Musculoskeletal



Entrapment/Crushing



Burns

	2021	2022
Cuts	24%	19%
Bruising	26%	18%
Musculoskeletal	33%	15%
Entrapment/Crushing	6%	13%
Burns	8%	10%



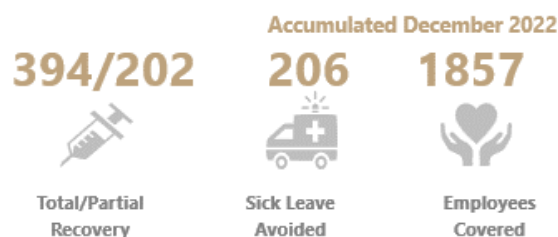
Goal: Achieve the Zero Accidents Target through continuous improvement in safety, with the new OHS Strategy 2021-2023: Frequency index ≤ 2 in 2030 (internal and external Employees).

(1) The frequency rate for accidents at work was calculated by counting accidents leading to sick leave and using a normalisation factor for hours worked of 1,000.00.



Occupational Health Programme in 2022

2,686 physiotherapy consultations
893 consultations in Psychology and Welfare
760 consultations in Nutrition



Promoting health and well-being

In 2022, Navigator Employees took up the chance to consult the OH team in large numbers. During Occupational Health month in 2022 we organised a special campaign to raise Employees' awareness in the field through webinars and in-person events at all the Company's industrial units, with the slogan "Let's talk about health".

"Let's talk about health"

The slogan for Occupational Health month in October was "Let's talk about health".

In combination with the Mission Zero Strategy, this is a project that mobilises the four areas of the Company's Occupational Health team - Psychology, Physiotherapy, Nutrition and Social Services. The webinars and in-person events held at all the Company's units offered the chance to share information and answer people's questions.

The initiatives aimed at Employees and seeking to promote a healthy lifestyle addressed issues such as:

- Preventive nutrition – Chrononutrition²⁴ and eating less sugar;
- Back pain and how to avoid it;
- Carers, care and welfare support;
- Lighting and how it affects our sleep.

²⁴ A term which has recently come into use to describe the relationship between eating and circadian rhythms.



FEATURED INITIATIVE

Preventive medicine programme in Mozambique



Targets 3.3 and
3.4

Targets 8.8

A preventive medicine programme is being rolled out as part of efforts to promote the health and well-being of Employees of Portucel Moçambique. Launched in October, this programme has been designed to promote health through an approach based on prevention and early detection of disease and injuries, in the three Mozambican provinces in which we operate – Maputo, Manica and Zambézia.

With investment of around 25,000 USD, the programme involves deploying an expert medical team, providing a quality, reliable and technically proficient service.

By visiting workplaces, the medical team was able to screen and assess Employees (clinical analyses) and offer medical advice for better health (medical consultations).

Participation was voluntary and the take-up rate was 91% among Employees, with a total of 175 people. At this time, 36% of participants have completed their screening process.

According to the physician in charge, the main overall outcomes were:

- Diagnosis of infectious diseases not being treated;
- Detection of cases of Employees with untreated sight issues;
- Raised awareness of the need for self-care, a healthy diet and physical exercise;
- Statistics which can be used as the basis for further plans and strategies to improve the health of the workforce.



WHAT NEXT?

- Implementation of Training Programme based on a new skills matrix (2023/2024).
- Development and implementation of an Occupational Health and Safety Management Platform (phase 1, 2023).
- On the basis of the new Overall Risks Assessment methodology (2023):
 - Identification of the most significant risks and design of strategies to mitigate them.
 - Identification of good practices and promotion of internal benchmarking.
 - Identification of the most critical units where actions and initiatives need to be stepped up.



4.6 SUPPLY CHAIN MANAGEMENT

Aware of the impact of our purchasing policies on the creation and distribution of value, among the thousands of companies and workers belonging to our supplier's chain, we are committed to establishing partnerships and encouraging positive change.

OUR IMPACTS

More than
7,300

Suppliers

1,934 M€

total volume of purchasing
(up 40% on 2021)

72%

of purchasing volume -
Portuguese suppliers

68%

of wood purchases certified

87%

of our wood suppliers are chain-
of-custody certified

67%

of paper dispatched by sea



HOW WE MANAGE OUR IMPACTS

At The Navigator Company we rely on more than 7,300 suppliers and spend each year around 1,500 million²⁵ euros on supplies and services - a figure that points to the scale of the economic impacts, and also the social and environmental impacts, of our procurement decisions. The fact that 73% of our suppliers²⁶ are Portuguese, allows us to make a decisive contribution to the economy and to job creation at a local level.

The Company's operations require supplies of wood, chemical components used in the industrial process (to process wood, in the finished products and by-products we market) and energy, which we produce and consume. The impacts associated with our supply chain have to do not only with the extraction and production of these resources, but also with their transportation. Another relevant factor is the shipping of our products to more than 130 countries and approximately 3,800 delivery points.

In particular, the logistics of wood and biomass is directly responsible for moving a large volume of materials, which involves using fossil fuels, heavy machinery and large road vehicles, as well as rail and maritime transport (for longer distances), and a significant number of interactions between all the parties involved. These activities have environmental and social impacts, including on the safety of people working in the process.

In line with our governing principles, we are committed to encouraging responsible conduct throughout our supply chain. For this reason:

- We have a [Code of Conduct for Suppliers](#), in which we address issues such as practices for combating corruption and bribes, respect for human rights, environmental practices, health and safety, and environmental practices. This code is distributed to all materially relevant suppliers and in all consultation processes.
- We apply eligibility requirements, for supplies of chemical raw materials, which deal with environmental and legal issues (e.g. Microplastics, heavy metals, biocides, eco-label).
- When approving new suppliers of chemical raw materials, we make visits to production facilities in order to identify and mitigate the risks associated with new contracts. This process involves checking documentation, audits of facilities producing the materials to be purchases, and the taking of samples for laboratory tests and industrial testing.

As required by our certifications²⁷, we seek to use our ability to influence, engaging with suppliers (including service providers and subcontractors) and raising their awareness of critical issues relating to safety, the environment, business integrity, quality and other matters. It should also be noted that the permission to use the European Union Ecolabel on our UWF and tissue paper products requires us to implement a qualification process for suppliers, raw materials and consumables, setting high standards for performance on environmental and other criteria.

In our 2030 Agenda (Chap. 3.3), we have set targets centred on suppliers of our main raw material, which involve increasing the percentage of certified wood purchased and promoting the chain-of-custody certification of all our wood suppliers.

We have implemented projects aimed at forestry landowners in the Portuguese market, helping them to add value to eucalyptus forests, by way of complementing leases (Chap. 5.2). These projects seek to contributing to an improvement in yields from their plantations, through technical support in restoring burned areas, and abandoned and low-yield land, and in reforestation. We also disseminate our good forestry practices at meetings with producers, sharing our vision for forests and the collaborative model we defend for relations between industry and production forestry.

²⁵ Average figure for the past three years.

²⁶ Considering the total number of suppliers.

²⁷ ISO 9001 (quality management), ISO 14001 (environmental management), ISO 45001 (management of occupational health and safety), FSC® - Forest Stewardship Council® (License no. FSC® - C010852); PEFC - Programme for the Endorsement of Forest Certification schemes (License no. PEFC/13-23-001).



Our targets for reducing CO₂ emissions, approved in 2022 by the Science Based Targets initiative, involve an ambition to cut carbon emissions in the value chain (Chap. 5.1). Efforts are directed at optimising inbound wood flows, seeking to achieve, in each logistical area, efficient processes in the different origin-destinations flows, enabling us to reduce costs. We are also committed to alternatives to road haulage, and in particular to using rail.

Sustainable management of our supplier chain is an issue that emerged with renewed importance in our recent materiality analysis (Chap. 3.2), and we therefore plan to reflect internally on new commitments and goals to set in this area of crucial importance to sustainability on a global scale.

SPENDING ON SUPPLIERS

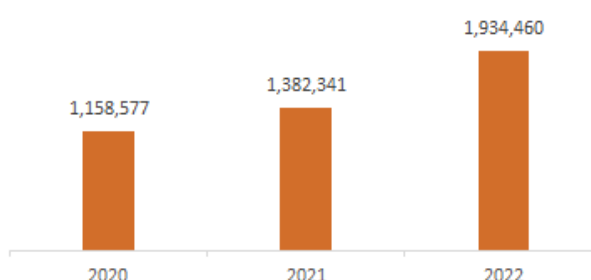
In 2022:

7,303 Suppliers (up 2% on 2021)

1,934 million euros spent on suppliers (up 40% on 2021)

- 72% Portuguese suppliers
- 28% foreign suppliers

Total costs for suppliers ('000 €)



WHAT WE ACHIEVED IN 2022

In 2022, our total purchasing volume increased by 40%. The wider economic context, in particular the war in Ukraine, with interruptions to gas supplies to Europe from Russia, together with the weather conditions recorded, led to a sharp rise in the prices for power, natural gas, transport and oil in Europe. This impacted not just our operations, but those of our suppliers.

Our strategy of partnerships with suppliers has proved a significantly resilient model, especially in periods of disruption like those experienced in the past two years.

We have therefore adopted several measures to support our partners, in the wood and biomass markets, forest landowners and managers, and road hauliers.

Materials Management

As part of a long-term strategy, the first steps were taken in a feasibility study for building a chemicals island in Portugal, involving Navigator's suppliers and internal Stakeholders. If this project goes ahead, it has the potential to develop the market and reduce our dependence on external suppliers.

Work has also proceeded on a procurement project with a Portuguese raw materials supplier, in which Navigator has taken the role of sponsor, incentivising and supporting investment in power generation from biomass, as a way of mitigating rising gas costs.



FEATURED INITIATIVE

Support for suppliers in wood and biomass market

During 2022 we implemented and consolidated measures to support our partners in the wood and biomass market. The most significant measures included:

- Financial support for purchasing machinery;
- Pricing policy to improve management of their businesses;
- Support to offset rising fuel prices;
- Broader implementation of the confirming policy to bring greater flexibility to our partners' cash management;
- Implementation/review of the supplier qualification system, allowing for segmentation on the basis of quantitative and qualitative variables and others concerning the relationship with Navigator; under this system, each supplier is aware of their standing and the challenges/opportunities for growth with the Company.

Este conjunto de apoios foi particularmente relevante para os fornecedores de menor dimensão, que apresentam menor capacidade de resposta para fazer face à escalada dos preços da energia.

Alongside this, our concern to reduce carbon emissions in our value chain took on even greater relevance in 2022 in view of interruptions to energy and gas supplies. Establishing partnerships with our suppliers – to increase energy and resource efficiency, looking for alternatives to fossil-based energy and contributing to decarbonisation goals – is an opportunity we have been exploring.

An important development was consolidation of the start-up of the new boiler at the Figueira da Foz Complex, for producing energy from forestry biomass, which has considerably increased our need to purchase this material. As a result, we have started to look at agricultural biomass as a way of complementing biomass from forestry waste.

Inbound Logistics - Wood Supplies

In the field of inbound transportation logistics, steps have been taken to optimise costs, whilst simultaneously helping to reduce our carbon footprint.

In the case of rail (wood), a collaborative project to improve the equipment used in transporting wood made it possible to increase the cargo carried by each wagon by around 7%, with increased safety.

In road transport, a partnership with local ports enabled us to cut the number of trips by approximately 500, for the same volume of materials.

In marine transport, a collaborative project was implemented between Navigator and an internationally important Portuguese shipowner for maritime transport of wood between Brazil and Portugal (2022-2024).

We stepped up procedures for control and raising awareness of occupational health and safety issues and increased our safety audits for transport, logistical hubs and seaports, in order to ensure they comply with our safety requirements.

Outbound Logistics - Shipping Products

In maritime transport, we looked closely at the impact of CO₂ emissions and other associated environmental issues, and discussed these with shipowners. We developed partnerships with smaller shipowners in order to use services at local ports, resulting in new services to the United Kingdom and the United States, from the ports of Aveiro and Setúbal. This enabled us to increase our capacity for shipping to the United States (Newark) and we cut emissions by using more local ports.

In the case of rail, we consolidated the model for shipping contained from our mills to the ports, and sought to optimise volumes per load.



In view of the importance of ensuring appropriate management of the ESG risks associated with our value chain, we have been working on a project that will enable us to contract an ESG rating tool. Another important development was the approval in late 2022 of our Human Rights Policy (Chap. 4.1).



WHAT NEXT?

- Implementation of tool to monitor ESG risk and design mitigation measures for suppliers with low ESG rating (2023/2024).
- Increased follow-up of measures to reduce the carbon footprint of our suppliers.
- Implementation of road haulier loyalty programme – incentive for haulage capacity (2023).
- Increased incentives for investment/expansion and renewal of road haulage fleets (2023).
- Continued partnerships with smaller shipowners, to develop services from local ports (2023).



4.7 COMMUNITY RELATIONS

We have invested in a strategy of close relations with Communities, seeking to be a catalyst for change and to find joint solutions for environmental, social and economic challenges. This means building trust and strengthening our social license to operate.

OUR IMPACTS

1.75 M€

invested in communities

More than
7,000

families helped and more than
7 million euros
invested in Social Development
Programme in Mozambique
since 2015

More than
7,000

children and
12,000 teenagers and adults reached by
initiatives promoting forest literacy

Approximately
6,500

participants in Forest of
Knowledge project

101
thousand copies

of Give the Forest a Hand and
My Planet magazines (7
editions)

4,104

trees planted under the Dá a Mão à Floresta
(Give the Forest a Hand) and My Planet
projects

12 sessions with
academy on the Florestas.pt
platform

18 articles authored

Engagement
with **5** new partners



HOW WE MANAGE OUR IMPACTS

At The Navigator Company we have a significant presence in several regions, through our industrial operations, as well as our forestry operation in Mainland Portugal, Galicia (Spain) and Mozambique.

In line with our purpose (Chap. 2.1) we have accepted a responsibility to find ways to share value with our Stakeholders (Chap. 4.2), and especially with local communities. These have a crucial role to play in the acceptance of companies, as they are the first link in the chain to feel the impacts, positive and negative, of our forestry and industrial operations.

APPROACH TO COMMUNITY RELATIONS

	Dialogue with Communities
	Forest literacy projects
	Transfer of forestry management expertise and skills to forestry producers (Chap. 5.2)
	Social Development Programme in Mozambique
	Direct community support

As a way of establishing dialogue with Communities, we have several arrangements for direct interaction (Chap. 3.5), such as the Community Monitoring Committees and Navigator's Sustainability Forum (Chap. 3.5 and 4.1).

Because forests are the principal source of our resources, one of our priorities involves educating the public about the benefits of woodlands and the importance to society of sustainable use of forest-based products. We therefore remain committed to launching projects that help to generate and share knowledge in the field of forest literacy, especially online, as well as initiatives to empower Stakeholders, such as forestry producers (Chap. 5.2).

Another important target group is our local school communities, where it is extremely importance to raise awareness of forestry protection at an early age. This has involved initiatives such as:

- The “Dá a Mão à Floresta” (Give the Forest a Hand) programme, using roadshows, a magazine and specific contents for social media.
- The “Forest of Knowledge” project, developed by Navigator and RAIZ and supported by the Calouste Gulbenkian Foundation's Sustainable Development Programme.

In addition to the forest literacy projects, we have built up our relationship with communities through direct support for local initiatives.

In the field of engagement with communities as stakeholders in the project, special attention is drawn to the Social Development Programme implemented in Mozambique. On the basis of needs identified in the Environmental and Social



Impact Assessment, the Programme is structured in three fronts and has already invested more than 7 million euros since 2015 and has brought a positive return in:

- Generation of employment along the value chain, at different levels of skills and professional advancement;
- Community investment, centred on three priorities: food security and diversity, income generation and welfare.
- Environmental protection, with implementation of best practices and developing know-how partnerships seeking to improve the protection of native woodlands in conjunction with communities;
- Engagement with Stakeholders at central level, in the projects and districts, in following through the project - through participation in the review of the Mozambique Forestry Law, with specific contributions and participation in public debates with Stakeholders.
- Generation of wealth and value added for the country.



- Support for improved agricultural production, with technical assistance, seeds and demonstration fields
- Promotion of livestock and fish farming



- Promotion of farming: provision of beehives to families to produce honey



- Health:
 - Support for construction of health facilities – surgery block
- Access to drinking water:
 - Drilling and restoration of boreholes for water
 - Quality tests on water for human consumption
- Provision of solar lamps to families
- Improved access roads and other infrastructures



WHAT WE ACHIEVED IN 2022

Dialogue with Communities

In 2022, a total of three meetings were held of the Community Monitoring Committees (CMCs) at the Company's industrial complexes. These Committees include an array of stakeholders - representatives of municipal authorities, local bodies, NGOs and universities, among others - and are fundamental for strengthening our credibility and "license to operate", above all in the local areas around Navigator's operations. Members of the local community are given an active voice on topics of concern to them, which can range from the impacts of the Company's activities (industrial, forestry) to projects able to contribute to the improved welfare and quality of life of the community.

The 14th edition of the Sustainability Forum was held in Aveiro, with an audience of leading local Stakeholders, offering a chance to debate the theme: "Bioeconomy: Road to a Sustainable Future" (Chap. 4.1).

Forest literacy projects


















Activities in 2022 were anchored in our corporate purpose (Chap. 2.1), seeking to make it a living reality through the various projects in progress.

In a year marked by the lifting of the pandemic restrictions, but also by growing uncertainty around the world, we sought to develop and deepen close relations between the Company and its different Stakeholders.

The My Planet and Give the Forest a Hand projects resumed their in-person events for the community. In the case of My Planet, this consisted of tree planting initiatives in partnership with local organisations, and for Give the Forest a Hand, we organised fun educational activities to raise young people's awareness of the need to protect and improve Portugal's woodlands.



FOREST LITERACY PROJECTS

My Planet	Give the Forest a Hand	Forest of Knowledge	Biodiversity	Florestas.pt
 https://myplanet.pt/   11,954 teenagers and adults reached 3 editions of magazine with average print run of 15,000 copies 14,003 subscribers of magazine 401 online content items 1 competition More than 43,100 social media followers More than 441,000 hits on website 12 editorial content items in National Geographic 2,922 trees planted	 https://www.daamaoa.floresta.pt/pt     More than 7,000 children reached 4 editions of magazine with average print run of 14,000 copies More than 14,900 subscribers of magazine 479 online content items 8 competitions Approximately 106,400 social media followers 1.4 million hits on website 1,182 trees planted	 https://florestadosaber.pt/ Approximately 6,500 participants in project; more than 90% are teachers and students, from infant to secondary education 280 practical activities 8 think tanks 3 exhibitions on the themes of forests, biodiversity and bioproducts	 https://biodiversity.com.pt    Approximately 4,491 social media followers	 https://florestas.pt/    18 opinion articles (ecosystem services, sustainability of forests, planted forests, controlled burning, invasive plants) 323,236 Visitors 502 subscribers to newsletter

The “Forest of Knowledge” project, organised by RAIZ, kicked off in 2023, with in-person activities that included practical sessions in a forest or laboratory environment, arranged in partnership with education institutions such as Aveiro Vocational College and several local schools.



FEATURED INITIATIVE

Forests for Families at Jamor Sports Centre



Target 4.7 Target 11.6 Target 12.8

In order to bring the Company and its projects closer to the wider community, we joined forces with the Portuguese Institute of Sport and Young People and the Jamor Urban Park for two initiatives - “Forests for Families” and the celebrations for European Week of Sport.

These events enabled us to deploy the “Give the Forest a Hand” and My Planet projects, by raising awareness of forest literacy topics, the importance of outdoor sports and social inclusion. An area of the Jamor Urban Park was also reforested, with the planting of 250 trees, alongside a sensorial activity enabling people to “feel” the forest.

The initiatives involved 784 children and 1,681 adults, including young people and adults with cognitive and motor disabilities.



The desire to share our knowledge, experiences and resources, in the quest for a better future – fundamental components of our purpose – also lay behind the launch of the biodiversidade.com.pt website (Chap. 5.3).

In the spirit of engagement and co-creation, we have invited Portuguese experts from a range of institutions, fields of knowledge and geographical regions to develop content for Florestas.pt. The different professional backgrounds of our authors - ranging from university lecturers, to forestry officers, museum curators, producers and fire fighters, among others - have enabled us to enrich the content offered and to promote “knowledge communities” by including different perspectives. This has added to the credibility of the platform and to the Company’s reputation, with positive impacts throughout the forestry sector.

In 2022, summer interns at the School of Agriculture in Lisbon were also involved in developing content for the website, enabling them to engage with what is a crucial topic for the whole world.

The efforts made across to organisation to combat climate change and our positioning as a “Bioindustry on the right side of the future” have also been publicised through these platforms and our media relations strategy. Our work with media outlets, in a variety of formats (press releases, interview and articles), have enabled us to turn the spotlight on issues such as: planted forests and sustainable forestry management, perceptions of eucalyptus forests, Navigator’s 2030 Responsible Business Agenda, research and development of new bioproducts, within the framework of a forest-based bioeconomy, along with decarbonisation and many others.

The resumption of in-person activities, after the end of the pandemic, also enabled us to restart the Navigator Tour initiative, with visits to our production units, as well as to the RAIZ research institute. These moments of interactions with various Stakeholder group, such as schools, universities and other community institutions, enable us to build close ties between the Company and organisations within its sphere of influence.

Navigator also took part in Woodfiber Conference 2022, one of the top international conferences in the sector. Guided tours of RAIZ, the Setúbal Industrial Complex and the nurseries at the Espirra Estate also offered participants a unique experience.

Social Development Programme in Mozambique

Our Programme in Mozambique consolidated and stepped up its activities in 2022, reaching out to around 7,000 families in the project areas. At the same time, we sought to refine the indicators of lasting impact, to provide improved monitoring and more robust and effective tools that can assist in empowering families in the fields of food security and diversity, income generation and well-being.

We have stepped up our community welfare work, especially in health and education, as well as in access to drinking water and environmental awareness raising, engaging with 3,626 people in 2022, of whom 43% were women.

We pressed ahead in 2022 with the project to build a new surgery block at the Ile district hospital, in Zambézia province, which is planned to be completed in 2023.

In the field of education, we have helped build four classrooms at the Munhinga Secondary School, located in one of the development areas for the Company’s venture in Mozambique. This support consisted of purchasing construction materials, and originated in response to a request from local organisations.

SOCIAL DEVELOPMENT PROGRAMME IN MOZAMBIQUE (to date 31.12.2022)

7,000 families reached	35 boreholes built
7 million euros in investment	36 boreholes repaired
935 tons kilos of improved seeds	40 Fish tanks
100,000 kgs of sweet potato cuttings (orange flesh)	587,000 vaccines administered to poultry against Newcastle disease
894,000 manioc cuttings and seedlings	Environmental awareness raising, with 3,625 individuals involved in 2022, including 43% women
1,281 Beehives	
1,782 Goats	



Other important initiatives in 2022:

- Support for the GirlMove project, in which young Mozambican women try out and validate ideas for impactful solutions to the economic and social challenges facing their country.
- Participation, with several entities, in the creation of a biodiversity conservation classroom at the Sussundenga Secondary School;
- Participation in the Combo project, an initiative of the Wildlife Conservation Society (WCS), which invited Portucel Moçambique to be a case study for application of the biodiversity impacts mitigation hierarchy;
- Participation in the Circular Bioeconomy Alliance, promoted by the British monarch to develop a living lab of how to involve communities and local government in restoring and rehabilitating natural woodlands, in particular by developing new forest-based businesses, community education and awareness raising, and improving their means of subsistence.

Biodiversity conservation classroom

Sussundenga Secondary School, in Manica province, received help from Portucel Moçambique, among other entities, under the leadership of the Biofund Foundation, in setting up a new Biodiversity Conservation Classroom.

This is a pilot project designed to raise the awareness of younger people to the importance of preserving biological assets, in conjunction with the Chimanimani National Park, located nearby.

As part of this project, Portucel Moçambique is also helping to develop a school *machamba* (vegetable garden), by teaching more efficient farming practices.

Direct community support

Donations of paper are one of Navigator's most direct ways of supporting communities, making a material contribution to the smooth administrative workings of the institutions in question, in the areas where the Company operates, such as schools and civil parish councils. In 2022, paper donations totalled 120 tons, representing investment of more than 170,000 euros. More than 78 tons of tissue paper was donated to the União das Misericórdias and Liga dos Bombeiros Portugueses (association of portuguese fire brigades), with a value of approximately 77,000 euros.

At national level, the Company also supported a number of leading organisations such as the School of Agriculture, Fundação Nossa Senhora do Bom Sucesso, Ordem dos Engenheiros, Santa Casa da Misericórdia do Funchal, and the Portuguese Embassy in the United States.

Cultural and social inclusion issues remained central to these efforts, and Navigator has continued to contribute to the braille edition of Visão Magazine, by donating paper for producing and printing the magazine for the visually impaired.

Navigator also donated paper for the new edition of the "Trees in Portugal", a book issued by the Portuguese Association of Landscape Architects. Support was also provided for CoLAB ForestWISE, the collaborative laboratory for integrated forest and fire management, and its publication of a book entitled "Forests and Fire in times of pandemic".

Plants from our Aliança Nurseries are another important way in which we support communities. In 2022, Navigator donated 7,900 trees, shrubs and herbaceous plants of different 20 species to Universidade Nova, for planting on the Carcavelos campus of the Nova School of Business and Economics (Chap. 5.3).

In the education sector, a cooperation agreement was signed with the Figueira Mar group of schools, in Figueira da Foz, to provide training experiences for students and professionals on the Technical Course in Electronics, Automation and Control. Making a contribution to the skills and employability of young people in the regions where we operate is one of the commitments in our 2030 Agenda (Chap. 3.3).



WHAT NEXT?

- Creating impact in connection with the topic of the Circular Bioeconomy (2023).
 - A larger communication component in the various projects, using different media (journals, websites).
 - Production of six short videos on projects related to the Forest-Based Bioeconomy, as part of the Florestas.pt project.
 - Holding a Navigator/Expresso Conference on the topic of the Forest-Based Bioeconomy.



5. FOR THE CLIMATE AND NATURE: ACT

SUSTAINABILITY REPORT 2022



5.1 CLIMATE CHANGE AND CO₂ SEQUESTRATION

We have embraced an active role in the low-carbon economy, in line with current climate science, through sustainable management of our forests, investment in renewable energy sources and efficient processes. Our bioproducts are another visible sign of this commitment.

OUR IMPACTS

596,980

tCO₂e

(up 2.2% on 2021)

GHG emissions (scope 1)

352,556

tCO₂e

(down 9.6% on 2021)

GHG emissions (scope 2)

1,570,567

tCO₂e

GHG emissions (scope 3) ²⁸

0.182

tCO₂e/t produced

GHG emissions intensity

Cut by

28%

CO₂ direct emissions (EU ETS)
from industrial complexes in
relation to 2018

More than

200 M€

Investment in the carbon neutrality of
our mills (2018-2035)

6.1 M tCO₂

Accumulated stock in our forests

18,630

tCO₂

captured in production process

2.6 M t

biogenic CO₂ stored in our products

²⁸ Figure for 2021; in view of the complexity of calculating scope 3 emissions and the unavailability of final figures at the date of issue of this report, we publish the data for 2021. Scope 1 and 2 emissions are for 2022.



HOW WE MANAGE OUR IMPACTS

As an industrial undertaking, we are aware that our activity produces greenhouse gas (GHG) emissions with potential negative impacts on the environment and on the worsening of the effects of climate change. The main source of direct carbon emissions (CO₂) is from the burning of fossil fuels to generate the energy needed for our operations (scope 1), the majority of which falls within the scope of the European Emissions Trading System (EU ETS).

In addition, indirect GHG emissions are generated in association with the energy we purchase for consumption (scope 2) and over the length of our value chain (scope 3), especially in the category of “Third party goods and services” (accounting for 65% of scope 3 emissions). On the positive side, our activities contribute to the capture and sequestration of CO₂ on three fronts:

- Sequestration and storage of carbon in forests and forestry products;
- Reduction in CO₂ emissions and carbon capture in the production process;
- Growth of the circular bioeconomy (Chap. 5.6).

Of all Portuguese forestry species, eucalyptus is that which sequesters the most CO₂ per hectare, in each year of growth. The figure for eucalyptus stands is 11.3t CO₂/hectare per year, almost three times more than woodlands of maritime pine (3.9t CO₂/hectare per year) and seven times more than cork oak woodlands (montado) (1.6t CO₂/hectare per year)²⁹.

In line with the National Energy and Climate Plan 2021-2030, which attaches added importance to increasing absorption of carbon emissions by Portugal's forests – from 8.7 million tons of CO₂ to 12.7 million tons by 2030 – and not just by cutting emissions, Navigator will be able to make an active contribution to forestation efforts that enable Portugal to meet 75% of its CO₂ carbon sequestration targets, in particular through:

- Planting of 300 thousand ha of “new” forest (150 thousand of eucalyptus + 150 thousand of native species) – which would make it possible to increase net annual sequestration by 2.1 million tons of CO₂, i.e. approximately 50% of the national goal;
- Recovery of 300 thousand ha of degraded and abandoned eucalyptus areas – which would make it possible to increase net annual sequestration by 1.2 million tons, i.e., approximately 25% of the national goal.

It is important to stress that CO₂ sequestered by trees during the photosynthesis process is transformed into biogenic carbon, which is stored in wood fibres and consequently in forest-based products, such as pulp and paper.

In addition, we are seeking to develop processes that enable us to capture carbon in the production process, an example of which is the manufacture of precipitated calcium carbonate (PCC) – which uses the CO₂ released in our chimneys, and uses it as a “raw material” in paper manufacture.

In order to support decarbonisation of the economy, our Roadmap to Carbon Neutrality reflects our ambition to make our industrial complexes carbon neutral by 2035. This goal presupposes cutting EU ETS direct CO₂ direct emissions by around 86%, in relation to 2018, and also increasing the use of energy from renewable sources as a proportion of the Company's total energy mix, with the aim of renewable energy representing 80% of total consumption of primary energy by the Company in 2030.

By signing up to the Science Based Targets initiative (SBTi), and obtaining approval of its targets, Navigator has strengthened its commitment to reducing CO₂ direct emissions, now encompassing the Company's scope 2 and 3 emissions inventory – through targets of a 63% cut in scope 1 and 2 GHG emissions and a 37.5% reduction in scope 3 emissions by 2035, taking 2020 (date of our first full emissions inventory) as the baseline.

²⁹ Calculations made on the basis of “[Inventário Florestal Nacional 6](#)”, published by Instituto de Conservação da Natureza e das Florestas (2015), considering all types of stand (pure, dominant and irregular) and for all biomass components.







As well as helping to mitigate climate change, our decarbonisation plan has a positive impact thanks to the use of biomass to produce energy, reclaiming this resource and protecting forests against fires. Another positive impact comes from the generation of power from renewable sources. Investment in solar energy is an important source in the Company's decarbonisation strategy, and the consequent reduction of energy costs.

In line with its overall commitment in the field of carbon neutrality, the Company's operations in Mozambique also contribute to storage of carbon, on three fronts:

- (1) Planted forests;
- (2) Preservation of forests with conservation interest;
- (3) Social Development Programme, with initiatives that promote the reduction of carbon emissions, including action to cut the high rates of deforestation caused by itinerant agriculture (Chap. 4.7). Examples of these include conservation farming techniques, improved seeds and environmental awareness raising.

APPROACH TO GHG EMISSIONS

 SEQUESTER In our forests	 REDUCE AND CAPTURE In our production process	 STORE In our products
<ul style="list-style-type: none"> - Sustainable management of forests as a natural solution for the climate, through sequestration and storage of carbon while they grow. • 105,733 hectares of forest holdings under certified management in 2022. - Accumulated stock of approximately 6.1 M tCO₂, breaking down as follows: <ul style="list-style-type: none"> • Eucalyptus forests (73% of the area managed by Navigator): around 4.9 M tCO₂; • Woodlands of cork oak, conifers and other forest species under the Company's management: approximately 1.0 M tCO₂; • Agricultural areas, with shrubs or scrubland: approximately 157,000 tCO₂. 	<ul style="list-style-type: none"> - Investment in technologies that minimise environmental impacts and improve energy efficiency. - Gradual phasing out of energy consumption from fossil sources. - Investment in renewable energy sources. • Solar power: 7 MW rated capacity in 21,000 solar panels. - Capture of approximately 19,000 t fossil CO₂, released in the pulp manufacturing process, for incorporation in manufacture of precipitated calcium carbonate (PCC). <p> Commitment: to have our industrial complexes carbon neutral by 2035.</p> <p>Approval of decarbonisation targets by the Science Based Targets initiative (SBTi).</p>	<ul style="list-style-type: none"> - Products sourced from forests store carbon over time, allowing for reincorporation into Nature at the end of their useful lives. - Paper is a sustainable product: <ul style="list-style-type: none"> • Natural source • Renewable • High recyclability rate • Biodegradable - 2.6 M tCO₂e: Biogenic carbon content in products marketed by Navigator in 2022.

	POWER The bioeconomy and low carbon economy	
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LOW-CARBON SOLUTIONS / INNOVATION

- Production of energy from forest waste (Chap. 5.1):
 - Biomass-powered Renewable Cogeneration (CoREN): rated power of 195.5 MW;
 - Biomass Power Plants (BPP): rated power of 25 MW.
- Investment in bioproducts (Chap. 4.3).



WHAT WE ACHIEVED IN 2022

GHG Emissions

Direct emissions from industrial assets are the factor that most contribute to scope 1 emissions (93.2%). In 2022, emissions from our mills increased by 3.1% in quantity, in relation to the previous year (total scope 1 emissions were up by 2.2%). Disruption of logistical chains worldwide and the outbreak of war in Europe heightened the pressure on our business and introduced new factors, with higher costs for energy, logistics and raw materials. In order to ensure business continuity, use had to be made of fuel oil as an alternative to natural gas, which had a visible impact on growth of scope 1 emissions. In addition, operational problems at the biomass boiler on the Setúbal site led to an unplanned increase in the use of fossil fuels to generate steam.

Indirect emissions from purchases of power (scope 2) fell by 9.6%, in relation to the previous year, and the Company avoided the emission of 338,974 tCO₂e, through co-generation operations and generation of power from renewable sources.

Against the backdrop of the current economic situation, the Company worked during the year on five applications to the Recovery and Resilience Plan (RRP), under component C11 - Decarbonisation of Industry, seeking to accelerate the reduction in CO₂ emissions over the years ahead (Chap. 4.2 and 4.3). These initiatives will enable us to reduce direct and indirect emissions at all Navigator's industrial complexes by around 283,000 tons of CO₂ by 2026, ahead of the target set for 2029 in the Company's Roadmap to Carbon Neutrality.

Carbon capture and sequestration

In the forest

The forests in our care have played a significant role in mitigating the effects of climate change. As a result of sustainable management of 105,733 hectares of forest holdings, at year-end 2022 the accumulated carbon stock stood at 6.1 M tCO₂ (up 3.4%, from 2021).

In the production process

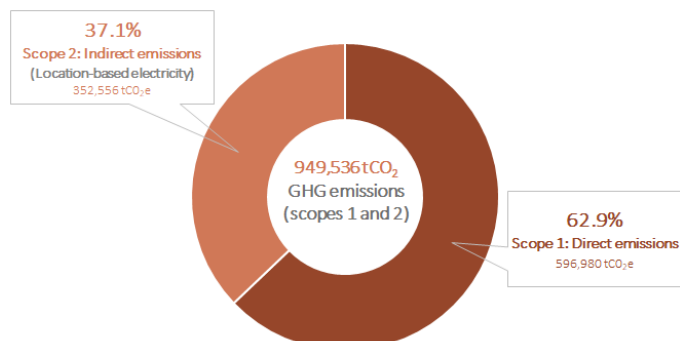
Some of the CO₂ of fossil origin resulting from our production process (flue gases) is used to manufacture precipitated calcium carbonate (PCC), which we incorporate in the paper produced. In 2022 this amounted to 18,630 tCO₂.

In products

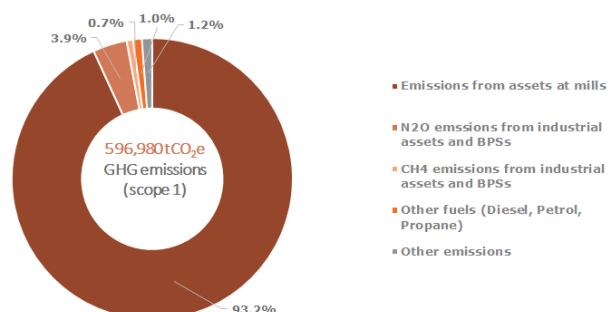
Forest-based products store biogenic carbon derived from the CO₂ sequestered by trees during photosynthesis, and are therefore regarded as products from renewable sources, as opposed to products from fossil sources (such as plastic). In 2022, the biogenic carbon content in pulp and paper marketed by Navigator totalled 2.6 M tCO₂e. Over the course of its life cycle (use and recycling), the products retain a significant part of this biogenic carbon, and a residual part remains stored, more permanently, in books and other documents, when archived or when sent to landfill.



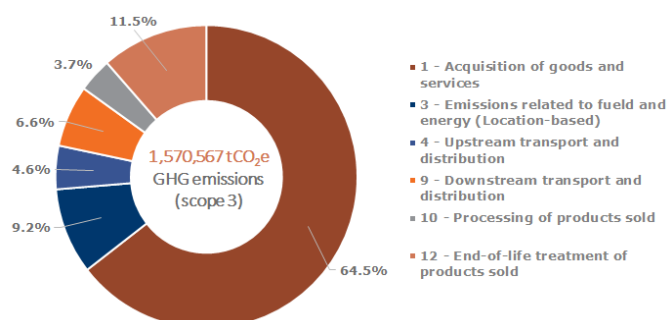
Percentage breakdown of scope 1 and 2 emissions (tCO₂e)



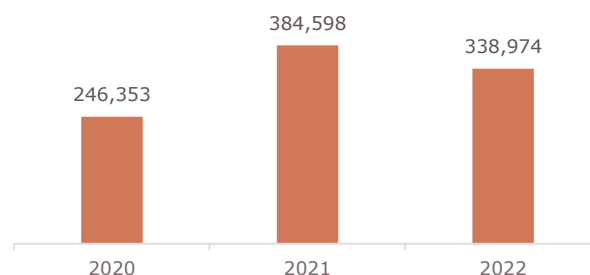
Breakdown of direct emissions (scope 1) (tCO₂e)



Breakdown of indirect emissions (scope 3) (tCO₂e) ⁽¹⁾ Figures for 2021



GHG emissions avoided through co-generation activities and power generation from renewable sources (tCO₂e)



GHG Emissions (tCO₂e)

Indicator	2020	2021	2022
Direct GHG emissions (scope 1)	741,188	584,090	596,980
Indirect GHG emissions (scope 2)	223,356	389,919	352,556
Total (scopes 1 and 2)	964,544	974,009	949,536
Indirect GHG emissions (scope 3) ⁽¹⁾	1,492,286	1,570,567	-

GHG emissions intensity by turnover (tCO₂e/M€)

Indicator	2020	2021	2022
GHG emissions (scopes 1 and 2)	964,544	974,009	949,536
Turnover (million euros)	1,385	1,596	2,465
GHG emissions intensity (tCO₂e/million euros)	696.4	610.3	385.2



Goal: reduce direct EU ETS CO₂ emissions from industrial complexes by 86% by 2035 (baseline: 2018). Emissions baseline year: 774,464 tCO₂.

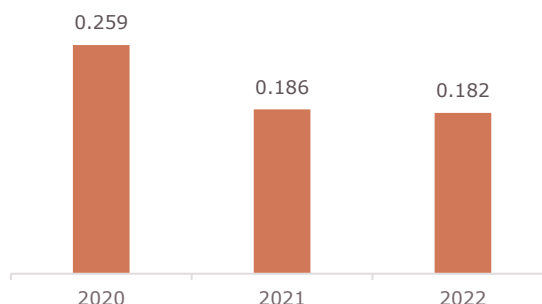


New goal: reduce scope 1 and 2 GHG emissions by 63% by 2035 (baseline year: 2020).



New goal: reduce scope 3 GHG emissions by 37.5% by 2035 (baseline year: 2020).

GHG emissions intensity per ton of output (tCO₂e/t produced)⁽²⁾



⁽¹⁾ In view of the complexity of calculating scope 3 emissions, the final figures for 2022 are not available at the date of issue of this report. Figures for 2021 are presented, in order to characterise the percentage breakdown of scope 3 indirect emissions, in accordance with the categories deemed material.

⁽²⁾ The calculation of emissions intensity took into consideration scope 1 emissions (excluding primary energy from Biomass Power Plants – BPP) and the total quantity of products manufactured.

NB: See the GRI Table for methodological information on the calculation of indicators (GRI 305-1/2/3/4).

Use of alternative energy sources

The worsening of the energy crisis, in 2022, added to the importance of investing in alternative energy sources, and especially renewables. We accordingly pressed ahead with the projects planned in our Roadmap to Carbon Neutrality.

Expansion of Navigator's solar capacity and the conversion of the lime kiln at the Setúbal Complex, to use waste biomass instead of fossil fuels, are two projects where significant progress was made towards implementation. Following on from other solar investment projects undertaken by Navigator since 2016, work started in 2022 on the study and design phases of new solar facilities to be installed at the Aveiro, Figueira da Foz and Vila Velha de Ródão complexes.

Generation for the Company's own consumption enables us to reduce dependence on external power supplies, and is equally important as a mechanism for containing the significant variations in power prices observed in the past year. Navigator also recorded a 14% reduction in 2022 in its location-based emissions factor, in relation to 2021.

The project for the lime kiln at the Setúbal Complex is at the stage of deciding on the technical solution and consultation of the main equipment suppliers, as envisaged by the European Commission's Innovation Fund (small scale projects). With the aim of a reduction of up to 76% in GHG emissions associated with this facility, the project consists of retrofitting the lime kiln to use by-products generated in the production of woodchips.

Other important developments included the pioneering agreement reached to produce green aviation fuel at the Figueira da Foz Industrial Complex and the start-up of the new natural gas boiler at the Setúbal Industrial Complex, with the possibility of incorporating up to 20% hydrogen (Chap. 5.5).



FEATURED INITIATIVE

Green aviation fuel on horizon



Target 8.4

Target 9.4

Target 13.1

In partnership with the German company P2X Europe, we signed an agreement in principle in 2022 for a new joint venture, P2X Portugal. This pioneering partnership is designed to lead the way internationally in the development and large scale marketing of innovative synthetic fuels for the aviation sector.

The aim is to develop a state-of-the-art industrial unit for producing non-fossil fuels - e-SAFs (e-Sustainable Aviation Fuels) -, notably synthetic, carbon neutral jet fuel (kerosene). Unlike conventional SAFs, which use raw materials such as plants or used food oils, e-SAFs are produced from electricity generated from renewable sources (solar and wind) and biogenic CO₂, resulting from the natural carbon cycle.

This venture takes advantage of Portugal's highly competitive position for production of renewable energy (solar and wind) and of biogenic CO₂ generated by Navigator's biomass boilers.

The installation of P2X Portugal at the Figueira da Foz will contribute to development of a new strategic value chain in Portugal, and to implementing the EU's main climate initiatives, in particular the Green Deal, the EU Hydrogen Strategy and REPowerEU

- Project classified by the Portuguese Government as having National Interest Potential (NIP) status.
- Investment of approximately 550 to 600 M€, in the first two phases.
- Production capacity of 40,000 tons per annum of crude and synthetic fuel.

Recognition by external entities

Offering external recognition of its contribution to fighting climate change, 2022 marked the Company's participation in the Vision 2045 Summit, within the framework of COP 27, and classification of Navigator as a climate action leader, a distinction awarded by CDP (Disclosure Insight Action). This was also the year in which we obtained approval from SBTi of our targets submitted for scopes 1, 2 and 3.

Navigator takes sustainability commitment to COP27

In November 2022, we were among the participants at the Vision 2045 Summit, held in Sharm El-Sheikh, in Egypt, alongside the 27th United Nations Conference on Climate Change (COP27).

By taking part in the panel discussion on "Fostering Sustainable Ecosystems", we were able to obtain visibility for our climate action commitments and to share our 2030 Responsible Business Agenda on which our entire operation is based.

The invitation to participate in this event provided further recognition of our endeavours in the field of sustainable value creation and growth.

"Climate and Nature risks are firmly interconnected and so efforts to contribute to a circular, low-carbon bioeconomy will have an effect on preserving Nature and will support wider action on sustainable development."

João Lé, Executive Director



FEATURED INITIATIVE

CDP names Navigator as a leader on climate action



Target 8.4 Target 13.1

On the basis of a global survey to assess steps taken by business in relation climate change, Navigator was one of a select group of 330 companies worldwide (less than 2% out of a total of more than 18 thousand) included in the CDP's A-List.

The scoring methodology used by CDP (Disclosure Insight Action) measures the comprehensiveness and detail of information disclosed by companies, in-depth understanding of their environmental risks and impacts, and strong governance and transition strategies, as well as assessing the science-based measures and targets established to reduce their impacts.

Inclusion in the Climate A-List has put Navigator in the Leadership class (with a score up from "A-" to "A"). This is important recognition of steps taken by the Company to cut emissions, reduce climate risks and develop a low-carbon economy.

SBTi approves decarbonisation targets up to 2035

Having signed up to the Science Based Targets initiative (SBTi) (a global organisation respected internationally for its assessments of initiatives taken by companies towards a low-carbon economy), our science-based climate targets were considered by SBTi as a "key element" in Navigator's decarbonisation journey towards net zero.

In addition to the decarbonisation roadmap, and having emissions reduction target based on the latest climate science, our work in the field of forest management and obtaining forest-based products will contribute to progress along this course, through carbon sequestration and storage, and promotion of a circular bioeconomy.

The Company has committed itself to reduce absolute greenhouse gas emissions (scopes 1 and 2, relating to emissions released into the atmosphere as a direct result of its operations, and also indirect emissions from the electricity purchased for the company's use) by 63% in 2035, in relation to 2020. As also committed to reduce absolute scope 3 emissions along the value chain by 37.5% within the same time frame. The targets submitted for scopes 1 and 2 seek to respond to the plan established in the Paris Agreement for a temperature rise of not more than 1.5°C, and in the case of scope 3 for an increase of well below 2°C, in relation to pre-industrial levels.

The decision not to use the two-year grace period before submitting its plans for cutting greenhouse gas emissions once again demonstrated our clear commitment to contributing to a low-carbon society as a bioindustry on the right side of the future.



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



WHAT NEXT?

- Review our internal travel policy and implement a tool for recording journeys throughout the organisation in order to facilitate systematic calculation of greenhouse gas emissions, on an annual basis, and provide a better basis for designing measures and targets to reduce them, in keeping with the principle of more responsible travel (2023).
- New boiler for chemicals recovery and production of renewable energy in Pulp manufacture in Setúbal Industrial Complex, more flexible generation of thermal energy with a view to shutting down a Natural Disasters Cogeneration unit (2025).
- New cogeneration facility in Aveiro Industrial Complex – decarbonisation of steam generation at Tissue Aveiro, by replacing natural gas with waste forestry biomass, simultaneously supplying renewably sourced electricity to the mill (2025).
- New steam turbine in Figueira da Foz Industrial Complex, to increase efficiency in the use of primary energy and to provide renewably sourced electricity to the paper mills (2025).



5.2 SUSTAINABLE FOREST MANAGEMENT

We have adopted management practices that seek nurture the economic, ecological and social function performed by our woodlands, both locally and at the wider landscape level.

OUR IMPACTS

105,733 ha

of forests under management,
corresponding to **1.2%** of the
area of Mainland Portugal

73% eucalyptus

9% other species
18% other forms of land use

Production of

8.4 M

plants
for renewal of Portugal's forests

100%

of forest holdings under
management certified by the FSC®
and PEFC schemes in Mainland
Portugal

68%

of wood used from woodlands with
certified forest management system

87%

of our wood suppliers are chain-of-
custody certified

12,500

individuals

Impacted by the Forestry Producers
project

4.73 M€

Invested each year in forest fire
prevention and support for firefighting

Approximately

290 ha

of burned area under
management, corresponding to
0.3 % of total area



HOW WE MANAGE OUR IMPACTS

By embracing our role as prime movers in the improvement and protection of forests in Portugal, undertaking the responsible management of 105,733 hectares³⁰, we are aware of the environmental and socio-economic impacts associated with our activities.

Despite the impacts that forestry plantations in which one species predominates can have on the environment, like any other human activity, there is growing recognition that responsible and balanced management of planted forests, such as that practised by Navigator, can play an important role in the planet's sustainability - by protecting soils and water, improving air quality and mitigating climate change³¹ (Chap. 4.2), among other things.

We should stress the positive impacts generated by our operations, as forests and forest-based products make a positive contribution to the economy and to society. This impact can be seen in the creation of employment - resulting from forestry activities - and in the generation of income created for landowners, encouraging the management of other woodlands and areas, for farming and pasturage use, as well as local economic activities associated with forests, such as grazing and beekeeping.

At the same time, there may be negative impacts for local communities, as a result of operations in the field, such as damage to public infrastructure, caused by the use of machinery and vehicles.

With a view to conciliating varying environmental, social and economic concerns, our business model is based on responsible forestry management. We work on the basis of efficient and competitive management of our plantations and agro-forestry holdings, promoting renewal and improvement of forests and protection of natural, social and cultural heritage. Also fundamental is respect for the rights of workers and local communities, along the value chain.

We have established a [Forestry Policy](#) and a Code of Good Forestry Practice. In our 2030 Roadmap (Chap. 3.3) one of our commitments is centred on sustainable use of soil and forestry resources, including biodiversity.

In order to mitigate the negative effects of our activities, we systematically identify and assess the environmental and social impacts of forestry activities, resulting in the matrices used during the planning and execution of operations, enabling us to avoid negative impacts or to adopt the appropriate measure when these impacts occur. The communication channels that affected Stakeholders can use, for remediation of the negative impacts of these operation, include [The Navigator Company's](#) official website and the [whistleblowing channel](#). They can also make representations in person to the Company's staff, or else send an email or telephone³².

We manage our holdings in keeping with the applicable legal requirements, the Pan-European Criteria for Sustainable Forest Management, the other requirements of Portuguese Standard NP 4406 (Sustainable Forest Management) and in accordance with the Principles and Criteria of the Forest Stewardship Council.

Certified forest management allows us to guarantee that the wood used in our products - pulp and paper - is obtained from forests managed on a responsible basis. That is why we invest in programmes for forest certification and support for forestry landowners and companies, well beyond the woodlands under our own direct management, in keeping with our ambition to reach a larger number of landowners and encourage them to adopt good practices and to invest in conservation of the natural and cultural heritage in our countryside.

³⁰ As well as 955 ha of forests in Galicia (Spain) and around 14,000 ha in Mozambique.

³¹ Substitution Effects of Wood-based Products in Climate Change Mitigation", Leskinen et. al, 2018, TIG Analysis: https://efi.int/sites/default/files/files/publication-bank/2019/efi_fstp_7_2018.pdf.

- FAO 2016. Forestry for a Low-Carbon Future: Integrating Forests and Wood Products into Climate Change Strategies, FAO Forestry Paper 177, Rome, Italy. <https://researchrepository.murdoch.edu.au/id/eprint/66391/1/IS857E.pdf>.

³² E-mail: cadastro.florestal@thenavigatorcompany.com

Telephone: 265 709 000



These programmes are also designed to protect forests and Communities from wildfires. Fires have a severe impact on ecosystems, on the Company and its Stakeholders, and we therefore invest heavily in preventing and defending forests against fires.

Attention is also drawn to our investment in habitat and biodiversity conservation, in addition to the work done along the value chain anchored in creating and sharing knowledge and establishing partnerships - with Forest Landowners and Associations, Business Associations, Suppliers, Local Authorities and other Community agents.

APPROACH TO SUSTAINABLE FORESTRY MANAGEMENT

	Forest Certification / Support for forestry producers
	Fire prevention and support for firefighting
	Research and forest renewal (Chap. 4.3)
	Forest rehabilitation and biodiversity conservation (Chap. 5.3)
	Forest literacy projects (Chap. 4.7)

Forest Certification / Support for forestry producers


We have been certified since 2007, by FSC® and since 2009, by PEFC, and the forest holdings under our management in Mainland Portugal are 100% certified under these schemes.

We see ourselves as a driving force for expansion of the forest certification process in Portugal, through a number of programmes to support Forestry Producers, helping to build a common front in defence of the interests of the country's forestry sector.

Our work with forestry producers deals with technical issues relating to forestry, as well as disseminating information on safety at work and biodiversity conservation. Initiatives are also pursued in order to respond to the individual needs of forestry producers throughout the country, not just for those with whom we work. Examples of this are the Premium Programme, the e-globulus platform and the Forestry Producers magazine.



PROGRAMMES TO SUPPORT FORESTRY PRODUCERS

€	Incentive for supplies of certified wood (absolute value of 4 € /m ³)	
	Initiatives for training and know-how transfer in the field of forestry management and certification	Support for forestry management and/or chain of custody certification groups (15 groups / organisations of forestry producers).
		Active participation in Portuguese initiatives of FSC® and PEFC Collaboration on developing the framework of rules under both certification schemes, adapted to the realities of the Portuguese forestry sector.
		Tec4Forest Training on topics relating to good forestry practices and health and safety at work. Distribution of technical information materials, drawn up in collaboration with RAIZ (213 participants, 46 sessions on good forestry practices (selection of saplings, installation and operation of plantations, forest inventory, and other matters)).
		Premium Programme Technical support free of charge for eucalyptus landowners, in collaboration with RAIZ. Work was carried out on 1,671 ha in 2022, corresponding to 96 new requests for assistance. Since the programme started in 2018, technical support has been provided for an area totalling 6,225 ha.
		Better Eucalyptus Project In cooperation with Biond, to provide information on good forestry practices and support for the "Clear and Fertilise", "Recovery of Burned Areas" and "Replant" projects. Total of approximately 7,390 beneficiaries.

Fire prevention and support for firefighting

In order to mitigate the impacts of fires for the Company and local Communities, we invest in prevention, helping to ensure woodlands become more resilient to this issue.

Work we carry out on a regular basis:

- Maintenance of paths and fire breaks;
- Control of vegetation;
- Reduction of fuel load and creating areas to halt the spread.

During the summer, some of the Company's Employees are deployed with AFOCELCA, an organisation through which The Navigator Company and the ALTRI Group join forces to support fire fighting efforts, with its own Special Rural Fire-Fighting Brigade. In addition to protecting the forests managed by the two companies, the aim is also to provide assistance within a radius of at least 2 km of the holdings under their management, protecting the properties of third parties, working closely at all times with the National Emergency and Civil Protection Authority (ANEPC). This brigade is equipped with around fifty fire engines, of various types, and three aircraft, with a total of around 507 operational personnel.



At the same time, we remain an active participant in projects with various partners (from stakeholders in the forestry sector to universities) seeking to find and test new solutions for preventing and controlling forest fires.

We also provide support for the recovery of burned areas, by taking part in the pilot recovery programme organised by Biond (Forest Fibers from Portugal), which in 2022 focussed efforts on the municipalities of Mortágua and Pedrógão. This programme sets out to provide technical and financial support for demonstrating good practices, in strategically selected burned areas, with the aim of:

- Reducing the fire risk, in a post-fire scenario, where there are already high levels of accumulated biomass and abandonment;
- Controlling invasive species (acacias) and germinating eucalyptus;
- Restoring the productive potential of burned forests for their owners.

Forest research and renewal

In the field of research and development, we have our own forestry and paper research institute (RAIZ), through which we take part in projects that help to increase yields in eucalyptus plantations, as well as to improve the quality of the fibre produced and the management of woodlands (Chap. 4.3).

In addition, our active policy of renewing and improving Portugal's forests requires the production of a large volume of forest plants, and these are provided by the nurseries operated by our subsidiary, Viveiros Aliança, S.A.. With annual output of 8.4 million plants, in 2022, these nurseries meet the needs of the reforestation activities of the Company and Portuguese producers; 61% of the plants were used internally, and the remaining 39% sold to the market.

WHAT WE ACHIEVED IN 2022

In 2022 we continued our endeavours in the field of responsible forestry management as we worked towards the commitments made in our Forestry Policy and in the 2030 Roadmap.

The forest area planted in 2022 was in excess of 3,800 hectares, the highest figure recorded in the past 22 years, despite the very dry spring.

We successfully renewed our sustainable forestry management certification, covering 100% of the forests managed by Navigator in Mainland Portugal, and our performance in this field was also recognised by CDP Forest.

"Leadership" level in CDP Forest

CDP Forest assesses the strength of the systems we use to track and monitor the source of the raw materials we use, based on certification of our management of the forests in our care and on our strict wood purchasing policies.

In 2022, the second year that we took part in the CDP Forest ranking, we improved our score from "B" to "A-", putting us at Leadership level. This provided recognition of our performance from this important ESG assessment scheme.



Navigator Forests Conference

The year saw the creation of a new internal form for sharing experience and knowledge - the Navigator Forests Conference. This initiative offers the chance to present and debate projects, the results achieved and difficulties experienced in this sector.

The sessions held in April, July and November were vital opportunities to align strategies and search for solutions to issues ranging from the availability of certified raw material, R&D as a support for forestry development and the challenges of sustainability.

The three events involved participation by 220 Employees.

CERTIFIED WOOD

Supply of certified wood

2020	2021	2022
74%	71%	68%



Goal: achieve 80% use of certified wood by 2030.

Wood suppliers with chain-of-custody certification

2020	2021	2022
74%	78%	87%



Goal: promote chain of custody certification for all our wood suppliers by 2030.

Certified wood

In 2022, there was a decrease in the supply of certified wood at a global level from 71% to 68% (national and international markets). In view of the conditions experienced in the Iberian market over the reporting year, more imported wood had to be purchased than in 2021, with a sharp increase in wood from outside the Iberian Peninsula. All legal rules, including the EUTR requirements, were complied with in respect of wood delivered to our Industrial Centres.

Significantly, however, thanks to Navigator's programmes to improve yields and encourage forestry certification in Portugal, it was possible to increase the proportion of certified wood acquired on the national market to 65% (63% in 2021). There was also an increase in wood suppliers with chain-of-custody certification (from 78% to 87%). Support is provided to 15 organisations, including certification groups, forestry producers' organisations and chain of custody groups; in conjunction with the support given to producers, this made it possible to achieve these results.

SUPPLY OF CERTIFIED WOOD (%)





Awareness raising and promotion of safety in forestry operations

Our commitment to promoting occupational health and safety (Chap. 4.5) can be seen not only in our own operations, but also in our work with forestry officers and producers.

The highlights of the year included the seminar on safety in forestry work and the “Forestry in Fashion” event, which sought to draw attention to the importance of wearing Personal Protective Equipment (PPE) in forestry operations.

Safety at Work in Forests and New Challenges

In partnership with the Minho-Lima Forest Certification Association (ACFML) and the Working Conditions Authority (ACT), we organised a seminar on “Safety at Work in Forests and New Challenges”, as part of the celebrations for National Prevention and Safety at Work Day.

This event brought together specialists, official bodies, producers and industry, and sought to raise awareness in the sector of the need to improve safety practices in forestry activities and to bring down the accident rate.

A total of 120 participants attended in person, and the livestream recorded 1,011 hits.

Forest in Fashion

In order to promote the use of Personal Protective Equipment (PPE), the Forest in Fashion show was organised in May, at ExpoFlorestal 2022.

Forestry workers from certified companies and forestry officers from chain of custody groups took to the catwalk, modelling PPE (footwear, clothing and other items). The aim was to raise awareness of the importance of using this equipment, showcasing the progress made in both safety and comfort – up-to-date equipment adapted to working and professional needs, and also to the Portuguese climate.

The event was organised by 2BForest, and supported by PPE companies. This has followed on from training in safety and good practice in forestry operations (Navigator’s Tec4Forest), which has been provided in the field, for forestry contractors working for several certification groups, demonstrating the need to use appropriate equipment, able to ensure people’s safety.



[WATCH THE VIDEO OF THE SHOW](#)

Engagement with Forestry Producers

Our links to the important community of Forestry Producers were strengthened in 2022 through a variety of initiatives designed to encourage the sharing of expertise and skills with forestry Stakeholders. These efforts included taking part in relevant trade fairs, organising the Forestry Producers Meeting, publication in instalments of the Practical Guide to the Forestry Sector, publication of the 2nd Technical Handbook, dealing with selection of saplings, and production of other technical leaflets.

In addition, the e-globulus platform developed by RAIZ launched items entitled “e-science” and “Together let’s care for our health and safety”, to publicise the latest scientific advances in the forestry sector and encourage people to adopt best safety practices. This platform has proved increasingly popular with forestry officers, and new functions are being developed for this user profile.



WORKING FOR FORESTRY PRODUCERS

e-globulus	Forestry Producers
 https://e-globulus.pt/  LEARN ABOUT THE E-GLOBULUS PLATAFORM More than 14,800 users accessed the platform 687 users registered More than 63,300 thousand hits More than 60 reports, events and news items	 https://produtoresflorestais.pt/    12,500 individuals impacted by the Forestry Producers project 3 magazines with a print run of approximately 15,000 copies, per edition 2 campaigns to contract forestry land in Portugal and Galicia 300 online content items Attendance of 5 trade events in the agro-forestry sector 1st Forestry Producers Meeting (north/centre region): 112 participants Launch of Practical Guide to Forestry, in 4 instalments

Annual Forestry Producers Meeting

Held in October and addressing the topic of “Improved profitability and management of small holdings”, the Annual Forestry Producers Meeting, organised by Navigator, brought together players in the sector to present good examples of sustainability and profitability.

The event is designed to reach out to the forestry community and players in the sector, and to encourage debate on relevant issues, reflecting the important role played by privately-owned small holdings in promoting sustainable forestry management in Portugal.

The meeting addressed topics such as Combined Forest Area, Integrated Landscape Management Areas, plant quality as a guarantee of yields, and extracting value from biomass. This provided an opportunity for ideas and experiences to be shared between producers and landowners, public institutions, service providers, municipal councillors, associations and industry.

João Lé, one of Navigator’s executive directors, attended and spoke at the conference, alongside a total of 112 participants and 679 hits on the livestream.



WHATCHE THE [ANNUAL FORESTRY PRODUCERS MEETINGS HERE](#)

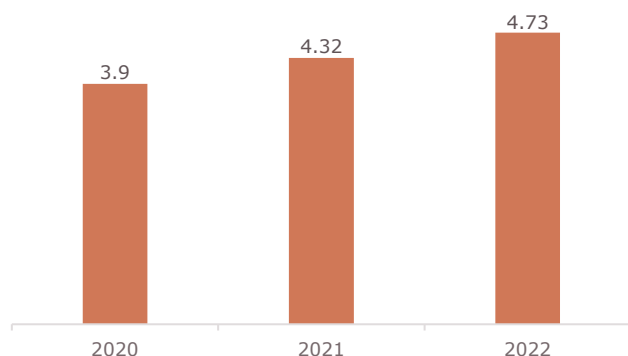
Fire prevention and support for firefighting

In 2022, we pressed ahead with investments in forestry infrastructure and services, with an impact on support for fire prevention and fire fighting, and well on the recovery of burned areas.

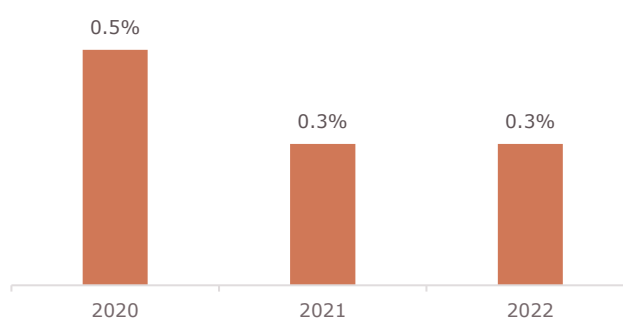


DEFENDING FORESTS AGAINST FIRES

Investment in forest fire prevention and support for firefighting (M€)



Burned forest area under Navigator's management (%)



AFOCELCA Activities	2.40 M€
Clearance and vegetation control activities	1.97 M€
Maintenance of paths and fire breaks	0.36 M€
Total	4.73 M€



Goal: contribute to reducing wildfires, guaranteeing a burned area of less than 1% of area under management by 2030.

Our work in defending forests against fires, in coordination with the [AFOCELCA](#) structure has represented a gain for woodlands protection, thanks to the optimised deployment of resources, leading to improved operational performance. In another important development in 2022, we started work on updating the mapping of response times of AFOCELCA terrestrial fire-fighting resources.

Of the last three years, 2020 recorded the largest percentage of burned area in Navigator's holdings, and this was more than halved in 2021. In 2022, the total area burned was approximately 290 ha (% unchanged from 2021), corresponding to 0.3% of the forest areas under our management.



FEATURED INITIATIVE

Updating maps of response times of terrestrial fire fighting resources



Target 13.1



Targets 15.1, 15.2 and 15.3

With the aim of improving the response capability of AFOCELCA's resources and helping to reduce the burned area, we started work in 2022 on a study to update the mapping of response times of terrestrial fire fighting resources. At this initial stage, the project has involved participation by RAIZ, and in 2023 it will continue under the leadership of AFOCELCA.

On the basis of the area under AFOCELCA's protection (nationwide), the fire-fighting resources to be contracted for the next fire season and the existing road network, the aim of this study is to contribute to an improved distribution of resources, on the basis of pre-defined criteria – i.e., arrival times, area protected per unit, and others. The study will also serve to assess whether the quantity of resources contracted is sufficient to respond to needs, in accordance with those criteria.

The study is planned to be completed in the first half of 2023, enabling adjustments to be made to fire fighting resources.



Also in relation to Navigator's strategy of fire defence for forests, Portucel Moçambique (Chap. 4.7), has sought to achieve a substantial reduction in the area affected by fire (0.23% of forest holdings, corresponding to a reduction of 50% in relation to the previous year), consolidating the planning of risk management activities, which started in the 2019 season. The action taken has included:

- Creation of rapid response teams;
- Use of new forestry practices, based on controlled burning;
- Information campaigns on local radio;
- Technical assistance to communities from Portucel's forestry officers, relating to the safety rules for controlled burning;
- Placement of hives and agricultural buffer areas (principally manioc), around the edge of forests, to encourage families and communities to protect their assets;
- Awareness raising and community engagement;
- Support for conservation farming practices.



WHAT NEXT?

- Updating of Forestry Policy (2023).
- Force Project – Forest Certification (FC) in Eucalyptus Plantations (EP) (2023-2026).
- PRR TransForm – Genetic improvement of eucalyptus, maritime pine, Monchique oak and other species (cooperation with RAIZ and several R&D institutions (2022-2025)).



5.3 BIODIVERSITY CONSERVATION

We have built biodiversity conservation into our forestry management model. As well as monitoring and preserving species and their habitats, we use no genetically modified organisms and make efforts to eradicate invasive species.

OUR IMPACTS

Approximately
12.3% of the
area under
management

considered as Conservation
Interest Areas (managed for
conservation purposes, and not for
production)

4,243 ha

classified as protected habitats
by the Natura 2000 Network

Approximately
900 species and
subspecies

of flora and **252** species of fauna
identified in our forest holdings

41 ha

of reforestation with
native species to convert
inappropriate production forests

71 ha

covered by ecological
restoration



HOW WE MANAGE OUR IMPACTS

Healthy ecosystems provide a varied range of services to meet our needs and have a positive influence on our well-being, health, and on the generation of employment and wealth for communities. In addition, the important role played by biodiversity in the balance of Nature means that conserving biodiversity is an important contribution to mitigating and adapting to the effects of climate change. We accordingly invest in conservation of biodiversity and ecosystem services as a part of our responsible forestry management approach.

Within the assets in our care in Mainland Portugal we manage areas considered as Conservation Interest Zones (CiZ), which serve as an important habitat for a diverse range of flora and fauna, including species with varying conservation and protection status. These zones also include Areas of High Conservation Value (AHCV), an exclusive concept of the FSC® certification scheme, which enjoy special safeguards in view of the presence of environmental, social and cultural heritage of exceptional value.

In order to integrate biodiversity conservation into our forestry management model, we have developed a strategy designed to maintain ("no net loss") or improve ("net positive gain") the biodiversity on our holdings and its conservation status.

We invest continuously in monitoring and assessment, active protection and conservation (such as rehabilitation or restoration or natural habitats and ecosystems), benefiting species that use them for their ecological functions of feeding, shelter or breeding. To support this strategy for conserving biodiversity, we have Biodiversity Assessment Techniques Manuals (BATM) and Conservation Action Plans (CAP), with contributions from experts.



LEARN MORE ABOUT [WILDLIFE CONSERVATION ON THE NAVIGATOR COMPANY'S ESTATES](#)

APPROACH TO BIODIVERSITY CONSERVATION

	Assessment and monitoring of wildlife, biodiversity and heritage sites
	Mapping and classification of Conservation Interest Areas
	Assessment of the potential impacts of operations
	Design and implementation of management activities to conserve, enrich or restore the functions of sites of conservation interest.
	Annual monitoring programmes
	Literacy for biodiversity conservation projects (Chap. 4.7)

The approach we use means we enjoy access to a significant set of data on relevant wildlife to be preserved in the territory, also enabling us to identify, avoid, mitigate and minimise negative impacts (direct or indirect) on biodiversity, as well as to boost the positive impacts.



We also attach great importance to the more visible aspects of Navigator's active policy in wildlife conservation, consisting of public information and awareness raising initiatives, through which we share our experience and case studies in our own publications, editorial projects and media events.

WHAT WE ACHIEVED IN 2022

Biodiversity monitoring

During the spring and summer, we conducted monitoring on 13 properties under our management in Malcata, in the Penamacor region, and in the Tagus Valley. This work consisted above all of monitoring of sites previously identified as conservation zones and others with the potential for inclusion in this category. This research has resulted in a better assessment of the habitats and wildlife and, significantly, has led to identification of threatened species of flora not previously described in our estates and important for conservation (e.g. *Rhaponticum exaltatum*). In addition, the flora species recorded include some classed as "vulnerable" in Portugal (*Eryngium galioides*, *Utricularia gibba*) and as "near threatened" (*Potamogeton trichoides* and *Thelypteris palustris*). In relation to fauna, one of the highlights was the sighting of the European nightjar (*Caprimulgus europaeus*).

Roughly 900 species and sub-species of flora and 252 species of fauna have been identified in forest holdings in our care. Approximately 12.3% are Conservation Interest Zones (11.8% in 2021), and there is a further area of 168 hectares classified as protected habitats protected by the Natura 2000 Network (making a total at present of 4,243 hectares, corresponding to 48 classified habitats, of which 11 are classed as priority habitats).

No. of IUCN Red List species and national conservation list species with habitats in areas affected by Navigator's operations

	2020	2021	2022
Critically endangered	4	4	5
Endangered	13	13	13
Vulnerable	31	36	39
Near threatened	20	21	24
Least concern	180	182	195

In the period from autumn to spring, we monitor nine nesting sites of the Bonelli's eagle (*Aquila fasciata*), as well as keeping watch on a nesting site for black storks (*Ciconia nigra*).

On our Espirra Estate, in Pegões, we have continued to monitor 40 nesting boxes installed to offer better breeding conditions for insect-eating species (such as blue tits and nuthatches) and so to control pests in cork oak woodlands. At the end of the year, we organised a week-long systematic survey of macrofungi in the South-West Alentejo and Monchique, in an example of our efforts to expand our knowledge of the wildlife existing on the properties we manage and in the surrounding areas. The fact that little research has been conducted into fungi in Portugal, and especially at these sites, added to the importance of this work.



Rare plant *Rhaponticum exaltatum* discovered in Penamacor

Rare and little known, *Rhaponticum exaltatum*, previously called *Leuzea rhaponticoides*, is classed as a “critically endangered” plant in Portugal.

The information available indicated that this plant was confined to a restricted area in Trás-os-Montes, but in 2022 it was discovered in forests under Navigator's management in Penamacor.

The species was identified in the course of our current programme of wildlife monitoring.

Although the discovery does not alter the extremely high extinction risk of the species in the wild, it has shown that individuals have germinated in recent years and have flowered. The fact that this site is close to the centre of the species' distribution in Spain brings a measure of hope for its future in Portugal.

 [LEARN MORE HERE](#)

Promotion of biodiversity and ecological restoration

Restoration or rehabilitation work was carried out in 2022 over approximately 71 hectares, in order to maintain or improve the state of conservation of natural and semi-natural habitats. The focus remained on the projects in progress, insofar that restoration goals are always long term. However, attention was also paid to improving habitats in new sites, identified in accordance with our priority matrix.

An informal partnership has been established with the Faculty of Sciences of the University of Lisbon (FCUL), to work alongside master's degree students in expanding our knowledge of biodiversity gains on land previously occupied by eucalyptus, and currently at different stages of restoration.

The year also saw the start of a new project, “Zambujo reCover”, the official opening of the Navigator Park and the start-up of the RRP *transForm* Project, in the field of genetic conservation and reclamation of ecosystems.



FEATURED INITIATIVE

Zambujo reCover Project: forest rehabilitation and soil protection



Targets 15.2 and 15.3

The Zambujo reCover project, which got under way in December, is an initiative for forestry intervention seeking to improve environmental quality.

The project is being implemented in the Zambujo Unit managed by Navigator. This is an estate of approximately 397 hectares, located in the municipality of Idanha-a-Nova, and included in its entirety in an area classified under the Natura 2000 Network (PTZPE0042). Parts of the property correspond to protected areas (PNTI), including significant Erosion Risk Areas, according to the National Ecological Reserve (REN).

Covering an area of 153 ha, the aims of the project are:

- Conversion of inappropriate production forests and reforestation with native species (holm oak);
- Promotion of protected agro-forestry habitats;
- Ecological restoration and soil conservation.

Promoted by The Navigator Company in partnership with RAIZ, our Forestry and Paper Research Institute, the initiative has an overall budget of 225,775 euros and is funded by the COMPETE 2020 Programme, under the measure "Support for climate transition/Resilience of territories in the face of risk: Fighting desertification through reforestation and action to fix carbon and nutrients in the soil" (REACT-EU/ERDF).



Official opening of Navigator Park promotes biodiversity in an urban setting

February saw the official opening of Navigator Park – with trees planted by the Company, in a partnership with Nova School of Business & Economics (Nova SBE) and Fundação Alfredo de Sousa.

Located on the Nova SBE campus in Carcavelos, the Navigator Park occupies an area of 3,000 m². The aim was to create a leisure and recreation area for the academic and municipal community, at the same time as promoting local biodiversity, by planting trees, shrubs (small, medium and large) and herbaceous plants.

Participants drawn from the academic community and local people in the Cascais municipality planted a total of 7,900 trees, shrubs and herbaceous plants, of 20 different species, donated by Navigator from its Aliança Nurseries. The Company also provided the technical consultancy services needed for the trees to become successfully established in the park.

As part of its strategy of raising awareness of nature conservation, the efforts to preserve biodiversity in the Navigator Park mirror the way in which the Company manages its forestry holdings, using conservation practices that enable us to protect important habitats.

"Navigator Park is rooted in what we believe in, what we advocate and what we do each day in the cause of Portugal's forests."

António Redondo, CEO



PRR *transForm* Project – Genetic conservation and ecosystem restoration

We started work in 2022 on one of the activities in the *transForm* Project, geared to digital transformation in forestry value chains, under the Recovery and Resilience Plan.

With technical and scientific coordination by ForestWISE, the collaborative laboratory for integrated management of forests and fire, this initiative will continue until 2025, in partnership with a number of organisations, including the National Institute for Agrarian and Veterinary Research (INIAV), the Institute for Nature Conservation and Forests (ICNF), ALTRI, the Beira Interior Plants Biotechnology Centre (CBP-BI), and others. Specialist technical support is also provided by BIOPOLIS-CIBIO (Centre for Research into Biodiversity and Genetic Resources) and the Botanical Gardens of the University of Porto.

The aim is to research methods for reproducing and improving the conditions for survival of populations in the wild, through repopulation measures or installation of new genetic conservation areas. It will focus on some of the most threatened trees in Portugal, such as native oaks (e.g. *Quercus canariensis*) and associated arboreal species, such as arbutus, rhododendrons and riverside gallery forests which are predominantly willow woods, allowing these woodlands to be improved in future.

Some of the innovative aspects of this project have to do with the use of new mapping methodologies, using high resolution remote detection, and studies in genomics³³, which will make it possible to arrive at a better characterisation of the genetic diversity of the species under study. Alongside this, there are plans to develop breeding methodologies to facilities production of these plants in nurseries and make them more available on the market.

Sharing knowledge with the community

The desire to share our knowledge, experiences and resources, in the quest for a better future - fundamental components of our purpose - also lay behind the launch of the biodiversity.com.pt website. In conjunction with [Florestas.pt](https://florestas.pt), another pioneering initiative stepped up in 2022 (Chap. 4.7) the new website represents a unique store of knowledge and information on biodiversity conservation and sustainable forestry management.

At the launch of this initiative, Navigator “opened a window” onto biodiversity, through an art installation in its office building in Lisbon. This installation included natural elements such as the arbutus tree, sundew and eucalyptus, as well as several animal species, such as Bonelli's eagle and the Iberian wolf, all made from the new gKRAFT brand of paper.



WATCH THE VIDEO *A WINDOW ONTO BIODIVERSITY*



FEATURED INITIATIVE

Launch of new website: Biodiversity by The Navigator Company



Target 15.2

A unique project was launched in 2022 to share knowledge about biodiversity and forest ecosystems, under the title “Biodiversidade by The Navigator Company”. The new platform, available at www.biodiversity.com.pt, seeks to help raise awareness and provide public information on the importance of biodiversity in forests, through content designed to be accessible, educational and inspirational. It is structured in three sections, enabling users to explore the different topics:

- 1) Biohistory: includes articles, reportage, news items and indicators about biodiversity in general and about initiatives to expand our knowledge, prevent losses, preserve and restore.
- 2) Biogallery: an invitation to explore the different habitats that coexist in woodlands and the species that live in them, from plants to mammals, reptiles, birds and fungi;
- 3) Bioresources: an area where users can explore a (bio)library with the main organisations, reports, legislation and commitments relating to biodiversity, threatened species or protected areas.

With this content our aim is to encourage people to take action to protect and restore biological diversity.

³³ Branch of genetics that studies the complete genome of an organism.



WHAT NEXT?

- Update approach to integrating Biodiversity and Ecosystem Services (B&SE) conservation into corporate biodiversity conservation strategy, in line with available scientific knowledge and voluntarily accepted (2023);
- Logistical support for the FORCE project - FOReSt CErtification as a tool to preserve vertebrate biodiversity in exotic forestry plantations (2023-2026);
- Update and implement the goals and targets of the action plan for biodiversity conservation as a way of contributing to “restoring Nature” (2050).



5.4 WATER MANAGEMENT

Responsible use of water resources is one of our priorities. We have taken steps to reduce use and to improve the quality of treated effluents, thereby optimising circularity in the use of this natural resource.

OUR IMPACTS

Less 4.7%
than in 2021
water intake

14.7%

reduction in specific water use³⁴ in
relation to 2019 (baseline year for
2030 target)

84%

of water returned to the
environment

19.1
m³/t produced
specific water use³⁴

³⁴ The specific use of water took into consideration total intake of water and the total quantity of products manufactured.



HOW WE MANAGE OUR IMPACTS

At The Navigator Company, we use water resources at different stages of our industrial processes, from steam production to transport of materials, cooling systems and other operations. The water used is predominantly obtained through surface and underground intakes, and there are only occasional cases where it is obtained from the municipal water network.

In view of the significant impact that our activities can potentially have on water resources and on rational and balanced management of those resources, our intakes are licensed by the National Water Resources Authority, and operated in strict compliance with the maximum authorised volumes.

Although we obtain water in Hydrographic Basins (HB) which present no signs of water stress, we have closely monitored the evolution of the drought in Portugal and the potential effect of climate change in this area, with a view to assessing its impact on the continuity of our business. We therefore seek to ensure that our activities are not in themselves an additional risk factor for the environment and local communities.

We have accordingly used risk analyses to develop future scenarios and plans for cutting use of this vital resource. We have monitored the drafting of the management plans for the hydrographic regions in which our plants are located, through representation on the respective Hydrographic Region Boards, and kept abreast of research assessing the availability of water, now and in the future, and determining the scarcity index in each basin and sub-basin.

In our 2030 Roadmap (Chap. 3.3) we set the goal of a 33% in specific use of water, taking 2019 as the baseline, and propose solutions that will lead to greater efficiency in water use.

Committed to making optimised use of this resources, we have been implementing measures under our Water Use Reduction Programme (WURP). This programme includes a series of management measures and investment in new technology which will enable us to further optimise processes - i.e., increased recovery of process water, so as to minimise the intake volume and the discharge of effluents.

We run a wide-ranging system for monitoring and controlling our water use at all stages of the production process, so as to keep checks on quality and conduct systematic reassessments of the potential for reuse in different processes. We also conduct monthly monitoring of the situation at all our industrial units.

It should be noted that the water used in production processes is drawn not just from intakes, but also from the raw and subsidiary materials, including wood and chemicals. The water used is returned to nature in the form of water vapour and treated effluent, but wastes, products and by-products also contain significant volumes of water.

Our commitment to responsible management of water resources has to do not only with the intake quantity, but also with the quality of the water discharged.

All our mills are covered by Water Resources Use Licenses for discharging industrial effluents. These undergo treatment (primary, secondary and treatment of sludges) at Industrial Waste Water Treatment Plants (IWWTPs), which is designed to minimise the potential impacts of their discharge into the environment and to obtain quality levels in treated effluent compatible with the Admissible Emission Values (AEV) set out in BREF Pulp and Paper³⁵. This process incorporates the Best Available Techniques (BAT) for the sector (2015).

We have an extensive programme of laboratory monitoring of effluent samples from WWTP inflows and outflows, and our licenses require continuous monitoring and reporting, connecting the Portuguese Environment Agency (APA) to the relevant data logger. We also carry out environmental monitoring studies to assess the potential impact of our effluent discharges on the ecological status of the receiving environments.

³⁵ Reference document covering industrial activities listed in Annex 1 of the European Directive for integrated pollution prevention and control (IPPC)



It should also be noted that water management is one of the key topics for our Community Monitoring Committees (Chap. 3.5), whose contributions are incorporated into the water management plans and measures referred to, in particular into the design of WURP.

WHAT WE ACHIEVED IN 2022

In 2022, the volume of water intake was down by 4.7% on the previous year. There has been a reduction in specific use of water resources over the year, arriving at a figure of 19.1 m³/t in 2022, representing a reduction of 14.7% in relation to the baseline year of 2019. These results point to the good operational performance of our mills and our continuous efforts to implement effective measures to cut water use in production processes, through reuse of water and closed circuits, among others.

The projects undertaken in 2022 included continued implementation of WURP. A total of 16 projects were executed (seven already in operation, representing CAPEX of more than 2.1 M€) and we can point to the following highlights:

- The new evaporation line at the Aveiro Pulp Mill and improvements to evaporation at the Figueira da Foz Pulp Mill, with the aim of optimising recovery and use of the condensates generated;
- Installation of new showers using less water at the Figueira da Foz Pulp Mill;
- Partial use of clarified water in washing the pulp feeding one of the paper machines at the Setúbal Industrial Complex;
- Reduction in water use in wood preparation at the Figueira da Foz and Setúbal complexes, by using recovered currents, as well as improving and closing existing circuits.
- Recovery of boiler purges at the Figueira da Foz Industrial Complex.



FEATURED INITIATIVE

New evaporation line at the Aveiro Industrial Complex



Targets 6.3 and 6.4



Target 8.4



Target 9.4



Target 12.2

The project to install a new evaporation line at the Aveiro Industrial Complex represents investment of 14 M€ making significant improvements to this pulp production sub-process.

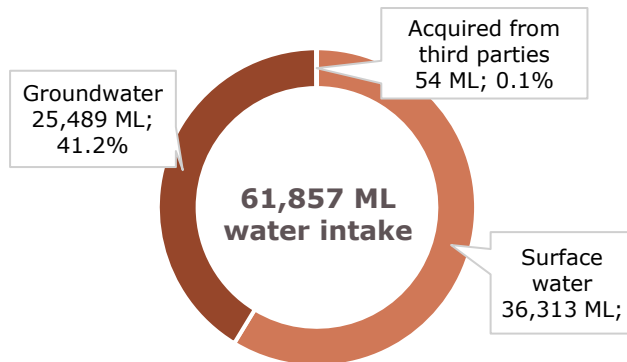
Evaporation makes it possible to concentrate the black liquor, a by-product from the kraft process for pulp production, making it possible to recover, in the boiler, the chemicals used in cooking the pulp and to generate the thermal energy essential for the process.

This project has several environmental benefits due to maximising circularity in the use of condensates in the production process. It will enable us to cut water consumption by around 21% (from 33.5 to 26.6 m³/tAD³⁶), and also to reduce the use of chemicals in the process and to incorporate biological sludges (waste from effluent treatment) in the black liquor, for reuse for energy purposes in the recovery boiler.

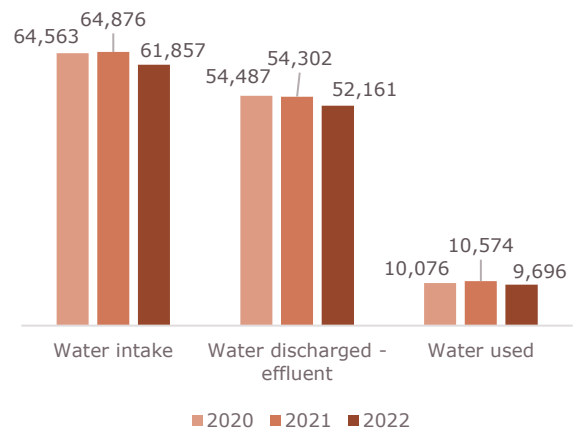
³⁶ Ton of Air Dried pulp.

USE OF WATER RESOURCES BY NAVIGATOR IN 2022

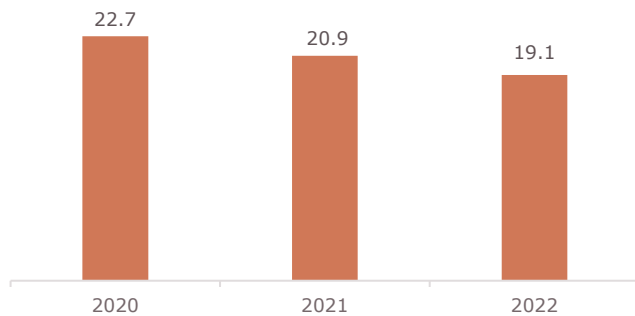
Breakdown of intake volume



Water use (million litres)



Specific use per ton of output⁽¹⁾ (m³/t)



Specific use per turnover⁽¹⁾ (ML/M€)

Indicator	2020	2021	2022
Total water intake (ML – million litres)	64,563	64,876	61,857
Turnover (M€ – million euros)	1,385	1,596	2,465
Specific use (ML/ M€)	46.6	40.6	25.1



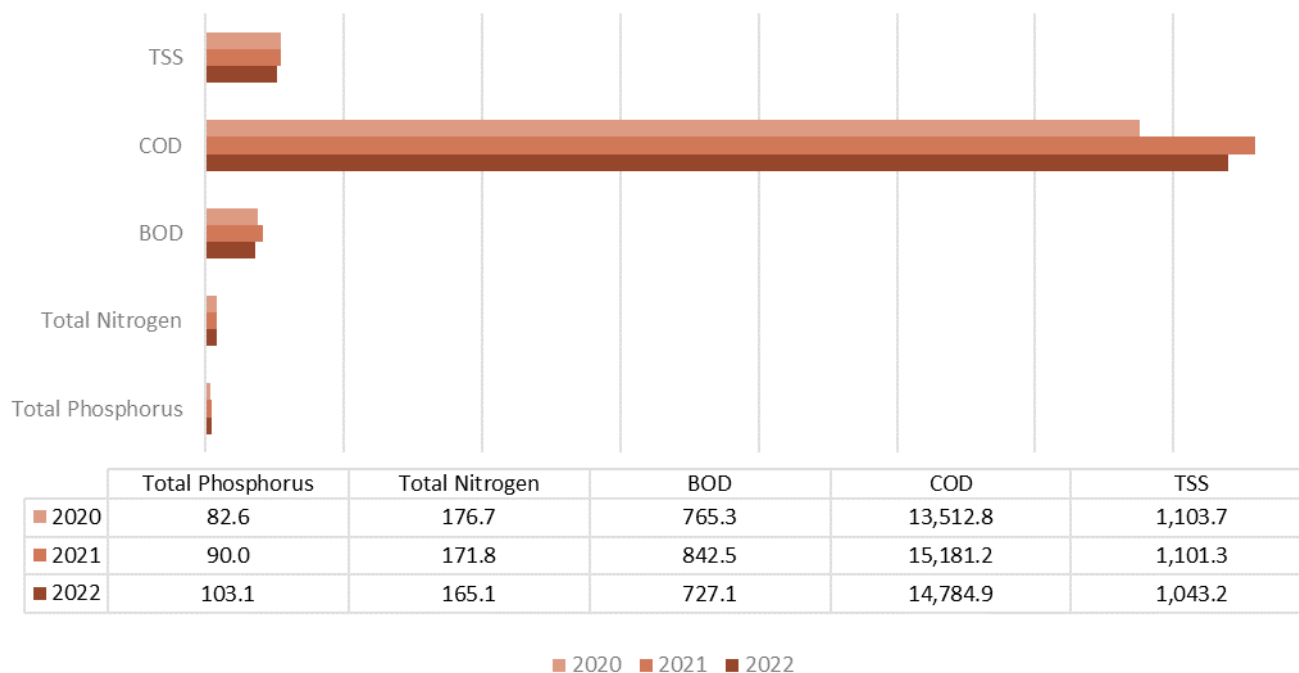
Goal: cut specific water use (m³/t product) by at least 33% by 2030 (baseline: 2019).
Specific use in baseline year: 22.4 m³/t

(1) The specific use of water took into consideration total intake of water and the total quantity of products manufactured or by the turnover.
 NB: See the GRI Table for methodological information on the calculation of indicators (GRI 303-3/4/5).

The work done by the Company has enabled it not only to reduce the quantity of water used, but also to maximise the volume of water returned to the environment, in the form of treated effluent thereby contributing to the close of the cycle. In 2022, 84% of water was returned to the natural environment.

As regards the discharge of these effluents, we conduct monitoring of quality parameters, including of nutrients (phosphorus and nitrogen), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Total Suspended Solids (TSS), in order to assess the impact of our discharges on the receiving environment.

Quality parameters (t)



WHAT NEXT?

- Development of tools to monitor and track water use at mills on a daily basis.
- Ongoing optimisation of water use at the Figueira da Foz mill as a result of the pulp washing process in the bleaching phase.
- Monitoring and improvement of water use in various production areas (e.g., brown paper and pulp).



5.5 ENERGY AND RAW MATERIAL MANAGEMENT

We invest in solutions that promote efficient and responsible use of energy and raw materials, seeking to reduce the environmental impact of our business, working constantly to improve our performance and contributing to a circular low-carbon economy.

OUR IMPACTS

41,165,471 GJ

(down 0.2% on 2021)

Energy consumed

Energy consumption reduced by

65,682 GJ

as a result of **14** energy consumption projects completed in 2022

5,372,917 GJ

(up 3.8% on 2021)

Energy sold

76%

Primary energy consumed from renewable sources

Approximately 700,000 €

Investment on energy efficiency projects completed in 2022

Saving of **375,000 €/year**

5,156,843 t

(up 1.8% on 2021)

Raw materials consumed

12.0 GJ/t

(down 3.9% on 2021)

Energy intensity

3% 34%

of all power generated in Portugal

of power generated from biomass in Portugal³⁷

90%

Renewable raw materials

³⁷ National figures on the basis of 2022 data from REN – Redes Energéticas Nacionais



HOW WE MANAGE OUR IMPACTS

Aware that our production operations are highly dependent on a variety of resources - energy, wood, chemicals and water (Chap. 4.6) – we are committed to using them responsibly, through solutions that promote efficient use and minimise our environmental footprint (Chap. 5.3). To that end, we have established a series of commitments in our 2030 Agenda (Chap. 3.3) and invest in research and development projects to implement the best available techniques for the sector. We develop and incorporate technologies and practices designed to protect the environment and prevent pollution - atmospheric emissions and odours, waste and noise pollution – and also to eliminate hazards and minimise risks to safety and health (Chap. 4.5), as well as to improve performance, processes, products and services.

Energy

The consumption and production of energy is a highly important topic in the context of operational performance and management of The Navigator Company's resources, representing significant costs, which are joined by important environmental impacts, both direct and indirect.

Our certification under ISO 50001:2018 (Energy Management Systems) points to our systematic approach to achieving continuous improvement in energy performance in our operations.

In line with our Roadmap to Carbon Neutrality (Chap. 4.2), and with the approved capex plan, we are committed to lessening our dependence on fossil fuels, helping to reduce our carbon footprint (Chap. 5.1). We are phasing out consumption of fossil energy and replacing it with less carbon-intensive sources of energy, as well as investing in growing use of renewable energy sources, most notably waste forestry biomass.





In the renewable energy sector, we have accordingly positioned ourselves strategically as a leading Portuguese producer of green energy from biomass, and so taking a leading role in building solutions for the climate challenge. The two Biomass Power Plants (BPP): at the industrial complexes Aveiro and Setúbal, and the three biomass co-generation plants (Aveiro, Figueira da Foz and Setúbal) give the Company a consolidated lead in this area.

In total, we account for 3% of all electricity produced in Portugal and 34% of power generated from biomass in the country. Because the manufacture of pulp and paper require thermal energy in the form of steam, it is important to note that we have highly efficient co-generation facilities that allow for simultaneous production of steam and electricity, the latter being mostly sold to the national grid.

The renewably sourced power produced by Navigator is certified with Guarantee of Origin (GO), issued by REN as the Guarantee of Origin Issuing Body (GOIB). In 2022, the GOs generated helped consumers of this power to cut their scope 2 (market based) carbon emissions.



ENERGY MANAGEMENT APPROACH

			
Energy Management Systems (ISO 50001) Certification under ISO 50001:2018 at all industrial units.	Industrial efficiency Implementation of energy efficiency projects at all production units in line with our commitment to improved energy efficiency.	Alternative energy sources Investment in renewable energy, such as solar and biomass. Phasing out of fuel oil consumption, replacing it with less carbon-intensive energy sources.	Power production and sales Generation of green energy from biomass, at the BPPs and biomass co-generation plants. Injection of electricity into the national grid as a result of power generation associated with the production process.

Raw materials

Through our responsible forestry management and initiatives to support certification of forest producers, we work to optimise the use of wood, whilst at the same time safeguarding the provenance of our most significant source of raw material (Chap. 5.2).

We likewise invest in projects that work towards the aim of minimising losses and consequently increasing the yields from this resource. Most significantly, new and more effective equipment has been installed for preparing wood, on fibre lines and in the paper machines.

In an important contribution to the transition to a more sustainable economy, we have developed forest-based packaging products that replaced fossil-based packaging – our gKRAFT packaging (Chap. 2.3) which also brings positive impacts to Navigator's production processes, in particular in terms of consumption of non-renewable materials, thanks to:

- Less use of chemicals in manufacturing brown pulp, in comparison with bleached pulp;
- Less use of optical brighteners in production;
- Less use of precipitated calcium carbonate (PCC).

WHAT WE ACHIEVED IN 2022

Energy

2022 was a year of economic instability, influenced by the war in Ukraine. This situation has added to the energy crisis in Europe and worldwide and resulted in particular in a sharp rise in energy prices, especially for electricity and natural gas, which created the need to use fuel oil as an alternative to natural gas. Despite this adverse environment, the Company remains committed to adopting low-carbon solutions.

Work therefore proceeded on the dismantling of two fuel oil boilers and installation of a new natural gas and hydrogen steam boiler in Setúbal.



We continued to invest in renewable energies, which accounted for approximately 76% of the primary energy consumed in the Company, and we have expanded production of electricity from renewable sources (up 3.8% in relation to 2021).



FEATURED INITIATIVE

New natural gas and green hydrogen boiler

In the fourth quarter of the year, a new boiler started up at the Setúbal Industrial Complex. With investment of 5.5 million euros, this facility, which will initially be powered by natural gas but in future could operate with green hydrogen, will permit the burning of gas blends incorporating up to 20% hydrogen.

The new boiler will bring greater flexibility in the generation of thermal energy at the complex and contribute to the phasing out of fuel oil.

In addition to permitting a reduction in CO₂ emissions, the project will use the Best Available Technologies to increase efficiency and reduce the environmental risks associated with the transport of fuel oil, consumption of which is avoided, as well as other environmental benefits, such as reduction of odours and atmospheric emissions.

Another important development was the signing of a Corporate Power Purchase Agreement (PPA), designed to ensure, over a period of 10 years, that a fraction of the Company's electricity needs is met, at a competitive price, from use of 100% renewable assets.

With a view to improving our energy efficiency, we completed 14 projects at the four industrial complexes, leading to an overall reduction of 65,682 GJ.

One of the highlights was the extension of our certification under ISO 50001 to the tissue Industrial unit in Aveiro.

Implementation of projects and operational measures to enhance the energy efficiency of our production processes has enabled us to optimise energy consumed from primary sources, per ton of output, and to achieve energy intensity in 2022 of 12.0 GJ/t of output (down 4% from 2021).

The Company's investment in energy efficiency and renewable energies will continue in 2023 and subsequent years. Examples of this are: development of Energy Efficiency Action Plans at each of the mills, incorporation of renewable energy into production processes at the Setúbal and Aveiro complexes, as well as implementation of several projects currently in progress, which will allow us to increase the rated capacity of our solar facilities, for international consumption, from 7 MW at present, to around 32 MW.

The decision to substitute the existing recovery boiler (project planned for 2023 and 2024) at the Setúbal Industrial Complex (CR3), in service since 1989, by a new Recovery Boiler (CR4), using more modern and efficient technology, in terms of energy and chemicals, will also bring other environmental benefits, such as the reduction of odours and atmospheric emissions.

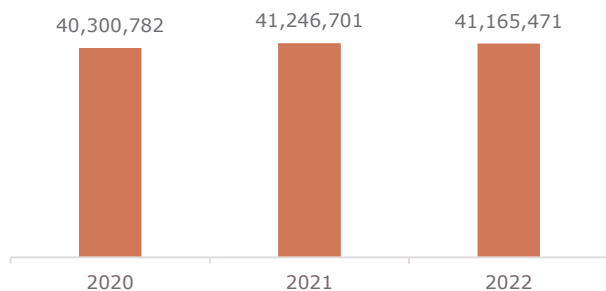
With regard to the volume of energy sales, in 2022 we recorded an increase of 3.8% in relation to the previous year.

From the perspective of business continuity, attention should also be drawn to the classification of the Company's mills this year as Electro-Intensive Customers. This status enables us to access power on more competitive terms, thereby putting us on a more equal footing with facilities of the same kind operating in other Member States.

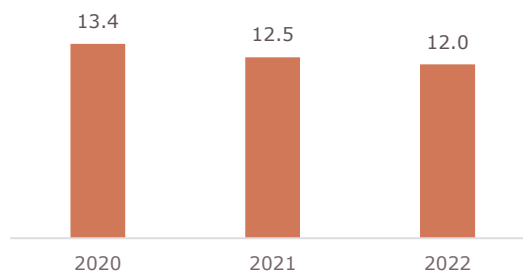


ENERGY MANAGEMENT AT NAVIGATOR IN 2022

Energy consumed (GJ) ⁽¹⁾



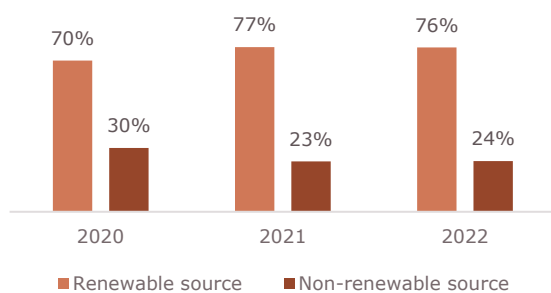
Evolution of energy intensity ⁽²⁾ (GJ/t)



Energy consumed by renewable and non-renewable source (%) ⁽¹⁾



Goal: optimise energy intensity, year after year.



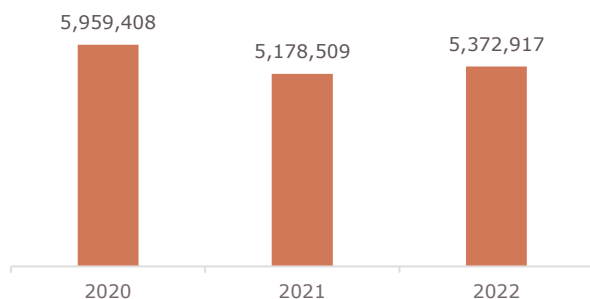
Energy intensity by turnover (TJ/M€) ⁽³⁾

Indicator	2020	2021	2022
Total energy consumption (TJ)	46,260	46,425	46,538
Turnover (million euros)	1,385	1,596	2,465
Energy intensity (TJ/million euros)	33.4	29.1	18.9



Goal: renewable energy representing 80% of total primary energy consumption by 2030.

Energy sold (GJ) ⁽¹⁾



Reduction in energy consumption as a result of energy efficiency projects (GJ)

2020	2021	2022
48,524	51,184	65,682

⁽¹⁾ As from 2022, energy figures now include consumption of petrol and propane at other Company facilities, as well as fuel for the vehicle fleet.

⁽²⁾ The calculation of energy intensity took into consideration direct energy consumption by primary resources (excluding primary energy from Biomass Power Plants – BPP) and the total quantity of products manufactured.

⁽³⁾ The calculation of energy intensity by turnover took into consideration direct energy consumption by primary resources and the total consumption of energy acquired.
NB: See the GRI Table for methodological information on the calculation of indicators (GRI 302-1/3/4).



Energy efficiency projects at industrial complexes



Target 8.4



Target 9.4



Target 12.2



Aveiro

Maximisation of heat recovery for producing hot water

The aim of this project is to increase the recovery of heat from continuous cooking for producing hot water, generating a reduction in steam consumption of 0.1tV/tAD.

Investment:
€70,000€

Saving:
195,000€/year

Payback period:
Around 4 months

Reduction in consumption:
Approximately 23 MWth (thermal)/year

Figueira da Foz

Installation of centrifugal air compressor

A new compressor using centrifugal technology has been installed to replace one using screw technology, which had reached the end of its useful life.

This new compressor is approximately 7% more efficient than screw technology compressors.

Investment:
Approx. 293,000€

Saving:
86,700€/year

Payback period:
Approx. 3.4 years

Reduction in consumption: 340 MWh/year

Vila Velha de Ródão

Installation of LED lighting with DALI controller in converting hall

The LED lighting project, in the converting sector, consisted of replacing all the conventional lighting in the hall, and of adding new lamps at strategic points.

In addition, the use of a DALI controlled means that light can be automatically regulated to meet needs, making it possible to improve working and safety conditions in the hall, as well as reducing costs.

Investment:
Approx. 93,000€

Saving:
18,400€/year

Payback period:
Approx. 5.1 years

Reduction in consumption: 195 MWh/year

Setúbal

Installation of LED lighting in Paper Mill 1

As part of the energy efficiency action plan, a new lighting system has been implemented in the rewinders sector and in the dispatch and packaging products stores.

In addition to the savings in power consumption, the project also ensures that the technical lighting requirements of the sectors are met, promoting Employee well-being and safety.

Investment:
Approx. 143,000€

Saving:
75,500€/year

Payback period:
Approx. 1.9 years

Reduction in consumption: 800 MWh/year



Consumption of raw materials

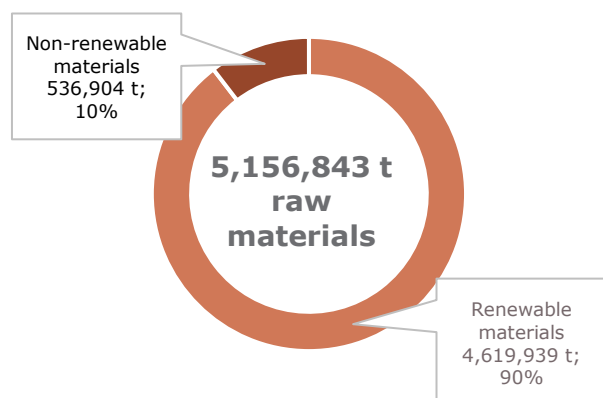
The good operating results recorded in 2022 resulted in an increase in output of 4.3% in relation to 2021, with consumption of materials up by only 1.8%, pointing to a reduction in the intensity of materials consumption of 2.4%.

It is important to note that approximately 90% of the materials used are renewable, and the remaining 10% consists essentially of chemicals which are necessary in different phases of the pulp and paper production process.

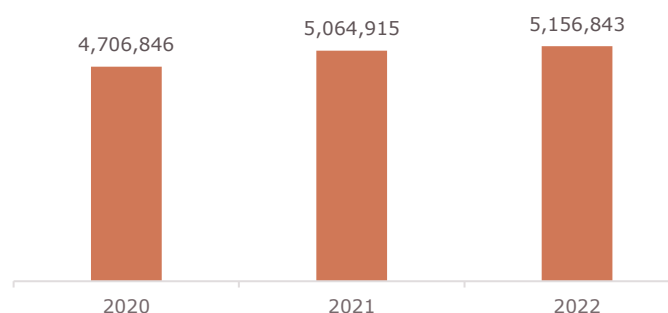
With a view to greater efficiency in the use of raw materials, we have a number of initiatives under way, such as the project for a new debarking line in the wood yard at the Figueira da Foz Industrial Complex, planned to come online in 2023 and expected to reduce fibre loss and also noise levels in the complex.

NAVIGATOR'S CONSUMPTION OF RAW MATERIALS IN 2022

Percentage breakdown of materials by type



Total consumption of used materials (t)



Intensity of materials consumption			
Indicator	2020	2021	2022
Total consumption of materials (t)	4,706,846	5,064,915	5,156,843
Output (t)	2,842,364	3,105,209	3,238,424
Turnover (million euros)	1,385	1,596	2,465
Intensity of materials consumption (t/ton produced)	1.66	1.63	1.59
Intensity of materials consumption (t/million euros)	3,398.4	3,173.5	2,092.0

NB: See the GRI Table for methodological information on the calculation of the indicator (GRI 301-1).



WHAT NEXT?

- New cogeneration facility at the Aveiro Complex, in order to decarbonise steam generation in tissue production, by replacing the natural gas currently used with waste forestry biomass, simultaneously supplying renewably sourced electricity to the unit (2025).
- New steam turbine at Figueira da Foz Complex, to increase efficiency in the use of primary energy and simultaneously to provide renewably sourced electricity to the paper mills (2025).
- Implementation of the the new wood debarking line at the Figueira da Foz Industrial (2023).
- New boiler for chemicals recovery and production of renewable energy in Pulp manufacture at Setúbal Complex – flexible generation of thermal energy with a view to shutting down a Natural Disasters Cogeneration unit (2025).
- Implementation of the Energy Efficiency Action Plans at each of the mills, under ISO 50001 (2023 and subsequent years, on an annual basis).
- Implementation of new solar projects for internal consumption at the mills (2023/2024).
- Provision of energy system services in connection with the Regulation Reserve Band (2023).



5.6 CIRCULAR ECONOMY

We have positioned ourselves strategically as a player in the transition to a circular low-carbon bioeconomy. We apply the principles of optimisation and efficiency in the use of resources and invest in the search for innovative products and solutions, developed in partnership with a range of organisations.

OUR IMPACTS

410,692 t

(up 3.2% on 2021)

of waste generated

410,007 t

(up 3.2% on 2021)

of non-hazardous waste generated

More

5,509 t

sand reclaimed than in 2021

Less

24,151 t

cabonate sludges generated than in 2021

28,395 t

sands sent to construction sector

5

new partnerships for promoting the circular economy

11%

percentage of waste sent to industrial landfill



HOW WE MANAGE OUR IMPACTS

Planted forests are fundamental to the transition from a linear fossil economy to a sustainable circular bio-economy, based on renewable, recyclable and biodegradable forestry products, beneficial to nature and climate-neutral.

In addition to being natural and renewable, the wood we use at The Navigator Company is sourced from sustainably management forests (Chap. 5.2). This is processed into various type of paper products which, after serving their purpose, are collected and recycled, becoming a raw material once. Fibre from the *Eucalyptus globulus* we plant in Portugal is recognised as suitable for recycling over a larger number of cycles than its competitors. A comparative analysis conducted by RAIZ, our forestry and paper research institute, has proven that this species can be recycled over ten cycles - six more than for other paper fibres (source: RAIZ).

This natural raw material has enabled us to lead the From Fossil to Forest agenda (Chap. 4.3), seeking to use our technology and know-how to lay the foundations for a truly circular economy based on forests, and offering an important opportunity for business innovation and competitiveness. This is the context on which we create forest-based bioproducts, seeking to find more sustainable alternatives to fossil-based materials, as part of our strategy of creating value responsibly.

Sustainable management of resources is another plank in our strategy, because of the impacts resulting from the consumption of raw materials, energy and water (Chap. 5.5 and 5.4) and from the generation of waste over the course of our production process. Taking advantage of the potential for circularity within the pulp and paper production process, we have increasingly invested in a more sustainable industrial production model, featuring a closed circuit, prioritising measures to cut the production of waste, and also to reclaim and reuse that waste.

We have adopted technological solutions that enable us to reincorporate waste in the production processes, or to reclaim waste internally, in particular in energy production processes. At the same time, the implementation of these processes makes it possible to minimise the use of virgin raw materials, and also to minimise wastage and effluent loads (Chap. 5.5 and 5.4). Because the vast majority of waste is generated in pulp production operations, we have invested in improvements in the efficiency of treatment processes and systems, cutting production of this waste to minimum levels.

Our efforts to promote the circular economy have been leveraged by the Corporate Upcycling Project, and by investment in Research, Development and Innovation (RDI) projects and in establishing partnerships with other organisations, which has enabled us to implement technological solutions such as:

- Use of flue gases for capturing CO₂, which is used in producing precipitated calcium carbonate (Chap. 5.5);
- Implementation of chemical recovery cycles at paper pulp production units;
- Recovery of biological sludges, through incorporation in black liquor evaporation, obtaining energy from the organic matter in the recovery boiler at the Figueira da Foz Industrial Complex;
- Use of sands from biomass boilers (by-product) by the cement industry, instead of the quarried sands used in construction materials.

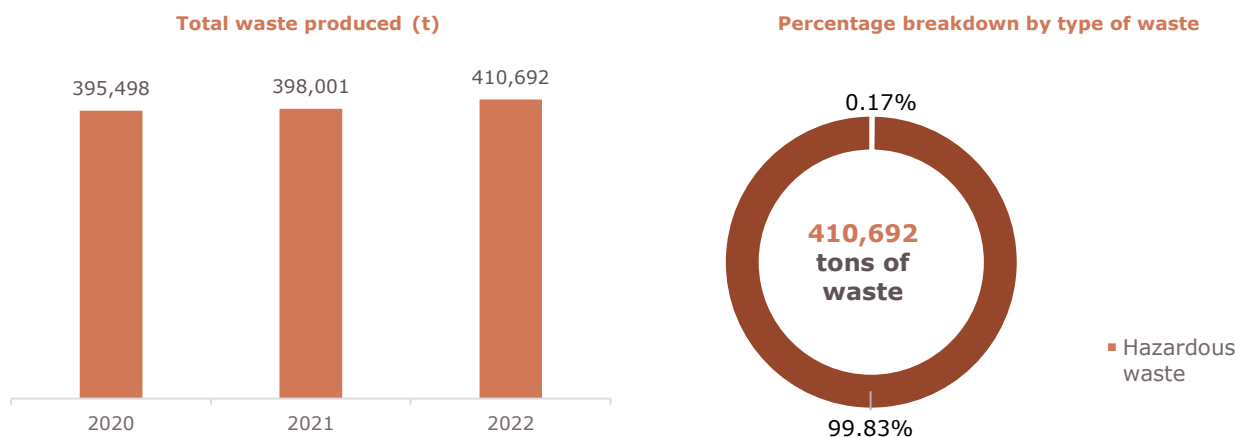
In addition, the reuse and recycling of water is also part of the circularity of our production process, and most of the water used is returned to the environment in the form of treated effluent (Chap. 5.4).



CIRCULAR ECONOMY AT NAVIGATOR

Investment in bioproducts Creation of forest-based bioproducts as a sustainable alternative to fossil-based materials, promoting the transition to a bioeconomy model.	Optimisation and improvement of processes Improved efficiency in the use of resources, minimising the use of virgin raw materials, water and energy, and avoiding wastage and waste production. Improved efficiency in processes and treatment systems.	Waste management Waste is selectively collected, correctly stored and sent for appropriate final disposal, assigning preference to recovery operations whenever possible.	Reincorporation of by-products in Navigator processes Implementation of technological solutions to reuse by-products in the place of virgin materials.	Industrial symbiosis Development of industrial synergies with other industrial sectors, promoting circular use of materials. Use of waste produced by the Company as secondary raw materials, replacing virgin raw materials and thereby extending their useful lives.
	Research, Development and Innovation (RDI) Investment in applied research, through our own projects and others with consortia, with a view to innovating in products and processes.			
	Networking Establishing partnerships, with universities, research centres and other industrial sectors, in order to boost the circularity of materials, develop bioproducts, reuse waste and share expertise. Participation in Circular Bioeconomy Alliance platform.			

WASTE PRODUCTION IN 2022



REFORMULATED GOAL⁽¹⁾: By 2030, send less than 10% of waste to industrial landfill.

⁽¹⁾ There are two divergent criteria for calculating the waste recovery rate: Portuguese legislation classes recovery for energy use as recovery (code R1), whilst GRI 306 (2020 version) considers it a form of disposal. In view of this, and the fact that our 2030 target was set prior to review of the GRI standards, we have reformulated our target to ensure it is aligned with the figures now reported, which are calculated using the GRI framework (2020 version).

Note 1: It should be noted that there is a difference between waste generated and the sum total of waste sent for recovery and disposal operations, because of recovery in 2022 of waste from 2021, which had been stored. In addition, some of the waste generated in 2022 was temporarily stored on our premises, as permitted under the respective environmental licenses and the new Legal Framework for Waste Management (Decree-Law 102D/2020, of 10 December).

Note 2: See the GRI Table for methodological information on the calculation of indicators (GRI 306-3/4/5).



WHAT WE ACHIEVED IN 2022

In 2022, we produced a total of 410,692 tons of waste, up by 3.2%, on the previous year.

Sludges resulting from effluent treatment (sludges from the Waste Water Treatment Plants, or WWTP) and fly ash from the biomass boilers, originating in the paper pulp production process, are the waste products representing the largest quantities – 173,782 tons and 85,598 tons, respectively.

Increased waste production is in fact one of the outcomes of the improvements made to processes. This is because: a) in the case of WWTP sludges, the improved efficiency of effluent treatment means that more of this waste is produced; b) in relation to fly ash from boilers, the fitting of sleeve filters to the biomass boilers in the renewable co-generation facilities in Aveiro and Setúbal has reduced particle emissions into the atmosphere, meaning that more ash is generated. In 2022, this increase was also due to the fact of it being the first full year of operation of the new biomass boiler at the Figueira da Foz complex.

The WWTP sludges produced are reclaimed in farming and/or energy production. Another important development is the new evaporation line at the Aveiro Industrial Complex (Chap. 5.4), which will reclaim energy from biological sludges, in the recovery boiler.

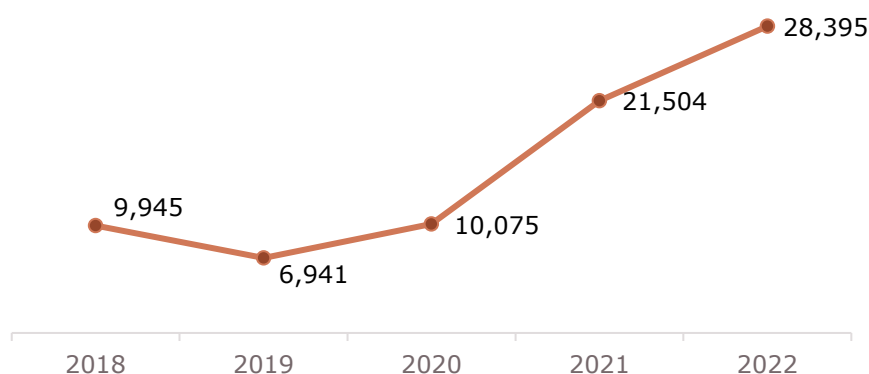
Carbonate sludges can in turn be used to produce precipitated calcium carbonate (PCC), a mineral filler incorporated in the printing and writing paper (UWF) produced. In 2022, we continued our partnership with Specialty Minerals Inc., enabling us to reclaim approximately 991 tons of carbonate sludges at the Figueira da Foz Pulp Mill.

The Company remains committed to establishing strategic partnerships, with other companies and research centres, with a view to finding new solutions for applying wastes in new materials.

We made three successful applications to the Portuguese Environment Agency (APA) for trial areas, in conjunction with market leaders in the construction sector. In addition, we established a partnership with Prosari for incorporating sands from the fluidised bed biomass boiler (by-product) in the production of concrete blocks.

Taken together, these partnerships enabled us in 2022 to send approximately 28.4 thousand tons of sands for incorporation in the construction industry (up 32% on 2021).

Sands sent to construction sector (t)



One of the landmark developments in 2022 was the completion of the Inpactus Project (Chap. 4.3) which in this area resulted in the development of:



- New products obtained from lignin³⁸, a by-product of the industrial process, for application in polyurethane foams, adhesives and composites;
- New ecological mortars and cements incorporating fly ash from the biomass boilers.

Lastly, our efforts to make the most of our scientific and technological expertise included the launch of a co-creation programme in the circular and digital forest-based bioeconomy, seeking to respond to the main challenges currently facing Portugal's forests.



FEATURED INITIATIVE

Fly ash trial areas



Target 9.4 Targets 12.4 and 12.5

Thanks to the combined and highly focussed efforts of Navigator and several industrial partners - users, intermediaries and Technological Interface Centres (TICs) -, three successful applications were made to the APA for trial areas, with two leading players in the construction sector market - Weber St. Gobain and Secil Unibetão.

Subject to a simplified licensing process, the trial areas allow companies receiving the waste to conduct trials, on an industrial scale, for incorporation of by-products into their production processes. Once the industrial trials are completed and technical feasibility is demonstrated, Navigator, as a producer of fly ash in its Biomass Power Plants (BPP), will be able to self-declare this to APA as a by-product.

Incorporation of BPP fly-ash into construction materials will make it possible to reduce the use of virgin raw materials, in a sector facing added challenges in the decarbonisation process, in addition to cutting the costs associated with sending the fly ash for disposal.

In 2022, during the research phase, trials were carried out permitting the use of approximately 13 tons of fly ash. This project has the potential for absorbing approximately 7,500 tons of fly ash in 2027.

Co-creation Programme in the Forest-based Circular and Digital Bioeconomy

In 2022, we launched the first edition of a new Co-creation Programme for Promotion of Scientific and Technological Knowledge in the Forest-Based Circular and Digital Bioeconomy.

The programme is being run by RAIZ, our forestry and paper research institute, and is aimed at Portuguese start-ups and SMEs with innovative technologies, new processes or bioproducts that are able to respond to our challenges.

The value co-creation model is intended to achieve synergies in the fields of innovation and research in the fields of technology, forestry and industry. The aim is to generate economic value with a social and environmental impact, and the results are expected to include registration of new patents, licensing to third parties or the launch of new joint business and/or industrial ventures.

The topics featured in this edition included forest-based biorefineries, the circular bioeconomy, efficient use of resources and environmental compliance.

A total of eight projects were selected and are currently in progress, seven of which address the direct or indirect recovery of by-products from forestry operations or industrial processes.

³⁸ Lignin is the second most abundant renewable polymer in nature and is present in eucalyptus wood.



WHAT NEXT?

- Implementation, on an industrial scale, of the projects started in 2022 with Saint-Gobain and Secil Unibetão.
- Development of new trial areas for other types of waste generated by industrial operations.
- Consolidation of new uses of fly ash (mortars and geopolymers), considering this waste as a by-product (2023).
- Establishing new partnerships for other forms of industrial waste (2023).



6. SUSTAINABILITY PERFORMANCE

SUSTAINABILITY REPORT 2022



6.1 ECONOMIC INDICATORS

Economic Indicators	2020	2021	2022	GRI
Direct Economic Value Generated - Revenues (I) (thousand €)	1,424,321	1,627,251	2,535,783	201-1
Direct Economic Value Distributed (II) (thousand €)	1,320,697	1,370,996	2,122,950	
Operating costs (thousand €)	994,258	1,077,385	1,514,271	
Employee salaries and benefits (thousand €)	131,184	153,970	185,194	
Payments to capital providers (thousand €)	212,963	117,343	356,967	
Taxes (thousand €)	- 19,422	20,650	64,765	
Investment in community (thousand €)	1,714	1,649	1,752	
Accrued Economic Value (I-II) (thousand €)	103,624	256,178	412,834	
Financial assistance received from Government (thousand €)	12,447	7,824	16,405	201-4
Tax Incentives / Credits (thousand €)	9,937	5,121	2,557	
Subsidies (thousand €)	185	143	12,314	
Support for research and R&D (thousand €)	2,355	2,560	1,533	
Financial implications of climate change				201-2
Number of CO ₂ licenses (no.)	516,319	620,805	574,122	
Market value (thousands €)	16,909	50,068	46,785	
Ratios of standard entry level wage to local minimum wage ¹				202-1
Men	1.12	1.07	1.13	
Women	1.12	1.07	1.13	
Total number of suppliers (no.)	6,756	7,172	7,303	204-1
Percentage of local suppliers (%)	76	74	73	
Total expenditure on suppliers (thousand €)	1,158,577	1,382,341	1,934,460	
% of expenditure on suppliers	77	74	72	



6.2 ENVIRONMENTAL INDICATORS

Environmental Indicators	2020	2021	2022	GRI
Forest				
% Certified of forest area managed	100	100	100	
Wood purchased with FSC® and PEFC™ certification				
% Portuguese	61	63	65	
% overall	74	71	68	
Materials				
Raw materials (tons)	4,706,846	5,064,915	5,156,843	301-1
Renewable	4,253,717	4,558,516	4,619,939	
Non-renewable	453,128	506,399	536,904	
% of renewable raw materials	90	90	90	
% of recycled materials used ⁱⁱ	0.04	0.02	0.01	301-2
Energy				
Energy consumption within the organization (GJ)	40,300,782	41,246,701	41,165,471	302-1
Energy consumption from non-renewable sources ⁱⁱⁱ	12,264,687	9,811,472	9,825,584	
Energy consumption from renewable sources	29,101,758	31,962,573	31,802,148	
Total energy acquired for consumption	4,893,745	4,651,165	4,910,655	
Energy sold	5,959,408	5,178,509	5,372,917	
% renewable energy consumed ^{iv}	70	77	76	
Energy intensity (GJ/t produced) ^v	13.4	12.5	12.0	302-3
Reduction in energy consumption (GJ) ^{vi}	48,524	51,184	65,682	302-4
Water				
Water intake (thousand m³)	64,563	64,876	61,857	303-3
Water discharged - effluent (thousand m³)	54,487	54,302	52,161	303-4
Water used (thousand m³)	10,076	10,574	9,696	303-5
% of water returned to environment	84	84	84	



Specific water use (m³/t)	22.7	20.9	19.1	
Biodiversity				
Facilities in or close to protected areas and areas of high biodiversity value				304-1
National Network of Protected Areas (RNAP) (ha)	10,315	10,067	10,253	
% of total holdings managed	10	10	10	
Classified sites in Natura 2000 Network (ha)	43,110	43,498	43,699	
% of total holdings managed	40	42	41	
Special Protection Zones (ZPE) in the Natura 2000 Network (ha)	31,631	31,657	31,533	
% of total holdings managed	29	30	30	
Total classified areas (ha)	53,492	53,563	53,738	
% of total holdings managed	50	51	51	
Habitats protected or restored (ha)	4,201	4,129	4,314	304-3
Protected habitats (ha) ^{vii}	4,163	4,076	4,243	
Restored habitats (ha)	38.3	53.1	71.2	
Emissions				
Scope 1 (tCO₂e) ^{viii}	741,188	584,090	596,980	305-1
Assets at plants (EU ETS scope)	706,844	539,332	556,120	
Fluorinated gases	1,133	973	973	
Fuel for travel and kilometres travelled	1,991	2,114	1,702	
Natural Gas used in Biomass Power Plants (auxiliary fuel)	2,035	2,578	3,304	
CH ₄ from combustion processes	4,010	4,576	4,392	
N ₂ O from combustion processes	18,311	27,471	23,397	
Diesel and gasoline consumed at plants	5,476	5,788	6,036	
Fertilisers and phyto-fertilisers in soil	1,388	1,259	1,056	
Scope 2 (tCO₂e) ^{ix}				305-2
Purchase of power (location based)	223,356	389,919	352,556	
Purchase of power (market based)	281,701	246,860	308,832	



Scope 3 (tCO₂e) ^x	1,492,286	1,570,567	n/a	305-3
GHG emissions intensity (tCO₂e/t produced) ^{xi}	0.259	0.186	0.182	305-4
Reduction in greenhouse gas (GHG) emissions associated with sales (tCO₂e) ^{xii}	246.353	384,598	338,974	305-5
Air emissions (t) ^{xiii}				305-7
NO _x	1,540	1,687	1,737	
SO ₂	687	76	83	
Particles	266	262	261	
Waste ^{xiv}				
Total waste generated (t)	395,498	398,001	410,692	306-3
Recovered	345,386	280,579	279,846	
Disposed of	50,112	126,485	133,332	
Non-hazardous waste (t)	394,228	397,439	410,007	
Recovered	-	280,185	279,317	
Disposed of	-	126,316	133,177	
Hazardous waste (t)	1,269	563	684	
Recovered	-	394	529	
Disposed of		168	155	



6.3 SOCIAL INDICATORS

Social Indicators	2020	2021	2022	GRI
Human resources				
Number of Employees	3,106	3,021	3,115	2.7
Permanent contract	2,987	2,920	2,966	
Men	2,525	2,459	2,470	
Women	462	461	496	
Fixed-term contract	69	68	114	
Men	61	56	101	
Women	8	12	13	
Temporary	50	33	35	
Men	29	13	13	
Women	21	20	22	
Full-time	3,100	3,015	3,110	
Part-time	6	6	5	
New employee hire rate by gender and age group (%)	4	5	11	401-1
Men	3	5	9	
Women	9	10	19	
<30 years	18	24	48	
30-50 years	4	5	8	
>50 years	1	1	1	
Employee turnover rate by gender and age group (%)	5	8	8	
Men	4	8	7	
Women	9	9	12	
<30 years	10	8	8	
30-50 years	3	5	6	
>50 years	7	15	13	



Health and Safety ^{xv}				403-9
Number of accidents at work	195	147	262	
Frequency rate	8.2	6.6	7.3	
Severity rate	244.0	354.1	262.2	
Index of fatalities as a result of work-related injury	0	0	0	
Index of high-consequence work-related injuries (excluding fatalities)	0.6	0.3	0.1	
Index of reportable work-related injuries	20.4	15.1	25.8	
Work ability index ^{xvi}	40.04	39.8	-	
Training and development				
Training hours per Employee	40	41	41	404-1
By gender				
Men	44	42	43	
Women	17	37	32	
By occupational category				
Top Management	9	19	17	
Senior Management	22	39	40	
Middle Management	15	14	21	
Operatives	49	47	46	
Performance assessment (%)	97	99	98	404-3
By gender				
Men	97	99	97	
Women	95	99	98	
By occupational category				
Top Management	89	70	100	
Senior Management	99	99	99	
Middle Management	97	99	99	
Operatives	97	99	97	



Diversity				
Employees by category and gender (%)				405-1
Governance Bodies				
Men	78.6	76.9	75.0	
Women	21.4	23.1	25.0	
Top Management				
Men	87.3	83.3	89.5	
Women	12.7	16.7	10.5	
Senior Management				
Men	64.2	64.2	59.8	
Women	35.8	35.8	40.2	
Middle Management				
Men	80.9	74.3	72.2	
Women	19.1	25.7	27.8	
Administrative				
Men	33.0	-	-	
Women	67.0	-	-	
Operatives				
Men	95.1	91.0	92.2	
Women	4.9	9.0	7.8	
% of women in the organisation	15.8	16,4	17.1	
Employees by age (%)				405-1
<30 years	10.1	9.7	12.2	
30-50 years	57.7	61.4	61.0	
>50 years	32.2	28.9	26.9	
Gender pay ratio ^{xvii}				405-2
Governance bodies	-	0.28	0.31	



Top Management	0.85	0.68	0.74
Senior Management	0.75	0.75	0.68
Middle Management	0.62	0.66	0.66
Operatives	0.67	0.88	0.89

Methodological notes

i Navigator has no Employees on the national minimum wage, and entry-level pay is set higher. In 2020, the entry-level salary for Navigator Employees, overall, was 711.95 €, as compared to national minimum wage in force that year of 635 €. In 2021, the entry-level salary was 712 €, as compared to national minimum wage of 665 €. In 2022, the entry-level salary was 795 €, as compared to national minimum wage of 705 €.

ii The calculation considers the quantity of recycled fibre as a proportion of total fibre used.

iii As from 2022, energy figures now include consumption of petrol and propane at other Company facilities, as well as fuel for the vehicle fleet.

iv Since 2021, renewable primary energy consumed includes power produced by solar facilities.

v The calculation of energy intensity took into consideration consumption by primary resources (excluding primary energy from Biomass Power Plants - BPP) and the total quantity of products manufactured. The energy used by BPPs is included in total energy consumed, but these figures are not included in the calculation of energy intensity, because that consumption is not allocated to the production process.

vi Calculation of reductions in energy consumption is based on energy efficiency projects concluded in 2022. Figures are calculated for one year of operation, on the basis of project information, using a methodology validated in connection with the Energy Management System certified under ISO 50001.

vii The reduction in area in 2021 was largely due to the smaller area of properties under management and adjustments to the boundaries of habitat areas.

viii The baseline (2018) figure considered for calculating direct CO₂ emissions (scope 1), in the Climate and Nature strategic action area, is 774,464 t CO₂, corresponding to emissions recorded for EU ETS (European Emissions Trading System) purposes. Since 2020, Navigator has adopted the methodology of the GHG Protocol, resulting in a more comprehensive inventory of greenhouse gas (GHG) emissions, due to the inclusion of new emissions categories, in addition to those already reported for EU ETS purposes. At the date of publication of this report, the figures have not been verified under EU ETS and PRTR (Pollutant Release and Transfer Register) (N₂O and CH₄); those figures are therefore provisional. The 2021 figures have been revised in line with verifications subsequent to publication of the 2021 Sustainability Report. Figures previously published for 2020 and 2021 have been revised to include the category of fertilisers and phyto-fertilisers in soil. The figures for 2021 have been revised in the categories of fluorinated gases, fuel associated with travel and kilometres travelled, and other fuel, on the basis of information that became available after publication of the 2021 Sustainability Report. The scope 1 inventory does not consider the international offices, due to the low significance of the data (these emissions account for less than 0.2%).

ix The 2021 location-based emissions were revised on the basis of information that became available after publication of the 2021 Sustainability Report. The 2020 location-based emissions were revised considering the emission factor published by ERSE (Energy Services Regulatory Authority) for 2020. The scope 2 inventory does not consider the international offices, due to the low significance of the data (< 0.02%). The 2022 market-based emissions were calculated with provisional emissions factors from marketers.

x In 2022, Navigator conducted a study to calculate scope 3 GHG emissions more thoroughly, on the basis of data for 2021. In 2022, Navigator took an inventory of scope 3 emissions for 2021, considering the six relevant categories identified in the previous year - purchased goods and services; upstream transportation and distribution; fuel and energy related emissions not included in Scope 1 or Scope 2 (location-based method); downstream transportation and distribution; processing of sold products; end-of-life treatment of sold products. The information needed to calculate the 2022 has not been fully consolidated. The 2020 emissions were revised on the basis of information that became available after publication of the 2021 Sustainability Report.

xi The methodology for calculating emissions intensity per ton of output was revised for the three years. Scope 1 emissions (excluding BPP emissions) and the total quantity of products manufactured are considered, in line with the calculation of energy intensity.

xii The calculation of the reduction in GHG emissions refers to emissions avoided through sale of highly efficient renewable electrical energy.

xiii For emissions sources subject to continuous monitoring, reporting data is obtained through online monitoring of flow and pollutant parameters. There are low emissions sources where emissions are counted through occasional monitoring, conducted twice a year, by an Accredited Laboratory. The findings from this occasional monitoring may be influenced in each instance by the type of fuels used. When a facility is not subject to monitoring in the year in question, (for example, sources monitored every 3 years), annual emissions are calculated on the basis of the last monitoring, taking into account the operating hours in the years to which the emissions relate. In 2022, the reporting and emissions scope for NO_x and Particles was extended to the BPPs, and the 2021 figures corrected accordingly.



xiv It should be noted that there is a difference between waste generated and the sum total of waste sent for recovery and disposal operations, because of recovery in 2022 of waste from 2021, which had been stored. In addition, some of the waste generated in 2022 was temporarily stored on our premises, as permitted under the respective environmental licenses and the new Legal Framework for Waste Management (Decree-Law -102D/2020).

xv Hours worked by Employees in commercial subsidiaries outside Portugal are not included in this indicator, insofar as there is no structured reporting system for incidents. For the purpose of calculating indexes, a normalisation factor of 1,000,000 worked was used.

xvi Insofar as this index is monitored every 4 years, the WAI will be reassessed in 2025.

xvii Navigator does not apply any pay differential between Men and Women, and the entry-level salary is the same for both genders, male and female. The pay ratio presented considers the macro level aggregator, and so, for each of these levels, we naturally have different sub-groups and distinct professional pathways, which has an impact on the average figures obtained for the pay ratio and as such the values reported.



7. ABOUT THIS REPORT

SUSTAINABILITY REPORT 2022



We are now publishing the 11th Sustainability Report, which continues our policy of transparency in reporting non-financial information.

This Report has been published in accordance with the standards of the Global Reporting Initiative (GRI), and it has been drawn up to encompass activities that contribute to the production and sale of pulp and paper, and to exclusive production of energy.

All indicators are consolidated, except those for Mozambique, where activities are described over the course of the document, wherever applicable.

Presentation of information

This report seeks to consolidate and reflect our approach and commitment to sustainability issues, and also to demonstrate our performance, in particular in connection with our Responsible Management Agenda ("2030 Agenda"), whilst also meeting the legal requirements introduced by Decree-Law 89/2017, of 28 July, on the disclosure, by large companies and groups, of non-financial information and diversity information.

This report reflects the reorganisation of the 15 material topics, resulting from the double materiality analysis (Chap. 3.2) which was undertaken during the final quarter of 2022 and the corresponding review of our 2030 Agenda (Chap. 3.3), around two strategic action areas: "For Society" and "For Climate and Nature". Our aim in this is to respond to the topics deemed most relevant by our leading Stakeholders.

In addition, in line with our established practices in the reporting of sustainability information, we include, in an annex to this document, a detailed statement of progress in our performance, in relation to the commitments we have made in the 2030 Roadmap. In another annex, we present the GRI Index, showing how the content of this report corresponds to the reporting model for disclosure of non-financial information defined by the Portuguese Securities Exchange Commission (CMVM), as well as to the World Economic Forum's (WEF) framework in Measuring Stakeholder Capitalism Towards Common Metrics and Consistent Reporting of Sustainable Value Creation, published in 2020, taking the core option, to which we voluntarily signed up last year.

This 2022 Sustainability Report, published in Portuguese and English, is available online on our website at <http://en.thenavigatorcompany.com/>.

Publication cycle and period covered by report

This Report refers to activities during 2022 (1 January to 31 December 2022) and is issued annually.

Publication date

3rd of April 2023.



Verification of information

The information contained in this report has been subject to an external verification, conducted by KPMG & Associados – Sociedade de Revisores Oficiais de Contas, S.A., which drew up an independent limited reliability assurance report, which is attached to this report (page 173).

Acknowledgements

We would like to include a special word of thanks to all the Employees who contributed with information to the drafting of this Sustainability Report, which is the result of the joint and shared efforts of many people, in particular our Sustainability key users.

Opinions and contact details

We value your opinion. If you have any questions, please contact:

The Navigator Company

Av. Fontes Pereira de Melo 27, 1050-117 Lisboa

Ana Nery

Sustainability Manager

ana.nery@thenavigatorcompany.com



INDEPENDENT LIMITED ASSURANCE REPORT



INDEPENDENT LIMITED ASSURANCE REPORT

(Free translation from a report originally issued in Portuguese language. In case of doubt the Portuguese version will always prevail.)

Introduction

We were engaged by the Board of Directors of **The Navigator Company, S.A.** (the Entity) to provide limited assurance on the sustainability information included in the Sustainability Report for the year ended 31 December 2022, prepared in accordance with the requirements of the Global Reporting Initiative Standards (GRI Standards) .

Responsibilities of Management

Management is responsible for:

Preparing the sustainability information, included in the 2022 Sustainability Report, in accordance with the GRI Standards (Information);

- Designing, implementing and maintaining an appropriate information and internal control system to enable the preparation of Information that is free from material misstatement, whether due to errors or fraud;
- Preventing and detecting fraud, errors and for identifying and ensuring that the Entity complies with laws and regulations applicable to its activities;
- Ensuring that Management and staff involved with the preparation of the Information are properly trained.

Our Responsibilities

Our responsibility is to carry out a limited assurance engagement and to express a conclusion based on the work performed.

We conducted our engagement in accordance with International Standard on Assurance Engagements other than Audits or Reviews of Historical Financial Information – ISAE 3000 (Revised) issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC) and the other standards and technical guidance issued by the Portuguese Institute of Statutory Auditors (*Ordem dos Revisores Oficiais de Contas*). These Standards require that we plan and perform the engagement to obtain limited assurance about whether nothing has come to our attention that causes us to believe that the sustainability information included in the Sustainability Report for the year ended 31 December 2022 has not been prepared, in all material respects, in accordance with GRI Standards and that the Entity has not applied, in the sustainability information included in the Sustainability Report for the year ended 31 December 2022, the GRI Standards. Accordingly, this work included, among other procedures, the following:

- Interviews with senior management and relevant staff, at corporate and operational level, regarding the sustainability strategy and policies for materially relevant aspects, and their implementation across the different business areas;
- Interviews with relevant staff responsible for preparing the sustainability information for the year ended 31 December 2022;
- Comparing the information presented in the Navigator's Sustainability Report for the year ended 31 December 2022, with the relevant sources of information to determine whether all relevant information included in such sources of information has been included in the Report; and
- Reading the information presented in Navigator's Sustainability Report to determine whether it is in line with our overall understanding of the Entity.



The procedures selected depend on our understanding of compliance with the requirements of the GRI standards and other engagement circumstances, and our consideration of areas where material misstatements are likely to arise.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our conclusion.

Quality and Independence

We applied International Standard on Quality Control 1 (ISQM 1), which requires that a comprehensive quality management system be designed, implemented and maintained including documented policies and procedures regarding compliance with ethical requirements, professional standards, and applicable legal and regulatory requirements.

We have complied with the independence and other ethical requirements of the Code of Ethics for the Portuguese Institute of Statutory Auditors (OROC) and the International Code of Ethics for Professional Accountants (including international independence standards), (IESBA Code), which is founded on fundamental principles of integrity, objectivity, professional competence, and due care, confidentiality, and professional behaviour.

Conclusion

Our conclusion has been formed on the basis of, and is subject to, the matters outlined in this report.

Based on the procedures performed and the evidence obtained, nothing has come to our attention that causes us to believe that the sustainability information included in the Sustainability Report for the year ended 31 December 2022 has not been prepared, in all material respects, in accordance with the requirements of the GRI Standards and that the Entity has not applied, in the sustainability information included in the Sustainability Report for the year ended 31 December 2022, the GRI Standards.

Restriction of the use of our report

Our Limited Assurance Report is issued solely for the information and use of the Board of Directors of The Navigator Company, S.A. in connection with the release of the 2022 Sustainability Report and should not be used for any other purpose. We accept or assume no responsibility and deny any liability to any party other than the Entity for our work, for this independent limited assurance report, or for the conclusions we have reached.

Lisbon, 3rd April 2023

KPMG & Associados

Sociedade de Revisores Oficiais de Contas, S.A.
(no. 189 and registered at CMVM with no. 20161489)

represented by
Rui Filipe Dias Lopes
(no. 1715 and registered at CMVM with no. 20161325)











ANNEX

SUSTAINABILITY REPORT 2022



DETAILED 2030 ROADMAP























We here present our 2030 Roadmap with detailed information on performance in the past three years (2020, 2021 and 2022), thereby closing the assessment in relation to the goals and targets set for this reporting period (i.e. not presenting the new goals which will take effect as from 2023, and which are identified in (Chap. 3.3).

COMMITMENTS	GOALS	INTERIM TARGETS	PERFORMANCE IN 2020	PERFORMANCE IN 2021	PERFORMANCE IN 2022	2022 STATUS	LOCATION
1. Develop sustainable bioproducts, reducing dependence on fossil resources and working towards a decarbonised economy. CORE    	1.1. Develop new cellulose materials and composites, which are recyclable and biodegradable.		Goals defined in 2020.	New biocomposites made from cellulose fibres and bioplastics - new patent filed	Installation of equipment to produce cellulose biocomposites with thermoplastics as part of the start-up of the Bioproducts Pilot Laboratory. Scaling up of biocomposites production process. New biocomposite comprising only bioproducts, including more than 40% cellulose fibre - patent filed.		Chap. 4.3 Research and Innovation in Forest-Based Bioeconomy
SUPPORTIVE 	1.2. Develop biofuels, bioplastics and biochemicals from waste forestry biomass.			Integrated process for extracting bioactive compounds from eucalyptus biomass - new patent filed.	Installation of pilot equipment for extraction of essential oils as part of the start-up of the Bioproducts Pilot Laboratory. Scaling up of production process for essential oils. Optimisation of production of bioplastics (PHAs) from eucalyptus biomass hydrosylates.		
2. Promote scientific and technological co-creation in the field of the bioeconomy and bioproducts.	2.1. Strengthen partnerships with universities and technology centres in Portugal and abroad.			Consolidate partnership with Bioref and AlmaScience Collaborative Laboratories	The scope of our partnerships for the new RRP projects has been widened to include Universidade Católica Portuguesa, PIEP – Centre for Innovation in Polymer Engineering, a CeNTI – Centre for Nanotechnology and Smart Materials and		



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<div>CORE</div> <div></div> <div>SUPPORTIVE</div> <div></div>				products (2 on market).	papers.		
				New high yield kraft pulp for packaging.	Market launch of new product: Amoos Calorie Control™.		
					Optimisation of high yield pulp production conditions and support for industrial project.		
					First laboratory trials conducted of production of Moulded Cellulose products for packaging and production of packaging papers with barrier properties.		
5. Promote efficient use of resources, minimising our ecological footprint.	5.1 Cut specific use of water (m3/t product) by at least 33% by 2030 (baseline: 2019).		Increase of 1.5%.	Reduction of 6.7%.	Reduction of 14.7%.		Chap. 5.4 Water Management
<div>CORE</div> <div></div> <div>SUPPORTIVE</div> <div></div> <div>OTHERS</div> <div></div>	Specific use in baseline year: 22.4 m³/t		(22.7 m³/t vs. 22.4 m³/t)	(20.9 m³/t vs. 22.4 m³/t)	(19.1 m³/t vs. 22.4 m³/t)		
	5.2 Optimise energy intensity, year after year.		13.4 GJ/t	12.5 GJ/t	12.0 GJ/t		Chap. 5.5 Energy and Raw Material Management
	5.3 Propose solutions that make it possible to improve efficiency in use of water and wood in the industrial process		Implementation of WURP (Water Use Reduction Programme).		Continued development and implementation of measures defined in WURP (Water Use Reduction Programme).		Chap. 5.4 Water Management
			Projects implemented to minimise wood wastage		Projects implemented to minimise wood wastage.		Chap. 5.5 Energy and Raw Material Management
6. Ensure sustainable use of soil and forestry resources, including biodiversity.	6.1 Achieve 80% use of certified wood by 2030.		74%	71%	68%		Chap. 5.2 Sustainable Forestry Management
<div>CORE</div> <div></div>	6.2 Promote chain of custody certification for all our wood suppliers by 2030.		74%	78%	87%		















<p>SUPPORTIVE</p> <p>6 CLEAN WATER AND OCEANS 17 PARTNERSHIPS FOR THE GOALS</p>	<p>6.3 Help reduce wildfires, guaranteeing a burned area of less than 1% of area under management by 2030.</p>	<p>0.5%</p>	<p>0.3%</p>	<p>0.3%</p>	<p>○</p>	
<p>OTHERS</p> <p>14 LIFE BELOW WATER</p>	<p>6.4 Create positive impact on (or net gain in) biodiversity by taking action in keeping with Navigator's commitments in connection with the act4nature Portugal initiative.</p>	<ul style="list-style-type: none"> • Implement annual monitoring plans and Biodiversity and Ecosystem Services (B&ES) conservation and restoration work in woodlands holdings managed by the Company. • By 2023, update approach to integrating B&ES conservation into corporate strategy, in line with available scientific knowledge and voluntarily accepted commitments. • By 2025, to establish a simplified framework, in line with the key elements of the Natural Capital Protocol, for systematic assessment of B&ES impacts and dependencies, testing the approach in a pilot project. • By 2025, to undertake at least two partnerships with external bodies (representatives 	<p>See Progress Report - Act4nature Commitments 2021.</p>	<p>900 species and subspecies of flora and 252 species of fauna identified in woodlands managed by the company. Restoration or rehabilitation work was carried out over approximately 71 hectares, in order to maintain or improve the state of conservation of natural and semi-natural habitats.</p> <p>Zambrujo reCover Project.</p> <p>Transform PRR Transform.</p> <p>See Progress Report - Act4nature Commitments 2022 (online).</p>	<p>○</p>	<p>Chap. 5.3 Biodiversity Conservation</p>



							of academia, research centres, non-governmental organisations and other stakeholders) on projects for B&ES conservation at local, regional and national level or at the landscape scale.
7. Promote circular bioeconomy, prioritising R&D solutions.	7.1 Reuse 90% of waste by 2030. ³⁹	87%	88%	90%			
CORE	NB: The target includes waste recovery through incineration with energy recovery, with the identification code of waste undergoing recovery operations (R1), in line with the applicable Portuguese legislation. GRI 306 considers operations leading to incineration with heat recovery as disposal operations.			In 2022, the goal was reformulated (Chap. 3.3)			Chap. 5.6 Circular Economy
SUPPORTIVE							
	7.2 Develop sustainable applications and added value for by-products from industrial process (sludges, ash and other inorganic waste).		Increase quantity of sand incorporated in process at Secil Britas (manufacture of aggregates). Tests successfully completed on using technosoils for restoration of mining areas.	Continued partnership with Specialty Minerals Inc., enabling us to use approximately 991 tons of carbonate sludges at the Figueira da Foz Pulp Mill. Three successful applications for trial areas, in conjunction with two market leaders in the construction sector. Taken together, these partnerships enabled us in 2022 to send 28,395 tons of sands for incorporation in the construction industry. First edition of a new Co-creation Programme for Promotion of Scientific and			

³⁹ There are two divergent criteria for calculating the waste recovery rate: Portuguese legislation classes recovery for energy use as recovery (code R1), whilst GRI 306 (2020 version) considers it a form of disposal. In view of this, and the fact that our 2030 target was set prior to review of the GRI standards, we have reformulated our target to ensure it is aligned with the figures now reported, which are calculated using the GRI framework (2020 version).




















						Technological Knowledge in the Forest-Based Circular and Digital Bioeconomy.	
8. Invest in low carbon solutions leading to carbon neutrality. CORE   SUPPORTIVE  	8.1 Cut direct EU ETS CO ₂ emissions from industrial complexes by 86% by 2035 (baseline: 2018). Emissions baseline year: 774,464 t CO ₂ . NB: Emissions reported under EU ETS (European Emissions Trading System). 8.2 Use renewable energy representing 80% of total primary energy consumption by 2030.	<ul style="list-style-type: none"> Cut direct EU ETS CO₂ emissions from industrial complexes by 31.5% by 2027, in relation to 2018. 	Reduction of 8.7%. (706,844 t CO ₂ vs. 774,464 t CO ₂)	Reduction of 30.4%. (539,332 t CO ₂ vs. 774,464 t CO ₂)	Reduction of 28.2%. (556,120 t CO ₂ vs. 774,464 t CO ₂)		Chap. 5.1 Climate Change and CO ₂ Sequestration
			70%	77% ⁴⁰	76% ⁴⁰		Chap. 5.5 Energy and Raw Material Management
9. Promote development and upskilling of human capital in line with the Company's present and future needs. CORE  SUPPORTIVE  OTHERS 	9.1. Reach 80% of Employees with development plans customised to their needs and professional plans, in alignment with Navigator's succession needs.	<ul style="list-style-type: none"> 60% of all Employees with Individual Development Plan in 2025. 90% of Employees identified in lines of succession with Individual Development Plan in 2025. 60% of Employees identified in lines of succession covered by Development Programmes in 2025. 	Goals defined in 2020.	38% of workforce.	37% of all Employees with Individual Development Plan. 76% of Technicians/Specialists/Managers with Individual Development Plan. In 2022, the interim targets were adjusted (Chap.3.3).		Chap. 4.4 Talent Management and Developing Human Capital
10. Contribute to the skills and employability of young people in the regions where we operate. CORE 	10.1. Have active partnerships with educational institutions in all regions where we operate in Portugal, including curricular and vocational internships, as well as participation in teaching activities, events and fairs.	<ul style="list-style-type: none"> Continue to take part in job fairs, at the same time as designing and implementing programmes for engagement with students, in specific projects run by the 		Participation in 25 job fairs. 13 partnerships with Technical Colleges, in areas around Navigator plants. 30 management-level internships.	Participation in 19 job fairs (in-person and online). 6 Pitch sessions. 10 presentations of Company and Junior Recruitment Programmes. 6 seminars/workshops on topics related to the		

⁴⁰ Includes production for own consumption by the solar power facilities.



<p>SUPPORTIVE</p>  <p>OTHERS</p> 	<p>Company, over the course of their academic career.</p> <ul style="list-style-type: none"> • Keep the partnerships with technical colleges active and up to date, and offer at least 1 internship for each course identified as being of interest. • Integrate 20% of internships at management level. • Integrate 50% of internships for Technical Operative positions. 	<p>60 internships for technical operatives.</p>	<p>Company's business.</p> <p>3 Open Sessions for master's degree finalists at FCTUC, NOVA FCT and ISA.</p> <p>11 meetings between representatives of Navigator and teaching staff and educational institutions to expand synergies.</p> <p>2 Merit Bursaries awarded at FCT NOVA.</p> <p>Cooperation Agreement with Altri, Corticeira Amorim and Sonae Arauco for 100% funding of 22 bursaries in the field of forestry engineering at UTAD/FEUP, ISA and ESAC.</p> <p>8 Visits by student groups to our mills (242 students).</p> <p>104 internships, of which: 49 professional management-level internships (47%); 55 professional internships for Technical Operatives (53%); 35 summer internships.</p> <p>9 long-term Trainees (24 month programme) hosted.</p>
<p>11. Promote an inclusive organisational culture able to integrate internal and external challenges.</p> <p>CORE</p>  <p>SUPPORTIVE</p>  <p>OTHERS</p> 	<p>11.1. Monitor on a continuous basis the main motivational stimuli for Employees to arrive at more appropriate management practices, policies and processes implemented.</p>	<p>Straight to the Top Programme (communication channel for Employees' suggestions for improvement).</p>	<p>Straight to the Top Programme.</p> <p>Employer Branding activities: Onboarding, Semapa event.</p> <p>Open days, with total of 69 sessions for new Employees and others already integrated in the organisation in order to share knowledge across different sectors.</p> <p>Launch of the "Growth" project, including listening sessions with involvement of 200 individuals, whose input will give rise to a Roadmap of initiatives and measures for gradual and consistent</p>




<p>12. Provide a safe and healthy environment for Employees, ensuring their well-being.</p> <p>CORE</p>  <p>SUPPORTIVE</p>  <p>OTHERS</p> 	<p>12.1. Achieve the Zero Accidents Target through continuous improvement in safety, with the new OHS Strategy 2021-2023:</p> <p>Frequency index ≤ 2 in 2030 (internal and external Employees).</p>	<ul style="list-style-type: none"> • Achieve Frequency index of = 4 in 2023. 	<p>Frequency index = 8.2</p>	<p>Frequency index = 6.6</p>	<p>implementation.</p> <p>Frequency index = 7.3</p>		<p>Chap. 4.5 Health, Safety and Well-being</p>
	<p>12.2. Develop the Occupational Health programme up to 2030:</p> <ul style="list-style-type: none"> • Work Ability Index (WAI): 45% in 2030. <p>Assessment of Employee satisfaction with programme > 95%.</p>		<p>WAI = 40.04%</p>	<p>WAI = 39.8%</p>	<p>Insofar as this index is monitored every 4 years, the WAI will be reassessed in 2025.</p>		
	<p>12.3. Develop the Ergonomics Action Area:</p> <ul style="list-style-type: none"> • 100 workstations redesigned by 2030. 		<p>Target established in 2020.</p>	<p>98.8%</p>	<p>97%</p>		
				<p>32 workstations redesigned (to date).</p>	<p>52 workstations redesigned (to date).</p>		
<p>13. Engage with national, international and local community institutional Stakeholders, listening to their expectations and aligning them with Navigator's strategy and needs.</p> <p>CORE</p>    <p>SUPPORTIVE</p>   <p>OTHERS</p>   	<p>13.1 Hold 10 events each year for interaction with representatives of relevant Stakeholder groups around the country or internationally, or five meetings of the Community Monitoring Committees in the areas around the Aveiro, Figueira da Foz, Setúbal and Vila Velha de Ródão industrial units.</p>			<p>Goal defined in 2021.</p>	<p>More than 10 interactions with Portuguese members of parliament and MEPs.</p> <p>3 Meetings of Environmental Monitoring Committees.</p> <p>Resumption of Navigator Tour - programme of guided tours of Navigator, involving secondary schools and higher education establishments, as well as national and international institutions in different sectors.</p> <p>- 56 visits to 4 industrial units, nurseries and RAIZ, involving 1,350 participants.</p>		<p>Chap. 4.1 Responsible Governance</p>
<p>14. Develop community relations.</p>	<p>14.1 Run Forest Literacy initiatives for primary school children, adolescents and adults, in order to contribute</p>		<p>Goals defined in 2020.</p>	<p>12 initiatives: 2 roadshows, 6 magazine editions; 3 interactive games, 5</p>	<p>29 in-person initiatives: 7 editions of magazines; 880 digital content items; 9</p>		<p>Chap. 4.7 Community Relations</p>



<p>CORE</p> <p>8 STEADY ECONOMIC GROWTH</p> <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p> <p>15 LIFE ON LAND</p> <p>SUPPORTIVE</p> <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p> <p>17 PARTNERSHIPS FOR THE GOALS</p> <p>OTHERS</p> <p>1 NO POVERTY</p> <p>2 ZERO HUNGER</p> <p>4 QUALITY EDUCATION</p>	<p>to better knowledge of Portugal's forests, and their environmental, social and economic importance, through the Give the Forest a Hand, My Planet and Florestas.pt projects.</p> <ul style="list-style-type: none"> No. initiatives/year (digital and in-person): 10 No. children reached/year: 20 thousand No. teenagers and adults reached/year: 40 thousand 		<p>episodes of the series Portugal nas Alturas, 3 cartoon episodes on SIC KIDS and 12 competitions</p> <p>Children reached: 8 thousand; 2 roadshows; 20 thousand interactive games and cartoons; 14,800 copies of each edition of the <i>Dá a Mão à Floresta</i> (Give the Forest a Hand) magazine.</p> <p>Teenagers and adults reached: 13 thousand copies of each edition of <i>My Planet magazine</i>.</p>	<p>competitions.</p> <p>Children reached: 7,225 (17 in-person initiatives); 4 editions of Give the Forest a Hand magazine with average print run of 14,000 copies;</p> <p>Teenagers and adults reached: 12,050 (12 in-person initiatives); 3 editions of <i>My Planet magazine</i> with average print run of 15,000 copies.</p>	
	<p>14.2 Promote and disseminate technical information about forestry production, helping to share best practices, through the Forestry Producers project.</p> <ul style="list-style-type: none"> No. initiatives/year (digital and in-person): 10 No. forestry producers reached/year: 10 thousand 	<ul style="list-style-type: none"> 40 initiatives for contact with forestry producers by 2025. Step up the impact on a community of 20 thousand Forestry Producers by 2025. 	<p>Six initiatives: 3 magazines with a print run of around 30 thousand per edition and three campaigns to contract land; 500 digital content items.</p> <p>Impact on a community of 10 thousand Forestry Producers.</p>	<p>11 initiatives: 3 editions of magazine with average print run of 15 thousand copies.</p> <p>Impact on a community of 12,500 forestry producers.</p>	○
	<p>15. Promote knowledge transfer and public awareness of the economic, social and environmental importance of forests.</p> <p>CORE</p> <p>15 LIFE ON LAND</p> <p>SUPPORTIVE</p> <p>17 PARTNERSHIPS FOR THE GOALS</p>	<p>15.1 Implement Forest of Knowledge project, in partnership with Calouste Gulbenkian Foundation.</p> <p>15.2 Implement the UNESCO RAIZ Club.</p> <p>15.3 Develop the Florestas.pt platform.</p>	<p>Project launched in October 2021, with initiatives in the field.</p> <p>19 sessions with Academe; four editions of newsletter; 18 authored articles; 52 specialists involved</p>	<p>Approximately 6,500 participants.</p> <p>280 activities.</p> <p>8 think tanks.</p> <p>3 exhibitions.</p> <p>UNESCO Club initiatives incorporated into Forest of Knowledge project.</p> <p>12 sessions with academe.</p> <p>4 (thematic) editions of newsletter; 18 authored articles; 5 new partnerships (12 partnerships established)</p>	<p>○</p> <p>○</p> <p>○</p>
		<ul style="list-style-type: none"> 35 Initiatives with academe (online and in-person) by 2025 4 in-person initiatives by 			



OTHERS		2025.	in developing technical and scientific content.	in 2020 and 2021).	
			High-profile website, with prime position in Google search.	6 dissemination events (2 in-person).	
	15.4 Consolidate the e-globulus platform.		10,500 platform hits; 560 registered users.	14,883 users accessed platform; 687 registered users.	○
	15.5 Consolidate the Forestry Producers project.		More than 44 thousand hits.	63,394 hits.	
			New functions.	(accumulated figures)	
			Information materials on best forestry practices, genetic materials and contracting forestry land.		○

Caption:

In progress, can be brought forward

In progress, as planned

In progress, with downward tendency, reflecting performance of the past two years





Development and coordination

The Navigator Company's Sustainability Division

Technical support

Stravillia Sustainability Hub

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