

(Convenience translation into English from the original
previously issued in Portuguese)

GRANBIO INVESTIMENTOS S.A.

Independent auditor's report

Individual and consolidated financial
statements

As at December 31, 2022

GRANBIO INVESTIMENTOS S.A.

Individual and consolidated financial statements
As at December 31, 2022

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Management Report

1. Our business

GranBio was founded in 2011 with the mission of rolling back the trend of global warming and the climate crisis by creating and implementing seamless sustainable solutions with a net-zero carbon footprint for converting biomass into advanced biofuels, biochemicals and biomaterials made from cellulose carbon, in harmony with food production and water use.

Throughout its trailblazing trajectory, GranBio has developed proprietary knowledge and consolidated over 350 patents at its technology center in Thomaston, Georgia, in the United States. GranBio operates 4 pilot and demonstration-scale plants, in addition to the BioFlex® I industrial plant in Alagoas, the only dedicated 2G cellulosic ethanol plant in operation worldwide, using 100% proprietary technology. As part of its strategy to integrate solutions throughout the entire production chain, GranBio has also developed a proprietary industrial process for harvesting, storing and preparing residual biomass (sugarcane straw) on a commercial scale (200Kt/year) and genetically developed Vertex Energy Cane, the most competitive biomass in terms of photosynthetic efficiency known, which today is part of a technological and commercial development agreement with the strategic partner Nuseed.

The Company had 3 business units in 2022:

- BioVertis: Unit responsible for logistics operations and pre-industrial harvesting and processing of residual agricultural biomass, as well as for integrating energy cane into 2G biorefineries, through a strategic partnership with Nuseed.
- BioFlex: Unit responsible for the industrial production of biofuels, biochemicals and bioenergy; BioFlex I is the operating facility that makes 2G ethanol from sugarcane straw;
- BioTech: Unit that houses the research and development program for intellectual property, patent portfolio, process engineering and management of GP+®, AVAP®, and BioPlus® technology licensing. In addition, the unit was responsible for integrating the AVAP technology for industrial solutions for producing sustainable aviation fuel (SAF) from biomass, with a carbon-neutral footprint. As an additional activity, the operation was also responsible for the development, technological demonstration and industrial scaling of GranBio's nanocellulose production and its composites through strategic partnerships.

Starting in 2023, the Company will operate with 2 new business units with the goal of focusing on the development of the SAF project and the nanocellulose business. The BioTech BU will be divided into 3 units: BioTech, consolidating the R&D program and operations in Thomaston; AVAP, focused on SAF, and BioPlus focused on nanocellulose.

GranBio is essentially a knowledge-based company committed to creating solutions to roll back global warming. The culture of entrepreneurial pioneering with a sense of mission at GranBio forges an innovative and resilient business model, attracting exceptional strategic partnerships and bringing together people with a common sense of purpose and urgency in delivering new technologies that save the planet.

2. Message from Management

2022 was a remarkable period for the Company. GranBio overcame the economic crisis triggered by COVID and its critical capital structure situation, consolidated its technological assets in the main lines of business with global patents, became a technological leader in the SAF production chain and established new global strategic partnerships for technological and commercial cooperation.

The years 2020 and 2021 were shaped by the pandemic crisis, which restricted business travel and fuel consumption, including renewable fuels, delaying the technological licensing strategy for 2G ethanol and the production of BioFlex I. Our net debt as of December 31, 2021 stood at R\$ 551 million.

On December 30, 2022, the indirect subsidiary BioFlex Agroindustrial S.A. and the investee Companhia Energética de São Miguel dos Campos (CESM) entered a transaction by which CESM assumed the entire existing debt taken out by BioFlex Agroindustrial S.A. from the National Bank for Economic and Social Development - BNDES. This debt assumption will provide the Company and its subsidiaries with substantial debt relief, maintaining the long-term contract with CESM for the supply of energy and steam for the operations of the Company and its subsidiaries.

GranBio Management pursued capital restructuring solutions using its own assets and carried out two M&A operations - energy cane with Nuseed and CESM with Caeté - in the amount of R\$ 354 million, which, together with new contributions from the shareholder GraInvestimentos in the amount of R\$ 60 million as an AFAC (Advance for Future Capital Increase), reduced GranBio's net debt to R\$ 270 million as of December 31, 2022, with a comfortable long-term profile and current liquidity of 1.

In 2022, GranBio made new advances in the recognition of globally important patents, and above all, in its strategy of accelerating the technological demonstration and leadership in the development and production of SAF. Through its subsidiary AVAPCO, in January 2023 GranBio obtained a new grant of up to USD 80 million from the U.S. Department of Energy (DOE) for the construction of an integrated 2G SAF biorefinery at a demonstration scale, equivalent to 6 million liters per year, and a joint industrial-scale nanocellulose plant using wood and sugarcane trash as raw materials. Global mandates for SAF indicate an expected consumption equivalent to 1.25 million barrels per day by 2050.

The first and only dedicated 2G ethanol plant in operation in the world, BioFlex I maintained its certification from the RSB - Roundtable on Sustainable Biomaterials via Certificadora Control Union, for export to Europe as advanced ethanol with a carbon footprint of 8.2g/Ton CO₂eq delivered in Rotterdam - Netherlands, probably the cleanest fuel produced on a commercial scale. BioFlex started a program to expand its capacity to 50 million liters for implementation by 2024.

Management of GranBio Investimentos S.A. hereby submits for your appreciation the Group's financial statements along with the independent auditors' report on the financial statements, prepared in accordance with the accounting practices adopted in Brazil for the financial years ended December 31, 2022 and 2021.

3. Relations with the Independent Auditors - CVM Directive 381/2003

BDO RCS Auditores Independentes is the firm that provided independent audit services on GranBio Investimentos S.A.'s financial statements for the financial years 2022 and 2021.

São Paulo, March 02, 2023.

Management.

INDEPENDENT AUDITOR'S REPORT ON THE INDIVIDUAL AND CONSOLIDATED FINANCIAL STATEMENTS

To the
Shareholders and Management of
GranBio Investimentos S.A.
São Paulo - SP

Opinion on the individual and consolidated financial statements

We have audited the individual and consolidated financial statements of GranBio Investimentos S.A. ("Company"), identified as parent company and consolidated, respectively, which comprise the statement of financial position as at December 31, 2022, and the respective statements of profit or loss, comprehensive income (loss), changes in equity and cash flows for the year then ended, as well as the corresponding notes to the financial statements, including a summary of significant accounting policies.

Opinion on the individual financial statements

In our opinion the accompanying individual financial statements present fairly, in all material respects, the financial position of GranBio Investimentos S.A. as at December 31, 2022, its financial performance and its cash flows for the year then ended, in accordance with Brazilian accounting practices.

Opinion on the consolidated financial statements

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the financial position of GranBio Investimentos S.A. and its controlled companies as at December 31, 2022, its consolidated financial performance and its consolidated cash flows for the year then ended, in accordance with Brazilian accounting practices and International Financial Reporting Standards (IFRSs) issued by the International Accounting Standards Board (IASB).

Basis for opinion on the individual and consolidated financial statements

We conducted our audit in accordance with Brazilian and International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the "Auditor's Responsibilities for the Audit of the Individual and Consolidated Financial Statements" section of our report. We are independent of the Company and its controlled companies in accordance with the relevant ethical principles established in the Code of Ethics for Professional Accountants and in the professional standards issued by the Brazilian Federal Council of Accounting (CFC), and we have fulfilled our other ethical responsibilities in accordance with these standards. We believe that the audit evidence obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis

Investment realization stage

We draw attention to Notes 1 and 12 to the individual and consolidated financial statements, which describe that the Company and its controlled company have reported recurring losses on their operations and accumulated loss in equity amounting to R\$ 712,290 thousand (R\$ 739,472 thousand as at December 31, 2021), individual and consolidated. This situation is mainly due to the fact that the ethanol plant of the controlled company Bioflex Agroindustrial S.A. is currently in the stage of investments to reach its business capacity of continual operations and, consequently, the recoverability of the investments made in fixed assets and technology (intangible assets). Our opinion is not qualified in respect of this matter.

Related-party transactions

We draw attention to Notes 7, 10 and 19 to the financial statements which describe that the Company and its controlled companies maintain balances and transactions in significant amounts with related parties, according to the conditions there described. Accordingly, the individual and consolidated financial statements should be analyzed in this context. Our opinion is not qualified in respect of this matter.

Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements for the current year. These matters were addressed in the context of our audit of the individual and consolidated financial statements as a whole and in forming our opinion thereon and, accordingly, we do not provide a separate opinion on them.

Compliance with contractual clauses in loan and financing agreements

The Company and its controlled companies are a party to several loan and financing agreements totaling R\$ 132,376 thousand and R\$ 342,253 thousand, in the individual and consolidated financial statements, respectively. Certain agreements contain debt anticipation clauses involving certain obligations which, when not fulfilled, may trigger cross-acceleration and cross-default covenants.

As mentioned in Note 15, Management considers, based on its understanding and on the understanding of its legal advisors, that there is no non-compliance with non-financial covenants related to the filing of protests of bill.

Management and its legal advisors believe that there is no legal or contractual basis for early maturity by the creditors until the reporting date, with the Company and its controlled companies being guaranteed the unconditional right to continue maintaining the deferral of settlement based on the contractually established terms.

Considering the complexity of judgment in interpreting agreements with some financial institutions, the need for robust and timely internal controls and the relevance of this matter in relation to the Company's liquidity risk, we consider this a key audit matter.

How the matter was addressed in our audit

Our audit procedures included, among others:

- Reading loan and financing agreements;
- Issuing confirmation letters and receiving confirmation letter responses to confirm the balances recorded in the financial statements;
- Understanding Management's analysis of the covenants and the consistency of the application of the understanding in relation to the financial statements disclosed in previous periods;
- Obtaining the opinion of the Company's internal legal advisors.

The results obtained by the audit procedures previously mentioned are consistent with Management's evaluation presented in the notes, in the context of the individual and consolidated financial statements taken as whole.

Impairment of non-financial assets

As at December 31, 2022, the Company has fixed assets in the amount of R\$ 737,498 thousand in the controlled company Bioflex Agroindustrial S.A., and in the amount of R\$ 568,561 thousand in the controlled company GranBio LLC, referring to licenses and intellectual properties and goodwill from expected future profitability, respectively.

In the process of measuring the corresponding recoverable amounts, complex judgments are used by Management, mostly based on internally developed assumptions, which are not observable, and for a period longer than that formally supported by the approved business plan of the Group.

Any changes in the assumptions used for the impairment test prepared by Management could have significant effects on the individual and consolidated financial statements and, for this reason, we consider this a key audit matter.

How the matter was addressed in our audit

Our audit procedures included, among others:

- Analyzing the competence and objectivity of external experts hired by Management;
- Engaging our experts to assess the model and the reasonableness of the assumptions considered and arithmetic recalculations;
- Comparing data used with comparable observable data;
- Confirming observable data based on data sources mentioned in the external experts' report;
- Comparing the financial performance considered in the model with prior periods (history);
- Verifying whether the methodology used was consistent with assumptions adopted in the previous year.

We have identified failures in internal controls regarding the formalization of some assumptions, however, with no material adjustments to be recorded.

Other matters

Statements of value added

The individual and consolidated statements of value added for the year ended December 31, 2022, prepared under the responsibility of the Company's Management and presented as supplementary information for IFRS purposes, were submitted to the same audit procedures followed for the audit of the Company's financial statements. In order to form an opinion, we have checked whether these statements are reconciled with the financial statements and accounting records, as applicable, and whether their form and contents meet the criteria established in NBC TG 09 - Statement of Value Added. In our opinion, the statements of value added were properly prepared, in all material respects, in accordance with the criteria established in that Standard, and are consistent with the individual and consolidated financial statements taken as a whole.

Other information accompanying the individual and consolidated financial statements and auditor's report

The Company's Management is responsible for the other information that comprises the Management Report.

Our opinion on the individual and consolidated financial statements does not cover the Management Report and we do not express any form of audit conclusion thereon.

In connection with our audit of the individual and consolidated financial statements, our responsibility is to read the Management Report and, in doing so, consider whether the report is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this Management Report, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Management and those charged with governance for the individual and consolidated financial statements

The Company's Management is responsible for the preparation and fair presentation of the individual and consolidated financial statements in accordance with Brazilian accounting practices and with the International Financial Reporting Standards, issued by IASB, and for such internal control as Management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the individual and consolidated financial statements, Management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless Management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company's and its controlled companies' financial reporting process.

Auditor's responsibilities for the audit of the individual and consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the individual and consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Brazilian and International Standards on Auditing (ISAs) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Brazilian standards and ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the individual and consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls;
- Obtain an understanding of internal controls relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's and its controlled companies' internal controls;
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and disclosures made by Management;

- Conclude on the appropriateness of Management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the individual and consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern;
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the individual and consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation;
- Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the individual and consolidated financial statements. We are responsible for the direction, supervision and performance of the audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the planned audit and significant audit findings, including any significant deficiencies in internal controls that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate to them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Of the matters communicated to those charged with governance, we determine those that were of most significance for the audit of the financial statements for the current year and which are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The accompanying financial statements have been translated into English for the convenience of readers outside Brazil.

São Paulo, March 02, 2023.

GRANBIO INVESTIMENTOS S.A.

Statements of financial position as of December 31, 2022 and 2021
(In thousands of Brazilian Reais)

Assets	Parent company		Consolidated		Liabilities	Parent company		Consolidated	
	12/31/22	12/31/21	12/31/22	12/31/21		12/31/22	12/31/21	12/31/22	12/31/21
Current assets					Current liabilities				
Cash and cash equivalents	1	-	64,723	274	Loans, financing and debentures	9,346	18,547	44,152	284,719
Short-term investments	7,186	54,528	7,186	-	Trade payables	562	4,544	39,670	63,720
Accounts receivable	-	-	2,032	1,294	Other accounts payable to related parties	-	-	-	56,714
Inventories	-	-	8,570	8,723	Tax and labor obligations	9	71	7,502	12,978
Advances to suppliers - related parties	-	-	12,979	-	Other accounts payable	190	166	1,577	19,548
Advances to suppliers	11	80	515	1,972	Deferred revenue	-	-	5,739	6,697
Recoverable taxes	6	-	1,803	-	Loans with related parties	44,363	316,354	-	281,011
Prepaid expense	46	137	1,730	1,536		54,470	339,682	98,640	725,387
	7,250	54,745	99,538	13,799					
Noncurrent assets					Noncurrent liabilities				
Long-term investments	61,875	-	-	-	Loans, financing and debentures	123,030	128,892	298,101	266,298
Recoverable taxes	-	261	2,850	5,591	Tax and labor obligations	-	-	7,081	5,118
Judicial deposits	166	177	770	675	Deferred revenue	-	-	-	8,318
Other receivables	-	-	-	174	Deferred income tax and social contribution	-	-	48,493	57,075
Other accounts receivable from related parties	-	-	-	83,540	Other accounts payable	1,879	1,952	3,449	5,488
					Other accounts payable to related parties	-	-	63,502	-
Investments	1,015,825	991,155	-	-		124,909	130,844	420,626	342,297
Property, plant and equipment	2,482	3,150	746,533	892,967	Equity				
Intangible assets	-	-	580,562	653,430	Share capital	977,662	977,662	977,662	977,662
	1,080,348	994,743	1,330,715	1,636,377	Advance for future capital increase	341,059	-	341,059	-
					Capital reserves	108,175	108,175	108,175	108,175
					Asset and liability valuation adjustments	193,613	232,597	193,613	232,597
					Accumulated losses	(712,290)	(739,472)	(712,290)	(739,472)
						908,219	578,962	908,219	578,962
					Equity attributable to controlling shareholders				
					Noncontrolling interests	-	-	2,768	3,530
					Total equity	908,219	578,962	910,987	582,492
Total assets	1,087,598	1,049,488	1,430,253	1,650,176	Total liabilities and equity	1,087,598	1,049,488	1,430,253	1,650,176

The accompanying notes are an integral part of these individual and consolidated financial statements.

GRANBIO INVESTIMENTOS S.A.

Statements of profit or loss
For the years ended December 31, 2022 and 2021
(In thousands of Brazilian Reais)

	Parent company		Consolidated	
	12/31/22	12/31/21	12/31/22	12/31/21
Revenue from goods sold and services rendered	-	-	22,970	33,617
Cost of goods sold and services rendered	-	-	(34,679)	(61,586)
Gross profit/loss	-	-	(11,709)	(27,969)
Operating income and (expenses)				
Administrative and general expenses	(12,849)	(11,301)	(59,977)	(69,752)
Other operating income (expenses)	614	2,704	138,092	(1,114)
Equity of earnings (losses) in controlled companies	44,236	(146,552)	-	-
Operating income before financial income (expenses), net	32,001	(155,149)	66,406	(98,835)
Financial revenue	11,012	2,900	41,130	2,307
Financial expenses	(15,831)	(18,096)	(85,086)	(79,702)
Net financial income (loss)	(4,819)	(15,196)	(43,956)	(77,395)
Profit or loss before income tax and social contribution	27,182	(170,345)	22,450	(176,230)
Current income tax and social contribution	-	-	(853)	-
Deferred income tax and social contribution	-	-	4,823	5,038
Profit or loss for the year	27,182	(170,345)	26,420	(171,192)
Controlling interest	27,182	(170,345)	27,182	(170,345)
Noncontrolling interest	-	-	(762)	(847)
Profit or loss for the year	27,182	(170,345)	26,420	(171,192)
Number of shares	108,133	108,133	108,133	108,133
Earnings (losses) per share	0.2514	(1.5753)	0.2514	(1.5753)

The accompanying notes are an integral part of these individual and consolidated financial statements.

GRANBIO INVESTIMENTOS S.A.

Statements of comprehensive income (loss) For the years ended December 31, 2022 and 2021 (In thousands of Brazilian Reals)

	Parent company		Consolidated	
	12/31/22	12/31/21	12/31/22	12/31/21
Profit or loss for the year	27,182	(170,345)	26,420	(171,192)
Other comprehensive income (loss) to be reclassified to profit or loss in subsequent periods:				
Cumulative translation adjustment - CTA	(38,984)	39,586	(38,984)	39,586
Comprehensive income (loss) for the year	<u>(11,802)</u>	<u>(130,759)</u>	<u>(12,564)</u>	<u>(131,606)</u>
Profit attributable to:				
Controlling shareholders			(11,802)	(130,759)
Noncontrolling shareholders			(762)	(847)
Total comprehensive income (loss)			<u>(12,564)</u>	<u>(131,606)</u>

The accompanying notes are an integral part of these individual and consolidated financial statements.

GRANBIO INVESTIMENTOS S. A.

Statements of changes in equity
(In thousands of Brazilian Reals)

	Note	Attributable to controlling shareholders							Noncontrolling interest	Total equity
		Share capital	Advance for future capital increase	Capital reserve	Asset and liability valuation adjustments	Accumulated losses	Equity attributable to shareholders			
Balances at January 01, 2021		977,662	-	108,175	193,011	(569,127)	709,721	4,377	714,098	
Cumulative translation adjustment - CTA		-	-	-	39,586	-	39,586	-	39,586	
Profit or loss for the year		-	-	-	-	(170,345)	(170,345)	(847)	(171,192)	
Balances at December 31, 2021		977,662	-	108,175	232,597	(739,472)	578,962	3,530	582,492	
Cumulative translation adjustment - CTA	11. c	-	-	-	(38,984)	-	(38,984)	-	(38,984)	
Advance for future capital increase	19. b	-	341,059	-	-	-	341,059	-	341,059	
Profit or loss for the year		-	-	-	-	27,182	27,182	(762)	26,420	
Balances at December 31, 2022		977,662	341,059	108,175	193,613	(712,290)	908,219	2,768	910,987	

The accompanying notes are an integral part of these individual and consolidated financial statements.

Statements of cash flows
For the years ended December 31, 2022 and 2021
(In thousands of Brazilian Reals)

	Parent company		Consolidated	
	12/31/22	12/31/21	12/31/22	12/31/21
Cash flows from operating activities				
Profit or loss for the year	27,182	(170,345)	26,420	(171,192)
Adjustments for:				
Depreciation	194	173	29,128	35,020
Amortization	-	-	17,882	18,781
Returns on short and long-term investments	(7,533)	-	(186)	-
Derecognition of PPE	503	-	61,632	22,459
Net income from the disposal of intangible assets	-	-	(114,012)	-
Partial debt forgiveness	-	-	(8,156)	-
Derecognition of investments	-	41	-	-
Result on recognition of deferred revenue	-	-	-	(2,052)
Equity of earnings (losses) in controlled companies	(44,236)	146,552	-	-
Provision for interest on loans, financing and debentures	14,874	14,566	73,952	63,234
Deferred income tax and social contribution	-	-	(4,823)	(5,038)
Provision for (reversal of) impairment loss	-	(2,788)	(70,522)	18,990
Reversal of losses for inventory realization	-	-	(30)	(21,935)
Result for adjustments for the year	(9,016)	(11,801)	11,285	(41,733)
Change in assets and liabilities:				
Accounts receivable	-	-	(762)	2,876
Advance to suppliers	69	457	1,457	4,471
Advance to suppliers - related parties	-	-	(12,979)	-
Inventories	-	-	183	21,465
Recoverable taxes	255	2,193	938	3,900
Prepaid expenses	91	259	(281)	329
Other receivables	-	-	161	79,738
Judicial deposits	11	20	(95)	1,061
Other accounts receivable from related parties	-	5,560	(17,428)	(19,064)
Trade payables	(3,982)	(260)	(22,149)	13,026
Tax and labor obligations	(62)	(670)	(3,536)	(1,104)
Customer advances	-	-	(2,735)	276
Deferred revenue	-	-	(8,217)	(6,497)
Other accounts payable	(49)	16	(17,064)	(108,859)
Net cash provided by (used in) operating activities	(3,667)	7,575	(82,507)	(8,382)
Interest on amortized loans, financing and debentures	(14,288)	(12,525)	(23,421)	(35,962)
Net cash used in operating activities	(26,971)	(16,751)	(94,643)	(86,077)
Cash flows from investing activities				
Short-term investments	(7,000)	4,434	(7,000)	7,231
Increase in investments	(19,418)	(133,429)	-	-
Acquisition of PPE	(29)	(295)	(175)	(906)
Amount received on sale of PPE	-	-	2,801	-
Acquisition of intangible assets	-	-	(812)	(1,376)
Amount received on sale of intangible assets	-	-	128,068	-
Net cash provided by (used in) investing activities	(26,447)	(129,290)	122,882	4,949
Cash flows from financing activities				
Acquisition of equity interest	-	-	-	(18,040)
Loans with Related parties	69,068	155,640	63,888	161,871
Payment of loans and financing - principal	(15,649)	(14,500)	(27,649)	(345,007)
Raising of loans and financing - principal	-	4,901	-	280,985
Net cash provided by financing activities	53,419	146,041	36,239	79,809
Effect of exchange variance on cash and cash equivalents	-	-	(29)	1,196
Application of cash and cash equivalents	1	-	64,449	(123)
Cash and cash equivalents at January 01	-	-	274	397
Cash and cash equivalents at December 31	1	-	64,723	274
Increase (Decrease) in cash and cash equivalents	1	-	64,449	(123)

The accompanying notes are an integral part of these individual and consolidated financial statements.

Statements of value added
 For the years ended December 31, 2022 and 2021
 (In thousands of Brazilian Reais)

	Parent company		Consolidated	
	2022	2021	2022	2021
Revenue				
Sales of merchandise, goods and services	-	-	24,237	36,352
Other revenue	614	2,704	138,092	(1,114)
	<u>614</u>	<u>2,704</u>	<u>162,329</u>	<u>35,238</u>
Inputs acquired from third parties				
Costs	-	-	(34,410)	(17,670)
Material, electricity, outsourced services and other operating expense	(12,538)	(10,800) #	(27,667)	(34,395)
	<u>(12,538)</u>	<u>(10,800)</u>	<u>(62,077)</u>	<u>(52,065)</u>
Gross value added	<u>(11,924)</u>	<u>(8,096)</u>	<u>100,252</u>	<u>(16,827)</u>
Depreciation and amortization	(194)	(173)	(19,595)	(59,630)
	<u>(194)</u>	<u>(173)</u>	<u>(19,595)</u>	<u>(59,630)</u>
Net value added	<u>(12,118)</u>	<u>(8,269)</u>	<u>80,657</u>	<u>(76,457)</u>
Transferred value added				
Equity of earnings (losses) in controlled companies	44,236	(146,552)	-	-
Financial revenues	11,012	2,900	41,537	2,307
	<u>55,248</u>	<u>(143,652)</u>	<u>41,537</u>	<u>2,307</u>
Added value to be distributed	<u>43,130</u>	<u>(151,921)</u>	<u>122,194</u>	<u>(74,150)</u>
Distribution of value added				
Personnel				
Direct compensation	2	97	3,714	9,008
Benefits	87	65	1,480	2,175
Government Severance Indemnity Fund for Employees (FGTS)	-	3	786	1,220
	<u>89</u>	<u>165</u>	<u>5,980</u>	<u>12,403</u>
Taxes and contributions				
Federal	102	300	4,737	4,992
State	-	-	988	84
	<u>102</u>	<u>300</u>	<u>5,725</u>	<u>5,076</u>
Interest on borrowed capital				
Interest on loans, financing and debentures	15,757	17,959	84,069	79,563
	<u>15,757</u>	<u>17,959</u>	<u>84,069</u>	<u>79,563</u>
Return on equity capital				
Retained earnings	27,182	(170,345)	27,182	(170,345)
Noncontrolling interest	-	-	(762)	(847)
	<u>27,182</u>	<u>(170,345)</u>	<u>26,420</u>	<u>(171,192)</u>
Total	<u>43,130</u>	<u>(151,921)</u>	<u>122,194</u>	<u>(74,150)</u>

The accompanying notes are an integral part of the individual and consolidated financial statements.

GRANBIO INVESTIMENTOS S.A.

Notes to the individual and consolidated financial statements Years ended December 31, 2022 and 2021 (In thousands of Reais)

1. Reporting entity

GranBio Investimentos S.A. (“GranBio” or “Company”) is a privately held company having its registered office at the address Av. Professor Almeida Prado, 532 - Edif. Prédio, 50, Butantã, São Paulo, São Paulo state. It was founded on June 13, 2011. Its ultimate and direct parent company is GranInvestimentos S.A., which has its registered office at the address at Av. Faria Lima, 3144 - 3º andar, Jardim Paulistano, São Paulo, in São Paulo state.

GranBio is a holding company. Its subsidiaries are mainly engaged in: (a) Logistical and technological solutions for supplying biomass (b) creating viable flexible biorefineries that can be rolled out on an industrial scale to convert biomass into cellulose sugar, biofuels, biochemicals, nanocellulose and other ligno-cellulosic materials, in addition to electricity; (c) developing and licensing patents and intellectual property in the renewables sector using biomass as a raw material; and (d) generating and cogenerating renewable electric power.

Through its subsidiaries in the United States of America (USA), the Company develops and licenses clean technology to produce nanocellulose and biochemicals. GranBio LLC has upwards of 350 patents, including registered patents and applications, for various proprietary technologies it has developed. The Thomaston Research Center in Georgia, USA, has four integrated pilot plants that have been continuously operating for 11 years.

The Company has a strategic global licensing partnership with Maire Tecnimont for the sale of GP+ technology for cellulosic ethanol with an EPC option (engineering, procurement and construction) with a fixed-price guarantee.

GranBio entered a global alliance with Nuseed for the technical development of sugarcane varieties as a source of biomass for second-generation biochemicals and fuels (2G). The alliance with Nuseed guarantees GranBio an exclusive cane-energy licensing contract in 2G biorefineries worldwide over the next 10 years.

The Company's financial statements embrace the Company and its subsidiaries (jointly referred to as “Group”).

Going concern status

As of December 31, 2022 the Company presented a positive consolidated net working capital of R\$ 898 and accumulated losses of R\$ 712,290.

Due to the business characteristics of a technology firm, Management is continuously evaluating the ability of the Company and its subsidiaries to keep generating sufficient cash flows to assure they continue as a going concern for the foreseeable future by either generating operating cash flows, disposing of assets, obtaining external funding or shareholder funding.

The Company's Business Plan is based on the following actions already carried out impacting estimated future cash flows:

- In July 2021, the parent company GranInvestimentos S.A. contributed funds to the Company to partially settle the financing held by the subsidiary BioFlex Agroindustrial S.A. from BNB and the National Bank for Economic and Social Development - BNDES, totaling R\$ 34,788;

GRANBIO INVESTIMENTOS S.A.

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- In August 2021 the parent company GranInvestimentos S.A. and the ultimate individual beneficiaries acquired all of the nonconvertible debentures issued by BioFlex Agroindustrial S.A., thereby reducing the Company's overall indebtedness.
- In September 2021 the Company redeemed funds from a short-term investment to cover the full early amortization of one of the Company's financing contracts with Financiadora de Estudos e Projetos - FINEP (no. 09.14-0013.00) in the amount of R\$ 6,747, thereby reducing the Company's overall indebtedness.
- On November 30, 2021 the company amended the financing contract consisting of credit facility 13.2.0418.1 with the National Bank for Economic and Social Development - BNDES in the amount of R\$ 197,797, which postponed the final maturity of the facility to May 2025, changed the interest rate practiced for the subbranches and ratified the existing guarantees;
- By way of its shareholders, on March 09, 2022 the parent company GranInvestimentos S.A. fully settled the working capital loan, which stood at R\$ 12,637 as of December 31, 2021, reducing the Company's overall indebtedness and increasing the balance of the loan payable to the Parent company;
- On September 08, 2022 the indirect subsidiary BioFlex Agroindustrial S.A. and Atlântica Sementes S.A, of Nuseed Group, entered a strategic long-term alliance to expedite investments in Research and Development (R&D) and sales in global sugarcane markets. Atlântica Sementes S.A acquired the commercial and sugarcane processing assets from the indirect subsidiary BioVertis Produção Agrícola Ltda. and the R&D program in order to improve the value of the energy produced by innovating in bioenergy cane. GranBio will continue investing in cane energy by way of Nuseed Group and will be the exclusive license holder of cane energy as a raw material for 2G applications in the ligno-cellulosic field, such as cellulose sugar and lignin, 2G ethanol, biochemicals, Sustainable Aviation Fuels (SAF) and renewable materials worldwide. The agreement will allow the value chain for fuel biomass to become a powerful solution to guarantee a secure supply of renewable raw material on a large-scale without competing with food products.
- On November 10, 2022 and December 05, 2022 the indirect subsidiary BioFlex Agroindustrial S.A. entered a re-profiling agreement with Banco do Brasil S.A. and Bradesco S.A., respectively, which involved awarding the partial rebate of the balance payable on financing facilities and commission on guarantees secured from both institutions, as well as extending the grace period for the principal and interest. The total exposure as of December 31, 2022 is R\$ 102,465 and R\$ 72,607 respectively.
- On December 30, 2022 the indirect subsidiary BioFlex Agroindustrial S.A., and the investee Companhia Energética de São Miguel dos Campos (CESM) entered a transaction by which CESM assumed the entire existing debt contracted by BioFlex Agroindustrial S.A. from the National Bank for Economic and Social Development - BNDES. This debt assumption will provide the Company and its subsidiaries with an important debt relief, maintaining the long-term contract with CESM for the supply of energy and steam for the operations of the Company and its subsidiaries.

The planned actions that impact the future cash flow estimates are:

- Negotiating an agreement with Itaú to lengthen the debt with amortization 100% allocated to long-term and without the need for the initial disbursement of cash from current operations. The total exposure as of December 31, 2022 is R\$ 34,805;

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- The Company is implementing its capital restructuring plan through: (i) profiling existing debts; (ii) initiatives to dispose of non-strategic assets in Brazil and the USA; (iii) identifying a strategic partner to work alongside it on the development of its business plan for technology marketing and licensing, selling second generation ethanol and biochemicals, and an investing partner for the advanced jet fuel production plant (Sustainable Aviation Fuel - SAF); and (iv) negotiating cellulosic ethanol presale contracts as strategy of accelerating cash receipts to optimize its working capital balance and expedite investments to raise the capacity of BioFlex I.

As regards the operations of the indirect subsidiary BioFlex Agroindustrial S.A., due to price fluctuations in the energy market in the 2022/2023 crop year, Company management opted to direct inventory of straw biomass and bagasse to the production and sale of energy in the spot market of the joint venture Companhia Energética de São Miguel dos Campos (CESM). This is a specific short-term strategy that will not be adopted in the new 2023/2024 crop year, in which the unit will resume focusing on the production of 2G ethanol for export, taking advantage of the current favorable biofuel prices.

Considering the business plan, Management believes that obligations will be paid as planned, and that the cash flow generation will be appropriate to meet its obligations in the foreseeable future.

However, if the business plan is unsuccessful, the Company's current shareholders have formally committed to continue supporting the Company in all actions required for continuing as a going concern, including the commitment to invest additional funds in an amount considered sufficient.

Based on its evaluation, Management has concluded that there is no significant uncertainty as to the Company's ability to continue as a going concern in the foreseeable future. Therefore, the parent company and its subsidiaries' financial statements have been prepared on a going concern basis.

2. List of subsidiaries

Direct subsidiaries

- BioEdge Agroindustrial Ltda.: Company that invests in commercial second-generation and biochemical plants.
- BioVertis Produção Agrícola Ltda. ("BioVertis"): Company engaged in the experimentation, development, plantation, production and collection of biomass, i.e. Vertix energy cane and sugarcane straw. The Company has Vertix Energy Cane licensing agreements with ethanol producers. Currently under this program a semi-commercial nursery is being created. The company was acquired by BioFlex Agroindustrial S.A. on June 02, 2022, as detailed in note 5.a;
- GranBio LLC: A US-based company engaged in investing in companies strategically related to the Company's business plan, by creating technologies for converting biomass into cellulose sugar for biochemicals and second-generation ethanol, in addition to developing nanocellulose for a range of industries.

GRANBIO INVESTIMENTOS S.A.

Notes to the individual and consolidated financial statements Years ended December 31, 2022 and 2021 (In thousands of Reais)

Indirect subsidiaries

- BioFlex Agroindustrial S.A.: Company engaged in the production of biomass, processing biomass for the production and sale of biofuel, electricity, biochemicals and pharmaceuticals, technological research and development, sale of sugarcane straw, bagasse and biomass;
- GranBio Intellectual Property Holdings LLC: It holds all the patents and trade and technological secrets developed by GranAPI LLC and its subsidiaries;
- GranBio Conversion Technologies LLC: Company holds the assets of Thomaston, a demonstration plant for existing biomass conversion technologies. This company has a lease agreement for its assets for AVAPCO LLC;
- American Green + LLC: Company holding the sublicensing rights for technology owned by GranBio Intellectual Property Holdings LLC for converting biomass into cellulosic ethanol;
- AVAPCO LLC: Company holding the sublicensing rights for technology owned by GranBio Intellectual Property Holdings LLC for converting biomass into biochemicals and nanocellulose. This company leases the Thomaston asset (a demonstration plant) from GranBio Process Conversion Technologies LLC to develop new technologies and provide client services.
- GranBio Services Inc.: A US-based company engaged in investing in companies strategically related to the Company's business plan. It is the holding company of the three companies below:
 - ✓ Alpena Biorefinery Inc.: Company providing water treatment services to the paper and pulp company Decorative Panels International, located in Alpena, MI, and the production and sale of molasses to other clients;
 - ✓ Alpena Prototype Bioref LLC: Nonoperating company owner of the Alpena Biorefinery land;
 - ✓ Alternative Bioprod Inv. LLC: Nonoperational company.

Joint ventures

- Companhia Energética de São Miguel dos Campos: Company dedicated to developing an integrated electricity and steam generation system running on biomass - cogeneration, electricity and steam supply and provision of services related to energy efficiency enhancement and generation. Most of the energy generated is to meet the demands of its shareholders and the surplus generation is fed into the electricity grid.

Note 5 shows the percentage ownership interest in the direct subsidiaries, indirect subsidiaries and joint ventures.

3. Basis of preparation and presentation of the individual and consolidated financial statements

The Company's Board of Management approved the individual and consolidated financial statements on March 02, 2023.

The individual and consolidated financial statements for the year ended December 31, 2022 comprise the individual and consolidated financial statements of the Company, its subsidiaries and the Group's share of the profits and losses and net assets of a joint venture accounted for by the equity-income method.

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Statement of compliance

The individual financial statements have been prepared in accordance with accounting practices adopted in Brazil ("BR GAAP"). The consolidated financial statements have been prepared in accordance with accounting practices adopted in Brazil ("BR GAAP") and in accordance with the International Financial Reporting Standards ("IFRS"), as issued by the International Accounting Standards Boards ("IASB").

Accounting practices adopted in Brazil include the policies established in Brazilian Corporation Law as well as the pronouncements, guidance and interpretations issued by the Accounting Pronouncements Committee (CPC), approved by the Brazilian Securities Commission (CVM) and the Federal Accounting Council (CFC).

International Financial Reporting Standards (IFRS) comprise the International Accounting Standards (IASs), the Interpretation of the International Financial Reporting Standards Committee (IFRIC) and Standing Interpretations Committee (SIC).

Details about the Group's main accounting policies can be seen in note 5.

Functional currency and presentation currency

The individual and consolidated financial statements are being presented in Brazilian Reais, which is the Company and its subsidiaries' functional currency, except the subsidiary GranBio LLC and its direct and indirect subsidiaries, whose functional currency is the US Dollar. All balances have been rounded to the nearest thousand, unless otherwise indicated.

Use of estimates and judgments

In preparing the individual and consolidated financial statements, Management has made judgments and used estimates that affect the application of the accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates.

Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to the estimates are recognized prospectively.

a. Judgments

The information on judgments made in applying the accounting policies that have the most significant effects on the amounts recognized in the individual and consolidated financial statements is included in the following notes:

- Note 1: Reporting entity (Going concern status): Management evaluation of how the Group will produce and/or obtain capital to support operations over the next 12 months after these financial statements have been approved.
- Note 5: Significant accounting policies (a. Consolidation basis): determines whether the Company actually holds the control of an investee;
- Note 10: Related party transactions: the shareholder GranInvestimentos S.A. bought back the debentures issued by BioFlex Agroindustrial S.A for R\$ 1.00., and each debenture payable by BioFlex is being restated to market value.
- Note 11: Investments: determines whether the Company has influence over an investee;

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- Note 12: Property, plant and equipment and Note 13 Intangible assets: Assessment of the need to conduct impairment tests on definite-lived assets and conducting this test on indefinite-lived assets, and key assumptions underlying the recoverable amounts. For further information see note 14.
- Note 15: Loans and financing: Compliance with the contractual terms of loans and financing;
- Note 20: Net revenue from goods and services sold: the Group recognizes revenue when it transfers the control of a product or service to the client.

b. Assumptions and estimation uncertainties

Information about assumptions and estimation uncertainties as of December 31, 2022 that have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities within the coming financial year are included in the following notes:

- Note 9 - Inventory: recoverable value of inventory based on market replacement cost, slow-moving products, expired products or products nearing the expiration date and products that do not meet quality standards, recorded as "Cost of products sold" and replacement cost in the market.
- Note 12 - Property, plant and equipment: Assessing the need to conduct impairment tests on property, plant and equipment and key assumptions underlying recoverable amounts. For further information see note 14.
- Note 13 - Intangible assets: main assumptions underlying the recoverable amounts, including the recoverability of development costs, licenses, intellectual property and goodwill deriving from the business combination; for further information see note 14.

Measurement of fair value

A number of the Company's accounting policies and disclosures require the measurement of fair values, for both financial and non-financial assets and liabilities; disclosures are shown in note 26.

When measuring the fair value of an asset or a liability, the Group used observable market data as far as possible. Fair values are categorized into different levels in a fair value hierarchy based on the inputs used in the valuation techniques as follows.

- Level 1: quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3: inputs for the asset or liability that are not based on observable market variables (unobservable inputs).

Further information about the assumptions adopted in measuring fair values is included in notes 14.

4. Basis of measurement

The individual and consolidated financial statements have been prepared on the historical cost basis, except for the valuation of certain assets and liabilities, such as financial instruments, which are measured at fair value.

GRANBIO INVESTIMENTOS S.A.

Notes to the individual and consolidated financial statements Years ended December 31, 2022 and 2021 (In thousands of Reais)

5. Significant accounting policies

The accounting policies set out below have been applied consistently to all periods presented in these individual and consolidated financial statements.

a. Basis of consolidation

Percentage interest in investees

	Country	Percentage interest	
		12/31/2022	12/31/2021
Direct subsidiaries			
GranBio LLC	USA	100.00%	100.00%
BioEdge Agroindustrial Ltda.	Brazil	100.00%	100.00%
BioVertis Produção Agrícola Ltda. (a)	Brazil	-	100.00%
Indirect subsidiaries			
Bioflex Agroindustrial S.A.	Brazil	100.00%	100.00%
GranAPI LLC (b)	USA	-	100.00%
GranBio - Intellectual Property Holdings LLC	USA	97.00%	97.00%
GranBio Conversion Technologies LLC	USA	100.00%	100.00%
GranBio Conversion Technologies HoldCo (b)	USA	-	100.00%
American Green + LLC	USA	100.00%	100.00%
AVAPCO LLC	USA	100.00%	100.00%
GranBio Services Inc.	USA	96.10%	96.10%
Alpena Biorefinery INC	USA	100.00%	100.00%
Alpena Prototype Bioref LLC	USA	100.00%	100.00%
Alternative Bioprod Inv. LLC	USA	100.00%	100.00%
Joint ventures			
Companhia Energética de São Miguel dos Campos - CESM (c)	Brazil	50.00%	50.00%

See below the percentage interest in the direct and indirect subsidiaries and joint ventures as of December 31, 2022 and December 31, 2021:

- (a) On June 02, 2022 the direct subsidiary BioFlex Agroindustrial S.A. was merged into the also direct subsidiary BioFlex Agroindustrial S.A. This aimed to: (i) streamline and optimize our corporate structure, lowering the related party balance and operations and consequently consolidating and reducing operational expenses; (ii) merging corporate resources and equity involved in the subsidiaries' operation to enable better management of operations, assets and cash flows, thereby optimizing the use of operational and financial resources and consequently obtaining greater benefits for the economic group's activities; and (iii) greater operational integration will enable better use of existing synergies and the creation of new forms of synergies between company activities, to drive value creation;
- (b) The Company is carrying out corporate restructuring to cut administrative costs and better manage business segments. On March 14, 2022 the companies GranBio Conversion Technologies HoldCo and GranAPI LLC were accordingly written off, with the existing balances of assets and liabilities before the operation being transferred to GranBio LLC;

(c) In FY 2022 the Company entered into various negotiations with the Joint Venture, Companhia Energética de São Miguel dos Campos (CESM): (i) On September 30, 2022 Company management authorized the sale of property, plant and equipment related to the thermoelectric plant of its indirect subsidiary BioFlex Agroindustrial, as disclosed in note 23; (ii) on December 30, 2022 the amount that the indirect subsidiary BioFlex Agroindustrial S.A. had receivable from Companhia Energética São Miguel dos Campos (CESM) was fully amortized due to the agreement with the companies by which CESM assumed the entire existing debt contracted by indirect subsidiary BioFlex Agroindustrial S.A. from the National Bank for Economic and Social Development-BNDES, as disclosed in Note 15; (iii) in FY 2023 the Company will sell its entire equity interest obtained from CESM to Usina Caeté S.A., which will neither trigger a loss nor a gain.

(i) Subsidiaries

The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of our subsidiaries are included in the consolidated financial statements from the date on which control commences until the date on which control ceases.

The subsidiaries' financial information is recognized in the parent company's financial statements by the equity-income method.

(ii) Investments in equity-accounted investees

The Group's investments in entities valued by the equity-income method consists of interests in associated companies and joint ventures.

Associates are those entities in which the Group has significant direct or indirect influence, but not control or joint control, over the financial and operating policies. A joint venture is an arrangement in which the Group has joint control, whereby the Company has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities.

These investments are recognized initially at cost, which includes transaction costs. Subsequent to initial recognition, the financial statements include the Company's share of profit or loss for the year and other comprehensive income of equity-accounted investees, until the date on which significant influence or joint control ceases.

Investments in subsidiaries are also accounted for under the equity-income method in the parent company's individual financial statements.

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(iii) Transactions eliminated on consolidation

Intra-group balances and transactions and any unrealized income and expenses arising from intra-group transactions are eliminated in preparing the consolidated financial statements. Unrealized gains driving from transactions with investees recorded by the equity income method are eliminated against the investment in proportion to the Group's interest in the investee. Unrealized losses are eliminated in the same way as unrealized gains, but only to the extent that there is no evidence of impairment.

(iv) Loss of control

When the Group loses control over a subsidiary, it derecognizes the assets and liabilities of the subsidiary, and any related NCI and other components of equity. Any gain or loss arising from the loss of control is recognized in profit or loss.

(v) Noncontrolling interest

NCI are measured initially at their proportionate share of the acquiree's identifiable net assets at the date of acquisition. Changes in the Group's interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions.

b. Foreign currency

(i) Foreign-currency transactions

Foreign-currency transactions are translated to the respective functional currencies of Company's entities at exchange rates at the dates of the transactions.

Cash assets and liabilities denominated in foreign currencies are translated into the functional currency at the exchange rate at the reporting date. Non-cash assets and liabilities that are measured at fair value in a foreign currency are translated to the functional currency at the exchange rate when the fair value was determined. Non-monetary items that are measured based on historical cost in a foreign currency are translated at the exchange rates at the date of the transaction.

Foreign-currency differences arising on translation are generally recognized in profit or loss.

The investees' statements of profit or loss and cash flow, not in the parent company's functional currency, are translated to Brazilian currency at the average monthly exchange rate; assets and liabilities are translated at the closing rate and other equity items are translated at the historic rate.

The exchange variance on investments in subsidiaries and associated companies, not in the parent company's functional currency, are recorded in equity as accumulated translation adjustments, and are transferred to profit or loss upon divestment.

(ii) Overseas subsidiaries

The assets and liabilities of overseas subsidiaries, including goodwill and fair value adjustments arising on acquisition, are translated into Brazilian Real at the exchange rates at the reporting date. The income and expenses of overseas subsidiaries are translated into Brazilian Real at the exchange rates at the dates of the transactions.

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Foreign currency differences arising from the translation of items into the presentation currency are recognized in other comprehensive income, and accumulated in the asset and liability valuation adjustments reserve in equity. If the subsidiary is a non-wholly owned subsidiary, then the relevant proportion of the translation difference is allocated to non-controlling interest.

c. Revenue

Revenue is measured based on the consideration specified in a contract with the customer. The Group recognizes revenue when it transfers control over a good or service to a customer or when the sale/concession of the license takes place.

The following topics provide information about the nature and timing of the satisfaction of performance obligations in contracts with customers, including significant payment terms, and the related revenue recognition policies:

- Service fee income: revenue is recognized over time as the services are provided. The stage of completion for determining the amount of revenue to recognize is assessed based on surveys of work performed. If the services under a single arrangement are rendered in different reporting periods, then the consideration is allocated based on their relative stand-alone selling prices. The stand-alone selling price is determined based on the list prices at which the Group sells the services in separate transactions. Invoices are issued monthly and are usually payable within 30 days;
- Resale of goods and Sugarcane and Energy Cane Vertix: revenue is recognized when the goods are delivered and have been accepted by customers at their premises. Customers obtain control of products when the goods are delivered to and have been accepted at their premises. This sales revenue is recognized when the performance obligation is fulfilled, i.e., when the promised product is physically transferred, and the consumer obtains control over this product;
- License revenue: the Company's license revenue is recognized at the specific point in time of the sale or its concession, since, at that time, the customer can determine how and when to use that license without needing the Group's performance, meaning, that the Group will no longer carry out any activities that significantly affect the intellectual property of this license to which the customer has rights. Therefore, the license provides the right to use the Company's intellectual property as it exists when it is sold and granted and, for this reason, the revenue is recognized at that specific time of the sale and concession of the license, since its intellectual property does not change, and the customer obtains control at the time the license is granted;
- Revenue from collaboration agreements: revenue is deferred and recognized over time on a straight-line basis, according to the time periods determined in the contract between the parties. Revenue from the commercial partnership also includes recognizing revenue from the development of new products. The price and means of collection are determined in specific negotiations with each client.

d. Employee benefits

Short-term employee benefits

Short-term employee benefits are expensed as personnel expenses as the related service is provided. A liability is recognized for the amount expected to be paid if the Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee, and the obligation can be estimated reliably.

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e. Financial income and financial costs

The Company's financial income and financial costs include:

- Interest income and expenses;
- The net gain or loss on financial assets at fair value through profit and loss;
- The foreign currency gain or loss on financial assets and financial liabilities;

Interest income and expense are recognized using the effective interest method.

'Effective interest rate' means the rate that exactly discounts the estimated future cash payments or receipts through the expected lifetime of the financial instrument at:

- gross carrying amount of the financial asset; or
- at amortized cost of the financial liability.

When calculating the interest income or expense, the effective interest rate is charged on the gross carrying amount of the asset (when the asset is not impaired) or at the amortized cost of the liability. However, interest revenue is calculated by applying the effective interest rate to the amortized cost of the financial asset suffering impairment after initial recognition. If the asset is no longer impaired, the interest revenue is once again calculated on the gross amount.

f. Inventory

Carried at the lower of average cost of purchase or production and net realizable value. The Group considers the following when determining its provision for inventory losses: slow-moving, expired products or products nearing the expiration date and products that do not meet quality standards. Inventory losses are recorded as "Cost of products sold" at replacement cost in the market. As per Note 9, the inventories are comprised of raw materials and consumables necessary for the production of 2G ethanol.

g. Property, plant and equipment

(i) Recognition and measurement

Items of property, plant and equipment are measured at the historic cost of acquisition or construction, which includes the capitalized loan costs, less accumulated depreciation and any impairment losses.

If parts of an item of property, plant and equipment have different useful lives, then they are accounted for as separate items (major components) of property, plant and equipment. Any gain or loss on disposal of an item of property, plant and equipment (calculated as the difference between the net proceeds from disposal and the carrying amount of the property, plant and equipment) is recognized in other operating income/expenses in profit or loss.

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(ii) Subsequent expenditure

Subsequent expenses are capitalized to the extent it is probable that the future benefits associated with these expenses shall be transferred to the Group. Ongoing repairs and maintenance are expensed as incurred in profit or loss.

(iii) Depreciation

Depreciation is calculated to amortize the cost of items of property, plant and equipment net of their estimated residual values using the straight-line method over their estimated useful lives, except for property, plant and equipment related to the operational plant that are depreciated based on the units-of-production method, i.e. its outputs projected for the next 40 years. Depreciation is recognized in profit or loss. The right-of-use asset is subsequently amortized using the straight-line method from the commencement date to the end of the lease term, unless the lease transfers ownership of the underlying asset to the Group by the end of the lease term or the cost of the right-of-use asset reflects that the Group will exercise a call option. In that case the right-of-use asset will be amortized over the useful life of the underlying asset. Land is not depreciated.

Items of property, plant and equipment are depreciated from the date they are installed and are available for use, or in the case of internally constructed assets, on the date construction is completed and the asset is available for use.

The estimated useful lives are (in years):

Property, plant and equipment	12/31/2022 and 12/31/2021
IT equipment	3 - 5
Vehicles	5
Furniture and fixtures	3 - 10
Lab plant and equipment	2 - 10
Agricultural plant and equipment	4 - 12
Improvements to rented property	25
Machinery, equipment and industrial facilities	2 - 40
Lease rights-of-use	10
Buildings and constructions	2 - 60

The depreciation methods, useful lives and residual values are reviewed at each reporting date and adjusted if appropriate.

h. Intangible assets and goodwill

(i) Goodwill

Goodwill arising on the acquisition of subsidiaries is measured at cost less accumulated impairment losses.

(ii) Research and development

Expenditure on research activities is recognized in profit or loss as incurred.

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Development expenditure is capitalized only if the expenditure can be measured reliably, the product or process is technically and commercially feasible, future economic benefits are probable and the Group intends to and has sufficient resources to complete development and to use or sell the asset. Subsequent to initial recognition, development expenditure is measured at cost less accumulated amortization and any accumulated impairment losses.

(iii) Other intangible assets

Other intangible assets that are acquired by the Group and have finite useful lives are measured at cost less accumulated amortization and any accumulated impairment losses. Subsequent expenditure is capitalized only when it increases the future economic benefits embodied in the specific asset to which it relates. Amortization is calculated on the cost of an asset or other equivalent cost, minus the residual value.

(iv) Subsequent expenses

Subsequent expenses are capitalized only when they increase the future economic benefits incorporated into the specific asset to which they relate. All other expenses are recognized in the statement of profit or loss as incurred.

(v) Amortization

Intangible assets are amortized on a straight-line basis in profit or loss over their estimated useful lives, from the date that they are available for use.

The estimated useful lives are as follows (in years):

Intangible assets	12/31/2022	12/31/2021
Software	5	5
Development - Energy Cane	-	14
Technology licenses and intellectual property	30	30

(vi) Technology licenses, intellectual property and goodwill deriving the business combination

The intangible assets are recorded at acquisition cost or fair value of the intangible assets acquired in a business combination, less accumulated amortization by the straight-line method, when applicable. These intangible assets are tested for impairment according to the accounting policy in note 5 (k.ii). Goodwill is not amortized.

i. Financial instruments

(i) Initial measurement and recognition

Trade receivables and issued debt securities are initially recognized on the date they originate.

All other financial assets and financial liabilities are initially recognized when the Group becomes a party to the contractual provisions of the instrument.

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A financial asset (except for trade receivables without a significant financing component) or financial liability is initially measured at fair value. A trade receivable without a significant financing component is initially measured at the operation price.

(ii) Classification and subsequent measurement

Upon initial recognition a financial asset is classified as measured at amortized cost or fair value through profit or loss - FVTPL.

Financial assets are not reclassified subsequently to initial recognition, unless the Group changes its business model to financial asset management. In this case all the affected financial assets are reclassified on the first day of the first period following the business model change.

A financial asset is measured at amortized cost if it meets both of the following conditions below and it is not designated as at FVTPL:

- it is held within a business model whose objective is to hold financial assets to collect contractual cash flows; and
- its contractual terms generate the cash flows on specified dates that constitute solely payments of principal and interest on the outstanding principal.

A debt instrument is measured at FVTPL.

Financial assets that are held for trading or are managed and whose performance is evaluated on a fair value basis are measured at FVTPL.

Financial assets

These assets are subsequently measured at amortized cost using the effective interest method. The amortized cost is reduced for impairment. Interest revenue, exchange variance gains and losses and impairment are recognized in profit or loss. Any gain or loss on derecognition is recognized in profit or loss.

Financial liabilities

Financial liabilities were classified as measured at amortized cost or at FVTPL. A financial liability is classified as at FVTPL if it is classified as held-for trading, is a derivative or is designated as such on initial recognition. Financial liabilities stated at FVTPL are measured at fair value and net income (loss), including interest, is recognized in profit or loss. Other financial liabilities are subsequently measured at amortized cost using the effective interest method. Interest expense and foreign exchange gains and losses are recognized in profit or loss. Any gain or loss on derecognition is also recognized in profit or loss.

(iii) Derecognition

Financial assets

The Group derecognizes a financial asset when the contractual rights to the cash flows from the asset expire, or when the Group transfers the rights to receive the contractual cash flows of a financial asset in a transaction where essentially all the risks and rewards of ownership of financial assets are transferred or in which the Group neither transfers nor substantially retains all the risks and rewards of ownership of the financial asset nor retains control over the financial asset.

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Financial liabilities

The Group derecognizes a financial liability when its contractual obligations are withdrawn, canceled, or expire. The Group also derecognizes a financial liability when its terms are modified and the cash flows from the modified liability are substantially different, in which case a new financial liability based on the modified terms is recognized at fair value.

Upon derecognizing a financial liability, the difference between the former carrying amount and the consideration paid (including assets transferred that do not flow through cash or assumed liabilities) is recognized in profit or loss.

(iv) Offsetting

The financial assets and liabilities are offset and the net amount presented in the statement of financial position when, and only when, the Group has a legally enforceable right to offset the amounts and it intends either to settle them on a net basis or to realize the asset and settle the liability simultaneously.

j. Share Capital

Common shares are classified as equity.

Incremental costs directly attributable to the issuance of common shares and share options are recognized as a deduction from equity. Income tax relating to transaction costs of an equity transaction is accounted for in accordance with CPC 32. /IAS 12.

k. Impairment

(i) Non-derivative financial assets

Financial instruments and contractual assets

The Group recognizes provisions for expected credit losses on:

- Financial assets measured at amortized cost; and
- Contract assets
- The Group measures the provision for loss at an amount equal to the lifetime ECL. The provisions for losses on trade receivables and contract assets are measured at an amount equal to the expected credit loss for the instrument's entire life.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating the lifetime ECL, the Group considers reasonable and supportable information that is material and available without excessive cost or effort. This includes quantitative and qualitative information and analyses based on the Company's historic experience in credit evaluation and forward-looking information.

The Group assumes a financial asset's credit risk has risen substantially if it is more than 30 days overdue.

The Group considers a financial asset to be in default when:

- It is highly unlikely that the debtor will pay all of its credit obligations without resorting to actions such as enforcing the guarantee (if applicable) or
- The financial asset is more than 90 days overdue.

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The Group considers that a debt security has a low credit risk when its credit risk rating is equivalent to the globally accepted definition of "investment grade".

- Lifetime ECLs are ECLs that result from all possible default events over the expected life of a financial instrument.
- 12-month ECLs are ECLs that result from possible default events within the 12 months after the reporting date (or a shorter period, if the instrument's expected life is shorter than 12 months);
- Expected credit losses could also be affected as result of the economic disruption caused by the Covid-19 pandemic.

The maximum period considered to estimate the expected credit loss is the maximum contractual period during which the Group is subject to credit risks.

Measuring expected credit losses

Expected credit losses are estimates weighted by the credit loss probability. Expected losses are measured at present value based on all cash deficiencies (i.e. the difference between the cash flows owed to the Group according to the contract and the cash flows it expects to receive). Expected credit losses are discounted by the financial asset's effective interest rate, when applicable.

Impaired financial assets

At each reporting date, the Group evaluates whether the financial assets recorded at amortized cost are credit impaired. A financial asset is 'impaired' when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred. Objective evidence that a financial asset is impaired includes the following observable data:

- Significant financial difficulty of the issuer or borrower; violation of contractual clauses, such as default or being more than 90 days overdue;
- Restructuring of an amount due to the Group on terms that the Group would not consider otherwise;
- The probability that the borrower will enter bankruptcy or other type of financial reorganization; or
- The disappearance of an active market for that financial asset because of financial difficulties.

Presenting the provision for expected credit losses in the statement of financial position

The provision for financial asset losses measured at amortized cost is deducted from the gross carrying amount of the assets, when applicable.

Write-off

The gross carrying amount of a financial asset is written off when the Group does not have a reasonable expectation to recover the financial asset in its entirety or in part. The Group expects no significant recovery from the amount written off. However, written-off financial assets can still be subject to credit enforcement to perform the Company procedures to recover the amounts due.

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(ii) Non-financial assets

At each reporting date the Group reviews the carrying amounts of its non-financial assets (except biological assets and inventory) for signs of impairment. If any such indication exists, the asset's recoverable amount is estimated. Goodwill is tested for impairment annually.

For assets other than goodwill, an assessment is made at each reporting date to determine whether there is evidence that impairment losses recognized in prior years no longer exist or have diminished. If such evidence exists, the Group estimates the recoverable amount of the asset or cash-generating unit. An impairment loss previously recognized for an asset is reversed only if there has been a change in the estimates used to determine the recoverable amount of the assets since the previous impairment loss was recognized. The impairment loss can only be reversed to the extent that the carrying amount of the asset does not exceed the carrying amount that would have been determined (net of depreciation, amortization or depletion) had no impairment loss been recognized for the asset in previous years. The reversal is recognized in profit or loss.

Indefinite-lived intangible assets are tested annually for impairment on December 31, either individually or at cash generating unit level, as the case may be or when circumstances indicate impairment.

For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs (cash generating units). The goodwill acquired in a business combination is allocated to groups of CGUs that are expected to benefit from the synergies of the combination.

The recoverable value of an asset or cash generating unit is the higher of the value in-use and fair value less selling expenses. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset or the CGU.

An impairment loss is recognized if the carrying amount of an asset or CGU exceeds its recoverable amount.

Impairment losses are recognized in profit or loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU (or group of CGUs), and then to reduce the carrying amounts of the other assets in the CGU (or group of CGUs) on a pro rata basis.

An impairment loss in respect of goodwill is not reversed. For other assets, an impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortization, if no impairment loss had been recognized.

I. Provisions

A provision is recognized when the Group has a legal or unofficial obligation as a result of past events, and it is probable that an outflow of economic benefits will be required to settle the obligation, which can be reliably estimated. When the Group expects a provision to be reimbursed, in part or full, for example as a result of an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is a virtual certainty. Expenses related to any provision are presented in the statement of profit or loss net of any reimbursement. Any increase in the obligation over the course of time is recognized as a financial expense.

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m. Statement of value added

The Group prepared the Statements of Value Added pursuant to technical pronouncement CPC 09 - Statement of value added. They are presented as an integral part of the financial statements in accordance with the BR GAAP applicable to publicly-held companies, while under IFRS they represent additional information.

6. Cash and cash equivalents

	Consolidated	
	2022	2021
Cash and banks - checking account	107	274
Short-term investments	64,616	-
Total	<u>64,723</u>	<u>274</u>

Cash and cash equivalents include cash and bank deposits used to make and receive payments for the Company's operations in addition to short-term investments.

Short-term investments classified as current have a maximum grace period of three months from investment to redemption, and are used to manage immediate obligations. The yield is fixed at 102% of the CDI rate.

7. Short-term investments

	Parent company		Consolidated	
	2022	2021	2022	2021
Short-term investments	69,061	54,528	7,186	-
Total	<u>69,061</u>	<u>54,528</u>	<u>7,186</u>	<u>-</u>
Current	7,186	54,528	7,186	-
Noncurrent	61,875	-	-	-

As of December 31, 2022 the short-term investments consist solely of:

- (i) Short-term investment made by the Company in 39,229 units of debenture BFLE11 for R\$ 50,897 from Itaú Unibanco S.A. (Itaú). The restated balance as of December 31, 2022 including the financial restatement of the yield is R\$ 61,875 (R\$ 54,528 as of December 31, 2021). The seventh amendment was made to the private simple public debentures issuance deed on May 30, 2022, extending the maturity to December 2025. This debenture was initially an exclusive operation between the subsidiary BioFlex Agroindustrial S.A and Banco Itaú S.A. As a result of this investment made by the Company, part of BioFlex's debt under this debenture was transferred to the parent company itself. For the purpose of consolidation this amount is therefore eliminated from the item short-term investments and loans and financing;
- (ii) Short-term investment realized by the Company in October 2022 in the amount of R\$ 7,000, amounting to a restated R\$ 7,186 on December 31, 2022, yielding 99.5% of the CDI rate. Investment made to create a guarantee to secure the FINEP loan.

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8. Accounts receivable

	Consolidated	
	2022	2021
Accounts receivable	2,032	1,294
Total	2,032	1,294

As of December 31, 2022 the amounts recorded in this item primarily consist of accounts receivable from Equilon Enterprises LLC (Shell) for biomass demineralization experiments.

a. Receivables schedule

See below an aging list for receivables:

	Consolidated	
	2022	2021
Falling due	1,287	-
1 to 30 days past due	50	-
31 to 90 days past due	-	19
91 to 360 days past due	2	3
More than 1 year past due	693	1,272
	2,032	1,294

9. Inventory

	Consolidated	
	2022	2021
Consumables (i)	5,797	6,030
Finished goods	25	29
Storeroom materials	2,748	2,664
Total	8,570	8,723

- (i) Balance of various consumables used to produce 2G ethanol. One of the main inputs for producing 2G ethanol are the enzymes which are stored in a specific location with a suitable temperature so as not to lose their productive capacity. Part of the enzyme inventory is stored at third parties. There was R\$ 4,753 relating to 280,000 kg as of December 31, 2022 and 2021.

Inventory risks:

- Inventory counts are carried out annually and when necessary all differences between physical counts and accounting records are adjusted. However, in the last few years there have been no significant inventory adjustments.

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Management valued the inventory based on its recoverable value as of December 31, 2022 and 2021 as follows:

Movement	Provision
Balances at December 31, 2020	(22,147)
Use of the provision for losses	21,935
Balances at December 31, 2021	(212)
Use of the provision for losses	30
Balances at December 31, 2022	<u>(182)</u>

10. Related-party transactions

The Company has transactions with its direct subsidiaries, indirect subsidiaries, joint ventures, parent companies and associated companies, in order to provide funds to maintain its operations. Such operations do not incur interest or have a maturity date, as agreed by the parties.

Transactions between related parties refer to loans for cash supply and commercial transactions related to cost-sharing and other commercial transactions. As of December 31, 2022 and 2021 the balances break down as follows:

	Ratio		Parent company			
			2022 Assets	2022 Liabilities	2021 Assets	2021 Liabilities
Loans						
Granbio LLC	Subsidiary	(i)	-	33,044	-	35,343
BioEdge Agroindustrial Ltda.	Subsidiary	(ii)	-	11,319		
	Parent					
GranInvestimentos S.A.	company	(iii)	-	-	-	281,011
Total			<u>-</u>	<u>44,363</u>	<u>-</u>	<u>316,354</u>

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		Consolidated			
		2022		2021	
Ratio		Assets	Liabilities	Assets	Liabilities
Advance to suppliers Companhia Energética São Miguel dos Campos	Joint venture	12,979	-	-	-
Total		12,979	-	-	-
Other accounts receivable/payable Companhia Energética São Miguel dos Campos	Joint venture	(iv) -	-	83,540	-
Total		-	-	83,540	-
Loans					
GranInvestimentos S.A.	Parent company	(iii) -	-	-	281,011
Total		-	-	-	281,011
Other accounts payable to related parties Shareholder investment fund	Other Parent company	(v) -	27,815	-	25,050
GranInvestimentos S.A.	Parent company	(v) -	35,687	-	31,664
Total		-	63,502	-	56,714
Total		-	63,502	-	337,725
Grand Total		12,979	63,502	83,540	337,725
Current		12,979	-	-	337,725
Noncurrent		-	63,502	83,540	-

Operations affecting profit or loss for the periods:

		Consolidated	
Ratio		2022	2021
Lease income Companhia Energética São Miguel dos Campos	Joint venture	(vi) 13,251	20,433
Proceeds from sale of thermal power station Companhia Energética São Miguel dos Campos	Joint venture	(vii) (60,636)	-

- (i) Interest-free loan taken out from GranBio LLC with an indefinite maturity;
- (ii) Denote the amounts in the Company's current account with its subsidiaries expected to be settled in the short-term. The loans are interest free and have no defined maturity date;
- (iii) Cash received from the Company's parent company to supply cash for operating activities. On December 30, 2022 the shareholder resolved to make an Advance for Future Capital Increase instrument, by which R\$ 341,059 (R\$ 281,011 outstanding as of December 31, 2021 and R\$ 60,048 made in FY 2022) will be converted in the future into a capital increase, via (AFAC) at its parent company GranBio Investimentos S.A, as per note 19;
- (iv) On December 30, 2022 the amount that the indirect subsidiary BioFlex Agroindustrial S.A. had receivable from Companhia Energética São Miguel dos Campos- CESH regarding the boiler lease was fully amortized due to the agreement with the companies by which CESH assumed the entire existing debt contracted by BioFlex Agroindustrial S.A. from the National Bank for Economic and Social Development- BNDES, as disclosed in Note 15;
- (v) Part of the debentures issued by the direct subsidiary BioFlex Agroindustrial S.A. were purchased in August 2021 by the shareholder GranInvestimentos S.A. for R\$ 1.00 (22,771 units for a restated R\$ 35,687) and by an investment fund of the ultimate beneficiaries of GranInvestimentos S.A. (18,000 units worth a restated R\$ 26,460). As a consequence, the payable balance of the debentures was then reclassified as other accounts payable with related parties.

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- (vi) Invoicing for the boiler lease between the indirect subsidiaries BioFlex Agroindustrial S.A. and Companhia Energética São Miguel dos Campos - CESM between the periods January 2022 until the sale of the thermoelectric assets on September 30, 2022;
- (vii) BioFlex Agroindustrial S.A.'s thermoelectric assets were sold to Companhia Energética São Miguel dos Campos - CESM on September 30, 2022. This sale generated a loss of R\$ 60,636, as per note 23.

Key management personnel compensation

	Parent company		Consolidated	
	2022	2021	2022	2021
Key management personnel compensation	(237)	(459)	(998)	(1,607)
Total	(237)	(459)	(998)	(1,607)

The amount paid as key management personnel compensation has been included in personal expenses disclosed in note 22.

11. Investment

a. Breakdown of balances

	Parent company	
	2022	2021
Direct and indirect subsidiaries	1,015,825	991,155
Total	1,015,825	991,155

b. Direct investments

	Equity (negative equity)		Profit/loss for the year	
	2022	2021	2022	2021
Investees				
BioEdge Agroindustrial Ltda.	464,182	379,032	68,679	(144,230)
BioVertis Produção Agrícola Ltda.	-	19,642	(3,171)	(4,786)
BioCelere Agroindustrial Ltda.	-	-	-	(774)
Granbio LLC	551,643	592,481	(21,272)	3,238

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c. Changes in the investments

Direct subsidiaries

	Balances at 12/31/2020	Translation adjustment	Investments	Derecognition of Investments	Merger	Equity in earnings (losses) of controlled companies	Balances at 12/31/2021	Translation adjustment	Investments	Merger	Equity in earnings (losses) of controlled companies	Balances at 12/31/2022
Subsidiaries												
BioEdge Agroindustrial Ltda.	422,709	-	100,553	-	-	(144,230)	379,032	-	-	16,471	68,679	464,182
BioVertis Produção Agrícola Ltda.	9,587	-	2,377	-	12,464	(4,786)	19,642	-	-	(16,471)	(3,171)	-
BioCelere Agroindustrial Ltda	13,238	-	-	-	(12,464)	(774)	-	-	-	-	-	-
BioPlant Agroindustrial Ltda	41	-	-	(41)	-	-	-	-	-	-	-	-
GranBio LLC (i)	513,597	39,586	36,060	-	-	3,238	592,481	(38,984)	19,418	-	(21,272)	551,643
Total investments	959,172	39,586	138,990	(41)	-	(146,552)	991,155	(38,984)	19,418	-	44,236	1,015,825

(i) Financial contributions made in the investee based on its cash requirement.

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d. Summary of direct subsidiaries' equity accounts

Direct subsidiaries at December 31, 2022	Assets	Liabilities	Controlling interest	NCI	Equity
	BioEdge Agroindustrial Ltda.	1,045,969	581,787	464,182	-
Granbio LLC	634,009	79,598	551,644	2,768	554,412
Direct subsidiaries at December 31, 2021	Assets	Liabilities	Controlling interest	NCI	Equity
	BioEdge Agroindustrial Ltda.	1,001,661	622,629	379,032	-
BioVertis Produção Agrícola Ltda.	33,412	13,770	19,642	-	19,642
Granbio LLC	701,268	105,255	592,482	3,530	596,012

The investment in the Joint Venture, Companhia Energética de São Miguel dos Campos (CESM), was reduced to zero. Additional losses and a liability were not recognized as the Company does not have legal or constructive obligations (not formalized) and does make payments on the investee's behalf.

Direct subsidiaries	Net result 12/31/2022	Net result 12/31/2021
BioEdge Agroindustrial Ltda.	68,679	(144,230)
BioVertis Produção Agrícola Ltda.	(3,171)	(4,786)
BioCelere Agroindustrial Ltda.	-	(744)
Granbio LLC	(21,272)	3,238

12. Property, plant and equipment

a. Breakdown of carrying amount

Parent company

	2022			2021
	Cost	Depreciation	Net	Net
IT equipment	837	(813)	24	-
Property, plant and equipment under construction	-	-	-	2
Improvements to rented property	688	(26)	662	-
Furniture and fixtures	874	(868)	6	28
Administrative facilities	84	(84)	-	1,191
Right of use	2,081	(291)	1,790	1,929
Total	4,564	(2,082)	2,482	3,150

Consolidated

	2022			2021
	Cost	Depreciation	Net	Net
IT equipment	3,257	(3,104)	153	8
Furniture and fixtures	1,734	(1,616)	118	193
Lab plant and equipment	5,495	(4,742)	753	1,511
Agricultural plant and equipment	40,209	(33,716)	6,493	11,605
Improvements to rented property	4,929	(2,677)	2,252	6,244
Industrial machinery, equipment and facilities	846,263	(155,073)	691,190	823,077
Property, plant and equipment under construction	3,942	-	3,942	5,761
Right of use	2,081	(291)	1,790	1,929
Land	2,247	-	2,247	2,394
Buildings and constructions	42,284	(4,689)	37,595	40,245
Total	952,441	(205,908)	746,533	892,967

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b. Changes in property, plant and equipment

Parent company

	Balance at 12/31/2021	Additions	Write- off	Reclassification	Balance at 12/31/2022
Cost					
Improvements to rented property	-	-	-	688	688
Property, plant and equipment under construction	1,191	-	(503)	(688)	-
Furniture and fixtures	874	-	-	-	874
IT equipment	808	29	-	-	837
Administrative facilities	84	-	-	-	84
Right of use	2,081	-	-	-	2,081
Total	5,038	29	(503)	-	4,564
Depreciation					
Improvements to rented property	-	(26)	-	-	(26)
Furniture and fixtures	(846)	(22)	-	-	(868)
IT equipment	(808)	(5)	-	-	(813)
Administrative facilities	(82)	(2)	-	-	(84)
Right of use	(152)	(139)	-	-	(291)
Total	(1,888)	(194)	-	-	(2,082)
Total property, plant and equipment	3,150	(165)	(503)	-	2,482

Parent company

	Balance at 12/31/2020	Additions	Write-offs	Balance at 12/31/2021
Cost				
Property, plant and equipment under construction	896	295	-	1,191
Furniture and fixtures	912	-	(38)	874
IT equipment	808	-	-	808
Administrative facilities	84	-	-	84
Right of use	2,081	-	-	2,081
Total	4,781	295	(38)	5,038
Depreciation				
Furniture and fixtures	(849)	(33)	36	(846)
IT equipment	(808)	-	-	(808)
Administrative facilities	(82)	-	-	(82)
Right of use	(12)	(140)	-	(152)
Total	(1,751)	(173)	36	(1,888)
Total property, plant and equipment	3,030	122	(2)	3,150

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	Balances at 12/31/2021	Addition	Write-off	Merger	Exchange variance	Reclassification	Balances at 12/31/2022
Cost							
IT equipment	3,489	160	(253)	(41)	(98)	-	3,257
Vehicles	20	-	(20)	-	-	-	-
Furniture and fixtures	2,020	-	(88)	(190)	(8)	-	1,734
Lab plant and equipment	6,433	15	(245)	(417)	(291)	-	5,495
Agricultural plant and equipment	43,601	-	(2,033)	(1,359)	-	-	40,209
Improvements to rented property	9,543	-	(5,302)	-	-	688	4,929
Machinery, equipment and facilities	1,015,660	-	(160,361)	(412)	(8,624)	-	846,263
Property, plant and equipment under construction	5,761	-	(1,131)	-	-	(688)	3,942
Right of use	2,081	-	-	-	-	-	2,081
Land	2,394	-	-	-	(147)	-	2,247
Buildings and constructions	44,925	-	(1,532)	(853)	(256)	-	42,284
Total	1,135,927	175	(170,965)	(3,272)	(9,424)	-	952,441
Depreciation							
IT equipment	(3,481)	(16)	253	41	99	-	(3,104)
Vehicles	(20)	-	20	-	-	-	-
Furniture and fixtures	(1,827)	(65)	79	190	7	-	(1,616)
Lab plant and equipment	(4,922)	(605)	121	417	247	-	(4,742)
Agricultural plant and equipment	(31,996)	(4,220)	1,141	1,359	-	-	(33,716)
Improvements to rented property	(3,299)	(237)	859	-	-	-	(2,677)
Machinery, equipment and facilities	(192,583)	(22,845)	52,035	412	7,908	-	(155,073)
Right of use	(152)	(139)	-	-	-	-	(291)
Buildings and constructions	(4,680)	(1,001)	24	853	115	-	(4,689)
Total	(242,960)	(29,128)	54,532	3,272	8,376	-	(205,908)
Total Property, plant and equipment	892,967	(28,953)	(116,433)	-	(1,048)	-	746,533

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	Balances at 12/31/2020	Addition	Write-off	Merger	Exchange variance	Balances at 12/31/2021
Cost						
IT equipment	3,809	-	-	(424)	104	3,489
Vehicles	146	-	(126)	-	-	20
Furniture and fixtures	2,108	-	(39)	(57)	8	2,020
Lab plant and equipment	7,997	99	-	(1,967)	304	6,433
Agricultural plant and equipment	46,457	-	(2,856)	-	-	43,601
Improvements to rented property	10,410	-	-	(867)	-	9,543
Machinery, equipment and facilities	1,028,757	-	(22,192)	(28)	9,123	1,015,660
Property, plant and equipment under construction	4,954	807	-	-	-	5,761
Right of use	2,081	-	-	-	-	2,081
Land	2,239	-	-	-	155	2,394
Buildings and constructions	44,654	-	-	-	271	44,925
Plantation	-	-	-	-	-	-
Total	1,153,612	906	(25,213)	(3,343)	9,965	1,135,927
Depreciation						
IT equipment	(3,794)	(7)	-	424	(104)	(3,481)
Vehicles	(146)	-	126	-	-	(20)
Furniture and fixtures	(1,832)	(81)	36	57	(7)	(1,827)
Lab plant and equipment	(6,060)	(575)	4	1,967	(258)	(4,922)
Agricultural plant and equipment	(29,555)	(4,490)	2,049	-	-	(31,996)
Improvements to rented property	(3,918)	(248)	-	867	-	(3,299)
Machinery, equipment and facilities	(156,802)	(28,271)	539	28	(8,077)	(192,583)
Right of use	(12)	(140)	-	-	-	(152)
Buildings and constructions	(3,362)	(1,208)	-	-	(110)	(4,680)
Total	(205,481)	(35,020)	2,754	3,343	(8,556)	(242,960)
Total Property, plant and equipment	948,131	(34,114)	(22,459)	-	1,409	892,967

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Property, plant and equipment under construction

As of December 31, 2022 and December 31, 2021 the balance of property, plant and equipment in progress consists of expenses to upgrade consumables processing and feeding machinery and upgrades to the dedusting system. The project will be completed in the 2023 financial year.

Guarantees

The residual carrying amount of the property, plant and equipment securing loans and financing amounts to R\$ 732,940 at December 31, 2022. For further information see note 15 (c).

Write-off of assets

As of December 31, 2022 the amount of R\$ 116,433 consists of: (i) write-off through the sale of certain assets related to the thermoelectric plant's operation in the amount of R\$ 112,636 to the Joint Venture CESM (Companhia Energética de São Miguel dos Campos) formerly leased to it; (ii) write-off through the sale of assets related to the experimental station held by the indirect subsidiary BioVertis Produção Agrícola Ltda. in the amount of R\$ 2,801 and; (iii) other write-offs through sales of R\$ 996. For further information see Note 23 (v).

13. Intangible assets - Consolidated

	Software	Development	Licenses and intellectual property	Goodwill	Total
Balances at December 31, 2020	265	29,321	476,676	120,996	627,258
Additions	-	-	1,376	-	1,376
Amortizations (a)	(149)	(821)	(17,811)	-	(18,781)
Exchange variance	-	-	34,642	8,935	43,577
Balances at December 31, 2021	116	28,500	494,883	129,931	653,430
Additions	-	-	812	-	812
Write-off	-	(15,789)	(1,068)	-	(16,857)
Amortizations (a)	(5)	(821)	(17,056)	-	(17,882)
Exchange variance	-	-	(30,494)	(8,447)	(38,941)
Balances at December 31, 2022	111	11,890	447,077	121,484	580,562

(a) Amortization expenses were recognized in administrative and general expenses.

- Development - development of genetically modified yeast to ferment cellulose sugar in the amount of R\$ 11,890 as of December 31, 2022. As of March 31, 2022, 4 patents were written off in the amount of R\$ 495 due to the discontinuation of projects and R\$ 15,294 was written off on September 08, 2022 due to the sale of proprietary cane energy varieties, whose results can be seen in Note 23;

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- Licenses and intellectual property - Amounts denoting the development of intellectual property and licensing related to nanocellulose and biorefinery technology and trade and industrial secrets. R\$ 368,086 was recognized on March 31, 2019 as intangible assets identified by Management in the business combination between Granbio LLC and the companies GranAPI LLC, API- Property-Intellectual Holdings LLC, American Process Conversion Technologies LLC and American Process Conversion Technologies Holdco LLC. The number of technology and intellectual property licenses was calculated based on the expected revenue generated by selling licenses to third parties, the existing commercial pipeline and prospects for growth in the number of projects for converting biomass into cellulosic ethanol, biochemicals and nanocellulose.
- Goodwill - Denotes expected future earnings generated for the companies GranAPI LLC, API-Propriety Intellectual Holdings LLC, American Process Conversion Technologies LLC and American Process Conversion Technologies Holdco LLC, as a result of their technology. Management used the relief-from-royalty method to estimate the fair value of these companies' technology. This method assumes that instead of paying for a property, a company is willing to pay to exploit the benefits related to this class of assets. This goodwill is not deductible for tax purposes.

14. Impairment analysis

a. Property, plant and equipment

At each reporting date the Group checks whether there is evidence that the carrying amount of a definite-lived asset has incurred impairment. If there is evidence of impairment, a test is carried out to quantify the asset's recoverable value. The recoverable value of an asset is determined by the higher of: (a) its fair value less estimated costs to sell and (b) its value in use. The value in use is measured based on the discounted cash flows (before tax) deriving from the continuous use of an asset until the end of its useful life.

Although management understands that there is evidence that its property, plant and equipment has suffered impairment, given that the fair value less costs to sell indicates that the construction of a plant similar to that of BioFlex Agroindustrial S.A. would result in values higher than the depreciated carrying amount, due to the short operational history resulting from strategic decisions made by Management, which considered micro and macroeconomic issues for past periods and investments in innovation, the Group also performs an impairment test on the value in use for the property, plant and equipment intended for the production of 2G ethanol at BioFlex Agroindustrial S.A., substantially developed based on internal management assumptions.

Management's assessment shows that there are no indications of a significant change in their calculations and analyses that could lead to the need to recognize impairment losses on property, plant and equipment. However, if current or future results are not consistent with the estimates and assumptions used in the estimated future cash flows and determination of the property, plant and equipment's fair value, the Company may be exposed to losses.

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b. Intangible assets and goodwill

Goodwill resulting from business combinations and indefinite-lived intangible assets are tested for impairment at least once a year, in December.

As regards the impairment test for the subsidiary GranBio LLC, the recoverable value of the cash generating unit intellectual property and goodwill is R\$ 732,166 as of December 31, 2022 (R\$ 936,874 as of December 31, 2021), the Group used a 10-year cash flow plus perpetuity, which reflects the expected use of the recently implemented asset and the investments being made to achieve commercial capacity in an ongoing operation and based on the financial estimates approved by Senior Management. The licenses' sale prices were determined based on evidence from target markets. The Opex projection was compiled based on the history of costs incurred adjusted to an industrial capacity level of use.

The average discount rate used was 17.06% as of December 31, 2022 (19.12% at December 31, 2021) respectively in real terms.

The growth rate was used as a basis for the year-on-year increase in the number of patent licenses to be sold.

Others key assumptions are cellulosic ethanol price, biochemical price and nanocellulose demand.

See below a comparison between the value in use and carrying amount:

		Value in use (A)	Carrying amount of licenses and intellectual property (B)	Carrying amount of goodwill (C)	Total carrying amount (D=B+C)	Value in use/Carrying amount (A/D)
GranBio LLC	2022	732,166	447,077	121,484	568,561	1.29
GranBio LLC	2021	936,874	494,883	129,931	624,814	1.50

As a result of the impairment analysis conducted, we identified a surplus of R\$ 163,605 as of December 31, 2022 (R\$ 312,060 as of December 31, 2021) on the carrying amount, meaning it was not necessary to recognize impairment for the cash generating unit.

Given the potential impact of variance in the discount cash flow rate, the Group conducted a sensitivity analysis changing this variable by increasing it by 1 percentage point to 18.06% as of December 31, 2022 (20.12% as of December 31, 2021), where the value in use is calculated as shown in the table below:

		Value in use (A)	Carrying amount of licenses and intellectual property (B)	Carrying amount of goodwill (C)	Total carrying amount (D=B+C)	Value in use/Carrying amount (A/D)
GranBio LLC	2022	637,912	447,077	121,484	568,561	1.12
GranBio LLC	2021	805,813	494,883	129,931	624,814	1.29

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15. Loans and financing

Type	Index	Indexation	Maturity	Parent company		Consolidated	
				12/31/2022	12/31/2021	12/31/2022	12/31/2021
FINEP - Financing	TJLP	2.00% to 5.00%	Feb/29	132,376	134,802	132,376	134,802
BNDES - Financing	IPCA	+3.11%	May/25	-	-	-	201,472
Working capital	CDI	-	Feb/22	-	12,637	-	12,637
Working capital	CDI	+1.08%	Dec/27	-	-	175,072	-
Honoring bank guarantees	CDI	-	Jun/22	-	-	34,805	202,106
				<u>132,376</u>	<u>147,439</u>	<u>342,253</u>	<u>551,017</u>
Current				9,346	18,547	44,152	284,719
Noncurrent				123,030	128,892	298,101	266,298

The short-term debt has been exercising pressure on the Group's cash flow. Management concluded renegotiations with the financial institutions to lengthen its debt profile in order to ease up its operating cash flow. See note 1.

FINEP - Financing

The FINEP financing consists of contracts funding the research and development projects for biomass (Energy Cane Vertix) and yeast, in addition to technologies for converting biomass into biochemicals and biofuel.

BNDES - Financing

On December 30, 2022, the bank BNDES, the indirect subsidiary BioFlex Agroindustrial S.A., Companhia Energética de São Miguel dos Campos (CESM) and Usina Caeté S.A. entered into a debt rescheduling, consolidation and assumption contract, with CESM assuming the entire debt of the indirect subsidiary BioFlex.

Working capital and Honoring Bank Guarantees

In FY 2021, the Company restructured its loans and financing with its leading creditors, and the guarantees on loans and financing from public banks were exercised by private banks. Negotiations were made with a number of these private banks and the renegotiated debt was reclassified as Working Capital. As of December 31, 2022 the payable balance of R\$ 34,805 to Banco Itaú is negotiated with the financial institution, in order to lengthen the debt with amortization 100% allocated to long-term and without the need for the initial disbursement of cash from current operations.

a. Debt amortization schedule

See below the contractual maturities of financial liabilities:

	Parent company		Consolidated	
	12/31/2022	12/31/2021	12/31/2022	12/31/2021
1 year	9,346	18,547	44,152	284,719
2 years	14,798	6,959	20,025	89,333
3 years	27,257	14,688	55,865	51,838
4 years onwards	80,975	107,245	222,211	125,127
	<u>132,376</u>	<u>147,439</u>	<u>342,253</u>	<u>551,017</u>

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b. Reconciliation of equity changes against cash flows deriving from financing activities

	Parent company	Consolidated
Balances at December 31, 2020	154,997	643,311
Amortization of loans and financing (principal)	(14,500)	(345,007)
Provision for interest of loans, financing and debentures	14,566	63,234
Amortization of loans and financing (interest)	(12,525)	(35,962)
Proceeds from loans and financing	4,901	280,985
Debenture purchase by related parties (i)	-	(55,544)
	<hr/>	<hr/>
Balances at December 31, 2021	147,439	551,017
Amortization of loans and financing (principal)	(15,649)	(27,649)
Provision for interest on loans and financing	14,874	73,952
Amortization of loans and financing (interest)	(14,288)	(23,421)
Assumption for related parties - CESM	-	(223,490)
Partial debt forgiveness (ii)	-	(8,156)
	<hr/>	<hr/>
Balances at December 31, 2022	<u>132,376</u>	<u>342,253</u>

- (i) Purchase of shares in the debentures of BioFlex Agroindustrial S.A. by related parties, with the amount reclassified to other accounts payable with related parties, as detailed in note 10;
- (ii) Partial debt forgiveness in honoring bank guarantees renegotiated to Working Capital that do not impact the Company's cash.

c. Guarantees

The Company's debts are secured by bank guarantee and corporate aval and real guarantees. The real guarantees are imposed on property, plant and equipment in favor of BNDES, FINEP, Bradesco and Banco do Brasil. Institutions have a mortgage on the industrial assets of the subsidiary BioFlex, and FINEP also has a guarantee over agricultural equipment. See the values of property, plant and equipment assigned as collateral in Note 12.

d. Covenants

The Group has loans and financing in the individual and consolidated statements maturing by February 2029.

The loans and financing contain non-financial operating covenants establishing a range of obligations, listed below:

- Compliance with environmental obligations and legislation, the biosafety quality certificate (CQB) and the Gene Pool Management Council (CGEN);
- Submit federal, state and municipal tax debt clearance certificates;
- Have not incurred protests for indisputable debts;
- Pausing of operating activities;
- Corporate and equity restructuring.

The Executive Board and its legal advisers understand there was no breach of covenants between FY 2022 and the date these financial statements were approved.

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16. Trade payables

	Parent company		Consolidated	
	2022	2021	2022	2021
Domestic payables	562	4,544	10,584	23,716
Overseas payables	-	-	29,086	40,004
Total	562	4,544	39,670	63,720

Trade payables are mainly due to the purchase of raw materials for the 2G ethanol production process and independent auditing and consultancy services acquired.

17. Deferred revenue

	Consolidated	
	2022	2021
Collaboration agreement - Nextchem (i)	5,739	12,835
Collaboration agreement - Birla / US Endowment (ii)	-	2,180
	5,739	15,015
Current	5,739	6,697
Noncurrent	-	8,318

(i) On July 31, 2020, the Group established a strategic alliance with NextChem, a subsidiary of the Italian engineering group Maire Tecnimont with a worldwide presence in renewable energy. This is a 10-year partnership and has the following values and premises:

- USD 4,000 thousand received after signing the contract;
- USD 4,000 thousand will be received after the technology license has been sold;
- USD 4,000 thousand will be received after the plant starts production for the sale of the first license or the sale of the second technology license;
- USD 3,000 thousand will be received in engineering services to optimize the technology and develop a "process design package".

The first tranche of R\$ 21,855 (USD 4,000) thousand was received in August 2020 and recognized as deferred revenue, which will be amortized over 40 years, as per the contract. The contract has a total value of R\$ 78,050 (USD 15,000 thousand), with residual tranches of R\$ 57,236 (USD 11,000 thousand), of which R\$ 41,626 (USD 8 thousand) will be received in cash and R\$ 15,610 (USD 3,000 thousand) in services provided by Nextchem. These amounts were converted to dollars at the time of the operation.

There was a partial pro-rata amortization over 40 months (USD 100 per month) of the contract, with the carrying amount of R\$ 5,739 (USD 1,100 thousand) converted at the exchange rate as of December 31, 2022.

(ii) On November 01, 2021 the parent company AVAPCO LLC and the United States Endowment for Forestry and Communities, Inc. signed an agreement to continue developing nanocellulose in collaboration with Birla Carbon. The contract's total was R\$ 2,835 (USD 500). The amount was received at sight and was being recognized as revenue in the statement of profit or loss for the years according to the contractual term, which is effective until December 15, 2022.

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18. Legal claims

The Company and its subsidiaries are defendants in cases rated as possible defeats by our legal advisers in the amount of R\$ 100 at the Parent Company as of December 31, 2022 (R\$ 200 as of December 31, 2021) and the consolidated statement of R\$ 4,349 as of December 31, 2022 (R\$ 3,818 as of December 31, 2021), for which no provisions were made.

19. Equity

a. Share Capital

The ownership structure is as follows:

	December 31, 2022		
	Capital - R\$	Number of shares	Interest
Shareholders			
GranInvestimentos S/A	377,662	93,038,165	86%
BNDES Participações S/A	600,000	15,094,340	14%
Total	<u>977,662</u>	<u>108,132,505</u>	<u>100%</u>

	December 31, 2021		
	Capital - R\$	Number of shares	Interest
Shareholders			
GranInvestimentos S/A	377,662	93,038,165	86%
BNDES Participações S/A	600,000	15,094,340	14%
Total	<u>977,662</u>	<u>108,132,505</u>	<u>100%</u>

b. Advance for future capital increase - (AFAC)

As of December 30, 2022 the shareholder GranInvestimentos S.A. made a private advance for future capital increase instrument to transfer to the AFAC the amount of R\$ 341,059, it had receivable from its subsidiary GranBio Investimentos S.A. consisting of amounts submitted to provide cash for operating activities, which will be converted into registered common shares.

c. Asset and liability valuation adjustments

Asset and liability valuation adjustments include accumulated adjustments for foreign-currency differences deriving from the translation of financial statements for foreign operations. In FY 2022 the translation gain of R\$ 38,984 was recognized. The balance of the item as of December 31, 2022 is R\$ 193,613.

d. Capital reserve

In a Shareholders' Agreement signed on April 30, 2013 between BNDESPAR and GranInvestimentos S.A. (Shareholders), it was stipulated that the shares were initially issued at R\$ 39.75 each. The capital contributions after the signing of this Agreement have the share price adjusted by the Broad Consumer Prices Index (IPCA). The variation in the share price between the date of the Shareholders' Agreement until the date of the effective receipt of the capital contribution, is multiplied by the total number of paid-in shares, and this variation is recorded as a Capital Reserve.

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As at December 31, 2022 and December 31, 2021, the total capital reserve was R\$ 108,175.

20. Revenue from goods and services sold

The table below breaks down the Company's gross revenue in accordance with CPC 47 - item 112A:

	Consolidated	
	2022	2021
Revenue from collaboration agreements (i)	10,544	6,889
Service provision revenue (ii)	-	889
Resale of goods (ii)	-	7,961
Revenue from sales of royalties (iv)	442	181
Revenue	10,986	15,920
Equipment leasing revenue (v)	13,251	20,433
Other revenue	13,251	20,433
Total gross revenue	24,237	36,353
Sales taxes	(1,267)	(2,736)
Revenue from goods and services sold	22,970	33,617

- (i) Revenue of R\$ 8,946 (USD 1,730 thousand) due to the recognition of deferred revenue under the collaboration agreement with Nextchem and Birla, as detailed in note 17 and R\$ 1,597 (USD 306 thousand) for biomass demineralization experiments with Shell.
- (ii) Operational revenue of the indirect subsidiaries GranBio Process Energy Recovery, Inc., Bio Plus and Avapco resulting from the provision of waste elimination and water treatment services, by using proprietary technology.
- (iii) Operating revenue of the indirect subsidiaries BioFlex Agroindustrial S.A. and BioVertis Produção Agrícola Ltda. due to reselling sugarcane straw to CESM, domestic sales of cellulosic ethanol and sugarcane saplings to other clients outside GranBio group.
- (iv) Operating revenue from energy cane royalties;
- (v) Operating revenue of the indirect subsidiary BioFlex Agroindustrial S.A. due to leasing electricity cogeneration assets, as per the contract signed with CESM.

For further information about operating revenue see Note 27 - Segment Reporting.

21. Cost of goods sold and services rendered,

	2022	2021
Cost from commercial partnerships and services provided		
(i)	(11,007)	(15,838)
Leasing costs (ii)	(4,463)	(6,694)
Production costs (iii)	-	(17,653)
Idleness cost (iv)	(19,209)	(21,401)
Total	(34,679)	(61,586)

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- (i) Operational cost of US indirect subsidiaries;
- (ii) Depreciation cost of leased thermoelectric assets;
- (iii) 2G ethanol production cost for the 2020/2021 crop year. There was no ethanol production and sale in the 2021/2022 crop year;
- (iv) Idleness cost of the 2G ethanol production plant of the indirect subsidiary BioFlex.

22. Administrative and general expenses

	2022	2021	2022	2021
Services provided (i)	(11,480)	(7,062)	(23,452)	(17,070)
Depreciation and amortization (ii)	(195)	(173)	(19,595)	(21,113)
Personnel expenses	(261)	(726)	(7,178)	(10,039)
Insurance	(183)	(441)	(5,927)	(4,805)
General expenses (iii)	(63)	(16)	(1,290)	(5,023)
Occupation expenses	(351)	(76)	(1,225)	(563)
Taxes and fees	(265)	(2,700)	(1,074)	(10,154)
Travel	(47)	(14)	(182)	(371)
Vehicle expenses	-	-	(50)	(515)
Selling expenses	(4)	(93)	(4)	(99)
Total	<u>(12,849)</u>	<u>(11,301)</u>	<u>(59,977)</u>	<u>(69,752)</u>

- (i) Denotes expenses on third-party services provided such as audit, tax and legal;
- (ii) Depreciation of other assets such as furniture, vehicles and IT equipment are recognized as a general and administrative expense. In the individual and consolidated financial statements, the depreciation expense at December 31, 2022 was R\$ 1,713 (R\$ 2,332 at December 31, 2021) and the amortization expense for intangible assets at December 31, 2022 was R\$ 17,882 (R\$ 18,781 at December 31, 2021);
- (iii) General expenses on maintenance, mail, fuel, materials for use and consumption and security materials.

23. Other operating income

	Consolidated	
	2022	2021
Recognition of right of use for access (i)	-	2,052
Gain on closure of the New Market Tax Credit (ii)	-	31,646
Proceeds from the sale of intangible assets (iii)	114,012	
Reversal of provision for related-party losses (iv)	70,522	
Other operating income (expenses)	15,190	4,630
Total other revenue	<u>199,724</u>	<u>38,328</u>
Provision for related-party losses (iv)	-	(18,990)
Proceeds on sale of property, plant and equipment (v)	(61,632)	-
Proceeds on the sale of other property, plant and equipment (vi)	-	(20,452)
Total other expenses	<u>(61,632)</u>	<u>(39,442)</u>
Total	<u><u>138,092</u></u>	<u><u>(1,114)</u></u>

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- (i) Recognition of right of use (lease) of the Thomaston plant due to the control acquisition and the business combination in March 2019. The recognized right of use was recorded based on the period embraced by this agreement;
- (ii) Gain of R\$ 31,646 (USD 5,600) on closure of the New Market Tax Credit contract;
- (iii) As explained in Note 1, on September 08, 2022, the indirect subsidiary BioFlex Agroindustrial S.A. and Atlântica Sementes S.A, of Nuseed Group, entered a strategic long-term alliance to expedite investments in Research and Development (R&D) and sales in global sugarcane markets. Atlântica Sementes S.A acquired the commercial and sugarcane processing assets and the R&D program in order to improve the value of the energy produced by innovating in bioenergy cane. The transaction involved the receipt of R\$ 130,869 (USD 25,000). This sale led to a gain of R\$ 115,575, with R\$ 112,268 from the sale of intangible assets and R\$ 3,307 from the transfer of customer advances to be performed by the buyer. In addition to this operation with Atlântica Sementes S.A, the Company wrote off intangible assets of R\$ 1,563 due to the discontinuation of projects;
- (iv) As explained in notes 10 and 15, the company reverted its entire provision for related-party losses, generating a net impact of R\$ 70,522;
- (v) On September 30, 2022 Company management authorized the sale of property, plant and equipment related to the thermoelectric plant of its indirect subsidiary BioFlex Agroindustrial S.A which had been leased to the Joint Venture Companhia Energética de São Miguel dos Campos (CESM). This sale generated a loss of R\$ 60,636. This sale is a part of the process of only retaining at BioFlex assets related to its core activity of producing 2G ethanol. Furthermore, this sale completed the negotiations with CESM shareholders due to the restructuring of the Joint Venture. In addition to this operation, the Company wrote off other assets in the amount of R\$ 996;
- (vi) In January 2021 Company management authorized the sale of obsolete equipment and property, plant and equipment of the indirect subsidiary Bioflex Agroindustrial S.A.; thereby generating cash to settle short-term debts. These sales generated a loss of R\$ 20,452.

24. Net financial income/loss

	Parent company		Consolidated	
	2022	2021	2022	2021
Financial costs				
Bank expenses	(258)	(39)	(575)	(57)
Financial discounts awarded	-	-	-	(23)
IOF	(74)	(137)	(1,424)	(138)
Interest expenses (i)	(361)	(923)	(9,108)	(10,614)
Interest on loans, financing and debentures	(15,138)	(14,566)	(73,952)	(63,234)
Monetary restatement	-	-	(27)	-
Exchange variance loss	-	(2,431)	-	(5,636)
	<u>(15,831)</u>	<u>(18,096)</u>	<u>(85,086)</u>	<u>(79,702)</u>
Financial revenue				
Interest received	-	-	-	1,066
Financial discounts obtained (ii)	1,151	27	32,530	59
Earnings on investments	7,533	2,873	3,813	76
Monetary restatement	30	-	-	-
Exchange variance gain	2,298	-	4,787	1,106
	<u>11,012</u>	<u>2,900</u>	<u>41,130</u>	<u>2,307</u>
Financial costs, net	<u>(4,819)</u>	<u>(15,196)</u>	<u>(43,956)</u>	<u>(77,395)</u>

- (i) Interest mainly due to financial cost on loan guarantees obtained from financial institutions and interest and fines on late payments to suppliers and taxes.

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- (ii) In FY 2022 there were renegotiations with financial institutions and suppliers to regularize certain debts, and part of the amount owed was given a financial discount in exchange for settling the outstanding balance.

25. Accumulated tax losses

a. Amounts recognized in profit or loss for the period - Consolidated

	<u>2022</u>	<u>2021</u>
Current income tax and social contribution expense		
Current year expense	-	-
Total	-	-
Deferred income tax and social contribution expense		
Temporary difference:		
Realization through amortization of intangible assets	<u>4,823</u>	<u>5,038</u>
	<u>4,823</u>	<u>5,038</u>

b. Deferred tax assets not recognized - Consolidated

The Group did not generate taxable profit in previous years and, therefore, there is increased doubt about whether future taxable profit will be available in the foreseeable future to realize deferred tax assets. As a result, deferred tax assets were not recognized as at December 31, 2022.

For the Brazilian companies, accumulated tax losses and the negative basis of social contribution never expire, but can only be offset against up to 30% of annual taxable earnings. The Company's total income tax loss and negative basis is R\$ 848,268 as of December 31, 2022 (R\$ 824,818 as of December 31, 2021).

For North American entities, tax losses accumulated before December 31, 2017 can be used in 20 years and there is no limit on taxable profit for the use of these losses. Tax losses generated after December 31, 2017 can be used indefinitely and can be used to offset only 80% of taxable income for the current year. The total tax loss is R\$ 122,417 as of December 31, 2022 (R\$ 100,383 as of December 31, 2021).

Tax returns for all companies are subject to tax inspections and reviews by the tax authorities for varying periods. As a result of these inspections and reviews, questions may arise about the methodologies, criteria and interpretations of the legislation by the authorities and, therefore, change the amounts recognized by the Group in the financial statements and/or result in judicial questions.

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c. Movements in deferred tax balances

	<u>Consolidated</u>
Closing net balance at December 31, 2020	58,003
Realization through amortization of intangible assets	(5,038)
Exchange variance on translating deferred taxes from the functional currency to the presentation currency	4,110
Closing net balance at December 31, 2021	<u>57,075</u>
Realization through amortization of intangible assets	(4,822)
Exchange variance on translating taxes from the functional currency to the presentation currency	(3,760)
Closing net balance at December 31, 2022	<u><u>48,493</u></u>

d. Tax benefit

The subsidiary BioFlex Agroindustrial S.A. has a benefit from the federal tax authority and the Northeast Development Agency (SUDENE) awarding a nonreturnable entitlement to a 75% reduction in the IRPJ and Surcharge in the period 01/01/2015 to 12/31/2024.

26. Financial instruments and risk management

Operations with financial instruments are fully recognized in the accounts and restricted to cash and cash equivalents, accounts receivable, loans and financing, and other accounts receivable and payable from related parties, loans, financing and debentures, trade payable and other accounts payable.

The Group and its direct and indirect subsidiaries do not invest in derivatives or any other risky assets on a speculative basis.

The Group and its direct and indirect subsidiaries assessed such financial assets and liabilities with respect to market value on the basis of available information and appropriate assessment methodologies. However, the interpretation of market data and selection of assessment methods requires considerable judgment and estimates to calculate the most appropriate realizable value. As a result, the estimates do not necessarily indicate the values that could be realized in the current market.

The activities of the Company and its direct and indirect subsidiaries expose them to various financial risks: credit risk, liquidity risk and market risk (including interest rate risk), as described below:

a. Credit risk

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument fails to meet its contractual obligations. This risk is primarily posed by trade receivables.

The carrying amount of financial assets represents the maximum credit exposure.

The Company has a credit policy whose purpose is to set procedures for granting loans in business transactions that are in line with the required levels of quality, fastness and security.

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The Group determines credit limits by analyzing the client's credit standing, considering: (i) onboarding information (ii) economic and financial information and (iii) historical purchases and payments.

b. Liquidity risk

The cautious management of liquidity risk implies keeping enough cash and securities and credit facilities to be able to settle market positions. Due to the dynamic nature of their businesses, the Group and its direct and indirect subsidiaries use flexible funding by maintaining bank credit facilities.

Management monitors the level of the Company and its direct and indirect subsidiaries' liquidity, considering the expected cash flow and cash and cash equivalents. Furthermore, the liquidity management policy of the Company and its direct and indirect subsidiaries entails projecting cash flows and considering the level of net assets required to achieve these projections and maintain the debt financing plans.

Management is continuing to look into alternatives to guarantee a balanced capital structure information. See further information in notes 1 and 30.

The following are the remaining contractual financial liability maturities and exclude the impact of netting agreements:

	Parent company				
	Carrying	6 months	6 to 12	1 to 3	Above 3
	amount	or less	months	years	years
Non-derivative financial liabilities					
Loans and financing*	132,376	5,084	5,531	98,469	147,934
Trade payables	562	562	-	-	-
Related-party loans	44,363	44,363	-	-	-
Accounts payable	190	190	-	-	-
	<u>177,491</u>	<u>50,199</u>	<u>5,531</u>	<u>98,469</u>	<u>147,934</u>
	Consolidated				
	Carrying	6 months	6 to 12	1 to 3	Above 3
	amount	or less	months	years	years
Non-derivative financial liabilities					
Loans and financing *	342,253	23,637	25,310	263,046	279,318
Trade payables	39,670	39,670	-	-	-
Related-party loans	-	-	-	-	-
Accounts payable	5,026	-	-	5,026	-
	<u>386,949</u>	<u>63,307</u>	<u>25,310</u>	<u>268,072</u>	<u>279,318</u>

(*) Amounts in each age range have projected interest to be incurred.

The maturity analyses of the Group do not project cash flows that could occur significantly earlier or at significantly different amounts.

c. Market risk

The Group is exposed to interest-rate changes, charged on its loans and financing and exchange variance on the assets and liabilities of the overseas-based direct and indirect subsidiaries. To minimize possible impacts triggered by these changes, the Group adopts the policy of diversifying these contracts.

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The Group is primarily exposed to changes in CDI, IPCA and TJLP interest rates, which are applied to its loans and financing.

At the individual and consolidated reporting date the profile of the Company's financial instruments yielding interest was:

	Carrying amount			
	Parent company		Consolidated	
	2022	2021	2022	2021
Variable-income instruments				
Liabilities				
Loans and financing (CDI)	-	(12,637)	(209,877)	(214,743)
Loans and financing (IPCA)	-	-	-	(201,472)
Loans and financing (TJLP)	(132,376)	(134,802)	(132,376)	(134,802)
	<u>(132,376)</u>	<u>(147,439)</u>	<u>(342,253)</u>	<u>(551,017)</u>

The profile of the assets and liabilities resulting from the consolidation of the direct and indirect subsidiaries in USD as the functional currency has been summarized below, and is exposed to exchange variance:

	Consolidated	
	2022	2021
Instruments exposed to exchange variance		
Assets		
Cash and cash equivalents	105	268
Accounts receivable	1,857	579
Notes receivable	-	174
Other financial assets	56,932	60,489
	<u>58,894</u>	<u>61,510</u>
Liabilities		
Trade payables	(6,858)	(16,135)
Other accounts payable	(6,188)	(3,146)
Accounts payable	(12,319)	(13,678)
	<u>(25,365)</u>	<u>(32,959)</u>

Cash flow sensitivity analysis for variable-rate instruments and exchange variance

The sensitivity analysis took into account the loans and financing which are restated by the CDI, TJLP and SELIC rates.

The sensitivity analysis on interest rates on loans, financing and debentures considers an increase and reduction of 25% and 50% in interest rates and how this would impact equity and profit or loss. This analysis takes into account the amounts presented in the individual and consolidated financial statements as of December 31, 2022. Except for the previously mentioned 25% and 50% variation, no other changes were projected:

Interest rate exposure	Balances	Probable	25%	50%	-25%	12/31/2022
						-50%
Loans and financing						
TJLP	(132,376)	(9,756)	(12,195)	(14,635)	(7,317)	(4,878)
IPCA	-	-	-	-	-	-
CDI	(209,877)	(28,648)	(35,810)	(42,972)	(21,486)	(14,324)
Profit or loss for the period	<u>(342,253)</u>	<u>(38,404)</u>	<u>(48,005)</u>	<u>(57,607)</u>	<u>(28,803)</u>	<u>(19,202)</u>

The interest rates the Company is subject to, based on projections of these rates in a probable scenario and the sensitivity analysis, are the following:

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	Probable	25%	50%	-25%	12/31/2022 -50%
TJLP (i)	7.37%	9.21%	11.06%	5.53%	3.69%
IPCA (ii)	6.16%	7.70%	9.24%	4.62%	3.08%
CDI (iii)	13.65%	17.06%	20.48%	10.24%	6.83%

- (i) Interest rates were based on information available at the BNDES Source: BNDES
(ii) Interest rates were based on information available at the BNDES Source: BNDES
(iii) Interest rates were based on information available at CETIP.

The sensitivity analysis into the exchange rates with the 25% and 50% increase and decrease in the consolidated figures is as follows, including the most likely dollar variance used for translation at December 31, 2022. As of December 31, 2022 the USD exchange rate was R\$ 5.2177 to the US dollar:

Exposure to exchange rates	Carrying amount in R\$	In USD	25%	50%	-25%	-50%
Assets	58,894	11,287	14,723	29,447	(14,723)	(29,447)
Liabilities	(25,365)	(4,861)	(6,341)	(12,683)	6,341	12,683
Exposure in profit or loss for the period		6,426	8,382	16,764	(8,382)	(16,764)

For the effects of the investments in overseas subsidiaries, see below the sensitivity analysis with the probable scenario for the future exchange rate:

	Probable	25%	50%	-25%	12/31/2022 -50%
US dollar (USD)	5.2177	6.5221	7.8266	3.9133	2.6089

Capital management

The objective of the Company's capital management is to ensure that it maintains its strong credit rating with the financial institutions and its optimal capital ratio, in order to support the Company's business and maximize value for its shareholders. The Group and its direct and indirect subsidiaries control their capital structures by making adjustments and adapting to the existing economic conditions. In its net debt structure the Group includes loans and financing less cash and cash equivalents.

	Parent company		Consolidated	
	2022	2021	2022	2021
Cash and cash equivalents	1	-	64,723	274
Short-term investments	7,186	54,528	7,186	-
(-) Loans and financing	(132,376)	(147,439)	(342,253)	(551,017)
Net debt	(125,189)	(92,911)	(270,344)	(550,743)
Equity	908,219	578,962	910,987	582,492
Equity and net debt	783,030	486,051	640,643	31,749

Classification of financial instruments

The table below shows the main financial instruments by category.

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Parent company

	Amortized cost	
	2022	2021
Financial assets		
Cash and cash equivalents	1	-
Total	1	-
Financial liabilities		
Trade payables	562	4,544
Related-party loans	44,363	316,354
Loans and financing	132,376	147,439
Accounts payable	190	2,118
Total	177,491	470,455
	Fair value through profit or loss	
	2022	2021
Financial assets		
Short-term investments	69,061	54,528
Total	69,061	54,528

Consolidated

	Amortized cost	
	2022	2021
Financial assets		
Cash and cash equivalents	64,723	274
Other accounts receivable from related parties	-	83,540
Other receivables	-	174
Accounts receivable	2,032	1,294
Total	66,755	85,282
Financial liabilities		
Trade payables	39,670	63,720
Loans and financing	342,253	551,017
Related-party loans	-	281,011
Other accounts payable to related parties	63,502	56,714
Accounts payable	5,026	22,301
Total	450,451	974,763
	Fair value through profit or loss	
	2022	2021
Financial assets		
Short-term investments	7,186	-
Total	7,186	-

The fair values of the financial instruments presented do not significantly vary from the balances presented in the statement of financial position.

27. Segment reporting

Basis for segmentation

The Group has the following 3 strategic divisions, which are its reportable segments. These divisions offer different products and services, and are managed separately because they require different technologies. The following summary describes the operations of each reportable segment of the Company:

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Reportable segments	Operation
BioVertis	Company engaged in the experimentation, development, plantation, production and collection of biomass, i.e. Vertix energy cane and sugarcane straw.
BioFlex	Production of biomass, processing biomass for the production and sale of biofuel, electricity, biochemicals and pharmaceuticals, technological research and development, sale of sugarcane straw, bagasse and biomass.
Biotech	Development of technology to convert biomass into cellulose ethanol, biochemicals and nanocellulose.

Information about reportable segments

Information related to each reportable segment is set out below. The performance is assessed based on final net income, as Management believes that this information is the most important for assessing the results of the respective segments.

	December 31, 2022				
	BioVertis	BioFlex	Biotech	Other	Total
Revenue from goods and services sold	77	12,350	10,543	-	22,970
Cost of goods sold and services rendered	-	(23,672)	(11,007)	-	(34,679)
Gross Profit / (Loss)	77	(11,322)	(464)	-	(11,709)
Operating revenue (expenses)					
Administrative expenses	(1,530)	(12,282)	(13,726)	-	(27,538)
Depreciation and amortization	(829)	(1,297)	(17,275)	-	(19,401)
Other income (expenses)	(497)	138,384	(409)	-	137,478
	(2,856)	124,805	(31,410)	-	90,539
Net income / (loss) before financial income and expense	(2,779)	113,483	(31,874)	-	78,830
Financial revenue	13	29,126	5,107	-	34,246
Financial costs	(404)	(76,456)	(90)	-	(76,950)
Net financial income/loss	(391)	(47,330)	5,017	-	(42,704)
Deferred income tax and social contribution	-	-	4,823	-	4,823
Net (loss) for the period - Subtotal	(3,170)	66,153	(22,034)	-	40,949
Other	-	-	-	-	(14,529)
Net income for the year					26,420
Segment reporting - Assets	BioVertis	BioFlex	Biotech	Other	Total
Inventories	-	8,570	-	-	8,570
Property, plant and equipment	-	737,498	6,554	2,481	746,533
Intangible assets	-	12,001	568,561	-	580,562
Segment reporting - Liabilities	BioVertis	BioFlex	Biotech	Other	Total
Loans and financing	-	(335,254)	-	(6,999)	(342,253)
Other accounts payable	-	(639)	(2,320)	(2,067)	(5,026)

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	December 31, 2021				
	BioVertis	BioFlex	Biotech	Total	
Revenue from goods and services sold	235	25,605	7,777	33,617	
Cost of goods sold and services rendered	-	(45,749)	(15,837)	(61,586)	
Gross Profit / (Loss)	235	(20,144)	(8,060)	(27,969)	
Operating revenue (expenses)					
Administrative expenses	(3,988)	(20,058)	(13,223)	(37,269)	
Depreciation and amortization	(1,519)	(930)	(18,204)	(20,653)	
Other income (expenses)	1,274	(42,533)	37,656	(3,603)	
	(4,233)	(63,521)	6,229	(61,525)	
Net (loss) before financial income and costs	(3,998)	(83,665)	(1,831)	(89,494)	
Financial revenue	-	1,138	1,066	2,204	
Financial costs	(788)	(61,680)	(1,881)	(64,349)	
Net financial costs	(788)	(60,542)	(815)	(62,145)	
Deferred income tax and social contribution	-	-	5,038	5,038	
Net (loss) for the period- Subtotal	(4,786)	(144,207)	2,392	(146,601)	
Other				(24,591)	
Net (loss) for the year				(171,192)	
Segment reporting - Assets	BioVertis	BioFlex	Biotech	Other	Total
Inventories	13	8,710	-	-	8,723
Property, plant and equipment	3,572	871,298	14,947	3,150	892,967
Intangible assets	28,505	111	624,814	-	653,430
Segment reporting - Liabilities	BioVertis	BioFlex	Biotech	Other	Total
Loans and financing	(7,082)	(507,738)	-	(36,197)	(551,017)
Other accounts payable	(257)	(16,780)	(3,146)	(100)	(20,283)
Leasing accounts payable	-	-	-	(2,018)	(2,018)

28. Earnings (loss) per share

In compliance with technical pronouncement CPC 41 (IAS 33) - Earnings per share, approved by CVM Resolution 636, the Company presents the following information on earnings per share for the years ended December 31, 2022 and 2021.

- Basic: the basic calculation of earnings per share is done by dividing the profit (loss) for the period, attributed to the holders of the Parent Company's common shares, by the weighted average number of common shares available during the period (denominator).
- Diluted: the calculation of diluted earnings per share has been based on the following profit or loss attributable to the holders of the Company's common shares and weighted-average number of common shares for the effects of all dilutive potential common shares. The Company does not have any potential common shares.

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The table below provides data on earnings and the shares used in calculating basic and diluted earnings per share, which are identical because the Company does not have potential common shares.

	<u>2022</u>	<u>2021</u>
Profit (loss) for the year	27,182	(170,345)
Weighted average number of common shares (in thousands)	108,133	108,133
Basic and diluted loss per share (in Brazilian Reais)	<u>0.2514</u>	<u>(1.5753)</u>

29. Insurance

As of December 31, 2022, the Company and its subsidiaries have the following insurance contracts and amounts considered compatible by management with the risks involved:

PP&E and inventory (approximate coverage - R\$ 562,024)

- Civil liability: coverage for material and personal damages caused involuntarily to third parties as a result of the production, facilities and assemblies taking place on the insured site;

Administrative (approximate coverage - R\$ 459,392)

- Administrative head office: fire, lightning strike, explosion, theft, qualified theft, civil liability and others.

Given their nature and specific features, the risk assumptions made and the respective coverage are not covered by an individual and consolidated financial statements audit, and were not therefore reviewed by our independent auditors.

30. Subsequent events

In 2022, GranBio made fresh advances in the recognition of globally important patents, particularly in the strategy to accelerate technological demonstration and leadership in the development and production of Sustainable Aviation Fuel (SAF). On January 26, 2023, GranBio, through its subsidiary AVAPCO, obtained a new grant of up to USD 80 million from the U.S. Department of Energy (DOE) for the construction of an integrated 2G SAF biorefinery at a demonstration scale, equivalent to 6 million liters per year, and a joint industrial-scale nanocellulose plant using wood and sugarcane trash as raw materials. Global mandates for SAF indicate an expected consumption equivalent to 1.25 million barrels per day by 2050.

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On February 8, 2023, the full session of the Supreme Federal Court (STF) concluded the judgment related to subsequent decisions on the so-called "claim preclusion." The STF ruling is still subject to appeal, and the publication of this ruling is awaited. According to the study conducted by the Company, to date the aforementioned ruling has not had a material impact on our individual and consolidated financial statements as of December 31, 2022.

Members of the Executive Board

Bernardo de Almeida Gradin
Chief Executive Officer

Guilherme Mottin Refinetti
CFO

Dejair Adão Guerreiro de Oliveira
Controller
CRC PR-052741/O-4-T-CE