(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, 2021

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Individual and consolidated financial statements
As at December 31, 2021

Contents

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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, 2021, and the respective statements of profit or loss, comprehensive income, changes in equity and cash flows for the year then ended, as well as the corresponding notes, 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, 2021, 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, 2021, 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 we have 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 companies have reported recurring losses on their operations and accumulated losses in equity in the amount of R$ 739,472 thousand (R$ 569,127 thousand as at December 31, 2020) in the individual and consolidated financial statements, as well as current liabilities in excess of current assets at the year ended December 31, 2021, in the amount of R$ 711,588 thousand in the consolidated financial statements (R$ 367,418 thousand as at December 31, 2020). 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. Our opinion is not qualified in respect of this matter.

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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$ 147,439 thousand and R$ 551,017 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 16, 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, and that contractual amendments establishing a grace period (*standstill agreement*) by the creditors until the reporting date guarantee the Company and its controlled companies 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 external legal advisors on a given transaction.

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	How the matter was addressed in our audit
As at December 31, 2021, the Company has fixed assets in the amount of R$ 871,298 thousand in the controlled company Bioflex Agroindustrial S.A., and in the amount of R$ 624,814 thousand in the controlled company GranBio LLC, referring to licenses of intellectual property 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.	Our audit procedures included, among others: ▪ Analyzing the competence and objectivity of external experts hired by Management; ▪ Having our experts 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, 2021, 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 legislation precludes public disclosure about them or when, in extremely rare circumstances, we determine that a matter should not be included in our report because the adverse consequences of doing so would reasonably be expected to outweigh the benefits to public interest.

São Paulo, March 29, 2022.

BDO RCS Auditores Independentes SS
CRC 2 SP 013846/O-1

Ricardo Vieira Rocha
Accountant CRC 1 BA 026357/O-2 – S - SP

GranBio Investimentos S.A.

Statements of financial position as of December 31, 2021 and 2020

(In thousands of Brazilian Reais)

		Parent company		Consolidated	
Assets	**Note**	**12/31/21**	**12/31/20**	**12/31/21**	**12/31/20**
Current assets					
Cash and cash equivalents	6	-	-	274	397
Short-term investments	7	54,528	58,962	-	7,231
Accounts receivable	8	-	-	1,294	4,060
Advances to suppliers		80	537	1,972	6,443
Inventories	9	-	-	8,723	8,253
Recoverable taxes		-	-	-	2,212
Loans with related parties	10	-	2,772	-	-
Prepaid expense		137	396	1,536	1,778
Total current assets		54,745	62,667	13,799	30,374
Noncurrent assets					
Recoverable taxes		261	2,454	5,591	7,279
Judicial deposits		177	197	675	1,736
Other receivables	11	-	-	174	76,961
Other accounts receivable from related parties	10	-	-	83,540	83,466
Investments	12	991,155	959,172	-	-
Property, plant and equipment	13	3,150	3,030	892,967	948,131
Intangible assets	14	-	-	653,430	627,258
Total non-current assets		994,743	964,853	1,636,377	1,744,831
Total assets		**1,049,488**	**1,027,520**	**1,650,176**	**1,775,205**

		Parent company		Consolidated	
Liabilities	**Note**	**12/31/21**	**12/31/20**	**12/31/21**	**12/31/20**
Current liabilities					
Loans, financing and debentures	16	18,547	16,357	284,719	164,373
Leases		66	58	66	59
Trade payables	17	4,544	4,804	63,720	49,716
Loans with related parties	10	316,354	155,153	281,011	122,240
Other accounts payable to related parties	10	-	-	56,714	-
Tax and labor obligations		71	679	12,978	16,024
Customer advances		-	-	10	194
Other accounts payable	18	100	29	19,472	34,922
Deferred revenue	19	-	-	6,697	10,264
			-		-
Total current liabilities		339,682	177,080	725,387	397,792
Noncurrent liabilities					
Loans, financing and debentures	16	128,892	138,640	266,298	478,938
Leases		1,952	2,017	1,952	2,017
Tax and labor obligations		-	62	5,118	3,005
Deferred revenue	19	-	-	8,318	11,952
Deferred income tax and social contribution	27	-	-	57,075	58,003
Customer advances		-	-	2,725	2,265
Other accounts payable	18	-	-	811	107,135
Total noncurrent liabilities		130,844	140,719	342,297	663,315
Equity	21				
Share capital		977,662	977,662	977,662	977,662
Capital reserves		108,175	108,175	108,175	108,175
Asset and liability valuation adjustments		232,597	193,011	232,597	193,011
Accumulated losses		(739,472)	(569,127)	(739,472)	(569,127)
Equity attributable to controlling shareholders		578,962	709,721	578,962	709,721
Noncontrolling interests		-	-	3,530	4,377
Total equity		578,962	709,721	582,492	714,098
Total liabilities and equity		**1,049,488**	**1,027,520**	**1,650,176**	**1,775,205**

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

GranBio Investimentos S.A.

Statements of profit or loss

Years ended December 31, 2021 and 2020

(In thousands of Brazilian Reais)

		Parent company		Consolidated	
	Note	**12/31/21**	**12/31/20**	**12/31/21**	**12/31/20**
Revenue from goods and services sold	22	-	-	33,617	39,975
Cost of goods sold and services rendered	23	-	(68)	(61,586)	(78,498)
Gross profit/loss		-	(68)	(27,969)	(38,523)
Operating income and (expenses)					
Administrative and general expenses	24	(11,301)	(9,542)	(69,752)	(72,931)
Other operating income (expenses)	25	2,704	(336)	(1,114)	12,434
Share of profit (loss) of equity-accounted investees	12	(146,552)	(129,798)	-	-
Operating income before financial income (expenses), net		(155,149)	(139,744)	(98,835)	(99,020)
Financial revenue	26	2,900	957	2,307	12,349
Financial expenses	26	(18,096)	(30,355)	(79,702)	(88,307)
Net financial income (loss)		(15,196)	(29,398)	(77,395)	(75,958)
Profit or loss before income tax and social contribution		(170,345)	(169,142)	(176,230)	(174,978)
Deferred income tax and social contribution	27	-	-	5,038	4,814
Profit or loss attributable to shareholders		**(170,345)**	**(169,142)**	**(171,192)**	**(170,164)**
Controlling interest		(170,345)	(169,142)	(170,345)	(169,142)
Noncontrolling interest		-	-	(847)	(1,022)
Profit or loss for the year		**(170,345)**	**(169,142)**	**(171,192)**	**(170,164)**
Number of shares		108,133	108,133	108,133	100,221
Earnings (loss) per share		(1.5753)	(1.5642)	(1.5753)	(1.6877)

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

GranBio Investimentos S.A.

Statements of other comprehensive income

Years ended December 31, 2021 and 2020

(In thousands of Brazilian Reais)

	Parent company		Consolidated	
	12/31/21	**12/31/20**	**12/31/21**	**12/31/20**
Profit or loss for the year	(170,345)	(169,142)	(171,192)	(170,164)
Other comprehensive income to be reclassified to profit or loss in subsequent periods:				
Cumulative translation adjustment - CTA (notes 12.c and 21.b)	39,586	111,233	39,586	111,233
Comprehensive income for the year	**(130,759)**	**(57,909)**	**(131,606)**	**(58,931)**
Profit attributable to:				
Controlling shareholders			(130,759)	(57,909)
Noncontrolling shareholders			(847)	(1,022)
Total comprehensive income			**(131,606)**	**(58,931)**

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

GranBio Investimentos S.A.

Statements of changes in equity

Years ended December 31, 2021 and 2020

(In thousands of Brazilian Reais)

		Attributable to controlling shareholders							
	Note	**Share capital**	**Capital to be paid in**	**Capital reserve**	**Asset and liability valuation adjustments**	**Accumulated losses**	**Equity attributable to shareholders**	**Noncontrolling interest**	**Total equity**
Balances at January 01, 2020		**1,149,869**	**(249,869)**	**108,175**	**81,778**	**(399,985)**	**689,968**	**5,399**	**695,367**
Cumulative translation adjustment - CTA	21.b	-	-	-	111,233	-	111,233	-	111,233
Capital increase		-	77,662	-	-	-	77,662	-	77,662
Capital to be paid in	21	(172,207)	172,207	-	-	-	-	-	-
Profit or loss for the year		-	-	-	-	(170,345)	(170,345)	(847)	(171,192)
Balances at December 31, 2020		**977,662**	**-**	**108,175**	**193,011**	**(570,330)**	**708,518**	**4,552**	**713,070**
Cumulative translation adjustment - CTA	21.b	-	-	-	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**	**(740,675)**	**577,759**	**3,705**	**581,464**

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

GranBio Investimentos S.A.

Statements of cash flows

Years ended December 31, 2021 and 2020

(In thousands of Brazilian Reais)

	Parent company		Consolidated	
	12/31/21	**12/31/20**	**12/31/21**	**12/31/20**
Cash flows from operating activities				
Profit or loss for the year	(170,345)	(169,142)	(171,192)	(170,164)
Adjustments for:				
Depreciation (Note 13)	173	929	35,020	36,047
Amortization (Note 14)	-	1	18,781	18,042
Derecognition of PP&E (Note 13)	-	1,115	22,459	4,787
Derecognition of investments (Note 12)	41	-	-	-
Result on recognition of deferred revenue (Note 25)	-	-	(2,052)	-
Share of profit (loss) of equity-accounted investees (Note 12)	146,552	129,798	-	-
Provision for leasing interest	(57)	1,002	(57)	1,002
Provision for interest on loans, financing and debentures (Note 16.b)	14,566	23,319	63,234	61,683
Deferred income tax and social contribution	-	-	(5,038)	(4,816)
Write-off of government grant	-	-	-	(4,797)
Provision for (reversal of) impairment loss	(2,788)	-	18,990	-
Provision for (reversal of) losses for inventory realization (Note 9)	-	-	(21,935)	8,608
Result for adjustments for the year	(11,858)	(12,978)	(41,790)	(49,608)
Change in assets and liabilities:				
Accounts receivable	-	-	2,876	15,803
Advance to suppliers	457	(401)	4,471	(1,823)
Inventories	-	-	21,465	(7,159)
Recoverable taxes	2,193	59	3,900	(430)
Prepaid expenses	259	(351)	329	164
Other receivables	-	-	79,738	23,922
Judicial deposits	20	(88)	1,061	(342)
Other accounts receivables from related parties	5,560	11,296	(19,064)	(21,690)
Trade payables	(260)	3,358	13,026	4,859
Tax and labor obligations	(670)	645	(1,104)	8,632
Customer advances	-	-	276	2,459
Deferred revenue	-	-	(6,497)	-
Other accounts payable	73	(31)	(108,802)	(6,126)
Net cash provided by (used in) operating activities	7,632	14,487	(8,325)	18,269
Interest on amortized loans, financing and debentures (Note 16 b)	(12,525)	(585)	(35,962)	(2,778)
Net cash provided by (used in) operating activities	(16,751)	924	(86,077)	(34,117)
Cash flows from investing activities				
Short-term investments	4,434	(58,962)	7,231	(7,231)
Increase in investments (Note 12)	(133,429)	(71,475)	-	-
Acquisition of intangible assets (Note 14)	-	-	(1,376)	(2,496)
Acquisition of PPE (Note 13)	(295)	(3,061)	(906)	(7,190)
Net cash used in investment activities	(129,290)	(133,498)	4,949	(16,917)
Cash flows from financing activities				
Acquisition of equity interest	-	-	(18,040)	(19,734)
Loans with Related parties	155,640	118,838	161,871	109,318
Payment of loans, financing and debentures - principal (Note 16 b)	(14,500)	(509)	(345,007)	(2,282)
Raising of loans, financing and debentures - principal (Note 16 b)	4,901	15,000	280,985	15,000
Debentures buyback	-	-	-	(50,897)
Lease payments	-	(757)	-	(757)
Net cash used in financing activities	146,041	132,572	79,809	50,648
Effect of exchange variance on cash and cash equivalents	-	-	1,196	(506)
Application of cash and cash equivalents	-	(2)	(123)	(892)
Cash and cash equivalents at January 01		2	397	1,289
Cash and cash equivalents at December 31	-	-	274	397
Decrease in cash and cash equivalents	-	(2)	(123)	(892)

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

GranBio Investimentos S.A.

Statements of value added

Years ended December 31, 2021 and 2020

(In thousands of Brazilian Reais)

	Parent company		Consolidated	
	12/31/21	12/31/20	12/31/21	12/31/20
Revenue				
Sales of merchandise, goods and services	-	-	36,352	42,014
Other revenue	2,704	(336)	(1,114)	12,434
Impairment of accounts receivable	-	-	-	-
	2,704	**(336)**	**35,238**	**54,448**
Inputs acquired from third parties				
Costs	-	(68)	(17,670)	(39,605)
Materials, electricity, outsourced services and other operating expenses	(10,800)	(8,036)	(34,395)	(34,912)
	(10,800)	**(8,104)**	**(52,065)**	**(74,517)**
Gross value added	**(8,096)**	**(8,440)**	**(16,827)**	**(20,069)**
Depreciation and amortization	(173)	(851)	(59,630)	(54,208)
	(173)	**(851)**	**(59,630)**	**(54,208)**
Net value added	**(8,269)**	**(9,291)**	**(76,457)**	**(74,277)**
Transferred value added				
Share of profit (loss) of equity-accounted investees	(146,552)	(129,798)	-	-
Financial revenues	2,900	445	2,307	11,837
	(143,652)	**(129,353)**	**2,307**	**11,837**
Added value to be distributed	**(151,921)**	**(138,644)**	**(74,150)**	**(62,440)**
Distribution of value added				
Personnel				
Direct compensation	97	226	9,008	9,419
Benefits	65	167	2,175	2,595
Government Severance Indemnity Fund for Employees (FGTS)	3	21	1,220	918
	165	**414**	**12,403**	**12,932**
Taxes, fees and contributions				
Federal	300	393	4,992	4,905
State	-	-	84	2,245
	300	**393**	**5,076**	**7,150**
Return on debt capital				
Interest on loans, financing and debentures	17,959	29,691	79,563	87,642
	17,959	**29,691**	**79,563**	**87,642**
Return on equity capital				
Retained earnings	(170,345)	(169,142)	(170,345)	(169,142)
Noncontrolling interest	-	-	(847)	(1,022)
	(170,345)	**(169,142)**	**(171,192)**	**(170,164)**
Total	**(151,921)**	**(138,644)**	**(74,150)**	**(62,440)**

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

Notes to the individual and consolidated financial statements

(In thousands of Brazilian 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 and its subsidiaries are mainly engaged in: (a) 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; (b) developing and trading competitive varieties of biomass, especially sugar cane Energy Cane Vertix ("Energy Cane"); (c) developing and licensing patents and intellectual property in the renewable sector using biomass and (d) generating and cogenerating electricity from biomass.

Energy Cane Vertix is a proprietary brand of GranBio, used to commercialize varieties of biomass developed by the Company. It is considered a lower cost biomass source compared to wood and sugar cane straw biomass. GranBio holds 11 Protected Cultivars (Vertix 1 to Vertix 11), already licensed by the subsidiary BioVertis.

Through its subsidiaries in the United States of America (USA), the Company also sells technology to extract nanocellulose, through the separation of lignin and the production of biochemicals. GranBio LLC, located in the USA, has multiple patents for various proprietary technologies it has developed. Its research center is located in the city of Thomaston, Georgia, USA, and is used to develop proprietary technology and provide research services to third parties for the development of applications to convert biomass into biochemicals and biofuels. GranBio LLC has a demonstration unit on a semi-commercial scale for the production of cellulosic ethanol in Michigan.

The Company recently restructured its business model to license its technologies and offers technological assistance to clients and partners in joint ventures in the production and processing of biomass in cellulose sugar, 2G (second-generation) Ethanol, 2G biochemicals and nanocellulose.

The Company's financial statements include the Company and its subsidiaries (jointly referred to as the "Group").

Going concern status

In the financial year ended December 31, 2021 the Company presented a consolidated net working capital deficiency of R$ 711,588 and accumulated losses of R$ 739,472.

This situation requires that Management assesses 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, through obtaining external funding or shareholder funding.

Management's assessment considered the Company's business plan, which was prepared based on the current status of assets and liabilities and the planned future actions, as well as certain significant macroeconomic assumptions and estimates of interest and inflation rates, as well as in the assessment of the financial capacity of shareholders to honor the capital commitment assumed in case of failure in the action plan prepared by the Company.

Actions already taken that impact the estimate of future cash flows were:

- 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;
- 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 financial investments to face the full early payment of one of the financing agreements maintained by the Company with Financiadora de Estudos e Projetos – FINEP, number 09.14.0013.00 in the amount of R$ 6,747, reducing the Company's total loans and borrowings;
- In November 30, 2021, the Company signed an amendment to the Financing Agreement by Opening Credit No. 13.2.0418.1 with the Banco Nacional de Desenvolvimento Econômico e Social - BNDES, in the amount of R$ 197,797, which postponed the final maturity of the line to May 2025, changed the interest rate used in the remuneration of sub-credits and ratified the existing guarantees;
- On March 9, 2022, the parent company GranInvestimentos S.A., through its shareholders, fully paid off the working capital financing, which on December 31, 2021 was R$ 12,637, reducing the Company's total loans and increasing the balance loan payable to the Parent Company, as disclosed in note 32 of subsequent events.

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

- Negotiating a standstill agreement with the banks Itaú, Banco do Brasil and Bradesco to temporally suspend the amortization of its debt payments for the term of 8 months commencing October 2021. As of December 31, 2021, the amount is R$ 202,106.
- The Company is pursuing: (i) alternatives to fund its existing obligations and its growth strategy with financial institutions and the capital markets both in Brazil and the United States, pursuing additional finance transactions of approximately R$ 250,000, (ii) alternatives to sell non-operating assets in Brazil and the USA; and (iii) identifying a strategic partner to work alongside it on the development of a strategic plan for technology sales and licensing.

Management has recently restructured its business model to focus on licensing its technologies and offering technological assistance to clients and partners. In July 2020, GranBio established a strategic alliance with NextChem, a subsidiary of the Italian engineering group Maire Tecnimont with a worldwide presence in renewable energy. The strategic alliance seeks to expand the Company's position in licensing its technology for the production of 2G (second-generation) ethanol through the conversion of lignocellulosic biomass into renewable fuel with low carbon intensity. The contract signed by the parties was worth USD 15,000 thousand, as stated in note 19.

The partnership combines the Company's technology and experience in second-generation biomass and biofuels with NextChem's engineering intelligence, project execution capacity and global presence to offer integrated services, feasibility studies, integrated projects, complete engineering and construction of manufacturing plants in different regions of the world.

Management is also evaluating its intellectual property portfolio and operating assets to define non-core packages of patents that might be sold to generate cash. The eligible assets will be certain non-utilized butanol technology and certain non-core deicer technology and certain industrial assets not directly involved in core business activities.

Regarding the businesses of the subsidiary Bioflex Agroindustrial S.A., due to price fluctuations in the energy market in the 2021/2022 crop year, the Company's management chose to direct the straw and bagasse biomass inventories to the production and sale of energy in the market. in view of the Joint Venture, Companhia Energética de São Miguel dos Campos (CESM). This is a short-term one-off strategy that will not be adopted in this new 2022/2023 crop year, in which the unit will once again focus on the production of 2G ethanol, focusing on the foreign market, taking advantage of the current scenario of 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. Between January 1, 2022 and March 29, 2022, the Parent Company sent R$14,827 as a loan to the Company to pay its obligations.

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.

The Impacts of COVID 19 (Coronavirus) on Company business

On January 31, 2020 the World Health Organization (WHO) announced that the novel coronavirus (COVID-19) outbreak had become a global health emergency. On March 11, 2020, the WHO declared that the outbreak was a global pandemic. The outbreak has led governments and private sector entities to make impactful decisions, which coupled with the outbreak’s potential have escalated uncertainty amongst economic agents and could have material impacts on our financial statements.

As disclosed in note 28 about market risks, we are exposed to US dollar exchange variance because of the investments in overseas subsidiaries of USD 5,116 thousand as of December 31, 2021. The possible impacts of our exposure to US dollar variance will be reflected in the item asset and liability valuation adjustments in Other comprehensive income and Investments.

Management is continuously monitoring the outbreak’s impacts on our operations and the Company’s equity and financial position, in order to take appropriate measures to mitigate the impacts on operations and the financial statements. The following measures had been taken by the date the issuance of these financial statements was authorized:

- Renegotiations of contracts with suppliers in order to align the acquisition of consumables with production based on the expected demand for the Company's products in light of the current post COVID-19 reality.
- Implementation of temporary staff adjustment measures, in order to preserve cash, such as suspending recruitments and implementing an unremunerated leave program (layoffs); and
- Rescheduling the maturities of the Group’s loans and borrowings with financial institutions and supplier payments in order to mitigate any liquidity risks.

2 List of subsidiaries

Direct subsidiaries

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, which is expected to be ramped up to commercial plantation in the coming years.

BioEdge Agroindustrial Ltda.: Company that invests in commercial second-generation and biochemical plants.

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. The direct subsidiary GranBio LLC completed the acquisition of the entire capital of API Intellectual Properties Holdings LLC, GranBio Process Conversion Technologies Holdco LLC, GranBio Process Conversion Technologies LLC, GranAPI LLC and other affiliated companies, including GranBio Services Inc., AVAPCO LLC, America Green+ LLC, Alternative Bioprod Inv. LLC, Alpena Prototype Bioref LLC and Alpena Biorefinery Inc. The result of the business combination includes Alpena Biorefinery Inc, in Alpena, Michigan, the Thomaston Biorefinery and R&D Center in Thomaston, Georgia, operations teams, business research and an extensive intellectual property profile related to converting biomass into biofuels, biochemicals and nanocellulose, with around 200 patents awarded and pending. The companies previously classified as joint ventures are now therefore classified as indirect subsidiaries.

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 pharmachemicals, 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 Process 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.

GranBio Process Conversion Technologies Holdco LLC: Nonoperational holding company with an interest of 10% in GranBio Process Conversion Technologies LLC.

GranApi LLC: US-based non-operating holding company, controlling companies engaged in developing technologies to convert biomass into cellulosic ethanol, biochemicals and nanocellulose. GranApi LLC controls the following companies:

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. (formerly American Process Energy Recovery 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 interests in the direct subsidiaries, indirect subsidiaries and joint ventures.

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

The Executive Board approved the issuance of the individual and consolidated financial statements on March 29, 2022.

The individual and consolidated financial statements for the year ended December 31, 2021 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.

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- Going concern**: Management evaluation of how the Group will produce and/or obtain capital to support operations 12 months after the approval of these individual and consolidated financial statements;
- **Note 5 – Consolidation basis**: determines whether the Company actually holds the control of an investee.
- **Note 12 - Investments**: determines whether the Company has influence over an investee;
- **Note 13- Property, plant and equipment and Note 14 - Intangible assets** - impairment test, key assumptions underlying the recoverable amounts. For further information see note 15.
- **Note 16 – Loans, financing and debentures:** Compliance with the contractual terms of loans and borrowings;
- **Note 22 - Net revenue from good 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, 2021 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 09 - 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 13 - Property, plant and equipment:** impairment test and key assumptions underlying recoverable amounts. For further information see note 15.
- **Note 14** – **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 15.

Fair value measurement

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 28.

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 (i.e. as prices) or indirectly (i.e. derived from prices).
Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

Further information about the assumptions adopted in measuring fair values is included in note 15.

4 Basis of measurement

The individual and consolidated financial statements have been measured based on a historical cost basis.

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

See below the percentage interest in the direct and indirect subsidiaries and joint ventures as of December 31, 2021 and December 31, 2020

	Country	Percentage interest	
Direct subsidiaries		**2021**	**2020**
GranBio LLC	USA	100.00%	100.00%
BioCelere Agroindustrial Ltda. (a)	Brazil	-	100.00%
BioVertis Produção Agrícola Ltda.	Brazil	100.00%	100.00%
BioEdge Agroindustrial Ltda.	Brazil	100.00%	100.00%
BioPlant Agroindustrial Ltda. (b)	Brazil	-	100.00%
Indirect subsidiaries			
Bioflex Agroindustrial S.A.	Brazil	100.00%	100.00%
GranAPI LLC	USA	100.00%	100.00%
GranBio - Intellectual Property Holdings LLC (formerly API - Intellectual Property Holdings – LLC)	USA	97.00%	97.00%
GranBio Process Conversion Technologies LLC	USA	100.00%	100.00%
American Green + LLC	USA	100.00%	100.00%
AVAPCO LLC	USA	100.00%	100.00%
GranBio Services Inc. (formerly API – Intellectual Property Holdings – LLC.)	USA	96.10%	96.10%
GranBio Process Energy Recovery 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	Brazil	50.00%	50.00%

(a) In July 31, 2021, the direct subsidiary BioCelere Agroindustrial Ltda. was merged in the also direct subsidiary BioVertis Produção Agrícola Ltda. The desired objective is to: (i) optimize and simplify the corporate structure, reduce the balance and transactions between related parties, and, consequently, consolidate and reduce operating expenses; (ii) the combination of business resources and assets involved in the operations of the subsidiaries will allow better management of operations, assets and cash flows, thus resulting in the optimization of the use of operational and financial resources and, consequently, obtaining greater benefits for the social activities performed by the economic group; and (iii) greater operational integration will allow a better use of existing synergies and the creation of new forms of complementation between social activities, in order to seek the creation of value.
(b) On June 21, 2021, the Company's management decided to terminate the activities of the direct subsidiary BioPlant Agroindustrial Ltda.

(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 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 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.

(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.

(iv) Noncontrolling interests

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.

(v) Overseas subsidiaries

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

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 interests.

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. The price and means of collection are determined in specific negotiations with each client.

d. Financial income and expenses

The Company's finance income and finance 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.

e. 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 turnover, 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.

f. 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 and equipment have different useful lives, then they are accounted for as separate items (major components) of property 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.

(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	2021 and 2020
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.

g. 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.

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	2021 and 2020
Software	5
Development - Energy Cane	14
Technology licenses and intellectual property	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.

h. Financial instruments

(i) Recognition and initial measurement

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.

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 cash flows on specified dates that constitute solely payments of principal and interest ("SPPI") 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.

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 undertaken 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.

i. 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. Effects of taxes related to the transaction costs are accounted for in accordance with CPC 32/IAS 12.

j. 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 expected credit loss (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.

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.

(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 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 minus 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.

k. 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.

l. 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	
	2021	**2020**
Cash and banks - checking account	274	205
Short-term investments	-	192
Total	**274**	**397**

Cash and cash equivalents include cash, bank deposits and short-term investments redeemable within up to 90 days from the investment date, highly liquid or convertible to a known cash amount and subject to immaterial change in value, which are recorded at cost plus income earned through the end of the reporting period and do not exceed their fair or realizable values. The funds are invested in capitalization bonds and yield the savings interest rate.

7 Short-term investments

	Parent company		Consolidated	
	2021	**2020**	**2021**	**2020**
Short-term investments	54,528	58,962	-	7,231
Total	**54,528**	**58,962**	**-**	**7,231**

As of December 31, 2021 the short-term investments consist solely of:

(i) Short-term investment made by the Company in the last quarter of 2020 to purchase 39,229 quotas of debenture BFLE11 for R$ 50,897 from Itaú Unibanco S.A. (Itaú). The balance restated as of December 31, 2021 to reflect the financial yield is R$ 54,528 (R$ 51,731 as of December 31, 2020). This debenture was initially an exclusive operation between the subsidiary BioFlex Agroindustrial S.A. and Itaú, and the total amount was classified as a payable balance in note 16 Loans, borrowings and debentures. As a result of the 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, borrowings and debentures.

(ii) In December 31, 2020 there was a short-term investment in the restated amount of R$ 7,231 originated by funds assigned by the shareholder GranInvestimentos S.A. and yielding 96.5% of the CDI rate. Investment made to create a reserve for repaying FINEP loans. The investment was redeemed in the second quarter of 2021 to repay the debt early.

8 Accounts receivable

	Consolidated	
	2021	**2020**
Accounts receivable	1,294	4,060
Total	**1,294**	**4,060**

As of December 31, 2021, the amounts recorded under this heading mainly refer to accounts receivable from the sale of energy cane. In respect of the provision for expected credit losses, the Group's accounts receivable was not impaired by the Covid-19 pandemic.

a. Receivables schedule

The receivables' maturities are shown below:

	Consolidated	
	2021	**2020**
Current	-	1,539
Due to between 1 and 30 days	-	239
Due to between 31 and 60 days	19	175
Due to between 61 and 90 days	-	62
Due to between 91 and 360 days	3	674
Due to above 1 year	1,272	1,371
Total	**1,294**	**4,060**

9 Inventories

	Consolidated	
	2021	**2020**
Raw materials (i)	2,664	3,937
Consumables (ii)	6,030	2,748
Finished goods	29	1,568
Total	**8,723**	**8,253**

(i) The main raw materials are enzymes and straw required for the production of 2G ethanol. The Company and its subsidiaries have insurance contracts due to the risks involved.
(ii) Balance of various consumables used to produce 2G ethanol.

In December 31, 2021, there were inputs in the possession of third parties in the amount of R$ 4,753 referring to 286,000 kg of enzyme (At December 31, 2020 there were no inventories in the possession of third parties).

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.
• The risk of loss of value was recorded for sugarcane straw and 2G ethanol due to the average cost of the inventories being higher than the replacement cost in the market, mentioned below.

Management valued the inventory based on its recoverable value as at December 31, 2021 and 2020 as follows:

Movement	**Provision for inventory**
Balances at December 31, 2019	**(13,539)**
Provision for loss (iii)	(28,452)
Net of use/reversal (iv)	19,844
Balances at December 31, 2020	**(22,147)**
Net of use/reversal (iv)	21,935
Balances at December 31, 2021	**(212)**

(iii) Provision for loss of inventories, of which R$18,166 of 2G ethanol and R$10,286 of sugarcane straw.
(iv) Use of the provision for losses due to the realization of the sale of 2G ethanol inventory and the consumption of sugarcane straw in the production process.

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, 2021 and 2020 the balances break down as follows:

- Parent company

	Ratio		2021 Assets	2021 Liabilities	2020 Assets	2020 Liabilities
Loans						
Granbio LLC	Subsidiary	(iv)	-	35,343	-	32,913
GranInvestimentos S.A.	Parent company	(i)	-	281,011	-	122,240
Total			**-**	**316,354**	**-**	**155,153**
Trade receivables / payable						
Companhia Energética São Miguel dos Campos	Joint venture	(ii)	-	-	2,772	-
Total			**-**	**-**	**2,772**	**-**
Grand Total			**-**	**316,354**	**2,772**	**155,153**

- Consolidated

	Ratio		2021 Assets	2021 Liabilities	2020 Assets	2020 Liabilities
Loans						
GranInvestimentos S.A.	Parent company	(i)	-	281,011	-	122,240
Total			**-**	**281,011**	**-**	**122,240**
Other accounts payable to related parties						
Shareholders' investment fund	Other	(v)	-	25,050	-	-
GranInvestimentos S.A.	Parent company	(v)	-	31,664	-	-
Total			-	**56,714**	-	-
Total			-	**337,725**	-	**122,240**
Trade receivables / payable						
Companhia Energética São Miguel dos Campos	Joint venture	(iii)	83,540	-	83,466	-
Total			**83,540**	**-**	**83,466**	**-**
Grand Total			**83,540**	**337,725**	**83,466**	**122,240**
	Current		-	337,725	-	122,240
	Noncurrent		83,540		83,466	-

Operations affecting profit or loss for the periods:

Parent company

	Ratio		2021	2020
Result				
Administrative expenses				
BioVertis Produção Agrícola Ltda.	Subsidiary	(vi)	-	1,235
BioCelere Agroindustrial Ltda.	Subsidiary	(vi)	-	258
BioFlex Agroindustrial S.A.	Subsidiary	(vi)	-	2,212
Companhia Energética São Miguel dos Campos	Joint venture	(vi)	-	1,816
Graal Participações S.A.	Other	(vi)	-	1,618
Grand Total			**-**	**7,139**

Consolidated

	Ratio		2021	2020
Result				
Lease income				
Companhia Energética São Miguel dos Campos	Joint venture	(iii)	20,433	20,804
Administrative expenses				
Companhia Energética São Miguel dos Campos	Joint venture	(vi)	-	2,538
Graal Participações S.A.	Other	(vi)	-	1,730
			-	**4,268**

(i) Amounts received from the Company's parent to supply cash from operating activities.

(ii) Account receivable in 2020 in the amount of R$2,772 referring to the transfer of corporate expenses by the Company. In December 30, 2021, this amount was assigned to the subsidiary BioFlex Agroindustrial S.A.

(iii) Operations for the commercial lease of the boiler between the indirect subsidiaries Bioflex Agroindustrial S.A. and Companhia Energética São Miguel dos Campos - CESM. The amount will be received by generating cash from CESM's operations.

(iv) Loan taken out from GranBio LLC with no interest or maturity.

(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. (22,771 shares in the updated amount of R$31,664) and by an investment fund of the final beneficiaries of GranInvestimentos S.A. (18,000 shares in the updated amount of R$25,050), as a result, the balance payable of debentures is now classified as other accounts payable with related parties, see note 16.

(vi) Transactions related to the transfer of corporate expenses by the Company and its direct and indirect subsidiaries and other related parties. As of 2021, there was a change in the Company's internal policy, without this transfer.

Key management personnel compensation

	Parent company		Consolidated	
	2021	**2020**	**2021**	**2020**
Key management personnel compensation	459	(1,640)	(1,607)	(2,366)
Total	**459**	**(1,640)**	**(1,607)**	**(2,366)**

The amount paid as key management personnel compensation has been included in personal expenses disclosed in note 24.

11 Other receivables

The other notes receivable account breaks down as follows:

	Consolidated	
	2021	**2020**
Promissory notes receivable (a)	-	75,125
Other receivables	174	1,836
Total	**174**	**76,961**

(a) On December 30, 2014, the US-based indirect subsidiaries (AVAPCO LLC and GranBio Conversion Technologies LLC) entered into the "New Market Tax Credits" (NMTC) transaction to increase the funds available for the Group's expansion. As part of this transaction, AVAPCO LLC loaned R$ 80,677 (USD 14,457 thousand) to COCRF Investor 35 LLC (investment fund). The Investment Fund also received USD 6,878 thousand in an equity investment from Capital One N.A. (Financial Investor). All funds received by the Investment Fund have been invested into three community development entities (CDEs) in transactions that qualify as a qualified entity investment under Internal Revenue Code Section 45C. AMCREF Fund XXIX (AMCREF), COCRF sub-CDE 27, LLC (COCRF), and DVCI CDE XXV, LLC (DVCI) received investments totaling up to USD 21,335 thousand. In exchange for its investment and in addition to expected return of capital and interest, the Financial Investor will receive NMTC totaling 39% of the total amount invested in AMCREF, COCRF, and DVCI over seven years.

AMCREF, COCRF, and DVCI loaned R$ 106,584 on December 31, 2020 (USD 20,510 thousand) to GranBio Conversion Technologies LLC described in note 18 (ii) to fund expansion and purchase the Thomaston Biorefinery from AVAPCO LLC for USD 14,890 thousand in December 2014. AVAPCO LLC has subsequently entered into a lease agreement whereby it leases the Biorefinery from GranBio Conversion Technologies under a lease arrangement expiring in December 2034, with early settlement option after 7 years.

As part of this structured transaction, the subsidiary AVAPCO LLC has a receivable in the amount R$ 75,125 as of December 31, 2020 (U$ 14,457) formalized through promissory notes issued by COCRF Investor 35, LLC in relation to the New Market Tax Credit transaction. The terms of this note call for interest only payments on a quarterly basis beginning March 2015 at 1.5% for a period of 7 years.

At the end of the seventh year, on December 31, 2021, the subsidiaries AVAPCO LLC and GranBio Conversion Technologies LLC with the investment fund COCRF Investor 35 LLC and financial investor (Capital One N.A.) closed the NMTC operation.

As established in the contract, after paying the closing fees and commissions, AVAPCO LLC purchased the promissory notes that were held by Capital One N.A. at the symbolic amount of R$ 1 thousand. These promissory notes were worth US$5,600 as of December 30, 2021. This purchase gain was recorded in Other operating income (note 25). On the other hand, the financial investor was entitled to the tax credits generated in the operation.

As a result, AVAPCO LLC retained all of the promissory notes receivable from the related party GranBio Conversion Technologies LLC. As this transaction started to be fully carried out between the Company's subsidiaries, on December 31, 2021, the amounts were eliminated for presentation of the consolidated financial statements, with the corresponding entry in the account "other accounts payable" (note 18).

12 Investments

a. Breakdown of balances

	Parent company	
	2021	**2020**
Direct and indirect subsidiaries	991,155	959,172
Total	**991,155**	**959,172**

b. Direct investments

	Equity (negative equity)		Profit/loss for the year	
Investees	**2021**	**2020**	**2021**	**2020**
BioEdge Agroindustrial Ltda.	379,032	422,709	(144,230)	(91,557)
BioVertis Produção Agrícola Ltda.	19,642	9,587	(4,786)	(6,887)
BioCelere Agroindustrial Ltda.	-	13,238	(774)	3,393
BioPlant Agroindustrial Ltda.	-	41	-	(36)
Granbio LLC	592,481	513,597	3,238	(34,711)

c. Movement in investments

- **Direct subsidiaries**

Subsidiaries	Balances at 12/31/2019	Translation adjustment	Investments	Share of profit (loss) of equity-accounted investees	Balances at 12/31/2020	Translation adjustment	Capital increase		Write-off	Merger	Share of profit (loss) of equity-accounted investees	Balances at 12/31/2021
BioEdge Agroindustrial Ltda.	389,820	-	124,446	(91,557)	422,709	-	100,553	(i)	-	-	(144,230)	379,032
BioVertis Produção Agrícola Ltda.	(10,950)	-	27,424	(6,887)	9,587	-	2,377	(ii)	-	12,464	(4,786)	19,642
BioCelere Agroindustrial Ltda.	1,496	-	8,349	3,393	13,238	-	-		-	(12,464)	(774)	-
BioPlant Agroindustrial Ltda.	(727)	-	804	(36)	41	-	-		(41)	-	-	-
Granbio LLC	381,403	111,233	55,672	(34,711)	513,597	39,586	36,060	(ii)	-	-	3,238	592,481
Total investments	**761,042**	**111,233**	**216,695**	**(129,798)**	**959,172**	**39,586**	**138,990**		**(41)**	**-**	**(146,552)**	**991,155**

(i) As at December 31, 2021, the Company decided to use the balances receivable recorded in related parties to make new investments in subsidiaries. Of the total, R$93,718 are amounts invested during 2021 that impacted the Company's cash. The amount of R$6,835 did not impact cash and refers to the Assignment of Accounts Receivables transferred from the Company to the Subsidiary.

(ii) As at December 31, 2021, the Company decided to use the balances receivable recorded in related parties to make new investments in subsidiaries. Of the total, R$3,651 are amounts invested during 2021 that impacted the Company's cash. The amount of R$1,274 did not impact cash and refers to the Assignment of Accounts Receivables assigned from BioVertis to the Parent Company.

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

d. Summary of direct subsidiaries' equity accounts

Direct subsidiaries at December 31, 2021	**Assets**	**Liabilities**	**Equity**	**Profit or loss**
BioEdge Agroindustrial Ltda.	1,001,661	622,629	379,032	(144,230)
BioVertis Produção Agrícola Ltda.	33,412	13,770	19,642	(4,786)
BioCelere Agroindustrial Ltda.	-	-	-	(774)
Granbio LLC	701,268	105,255	596,013	3,238

Direct subsidiaries at December 31, 2020	**Assets**	**Liabilities**	**Equity**	**Profit or loss**
BioEdge Agroindustrial Ltda.	1,074,736	652,028	422,708	(91,557)
BioVertis Produção Agrícola Ltda.	22,581	12,994	9,587	(6,887)
BioCelere Agroindustrial Ltda.	13,804	566	13,238	3,393
BioPlant Agroindustrial Ltda.	93	52	41	(36)
Granbio LLC	757,146	239,173	517,974	**(34,711)**

e. Summary of indirect subsidiaries' equity accounts

Indirect subsidiaries at December 31, 2021	**Currency**	**Assets**	**Liabilities**	**Equity**	**Profit or loss**
BioFlex Agroindustrial S.A.	Real	1,001.641	622,631	379,010	(144,207)
AVAPCO LLC	US dollar	56,994	47,248	9,746	2,365
GranBio Services Inc.	US dollar	12,395	28,717	(16,322)	(125)
GranBio Conversion Technologies LLC	US dollar	5,325	20,448	(15,123)	271
Indirect subsidiaries at December 31, 2020		**Assets**	**Liabilities**	**Equity**	**Profit or loss**
BioFlex Agroindustrial S.A.	Real	1,049,462	632,958	416,505	(91,404)
AVAPCO LLC	US dollar	52,116	44,735	7,381	(3,401)
GranBio Services Inc.	US dollar	21,756	37,948	(16,192)	(1,386)
GranBio Conversion Technologies LLC	US dollar	5,097	20,492	(15,395)	(202)

13 Property, plant and equipment

a. Breakdown of carrying amount

- Parent company

	2021			**2020**
	Cost	**Depreciation**	**Net**	**Net**
Improvements to rented property	808	(808)	-	-
Property, plant and equipment under construction	84	(82)	2	897
Furniture and fixtures	874	(846)	28	62
Administrative facilities	2.081	(152)	1.929	2
Right of use	2,080	(11)	2,069	2,069
	5,038	**(1,888)**	**3,150**	**3,030**

- Consolidated

	2021			**2020**
	Cost	**Depreciation**	**Net**	**Net**
IT equipment	3,489	(3,481)	8	15
Vehicles	20	(20)	-	-
Furniture and fixtures	2,020	(1,827)	193	276
Lab plant and equipment	6,433	(4,922)	1,511	1,937
Agricultural plant and equipment	43,601	(31,996)	11,605	16,902
Improvements to rented property	9,543	(3,299)	6,244	6,492
Industrial machinery, equipment and facilities	1,015,660	(192,583)	823,077	871,955
Property, plant and equipment under construction	5,761	-	5,761	4,954
Right of use	2,081	(152)	1,929	2,069
Land	2,394	-	2,394	2,239
Buildings and constructions	44,925	(4,680)	40,245	41,292
Total	**1,135,927**	**(242,960)**	**892,967**	**948,131**

b. Changes in property, plant and equipment

- Parent company

	Balance at 2020	Additions	Write-off	Balance at 2021
Cost				
Improvements to rented property	-	-	-	-
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**

- Parent company

	Balance at 2019	Additions	Write-offs	Balance at 2020
Cost				
Improvements to rented property	1,786	-	(1,786)	-
Property, plant and equipment under construction	169	896	(169)	896
Furniture and fixtures	912	-	-	912
IT equipment	808	-	-	808
Administrative facilities	-	84	-	84
Right of use	2,625	2,081	(2,625)	2,081
Total	**6,300**	**3,061**	**(4,580)**	**4,781**
Depreciation				
Improvements to rented property	(1,719)	-	1,719	-
Furniture and fixtures	(885)	(33)	69	(849)
IT equipment	(808)	-	-	(808)
Administrative facilities	-	(82)	-	(82)
Right of use	(875)	(814)	1,677	(12)
Total	**(4,287)**	**(929)**	**3,465**	**(1,751)**
Total property, plant and equipment	**2,013**	**2,132**	**(1,115)**	**3,030**

- Consolidated

	Balances at 2020	Addition	Write-off	Merger	Exchange variance	Balances at 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
Industrial 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)
Industrial 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 of Property, plant and equipment	**948,131**	**(34,114)**	**(22,459)**	**-**	**1,409**	**892,967**

- Consolidated

	Balances at 2019 (reclassified)	Addition	Write-off	Reclassif.	Exchange variance	Balances at 2020
Cost						
IT equipment	3,492	-	-	-	317	3,809
Vehicles	146	-	-	-	-	146
Furniture and fixtures	2,084	-	-	-	24	2,108
Lab plant and equipment	7,084	-	-	-	913	7,997
Agricultural plant and equipment	53,537	-	(7,080)	-	-	46,457
Improvements to rented property	12,112	-	(1,702)	-	-	10,410
Industrial machinery, equipment and facilities	980,791	781	-	19,467	27,718	1,028,757
Property, plant and equipment under construction	20,256	4,328	(163)	(19,467)	-	4,954
Right of use	2,625	2,081	(2,625)	-	-	2,081
Land	1,767	-	-	-	472	2,239
Buildings and constructions	43,830	-	-	-	824	44,654
Total	**1,127,724**	**7,190**	**(11,570)**	**-**	**30,268**	**1,153,612**
Depreciation						
IT equipment	(3,443)	(34)	-	-	(317)	(3,794)
Vehicles	(143)	(3)	-	-	-	(146)
Furniture and fixtures	(1,712)	(96)	-	-	(24)	(1,832)
Lab plant and equipment	(4,443)	(963)	-	-	(654)	(6,060)
Agricultural plant and equipment	(27,641)	(5,318)	3,404	-	-	(29,555)
Improvements to rented property	(5,371)	(249)	1,702	-	-	(3,918)
Industrial machinery, equipment and facilities	(108,717)	(27,044)	-	-	(21,041)	(156,802)
Right of use	(875)	(814)	1,677	-	-	(12)
Buildings and constructions	(1,459)	(1,660)	-	-	(243)	(3,362)
Other	(134)	134	-	-	-	-
Total	**(153,938)**	**(36,047)**	**6,783**	**-**	**(22,279)**	**(205,481)**
Total of Property, plant and equipment	**973,786**	**(28,857)**	**(4,787)**	**-**	**7,989**	**948,131**

Property, plant and equipment under construction

In 2020/2021 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.

Guarantees

The property, plant and equipment pledged as guarantees at December 31, 2021 amounts to R$ 261,812 (R$ 261,812 at December 31, 2020). For further information see note 16(c).

14 Intangible assets - Consolidated

	Software	Development	Licenses and intellectual property	Goodwill	Total
Balances at December 31, 2019	**345**	**29,321**	**381,809**	**93,847**	**505,322**
Additions	-	-	2,496	-	2,496
Amortizations (a)	(80)	-	(17,962)	-	(18,042)
Exchange variance	-	-	110,333	27,149	137,482
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	-	-	36,642	8,935	43,577
Balances at December 31, 2021	**116**	**28,500**	**494,883**	**129,931**	**653,430**

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

Development - development of Energy Cane Vertix, the raw material to be used in the production of biofuels and biochemicals in the amount of R$ 16,115 as of December 31, 2021 and development of genetically modified yeast to ferment cellulose sugar in the amount of R$ 12,385 as of December 31, 2021.

Licenses and intellectual property ownership - Amounts denoting the development of intellectual property and licensing related to nanocellulose and biorefinery technology and trade and industrial secrets. In March 31, 2019 was recognized R$ 368,086 as intangible assets identified by Management in the combination between Granbio LLC and the companies GranAPI LLC, API-Propriedade Intelectual 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. As at December 31, 2020 the amount of License and Intellectual Property of Technologies is R$ 494,883.

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.

15 Impairment analysis

Property, plant and equipment and intangible assets that are subject to depreciation and amortization are therefore tested for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable.

Due to the limited operating history and tradition of investing in innovation, the Group periodically conducts impairment tests on its intangible assets and goodwill at BioFlex Agroindustrial S.A PPE and Licenses and intellectual property and goodwill at GranBio LLC.

The recoverable amount was determined by using the discounted cash flows determined by Management based on budgets taking into account assumptions for each cash generating unit (CGU) budget assumptions and historical performance previously demonstrated.

The average weighted capital cost for discounting consisted of the alternative market funding base debt cost and CAPM methodology base equity cost, reflecting a reference beta for the renewable industry,

a. Property, plant and equipment

Regarding the impairment test of the subsidiary BioFlex Agroindustrial S.A., the recoverable amount of the cash-generating unit, property, plant and equipment is R$ 1,708,809 as of December 31, 2021 and determined based on the calculation of the value in use in view of the projections cash flow based on financial estimates approved by Executive Board. The Group used projected cash flow considering the useful life of the assets, recently the target of occasional investments to reach full and continuous operational capacity. 2G ethanol prices were set based on evidence from target markets. The projection of operating expenses (opex) was based on the history of costs incurred adjusted to a level of industrial capacity utilization. The realization of the assumptions used to prepare this test is conditioned to the start of production on a commercial scale of the 2G ethanol plant.

As a result of the impairment analysis carried out, an excess of R$ 837,511 was identified over the book value and, therefore, it is not necessary to recognize a reduction in the recoverable value for the cash-generating unit.

The discount rate used was 13.37% p.a. in real terms. The inflation rate used for the projection was 3.32%. The discount rate was based on the weighted average cost of capital. Given the potential impact on the discount cash flow rate, the Group conducted a sensitivity analysis changing this variable increasing by 0.5 percentage point (13.87%), with the value being a calculated use of R$ 1,631,434.

Others key assumptions are cellulosic ethanol price, biochemical price and nanocellulose demand, but the most important is the discount rate. The impairment tests conducted by the Group did not reveal the need for adjustments to the balances for the aforesaid projects.

b. Intangible assets and goodwill

As regards the impairment test for the subsidiary GranBio LLC, the recoverable amount of the cash-generating unit, intellectual property and goodwill is R$ 936,874 as of December 31, 2021. The Group used a 7-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 financial estimates approved by Executive Board. The 2G ethanol 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.

As a result of the impairment analysis carried out, an excess of R$ 312,060 was identified over the book value and, therefore, it is not necessary to recognize a reduction in the recoverable value for the cash-generating unit.

The average discount rate used was 19.12% p.a. in real terms. Given the potential impact on the discount cash flow rate, the Group conducted a sensitivity analysis changing this variable increasing by 1 percentage point (20.12%), with the value being a calculated use of R$ 805,813.

Other key assumptions are cellulosic ethanol price, biochemical price and nanocellulose demand, but the most important is the discount rate. The impairment tests conducted by the Group did not reveal the need for adjustments to the balances for the aforesaid projects.

16 Loans, financing and debentures

				Parent company		Consolidated	
Type	**Index**	**Indexation**	**Maturity**	**12/31/2021**	**12/31/2020**	**12/31/2021**	**12/31/2020**
FINEP - Financing	Fixed	4,00%	May/24	-	6,747	-	6,747
FINEP - Financing	TJLP	+ 3,72%	Feb/29	134,802	133,155	134.802	133,154
Working capital	CDI	+10,00%	Feb/22	12,637	15,095	12.637	15,095
BNDES - Financing	IPCA	+3,11%	May/25	-	-	201.472	118,778
BNDES - Financing	TJLP	+ 4,46%	May/25	-	-	-	185,023
BNDES - Loan	SELIC	+ 7,78%	Mar/22	-	-	-	1.779
BNB - Financing	Fixed	-	Sep/27	-	-	-	128,959
Debentures	CDI	+1,00%	Jul/21	-	-	-	53,776
Surety honors	CDI	-	Jul/22	-	-	202.106	-
				147,439	**154,997**	**551.017**	**643,311**
/		**Current**		**18.547**	**16,357**	**284,719**	**164,373**
		Noncurrent		**128.892**	**138,640**	**266,298**	**478,938**

The short-term debt has exerted pressure on the Group's cash flow and led it to incur a negative net working capital. Management concluded renegotiations with the financial institutions to lengthen its debt profile in order to ease up its operating cash flow. See note 1.

Financing

The BNDES and BNB financing was taken out in order to fund the construction of the industrial cellulose ethanol production plant and to acquire agricultural machinery to harvest the raw material.

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.

Debentures

In March 2015, the indirect subsidiary Bioflex Agroindustrial S/A made its 1st issuance of ordinary debentures through a private deed, entailing the issuance of 80 (eighty) secured registered ordinary nonconvertible debentures for a restricted public distribution, without the issuance of pledges or certificates, in a single series for a unit value of R$ 1,000, with the subscription amounting to R$ 80,000.

The debentures' yield rate is 100% of the accumulated variance of the average daily DI rates (interbank deposits or "CDI"), plus a surcharge, for the periods.

The debentures were issued by the indirect subsidiary BioFlex Agroindustrial S.A., with Banco Itaú as the debenture holder at the time of issuance, in order to refinance debt and bolster cash.

At the end of the period ended December 31, 2021, there was no balance payable for debentures to Banco Itaú, as all 80,000 shares were purchased by related parties. Note 7 (i) describes the partial acquisition by the Company, on the secondary market, of 39,229 shares of these debentures, valued at December 31, 2021 at R$ 54,528. The other shares were purchased by the shareholder GranInvestimentos S.A. (22,771 shares in the amount of R$ 31,664) and by an investment fund of the final beneficiaries of GranInvestimentos S.A. (18,000 shares in the amount of R$ 25,050), as disclosed in note 10.

a. Debt amortization schedule

See below the contractual maturities of financial liabilities:

	Parent company		Consolidated	
	12/31/2021	12/31/2020	12/31/2021	12/31/2020
1 year	18,547	16,356	284,719	164,373
2 years	6,959	4,127	89,333	91,659
3 years	14,688	8,497	51,838	89,925
4 years onwards	107,245	126,017	125,127	297,354
	147,439	**154,997**	**551,017**	**643,311**

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

	Parent company	Consolidated
Balances at January 01, 2020	**117,772**	**622,585**
Amortization of loans and financing (principal)	(509)	(2,282)
Provision for interest of loans, financing and debentures	23,319	61,683
Amortization of loans and financing (interest)	(585)	(2,788)
Proceeds from loans and financing	15,000	15,000
Debentures buyback (i)	-	(50,897)
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
Debentures buyback by related parties (i)	-	(55,544)
Balances at December 31, 2021	**147,439**	**551,017**

(i) Purchase of shares of debentures of BioFlex Agroindustrial S.A. by related parties, with the amount being reclassified to other accounts payable with related parties, as detailed in note 10.

c. Guarantees

The Company's debts are secured by bank guarantee and corporate endorsement and the subsidiaries' debts by bank guarantees, corporate endorsements and real guarantees. The real guarantees are imposed on property, plant and equipment by BNDES and FINEP. Both institutions have a mortgage on the industrial assets of the subsidiary BioFlex, level 1 and 2 mortgages respectively, and FINEP also has a guarantee over agricultural equipment. See the values of property, plant and equipment submitted as guarantees in note 13.

d. Covenants

The Group has loans and borrowings of R$ 147,439 (R$ 154,997 as of December 31, 2020) at the parent company and R$ 551,017 (R$ 643,311 as of December 31, 2020) at the consolidated level, all due in installments through February 2029.

The loans and borrowings 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 Company also engaged independent legal advisors to corroborate management's interpretation that no contract subject to a covenant forbidding protests of indisputable debts should be reclassified to current liabilities. Both opinions conclude there are no legal or contractual grounds for early maturity.

17 Trade payables

	Parent company		Consolidated	
	2021	**2020**	**2021**	**2020**
Trade payables	4,544	4,804	63,720	49,716
Total	**4,544**	**4,804**	**63,720**	**49,716**

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

18 Other accounts payable

	Consolidated	
	2021	**2020**
Acquisition of shareholdings (i)	-	18,188
Promissory notes (ii)	-	106,584
Co-obligations payable (iii)	17.137	12,337
Other accounts payable	3.146	4,948
	20.283	**142,057**
Current	**19.472**	34,922
Noncurrent	**811**	107,135

(i) Denotes the acquisition of equity interests through the direct subsidiary Granbio LLC. The amount payable is R$ 18,188 at December 31, 2020, (USD 3,500 thousand). The debt was paid off in June 2021.

(ii) By way of the subsidiary Granbio LLC, structured "New Market Tax Credit" operations were performed (note 11.a) to expand and purchase Thomaston Biorefinery, located in Georgia - USA, in which the funds AMCREF, DVCI and COCRF loaned R$ 54,479 on the date of contracting (USD 20,510 thousand) to GranBio Conversion Technologies LLC. These contributions were made as long-term promissory notes. As mentioned in note 11, this structured transaction was realized between subsidiaries directly and indirectly held by Granbio LLC. As of December 30, 2020, the amount of R$106,584 (US$20,510) remained outstanding to be paid to investment funds. As of December 31, 2021, the transaction was closed, with no balance payable and/or receivable as detailed in note 11 (a).

(iii) It refers to commissions of sureties payable to financial institutions rendering services of guarantee of loans and financing taken by the Company.

See below the schedule by year of maturity for accounts payable classified in non-current liabilities:

	2021	2020
1 to 2 years	811	8,749
2 to 3 years	-	8,199
3 to 4 years	-	8,199
4 years onwards	-	81,988
	811	**107,135**

19 Deferred revenue

	Consolidated	
	2021	**2020**
Collaboration agreement - Nextchem (i)	12,835	18,188
Collaboration agreement – Birla / US Endowment (ii)	2,180	-
Right of use (iii)	-	4,028
	15,015	**22,216**
Current	6,697	10,264
Noncurrent	8,318	11,952

(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$ 21,885 (USD 4,000 thousand) was received in August 2020 and recognized as deferred revenue, which will be amortized over 10 years, in accordance with the contract. The contract has a total value of R$ 78,050 on the date of contracting (USD 15,000 thousand), with residual tranches of R$ 57.236 (USD 11,000 thousand), of which R$ 41.626 (USD 8,000 thousand) will be received in cash and R$ 15.610 (USD 3,000 thousand) in services provided by Nextchem. As of December 31, 2021 the carrying amount is R$ 12.835 (USD 2,300 thousand).

(ii) On November 1, 2021, an agreement was signed between the AVAPCO LLC and the United States Endowment for Forestry and Communities, Inc. with the objective of continuing to develop nanocellulose in partnership with Birla Carbon. The total amount of the contract is R$ 2,835 (U$ 500 thousand) and is effective until December 15, 2022. The amount was received in cash and is being recognized as Revenue in the income statement following the contract period. As of December 31, 2021, the balance in deferred revenue is R$ 2,180 (U$ 391 thousand).

(iii) This denotes the recognition of the right to use the Thomaston plant, awarded under the terms of the equity interest acquisition agreement for the direct subsidiary Granbio LLC and the business combination in March 2019. The initial amount was R$ 12,711 (USD 3,400 thousand). During 2021, all revenue was recognized in profit.

20 Contingencies

The Company and its subsidiaries are defendants in lawsuits whose chances of loss were classified by our legal advisors as possible, in the amount of R$ 200 in the Parent Company as of December 31, 2021 (R$ 171 as of December 31, 2020) and in the consolidated in the amount of R$ 3,818 as of December 31, 2021 (R$ 2,559 as of December 31, 2020), for which no provisions were recorded.

21 Equity

a. Share Capital

The ownership structure is as follows:

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

	December 31, 2020		
Shareholders	**Capital - R$**	**Number of shares**	**Interest**
GranInvestimentos S/A	377,662	93,038,165	86%
BNDES Participações S/A	600,000	15,094,340	14%
Total	**977,662**	**108,132,505**	**100%**

b. 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 year end 2021 the translation of R$ 39,586 was recognized. The balance of the item as of December 31, 2021 is R$ 232,597.

c. 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.

As at December 31, 2021 and 2020, the total capital reserve was R$ 108,175.

22 Revenue from goods and services sold

	2021	2020
Revenue from collaboration agreements (i)	6,889	2,705
Service provision revenue (ii)	889	10,810
Resale of goods (iii)	7,961	-
Royalties (iv)	181	7,695
Revenue	**15,920**	**21,210**
Equipment leasing revenue (v)	20,433	20,804
Other revenue	**20,433**	**20,804**
Total gross revenue	**36,353**	**42,014**
Sales taxes	(2,736)	(2,039)
Revenue from goods and services sold	**33,617**	**39,975**

(i) Revenue of R$ 6,474 (USD 1,200 thousand) due to the recognition of deferred revenue under the Collaboration agreement with Nextchem and R$415 (US$ 74 thousand) due to the recognition of deferred revenue from the US Endowment agreement, as detailed in note 19.
(ii) Operating 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 royalties from energy cane.
(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 29 - Segment Reporting.

23 Cost of goods sold and services rendered

	2021	2020
Cost of the services provided (i)	(15,838)	(21,165)
Cost of goods sold (ii)	(45,748)	(57,333)
Total	**(61,586)**	**(78,498)**

(i) Operational cost of the indirect subsidiaries GranBio Process Energy Recovery, Inc. and Avapco resulting from the provision of waste elimination and water treatment services and Bioflex's lease costs.
(ii) The amounts denote the production costs of the indirect subsidiary BioFlex Agroindustrial S.A. due to reselling sugarcane straw to CESM and domestic sales of cellulose ethanol. As of December 31, 2020 the depreciation cost allocated to cost of goods sold was R$ 32,761 (R$ 32,362 as of December 31, 2020).

24 Administrative and general expenses

	Parent company		Consolidated	
	2021	2020	2021	2020
Personnel expenses	(726)	(1,466)	(10,039)	(11,481)
Services rendered (i)	(7,062)	(11,528)	(17,070)	(29,516)
Occupancy expenses	(76)	(778)	(563)	(1,880)
Vehicle expenses	-	(3)	(515)	(393)
Insurance	(441)	(174)	(4,805)	(4,069)
Travel	(14)	(147)	(371)	(606)
Depreciation and amortization (ii)	(173)	(851)	(21,113)	(20,747)
Selling expenses	(93)	(433)	(99)	(471)
General expenses (iii)	(16)	(259)	(5,023)	(4,364)
Taxes and fees (iv)	(2,700)	(1,048)	(10,154)	(2,874)
Recovery of expenses (v)	-	7,145	-	3,470
Total	**(11,301)**	**(9,542)**	**(69,752)**	**(72,931)**

(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 consolidated financial statements, the depreciation expense at December 31, 2021 was R$ 2,322 (R$ 2,706 at December 31, 2020) and the amortization expense for intangible assets at December 31, 2021 was R$ 18,781 (R$ 18,042 at December 31, 2020).

(iii) General expenses on maintenance, mail, fuel, materials for use and consumption and security materials

(iv) Taxes and fees is mainly composed of R$4,335 of write-off of prescribed federal tax credits and R$953 referring to the PIS and COFINS tax assessment notice on imports of inputs

(v) Expenses of subsidiaries recovered, through transfer of corporate expenses related to the management of the Company.

25 Other operating income

	Consolidated	
	2021	2020
Recognition of right of use for access (note 6) (i)	2,052	7,734
Other government grant revenue (note 21)	-	4,797
Gain at the close of the New Market Tax Credit (ii)	31,646	-
Other operating income	4,630	-
Total other revenue	38,328	12,531
Provision for loss with related parties (iii)	(18,990)	-
Profit from sale of property, plant and equipment (iv)	(20,452)	-
Other operating income (expenses)	-	(97)
Total other expenses	**(39,442)**	(97)
Total	**(1,114)**	**12,434**

(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 to use was recorded based on the period embraced by this agreement which ended in July 2021.

(ii) Gain of U$ 5,600 (R$ 31,646) at the end of the New Market Tax Credit agreement, as disclosed in Note 11.

(iii) Provision for impairment of accounts receivable with the Joint Venture Companhia Energética de São Miguel dos Campos (CESM) arising from the lease of the boiler with the subsidiary BioFlex Agroindustrial S.A. CESM's projected cash flow was lower than the total balance receivable recorded in the investee. Due to this, an additional provision for loss was recorded in the amount of R$18,990.

(iv) In January 2021, the Company's management authorized the sale of equipment and unserviceable fixed assets of the indirect subsidiary BioFlex Agroindustrial S.A; thus generating cash to settle short-term debts. The result of these sales was a loss of R$ 20,452.

26 Financial income (loss), net

	Parent company		Consolidated	
Finance costs	**2021**	**2020**	**2021**	**2020**
Bank expenses	(39)	(52)	(57)	(88)
Financial discounts	-	-	(23)	-
IOF (Tax on Financial Transactions)	(137)	(152)	(138)	(153)
Interest expenses (i)	(923)	(382)	(10.614)	(10,737)
Interest on loans, financing and debentures	(14.566)	(23,651)	(63.234)	(61,683)
Exchange variance loss	(2.431)	(6,118)	(5.636)	(15,646)
	(18.096)	**(30,355)**	**(79.702)**	**(88,307)**
Finance revenue				
Interest received	-	-	1.066	1,118
Financial discounts obtained	27	64	59	1,611
Earnings on investments	2.873	893	76	18
Exchange variance gain	-	-	1.106	9,602
	2.900	**957**	**2.307**	**12,349**
Financial income (loss), net	**(15.196)**	**(29,398)**	**(77.395)**	**(75,958)**

(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.

27 Accumulated tax losses

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

	2021	**2020**
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	5,038	4,814
	5,038	**4,814**

b. Deferred tax assets not recognized - Consolidated

	2021	2020
Profit (loss) before income and social contribution taxes	**(171.192)**	**(170.164)**
North American Companies [H]	3.238	(34.711)
Brazilian Companies [A]	(174.430)	(135.453)
Combined tax rate [B]	34%	34%
Income and social contribution taxes calculated at the statutory rates in Brazil [A]*[B]=[C]	**(59.306)**	**(46.054)**
Additions: [D]	**6.457**	**2,927**
Provision for inventory losses	-	2,927
Provision for impairment losses	6,457	-
Exclusions: [E]	**(7.458)**	**-**
Reversal of provision for inventory loss	7,458	-
Deferred income and social contribution tax assets not recognized [C] + [D] + [E] = [F]	**(60.308)**	**(43.127)**
Effective rate Brazilian Companies [F] / [A]	34.66%	31,84%
Accumulated tax loss (opening balance)	(647.445)	(520,600)
Deferred income and social contribution tax assets not recognized - opening balance [G]	(220.131)	(177,004)
Deferred income and social contribution tax assets not recognized in Brazil – closing balance [F] + [G]	**(280.439)**	**(220.131)**
Profit (loss) before income and social contribution taxes North American Companies [H]	**3.238**	**(34,711)**
Combined tax rate	21%	21%
Income and social contribution taxes calculated at the combined rates [I]	**680**	**(7,289)**
Effective rate North American Companies [I] / [H]	21%	21%
Accumulated tax loss (opening balance)	(103.621)	(68,910)
Deferred income and social contribution tax assets not recognized - opening balance [J]	(21.760)	(14,471)
Deferred income and social contribution tax assets not recognized in the US - closing balance [I] + [J]	**(21.080)**	**(21,760)**

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, 2021.

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.

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.

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.

c. Movements in deferred tax balances

	Consolidated
Opening net balance at January 01, 2020	48,752
Realization through amortization of intangible assets	(4,817)
Exchange variance on translating deferred taxes from the functional currency to the presentation currency	14,068
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	**57,075**

28 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 borrowings, 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.

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 32.

The following are the contractual maturities of financial liabilities on the financial statement date. These amounts are net and discounted and do not include contractual interest payments.

	Parent company				
Non-derivative financial liabilities	**Carrying amount**	**6 months or less**	**6 to 12 months**	**1 to 3 years**	**Above 3 Years**
Loans, financing and debentures	147,439	16,263	2,279	21,647	107,250
Trade payables	4,544	4,544	-	-	-
Related-party loans	316,354	316,354	-	-	-
	468,337	**337,161**	**2,279**	**21,647**	**107,250**

	Consolidated				
Non-derivative financial liabilities	**Carrying amount**	**6 months or less**	**6 to 12 months**	**1 to 3 Years**	**Above 3 Years**
Loans, financing and debentures	551,017	16,263	268,450	141,171	125,133
Trade payables	63,720	63,720	-	-	-
Related-party loans	337,725	337,725	-	-	-
Accounts payable	20,283	19,472	-	811	-
	972,745	**437,180**	**268,450**	**141,982**	**125,133**

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 borrowings 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.

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

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

	Carrying amount			
	Parent company		Consolidated	
Variable-income instruments	**2021**	**2020**	**2021**	**2020**
Liabilities				
Loans and financing (CDI)	(12,637)	(15,095)	(271,457)	(68,872)
Loans and financing (TJLP)	(134,802)	(133,154)	(208,307)	(318,176)
Loans and financing (SELIC)	-	-	(2,060)	(1,779)
	(147,439)	**(148,249)**	**(481,824)**	**(388,827)**

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	
Instruments exposed to exchange variance	**2021**	**2020**
Assets		
Cash and cash equivalents	268	194
Accounts receivable	579	2,370
Notes receivable	174	76,961
Other financial assets	60,489	56,088
	61,510	**135,613**
Liabilities		
Trade payables	(16,135)	(11,586)
Other accounts payable	(3,146)	(129,720)
Accounts payable	(13,678)	(13,330)
	(32,959)	**(154,636)**

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

The sensitivity analysis took into account the loans and borrowings 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 financial statements as of December 31, 2021. Except for the previously mentioned 25% and 50% variation, no other changes were projected:

						12/31/2021
Interest rate exposure	**Balances**	**Probable**	**25%**	**50%**	**-25%**	**-50%**
Short-term investments (CDI)	-	-	-	-	-	-
Loans and financing						
TJLP	(208,307)	(11,082)	(13,852)	(16,623)	(8,311)	(5,541)
SELIC	(2,060)	(49)	(61)	(74)	(37)	(24)
CDI	(271,457)	(24,838)	(31,048)	(37,257)	(18,629)	(12,419)
Profit or loss for the period		**(35,969)**	**(44,961)**	**(53,954)**	**(26,977)**	**(17,984)**

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:

					12/31/2021
	Probable	**25%**	**50%**	**-25%**	**-50%**
SELIC (i)	2.38%	2.97%	3.57%	1.78%	1.19%
CDI (ii)	9.15%	11.44%	13.73%	6.86%	4.58%
TJLP (iii)	5.32%	6.65%	7.98%	3.99%	2.66%

(i) Interest rates were based on information available at the Banco Central do Brasil.
(ii) Interest rates were based on information available at CETIP.
(iii) Interest rates were based on information available at the BNDES Source: BNDES

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, 2021. As of December 31, 2021 the USD exchange rate was R$ 5.5805 to the dollar:

Exposure to exchange rates	**Carrying amount in R$**	**In USD**	**25%**	**50%**	**-25%**	**-50%**
Assets	**61,509**	11,022	15,377	30,754	(15,377)	(30,754)
Liabilities	**(32,959)**	(5,906)	(8,240)	(16,480)	8,240	16,480
Exposure in profit or loss for the period		**5,116**	**7,137**	**14,274**	**(7,137)**	**(14,274)**

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

					12/31/2021
	Probable	**25%**	**50%**	**-25%**	**-50%**
US dollar (USD)	5.5805	6.9759	8.3708	4.1854	2.7903

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 borrowings less cash and cash equivalents.

	Parent company		Consolidated	
	2021	2020	2021	2020
Cash and cash equivalents	-	-	274	397
Short-term investments	54,528	58,962	-	7,231
(-) Loans and financing	(147,439)	(154,997)	(551,017)	(643,311)
Net debt	**(92,911)**	**(96,035)**	**(550,743)**	**(635,683)**
Equity	601,799	709,721	605,329	714,098
Equity and net debt	**508,888**	**613,686**	**54,586**	**78,415**

Classification of financial instruments

The table below shows the main financial instruments by category.

Parent company

	Amortized cost	
Financial assets	**2021**	**2020**
Other accounts receivable from related parties	-	2,772
Total	**-**	**2,772**
Liabilities		
Trade payables	4,544	4,804
Related-party loans	316,354	155,153
Loans and financing	147,439	154,997
Total	**468,337**	**314,954**

	Fair value through profit and loss	
Financial assets	**2021**	**2020**
Short term investments	54.528	58.962
Total	**54.528**	**58.962**

Consolidated

	Amortized cost	
Financial assets	**2021**	**2020**
Cash and cash equivalents	274	397
Other accounts receivable from related parties	83,540	83,466
Other receivables	174	76,961
Accounts receivable	1,294	4,060
Total	**85,282**	**164,884**
Liabilities		
Trade payables	63,720	49,716
Loans and financing	551,017	643,311
Related-party loans	337,725	122,240
Accounts payable	20,283	142,057
Total	**972,745**	**957,324**

	Fair value through profit and loss	
Financial assets	**2021**	**2020**
Short term investments	-	7,231
Total	**-**	**7,231**

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

29 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:

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 pharmachemicals, 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.

	12/31/2021			
	BioVertis	**BioFlex**	**Biotech**	**Total**
Revenue from products 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	**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 income before financial income and expense	**(3,998)**	**(83,665)**	**(1,831)**	**(89,494)**
Financial Revenue	0	1,138	1,066	2,204
Financial expenses	(788)	(61,680)	(1,881)	(64,349)
Net financial income (loss)	**(788)**	**(60,542)**	**(815)**	**(62,145)**
Deferred income tax and social contribution	-	-	5,038	5,038
Profit (loss) for the period- Subtotal	**(4,786)**	**(144,207)**	**2,392**	**(146,601)**
Other income				**(24,591)**
Net income for the period				**(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)

	2020			
	BioVertis	**BioFlex**	**Biotech**	**Total**
Revenue from goods and services sold	165	26,296	13,515	39,976
Cost of goods sold and services rendered	(895)	(56,362)	(21,165)	(78,422)
Gross Profit / (Loss)	**(730)**	**(30,066)**	**(7,650)**	**(38,446)**
Operating revenue (expenses)				
Administrative expenses	(5,638)	(15,198)	(21,395)	(42,231)
Depreciation and amortization	(27)	(1,704)	(17,962)	(19,693)
Other income (expenses)	373	(179)	7,848	8,042
	(5,292)	(17,081)	(31,509)	(53,882)
Net income / (loss) before financial income and expense	**(6,022)**	**(47,147)**	**(39,159)**	**(92,328)**
Financial revenues	239	10,910	1,118	12,267
Financial expenses	(1,104)	(55,168)	(2,507)	(58,779)
Net financial income (loss)	**(865)**	**(44,258)**	**(1,389)**	**(46,512)**
Deferred income tax and social contribution	-	-	4,814	4,814
Loss for the period- Subtotal	**(6,887)**	**(91,405)**	**(35,734)**	**(134,026)**
Other income (loss)				(36,138)
Loss for the period				**(170,164**

Segment reporting - Assets	**BioVertis**	**BioFlex**	**Biotech**	**Total**
Inventories	13	8,240	-	8,253
Property, plant and equipment	3,949	916,842	23,862	944,654
Intangible assets	16,941	111	597,671	614,723

Segment reporting - Liabilities	**BioVertis**	**BioFlex**	**Biotech**	**Total**
Loans and financing	(7,371)	(532,675)	-	(540,046)
Other accounts payable	(37)	(12,271)	(129,720)	(142,027)
Leasing accounts payable	-	-	-	-

30 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, 2021 and 2020.

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 share 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.

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.

	2021	**2020**
Net income (loss) for the year	**(170,345)**	**(169,142)**
Weighted average number of common shares (in thousands)	108,133	108,133
Basic and diluted earnings (loss) per share (in Reais)	**(1.5753)**	**(1.5642)**

31 Insurance

As of December 31, 2021, 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$ 891,152)

• 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$ 176,030)

• 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 a financial statements audit, and were not therefore reviewed by our independent auditors.

32 Subsequent events

On March 9, 2022, the parent company GranInvestimentos S.A., through its shareholders, fully paid off the working capital financing, which as at December 31, 2021 was R$ 12,637, reducing the Company's total debt and increasing the balance of loan payable to the parent company.

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Members of the Executive Board

Bernardo de Almeida Gradin
Chief Executive Officer

Guilherme Mottin Refinetti
CFO

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