



SUSTAINABLE RETURN ON INVESTMENT IMPLEMENTATION HANDBOOK

How to Analyse the Financial Return of Sustainability Projects



February 2018

SUSTAINABLE RETURN ON INVESTMENT IMPLEMENTATION HANDBOOK

How to Analyse the Financial Return of Sustainability Projects

Center for Sustainability Studies – GVces

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Emerging Market Sustainability Dialogues - EMSD

Emerging Market Multinationals Network for Sustainability - EMM

February 2018



SÃO PAULO SCHOOL OF
BUSINESS ADMINISTRATION
Center for Sustainability
Studies

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



EMSD EMERGING MARKET
SUSTAINABILITY DIALOGUES





Team

Study

*Sustainable Return on Investment Implementation Handbook:
How to Analyse the Financial Return of Sustainability Projects*

Partner organisation

Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) GmbH
Emerging Market Sustainability Dialogues (EMSD)
Emerging Market Multinationals Network for Sustainability (EMM)

Philipp Kruschel

**Programme Director, Emerging Market Sustainability Dialogues (EMSD) and
Executive Director, Emerging Market Multinationals Network for Sustainability (EMM)**

Cristina Fedato

Senior Consultant, Emerging Market Multinationals Network for Sustainability (EMM)

Organisation responsible for the study

Getulio Vargas Foundation - Center for Sustainability Studies (GVces)

Study coordinator

Mario Monzoni

Technical Team

Annelise Vendramini, Camila Yamahaki and Paula Peirão

Production Manager

Bel Brunharo

English Edition

Renata Hetmanek

Table of Contents

INTRODUCTION	9
1. CONTEXT FOR DEVELOPING THE HANDBOOK	11
2. HANDBOOK TO ANALYSE THE FINANCIAL RETURN OF SUSTAINABILITY PROJECTS	17
THE GUIDE AND COMPANIES' SUSTAINABILITY DEPARTMENTS	17
Project management	19
a) Defining the goal of the project	20
b) Defining the requirements of the project	21
c) Developing the schedule	23
d) Performing financial analyses	24
e) Defining a performance monitoring plan	32
f) Establishing risk management procedures	33
3. BENEFITS OF CONDUCTING A FINANCIAL ANALYSIS OF SUSTAINABILITY PROJECTS	37
Incorporating social and environmental aspects in corporate management	38
4. SUSTAINABLE ROI AND THE RELATIONSHIP WITH BANKS AND INVESTORS	39
5. FINAL REMARKS	40
6. REFERENCES	41
APPENDIX I - Definition of financial concepts	43
APPENDIX II - Studies about the relationship between sustainability and financial performance	44

List of Tables

Table 1: Case studies of the first phase of the Sustainable ROI Initiative	12
Table 2: Pros and cons of the static and dynamic financial analysis models	31
Table 3: Importance of each step of project management for calculating the <i>Sustainable ROI</i>	36
Table 4: Academic studies on sustainability and financial performance	44

List of Figures

Figure 1: Process to select projects in the organisation	19
Figure 2: Steps of a project	19
Figure 3: Financial analysis models	26
Figure 4: Income statement.....	26
Figure 5: Net Present Value (NPV).....	28

List of Boxes

Box 1: Checklist: Elements to be included in defining the goal of the project.....	20
Box 2: Example of the description of the goal of a project	21
Box 3: Checklist: Defining the requirements of a project	22
Box 4: Example of requirements of a project	22
Box 5: Checklist: Recommendations to develop the schedule of a project	23
Box 6: Examples of definition of the schedule of a project	23
Box 7: Competitive advantages from adopting sustainability practices	24
Box 8: Checklist: Adopting the static financial analysis model	27
Box 9: Example of adopting the static financial analysis model.....	27
Box 10: Main definitions of the financial budgeting techniques	29
Box 11: Checklist: Adopting the dynamic financial analysis model.....	29
Box 12: Example 1 of adopting the dynamic financial analysis model.....	29
Box 13: Example 2 of adopting the dynamic financial analysis model.....	30
Box 14: Suggestions on how to engage other company departments in calculating the <i>Sustainable ROI</i>	31
Box 15: Checklist: Monitoring the performance of a project	32
Box 16: Examples of performance monitoring	33
Box 17: Checklist: Establishing risk management procedures in a project	34
Box 18: Example of project's risk identification	35
Box 19: Examples of risk mitigation and opportunities generated by the project	35

Abraps	- Brazilian Association of Sustainability Professionals (in Portuguese, Associação Brasileira dos Profissionais de Sustentabilidade)
DCF	- Discounted Cash Flow
DJSI	- Dow Jones Sustainability Index
Ebitda	- Earnings Before Interest, Tax, Depreciation and Amortization
EMM	- Emerging Market Multinationals
ESG	- Environmental, Social and Corporate Governance
FEBRABAN	- Brazilian Federation of Banks (in Portuguese, Federação Brasileira de Bancos)
Giin	- Global Impact Investing Network
GIZ	- Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
GVces	- Center for Sustainability Studies at the Getulio Vargas Foundation
ICN	- Itaguaí Construções Navais
IRR	- Internal Rate of Return
KPI	- Key Performance Indicator
N/A	- not available
NPV	- Net Present Value
PRI	- Principles for Responsible Investment
ROI	- Return on Investment (em português, Retorno sobre o Investimento)
S&P	- Standard & Poor's

This handbook, entitled *Sustainable Return on Investment Handbook*, developed by the Center for Sustainability Studies (GVces) at Getulio Vargas Foundation, in partnership with the Emerging Market Sustainability Dialogues (EMSD), Emerging Market Multinationals Network for Sustainability (EMM) of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, seeks to provide guidance to companies on how to analyse the financial return of sustainability projects.

This document is the outcome of the second phase of the Emerging Markets Multinationals Network for Sustainability (EMM Network¹)'s initiative "*Sustainable ROI*" - to incorporate the financial term Return on Investment (ROI) - and it reflects the learnings of the work conducted in 2015 by the Brazilian companies that are members of the Network. In 2015, seven companies (**AES Brasil, Grupo Boticário, Odebrecht - Odebrecht Defesa e Tecnologia e Construtora Norberto Odebrecht, Siemens - Siemens Healthcare e Fundação Siemens, Adidas Brasil, CPFL Energia e Votorantim Cimentos**) developed eleven case studies to analyse the financial return of their sustainability projects. The final report, published in 2016, can be found [here](#).

The case studies involved key learnings, including:

- Measuring the financial return of sustainability projects is key for the investment decision-making process.
- Sustainability projects may bring tangible financial gains to companies derived from cost savings or from the generation of additional revenue.
- Good corporate social and environmental performance may result in lower legal, reputational and operational risks.
- Sustainability projects may contribute to obtaining the social license to operate and to reputational gains.
- Implementing sustainability strategies may facilitate access to credit lines at lower interest rates.

There are a large number of long-term projects that are presented annually by different company departments to request corporate financing. On the other hand, there are limited available financial resources to meet all investment needs. Hence, companies adopt capital budget techniques to analyse, select and prioritise projects under review and to determine the relevant cash flows associated with the proposals. Financial managers may use different approaches, such as time value adjustment and risk-return considerations, which allows them to evaluate whether a certain project is acceptable and/or rank the various projects under review. Measuring the financial return of sustainability projects contributes to demonstrating the financial value generated by sustainability projects to the company (including in processes for selecting and prioritising capital investments), to investors and financial institutions.

This document seeks to encourage sustainability managers to incorporate capital budgeting techniques in their management practices by offering a handbook for those who wish to financially analyse their sustainability projects.

¹ The EMM Network seeks to capture, advance, and multiply the efforts of its members in order to support the scaling-up and rolling-out of sustainable business models in emerging markets. This is achieved through a series of exclusive events, specific initiatives and an online knowledge and learning hub. The Network identifies areas of collaboration between its members and facilitates peer-to-peer interaction.

1.

CONTEXT FOR DEVELOPING THE HANDBOOK



SUSTAINABLE ROI



The “Sustainable ROI (S-ROI)”, an initiative of the EMM Network, seeks to measure the financial return of corporate sustainability projects. More specifically, it aims:

- To help member companies to identify and simulate the return of certain aspects of sustainability and, at the same time, to create an enabling environment for the exchange of learning and experience between these companies.
- To create an environment for the discussion of finance and sustainability, contributing to integrating and engaging different departments of the member companies.
- To offer elements for decision-makers to measure the return of implemented or potential sustainability projects.
- To contribute to EMM Network’s initiatives to transform sustainability challenges into successful business solutions.

In line with the goals mentioned above, in 2015, seven companies from the EMM Network developed 11 case studies (three companies conducted more than one case study) to financially analyse sustainability projects that had already been implemented or were being planned. Below there is a brief description of each one of the cases:

Table 1 – Case studies of the first phase of the Sustainable ROI initiative

Project	Company	Project description	Geographical scope	Status of the project	Method for financial evaluation	Result	Benefits
1	AES Brasil	Efficient water use project	One of the largest operational units of AES Eletropaulo	Planned project	NPV	Profitable project	Avoided costs Reduction in water use Lower risk related to shortage of water supply
2	Boticário Group	Ecoefficiency projects for reduced water, energy and gas use ²	Factories in São José dos Pinhais, Camaçari, in the Distribution Centres in Registro and São Gonçalo dos Campos and office buildings in São Paulo and Curitiba	Implemented projects	NPV	Profitable projects	Avoided costs Lower risk related to shortage of water and energy supply
3	Construtora Norberto Odebrecht	Implementing a concrete recycling system	All building sites	Planned project	NPV	Profitable project	Avoided costs Reduced use of water and acidulants Reduced waste generation

¹ The ecoefficiency initiatives implemented in the units included: (i) natural lighting project, which enabled the switch-off of lights from three buildings during daytime, (ii) water reuse and rainwater recycle; (iii) installation of solar panels for water heating, (iv) installation of photovoltaic panels to generate power, and (v) LED lighting.

(continuation)

4	Boticário Group	Packaging Recycling Programme, encouraging consumers to return empty product packages to the Group's stores, and repacking process of two products	Nation-wide Brazil	Implemented projects	NPV	Profitable projects	Reduced product costs Generation of spontaneous product sales Aligned with the National Policy of Solid Waste
5	Siemens	"More Life, Less Pollution, More Tests" campaign, raising employee awareness to reduce the disposal of reagents and consumables for laboratory diagnostic tests	A business unit that corresponds to 77% of Siemens' diagnostic division	Implemented project	Income statement	Profitable project	Avoided costs Reduced disposal of reagents and consumables Reduced CO ² emissions
6	Adidas Brasil	"Sustainable Footprint" Programme, which implements a programme for consumers to return used sports products to the stores in exchange for discounts, and sales of disposed products	Nation-wide Brazil (implemented in 40 stores)	Implemented projects	NPV	Profitable projects	Increase in sales Avoided costs Gains with Customer Relationship Management Spontaneous media Reduced CO ² emissions Reputational gains Aligned with the National Policy of Solid Waste

SOCIAL PROJECTS

Project	Company	Project description	Geographical scope	Status of the project	Method for financial evaluation	Result	Benefits
7	CPFL Energia	School of Electricians, to train people from the local community to act as electricians of the company's network	Local community of the company's concession area	Implemented project	NPV	Profitable project	<ul style="list-style-type: none"> Avoided costs Reduced time to train electricians Community development Reduced risk of shortage of skilled workforce for the company Company-community integration
8	Siemens	"Formare School" project, which trains young people in situation of social vulnerability at Siemens with employees as volunteer educators	Jundiaí	Implemented project	Income Statement	Profitable project	<ul style="list-style-type: none"> Avoided costs Development of skills of the volunteer employees Increased employee satisfaction index Increased satisfaction of the volunteer employees Reduced training time

(continuation)

9	Votorantim Cimentos	"Sustainable Primavera" project, that invested in professional development, education, health, sanitation, infrastructure and incentives to productive chains in Primavera (PA)	Primavera (PA)	Implemented project	NPV	Profitable project	<ul style="list-style-type: none"> Avoided costs Reduced absenteeism with better sanitation Better community relations Hiring of employees locally
10	Odebrecht	Developing suppliers from Itaguaí Construções Navais's value chain	Itaguaí (RJ)	Planned project	NPV	Profitable project	<ul style="list-style-type: none"> Reduced costs Reduced delays and product returns Reduced last-minute purchases Increased local supply
11	Boticário Group	Use of external source of finance to finance sustainability projects	N/A	Implemented project	Income Statement	Profitable project	<ul style="list-style-type: none"> Reduced financial costs Generation of spontaneous media Reduced risks related to its own equity

Source: (GVces, 2016)



Considering the contribution of the case studies from the first phase of the initiative and aiming to encourage the development of this practice, in 2016, the EMM Network decided to produce a guiding document for sustainability managers who wish to financially analyse their social and environmental projects and to use the capital budgeting techniques commonly adopted by financial managers. It is worth to mention that, although this guide is named “Sustainable Return on Investment (S-ROI) Handbook”, the term ROI is used more broadly in this document to refer to the analysis of the financial return of projects, thereby considering other financial metrics, such as Net Present Value (NPV), Internal Rate of Return (IRR) and Payback.

This Handbook was developed in a participatory way. In 2016 and 2017, three workshops were held with representatives of EMM Network member companies and of invited financial institutions. Additionally, GVces team conducted interviews with some of the member companies to evaluate whether there were any new developments driven by the case studies and to collect additional information that contributed to the development of the Handbook.

This chapter presents the main steps that sustainability managers should follow in order to perform a financial analysis of a sustainability project.

THE GUIDE AND COMPANIES’ SUSTAINABILITY DEPARTMENTS

A project is a unique, complex and non-routine effort limited by time, budget, resources and performance specifications developed according to the needs of a client, organisation or other stakeholders.³ Like other projects in the organisation, the sustainability departments are required to provide solutions for existing problems or needs to their internal and external clients and other stakeholders through projects. Similarly, other departments in the organisation develop projects that are particular to their needs – such as finance, marketing, manufacturing, human resources – that should include social and environmental elements.

In general, sustainability departments deal with numerous topics involving matters of internal management – for instance, eco-efficiency, greenhouse gases, human rights, employee rights and volunteering – and management of external affairs that affect the company’s performance – referring to the relationship between the organisation and its stakeholders, such as social and environmental impacts of the supply chain in several localities, and institutional corporate representation with different interest groups. For this reason, companies’ sustainability departments often consist of multidisciplinary teams, which are diverse in terms of their academic and professional background. More often than not, even the department’s manager has a degree in fields that are not traditionally associated with business management, such as business administration, economics and accounting. According to a 2015 survey by Deloitte and the Brazilian Association of Sustainability Professionals (ABRAPS)⁴ with 370 participants working in different industries, the background of the sustainability professionals is diverse:

- 20% of the respondents majored in business administration, engineering (19%), environmental management (14%), marketing (10%), journalism (6%), economics (5%), biological sciences (4%) and the remaining 22% in fields like social work, architecture, nursing, philosophy, geography and sociology.
- 48% of the respondents pointed out that one of the department’s main roles is to be a facilitator in all company departments to make sustainability projects possible.
- The main challenges related to their projects and activities include: lack of investment, engagement of the company’s leadership, vision of value, support, structured systems and priority of sustainability projects.

³ (Gray & Larson, 2009, p. 5)

⁴ (Deloitte & ABRAPS, 2015)

Therefore, considering the diverse academic and professional background of the sustainability professionals as well as the strategic role of the sustainability departments' managers to facilitate projects (whether they originate from sustainability departments or other departments), this handbook primarily targets sustainability managers. Its aim is to support the inclusion of elements related to financial analysis into their projects from the start by relying on the same principles and practices used by other corporate departments.

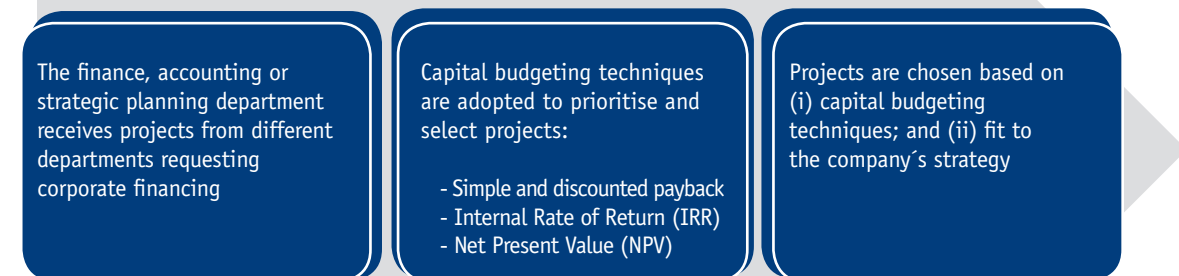
It is important to note that the financial evaluation of a project is part of a wider process of the project and financial management. For the financial analysis, it is essential that the project proponent – often, the responsible manager – has the necessary elements for doing the calculations. These elements comprise the project design, the definition of scope, objectives and performance indicators, necessary resources, risks of the project, schedule of the planning, investment and end-of-life phases (decommissioning), among others. All these elements offer important inputs for the financial assessment of a project. Another critical factor is the presence of a project database. This aspect is particularly challenging for sustainability projects, according to the experience of the EMM Network member companies in the first phase of the Sustainable ROI initiative.⁵ For this reason, we decided to present in this handbook a wider scope, considering elements of project management that include a financial analysis, but is not limited to it. This choice was made for two reasons.

Firstly, as mentioned before, the elements that are part of a process of project management also serve as inputs for the calculation of the ROI or other methods of financial analysis (this will be discussed in sections “a” to “f” in this chapter).

Secondly, these calculations represent specific technical knowledge often concentrated in the departments of finance, accounting or strategic planning. Many companies have internal rules and policies for the calculation of specific indicators in order to maintain the comparability across projects which are under review for the decision-making of investment allocations. The calculations involve capital budgeting techniques to help in decision-making processes of capital allocation, such as simple and discounted payback, assessment of internal rates of return and net present value (please refer to Appendix I for the definitions of the main financial indicators). In sum, these techniques assume that the manager must choose the project or the investment with the largest expected financial value, adjusted to its risk. The expected financial value will be based on the expected cash flows generated by projects or investments under review brought to present value considering a discount rate, which represents the opportunity costs of the company's capital.

⁵ (GVces, 2016)

Figure 1 – Process to select projects in the organisation



Source: The Authors

This Handbook aims to offer sustainability managers the central elements to engage in dialogue with the financial, accounting and/or strategic planning departments. The idea is to collaboratively analyse the project's feasibility by using the company's official calculation processes; thereby, ensuring the comparability of projects.

Project management

According to a project management approach, a project must follow the steps below:

Figure 2 – Steps of a project



Source: The Authors, based on (Gray & Larson, 2009) and (PMI, 2013)

Each of these steps is described in detail below. To exemplify the steps, some of the case studies of the first phase of the initiative will also be discussed.

a) Defining the goal of the project

The goal of the project must be clear, feasible, specific and measurable. In addition, it must include the following items: the project's main final product or deliverable, the project's geographical scope, the expected benefits of the project, the date by which the project will be delivered and the budget available for the project's implementation.⁶

A clear definition of the project's goal allows the manager to establish more precisely the project's limits, which then facilitates the calculation of revenues and costs estimates. Therefore, carefully describing the elements of the project's goal is of extreme importance for the success of the project feasibility analysis.

At this stage, it is also important to map internal and external stakeholders that may contribute to the definition of the project's goals by providing information that is relevant to the project and for the monitoring of the project performance. The involvement of internal stakeholders in this process is an opportunity for sustainability managers to engage with managers from other departments.

Box1 - Checklist: Elements to be included in defining the goal of the project

- ✓ Mapping internal and external stakeholders that may contribute to the definition of the project's goals by providing information that is relevant to the project and for the monitoring of the project performance
- ✓ Project's main final product or deliverable
- ✓ Project's geographical scope
- ✓ Expected benefits of the project
- ✓ Date by which the project will be delivered
- ✓ Budget available for the project's implementation

⁶ (Clements & Gido, 2014)

Box 2 – Example of the description of the goal of a project

One of the case studies of the first phase of this initiative that describes the goal of the project very clearly is the case study from **Votorantim Cimentos** (Project 9). In partnership with Votorantim Institute, the company has developed a local development plan named "Sustainable Primavera", in the city of Primavera, in Pará (*project's geographical scope*), where Votorantim has a cement production unit. To carry out the plan, the company invested BRL\$ 10 million (*budget of the project*) in areas such as professional training, education, health, sanitation, infrastructure and development of supply chains (*deliverables of the project*). The benefits that the company has estimated until 2025 (*final date to deliver the products*) include avoided costs (such as additional costs due to the attraction, hiring and retention of workforce from other regions), savings (for instance, savings in financial expenses due to the use of special credit lines) and future gains resulting from the impact of social investments (such as decreases in absenteeism rates derived from better sanitation) (*benefits of the project*).

b) Defining the requirements of the project

Defining the requirements of the project refers to the process of estimating the types and quantities of material, staff, equipment or supplies that are necessary to conduct each of the project's activities. This process improves the estimates of the costs as well as of the duration of the activities.⁷ At this stage, it is vital to consult the stakeholders identified at the previous stage to properly define the project's requirements.

When defining the requirements of the project's activities, the availability of each resource must be taken into account. For instance, it may be necessary to hire new staff beforehand because the project requires professionals with a specific qualification or because the current team will not be available to work on the project. Moreover, the project manager should also estimate the pieces of equipment (for instance, special machinery) or materials (e.g., furniture) that are necessary to perform the activities.⁸

A clear definition of the project's requirements facilitates the estimation of costs and revenues that are generated by the project. To improve the quality of the estimation process, these requirements must be carefully assessed from the project's planning phase on. At this stage, it is also possible to identify connections with ecosystem services or other aspects of sustainability that will be important for the project's success.

⁷ (PMI, 2013)

⁸ (Clements & Gido, 2014)

Box 3 - Checklist: Defining the requirements of a project

- ✓ Estimate the types and quantities necessary for the activities of the project:
 - Material
 - Staff
 - Natural resources or ecosystem services
 - Equipment
 - Supplies
- ✓ Check the availability of each resource for the project
- ✓ Consider the inputs from the consulted stakeholders

Box 4 – Example of requirements of a project

The case study from **Siemens Foundation** clearly lists the requirements of the Formare School Project (Project 8). Implemented by a partnership between Siemens, Siemens Foundation and Iochpe Foundation, the purpose of the project was to train 20 young people in situation of social vulnerability by Siemens' employee volunteers and then hire the trainees to work in the company. When planning the project, the Foundation has identified the following necessary resources:

- Infrastructure: classrooms, meeting rooms, library, computer labs, energy, water, phone
- Materials for students and educators
- Human resources for project management
- Franchise of the Iochpe Foundation
- Financial aid for 20 students
- 72 volunteer employees
- Platform for volunteers.

C) Developing the schedule

Developing the schedule of the project refers to the process of analysing activity sequences, durations, resource requirements and schedule constraints.⁹

To create a realistic and reasonable schedule, it must be based on normal conditions, efficient methods and an average level of resources, staff or equipment. It is suggested that estimates of time are conducted by staff who is more familiarised with the tasks at hand. It is also recommended that people with considerable experience and knowledge of the tasks are consulted, given that a discussion about individual estimates generates consensus and avoids extreme evaluation mistakes.¹⁰ It is important to differentiate between the project's pre-operation (planning and investment phases), operation and post-operation phases (decommissioning, for example), when applicable.

Box 5 - Checklist: Recommendations to develop the schedule of a project

- ✓ The schedule must be based on normal conditions, efficient methods and an average level of resources, staff or equipment.
- ✓ Estimates of time should be conducted by staff that are more familiarised with the tasks at hand.
- ✓ Differentiate between the project's planning, investing (for instance, building works), operation and post-operation phases.
- ✓ Consult people with considerable experience and knowledge of the tasks and stakeholders about the periods of time estimated in the previous phase.

Also, it is important to consider the timeframe in which the project will generate costs and benefits, as shown in Box 6.

Box 6 – Examples of definition of the schedule of a project

When the member companies financially analysed the sustainability projects, they defined the periods of investment and return based on different criteria.

- **AES Brasil** considered the period between 2015 and 2019 to financially analyse its water efficiency

⁹ (PMI, 2013)

¹⁰ (Gray & Larson, 2009)

project (Project 1), thus aligning the project to the company's sustainable strategic planning.

- **Boticário Group** considered the company's 2012-2018 planning cycle to define the analysis period of its eco-efficiency projects (Project 2), assessing investments between 2012 and 2015 and revenues between 2013 and 2018.
- **Construtora Norberto Odebrecht** considered a seven-year period for the analysis of its supplier development project at Itaguaí Construções Navais (ICN) (Project 10), given that this represented the contract period at ICN.

Hence, companies may align their financial analysis period to different criteria, including their planning cycle, strategic planning and period of operation.

d) Performing financial analyses

To conduct the financial analysis of a project, the company must consider two scenarios: one scenario *without* the project implementation, and one *with* the implementation of the sustainability project. The difference between the two scenarios' financial returns represents the financial return added or subtracted by the investment. It is important to mention that, specifically for the financial analysis of sustainability projects, the goal of the calculation is to estimate the financial return of the implemented project to the company rather than benefits to the environment or to the company's stakeholders. The company may consider measuring the latter by adopting other more suitable methods.

Box 7 – Competitive advantages from adopting sustainability practices

Integrating sustainability in company's operations may generate several competitive advantages for corporations, translated, in financial terms, into increases of revenues or cost reductions and the consequent increase of the net profit. Among the competitive advantages, there are:

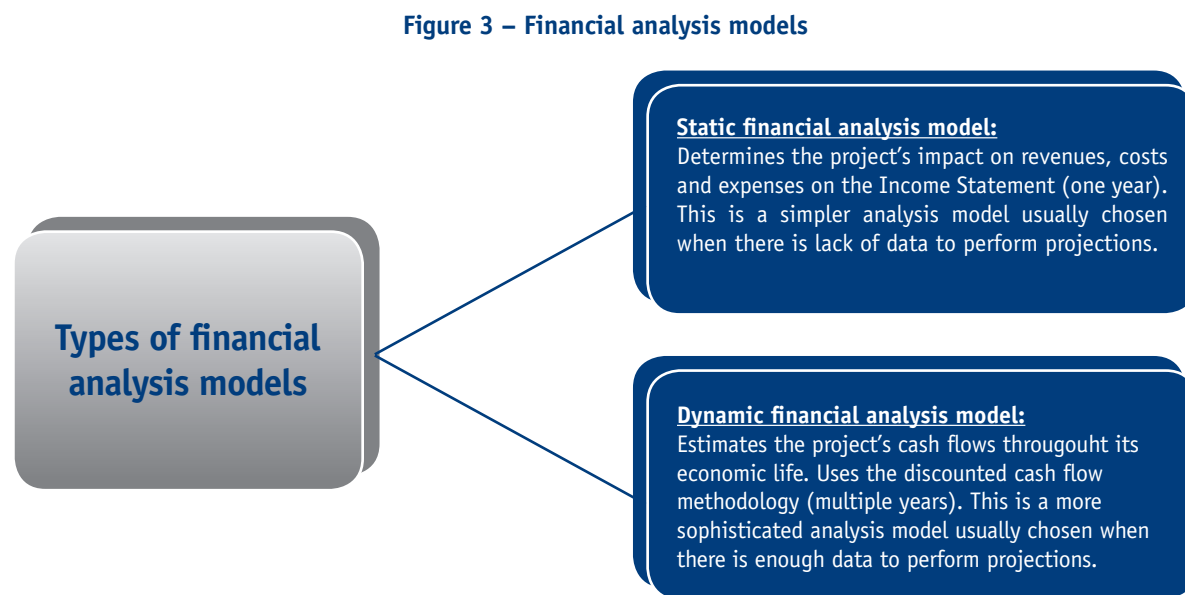
- **Ease to hire better talents:** It reduces hiring costs, which include operational expenses and professional time to interview future employees. The advantage also saves time spent on and costs related to hiring a professional that is skilled in sustainability, given that he/she is attracted by the company's sustainability practices.
- **Increased retention of better talents:** It reduces employee turnover and training costs, it values the employee and generates better career opportunities. Therefore, the benefit of retaining talents

is calculated by adding the costs of losing a good talent, the costs of hiring a new person and training costs for the new professional to adapt to the company.

- **Increased employee productivity:** It is derived from greater employee commitment, better team work and better working conditions, leading to an increase in revenues and a consequent increase of the net profit.
- **Reduced production costs:** Obtained by implementing sustainability actions, such as reducing and eliminating waste, economy of materials and resources, replacing energy sources, product design, improvement in processes, eco-efficiency, reduced use of changes in packaging.
- **Reduced costs in commercial locations:** Reduced general and administrative expenses with lower energy consumption, better building design and lower travel expenses.
- **Increased revenue:** Strategies such as the development of products with lower environmental impact, the attraction of conscious consumers, strategies for maintaining and increasing consumer loyalty and the generation of new business opportunities can increase company's revenues.
- **Reduced risk and ease of financing:** Benefits generated by reducing the risk of regulatory restrictions, risks of liability, operational risks and the cost of capital as well as by attracting investors with specific strategies in responsible investment. The calculation of risk reduction is performed by calculating the percentage of general and administrative expenses related to these risks and, subsequently, measuring the extent to which more sustainable practices lead to reduced expenses.

Source: (Willard, 2012)

To perform the financial analysis, the company may adopt two models: a static financial analysis model, determining the sustainability project's impact on the Annual Income Statement, or a dynamic financial analysis model, estimating the project's economic value through the Discounted Cash Flow (DCF) method.



Box 8 - Checklist: Adopting the static financial analysis model

- ✓ Establish two scenarios: one scenario without project implementation, and one with the implementation of the sustainability project.
- ✓ Check whether the project implementation generates gains or losses in operational and/or financial margins in the period under review in each of the scenarios;
- ✓ Determine in which scenario there is the greatest gain (or the lowest loss) in margins in the period under review.

Box 9 – Example of adopting the static financial analysis model

Siemens is one of the participating companies that have adopted the **static financial analysis model** in the case study “More Life, Less Pollution, More Tests Campaign” (Project 5), which focused on improving stock management of reagents and consumables used in laboratory diagnosis tests. To analyse the campaign's financial return, Siemens has analysed two scenarios:

- **Scenario 1 (without project implementation):** Without project implementation, there would be increased waste of reagents and consumables, and an associated increase in costs with the purchase of reagents.
- **Scenario 2 (with project implementation):** With the campaign, waste of reagents was reduced, leading to gains in operational margins and profits, and to avoided costs of storage and incineration.

The project's financial analysis has demonstrated that the campaign has generated a 6.2% reduction in incineration costs and a 10.6% reduction in other costs related to incineration and storage. Hence, the campaign implementation (Scenario 2) was financially beneficial to Siemens.

- In the **dynamic financial analysis model**, the economic value of a project is estimated using the DCF model. Its goal is to estimate the present value of the project's future cash flows - cost reductions (benefits), investments and additional operational expenses (costs), based on a discount rate. The net present value (NPV) is the sum of all discounted cash flows. A NPV larger than zero indicates that the project is profitable. This is a more sophisticated model because it considers the time value of money, one of the most important concepts in financial analysis. Usually it is chosen when there is enough data to perform projections over a certain period of time.

Figure 4 - Income Statement

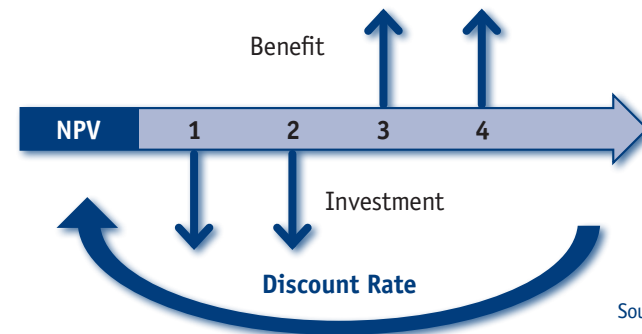
Income Statement	
<i>Nominal mn in BRL</i>	2014
Net Income	1,000
Cost of goods sold (COGS)	700
Net Profit	300
<i>Grass Margin</i>	<i>30.0%</i>
Commercial and Administrative Expenses	15
GENERAL AND ADM Expenses	10
Others	0
EBITDA	276
<i>margin %</i>	<i>27.6%</i>
Operational Results	275
Financial Results	2
Others Expenses	1
Non-Operational Expenses	3
Results before Taxes	272
Net Profit	180

Source: (Damodaran, 2002)

The two analysis models are presented below:

- In the **static financial analysis model**, it is analysed whether the project implementation generates gains or losses in operational margins in the period under review. This is a simpler analysis model than the dynamic model, and usually this model is chosen when there is limited data regarding the project and projections are very difficult to be made. Please see an example of an Annual Income Statement below.

Figure 5 - Net Present Value (NPV)



Source: (GVces, 2016)

In the dynamic financial analysis model, other financial budgeting techniques may also be adopted to support the decision-making, including:

- **Internal Rate of Return (IRR):** It is the interest rate at which the NPV reaches zero (i.e. the present value of the inflows equals the present value of the outflows). The project is considered profitable when the IRR is higher than the investment's expected return. For example, if the company policy establishes that projects should return 14% per year, and a project has an IRR of 17%, according to the IRR selection criteria, the project should be selected.

The IRR is also useful when comparing two or more investment projects: the project with the higher IRR value is financially more attractive. However, the IRR has certain limitations, including: it assumes that the cash flows are reapplied to the IRR and, in case there are inverted flows in the projection period (positive flow in one year and negative in the following one), the calculation of the IRR is compromised. For these reasons, it is suggested that the IRR is analysed along with other financial indicators, particularly NPV.

- **Payback:** It is the period the project takes to recover the initial investment, after which the project becomes profitable. The payback period must be compared to the maximum payback desired by the company, which is often established in the company's financial policy. For example, if a company has a policy that the payback should be no more than 3 years, a project with a payback of 6 years should not be pursued.
- **Return on Investment (ROI):** It measures the return on each unit of money invested; i.e., it measures the relationship between the amount earned or lost (in BRL\$, US\$ or any other currency) and the amount invested (cost-benefit analysis of the investment, in BRL\$, US\$ or any other currency), using the formula described below:

Box 10 – Main definitions of the financial budgeting techniques

Internal Rate of Return (IRR): The interest rate at which NPV reaches zero (i.e. the present value of the inflows is the same as the present value of the outflows).

Payback: Period the project takes to recover the initial investment, after which the project becomes profitable.

Return on Investment (ROI): Measures the relationship between the amount earned or lost in relation to the amount invested, according to the formula:

$$ROI = (\text{Investment Gain or Return} - \text{Investment Cost}) / \text{Investment Cost}$$

Source: (Gitman, 2010)

Box 11 – Checklist: Adopting the dynamic financial analysis model

- ✓ Establish two scenarios: one scenario without project implementation and one with the implementation of the sustainability project.
- ✓ Select the period for analysis.
- ✓ Estimate the cash flows (investments, expenses, cost reduction and future revenues) in each one of the scenarios, connecting with the inputs from the previous stages.
- ✓ Establish the discount rate to be used in the discounted cash flow, based on the company's financial policy.
- ✓ Calculate the present value of the cash flow, using the previously defined discount rate.
- ✓ Determine which is the most profitable scenario based on the sum of the terms of the discounted cash flows.

Box 12 – Example 1 of adopting the dynamic financial analysis model

AES BRASIL is one of the member companies that have adopted the discounted cash flow method to analyse its efficient water consumption project (Project 1). To assess the profitability of the project, which aimed to reduce water consumption by 10% by 2019 (in comparison to the 2014 baseline), the

company has analysed two scenarios:

- **Scenario 1 (without project implementation):** In this scenario, the company experiences an increase in water consumption and sewage treatment costs.
- **Scenario 2 (with project implementation):** The company avoids costs related to water tariff increases and mitigates financial, operational and reputational risks. In this scenario, the company has estimated two different water tariffs:

Scenario 2a: Annual water tariff increase by 10%.

Scenario 2b: Annual water tariff increase by 15%.

By calculating the difference between (i) the investments made between 2015 and 2019 in efficient water consumption projects per employee and (ii) the avoided costs due to reduced water consumption per employee, the project implementation generates positive returns in the two scenarios where the project is implemented. More specifically, BRL\$ 9,701 in Scenario **2a**, and BRL 18,016 in Scenario **2b**. Hence, for **AES**, it was economically profitable to implement the efficient water consumption project.

Box 13 – Example 2 of adopting the dynamic financial analysis model

Another member company that has adopted the discounted cash flow method to analyse its sustainability project is **Votorantim Cimentos**. To assess the feasibility of the “Sustainable Primavera” plan (Project 9), the company has analysed the following scenarios:

- **Scenario 1 (without project implementation):** No investments are made into the “Sustainable Primavera” plan to engage with stakeholders of the local community.
- **Scenario 2 (with project implementation):** With the implementation of the “Sustainable Primavera” plan, the investments have generated positive returns in the project’s cash flows of three types: avoided costs (such as costs related to a halt of operations due to conflicts with the community), savings (such as savings in the costs of specific socio-environmental constraints) and future gains due to the impact of social investments (like reduction in costs of the decommissioning of activities).

The positive NPV of BRL\$ 5MM of the project confirms that **Scenario 2** is the most financially beneficial to **Votorantim**.

Table 2 – Pros and cons of the static and dynamic financial analysis models

	Pros	Cons
Static financial analysis model	<ul style="list-style-type: none"> • Once the assumptions are simpler, support from the finance team is not extensively required. 	<ul style="list-style-type: none"> • Static “snapshot” of the positive or negative financial impact of the project.
Dynamic financial analysis model	<ul style="list-style-type: none"> • Largely employed in the financial market. • It measures the project’s present value. 	<ul style="list-style-type: none"> • Very detailed and complex; support from the finance team is required.

Source: Adapted from (Damodaran, 2002)

For further information on how to perform financial analyses of projects, we suggest the following references:

Damodaran, A. (2012). *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*. Wiley.

Gitman, L. (2010). *Principles of Managerial Finance*. Pearson Education.

Copeland, T; Koller T; Murrin, J. (2001). *Valuation: Measuring and Managing the Value of Companies*. Third edition. John Wiley & Sons.

To perform financial analyses of sustainability projects, it is advisable that the company’s sustainability department works in collaboration with the department that is responsible for these calculations (often, the finance, accounting or strategic planning departments) in order to benefit from their knowledge of the methodologies used by the company and their expertise in conducting financial analyses. To estimate investments, costs and revenues, the company should consider to consult internal and external stakeholders that may contribute to a more precise and wider mapping.

Box 14 – Suggestions on how to engage other company departments in calculating the Sustainable ROI

In conversations with GVces, the member companies offered some suggestions on how the sustainability department can engage with other departments to financially analyse projects. These recommendations included:

- To have a good relationship with the departments to engage with.
- To ask that the financial department helps the sustainability area to monetise the project's social and environmental outcomes.
- To be a good "salesperson" of the project, demonstrating to the departments that, by participating in the project, they are also promoting benefits to society.

e) Defining a performance monitoring plan

A performance monitoring plan serves to compare actual performance with planned performance in order to identify mismatches, assess possible courses of action and apply the appropriate corrective action. There are four steps to measure and evaluate the performance: establish a baseline plan that provides the base for measuring the performance; measure the project's progress and performance; compare the current situation with the planned one; and adopt corrective measures, if necessary, to realign the project with the original or revised plan.¹¹ This stage is critical for the project to deliver the planned economic, social and environmental outcomes. Thus, it is important to keep records of the project. Any deviations from projections should be accounted for in a new financial analysis/model to check whether original projected returns will be achieved (budget versus actual). This also helps future projects by allowing project managers to have historical data on deviations from projections.

Box 15 - Checklist: Monitoring the performance of a project

- ✓ Establish a baseline plan that provides the base for measuring the performance.
- ✓ Create a database of the project, recording all relevant information for performance measurement.
- ✓ Measure the project's progress and performance over time.
- ✓ Compare the current situation with the planned one.
- ✓ Adopt corrective measures, if necessary, to realign the project with the original or revised plan.

¹¹ (Gray & Larson, 2009)

Box 16 – Examples of performance monitoring

The member companies reported that they have adopted measures to monitor their projects.

- In the case study "More Life, Less Pollution, More Tests Campaign" (Project 5), **Siemens** has published a number of key performance indicators (KPIs) that demonstrate the success of the project implementation. The KPIs included data on reduction in incineration costs; reduction in incineration and storage costs, and increase in gross margin and in EBITDA (earnings before interest, tax, depreciation and amortization) margin.
- **Siemens** also reported that it monitored the progress of the Formare School Project (Project 8), monitoring the performance of the students that have been hired by the company as well as the performance of the students hired by other organisations.
- **Odebrecht** has also established performance indicators for its supplier development project (Project 10), which included: quantity of delays and returns, quantity of last-minute purchases, quantity of uniforms to be purchased from local suppliers and number of events to be organised by local suppliers.
- **Boticário Group** reported that it established financial, process and outcome-related indicators in the beginning of the projects in order to monitor each project during and after their implementation.

f) Establishing risk management procedures

In the context of projects, a risk is defined as an uncertain event or condition that, in case that it occurs, may compromise the attainment of the project's goal. Thus, risk management is a proactive approach that involves the identification, assessment and response to risks in order to avoid or minimise the probability of occurrence or the impact of unfavourable events.¹²

Risks to the project may include, for instance, a higher than forecasted increase in the cost of materials, changes in domestic law and lack of available staff to work in the project. It may also include elements associated with ecosystem services – such as water supply or water quality necessary for the project – or social aspects associated with the social license to operate from the community that is adjacent to the project. To

¹² (Clements & Gido, 2014)

identify the risks properly, it is suggested that the project manager involves the main team members to identify potential sources of risks, given that each member may bring his or her own experience and knowledge to help produce a wider list of risks. Another useful source of risk identification is the historical information of previous projects and their post-implementation assessments, which can also offer insights into how to deal with certain risks in case of recurrence.¹³

After identifying the risks, the project manager should consult the team members and other experts to establish the probability of occurrence of the identified risks and the impact these risks may have on the project's goal. At last, an action plan needs to be produced to reduce the probability of occurrence and the potential impact of each risk. It is also recommended that a risk matrix is periodically revised to establish whether there are any changes to the risks' probability of occurrence and potential impacts.¹⁴

Additionally, it is the project manager's duty to identify which operational risks are mitigated by the project under analysis. In general, socio-environmental projects contribute to mitigating several organisational risks. For example, reforestation projects reduce the legal risk and/or the risk of shortage of water supply in the water basin; social projects reduce the risk associated to the social license to operate. All risks identified should be contemplated in the financial model for adequate budgeting as a potential cost, expense, lower than expected revenue, and/or higher discount rate due to increased risk perception.

Box 17 - Checklist: Establishing risk management procedures in a project

- ✓ Identify potential sources of risks to the project, based on the experience and knowledge of the team members and historical information of previous projects.
- ✓ Consult external stakeholders to identify risks that may compromise the performance of the project.
- ✓ Assess each risk, establishing the probability of occurrence of the risk and the impact these risks may cause to the project's goal.
- ✓ Develop an action plan to reduce the probability of occurrence and the impact of each risk.
- ✓ Revise and evaluate the risk matrix periodically to assess whether there were any changes to the risks' probability of occurrence and potential impacts.

¹³ (Clements & Gido, 2014)

¹⁴ (Clements & Gido, 2014)

Box 18 – Example of project's risk identification

Siemens stated that it has identified a number of risks in the beginning of the *Formare* School Project (Project 8) that had the potential to impact the project negatively, including: risk that the project was not funded, risk that the company departments did not authorise their employees to act as volunteers; risk that the departments did not employ the trained students, and risk that the Human Resources department did not provide support to the project.

Besides conducting an assessment of the risks that could negatively impact the project's goal, some of the member companies reported that they have also analysed whether the implementation of the sustainability project has mitigated risks or has generated business opportunities, as shown in Box 19.

Box 19 – Examples of risk mitigation and opportunities generated by the project

- **Votorantim Cimentos** reported that the implementation of the "Sustainable Primavera" plan (Project 9) has reduced risks related to temporary shutdowns caused by conflicts with the community and risks of high absenteeism resulting from poor sanitation.
- By developing local suppliers (Project 10), **Odebrecht** believes that there will be lower risk of material delivery delays.
- **CPFL** noted that the School of Electricians project (Project 7) contributes to reducing the risk of shortage of skilled workforce to act as electricians in the company's network.
- On opportunities, **Adidas** noticed that the discounts offered to the consumers that participate in its "Sustainable Footprint" programme (Project 6) – encouraging consumers to return used products in exchange for discounts in the stores – have increased sales.
- Similarly, **Boticário Group** reported that its Packaging Recycling Programme (Project 4), by encouraging that consumers return empty product packages to the in-store stations, has increased the company's overall sales.

3.

BENEFITS OF CONDUCTING A FINANCIAL ANALYSIS OF SUSTAINABILITY PROJECTS



The table below summarises how each step related to project management presented in this chapter relates to Sustainable ROI calculations:

Table 3 - Importance of each step of project management for calculating the Sustainable ROI

Steps of a Project	Importance for calculating the Sustainable ROI
Defining the goal of the project	Clearly establishing the project's scope and limits sets inputs to be considered during the calculation of stream of revenues, costs and expenses over time.
Defining the requirements of the project	This phase establishes the types and quantities of material, staff, natural resources, equipment, supplies necessary to achieve the project's goals, respecting its scope and limits. These are going to be the costs and expenses projected on the projects' financial modeling.
Developing the project's schedule	The timeframe of the project is key for establishing the number of years the projection of revenues, costs and expenses should consider (3 years? 5? 15?). Also, financial calculations consider the investment, operation and decommissioning phases, so the overall cash flow projections will probably have more years than the project's operations.
Performing financial analyses	This phase is the calculation itself, with inputs coming from previous phases. The results will be analysed to decide if the project should be approved or not (whether the project has a positive NPV, adequate IRR and payback, and how these results compare to other projects' financial analyses for comparison and prioritisation).
Defining a performance monitoring plan	This stage establishes a plan for monitoring the project's actual results to check whether financial projections are met by reality. Any deviations from projections should be accounted for in a new financial analysis/ model to check whether the original projected returns will be achieved (budget versus actual). This also helps future projects by allowing project managers to have historical data on deviations from projections.
Establishing risk management procedures	All risks identified should be contemplated in the financial model for adequate budgeting as a potential cost, expense, lower than expected revenue, and/or higher discount rate due to increased risk perception.

Source: The Authors

The participating companies stated that performing a financial analysis of sustainability projects has generated numerous benefits to the sustainability department and to the company, including:

- Closer link between the finance and sustainability departments:** While some of the sustainability departments argued that the finance teams took part in this initiative because they already had been working with them before, others took the opportunity to develop a closer relationship with the finance area and, in some cases, with other departments.
- Demonstration of measurable financial gains of sustainability initiatives:** According to the companies, performing financial analyses of sustainability projects demonstrates to the company's internal stakeholders that sustainability initiatives bring real value to the company, thereby increasing internal support to the projects and facilitating project approval.
- Awareness of the need to generate financial, environmental and social information from the beginning of the project's implementation:** The company representatives involved in this initiative highlighted the importance of collecting and recording financial, social and environmental indicators from the very beginning of the project to facilitate financial analyses and project monitoring.
- Strengthened internal credibility of the sustainability department:** By adopting financial techniques, the company representatives noticed that the sustainability departments present results that are more aligned with the expectations of the organisation.
- Innovative spirit in the sustainability department:** Some company representatives observed that this initiative has fostered in the sustainability departments the "will to innovate" as they seek to monetise social and environmental outcomes that were previously considered intangible.

"We learned with you and internalised it in the department's routine. Another gain was to speak the business language. To notice that we are presenting results in the reports and in the presentations that are more consistent and aligned to the organisation's expectations. Finally, I think that there is the will to innovate. We've been trying to incorporate other aspects that we couldn't at the time. This will to innovate is also beneficial to the organisation." (participating company)

Additionally, several participating companies mentioned that this initiative has encouraged them to financially analyse other sustainability projects as well. **Siemens'** sustainability department, for instance, has expanded the *Formare* School Project to the city of Manaus, where it also conducted a financial analysis in the beginning of the project. **AES Brasil** has extended the analysis to other four sustainability projects. **Instituto Votorantim** has developed a social project evaluation policy to analyse the financial performance, impacts and outcomes of all its social projects.



Incorporating social and environmental aspects in corporate management

Not only may companies advance in the financial analysis of sustainability projects, but they may also make progress in incorporating social and environmental aspects into their traditional models of project evaluation and into corporate programmes.

An example is found at **AES Brasil**. Recently, the sustainability department – which has developed a closer relationship with the company's investment analysis department as a result of this initiative – contributed to the revision of AES's investment analysis policy by including social and environmental issues that need to be considered in the investment analysis process. Aiming to transform sustainability into a crosscutting theme in the organisation, AES's sustainability department is also helping to incorporate social and environmental criteria into supplier risk management and into the company's project continuous improvement programme.

The financial sector has been progressively incorporating social and environmental issues in its lending or investment decision-making. The banks' credit analysis departments have been using environmental, social and corporate governance (ESG) factors to analyse the risk of default of companies that apply for credit as well as the risk that the projects financed do not reach their goals. Institutional investors (such as pension funds and insurance companies) and asset managers have incorporated ESG criteria to analyse the performance of the investee companies, to calculate the companies' fair share value and to engage with them to improve corporate practices.

Hence, good management of sustainability projects, which includes financially analysing sustainability projects, contributes – albeit indirectly – to the dialogue between the organisation and its investors and lenders. From the point of view of the investors, there is an increase in the number of responsible investors, who are concerned with integrating ESG into investment analysis and decision-making. The Principles for Responsible Investment (PRI), the main global initiative that supports this movement, has more than 1,800 investor signatories from more than 50 countries with US\$ 70 trillion in assets under management.¹⁵ Another movement of investors concerned with social and environmental issues is the impact investment movement, which seeks to generate financial return with social and environmental impact. According to a survey from the Global Impact Investing Network (GIIN), there are US\$ 114 billion invested in impact assets.¹⁶ In Brazil, the green bond market is growing, fixed income aiming to finance companies with sustainability-related strategies through the capital markets.

From the point of view of lending, Brazilian banks have adopted socio-environmental responsibility policies and observed socio-environmental criteria for lending. This occurs for a number of reasons, including:

- To respond to the Brazilian Central Bank's regulations, which have advanced in regulating socio-environmental issues. Two resolutions are highlighted: 4327, from April 2014, establishing that financial institutions must have a socio-environmental responsibility policy and to observe aspects that are material to the institution's risk; and (ii) 4557, from February 2017, which includes socio-environmental risks in the risk management structure of the financial institutions.
- Commitment to FEBRABAN's self-regulation (SARB 14/2014)¹⁷, which creates and implements a socio-environmental responsibility policy for the associated financial institutions.
- Commitment to the Equator Principles and other voluntary mechanisms.

Good management of sustainability projects, which includes financially analysing sustainability projects, helps to make explicit the contribution of the company's projects (whether they come from sustainability departments or not) for the generation and/or protection of economic value. There is potential for sustainability projects to contribute to access to better conditions in the credit and investment markets.

¹⁵ (PRI, 2017)(PRI, 2017) | ¹⁶ (GIIN, 2017) | ¹⁷ (FEBRABAN, 2014)

5. FINAL REMARKS



6. REFERENCES



Applying concepts and practices of project management in sustainability projects contributes to bring the sustainability department closer to the other departments and to the language used in the business environment. It also makes explicit the quantifiable financial gains from sustainability initiatives, which facilitates decision-making and the approval of the project by management. Therefore, incorporating financial methodologies into project evaluation generates internal and external benefits.

We hope that this handbook contributes and helps sustainability professionals to overcome the challenges identified by Deloitte & ABRAPS' survey – particularly, the challenges related to project implementation, such as lack of investments, lack of engagement from the leadership, lack of support and difficulty to prioritise sustainability projects.

Bauer, R., & Hann, D. (2010). *Corporate Environmental Management and Credit Risk*.

Fonte: <https://ssrn.com/abstract=1660470>

Benson, B., & Davidson, W. (2010). The Relation between Stakeholder Management, Firm Value, and CEO Compensation: a Test of Enlightened Value Maximization. *Financial Management*, 39(3), 929-963.

Clements, J., & Gido, J. (2014). *Gestão de Projetos* (3 ed.). São Paulo: Cengage Learning.

Copeland, T., Koller, T., & Murrin, J. (2001). *Valuation: Measuring and Managing the Value of Companies*. (3 ed.). John Wiley & Sons.

Damodaran, A. (2010). *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset*. Wiley.

Deloitte & Abraps (2015). *Profissionais de Sustentabilidade: Atuação, Projetos e Aspirações*.

From: <https://www2.deloitte.com/content/dam/Deloitte/br/Documents/risk/ProfissionaisSustentabilidade.PDF>

Dhaliwal, S., Li, O., & Tsang, A. &. (2014). Corporate Social Responsibility Disclosure and the Cost of Equity Capital: the Roles of Stakeholder Orientation and Financial Transparency. *Journal of Accounting and Public Policy*, 33(4), 328-355.

Edmans, A., Li, L., & Zhang, C. (2014). *Employee Satisfaction, Labor Market Flexibility, and Stock Returns Around the World*. Retrieved 01 27, 2017 from <https://ssrn.com/abstract=2461003>

El Ghoul, S., Guedhami, O., Kim, H., & Park, K. (2014). *Corporate Environmental Responsibility and the Cost of Capital: International Evidence*. Retrieved 01 27, 2017 from <https://ssrn.com/abstract=246722>

FEBRABAN. (2014). Sarb 14/2014. From Sistema de Autorregulação Bancária:

<http://www.autoregulacaobancaria.com.br/pagina/17/4/pt-br/normativos>

Flammer, C. (2013). Corporate Social Responsibility and Shareholder Reaction: The Environmental Awareness of Investors. *Academy of Management Journal*, 56(3), 758-781.

GIIN. (2017). *Annual Impact Investor Survey 2017*. From <https://thegiin.org/knowledge/publication/annualsurvey2017>

Gitman, L. (2010). *Principles of Managerial Finance*. Pearson Education.

Gray, C., & Larson, E. (2009). *Gerenciamento de projetos: o Processo Gerencial* (4 ed.). São Paulo: McGrawHill.



- GVces. (2018). *Explorando Conexões entre Finanças e Serviços Ecossistêmicos: Estudos-Piloto*. São Paulo: Centro de Estudos em Sustentabilidade da Escola de Administração de Empresas de São Paulo da Fundação Getulio Vargas.
- GVces. (2016). *Retorno Econômico de Projetos de Sustentabilidade: Redefinindo o valor dos investimentos de multinacionais no Brasil*. From <http://gvces.com.br/retorno-economico-de-projetos-de-sustentabilidade?locale=pt-br>
- Huselid, M. (1995). The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance. *Academy of Management Journal*, 59(2), 635-672.
- Karpoff, J., Lo, J., & Wehrly, E. (2005). The Reputational Penalties for Environmental Violations: Empirical Evidence. *The Journal of Law and Economics*, 59(2), 653-675.
- Kumar, N., Smith, C., Badisa, L., Wanga, N., Ambrosya, & P. & Tavares, R. (2016). ESG Factors and Risk-Adjusted Performance: a New Quantitative Model. *Journal of Sustainable Finance & Investment*, 6(4), 292-300.
- Matsumura, E., Prakash, R., & Vera-Muñoz, R. (2014). Firm-Value Effects of Carbon Emissions and Carbon Disclosures. *The Accounting Review*, 89(2), 695-724.
- Morgan Stanley. (2015). *Sustainable Reality: Understanding the Performance of Sustainable Investment Strategies*. From <https://www.morganstanley.com/sustainableinvesting/pdf/sustainable-reality.pdf>
- PMI. (2013). *Um Guia do Conhecimento em Gerenciamento de Projetos: Guia PMBOK*. São Paulo: Saraiva.
- PRI. (2017). *About the PRI*. From <https://www.unpri.org/about>
- PRI. (2017). *Signatory Directory*. From <https://www.unpri.org/directory/>
- Reverte, C. (2012). The Impact of Better *Corporate Social Responsibility Disclosure on the Cost of Equity Capital*. *Corporate Social Responsibility and Environmental Management*, 19(5), 1213-1233.
- Richard, O., Murthi, B., & Ismael, K. (2007). The Impact of Racial Diversity on Intermediate and Long-Term Performance: the Moderating Role of Environmental Context. *Strategic Management Journal*, 28(12), 1213-1233.
- Verwijmeren, P., & Derwall, J. (2010). Employee Well-Being, Firm Leverage, and Bankruptcy Risk. *Journal of Banking & Finance*, 34(5), 956-964.
- Willard, B. (2012). *The New Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line*. New Society Publishers.

Discounted cash flow (DCF):

It estimates a firm or project's economic value by projecting cash flows in different periods of time. These cash flows will be brought to present value using a discount rate that reflects the investor's expected risk and return when investing in a company and/or project.

Discount rate:

Used to discount the projected cash flows of a company and/or project that represents the investor's expected return. To estimate the discount rate, in general the Weighted Average Cost of Capital (WACC) is considered. The WACC makes a weighted sum of the costs of capital according to the company's sources of capital: own capital and third-party capital.

Net Present Value (NPV):

Sum of the projected discounted cash flows minus the initial investment.

Payback:

Number of years to recover the initial investment. As soon as the initial investment is recovered, the project is profitable. Simple payback occurs the moment when the sum of the terms of the cash flow is positive. However, simple payback does not take into account the time value of money. Discounted payback considers the time value of money, bringing the cash flows to present value and then calculating the moment when the sum of the terms of the cash flow becomes positive.

Internal rate of return (IRR):

It is the discount rate at which the NPV reaches zero. It is used to compare two or more projects when they are mutually exclusive. In this case, the project with the highest IRR is the most attractive.

Return on Investment (ROI):

It measures the return on each unit of money invested, i.e., it measures the relationship between the amount earned or lost and the amount invested (cost-benefit analysis of the investment).



Since the beginning of the 1990s, an increasing number of academic studies have analysed the relationship between sustainability practices and financial performance, supporting the argument that the incorporation of sustainability into management is economically beneficial to the company. In Table 4, we list some of the main studies on this topic.

Table 4 - Academic studies on sustainability and financial performance

Issues	Author(s)	Conclusion
Human capital management	(Huselid, 1995)	High performance work practices (such as training programmes and performance appraisals) have a statistically significant impact on employee productivity and on short- and long-term measures of corporate financial performance.
	(Verwijmeren & Derwall, 2010)	Companies with better employee track records (in categories such as strong health and safety programmes and employee participation in corporate decision-making) have better credit ratings.
	(Edmans, Li, & Zhang, 2014)	In countries with high labour market flexibility, employee satisfaction of the “Best Companies to Work for” is associated with superior long-term financial returns.
	(Richard, Murthi, & Ismael, 2007)	There is a positive relationship between racial diversity and longer-term profitability.
	(Karpoff, Lo, & Wehrly, 2005)	Listed companies experience meaningful decreases in share price values after allegations of environmental violations are announced – on average, 1.69%.
Environmental management	(El Ghouli, Guedhami, Kim, & Park, 2014)	The cost of equity capital is lower when firms have higher corporate environmental responsibility.
	(Bauer & Hann, 2010)	The adoption of proactive environmental practices is associated with a lower credit risk.
	(Flammer, 2013)	Examining whether shareholders are sensitive to environmental news, the author found that there is a negative stock market reaction to harmful events and a positive stock market reaction to eco-friendly events.

(continuation)

Issues	Author(s)	Conclusion
Stakeholder management	(Benson & Davidson, 2010)	Stakeholder management is positively related to firm value (measured by <i>market to book</i>).
Sustainability transparency	(Reverte, 2012)	There is a negative correlation between corporate social responsibility disclosure ratings and the cost of equity capital, and the relationship is more pronounced for those firms operating in environmentally-sensitive industries.
	(Dhaliwal, Li, & Tsang, 2014)	There is a negative association between corporate social responsibility disclosure and the cost of equity capital.
	(Matsumura, Prakash, & Vera-Muñoz, 2014)	The median value of S&P 500 firms that disclose their carbon emissions is about \$2.3 billion higher than that of comparable non-disclosing firms.
Risk management	(Morgan Stanley, 2015)	The majority of sustainability funds have lower volatility than the median of the traditional funds.
	(Kumar, et al., 2016)	The equity return of the Dow Jones Sustainability Index (DJSI) companies is, on average, 6.12% higher and 28.67% less volatile in comparison with companies that are not listed on the DJSI.

Center for Sustainability Studies – GVces

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Emerging Market Sustainability Dialogues - EMSD

Emerging Market Multinationals Network for Sustainability - EMM



SUSTAINABLE ROI



FGV | SÃO PAULO SCHOOL OF
BUSINESS ADMINISTRATION
Center for Sustainability
Studies

EMSD EMERGING MARKET
SUSTAINABILITY DIALOGUES

Emerging Market Sustainability Dialogues (EMSD)

www.emsdialogues.org
emsdialogues@giz.de
T: +49 30 338424-356



EMM Contact Information

www.emm-network.org
emm-network@giz.de
Emerging Market Multinationals (EMM) Network for Sustainability
[@EMM_network](https://twitter.com/EMM_network)

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Köthener Straße 2
10963 Berlin

Friedrich-Ebert-Allee 36 + 40
533113 Bonn
Alemanha

Dag-Hammarskjöld-Weg 1 - 5
65760 Eschborn
Alemanha

E info@giz.de
I www.giz.de

GIZ no Brasil
SCN Quadra 01, Bloco C, Sala 1501
Ed. Brasília Trade Center
70711-902 Brasília, Brasil
T +55 61 2021-2170
F +55 61 202166
giz-brasilien@giz.de