

FINAL REPORT

Road Map to Green Funding of LCBA
Bankable Proposals for SMEs

Non Key Expert

Gustavo Pimentel, Managing Director
gpimentel@sitawi.net | +55 (21) 2247-1136

SITAWI Finance for Good

04 February 2017

Index

1. Introduction	2
2. Overview of Financial Instruments Related to Green Funding	3
2.1 General Context.....	3
2.2 European Context.....	5
2.3 Brazilian Context.....	8
2.4 Types of Bankable Transactions	8
2.5 Types of Funding	9
2.6 Matrix of Funding Possibilities per Type of Transaction	10
3. Green Funding Instruments and Conditions	24
3.1 Brazilian Institutions	24
3.2 International Institutions	29
4. Road Map Template.....	12
5. Conclusions	31
Appendix A - Project Timeline	33
Appendix B - Survey and Interviews	34
B.1 Sample	34
B.2 Survey Respondents	35
B.3 Funding Types.....	36
B.4 Sectors of Interest	36
B.5 Interest in Participating of Roundtable	37
B.6 Long List of Institutions.....	37
B.7 Survey Scope	41
Appendix C - Roundtable Overview.....	43
References	43

1. Introduction

This report aims to provide the Low Carbon Business Action (LCBA) Brazil Project an understanding of the green financing environment for Small and Medium Enterprises (SMEs), focusing on options for possible bankable proposals resulting from Cooperation Partnership Agreements between SMEs from European Union and Brazil across different LCBA target sectors.

Developed by the Non Key Expert Gustavo Pimentel, the report has an Overview of Financial Instruments Related to Green Funding, which explain the context in Brazil and Europe and defines the possible transactions to bankable proposals and their appropriate funding types.

Moreover, this document shows the Green Funding Instruments and Conditions found through a survey sent to 82 national and international institutions, interviews with 17 institutions that responded to the survey and an extensive desk research. With the findings from these phases it was possible to design a Road Map Template to guide LCBA audience in terms of types of CPA's, institutions, corresponding financing options and their requirements.

Finally, this report shares some insights and Conclusions about green financing options for SMEs and recommendations to the LCBA Brazil Project Team. The Appendices A, B and C detail the project timeline, survey, interviews and roundtable descriptions.

2. Overview of Financial Instruments Related to Green Funding

2.1 General Context

A meaningful response to climate change involves the development and diffusion of a wide variety of new and existing technologies that could generate less carbon dioxide than traditional technologies: we call them low carbon technologies (WIPO - World Intellectual Property Organization, 2015). Choices of infrastructure (for example water and waste management, electricity, mobility), industrial processes, agriculture models and other features will affect the greenhouse gas emissions intensity and climate change itself (OECD, 2016). Low carbon projects can mitigate greenhouse gas emissions and promote sustainable development.

Although low carbon innovation has its own scientific challenges, this developing field also faces barriers when it comes to financial support. According to the most recent report by the IEA - International Energy Agency, despite positive progress, the full implementation of the unconditional pledges made during COP21 by more than 150 countries by mid-October 2015 would require cumulative investment of \$13.5 trillion in low carbon technologies and energy efficiency until 2030 (International Energy Agency, 2015).

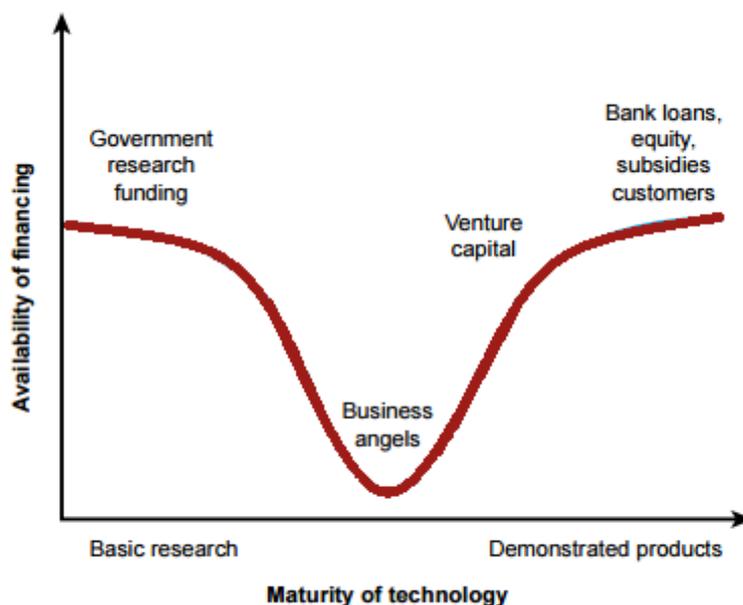
Small and Medium Enterprises (SMEs) are highly important for the environmental shift: whilst their individual impacts are generally small in comparison to those of large companies, the cumulative environmental impact of the sector is considerable (European Commission, 2014). According to the European Commission, in the European economy, for example, SMEs account for 99.8% of private companies, and more than two thirds of employment in the 27 member countries of European Union (European Commission, 2016a). For these types of enterprises, access to funding presents specific challenges: low carbon technology companies can face obstacles to find investors and partners.

Public funding, through development banks and governmental agencies, plays a crucial role to compensate underinvestment in SMEs on the part of private investors. In fact, when making investment decisions, public institutions are able to account for both social returns and profits, whereas private investors will focus largely on the latter (European Commission, 2016).

Government support is also crucial for SMEs in the green technology sector (World Bank, 2010) because while having the potential to contribute substantially to technological progress, they often lack resources, track record of implementation and assets to be offered as collateral (Rassenfosse, 2012).

Despite being central players in low carbon technology development, government and public funding are not sufficient to boost low carbon companies and projects in a scale enough to outrun the greenhouse gas emission growth. Actually, they may be scarce even to allow SMEs to survive (World Bank, 2010).

Figure 1 shows what the World Bank calls “Valley of Death” between SMEs green technology development and market. The valley represents the lack of financing that could kill project before they even start contributing to lower carbon emissions.



Source: World Bank 2010a

To overcome investment barriers for green companies and leverage the impact of available public resources, over a dozen national and sub-national governments have created public green investment banks (GIBs), which is a state-capitalized entity established specifically to facilitate private investment into domestic Low Carbon and Climate Resilient (LCR) infrastructure and other green sectors such as water and waste management (OECD, 2016).

These dedicated green investment entities have been established at national level (Australia, Japan, Malaysia, Switzerland, United Kingdom), state level (California, Connecticut, Hawaii, New Jersey, New York and Rhode Island in the United States) and city level (Masdar, United Arab Emirates).

Governments are using GIBs to channel private investment, including from institutional investors, into low carbon projects such as commercial and residential energy efficiency retrofits, large-scale onshore and offshore wind, rooftop solar photovoltaic systems and municipal-level energy efficient street lighting (OECD, 2016). Unlike grant-making public institutions, GIBs focus on financial sustainability and some are required to be profitable. For example, the UK Green Investment Bank must invest on commercial terms and has to meet a minimum 3.5% annual nominal return on total investments.

GIBs are typically smaller than national development banks, the size of the currently largest GIB is expected to be approximately USD 7 billion at final capitalisation, while Germany’s KfW invested about USD 56 billion in 2015 in ‘domestic promotion’, which includes but are not limited to green projects. Despite their smaller size, GIBs are mobilising significant private investment (OECD, 2016). The UK Green Investment Bank, Australia’s Clean Energy Finance Corporation and the Connecticut Green Bank

are successfully targeting institutional investors, like pension funds, insurance companies, sovereign wealth funds and mutual funds.

Notwithstanding, GIBs are a tool to mobilise private investment that can complement but not replace climate policies such as putting a price on carbon and reforming inefficient fossil-fuel subsidies. Well-designed climate policies create many of the conditions necessary to stimulate LCR investments. Within such a framework, GIBs can play a supportive role in overcoming remaining barriers and catalysing investment (OECD, 2016).

Unfortunately, there are currently twelve GIBs around the world, none of them in Brazil and only two in Europe, Technology Fund on Switzerland and the UK Green Investment Bank. The Swiss GIB only invests in Swiss based companies and the British fund prioritizes projects in India, South and East Africa. Due to few specialized public green funding entities in Europe and the lack of them Brazil, it's necessary to take a closer look at Brazilian and European financial institutions and financing options for SME's developing low carbon technologies.

2.2 European Context

Since the global economic and financial crisis in 2008, the European Union (EU) has been suffering from low levels of investment. Collective and coordinated efforts at European level are needed to reverse this downward trend and put Europe on the path of economic recovery (European Commission, 2014).

To mobilise adequate levels of resources across the euro zone, the EU launched in 2014 an Investment Plan to support and promote investments, which aims mainly three objectives: a) to reverse trends of falling investment to boost job creation and economic recovery – without adding to public debt or straining national budgets; b) to support investment that meets the long-term needs of the economy and increases competitiveness and; c) to support investment that helps strengthen Europe's productive capacity and infrastructure (European Commission, 2014).

A year later, the EU played a key role in the Climate Agreement of COP21, which was the first major multilateral deal of the 21st century and set up a global action plan to avoid dangerous climate change by holding the increase in the global average temperature to well below 2°C above pre-industrial levels (European Commission, 2015). In this scenario, the global transition to low emissions along with coordinated mobilisation of resources proposed by the investment plan can provide significant opportunities to revitalise Europe economically and help global climate action.

Authors suggest, however, that a low carbon investment strategy should avoid the two major pitfalls that have so far prevented it from taking hold. On the one hand, public budget constraints do not allow for subsidies in favour of the energy transition. On the other hand, political constraints preclude any attempt to put a price on carbon, at least at a level sufficient to drive investment decisions and change behaviours. The current price of carbon is too low to make any kind of difference and it could not be raised significantly in the short term, because this would be at the expense of the powerful

lobbies representing energy intensive industries and significantly affect the way of life of a large share of the population (Aglietta, Espagne, & Fabert, 2015).

To prevent the use of subsidies and the political complications that could emerge from the hypothetical raise of carbon prices, it's necessary to explore a third way: invest with financial return in low carbon initiatives developed by corporates and SMEs. The European Commission along with European Investment Bank Group (both EIB and EIF) created the European Fund for Strategic Investments (EFSI), which will support investment in transport, energy and digital infrastructure; education and training, health, research and development, information and communications technology and innovation; expansion of renewable energy and resource efficiency; environmental, urban and social projects; as well as support for smaller businesses and midcap companies. EFSI aims to unlock EUR 315 billion of investment over the next three years (European Investment Bank, 2015).

The EFSI will work providing EU-supported guarantees or counter-guarantees to selected financial intermediaries to cover for potential losses on a portfolio of SME loans. By reducing credit risk and lowering capital consumption through the guarantee, EFSI, EIB and EIF are encouraging financial intermediaries to extend new debt financing to innovative enterprises on more attractive terms.

Although currently the EFSI does not invest exclusively in low carbon related projects, there are low carbon targets among its prominent sectors, as energy efficiency and renewable energy (representing 23% of EFSI investment). The European Commission ensures that, in the future, the EFSI will focus even more on sustainable investments in all sectors to contribute to meeting COP21 targets and to help delivering on the transition to a resource efficient, circular and zero-carbon economy. The Commission already proposed that at least 40% of EFSI projects under the infrastructure and innovation window should contribute to climate action in line with the COP21 objectives (European Commission, 2016b).

The projects and agreements approved for financing under the EFSI so far (by 14 September 2016) are expected to mobilise EUR 116 billion in total investments across 26 Member States and to support some 200,000 SMEs. Until 2020, EFSI expects to reach EUR 500 billion of investments for SMEs. These EFS funds will be directed to SMEs through National Promotional Banks (NPBs), due to their particular expertise and knowledge of the local context, business and investor communities as well as national policies and strategies (European Commission, 2015).

The involvement of NPBs also remains crucial for the local work of the enhanced European Investment Advisory Hub (EIAH), which offers companies technical support to help make their projects investment-ready. So far, 18 NPBs as well as the International Union of Railways have agreed to build partner networks with the EIAH to exchange best practice and enhance the local contact with project promoters. The NPBs are focused on their countries SMEs, therefore, for the purpose of this report, they can be considered complementary because they can support the European side of each deal.

The list of International Institutions on section 3.2 shows financing options for Brazilian SME's related to low carbon technologies and complementary lines to European counterparts.

2.3 Brazilian Context

Through climate discussions before COP21, while major developing countries such as China and South Africa have pledged to rein in their emissions as their economies expand, Brazil became the only major developing country to pledge an absolute reduction of 37% in greenhouse gas emissions by 2025 from 2005 levels, by reducing deforestation and boosting the share of renewable sources in its energy mix.

While considered a huge step towards a green economy, according to specialists, the pledge only refers to decarbonisation and doesn't discuss about development model in Brazil and how it affects our environment. For example, one of the proposed measures is an increase of 18% in the use of biofuels in the national energy mix. This could mean an increase in sugar-cane monocultures, which, if poorly managed, could cause other environmental impacts. Thus, the model of COP21 agreements focused only on emissions targets, does not address the central issue of the development model. (Painel Brasileiro de Mudanças Climáticas, 2015).

This point of attention serves also to point how Brazil's greening goals have to go along with sustainable economic growth, which is related to how the population perceive consumption and also how companies deal with the environmental issue in their production process. Today, micro, small and medium companies account for 99.8% of companies, 66.9% of the jobs, and 58.1% of Brazilian GDP (Krauter & Ferreira de Sousa, 2016). This makes SMEs crucial pieces in greening the economy, although such discussion is not properly addressed in governmental planning.

In Brazil, Public Banks and State Agencies offer concessional loans and grants to SME's and some of them have specific lines for green technology development and implementation. However, some of these public bank lines and also private bank options aren't necessarily related to low carbon technologies or are too concentrated towards renewable energy. On the one hand, few specific credit lines make it harder for SMEs to find more favourable conditions to their green projects, on the other hand the extent of low carbon solutions makes a great part of green projects fit in several traditional credit lines, as machinery, franchising, export and import financing.

This report aims at showing financing options for bankable CPAs that could emerge from LCBA Brazil, thus the focus is to list programs and funds related to low carbon technologies and solutions, although it includes some viable generic credit lines. The list of Brazilian Institutions on section 3.1 shows these two types of financing options for Brazilian SME's.

2.4 Types of Bankable Transactions

The LCBA Matchmaking sessions can generate different types of Cooperation and Partnership Agreements (CPA) between European and Brazilian SMEs. Among the CPAs' different scopes there are the ones considered to carry bankable transactions and which could be supported by financing options. The list of operations considered as bankable transactions and their definitions are described below:

Export / Import Business: Agreement between two companies to trade equipment, materials and products.

Franchising: License that a company acquires to allow it to have access to a business's proprietary knowledge, processes and trademarks from other company.

Joint Production / Service Provision: Agreement between two parts to produce or offer services in partnership.

Joint Product Development / Adaptation: Agreement between two companies to allow that a part develop or adapt technologies originally from the other part.

Joint R&D: Agreement between two parts to jointly research and develop technologies.

Joint Project Development: Agreement between two parts to develop a project together.

Company Acquisition / Merger: Transaction between two companies in which one part buys or merges with the other.

The first LCBA matchmaking session (Aug 2016) resulted in 85 Cooperation Partnership Agreements (CPAs). The table below shows how many CPAs were signed showing interest in each type of bankable proposal (one company could sign more than one type of operation in each CPA).

Type	Number
Joint Production / Service Provision	39
Joint Project Development	37
Joint R&D	36
Export / Import Business	32
Joint Product Development Adaptation	28
Franchising	2
Joint Venture	1

Source: LCBA Brazil Project Team, Aug 2016

2.5 Types of Funding

There is a variety of funding types that can be used to support transactions between companies regarding low carbon technologies. Each type is usually related to the scope of the project, the stage of technology development, risk appetite and degree of involvement. In general, a funding type can be considered “commercial” when the investor is looking for market-based financial returns. Otherwise, the funding type is categorized as “concessional”, meaning the investor is looking for below-market rates of financial return. In the latter case, the investor might require benefits to society.

Below we describe possible funding types for bankable proposals that could emerge from LCBA Brazil CPAs.

Concessional Grant: Non-reimbursable funds provided for cooperation programs and investments with social and environmental benefits.

Technical Assistance: Provision of know-how in the form of personnel, training, research and associated costs.

Concessional Loan: A loan with no interest or a below-market rate interest made by development banks and government agencies to selected sectors and businesses.

Guarantee: A non-cancellable compensation for damages or loss bond that is backed by an insurer to guarantee investors that principal and interest payments will be made. Banks or insurers can provide guarantees and there are several types: financial guarantee, surety bond, insurance and endorsement, go-ahead, approval.

Leasing: Contract outlining the terms under which one party agrees to rent property owned by another party. There are two types of leasing: operational leasing, which allows for the use of an asset; and financial leasing, which besides the use of the asset also convey rights of its ownership, its obligations and risks to the customer (lessee).

Commercial Loan: debt-based funding arrangement between a business and a financial institution typically used to fund capital expenditures and working capital. Rates are defined by supply and demand in the market, as well as the credit profile and guarantees offered by the borrower.

Joint Venture Loan: Financial support to allow business arrangement in which two or more parties agree to pool their resources for accomplishing a specific task.

Mezzanine Debt: Hybrid capital that falls between secured senior debt and equity. It is usually a good way for growing businesses to bridge the gap between what conventional banks will lend against assets, and the total value of a new project or acquisition.

Convertible Debt: Type of debt security that can be converted into a predetermined amount of the underlying company's equity at certain times during the bond's life.

Equity: A stock or any other security representing an ownership interest.

2.6 Matrix of Funding Possibilities per Type of Transaction

The Matrix below was built to show what funding options are possible for each type of transaction.

Funding Possibility	Scope of Operation						
	Export / Import Business	Franchising	Joint Production / Service Provision	Joint Product Development / Adaptation	Joint R&D	Joint Project Development	Company Acquisition / Merger
Concessional Grant							
Technical Assistance							
Concessional Loan							
Guarantee							
Leasing							
Commercial Loan							
Joint Venture Loan							
Mezzanine Debt							
Convertible Debt							
Equity							
High							
Medium							
Low							
Not Applicable							

Export / Import Business: This is considered regular business between companies and therefore unlikely to receive highly concessional support such as grants and technical assistance. Commercial banks are usually the main capital providers through commercial loans and guarantees. Local development banks usually support only national companies willing to export, instead of importing.

Franchising: This is seen as a good way to reduce the risks of starting a business or entering new markets. Some development banks could provide technical assistance to structure the franchising model. The actual opening of franchised operations will demand capital on a commercial basis, such as commercial loans and guarantees. It is also possible to get equity to cover development of fixed assets.

Joint Production / Service Provision: If framed as a transfer of technology, this transaction might attract technical assistance and concessional loans. Otherwise, the **commercial approaches will prevail**, as with commercial loan, guarantees and leasing if there is the possibility of providing products or services using others' machinery. If new production capacity is to be established, requiring capital expenditure, an equity investor could be an option.

Joint Product Development / Adaptation: This is considered a riskier activity and would hardly attract commercial funding other than equity. If framed as transfer of technology or innovation, it can also attract concessional funding from grants to loans. It can also include technical assistance.

Joint R&D: This is the riskiest transaction and therefore cannot attract commercial funding except equity. The best option is concessional grants and loans and technical assistance from development institutions.

Joint Project Development: This is also a risky activity and is even broader than the others, as projects can differ in scope and sector. It can be similar to product development, general development, product development or adaptation if the project aims to reach this goal, and it can also be a combination of these processes. Thus, depending on the scope, it can be financed by technical assistance, concessional loan

and grants, leasing, commercial and joint venture loan, mezzanine and convertible debts and even equity.

Company Acquisition / Merger: Acquisitions could be funded by joint venture loans if the buyer has a strong balance sheet with low debt. Otherwise, an external investor would likely require a stake in the business through equity, convertible debt or mezzanine debt.

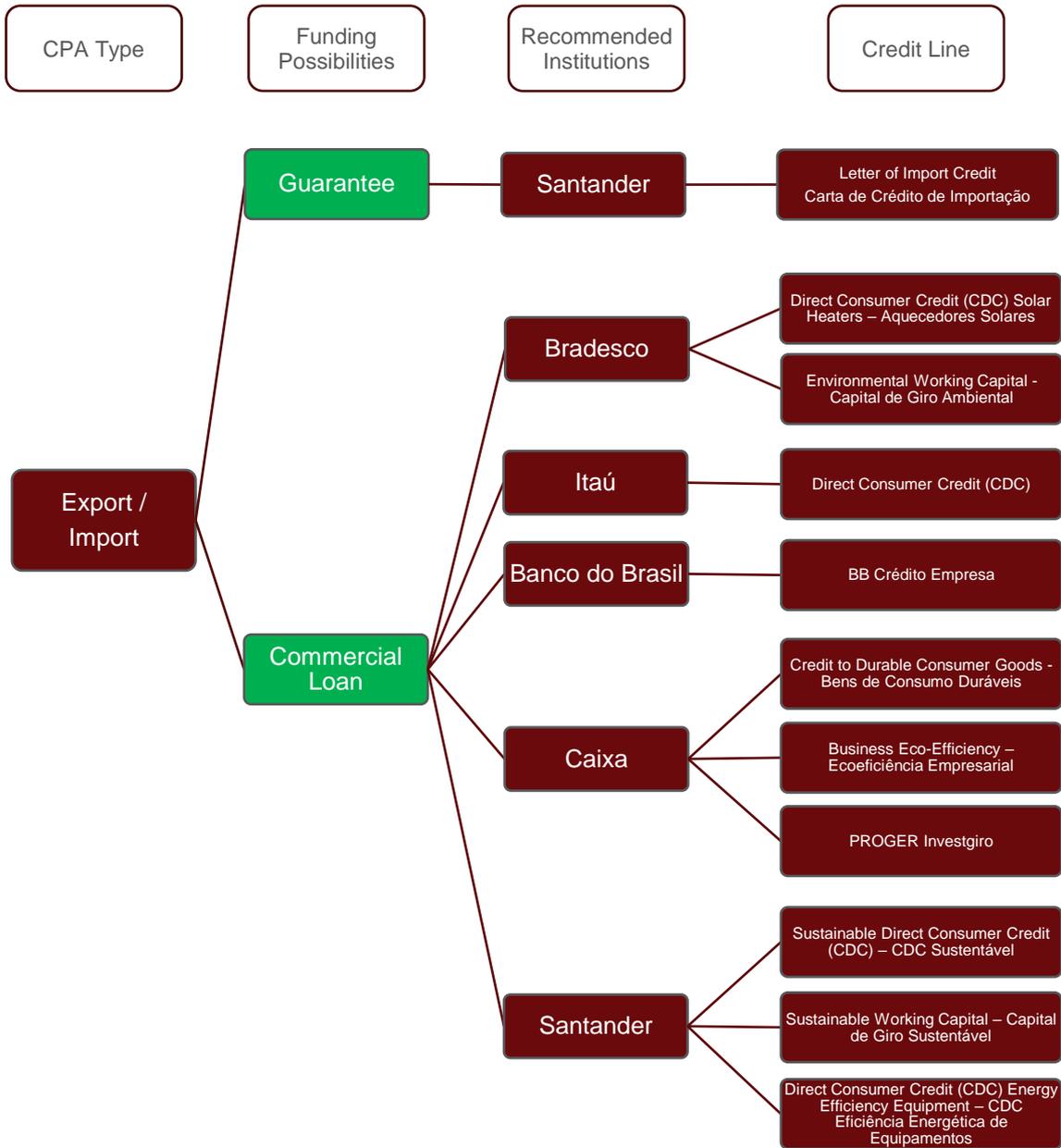
3. Road Map According to CPA Types

Information about funding conditions is crucial to small and medium companies as they can work as boosters or barriers, especially in an incipient theme as low carbon technologies. From the information collected, it was possible to draw a Road Map to Green Funding of LCBA Bankable Proposals for SMEs.

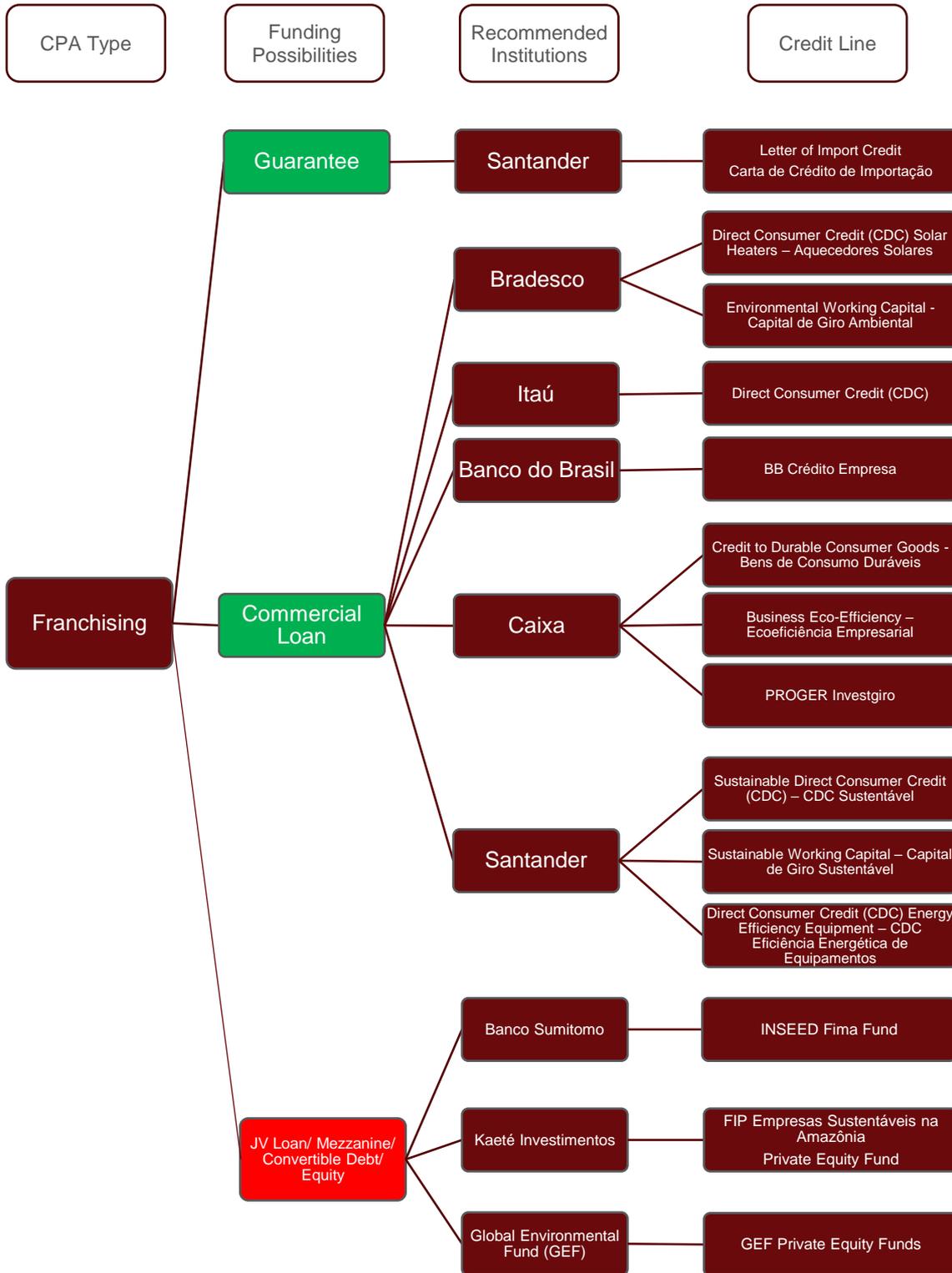
This way, each LCBA matchmaking session participant can look at the kind of transaction they want to make and, if it is a bankable type, they can find the funding possibilities that best apply to each case, followed by the recommended institutions and their related funding lines.

To see details and conditions of each funding line just click on its box.

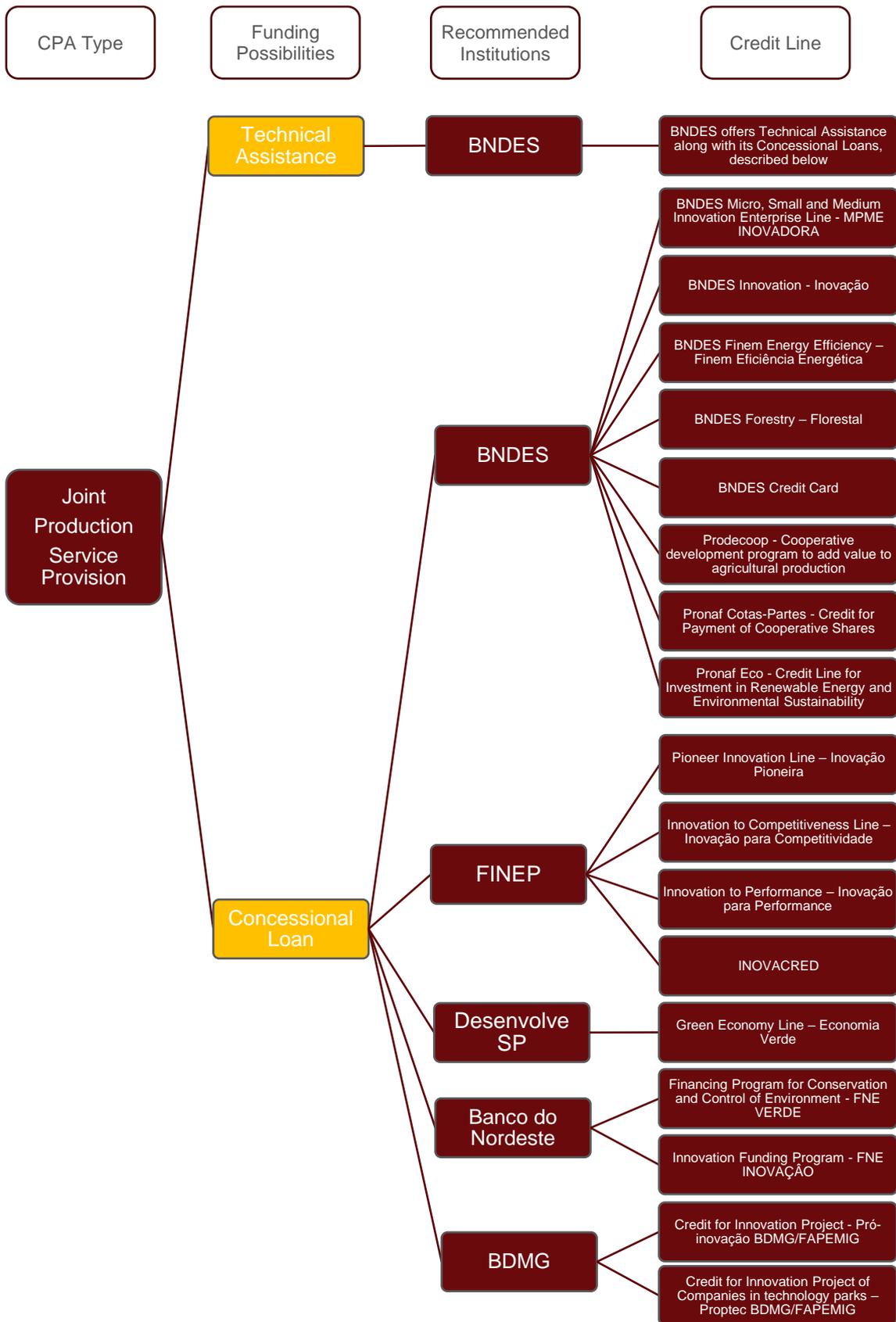
3.1 Export / Import



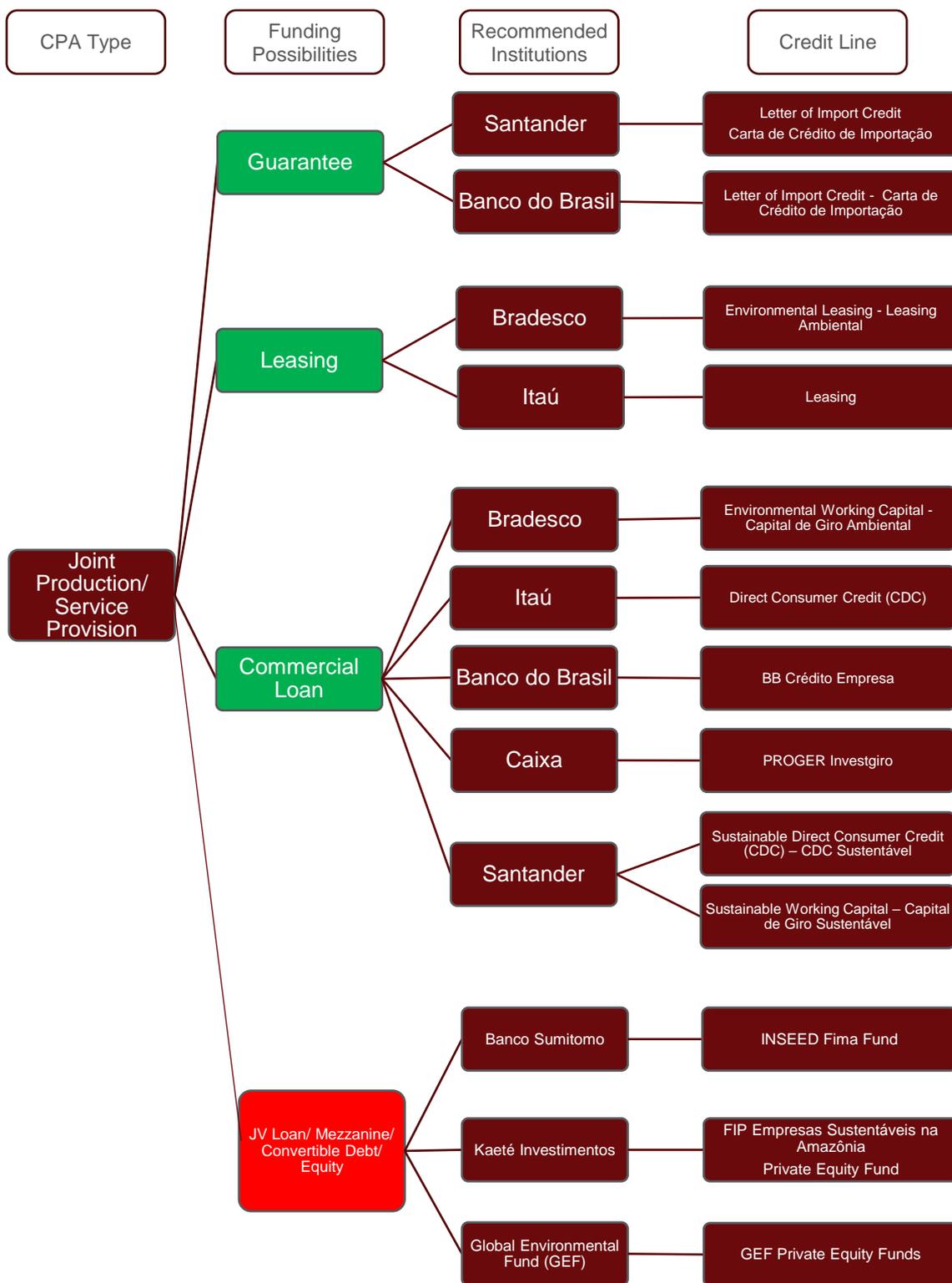
3.2 Franchising



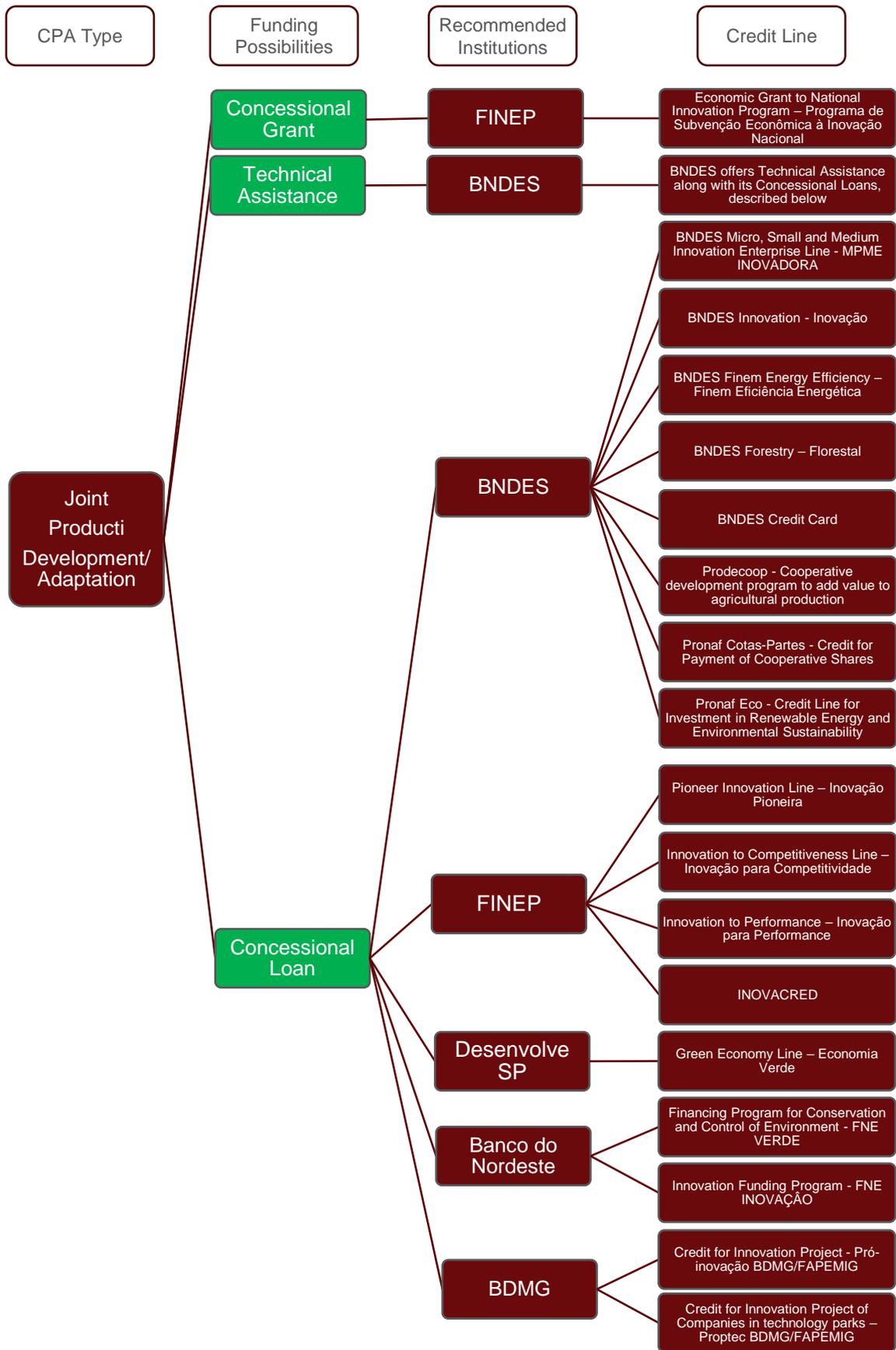
3.3 Joint Production / Service Provision



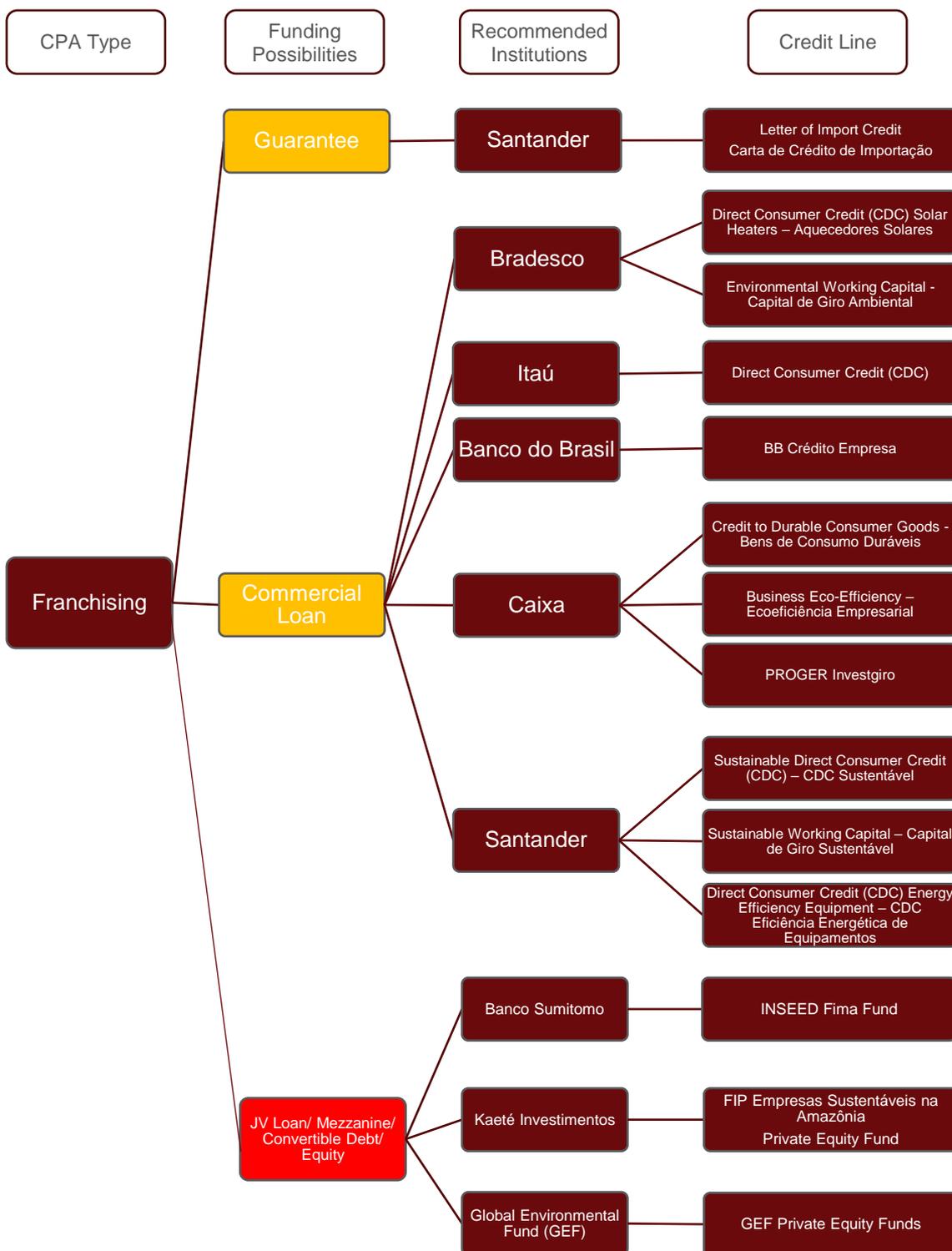
Joint Production / Service Provision continued



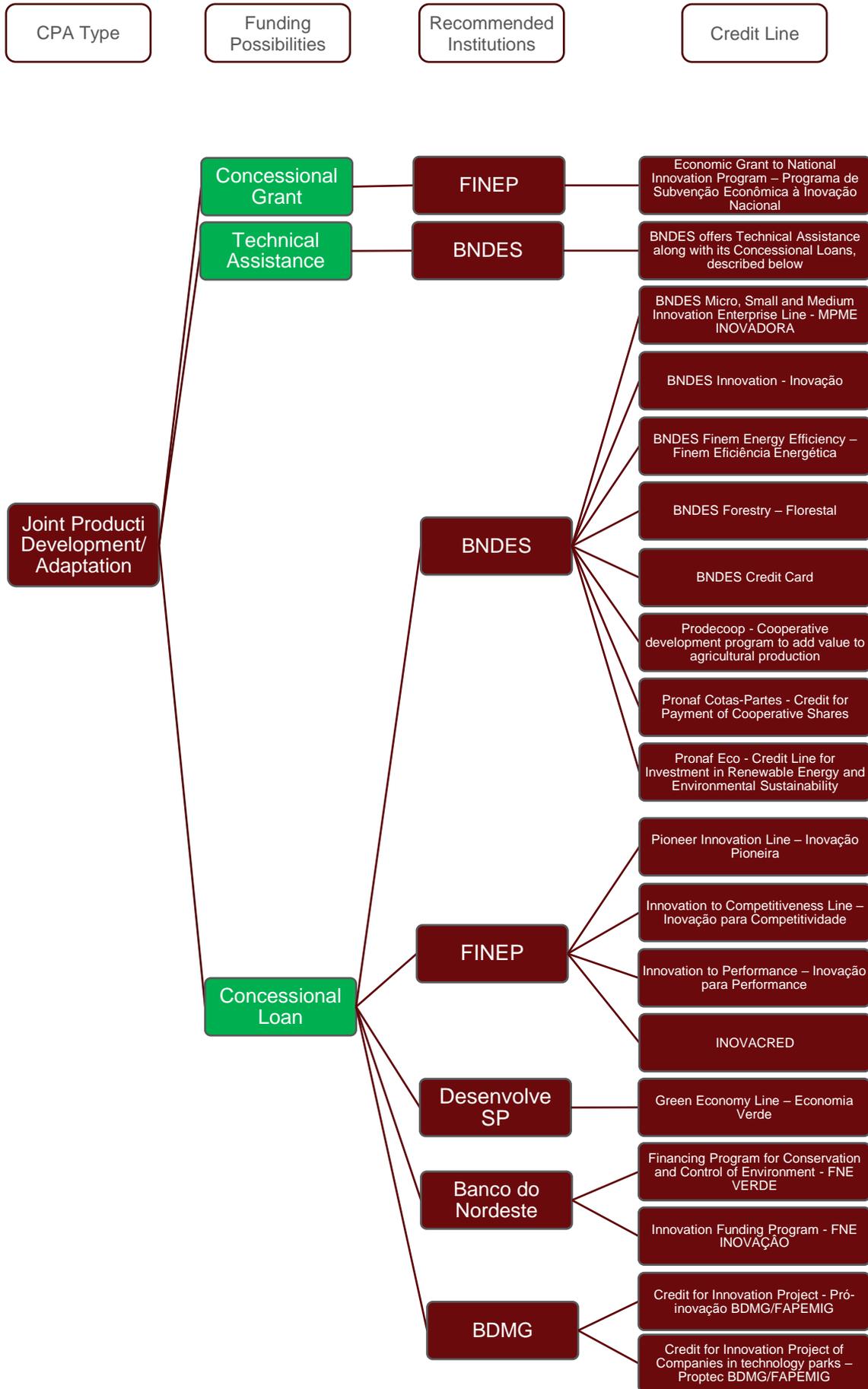
3.4 Joint Product Development / Adaptation



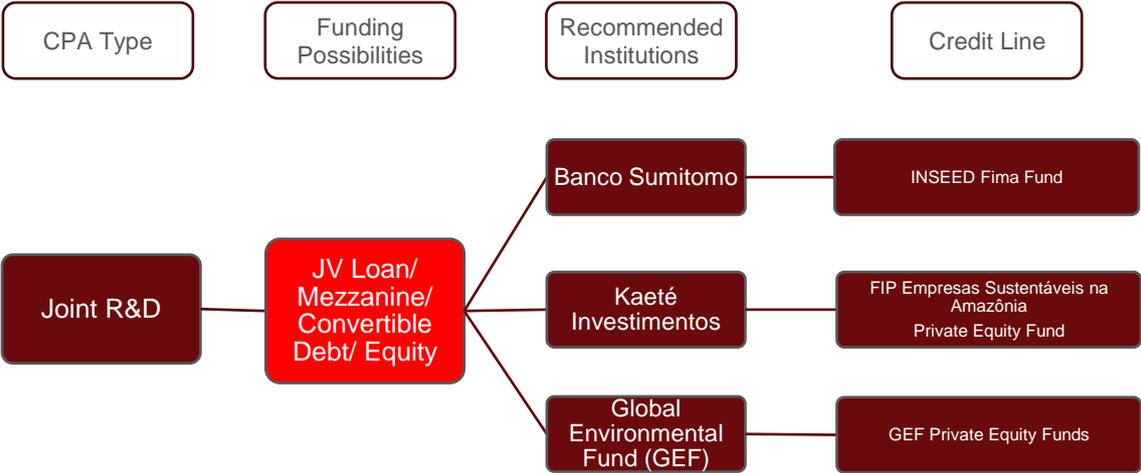
Joint Product Development / Adaptation continued



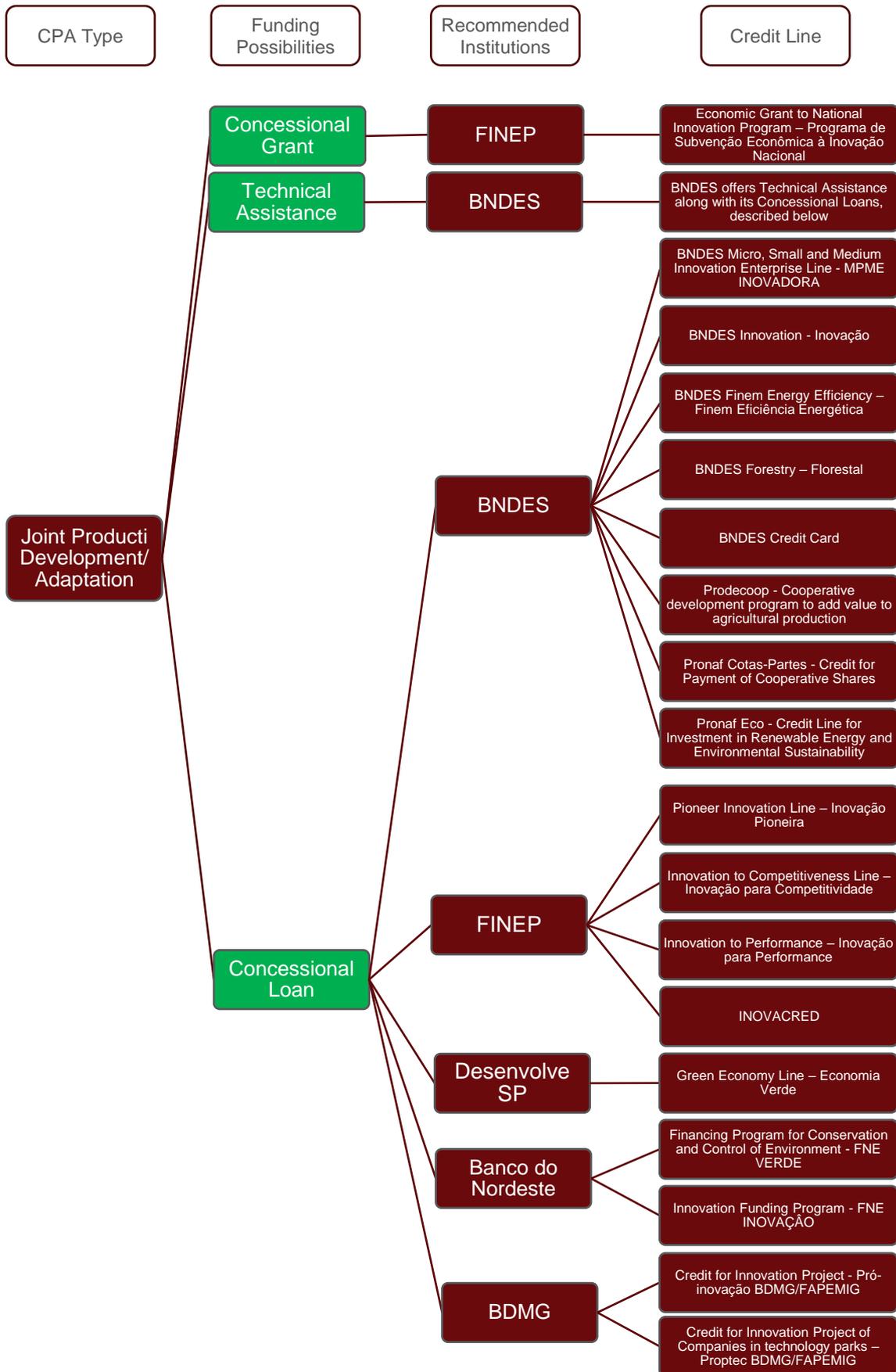
3.5 Joint Research & Development



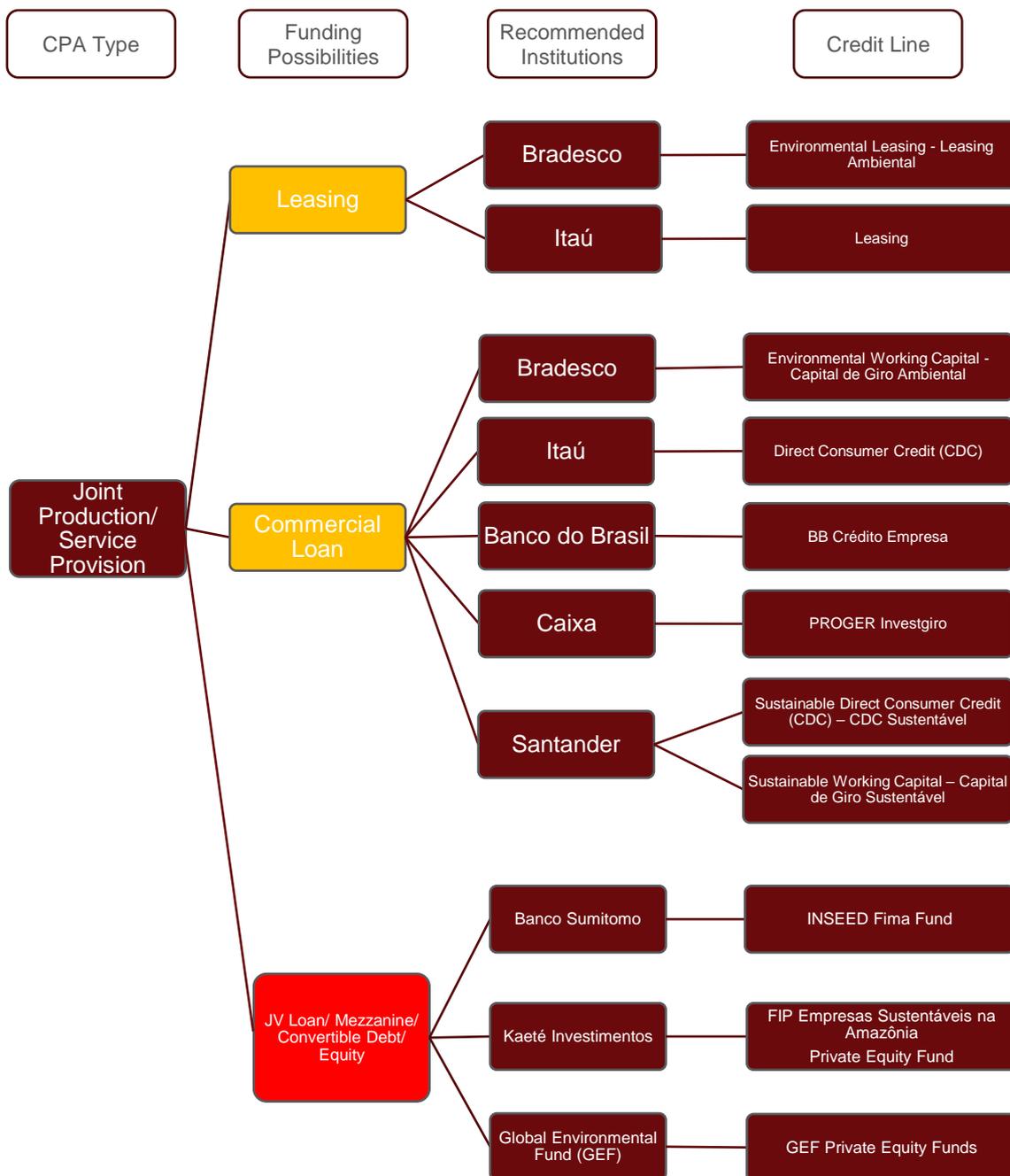
Joint R&D continued



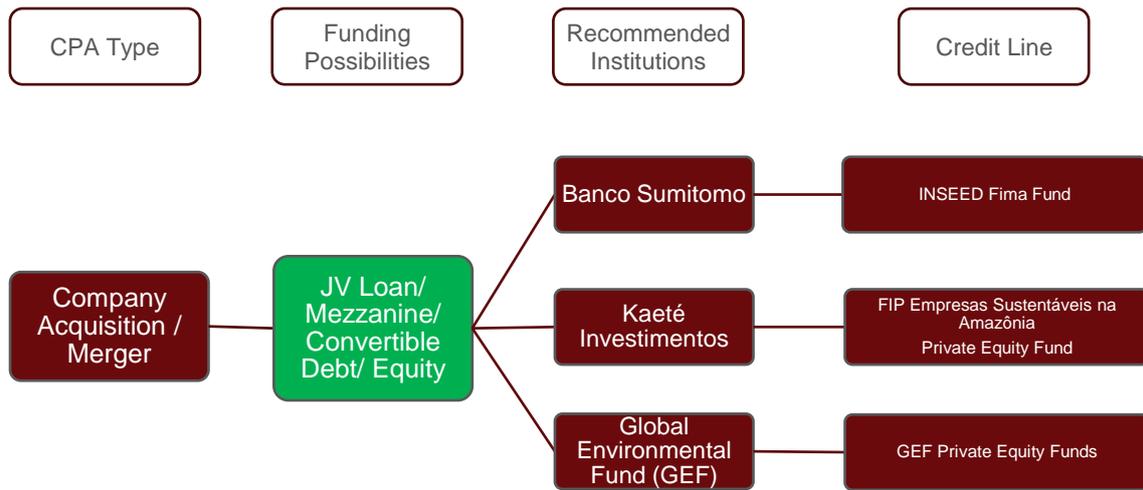
3.6 Joint Project Development



Joint Project Development continued



3.7 Company Acquisition / Merger



4. Green Funding Instruments in Detail

The sections below contain information in detail about funding lines and conditions found through survey, interviews and desk research, divided by Brazilian and International institutions.

Some institutions don't open overall conditions in websites or early stages of contact. The conditions that weren't released are described as non-available (n.a.) at this phase of research.

4.1 Brazilian Institutions

Institution Name	Description	Classification	Conditions
BNDES It transfers to intermediaries as Banco do Brasil, Caixa, Itaú, Bradesco and Regional Banks as Banco da Amazonia, Banco do Nordeste	BNDES Micro, Small and Medium Enterprise Line - MPME INOVADORA Investments for innovation introduction in the market, incremental improvements in products and / or processes	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + up to 1.4% p.a. + on lending rate - Period: up to 120 months - Grace period: up to 36 months - BNDES Participation: up to 90% - The guarantees will be, cumulatively or alternatively: mortgage, property, pledge, surety. The coverage is negotiable between the intermediary FI and the borrower
	BNDES Innovation - Inovação Funding from R\$ 1 million for innovation projects in products, processes and marketing, as well as improving the skills and technical knowledge in the country	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + up to 5.18% p.a. - Period: up to 144 months - BNDES Participation: up to 80% - The guarantees will be, cumulatively or alternatively: mortgage, property, pledge, surety. The coverage is negotiable between the intermediary FI and the borrower
	BNDES Finem Energy Efficiency – Finem Eficiência Energética Funding from R\$ 5 million to projects aiming at reducing energy consumption and increasing the national energy system efficiency	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + up to 2.0% p.a. + on lending rate - Period: determined by enterprise ability to pay - BNDES Participation: up to 80% - The guarantees will be, cumulatively or alternatively: mortgage, property, pledge, surety. The coverage is negotiable between the intermediary FI and the borrower
	BNDES Forestry – Florestal Funding from for projects aimed at reforestation, conservation and forest recovery, besides sustainable use of native areas	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP+ 1.6% p.a. + on lending rate - Period: up to 180 months - BNDES Participation: up to 80% - The guarantees will be, cumulatively or alternatively: mortgage, property, pledge, surety. The coverage is negotiable between the intermediary FI and the borrower
	BNDES Credit Card Credit Limits for micro, small and medium enterprises to finance the purchase of machinery, equipment, vehicles and services	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + up to 1.2% p.m. - Period: up to 48 months - Grace period: up to 3 months - BNDES Participation: up to 100% of the item

			<ul style="list-style-type: none"> - Credit Limit of R\$ 1 million - The guarantees will be, cumulatively or alternatively: mortgage, property, pledge, surety. The coverage is negotiable between the intermediary FI and the borrower
	<p>Prodecoop - Cooperative development program to add value to agricultural production</p> <p>Funding for the modernization of productive systems</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: 9.5% p.a. - Period: up to 144 months - BNDES Participation: up to 90% - Grace period: up to 36 months - Amount: maximum of R\$ 110 million per cooperative
	<p>Pronaf Cotas-Partes - Credit for Payment of Cooperative Shares</p> <p>PRONAF is a National Family Farming Strengthening Program. Pronaf Cotas-Partes is a credit line for member to pay for cooperative shares and make investments</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: 5.5% p.a. - Period: up to 36 months - Grace period: defined by intermediary institution - Amount: maximum of R\$ 20 thousand per each farmer or R\$ 20 million per cooperative
	<p>Pronaf Eco Credit Line for Investment in Renewable Energy and Environmental Sustainability</p> <p>PRONAF is a National Family Farming Strengthening Program with funds of Brazilian Central Bank. Pronaf Eco is the line for family farmers to implement renewable energy technologies, such as the use of solar and eolic energy and energy biomass.</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: 2.5% - 5.5% p.a. - Period: up to 144 months - Grace period: up to 96 months - Amount: up to R\$ 165 thousand
Finep	<p>INOVACRED Program</p> <p>Support activities that contribute to the generation, enhancement and use of knowledge. This lines is to enterprises with operational revenue up to R\$ 90 million and the support is granted through a a decentralised approach, with financial agents in each state or region</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + up to 1% p.a. - Period: up to 96 months - Grace period: 24 months - Amount: from R\$ 150 thousand to R\$ 10 million - The guarantees will be decided by the financial agent
	<p>Pioneer Innovation Line - Inovação Pioneira</p> <p>Support for the technological development cycle, from basic research to the development of markets for products</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + 1.5% p.a. - Period: up to 120 months - Grace period: 36 months - Finep Participation: 80% - The guarantees will be, cumulatively or alternatively: properties, movables (130% of coverage), rights (130% of coverage), corporate guarantee (100% of coverage), bank guarantee (100% of coverage), surety (100% of coverage)
	<p>Innovation to Competitiveness Line - Inovação para Competitividade</p> <p>Support for project development and / or improvement of products, processes and services, acquisition and / or absorption of technologies</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + 3.0% p.a. - Period: up to 120 months - Grace period: 36 months - Finep Participation: 70% - The guarantees will be, cumulatively or alternatively: properties, movables (130% of coverage), rights (130% of coverage), corporate guarantee (100% of coverage), bank guarantee (100% of coverage), surety (100% of coverage)

	<p>Innovation to Performance – Inovação para Performance</p> <p>Company strategic plans of innovation for products, processes or services</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + 4.0% p.a. - Period: up to 84 months - Grace period: 24 months - Finep Participation: 60% - The guarantees will be, cumulatively or alternatively: properties, movables (130% of coverage), rights (130% of coverage), corporate guarantee (100% of coverage), bank guarantee (100% of coverage), surety (100% of coverage)
	<p>Pre-investment - Pré-investimento</p> <p>Support for pre-investment projects that include studies of technical and economic feasibility, basic designs and executive projects</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* + 5.0% p.a. - Period: up to 84 months - Grace period: 25 months - Finep Participation: 60% - The guarantees will be, cumulatively or alternatively: properties, movables (130% of coverage), rights (130% of coverage), corporate guarantee (100% of coverage), bank guarantee (100% of coverage), surety (100% of coverage)
	<p>Critical Innovation – Inovação Crítica</p> <p>This line will apply to proposals demanded by the government expressing the need for technological development to meet the national priorities</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: TJLP* - Period: up to 144 months - Grace period: 48 months - Finep Participation: 90%
	<p>Economic Grant to National Innovation Program – Programa de Subvenção Econômica à Inovação Nacional</p> <p>Application of non-reimbursable public funds to cover operating expenses (including technical assistance) and capital expenditure to foster innovation and increase the competitiveness of companies</p>	Concessional Grant	<ul style="list-style-type: none"> - Amount: R\$ 500 thousand to 10 million
Desenvolve SP	<p>Green Economy Line – Economia Verde</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: from 0.53% * per month - Period: up to 60 months ** - Grace period: up to 12 months - Desenvolve Sp participation: up to 80 % of the value of eligible items - Guarantees: n.a. at this phase of contact - Desenvolve SP also offers guarantee funds as alternative to SMEs that don't have enough real guarantees * Updated by IPCA rate ** Including grace period
Banco do Nordeste do Brasil BNB	<p>Financing Program for Conservation and Control of Environment - FNE VERDE</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: from 8.53% to 12.95 p.a. - Period: up to 144 months - Grace period: 48 months - BNB Participation: 80 to 100% - The guarantees will be, cumulatively or alternatively: property, pledge, surety. At least 130% of coverage.
	<p>Innovation Funding Program - FNE INOVAÇÃO</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: n.a. at this phase of contact - Period: up to 180 months - Grace period: 60 months

			<ul style="list-style-type: none"> - BNB Participation: n.a. at this phase of contact - The guarantees will be, cumulatively or alternatively: mortgage, property, pledge, surety. At least 130% of coverage.
BDMG - Banco de Desenvolvimento de Minas Gerais Operates in State of Minas Gerais and Bordering states	Credit for Innovation Project - Pró-inovação BDMG/FAPEMIG Support to product, process and service innovation projects, financing machinery, P&D, technological development, associated working capital. Only available to companies in Minas Gerais	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: from 8% p.a. - Period: up to 60 months - Grace period: 12 months - Amount: up to R\$ 2 million - BDMG Participation: n.a. at this phase of contact - Guarantees: partner's endorsement in operations up to R\$ 1 million, for greater operations there are other guarantee modalities according to credit politics of BDMG
	Credit for Innovation Project of Companies in technology parks – Proptec BDMG/FAPEMIG Financing machinery, P&D, technological development, associated working capital. Only available to companies at technology parks in Minas Gerais	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: from 9% p.a. - Period: up to 60 months - Grace period: 12 months - Amount: up to R\$ 2 million - BDMG Participation: n.a. at this phase of contact - Guarantees: n.a. at this phase of contact
Bradesco	Environmental Leasing - Leasing Ambiental For environmental adaptation and conservation projects Leasing for treatment and reuse of water, renewable energy generation, air treatment and waste, other goods which contribute to the preservation of the environment	Leasing	<ul style="list-style-type: none"> - Interest rate: 2.5% over contract value - Period: up to 60 months - Grace period: 1 month - Leasing up to 70% of the asset
	Direct Consumer Credit (CDC) Solar Heaters – Aquecedores Solares Credit for the purchase of solar heaters	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: from 2.56% p.m. - Period: up to 48 months - Grace period: 2 months - Bradesco Participation: up to 70% - Guarantees: endorsement or promissory note
	Environmental Working Capital - Capital de Giro Ambiental Credit for companies that have activity related to social development and environmental preservation	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: n.a. at this phase of contact - Grace period: n.a. at this phase of contact - Bradesco Participation: n.a. at this phase of contact - Guarantees: endorsement or promissory note
Itaú	Direct Consumer Credit (CDC) Credit line to finance the purchase of machinery, equipment and utility vehicles	Commercial Loan	<ul style="list-style-type: none"> - Minimum value of R\$ 5 thousand - Interest rate: SELIC** + bank rate - Period: up to 48 months - Guarantees: the acquired asset - Finances up to 100% of the asset
	Leasing Financing of goods, whether machinery, equipment, cars, trucks and even airplanes and boats	Leasing	<ul style="list-style-type: none"> - Minimum value of R\$ 10 thousand - Interest rate: SELIC** + bank rate - Period: n.a. at this phase of contact - Guarantees: the acquired asset - Finances up to 100% of the asset
Banco do Brasil	BB Crédito Empresa Credit line to finance the purchase of machinery and equipment, construction material and vehicles for companies with gross annual sales of up to R\$ 90 million	Commercial Loan	<ul style="list-style-type: none"> - Minimum value of R\$ 1 thousand - Interest rate: SELIC** + bank rate - Period: up to 60 months - Guarantees: the acquired asset and partners warranties - Finances up to 100% of the asset - Costs: 3% of contract

	<p>FCO Empresarial</p> <p>To investment projects in Midwest region, with focus on industrial, agroindustry, infrastructure</p>	Concessional Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: up to 240 months - Grace period: up to 60 months - Guarantees: n.a. at this phase of contact - Finances up to 100% of the asset
	<p>Letter of Import Credit - Carta de Crédito de Importação</p> <p>BB issues a document guaranteeing the foreign exporter will receive from its foreign sales</p>	Guarantee	No information available
Caixa	<p>Credit to Durable Consumer Goods - Bens de Consumo Duráveis</p> <p>To finance the purchase of machinery, equipment and other assets</p>	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: up to 60 months - Grace period: up to 6 months - Guarantees: Bank Credit Certificate (CCB) issued by the borrower in favour of Caixa, endorsed by the partner's company directors and underlying assets - Finances up to 100% of the asset
	<p>Business Eco-Efficiency - Ecoeficiência Empresarial</p> <p>Line for financing the purchase of machinery and equipment that reduce the generation of waste and emissions and increase efficiency in the use of water and energy</p>	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: n.a. at this phase of contact - Guarantees: n.a. at this phase of contact - Finances up to 100% of the asset
	<p>PROGER Investgiro</p> <p>Credit line exclusive to companies with annual revenues of up to R\$ 7.5 million, to finance fixed investment projects, with or without working capital associated, machinery and implementation of franchises</p>	Commercial Loan	<ul style="list-style-type: none"> - Amount: up to R\$ 600 thousand - Interest rate: SELIC** + bank rate - Period: up to 60 months - Grace period: up to 12 months - Guarantees: n.a. at this phase of contact
SMBC Brasil Inseed Investimentos	<p>INSEED Fima Fund Private Equity Fund</p>	Convertible Debt, Equity	<p>To have the following characteristics:</p> <ul style="list-style-type: none"> (i) Companies Established in Brazil, developing innovative technologies and to have high growth potential (ii) Business related to promoting sustainability and reducing the environmental impact on value chains (iii) Projects that incorporate innovation in their technologies, products and processes to foster the development of sustainable productive cycles
Kaeté Investimentos	<p>FIP Empresas Sustentáveis na Amazônia Private Equity Fund</p>	Joint Venture Loan, Mezzanine Debt, Convertible Debt, Equity	<p>To be a company that:</p> <ul style="list-style-type: none"> (i) have low-income consumers as a target group (ii) have economic and social material impact on low-income families and cooperatives located in communities with limited access to jobs and entrepreneurial activities and / or (iii) foster a better and more sustainable use of natural resources

*TJLP is the abbreviation for Taxa de Juros de Longo Prazo, or Long Term Interest Rate, is the official base rate used by BNDES, which today is 7.50% p.a.

**SELIC is the abbreviation for Sistema Especial de Liquidação e de Custódia, or Special System for Settlement and Custody, and is the interest rate tax for loans between banks in operations that last only for one day and are also called "overnight". Today the rate is 14.00% p.a.

4.2 International Institutions

Institution Name	Description	Classification	Conditions
Santander	Sustainable Consumer (CDC) – Sustentável Direct Credit CDC Finances equipment for energy efficiency, water efficiency, waste treatment	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: n.a. at this phase of contact - Grace period : n.a. at this phase of contact - Santander Participation: n.a. at this phase of contact - Guarantees: n.a. at this phase of contact
	Sustainable Working Capital – Capital de Giro Sustentável Credit for projects and certifications related to energy efficiency, water efficiency, reduction and waste treatment, and corporate governance	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: n.a. at this phase of contact - Grace period : n.a. at this phase of contact - Santander Participation: n.a. at this phase of contact - Guarantees: n.a. at this phase of contact
	Direct Consumer Credit (CDC) Energy Efficiency Equipment – CDC Eficiência Energética de Equipamentos Finance the purchase of equipment and services that use renewable energy or efficient conventional energy	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: SELIC** + bank rate - Period: n.a. at this phase of contact - Grace period : n.a. at this phase of contact - Santander Participation: n.a. at this phase of contact - Guarantees: n.a. at this phase of contact
	Letter of Import Credit - Carta de Crédito de Importação	Guarantee	No information available
Landesbank Baden-Württemberg	Machine financing	Commercial Loan	<ul style="list-style-type: none"> - Interest rate: n.a. at this phase of contact - Period: n.a. at this phase of contact - Grace period : n.a. at this phase of contact - Guarantees: n.a. at this phase of contact Obs.: Company must have more than BRL 40M in assets and the transaction be larger than EUR 2M
Global Environment Fund	GEF Private Equity Funds	Convertible Debt, Equity	To be a company of energy, environment, or natural resource
UK Green Investment Bank It doesn't target Brazilian companies	International Fund Private Equity Fund	Equity	<ul style="list-style-type: none"> - Initial target countries will be India, South Africa and parts of East Africa (Kenya, Rwanda, and Tanzania) - Minority equity investments of c. £10-30million into renewable energy generation and energy efficiency projects
KfW Kreditanstalt für Wiederaufbau It does not operate with SME in Brazil, only in Germany	Unternehmerkredit Plus (This line serves as financial intermediary for the InnovFin SME Guarantee of EIF – European Investment Fund)	Guarantee	<ul style="list-style-type: none"> - To be a German innovative SME - Interest rate: from 1.00% p.a. - Period: up to 10 years - Amount: from EUR 25,000 to 7.5 million per project

<p>Bpifrance It does not operate with SME in Brazil, only in France</p>	<p>Fonds d'investissement Bpifrance Capital Développement</p> <p>To open capital to investors and identify investment funds that can assist business development</p>	<p>Convertible Debt, Mezzanine Debt, Equity</p>	<ul style="list-style-type: none"> - To be a SME established in France - For tickets minimum of € 150 thousand - Period: horizon 5-7 years or more
	<p>Prêt Croissance International</p> <p>To fund international growth</p>	<p>Commercial Loan</p>	<ul style="list-style-type: none"> - To be a SME established in France - Interest rate: fixed, but numbers n.a. at this phase of contact - Period: up to 7years - Amount: min. of € 30 thousand and max. of € 5 million euros per intervention - Guarantee: none, Only a holdback of 5% of the original loan amount - Obs: Refundable from the 3th year
<p>EIB – European Investment Bank It does not operate with SME in Brazil, only EU-28 Member States as well as the Horizon 2020 Associated Countries, which are currently Albania, Bosnia and Herzegovina, Former Yugoslav Republic of Macedonia, Iceland, Israel, Moldova, Montenegro, Norway, Serbia and Turkey</p>	<p>InnovFin SME Guarantee from European Fund for Strategic Investments (EFSI) and European Investment Fund (EIF)</p> <p>The guarantee covers 50% of the principal and interest losses on each exposure</p>	<p>Guarantee</p>	<ul style="list-style-type: none"> - To be a European innovative SME - Interest rate: it depends on the intermediary - Period: from 1 to 10 years - Amount: from EUR 25,000 to 7.5 million per project

The conditions vary from type of funding and characteristics of institutions. Commonly, public banks and agencies offer longer periods for repaying and lower rates than commercial private banks. For example, while there are loans with up to 240 months of period in public banks (Banco do Brasil), the longest period found in private banks was 60 months (Bradesco).

Regarding amounts, the availability will often depend on the size of the company which is looking for funding and most banks set ranges of revenues to decide the range of amount invested, with the exception of investment boutiques and private equity funds. The guarantees often required are related to the business assets and its owner's credibility, thus it's advisable to keep all documents in order and review the accounting periodically.

5. Conclusions

Through Desk Research, Survey and Interviews it was possible to outline the green funding scenario for small and medium enterprises in Europe and Brazil, besides several funding options for enterprises participating in the Low Carbon Business Action Brazil.

While development banks are usually focusing their funding offers to innovation, research & development programs, commercial banks show more interest in maintenance of already consolidated companies, with lines to finance machinery and equipment's renewal. Investment boutiques look more to a third scenario in which the companies are expanding or trying to bring new partners.

In Europe, commercial banks with interest in Brazil are looking for larger transactions than the LCBA Brazil range. European development banks are focused on their countries SMEs and they can be considered complementary because they can support the European side of each deal.

Furthermore, in Brazil, Public Banks and State Agencies offer concessional loans and grants to SME's and some of them have specific lines for green technology development and implementation. However, some of these public bank lines and also commercial bank options aren't necessarily related to low carbon technologies or are too concentrated towards renewable energy. On the one hand, few specific credit lines make it harder for SMEs to find more favourable conditions to their green projects, on the other hand the extent of low carbon solutions makes a great part of green projects fit in several traditional funding lines, as machinery, franchising, export and import financing.

In section 3. Road Map According to CPA Types it's possible to find specific lines for green technology as well as other non-specific options with requirements that could serve for a range of low carbon technologies SME's.

In the case of export, import and franchising transactions, in general the best funding option will be commercial loans and guarantees. For example, if a Brazilian SME signs a CPA in a matchmaking session with the intention of importing machinery that could reduce its carbon emissions, or even to sell to other companies in Brazil to reduce their emissions, that transaction might need funding. In section 3.1 Export / Import and 3.2 Franchising it's possible to find credit lines as guarantee offered by Santander, or Environmental Working Capital by Bradesco. On the other hand, if a company decides to bring a European franchise to Brazil, it might need a commercial loan as BB Crédito Empresa from Banco do Brasil or Direct Consumer Credit (CDC) from Itaú.

In the case of joint production or service provision agreements, leasing, guarantee and commercial loans are the most applicable options available. Besides the credit lines already mentioned, if the agreement includes the use of machinery from one of the parties or the necessity of using a certain kind of equipment for the period of agreement there are Environmental Leasing by Bradesco and Leasing by Itaú displayed as option in section 3.3 Joint Production / Service Provision.

On the other hand, agreements with the purpose of joint product development or adaptation, joint research and projects require innovation credit lines, which are offered mainly by public entities. In sections 3.4 Joint Product Development / Adaptation, 3.5 Joint Research & Development and 3.6 Joint Project Development there are concessional grants, technical assistance and concessional loans applicable to several cases. For example, if a Brazilian SME in the agriculture sector decides to bring a European low carbon technology for its production, but needs climate, soil or other

technical adaptations, or even a joint project to implement the changes, it's possible to look for Micro, Small and Medium Enterprise Line - MPME INOVADORA by BNDES or Innovation to Competitiveness Line – Inovação para Competitividade by FINEP. In the case of the agreement settles a joint research and development, like mapping the Brazilian necessities in energy efficiency in industry and developing a European based technology with exchange of knowledge between the parties, it's possible to find innovation calls as Economic Grant to National Innovation Program – Programa de Subvenção Econômica à Inovação Nacional by FINEP, which periodically releases calls to innovation and announced in the end of 2015 a public bilateral call with Spain to improve competitiveness of Brazilian and Spanish companies concerning the industrial sector.

When the SMEs have interest in a stronger and long term relationship, as merging operations or even receive investment for growth, the choices are mezzanine and convertible debt, joint venture or merger and acquisition. In the section 3.7 Company Acquisition / Merger there are comprehensive options of private equity funds that work with these type of funding as INSEED Fima, Banco Sumitomo and Global Environmental Fund (GEF).

It is important to notice that for different development stages of SMEs there are different types of funding: from the development of an idea, with the need of R&D sponsors, to the actual production and management of the business, with the need of working capital credit for example, each SME will deal with the corresponding challenges and funding.

Appendix A - Project Timeline

This timeline describes the activities set up by the Non Key Expert Gustavo Pimentel from July to November 2016 to develop a “Road Map to Green Funding of LCBA Bankable Proposals for SMEs”. Furthermore, the appendix B and C shows survey and interviews findings about the low carbon financing environment in Brazil and relevant topics from the roundtable with financial institutions.

Table (a) shows the activities performed from July to August and Table (b) shows the activities performed from September to November.

Table (a)

Activity / Week	Jun 20	Jul 04	Jul 11	Jul 18	Jul 25	Aug 01	Aug 08	Aug 15	Aug 22	Aug 29
0. Kick off / follow up meetings										
1. Overview and workplan										
2. Financial cases										
3. Desk Research										
4. Survey institutions										
4.1 Survey Focus: Brazil										
4.2 Survey Focus: International										
5. Interview institutions										
6. Roundtable										
7. Define Roadmap										
8. Discuss Roadmap, final report										

Table (b)

Activity / Week	Sep 05	Sep 12	Sep 19	Sep 26	Oct 03	Oct 10	Oct 17	Oct 24	Oct 31	Nov 07	Nov 14
0. Kick off / follow up meetings											
1. Overview and workplan											
2. Financial cases											
3. Desk Research											
4. Survey institutions											
4.1 Survey Focus: Brazil											
4.2 Survey Focus: International											
5. Interview institutions											
6. Roundtable											
7. Define Roadmap											
8. Discuss Roadmap, final report											

Appendix B - Survey and Interviews

B.1 Sample

A Long List of Institutions, which can be seen in detail within the B.6 section, has been created to guide the search for low carbon technology financing options. The sample contains 82 international and Brazilian institutions of different types.

Type	Number	%
Development Banks	58	71%
Commercial Banks	18	22%
Promotion Agency	4	5%
Boutique Investment Bank	2	2%
Total	82	100%

Headquarters	Number	%
Brazilian Institutions	17	21%
International Institutions	65	79%
Total	82	100%

Country of Origin	Number	%
Brazil	17	21%
Germany	16	20%
USA	7	9%
France	5	6%
Europe	4	5%
Netherlands	4	5%
Italy	3	4%
UK	3	4%
Belgium	2	2%
Spain	2	2%
Sweden	2	2%
Austria	1	1%
Bulgaria	1	1%
Croatia	1	1%
Czech Republic	1	1%
Denmark	1	1%
Estonia	1	1%
Finland	1	1%
Hungary	1	1%
Latvia	1	1%
Norway	1	1%
Poland	1	1%
Portugal	1	1%
Romania	1	1%
Slovakia	1	1%
Slovenia	1	1%
Turkey	1	1%
Venezuela	1	1%
Total	82	100%

B.2 Survey Respondents

In order to map funding options and interests from the sample, a survey was developed and sent to the 82 institutions. 17 institutions responded the survey, meaning a 20.7% response rate. The survey scope is attached in B.7 section, and consolidated findings are described below.

Received Survey

	Sent surveys	%	Responded surveys	%
Number of Brazilian Institutions	17	21%	8	47%
Number of International Institutions	65	79%	9	53%
Total number of Institutions	82	100%	17	100%

	Sent surveys	%	Responded surveys	%
Number of Institutions with Offices in Brazil	36	44%	17	100%
Total number of Institutions	82	100%	17	100%

Responded Survey

Country of Origin	Number	%
Brazil	8	47%
USA	3	18%
Netherlands	2	12%
Germany	2	12%
France	1	6%
Spain	1	6%
Total	17	100%

Your institution is Public or Private?	Number	%
Public	6	35%
Private	11	65%
Total	17	100%

	Does your institution make transactions with Small and Medium Enterprises (SME)*?	Number	%
11, 65%	Yes – Indirectly	1	6%
	Yes – Directly	6	35%
	Yes - Directly and Indirectly	4	24%
	No	6	35%
Total		17	100%

	Does your institution allocate capital to low carbon / clean tech projects?	Number	%
Yes		11	65%
No		6	35%
Total		17	100%

It is important to notice that from six respondents that declared their institution don't make transactions with SMEs, five were from big international commercial banks and one was KfW, the German development bank. Moreover, the same respondents affirmed their institutions don't allocate capital specifically to low carbon / clean tech projects, unless the project overcomes their regular screening process. In this case it isn't the low carbon theme that is attractive, but the large amount of money involved.

B.3 Funding Types

According to 11 respondents whose institutions make transactions with Small and Medium Enterprises either directly, indirectly or both ways, the most used funding types are:

Funding Type	Number of Institutions
Concessional Grant	1
Technical Assistance	0
Concessional Loan	4
Guarantee	4
Leasing	2
Commercial Loan	7
Joint Venture Loan	2
Mezzanine Debt	2
Convertible Debt	4
Equity	8

B.4 Sectors of Interest

According to 11 respondents whose institutions allocate capital to low carbon / clean tech projects, there are themes within the Low Carbon Technology segment they would look with interest.

Waste management, energy production/consumption and renewable energy are the most interesting themes to the respondents, and the full list can be seen below.

Sectors of Interest	Number of Institutions
Energy Efficiency in Industry	11
Energy Efficiency in Buildings	11
Industrial Processes	11
Waste Management	10
Energy Production and Consumption	10
Renewable Energy	10
Forestry Activity	10
Aquaculture	9
Agriculture	6
Biomass	6

The survey asks the institutions if they have already invested in Low Carbon Technology SME's and invites them to describe a case of investment related to this theme. The companies cited and their sectors are:

Energy Efficiency in Buildings: Tecverde

Energy Efficiency in Industry: AGV Logística
 Agriculture: Bio Soja
 Aquaculture: Peixes da Amazônia
 Forestry: Amata Brasil; Eco Brasil Florestas

B.5 Interest in Participating of Roundtable

During each survey and interview, the respondent was asked if his/her institution has interest in participating of a Roundtable to be held in November 2016. From 16 respondents, 11 declared they want to participate or know more about the content and scope of this event. The respondents that declared their institutions weren't interested in participating of the roundtable were the same ones declaring their institutions don't make transactions with companies within the LCBA Brazil criteria.

Do you have interest in attending to a round table about funding options for low carbon technologies in the next phase of this project?	Number	%
Yes	7	41%
Maybe, I want to know more about this round table	4	24%
No	6	35%
Total	17	100%

} 11, 65%

As the Roundtable was set up to occur within The Business & Innovation Network Annual Event, the guests were thought to be from different types of institutions. Thus, some of the invited were respondents to the survey and others were from Brazilian commercial banks. The list of invited and their status are in the table below.

Institution	Name	E-mail	Telephone	Status
Desenvolve SP	Alvaro Sedlacek	alvaro.sedlacek@desenvolvesp.com.br	+5511 31230485	Invitation accepted
Santander	Nasser Takieddine	nasser.takieddine@santander.com.br	+5511 35535410	No availability on the date
Global Environmental Fund	Alexandre Alvim	aalvim@gefbrasil.com	+5511 30730444	No availability on the date
Banco Sumitomo	Thiago Roque	thiago_roque@smbcgroup.com.br	+5511 31788104	Invitation accepted
FINEP	Paulo Resende	presende@finep.gov.br	+5521 25550288	Invitation accepted
Itaú	Eduardo Hupfer	Eduardo.hupfer@itau-unibanco.com.br	+5511 50192187	Invitation accepted

B.6 Long List of Institutions

#	Headquarter	Institution	Office in Brazil?	Type of Institution
1	Austria	OeEB - The Development Bank of Austria		Development Bank
2	Belgium	BIO - Belgian Investment Company for Developing Countries		Development Bank
3	Belgium	SBI-BMI - Belgian Corporation for International Investment		Development Bank
4	Brazil	BNDES - FINTEC Fundo Tecnológico	Y	Development Bank
5	Brazil	FINEP - FNDCT Fundo Nacional de Desenvolvimento Científico e Tecnológico	Y	Development Bank

6	Brazil	FAPESP - Fundação de Amparo à Pesquisa do Estado de São Paulo	Y	Promotion Agency
7	Brazil	Desenvolve SP - Portal de Investimentos do Estado de São Paulo	Y	Promotion Agency
8	Brazil	ABDE - Associação Brasileira de Desenvolvimento	Y	Promotion Agency
9	Brazil	BRDE - Banco Regional de Desenvolvimento do Extremo Sul	Y	Development Bank
10	Brazil	BADESUL Desenvolvimento	Y	Development Bank
11	Brazil	BDMG - Banco de Desenvolvimento de Minas Gerais	Y	Development Bank
12	Brazil	BNB - Banco do Nordeste	Y	Development Bank
13	Brazil	Banco Sumitomo Mitsui do Brasil - Fundo Brasil Sustentabilidade	Y	Traditional Bank
14	Brazil	INSEED - Investimentos - FIMA Fundo de Inovação em Meio Ambiente	Y	Boutique Investment Bank
15	Brazil	Kaeté Investimentos	Y	Boutique Investment Bank
16	Brazil	BB - FCO Fundo Constitucional de Financiamento do Centro-Oeste	Y	Development Bank
17	Brazil	BASA - FNO Fundo Constitucional de Financiamento do Norte	Y	Development Bank
18	Brazil	Bradesco	Y	Traditional Bank
19	Brazil	Banco do Brasil	Y	Traditional Bank
20	Brazil	Caixa Econômica Federal	Y	Traditional Bank
21	Bulgaria	Bulgarian Development Bank		Development Bank
22	Croatia	Croatian Bank for Reconstruction and Development		Development Bank
23	Czech Republic	Czech-Moravian Guarantee and Development Bank		Development Bank
24	Denmark	IFU - The Investment Fund for Developing Countries		Development Bank
25	Estonia	Fund KredEx		Development Bank
26	Europe	EIB - European Investment Bank		Development Bank
27	Europe	EIF - European Investment Fund		Development Bank
28	Europe	EBRD - European Bank for Reconstruction and Development		Development Bank
29	Europe	Network of European Financial Institutions for Small and Medium Sized Enterprises		Promotion Agency
30	Finland	FINNFUND - Finnish Fund for Industrial Cooperation Ltd		Development Bank
31	France	BNP Paribas		Traditional Bank
32	France	Credit Agricôle	Y	Traditional Bank
33	France	Proparco - private arm of AFD Agence Française de Développement		Development Bank
34	France	Bpifrance		Traditional Bank
35	France	Caisse des Dépôts et Consignations - CDC		Development Bank
36	Germany	Deutsche Bank	Y	Traditional Bank
37	Germany	KfW Development Bank	Y	Development Bank
38	Germany	LBBW - Landesbank Baden-Württemberg	Y	Development Bank
39	Germany	Landwirtschaftliche Rentenbank		Development Bank

40	Germany	Bremer Aufbau-Bank GmbH		Development Bank
41	Germany	Hamburgische Investitions- und Förderbank (IFB)		Development Bank
42	Germany	Investitionsbank Berlin (IBB)		Development Bank
43	Germany	Investitionsbank Sachsen-Anhalt		Development Bank
44	Germany	Investitionsbank Schleswig-Holstein (IB.SH)		Development Bank
45	Germany	Investitions- und Förderbank Niedersachsen – NBank		Development Bank
46	Germany	Investitions- und Strukturbank Rheinland-Pfalz (ISB)		Development Bank
47	Germany	Landesförderinstitut Mecklenburg-Vorpommern		Development Bank
48	Germany	LfA Förderbank Bayern		Development Bank
49	Germany	NRW.BANK		Development Bank
50	Germany	Thüringer Aufbaubank		Development Bank
51	Germany	Commerzbank		Traditional Bank
52	Hungary	MFB Hungarian Development Bank Private Limited Company		Development Bank
53	Italy	Intesa Sanpaolo	Y	Traditional Bank
54	Italy	SIMEST - Società Italiana per le Imprese all'Estero		Development Bank
55	Italy	Cassa Depositi e Prestiti CDP		Development Bank
56	Latvia	Latvian Development Financial Institution Altum		Development Bank
57	Netherlands	ING Bank	Y	Traditional Bank
58	Netherlands	ABN AMRO	Y	Traditional Bank
59	Netherlands	Rabobank	y	Traditional Bank
60	Netherlands	FMO - Netherlands Development Finance Company		Development Bank
61	Norway	Norfund - Norwegian Investment Fund for Developing Countries		Development Bank
62	Poland	State Development Bank of Poland - Bank Gospodarstwa Krajowego - BGK		Development Bank
63	Portugal	SOFID - Sociedade para o Financiamento do Desenvolvimento		Development Bank
64	Romania	BRD Group		Development Bank
65	Slovakia	Slovak Guarantee and Development Bank		Development Bank
66	Slovenia	Slovene Export and Development Bank - SID		Development Bank
67	Spain	Santander	Y	Traditional Bank
68	Spain	COFIDES - Compañía Española de Financiación del Desarrollo		Development Bank
69	Sweden	SEB Group	Y	Development Bank
70	Sweden	SWEDFUND - Swedfund International AB		Development Bank
71	Turkey	Black Sea Trade & Development Bank		Development Bank
72	UK	CDC - CDC Group plc		Development Bank

73	UK	Green Investment Bank		Development Bank
74	UK	British Business Bank		Development Bank
75	USA	Citibank	Y	Traditional Bank
76	USA	JP Morgan	Y	Traditional Bank
77	USA	Merrill Lynch	Y	Traditional Bank
78	USA	Goldman Sachs	Y	Traditional Bank
79	USA	IFC - International Finance Corporation	Y	Development Bank
80	USA	GEF - Global Environment Fund	Y	Development Bank
81	USA	BID - Interamerican Development Bank	Y	Development Bank
82	Venezuela	CAF - Banco de Desenvolvimento da América Latina	Y	Development Bank

B.7 Survey Scope



Funding Possibilities for Transactions Between Brazil and EU Regarding Low Carbon Technologies

This survey intends to understand and describe viable options for funding transactions between European Union and Brazilian small and medium companies, regarding low carbon technology.

The results will be part of a **Road Map to Green Funding of LCBA**, the Low Carbon Business Action Brazil.

For more information, please visit LCBA website: www.lowcarbonbrazil.com

Respondent's Name *

Your answer

Respondent's E-mail *

Your answer

Respondent's Phone Number

Your answer

Respondent's Job Title

Your answer

Institution Name *

Your answer

Is your institution Public or Private? *

Choose here.

If other, please explain here

Does your institution make transactions with Small and Medium Enterprises (SME)*?

*Small and Medium Enterprises are companies with less than 250 employees and turnover of less than EUR 50M annually

Choose here

If you responded 'Indirectly' to the previous question: What institutions intermediates investments between your institution and the SMEs?

Your answer

By which Financial Vehicles the investments and financing transactions occur?

- Concessional Grant
- Technical Assistance
- Concessional Loan
- Guarantee
- Leasing
- Commercial Loan

- Joint Venture Loan
- Mezzanine Debt
- Convertible Debt
- Equity
- Other: Your answer

What is the origin of the funds for these transactions?

Choose here.

If other, please explain here

Does your institution have interest in investing or financing transactions for SMEs within Brazilian-European partnerships? *

Choose here

Does your institution allocate capital to low carbon / clean tech projects? *

Choose here

What sectors/themes would your institution finance or invest in?

- Energy Efficiency in Industry
- Energy Efficiency in Buildings
- Industrial Processes
- Waste Management
- Energy Production and Consumption
- Renewable Energy
- Forestry Activity
- Aquaculture
- Agriculture
- Biomass

Other: Your answer

Could you list any example of past transactions in these sectors / themes? (If possible add sector, financial vehicle, amount, objective and institutions involved, post URLs if this info is already online)

Your answer

Do you have interest in attending to a round table about financing options for low carbon technologies in the next phase of this project?

Choose here.

Appendix C - Roundtable Overview

The Roundtable was set up to be held within The Business & Innovation Network Annual Event, on 8 November 2016 from 04:40 to 18:20 pm. The list of participants, besides the moderator Gustavo Pimentel, from SITAWI Finance for Good, is below:

Institution	Name	E-mail	Telephone
Desenvolve SP	Álvaro Sedlacek	alvaro.sedlacek@desenvolvesp.com.br	+5511 31230485
Banco Sumitomo	Thiago Roque	thiago_roque@smbcgroup.com.br	+5511 31788104
FINEP	Paulo Resende	presende@finep.gov.br	+5521 25550288
Itaú	Eduardo Hupfer	eduardo.hupfer@itau-unibanco.com.br	+5511 50192187

The guests were from different types of institutions, Álvaro Sedlacek and Paulo Resende were from public development agencies, whereas Thiago Roque and Eduardo Hupfer were from private banks. Gustavo Pimentel opened the roundtable with a brief introduction on green funding and the road map in construction to be disclosed on LCBA site.

Paulo Resende was the first to speak and showed a presentation about FINEP and its objective, which is to support science technology and innovation, while encouraging the adoption of sustainability. He also mentioned FINEP initiatives to fund innovation, as INOVACRED, and also international partnerships with foreign investment funds to foster green technologies.

Álvaro Sedlacek was the second speaker and he explained Desenvolve SP energy efficiency focus and Brazil's borrower profile, which according to him often find long terms more important than interest rates.

Thiago Roque followed with the explanation of Sumitomo's participation on INSEED Fima Fund, a private equity fund with sustainability criteria that doesn't have a minimum value of revenue as requirement to select companies to invest in. According to Roque, portfolio managers at INSEED have a cross-sectional look and are interested in analyse the maturity of the product and business models that could be validated on the market.

Finally, Eduardo Hupfer brought a large bank point of view, as he explained Itaú doesn't have much different options to green funding than it has to other kinds of companies, due to cost of capital, which is high in Brazil. One possible solution to turn green projects attractive, according to Hupfer, is to focus on risk valuation, with the inclusion of variables yet neglected, to show investors how the traditional investment can be a future liability.

References

- Aglietta, M., Espagne, E., & Fabert, P. (2015). A proposal to finance low carbon investment in Europe. *Études & documents from Department for the Economics, Assessment and Integration of Sustainable Development of France*.
- CEBDS. (2014). *Destravando o financiamento à eficiência energética no Brasil: soluções financeiras e não-financeiras para os agentes de mercado*.
- Development, I. -I. (2013). *Exploring Trends in Low-Carbon, Climate-Resilient Development*.
- European Commission. (2014). *Investment Plan*. Retrieved from https://ec.europa.eu/priorities/jobs-growth-and-investment/investment-plan_en#background
- European Commission. (2015). *Working together for jobs and growth: The role of National Promotional Banks (NPBs) in supporting the Investment Plan for Europe*.
- European Commission. (2016a). *Small and medium-sized enterprises (SMEs) and the environment*. Retrieved from http://ec.europa.eu/environment/sme/index_en.htm
- European Commission. (2016b). *European Commission Press Release Database*. Retrieved from http://europa.eu/rapid/press-release_MEMO-16-2983_en.htm
- European Investment Bank. (2015). *European Fund for Strategic Investments – Questions and Answers*.
- FGV e Febraban. (2014). *O Sistema Financeiro Nacional e a Economia Verde*.
- International Energy Agency. (2015). *World Energy Outlook 2015 Factsheet*.
- Krauter, E., & Ferreira de Sousa, A. (2016). Um Estudo sobre o Financiamento nas Micro, Pequenas e Médias Empresas no Estado de São Paulo. *EGEPE*.
- OECD. (2016). *Green Investment Banks*.
- Painel Brasileiro de Mudanças Climáticas. (2015). *Metas brasileiras para a COP-21: “esquecemos de debater o modelo de desenvolvimento”*. Entrevista especial com Maureen Santos. Retrieved from Painel Brasileiro de Mudanças Climáticas: <http://www.pbmc.coppe.ufrj.br/pt/noticias/487-metas-brasileiras-para-a-cop-21-esquecemos-de-debater-o-modelo-de-desenvolvimento-entrevista-especial-com-maureen-santos>
- Rassenfosse, G. D. (2012). *How SMEs Exploit their Intellectual Property Assets: Evidence from Survey Data*.
- WIPO - World Intellectual Property Organization. (2015). *Innovation and Diffusion of Green Technologies: The Role of Intellectual Property and Other Enabling Factors*.
- World Bank. (2010). *World Development Report 2010: Development and Climate Change*.

