

SCHOOL OF INTERNATIONAL AND PUBLIC AFFAIRS

THE FINANCING AND STRUCTURING OF
ENVIRONMENTAL SUSTAINABILITY

PROJECTS IN
BRAZIL



EPD WORKSHOP | SPRING 2016



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GLOSSARY OF TERMS

ANDE	Aspen Network of Development Entrepreneurs
BCB	Banco Central do Brasil (Brazilian Central Bank)
BNDES	Brazilian Development Bank
CAF	Development Bank of Latin America
CETESB	State Secretariat for Water Resources and Sao Paulo State Environmental Control and Regulation Agency
DFI	Development Finance Institutions
EM	Emerging Markets
IDB	Inter-American Development Bank
IFC	International Finance Corporation
MSME	Micro, Small, and Medium-size Enterprises
PE	Private Equity
SELIC	Overnight rate established by the Brazilian Central Bank for performing open market operations
VC	Venture Capital

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EXECUTIVE SUMMARY

The Latin America region represents significant potential and opportunities for socioeconomic and environmental development projects. PRISSMA – “Projects of Social Innovation and Environmental Sustainability”– is a consulting company seeking to provide financial and management services to public and private entities, to foster sustainable development and positive impact in the region. Over the past few years, PRISSMA has worked with various clients in Peru and Colombia, and is now entering the Brazilian market.

A team of students from Columbia University’s Economic and Political Development Workshop (“the team”) was tasked with studying the business and investment landscape in Brazil, specifically the Sao Paulo region, to identify opportunities for PRISSMA’s services, particularly in the sustainability sector. Through in-depth desk research and fieldwork, the team proposed three main recommendations:

Key environmental challenges in Sao Paulo that present the greatest potential and financial opportunities.

The team identified water management, emissions control and waste management¹ as the most pressing environmental issues. Both water management and emissions reduction projects, however, are highly dependent on large-scale infrastructure and frequently involve the government. Waste management offered more potential due to both the country’s 2010 legislation, which impacted waste management operations, and the fact that the sector comprises numerous projects and stakeholders, including the private sector and small to medium sized companies, making it conducive for services provided by external consultants.

The main financing opportunities for socio-environmental projects and enterprises in Brazil.

Due to the on-going political and economic crisis, the overall investment outlook is pessimistic. The Brazilian Development Bank (BNDES), one of the largest financing sources of development projects, has seen a reduction in funds due to the crisis. Development projects in Brazil, therefore, require alternative sources of financing, either by increased participation from multilateral

¹ In this report, waste management is understood as solid waste management, excluding sewage and greywater systems.

agencies, or private funding by private equity and venture capital funds. However, the current political instability has affected both activities, making investments for projects and enterprises challenging. Nevertheless, some sectors still present significant opportunities. Impact investing appears to be one of the investment sectors that has not been strongly affected by the crisis, and is still growing, even if at a slower pace. Interviewees from various sectors have stated that projects are still occurring in areas such as waste management and education.

Market segments and types of services that PRISSMA should focus its operations on.

Finally, the report offers the client several suggestions for addressing the Brazilian market. While prospects for sourcing projects for investment companies were not optimistic, the team identified other areas, such as focusing on small and medium sized organizations who are seeking funds, as more opportunistic. Additionally, the team made a number of recommendations to PRISSMA for enhancing its marketing and sales strategies.

INTRODUCTION

PRISSMA (“Proyectos de Innovación Social y Sostenibilidad del Medio Ambiente” - Projects of Social Innovation and Environmental Sustainability) is a for-profit consulting firm headquartered in Washington, DC. Its mission is to support public and private sector clients in the development of projects committed to improving environmental sustainability and/or promoting social inclusion in Latin America. By helping organizations strengthen their internal capabilities to address local problems, design self-sustainable projects, and manage resources more efficiently, PRISSMA seeks to become one of the leading consulting firms in socio-environmental impact, project development, and finance in Latin America by 2020.

PRISSMA provides consulting and financial intermediation services in planning, fundraising, and managing projects and enterprises in areas such as water and sanitation², social entrepreneurship, and climate change adaptation and mitigation. Additionally, PRISSMA collaborates with a network of specialists in development projects, development finance, and impact investing. With offices in Colombia and Peru, PRISSMA seeks to enter the Brazilian market, having opened a new office in Sao Paulo, Brazil, in December 2015. It is currently in the process of identifying potential partners and projects to collaborate with.

A team of students from The Columbia University’s School of International and Public Affairs (SIPA)’s Workshop in Development Practice in the Economic and Political Development Concentration (“the team”) was tasked to assist PRISSMA in better understanding the Brazilian landscape for potential project development, and designing a value proposition for the Brazilian market with a focus on environmental sustainability. Regional emphasis was narrowed to the State of Sao Paulo. Specific objectives included (i) defining strategic areas for PRISSMA to focus its work; (ii) understanding demand by identifying potential clients, their projects and needs regarding consulting, financial intermediation, and capacity building services; (iii) assessing competition by identifying and understanding relevant benchmarks and competitors for PRISSMA; and (iv) recommending a competitive growth strategy for the Brazilian market.

² Sanitation, in this report, refers to sewage and grey water disposal, which is often left untreated and uncollected in urban and rural areas.

Brazilian Context

Brazil is the largest economy in Latin America (Aceves, 2016), having grown considerably in the last decade. Since 2010, however, its growth rate has decreased significantly, showing signs of a deep economic recession. The country is experiencing high inflation, depressed confidence levels and low prices for export goods (Brazil Economic Outlook, 2016), while its GDP contracted by 3.8% during 2015 (World Bank, 2016). This economic crisis is directly linked to the political crisis stemming from a corruption scandal that has built up political instability (Brazil Economic Outlook, 2016), with the current president facing an impeachment process. The political and economic turmoil pose many challenges for existing and new businesses in Brazil, and must be taken into consideration when assessing potential opportunities for PRISSMA.

Additionally, Brazil presents a highly complex social and environmental landscape, with many issues in both sectors that still need to be addressed, either through policy, regulation or investments. Socially, more than a fifth (21.4%) of the Brazilian population is below the poverty line, with 4% below the “extreme” poverty line in 2009 (The World Factbook, 2016). Despite considerable social progress between 2003 and 2014, during which inequality improved considerably as 29 million people were lifted out of poverty³, indicators illustrate a decline in improvements since 2015 (World Bank, 2016). Issues such as lack of access to basic infrastructure, health services and education, as well as nascent technology development are still major challenges that Brazil must address (Social Issues in Brazil, 2011).

The Brazilian environmental landscape presents numerous complexities and challenges. Brazil houses approximately 60% of the Amazon rainforest (FlorestaAmazonica - Localizacao, 2016), the world’s largest tropical rainforest. Additionally, Brazil is home to various biodiversity hotspots and is abundant in natural resources (Ranganathan, 2013). Yet, the country has the highest global deforestation rate (Ranganathan, 2013), and suffers from issues such as illegal wildlife trade (Leap and Brito, 2013). While Brazil is one of the most water-rich nations, the State of Sao Paulo in the Southeast region is undergoing a severe water crisis (Curran, 2015), and arid and semi-arid regions in the country are economically underdeveloped. Water contamination and pollution threaten

³ During this period, the Gini coefficient fell by 11%, down to 0.515. The Gini coefficient measures the distribution of income among individuals or households within an economy, as a deviation from a perfectly equal distribution. Thus, a drop in the Gini coefficient indicates reduction of inequality (World Bank, 2016).

drinking supplies in major Brazilian cities (Ranganathan, 2013). The country also faces issues of greenhouse emissions linked to agriculture and rising energy demands (Ranganathan, 2013). In addition to these particularities, Brazil has an intricate and complex environmental legislation and multiple regulatory requirements that can pose further challenges to activities and projects developed in the country. This is the case of the extensive bureaucratic process for obtaining environmental permits necessary to build and operate projects such as power plants.

In light of these challenges, there exists the need for compliance with regulation to achieve minimum standards of environmental quality and social prosperity. The need for basic developmental infrastructure also offers potential opportunities for improving socio-environmental conditions. The increasing demand for renewable energy, solutions to urban mobility, improved water and sanitation, health, education and financial services, continue to offer potential investment opportunities in Brazil, despite the recent political and economic turmoil.

Project Structure

The team's first step was to understand how PRISSMA's services are perceived by the Brazilian market, using the State of Sao Paulo as an indicator of current opportunities. The team combined comprehensive desk research with extensive primary field research to address the following objectives: (i) analyze environmental problems in the State of Sao Paulo to define potential key areas of focus for PRISSMA; (ii) conduct in-depth research of potential clients to examine the need and demand for PRISSMA's services; and (iii) analyze the competitive landscape in Brazil. This research formed the findings and recommendations presented in this Final Report.

RESEARCH METHODOLOGY

Key Research Questions

To frame the report, the team used the following questions as the foundation for its research and analysis:

1. What are the key environmental problems of Sao Paulo that present the greatest potential financial opportunity for our client?
2. What are the main financing opportunities for environmental projects and enterprises in Brazil?
3. What market segments and types of services should PRISSMA focus its operations on?
4. Given the environmental and financing landscapes, how can PRISSMA position itself to be a leading consultancy firm in Sao Paulo?

Key Concepts

Based on the team's research focus, and PRISSMA's operations more broadly, it is useful to define key terms that have been used throughout the research process:

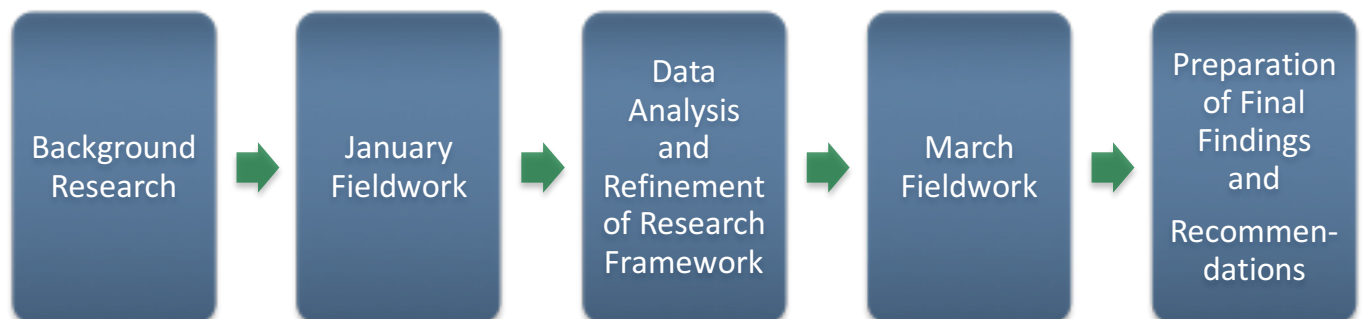
- *Environmental Sustainability*: Environmental sustainability refers to making decisions and taking actions that are in the interests of protecting the natural world through the reduction of a company's negative impact on the environment. Environmental sustainability forces businesses to not only consider the immediate impact of their actions on the environment, but also the long-term impact they are having on the natural world.
- *Consulting*: Consulting refers to the provision of professional or expert advice in a particular area such as management, engineering, finance, marketing or other specialized fields.
- *Impact Investment*: Impact investments are investments made to companies, organizations and funds that have the intention of generating social and environmental impact alongside a financial return.

- *Project Finance*: Project finance is the long-term financing of infrastructure, industrial projects, and public services where forecasted cash flows of the project are used to finance the project rather than the balance sheets of its sponsors.
- *Project Management*: Project management is the application of knowledge, skills, tools, and techniques to project activities through carefully planning, organizing, motivating, and controlling resources in order to attain specific goals and meet specific success criteria.
- *Project Planning*: Project planning is part of project management, and relates to the use of schedules or charts to plan and subsequently report progress within the project process.
- *Financial Intermediation*: Financial intermediation seeks to channel funds from people who have extra money to those who do not have enough to carry out a desired activity.
- *Equity Investment*: Equity investment refers to the buying and holding of company shares on the stock market with the expectation of making profits from dividends and capital gains, as the value of the stock rises. In other words, equity holders invest money into a company in exchange for a share of ownership in the company.
- *Gini Coefficient*: Measure of inequality (it is a measure of statistical dispersion that represents the income distribution of a nation's residents, with 0 representing perfect equality and 1 representing perfect inequality).

RESEARCH PHASES, METHODS AND TOOLS

The team's research was broadly divided into five phases that employed a variety of research methods and tools:

1. Background Research
2. January Fieldwork
3. Data Analysis and Refinement of Research Framework
 - a. Strategic Focus Report
 - b. Analysis of Financing Opportunities for Environmental Projects and Enterprises in Brazil
4. March Fieldwork
5. Preparation of Final Findings and Recommendations



Phase 1: Background Research

Literature Review

The purpose of this phase was to contextualize the research project. The team conducted a broad literature review to familiarize itself with Brazil's history, macroeconomic and investment landscape, current efforts towards environmental sustainability, and the client organization. The team focused on analyzing qualitative data on environmental sustainability in the state of Sao Paulo, seeking materials from academic sources as well as organizations working in the environmental sustainability field. The team also used PRISSMA's website and case studies to better understand the history, mission, and activities of the organization, in order to fully understand the need and impetus for the project.

Online Interviews

Prior to January fieldwork, online interviews were conducted with key personnel to supplement the topics covered in the literature review, and for the purposes of directing the team's Strategic Focus Report⁴. These interviews, conducted with representatives of PRISSMA, including Vladimir Olarte, helped the team familiarize itself with the organization, its history, its strengths and weaknesses, and its vision for growth in Brazil.

Phase 2: January Fieldwork

A January field visit, conducted by two members of the research team, aimed at helping the team further refine, frame and guide its ongoing research.

In-person Interviews

The primary goal of the January field trip was to identify some of the most pressing environmental issues in Sao Paulo by conducting interviews with stakeholders who could provide additional insight and knowledge. The interviews were used to refine the research questions, gain a more in-depth understanding of the key environmental challenges of the region and to better define the scope of the workshop project. Open-ended questions and probes allowed the team to yield detailed responses to qualitative questions. A total of 18 interviews with representatives of the state government, governmental agencies, private companies, academia and civil society organizations were conducted in the January field trip (*see Appendix 1 for the full list of interviews conducted in this phase*).

On-the-ground Research

Additional secondary data was collected from media sources and research publications to supplement information for the on-going literature review.

⁴ The team prepared a Strategic Focus Report for the client mid-way through the project. The purpose of the interim report was to draw on research from the January field trip and the literature review to outline the main areas of focus for PRISSMA's research. The findings of the report, divided into two major sections focusing on environmental and impact investment issues, are in the Appendix VII.

Phase 3: Data Analysis and Refinement of Research Framework

Strategic Focus Report

After the first field visit, the team transcribed all interviews conducted and compiled an extensive collection of notes on its experiences, observations and ideas. Transcriptions and notes were analyzed to map key environmental issues. Through this process, the data analysis was compared to the findings of the literature review to provide a firm, theoretical grounding. The findings were incorporated into the Strategic Focus Report which helped define the agenda for the March field trip, along with future primary and secondary research. The report was divided into two major sections (environmental issues and impact investment issues) and provided an overview of the next steps (*see Appendix 7 for Strategic Focus Report*).

Analysis of Financing Opportunities for Environmental Projects and Enterprises in Brazil

Building on research from the Strategic Focus Report, the team assessed the dynamics of the Brazilian investment sector and identified potential clients for PRISSMA. For this purpose, extensive secondary research, mapping out potential clients and relevant actors in Sao Paulo was conducted, along with interviews with investment executives, both in Brazil and in the US. Interviewees included representatives and heads of:

1. Private (Funds, Impact Investing, Banks)
2. Public/ Government Agencies
3. Development Finance Institutions

(See Appendix 2 for the full list of interviews conducted in this phase)

Phase 4: March Fieldwork

Two members of the research team traveled to Brazil in March for the second field visit. The second visit featured interviews and on-the-ground research to follow up on the January fieldwork, including an assessment of PRISSMA's services and how they relate to the strategic focus areas identified.

In-person Interviews

The primary objective of the interviews was to understand potential clients' needs regarding consulting, financial intermediation, and capacity building services for project planning, financing, and management provided by PRISSMA. Representatives from private, public and nonprofit sectors were targeted to help understand where PRISSMA could add value (*see Appendix 3 for the full list of interviews conducted in this phase*).

Phase 5: Preparation of Final Findings and Recommendations

The final component of the report reflects careful consideration and thematic analysis of primary and secondary data, collected from multiple sources including desk research and in-person phone and online interviews, spanning the duration of the project. The result is a series of recommendations for PRISSMA, addressing issues that framed the mission of the workshop.

LIMITATIONS AND CONSTRAINTS

The following emerged as challenges and limitations of the study, based on January and March fieldwork, analysis of findings, and conversations with the client.

A. External Challenges

Scope of the Study

The scope of PRISSMA's initial proposal was too broad for the duration of the workshop. The team was originally asked to consider the entire investment market in Brazil along with social inclusion projects outside the environmental sustainability sector. However, due to Brazil's topographic variability and rich cultural heritage, environmental challenges differ across its 26 states. For example, northern Brazil sees deforestation as its greatest challenge, while the south faces water scarcity issues. In order to mitigate this, it was decided that the geographic focus of the research would be limited to the state of Sao Paulo, where PRISSMA would be operating.

Given the geographic scope of the study, the findings regarding environmental challenges cannot be generalized to the entire country. However, future studies could expand on the team's existing work, should PRISSMA decide to target other regions and expand its services to other sectors.

Field Work Planning and Execution

The preparation for fieldwork in January was particularly challenging as it coincided with Brazil's summer vacation schedule. This meant that both, preparation and fieldwork, were carried out over a period in which business was slow and several potential interviewees were traveling. Moreover, Brazil's informal work culture made scheduling interviews in advance more challenging. The team managed to overcome such challenges by contacting interviewees after arriving in Sao Paulo, and giving preference for calling to schedule interviews (instead of e-mailing) due to the short notice.

Translation was one of the challenges the team faced while conducting interviews in January. Only one member of the January team spoke Portuguese, limiting the overall number of interviews that could be conducted. This issue continued in the team's efforts to transcribe interviews retrospectively.

March fieldwork was hampered by health concerns that prevented several team members from traveling to Sao Paulo. To address this, two native team members traveled to Brazil for a week (previous commitments prevented a two-week trip). The March team only had four business days to conduct interviews due to Easter holidays. Despite these challenges, the team was able to conduct a considerable number of interviews, and as both team members were native Portuguese speakers, language was no longer a barrier. Meanwhile, the team in New York conducted interviews with various funding agencies located within and outside the US, along with academics who are regional and industry experts.

PRISSMA

Since PRISSMA only recently began its operations in Sao Paulo, it was sometimes difficult for the team to provide context about PRISSMA's work in Brazil to investors. During interviews, the team did its best to provide adequate information about PRISSMA by illustrating ongoing projects in Brazil as well as other countries of operation.

B. Internal Challenges

The team also underwent a host of internal transitions. During the project cycle, the team experienced changes in its group members on six occasions, leading to readjustment of project roles and overall workload management. Additionally, with the departure of Portuguese speaking members at the beginning of the study, language became a significant barrier for conducting desk research in Portuguese and organizing fieldwork. However, the addition of native Brazilian members helped distribute the workload of the project effectively.

FINDINGS AND ANALYSIS

ENVIRONMENTAL ANALYSIS

Key Environmental Sectors

Three main environmental issues were identified after the team's January field trip. These were: (i) water management, (ii) waste management and (iii) atmospheric emissions control. Predominantly affecting the Southeast region of the country, these emerged as areas where environmental damage and need for action is 'dire'⁵. Accordingly, the team targeted these areas in its research to assess projects, investment opportunities, and overall potential for PRISSMA's services.

To further its understanding of these issues, the team conducted extensive desk research in addition to interviews with investors, potential clients, sector experts, and academics and government representatives during its March trip. Brazil's macroeconomic, political and legislative developments were also taken into consideration. While some environmental issues are extremely significant to Brazil's overall environmental context, the team's findings reveal that they may not represent opportunities for PRISSMA. Instead, PRISSMA may benefit from broadening its scope of its activities to include areas that are not related to environmental projects. This will be expanded upon later in the Final Report.

This section examines three environmental challenges. It begins with a comprehensive assessment of each challenge, moves on to the identification of potential opportunities for PRISSMA, and concludes with other options PRISSMA can explore.

Water Management

As identified in the Strategic Focus Report, water management and supply is a serious issue in the Southeast region of Brazil. Brazil has historically had abundant rainfall due to its topography and climate. Years of poor management, deforestation and changes in rain patterns, however, have led to droughts and water shortages that threaten the economy and provision of basic services

⁵ See Annex 7 for Strategic Focus Report.

(Romero, 2015). This decrease has been a tendency since 2010 (Samuel Roiphe Barreto, personal interview, January 7th 2016). Recent rainfall has brought considerable relief, bringing reservoirs such as Cantareira back to approximately 20% of their capacity (G1, 2016). Structural issues and vulnerability to future crises, however, are yet to be addressed.

The lack of proper sanitation⁶ in urban settings is another critical aspect of water management (The World Bank, 2012). Only 85% of sewage is collected, of which 70% has adequate treatment (Rui Brasil Assis, personal interview, January 13th 2016). This inadequacy stems from inequality, with the presence of large improvised and impoverished neighborhoods (favelas) within cities, and is exacerbated by a lack of resources and policies directed towards the matter (Sylmara Dias, personal interview, January 5th 2016; Fernando Vasconcellos, Francesco Sirangelo, Ana Paula Fava, Oswaldo Lucon, Rodrigo Spuri, among others, personal interview, January 6th 2016).

Despite water management being critical for Brazil's long-term sustainable development, the team's research revealed that this sector does not present a strong entry-point for PRISSMA:

Water management and sanitation projects are generally large-scale. Companies undertaking such projects, for instance SABESP, Sao Paulo city's main water management company, typically have experts in-house providing services PRISSMA might offer. Given the monopolistic nature of organizations in this sector, there is minimal opportunity for small to medium-scale companies to create new projects and innovate on a smaller scale (Mario Engler, personal interview, March 22nd 2016).

These projects are mainly driven by the public sector, which presents significant and complex business issues. Doing business with the government in Brazil has always presented structural difficulties (Tomas Besse, personal interview, March 23rd 2016). Bureaucracy is particularly complicated, and a number of interviewees highlighted an inadequate planning culture in government entities, indicating that international investors are often unwilling to invest in such projects. As a result, civil construction is financed by the National Development Bank (BNDES). Furthermore, public-private partnerships have also encountered several problems. These have included fines due to delays in constructions and the lack of interest from international companies

⁶ Sanitation refers to sewage and greywater treatment.

(Tomas Besse, personal interview, March 23rd 2016; Mario Engler, Tomas de Paula, personal interview, March 22nd 2016).

The current political and economic crisis has led federal, state and local governments cutting back on public construction. Sanitation projects are often the first to be eliminated. Since results of such projects are not visible to the general population, they do not engender significant political support when proposed in the government's budgeting agenda (Samuel Roiphe Barreto, personal interview, January 7th 2016; Rui Brasil Assis, personal interview, January 13th 2016).

In summary, the challenges associated with the water management sector do not seem to present viable business opportunities, neither in projects regarding water supply, nor in projects regarding sanitation.

Atmospheric Emissions

Reduction of atmospheric emissions and air pollution is another significant environmental area that was identified in the team's research. According to CETESB, Sao Paulo State's environmental agency, emissions are an issue, especially in larger cities of the region, due mainly to the significant number of motorized vehicles (Maria Helena Martins, personal interview, January 13th 2016). The deindustrialization process within cities has improved air quality as factories and industries have moved to adjacent cities and rural areas. Despite these positive influences, Sao Paulo suffers from excessive traffic congestion, with over 8 million cars and a precarious public transportation system, leading to increased pollutant emissions and deteriorated air quality (G1, 2014).

Air pollution in larger cities, therefore, is unequivocally a critical environmental issue within the region and the State of Sao Paulo. Investing in a larger, more effective public transport system is seen as one of the key actions to address the problem (Leonardo Dutra, personal interview, January 7th; Maria Helena Martins, personal interview, January 13th 2016). Despite political promises, global agreements and isolated, voluntary actions⁷, there are major constraints that prevent more concerted action. Similar to challenges associated with water management, there are several

⁷ For more information please refer to Annex 7 for Strategic Focus Report.

structural and contextual elements that make controlling atmospheric emissions a difficult sector for PRISSMA to enter:

As with water, mobility projects are typically large scale, and driven by the public sector.

These are characteristics common to both the water management and the mobility sectors, with the same consequences as above mentioned. Organizations in this sector also tend to be monopolistic which limits opportunities for small and medium-scale companies and innovation (Tomas Besse, personal interview, March 23rd 2016; Mario Engler, Tomas de Paula, personal interview, March 22nd 2016).

The main companies responsible for mobility construction in Brazil have been indicted in corruption scandals. Whether it is the Petrobras scandal, or the State government of Sao Paulo, a considerable number of companies and government officials have been involved in illicit practices. The scale of this corruption is enormous. It was estimated that companies involved in these scandals represented 5% of Brazil's GDP (BBC, 2015)⁸. This, together with the economic and political crisis, has led to a strong deceleration in investments in the sector (Tomas Besse, personal interview, March 23rd 2016; Mario Engler, Tomas de Paula, personal interview, March 22nd 2016).

In summary, issues associated with atmospheric emissions do not appear to be a funding priority for governments or investors. The few projects that are still operating would not present viable business opportunities for PRISSMA.

Waste Management

Waste management was broadly cited as an environmental concern and an area of potential for PRISSMA throughout the team's January interviews. Of the three areas, it appears to have the most positive prospects and greatest potential for PRISSMA's services.

For a greater part of Brazilian history, waste management was not regarded as a priority (Agência Senado, 2014). Garbage dumps have been a broadly applied solution – as of 2014, around 40% of

⁸ The Petrobras scandal is a major corruption scandal, and one of the main triggers of the current political crisis. Many CEOs from companies have been convicted, and this has paralyzed the public construction sector.

Brazil's waste still ended up in dumps (Agência Senado, 2014). Moreover, companies have hardly been held accountable for their waste disposal practices (Sylmara Dias, personal interview, January 5th 2016). In 2010, after over 20 years of discussions, the National Policy of Solid Waste was passed under the Federal Law (Federal Law number 12.305, August 2010). The legislation was considered to be a landmark. It launched the concept of Reverse Logistics to companies and comprised important social components, as it promotes the social inclusion of waste collectors and prioritizes the hiring of cooperatives by companies and municipalities who seek to comply with legislation (Ministério do Meio Ambiente, 2015).

These elements present a strong paradigm shift in waste management and logistics in the country (Sylmara Dias, personal interview, January 5th 2016; Daniel Carvalho, personal interview, March 24th 2016). According to the legislation, companies and municipalities were given until 2021 to adapt and implement new systems consistent with the new Federal Law. This has led to a series of developments that make waste management an area with considerable investment opportunities and potential demands for PRISSMA's services. Some of these include:

The passing of legislation makes waste management a compliance requirement as opposed to an unregulated socio-environmental responsibility. When going through economic crises, companies cut expenses and socio-environmental responsibility tends to be the first (Daniel Carvalho, personal interview, March 24th 2016). With the new law, however, waste management has become a legal requirement, encouraging companies to continue investing in recycling programs and waste collectors' capacitation despite the economic crisis (Sylmara Dias, personal interview, January 5th 2016; Daniel Carvalho, personal interview, March 24th 2016).

Waste management projects are usually smaller scale and within municipalities. The nature of these projects allows a larger number of organizations and entities to operate within the market. A city such as Sao Paulo, for instance, has many recycling companies that represent potential clients. Furthermore, since the market encourages more competition, innovation is much more likely to thrive. (Mario Engler, personal interview, March 22nd 2016).

Waste management encompasses strong social components. The team's interviews with impact investors indicate an inclination towards investment in projects with social, rather than environmental impact (Daniel Izzo, personal interview, March 24th 2016; Francisco de Mariz,

personal interview, March 30th 2016). As many of the projects in this space benefit waste collectors – which are a social component – the potential to attract investors appears to be higher compared to other areas.

To summarize, waste management appears to present the most business opportunities for PRISSMA, because of both recent legal developments attracting more players to the sector, and the social component, making it more appealing to investors.

Potential Opportunities for PRISSMA

The team identified several other Brazilian potential sectors that could be within PRISSMA's interests and expertise. According to the Aspen Institute, water and sanitation only comprise 2% of impact investing funds in the country, while other sectors such as education get as much as 19% (Aspen Institute, 2014). Sectors such as education, healthcare, community development and financial inclusion, among others, are likely to present valuable opportunities to PRISSMA, and attract more investments from national and international players.

It is critical to note that interviews with impact investors affirmed that the main evaluation criteria is the social, not environmental, benefit of the company or project. This was a constant remark that the team heard. For example, one investor, Daniel Izzo, said that education attracts the most number of investors, followed by healthcare. Socio-environmental projects are also desirable.

Impact investors showed particular interest in water and energy off-grid solutions⁹. To many impact investors, the key element of projects have to include social components to attract financial interest (personal interview, March 24th 2016).

PRISSMA has, therefore, several options to consider. It can focus on sectors beyond the environmental which impact investors are more likely to fund. Alternatively, it can target environmental projects with a stronger social element, such as energy for off-grid communities and enhance the capabilities of waste collectors. These projects have considerable appeal for investments and offer potential opportunities despite the country's economic instability.

⁹ Off-grid solutions are targeted into communities (often rural) that are not integrated into the national grid systems - in this case, for either water or energy. One example for energy off-grid solutions would be solar energy panel installations in residential houses.

INVESTMENT LANDSCAPE

Macroeconomic Analysis

Brazil is the largest economy in Latin America and the tenth largest in the world. Since the launch of the economic plan (Plano Real) in 1994, Brazil's macroeconomic environment has become increasingly stable and the economic growth, overall increase in population income, and stability in the past decade, have promoted an increase in the interest of corporations in the Brazilian market (Loman, 2014).

Even though Brazil has experienced an economic growth in the past decades, the current Brazilian macroeconomic landscape is not conducive for attracting investments in the short term. Brazil currently faces complex challenges affecting its entire population. For example, as mentioned in the environmental sector analysis, above, a recent prolonged drought increases the risks of water and electricity rationing which could have dire consequences for economic activity and overall growth (The World Bank: IBRD, IDA, 2016). Brazil also experiences extreme regional disparities in social indicators such as health, infant mortality, and nutrition (World Bank: IBRD, IDA, 2016). Over the past fifteen years, Brazil's social policies and economic growth have helped lift 40-60 million people out of poverty (Price, Impact Alpha, 2015). Despite having achieved success in reducing poverty and reaching universal coverage of primary education, Brazil is still struggling with its overall levels of inequality and the quality of education being provided (OECD, 2013).

Short-term challenges

Even as much as the Brazilian stock market and currency have suffered in 2015, the country's political and economic crisis is set to worsen over the course of 2016 (Eurasia Group, 2016, 18). Brazil is in the midst of a multi-year economic recession that reduces the internal market absorption capacity and threatens its political stability. Sharp declines in the prices of oil, iron ore and food staples have severely pinched Brazil compared to other countries, resulting in an economic contraction (Constable, 2015). The Brazilian GDP in 2015 decreased by 3.8%, unemployment rate increased to 6.8%, and exchange rate depreciated drastically reaching to 3.96 (USD/BRL) (Focus Economics, 2016). Added to this is a rising inflation rate. According to Banco Central do Brasil, inflation in 2015 was more than double its target rate (4.5%) at 9.5% (Constable,

2015). In this context, attempts to revive the economy using monetary policy tools is extremely risky; lowering the interest rates as a strategy for economic stimulation might further amplify inflation.

The international environment also affects Brazil. The expected increase in the interest rate in the US and the economic slowdown in China create instability for all emerging markets. Brazil is being affected more severely because of its internal economic and political crisis. An increase in the US interest rate poses a risk to the devaluation of the Brazilian currency even more, while the Chinese slowdown could hurt Brazilian exports especially through the reduction of commodity prices.

The Brazilian short term perspective does not seem promising. The economic recession and the political instability prevent businesses from providing the adequate return on the investments (Eurasia Group, 2016). Daniel Izzo from Vox Capital has mentioned that “Everybody is afraid of political uncertainties....This political uncertainty is what makes the risk so major and the future impossible to predict” (Daniel Izzo, personal interview, March 24th 2016).

Medium and long-term prospects

On the other hand, the medium and long-term prospects still remain favorable considering strong domestic demand, anticipated investments in infrastructure, development of offshore oil reserves, and prudent macroeconomic policies (U.S. Department of State, 2015). According to the U.S. government, Brazil is still one of the friendliest countries for private corporations in Latin America. Compared to neighboring countries, Brazil has a friendlier political culture for foreign investment, leading to a smaller risk of expropriation (U.S. Department of State, 2015). Indeed, incentives for foreign investments are part of the government’s efforts to overcome the economic recession. Despite the economic and political turbulences, the huge internal market consisting of 200 million people makes Brazil a promising place to invest.

In this volatile macroeconomic landscape, PRISSMA in the short term should consider directing its efforts towards local firms who are seeking financing opportunities rather than focusing on international investors. International investors become less willing to invest in volatile countries that have higher risk profiles. When the economy and political situation begins to stabilize, it

would be easier for PRISSMA to find required financial resources from potential international investors.

Investment Outlook

Brazil's investment landscape differs from the rest of Latin America because of its diversity, scale, and way of doing business (Christopher Sabatini, personal interview, March 10th 2016). According to World Bank's Doing Business Index, Brazil ranks 116th out of 189 economies on the ease of doing business in 2016 while its ranking (111th) was better in 2015 (The World Bank, 2016). In particular, Brazil represents higher costs for investors due to regulatory requirements associated with starting a business, construction permits, and a complex tax system (The World Bank, 2016). Despite these regulatory obstacles, "Brazil is generally considered a desirable market for investment given its large economy and growing middle class" (U.S. Department of State, 2015, 3).

The current economic and political instability has resulted in Brazil being downgraded by rating agencies; Standard & Poor's has cut its debt rating to 'noninvestment' grade (Constable, 2015). The depreciation of the Brazilian real against the dollar over the past year has only made matters worse. SELIC (federal funds rate) has recently risen to 14.25% from 13.75%, the 16th increase since April 2013 (Focus Economics, 2016). As a result, total investment decreased by 4.5% in 2015 and decreased by 14.1% in 2016 (Focus Economics, 2016).

A survey of diverse investment challenge and opportunities

To better understand the investment landscape in Brazil, this section of the report examines the investment landscape from various perspectives: public, private, and development finance institutions. The challenges, risks, and future trends, as well as implications for PRISSMA, are also identified and explored at length.

Public Investing

The report examined public investment in two spheres: Development Finance Institutions (DFIs) and public sector investments.

Development Finance Institutions

Development Finance Institutions (DFIs) such as the World Bank, the Inter-American Development Bank (IDB), and the Development Bank of Latin America (CAF) play a key role in the investment landscape in developing countries such as Brazil. Part of their mission is to foster development and community investments, and promote projects that create social and environmental value. As described by the organization, Advocates for International Development, the purpose of Development Finance Institutions is “to fill a gap in the financial market” (Griffith and Evans, 2012, 3), occupying the space between public aid and private capital, in order to drive development.

DFIs take on higher risk by providing equity or credit at better rates than commercial investors. Examples of such practices include the provision of low-cost long term loans, and the willingness to venture into sectors that do not attract traditional investors, such as education (Griffith and Evans, 2012). These institutions also provide management consultancy and technical assistance, and aim to promote best practices (Griffith and Evans, 2012).

A role in impact investing

Government projects such as large public infrastructure for transportation or sanitation, also rely heavily on resources from DFIs. They also play a key role in impact investing, as they serve as “anchor investors” in structuring funds for impact investing (Paulo Mattos, personal interview, March 24th 2016). Impact investing is described in greater detail on page 38. This type of investment is still perceived as highly risky by the market and is usually structured as venture capital. The higher risk level increases the challenge of obtaining investors that will contribute capital to impact investing funds. As DFIs take on higher risk when providing equity or debt as part of their development mission, DFIs are often times major contributors to impact investing funds. The lack of other financing institutions willing to support higher risks leads impact investing funds to rely heavily on DFIs. Due to their structure and robustness, DFIs play a relevant role in bringing a degree of stability to these investments, as they provide both the capital and a sense of reliability that can attract other investors to the impact investing funds.

The other portion of capital for impact investing funds comes from family offices and “angel investors”; wealthy individuals who have specific and altruistic missions (Paulo Mattos, personal interview, March 24th 2016). For instance, DFIs such as FINEP, IDB and CAF form two-thirds of the capital ownership of an impact investing fund from Vox Capital (Daniel Izzo, personal interview, March 24th 2016).

In Brazil, the Brazilian Development Bank (BNDES) has been the main financing agency for development since its foundation in 1952 (BNDES, 2015). Companies, such as CICLA Brasil, receive major resources from BNDES, essential for their activities. BNDES supports investment projects with low-cost financing for the acquisition of equipment and the export of goods and services. It also allocates non-refundable finances to projects which further social, cultural and technological development in Brazil (PWC, 2013, 43). The Aspen Institute has identified that both BNDES and traditional investors’ interest in impact investing has been increasing in the past years, due to the financial and the social returns on investments (Aspen, 2014, 36). Furthermore, multilateral organizations such as IFC and IDB have also been identified as becoming active in the field (Aspen, 2014, 30).

Financing capacity

The team’s interviews with financial and academic sources found pessimism with respect to BNDES. Many considered BNDES’s financing capacity to be compromised, especially in light of the current economic and political crisis. Additionally, due to the high demand for equity and credit, BNDES can no longer provide the amount of financing required, creating the need for alternative resources such as private capital to provide the resources necessary for development projects in Brazil (Tomas de Paula, personal interview, March 22nd 2016). Consequently, the main alternatives to BNDES’s financing currently are capital markets, infrastructure debentures, and private equity funds (Mario Engler, personal interview, March 22nd 2016).

Bureaucracy

In addition to the challenges of DFI resource availability, these agencies are often viewed as having a very slow decision making process that challenges securing resources for impact investing and development projects (Daniel Izzo, personal interview, March 24th 2016). The extended

time frame for securing DFI resources can jeopardize the structuring of impact investing funds which have the participation of multiple capital contributors.

Analysis

The compromised financing capacity of BNDES requires new alternatives for development projects in Brazil to obtain resources (Mario Engler, personal interview, March 22nd 2016). This could be accomplished either by increasing the participation of other DFIs in the Brazilian market and unlocking pools of capital, or by mobilizing private capital and developing alternative financing structures. Participation of private capital has been increasing in the sector, but the high risk nature of these investments require experienced market players and fund managers, and “anchor investors” that add robustness to the investment structure, in order to consolidate impact investing funds and development projects.

Potential opportunities for PRISSMA

PRISSMA has several opportunities. It can reach out to DFIs such as IDB to fill the void left by BNDES to help provide resources to development projects and impact investing. Also, PRISSMA could take an active role in bridging conversations between fund managers and potential investors, accelerating the process of unlocking investments and securing resources. There is limited potential for PRISSMA with impact investors, as most activities are done in-house, but developing connections with Development Finance Institutions and guiding impact investors through the bureaucratic loan processes of these Institutions might be a valuable niche for PRISSMA.

Public Sector

The public sector plays a key role in funding and creating projects that promote social and environmental benefits. It is the mission of many government agencies to plan and carry out development projects in sectors of public interest such as urban mobility, water and sanitation. Given the country’s need for enhanced infrastructure development, the infrastructure sector is a government priority and recipient of significant public funds (Mario Engler, personal interview, March 22nd 2016).

These projects require substantial amounts of resources that are either provided by government agencies, DFIs, and/or the private sector. In addition to securing resources, the public sector faces challenges in sectorial planning, especially in less traditional areas such as waste management and public housing (Tomas de Paula, personal interview, March 22nd 2016). With a few exceptions, such as metro-railway transport in Sao Paulo that is a relatively well developed and mature sector, other sectors in the country lack a clear strategy to address sector issues (Tomas de Paula, personal interview, March 22nd 2016). As one investor mentioned, the design of quality projects is also a major bottleneck to development that might be overcome through partnering with market players experienced in sectorial planning and project development (Mario Engler, personal interview, March 22nd 2016). This would provide opportunities to stimulate international players to participate in bidding processes and integrate the structuring and implementation of public sector projects (Mario Engler, personal interview, March 22nd 2016).

Traditional project areas

In the State of Sao Paulo, development projects associated with the environmental sector are traditionally carried out in areas such as public transportation, water, sanitation, and roads (Tomas de Paula, personal interview, March 22nd 2016). These projects are usually of larger scale, and often times structured under public-private partnerships (Tomas de Paula, personal interview, March 22nd 2016).

The scale of these projects requires substantial amounts of capital and the participation of robust financing organizations such as DFIs. There is also a demand for experienced partners that have sectorial business knowledge and can take on higher project risks. Complexities involving sectorial institutions and regulations increase project risks, and make it harder for medium and small companies to get involved with large scale public sector projects (Tomas de Paula, personal interview, March 22nd 2016).

One of the interviews conducted with an expert in government practice and infrastructure revealed that expertise of assessing projects and structuring projects technically (e.g. engineering and regulatory aspects) is well established in Brazil. Technical consulting in sector businesses is also a very competitive market, especially in well-developed sectors such as energy and transportation infrastructure. According to the interviewee, the market is saturated with technical consultants. In

the interviewee's opinion, Brazil lacks qualified companies to partner with government agencies to run the operations and manage projects after their planning and construction has been completed, such as subway lines and toll roads (Mario Engler, personal interview, March 22nd 2016).

Alternative project areas

Other less traditional areas for government projects are affordable housing and urban drainage (Tomas de Paula, personal interview, March 22nd 2016). Sectors with smaller companies such as irrigation, affordable housing, public lighting and waste also rely on public funds and government support to be developed (Mario Engler, personal interview, March 22nd 2016).

Public sector projects, particularly in less traditional areas such as water, sanitation and affordable housing require financial assistance and innovative institutional arrangements, especially when they do not generate the income used in financing the project, as is the case with toll tariffs and road projects for instance (Tomas de Paula, personal interview, March 22nd 2016). These projects also present higher risks that are aggravated by the long timelines for their implementation and execution. This increases challenges in raising the appropriate resources and forging partnerships for implementation.

Scenario for government investments

To overcome many of its development challenges, Brazil needs significant investments, and experienced government agencies and private companies that can design quality projects and identify potential investors (Tomas de Paula, personal interview, March 22nd 2016). In some areas, such as Energy and Highways, the country has better developed institutions and more experienced players in the market, making it easier to structure projects (Tomas de Paula, personal interview, March 22nd 2016). On the other hand, there are many government sectors that still need to be further developed, with more integrated planning and better coordinated initiatives to tackle the sector's issues. For instance, in the water and sanitation sector, building of new water infrastructure needs to be coordinated with the increase of water demand for industry and human consumption, as well as take into consideration climatic and weather forecasts. Having more water

infrastructure storage in place, for instance, can mitigate the negative impacts of a severe drought, such as the one that has affected the State of Sao Paulo since 2014.

However, the economic and political crisis in Brazil has stymied fund raising for government projects (Tomas de Paula, personal interview, March 22nd 2016). International investors are discouraged by the multiple regulatory requirements for doing business in the country (Tomas de Paula, personal interview, March 22nd 2016), and by low credit ratings (Mario Engler, personal interview, March 22nd 2016).

In the opinion of one of the interviewed experts, there are a number of important elements the country needs to launch projects and increase financing for development. These include having partners with the scale and strength to implement and manage large projects (market leaders), standardization of financing instruments, reduction of information asymmetry¹⁰ in transactions, compliance and transparency of procedures for project approval and financing, and standardization of government procedures (Tomas de Paula, personal interview, March 22nd 2016).

Analysis

This situation was compounded by the views of interviewees who spoke about the inconsistent quality of public sector project development. Some sectors in Brazil, such as public housing, education, water and sanitation, present major gaps in planning. There is no integrated and comprehensive approach to addressing these issues. The lack of planning and clear government initiatives for these sectors present difficulties to the development of projects and of finding partners and financing. Moreover, these difficulties are exacerbated by the current political and economic crisis in Brazil.

Potential opportunities for PRISSMA

Given the gaps identified in public sector project development, there may be opportunities for PRISSMA to help connect government agencies with qualified project designers and managers,

¹⁰ When one party in a transaction has more information than the other, creating a power imbalance, which is a market failure.

especially in less traditional sectors such as waste management and public housing, and for smaller scale projects.

Private Investing

Entrepreneurs in emerging markets (EMs), including Brazil, have been confronted with very limited access to finance (Chironga, 2012). In fact, the International Finance Corporation (IFC) reports that access to finance is considered to be the greatest problem for Small and Medium Enterprises (SMEs) (Stein, 2013). It is estimated that more than 70% of Brazilian SMEs do not have access to needed financial resources (Stein, 2013).

Keeping in mind macroeconomic and political risks that have put pressures on the country's public spending as described above, an entrepreneur in need of financing is forced to seek funding opportunities in the private investment space (Fernando Sotelino, personal interview, February 26th 2016). Currently, those private financing resources are mainly concentrated in the following four categories:

1. Private Banks
2. Public Capital Markets
3. Traditional Private Equity (PE)/Venture Capital (VC) investors
4. Impact Investing & Social Finance

While secondary research was conducted on all four categories, the team focused its primary research efforts on impact investors, and to a certain extent, classic PE/VC investors. Interviews were conducted with the representatives of impact investing funds, impact investing arms of investment banks, and classic PE/VC investment funds and asset managers. The team's research findings are summarized below:

Private Banks

Compared to other Latin American emerging economies, Professor Fernando Sotelino of Columbia University reported that Brazil is known to have a well-developed and robust financial system (personal interview, February 26th 2016). After inflationary issues in the nineties, the banking system was strengthened through a series of consolidations, including the well-known merger of Itau and Unibanco (Felix, 2012). In theory, large and strong banks should be able to provide loans to MSMEs, and by doing so, fill in the capital gap that MSMEs are confronted with.

However, due to the Brazilian economy's longstanding struggle with inflationary pressures, debt financing has never been the most favorable option for borrowers. As explained above in the Macroeconomic Analysis section, Banco Central do Brasil has been fighting against its chronic inflationary problems by keeping high interest rates (Fernando Sotelino, personal interview, February 26th 2016). Given that the federal funds rate (Selic rate), currently at 14.25% (Bloomberg, 2016), is tremendously high, lending from private banks is definitely not the preferred option (Fernando Sotelino, personal interview, February 26th 2016). Additionally, obtaining collateral would likely be a problem for most starting entrepreneurs, creating additional limitations and leading to a decision likely to be against this type of financing (Julia Wilkinson, personal interview, March 10th 2016).

Public Capital Markets

The Brazilian stock exchange, BM&F IBOVESPA, is the third largest exchange in the world in terms of market value, the second largest in the Americas and the largest in Latin America (Downes, 2014). With such a robust financial exchange, enterprises should be able to raise capital easily through public share offerings. Nonetheless, Brazilian companies that seek funding through its capital markets are not likely to be defined as SMEs (Julia Wilkinson, personal interview, March 10th 2016). Out of 450 companies trading on BOVESPA, only 11 are categorized as “medium”, while the rest are in the “large” company category (Jelmayer, 2014). Financial institutions have taken certain steps and initiatives to include MSMEs in capital flows on public exchange markets (eg. BOVESPA Mais). However, one commentator noted that serving companies that are large enough to trade on public markets might surpass PRISSMA's capacity to assist with providing access to finance (Julia Wilkinson, personal interview, March 10th 2016).

Traditional PE/VC Investors

In the U.S. and other developed economies, PE/VC-style financing has been one of the main drivers of innovation, employment, and economic growth overall (Strebulaev, 2015). These private financing mechanisms have helped many entrepreneurs and companies grow and develop. While private investing has a long tradition in the developed markets, the Brazilian PE/VC market has started growing only relatively recently. During the EM boom, these industries showed potential for growth and progress (Meerkatt, 2010).

Recent negative developments in the political and macroeconomic landscape, however, have affected PE/VC funds in Brazil. Managers raised just US\$1.9 billion for Brazil-focused funds in 2015, a decline of 54%, year-to-year (EMPEA, 2016). Aggregate investment also suffered, declining by 48%, to US\$1.6 billion (EMPEA, 2016).

Analysis

Research interviews revealed that these negative events have had an unfavorable impact on investors' confidence. "Everything in Brazil is in suspense as of now" (Antonio Miranda, personal interview, March 24th 2016). While the EMs globally have seen significant improvements in the quality of institutions and governance, Brazil appears to be lagging behind, having not yet caught up with its counterparts in Southeast Asia. One commentator warned that issues with corruption, combined with macroeconomic and political uncertainty, often discourage investors from entering the Brazilian market (Antonio Miranda, personal interview, March 24th 2016).

While the environmental sector was the primary target for the team's research, the research interviews revealed that investors do not consider environmental projects and enterprises to be a priority in their portfolios. Given that the primary focus of traditional PE/VC funds is market return, this does not come as a surprise. Even in the context of pure market returns, investments with an environmental focus are not common in PE/VC funds' portfolios (Alex Podolsky, personal interview, February 26th 2016, Antonio Miranda, personal interview, March 24th 2016).

Additionally, investors interested in Latin American markets seem to treat Brazil differently compared to other countries. One investor noted that "Everything is just very different in Brazil" (Alex Podolsky, personal interview, February 26th 2016). Whether seeing a completely different market size, different business models, target industries and operational procedures, investors seem

to be very unfamiliar with Brazil, and thus avoid any investments in that market. Interestingly Podolsky noted that, there has also been some anecdotal evidence that successful business models vary between Brazil and the rest of Latin America (personal interview, February 26th 2016). Besides the regulatory and macroeconomic challenges, another obstacle to the success of business models can possibly be explained by the prevalent social inequality. Brazil is a very divided country and experiences higher inequality compared to other Latin American countries. Brazil's Gini Inequality Index, a measure of economic inequality, is 52.7 and is the second highest in Latin America (de Unverhau et al., 2015). This strong social division potentially leads to greater differentiation amid consumers, and exacerbates other issues when transferring business models from other countries (Julia Wilkinson, personal interview, March 10th 2016).

Potential issues for PRISSMA

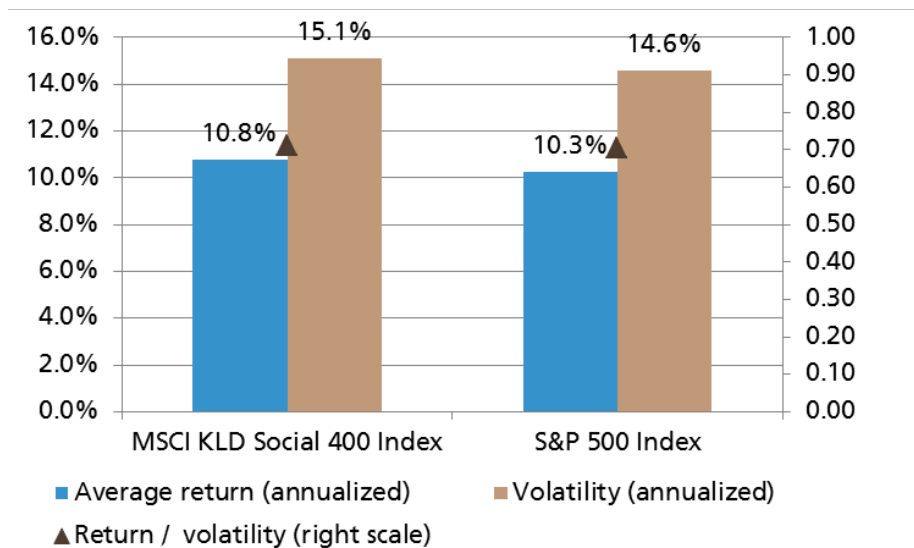
While the target size of investments, instruments, due diligence procedures, and deal structuring vary significantly among investors, one common theme emerging from the interviews was that funds prefer to keep the entire investment process in-house. Generally, funds identify investment opportunities either through personal connections or rigorous analysis and due diligence. In both cases, they universally preferred using and developing their in-house frameworks and capabilities. In extremely rare instances when they accept mediation services, they negotiate a finder's fee with the mediator. However, it is important to emphasize that these opportunities seem to be extremely rare, and are often only limited to very close connections of fund managers. (Alex Podolsky, personal interview, February 26th 2016; Julia Wilkinson, personal interview, March 10th 2016, Antonio Miranda, personal interview, March 24th 2016).

Nonetheless, there are still certain reasons for optimism in terms of a long-term outlook. Given the size and the diversity of the Brazilian market, many investors could be interested in potential opportunities that may arise. After the recessions, and an increasingly potential depression, the economy will hopefully recover and return Brazil back to a positive spotlight (Fernando Sotelino, personal interview, February 26th 2016). "Although the next few years might be painful, accountability, transparency, and democratic institutions are all coming out ahead in the midst of Brazil's corruption scandals and political crisis." (LAVCA, 2016) On an optimistic note, it was reported that there are definitely managers that seem to believe in Brazil's favorable demographics and long-term fundamentals, and hope that they can outlast the difficulties (EMPEA, 2016).

Impact Investing

Although a relatively novel investment strategy, impact investing has demonstrated success, both in terms of returns and portfolio risk diversification. When comparing MSCI KLD 400 Social (capitalization weighted index of 400 US securities that provides exposure to companies with outstanding Environmental, Social and Governance ratings) (MSCI, 2016), and S&P 500 indices, historically, the MSCI KLD 400 Social has outperformed S&P 500, offering both higher returns and lower portfolio volatility (Freedman, 2016).

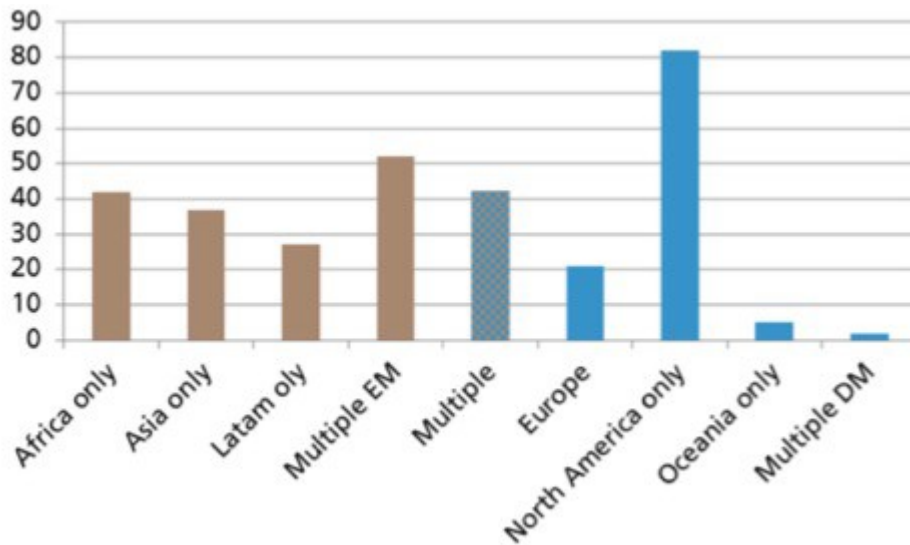
Figure 1. Comparison of MSCI KLD Social 400 and S&P Indices



Source: Freedman 2016.

However, despite both financial and social benefits that impact investing provides, EM investors are still not interested in this type of strategy as much as North American-oriented funds (these funds invest only in North America-based enterprises). More specifically, Latin America seems to be the least popular choice among all EMs in terms of impact investing. (Freedman, 2016)

Figure 2. Number of Impact Investing Funds per Region of Focus



Source: Freedman 2016.

Previously, impact investing landscape was not that developed in Brazil. More recently, together with other large corporations, foundations, banks and multilateral institutions and governments, entrepreneurs and investors have now become a part of a growing ecosystem combining social impact and financial returns (Forca Tarefa de Financas Sociais, 2015). In line with the overall impact investing trajectory of Latin America, Brazil has seen a significant development in its impact investment space.

The Aspen Institute report on impact investing estimates \$150M invested in social enterprises in 2014, which is a significant increase from \$76M invested between 2001 and 2013. However, compared to the total impact investing global market, the Brazilian market is miniscule. It encompasses only 0.4% of global impact investing AUM (ANDE, 2014). While there is a significant increase in investment in this area, Brazil definitely has more capacity for growth.

Analysis

Frederic de Mariz, Executive Director of the UBS Latin American Impact Investing team, explained that, in terms of financial access, Brazil is behind the rest of EM economies. However, he sees great potential in impact investing specifically, and noticed an increasing number of people involved in this field in Brazil. The fact that the sector is still small and developing is actually an advantage given the current circumstances: corruption and macroeconomic risks do not necessarily

affect it as much as they affect other financial sectors. (Personal interview, March 30th 2016). This is the advantage that impact investing funds have over traditional PE/VC strategies.

Although impact investing is different from traditional PE/VC strategies, especially in terms of size and susceptibility to macroeconomic shocks, there are still similarities that were identified in the research. As in the case of traditional PE/VC investors, it is important to note that environmental projects are not a priority for impact investors. In fact, environment and energy efficiency projects often do not seem appealing (Frederic de Mariz, personal interview, March 30th 2016). More commonly, impact investors are focused on education, health, and financial services. The environmental sector is interesting when it is part of another social impact project (Daniel Izzo, personal interview, March 24th 2016).

Additionally, impact investing funds are similar to traditional PE/VC in terms of sourcing deals. They strongly prefer using their in-house capabilities, and performing the due diligence process using their internal expertise (Daniel Izzo, personal interview, March 24th 2016; Frederic de Mariz, personal interview, March 30 2016; Julia Wilkinson, personal interview, March 10th 2016). The selection process is very competitive - at Vox Capital, on average, only one out of 120 projects is selected for financing (Daniel Izzo, personal interview, March 24th 2016). The advantage of having an outsider identify projects is not significant and it does not necessarily offset value of internal efforts and processes (Daniel Izzo, personal interview, March 24th 2016).

Potential opportunities for PRISSMA

First, considering that Brazil is a massive, diverse, and in case of rural areas, a disconnected country, impact investors likely cannot learn about all the interesting projects and initiatives happening outside Sao Paulo, Rio de Janeiro, and other major cities. Potentially, it would be beneficial if there was a partner like PRISSMA, who has a strong knowledge of the region and network of consultants, to search and source for interesting projects and enterprises in rural areas (Julia Wilkinson, personal interview, March 10th 2016).

Second, while the impact investing industry itself has been isolated from shocks, corruption, and macroeconomic risks, the investors who help to create these funds have definitely become more scarce. In the case of Vox Capital, their first fund was created mostly from the capital of development banks (⅔ of the fund), and the collection of family investments (30 families gave ⅓

of the capital). Given the macroeconomic issues and uncertainties in the EMs in general, it is likely that the establishment of new funds and capital raising will be hindered. Thus, a company like Vox Capital would definitely appreciate assistance when identifying and connecting with new investors and sourcing capital for new funds. If it were able to obtain connections with investors to help facilitate capital raising, Vox would be willing to compensate a third party by offering 2-3% of raised capital (Daniel Izzo, personal interview, March 24th 2016). While Vox Capital would accept an intermediary in searching for investors to help impact investment fund establishment, it is important to distinguish this from an intermediary that would help the identification of investment opportunities. Like other funds, Vox Capital strongly prefers in-house due diligence and does not need intermediaries for finding potential projects and enterprises. The intermediary might be considered only if a mediating third-party is able to bring in investors and capital for establishment of new funds inside Vox Capital.

Third, while impact investors do not appear to need assistance with internal due diligence, PRISSMA could be helpful in assisting entrepreneurs, and help them in preparing for and identifying impact investors. Business and financial literacy in Brazil has been very low, especially in the rural areas outside major cities (Julia Wilkinson, personal interview, March 10th 2016). This issue has been noticeable in even more formal and traditional forms of employment. A Gallup study has shown that education and skills training, including entrepreneurial and financial literacy training, is necessary to improve Brazil's growth and economy as a whole (Crabtree, 2013). New York's startup and entrepreneurship ecosystem has been enriched by several organizations whose purpose is to provide learning and education services to entrepreneurs and potential founders of MSMEs. For example, *Be Social Change* is a company that educates, connects and trains social entrepreneurs on development of their ideas and enterprises (Be Social Change, 2016). *Center for Social Innovation* has a similar purpose, with offering co-working spaces in New York City and Toronto. Similar organizations are also popular in Europe and Canada: *Social Innovation Europe* (Social Innovation Europe, 2016) and *Social Innovation Generation* (SiG, 2016), are just some of the examples of organizations and platforms that, in multiple ways, support entrepreneurs through improving their entrepreneurial, financial, and business literacy. This type of activity would be even more relevant in a less developed market, and would help entrepreneurs source the much-needed capital.

Finally, all impact investors agreed that, since the industry is in the developing stage, it is necessary to increase advocacy and make important stakeholders aware of this investment strategy. Not only is advocacy important in expanding literacy and the importance of this industry, it is essential in involving more players, expanding the network of stakeholders, and potentially unlocking capital and investment opportunities. (Daniel Izzo, personal interview, March 24th 2016; Frederic de Mariz, personal interview, March 30th 2016). Given its expertise, these are areas in which PRISSMA can provide its assistance, and which will be further discussed in this report.

POTENTIAL CLIENTS

In order to build a sustainable consulting practice in Brazil's investment sphere, PRISMA needs to identify where it can "add value" to potential clients, and focus its target areas. The following emerged as common themes in both the interviews held with key informants, and through the comprehensive literature review and desk research carried out by the team.

Connectivity and Alternate Sources of Finance

The huge size of the Brazilian market coupled with relatively low business literacy levels means that *connectivity* is a critical issue in Brazil. As such, an organization like PRISSMA can be useful in educating entrepreneurs and helping them identify and connect to potential investors, particularly in rural areas where impact investing funds do not operate (Julia Wilkinson, personal interview, March 10th 2016). In such regions, there are opportunities to help enterprises identify financing opportunities and to connect them with investors. (Julia Wilkinson, personal interview, March 10th 2016). PRISSMA may also consider diversifying potential sources of finance and identifying additional niche opportunities to provide its services. For example, it may consider funds that are more long-term focused and thus, relatively less concerned by current market risks. These include foundations, pension funds and endowments (Julia Wilkinson, personal interview, March 10th 2016). It can also look into more domestic sources of funding such as those available for sanitation projects (Fernando Sotelino, personal interview, February 26th 2016).

Assessing Potential Projects

Interviewees from investment organizations had mixed opinions with regards to the value PRISSMA could add in assessing potential projects, with some holding pessimistic views. The

expertise of assessing projects is well established in Brazil's competitive markets (Mario Engler, personal interview, March 22nd 2016). As such, many representatives of private equity and venture firms have in-house capabilities for accessing potential projects and do not rely on third party analysis. Vox Capital, Brazil's first impact investing fund that works with both small and big funds chooses approximately 10 companies per fund to invest in. These investments are made at embryonic stages after going through several rounds of cuts; for every 120 companies, only 1 is selected by the fund for investment purposes, taking into consideration social impact, management and company accounts, and the potential for profit and returns. (Daniel Izzo, personal interview, March 24th 2016). Such reluctance to rely on and trust third party analysis of potential investees emerged as a common theme in most interviews, with most organizations opting to use in-house capabilities to source clients (Alex Podolsky, personal interview, February 26th 2016). In the extremely rare occasion where mediators were involved, their role was limited to making an initial introduction and/or presenting an opportunity in return for a fee (usually a percentage). As such, intermediaries usually serve to connect and often have no role beyond that in the process (Alex Podolsky, personal interview, February 26th 2016)

Business and Revenue Model

PRISSMA's potential business model should be reconsidered. Interviews expressed reservations about the ability to charge a fee both from the entrepreneur/investee and the bank/investor, primarily due to the inherent conflict of interest. Organizations like PRISSMA are more likely to obtain some form of compensation as a one-time retainer fee than an on-going commission (Fernando Sotelino, personal interview, February 26th 2016).¹¹ Furthermore, the concept of a finder's fee is rare in Latin America (Julia Wilkinson, personal interview, March 2016). Given the nature of the investment community, an intermediary would have to be very well connected and respected for its recommendation to be valued. PRISSMA would therefore have to establish a proven track record and credibility in Brazil to have large investment funds utilize its analysis and recommendations of potential projects.

Pricing

Daniel Izzo, co-founder and Executive Director of Vox Capital, did believe that the use of intermediaries (like PRISSMA) to bring in projects could reduce the operational work for organizations in rare occasions. However, such a service would have to be priced very competitively to justify forgoing in-house assessments (finder's fee below 5%). In other words, it would have to offset the price of internal employee conducted analysis and pre-screening of potential projects (personal interview, March 24th 2016).

¹¹ A retainer fee is usually a flat/ lump sum fee paid out at the beginning of the engagement.

Carving out a Niche

An analysis of large impact investing funds shows that PRISSMA may be able to use its expertise and connections to position itself as an intermediary that can accelerate conversations with big banks like IDB and CAF to unlock investments,. In doing so, PRISSMA may also be able to carve a niche for itself

International Development Agencies and Development Finance Institutions are of crucial importance in structuring funds for impact investing (“anchor investors”) (Paulo Mattos, personal interview, March 24th 2016). However, these agencies and institutions have a very slow decision making process (Daniel Izzo, personal interview, March 24th 2016). For example, Fund 2 of Vox Capital relies heavily on the Brazilian Development Bank (BNDES) but with slow and laborious negotiations, putting such funds together takes a long time, often stretching into years (Daniel Izzo, personal interview, March 24th 2016). Thus, by offering its services to accelerate talks and negotiations, PRISSMA could provide valuable services to clients.

Advisory Services

The role of advisory services in the public sector was another theme that emerged from some interviews. Mario Engler, Professor at Escola de Direito da Fundacao Getulio Vargas (Getulio Vargas Foundation, Law School) saw an opportunity for public sector advisory services, as investments banks have traditionally provided these services for private actors in the country. “Brazil lacks qualified operators, not capital investors”, he believed. Thus, there is potential room for PRISSMA to provide financial advisory services¹² (Mario Engler, personal interview, March 22nd 2016). He also believed that Brazil presents opportunities for firms like PRISSMA to stimulate international players to participate in public sector bidding processes (Mario Engler, personal interview, March 22nd 2016).

¹² In the face of tightening budgets, different levels of government need to maximize performance and efficiency, and large consulting group’s like Deloitte’s Global Public Sector already provide such advisory services to public sector clients across the world.

Helping Small and Medium Sized Investees Find Stable Sources of Funding

Throughout the interviews, the ability to secure a stable flow of funding was seen as a common challenge faced by small to medium sized players looking for investment. Without the in-house capacity, people, or expertise to look for consistent flows of funding, organizations and entrepreneurs rely on contacts and opportunities that arise in an ad-hoc manner. For example, a representative from CICLA Brasil, a technology development company for social inclusion, believed that small and medium sized companies in such sectors might be willing to share a percentage of investments with intermediaries that are able to secure a stable and steady source of funds for them (Daniel Carvalho, personal interview, March 24th 2016). Thus, PRISSMA could add value by helping connect such organizations to investors that would be willing to finance projects on a long-term and stable basis.

RECOMMENDATIONS

The findings described in the previous sections of this report led to the development of a set of our broad recommendations to help guide PRISSMA in structuring a market strategy for its Brazilian office. These recommendations touch on a variety of issues, ranging from identifying industry sectors, potential partners, to highlighting potential services, products and strategies for business development that PRISSMA may consider to achieve its business goals and objectives.

Expand Focus Areas

Focus on companies developing projects with social impact. Sectors such as health and education have been found to be a major focus of impact investors, rather than the environmental sector. Various impact investors interviewed by the team work exclusively with social impact or hybrid projects that have positive environmental and social outcomes. The rising interest of investors in this area increases demand for social impact projects, creating opportunities for PRISSMA.

Within the environmental sector, focus on waste management. The introduction of legislation in 2010 makes waste management a promising sector despite the economic crisis. Moreover, involving a strong social component through waste collector programs, the sector is more likely to attract impact investors. Lastly, the decentralized nature of waste management in Brazil allows more actors to add value.

Assist projects in rural areas to connect to investment opportunities. The lack of connectivity between rural areas and impact investors presents a crucial gap. Impact investors are generally located in the larger cities of Sao Paulo and Rio de Janeiro, while the rest of the country remains physically and socially isolated from the investment community. As a result, potential to develop social and environmental projects outside larger cities exists. This could be a good opportunity for PRISSMA to identify potential clients in need of services such as intermediation and strategic planning, among others.

Focus on medium and small scale enterprises. The team's findings illustrated that most larger companies and impact investors in Brazil tend to have in-house experts for services that PRISSMA

provides. This includes strategic consultancy, project assessment and selection, and securing of investments. Small and medium entrepreneurs, on the other hand, seem to be in more need of such assistance as they are often unable to secure funding for their projects. The entrepreneurs interviewed demonstrated an interest in hiring third parties to help secure funding, and indicated a willingness to compensate using a percentage of earnings and funding acquired.

Potential Partners And Clients

Target entrepreneurs. Given that impact investors have a strong preference for performing activities such as project selection and evaluation in-house, the potential for PRISSMA to add value in this capacity is limited (see Recommendation below).however, enterprises, especially small and medium-sized, often lack the know-how of project development and struggle to secure investments. PRISSMA should therefore focus on companies as opposed to impact investing funds.

Expand connections with DFIs that can fill the void left by BNDES. As reported in previous sections, there has been a decline in loan disbursements by BNDES. However, investment demand for projects with social and environmental impact, for both large and medium scale initiatives, still exists. This presents an opportunity for PRISSMA to develop strategic connections with alternative DFIs that can bring investments to Brazil.

Expand Services And Products

Improve business and financial literacy among entrepreneurs. With its project finance and project management expertise, PRISSMA could develop seminars and workshops to help entrepreneurs understand available financing opportunities, and how to structure business and revenue models to attract capital. This is especially applicable to small and medium scale enterprises. The existing reach of the Impact Hub can be of potential advantage to PRISSMA in identifying specific unmet needs of stakeholders, such as entrepreneurs, trade groups, and small business associations. PRISSMA can help by granting access to its mentor, advisory and investor networks through organizing workshops and seminars to:

- Highlight innovative financial models and investment sources for social and environmental enterprises in Brazil using illustrative, sector-specific case-studies;
- Help inform potential clients of key steps and investment criteria used by investors, and provide assistance for navigating Brazil's regulatory landscape;
- Train potential clients on how to create/improve investment memos and business models, and provide a professional review of overall investor pitch; and,
- Provide access to PRISSMA's network to facilitate relationship building with investors.

Help identify funding opportunities for small and medium scale enterprises. Based on the recommendations above, small and medium scale enterprises often struggle to secure investments. This leaves room for PRISSMA to identify funding opportunities and act as an intermediary between entrepreneurs and potential investors.

Do not focus on strategic consultancy services in traditional sectors. Traditional sectors such as energy, transportation, and water and sanitation have a well-established market of strategic consultants to support entrepreneurs and projects. PRISSMA should be aware of the competitiveness of this market niche.

Charge competitive origination fees over raised capital. Some impact investors signaled their willingness to provide compensation of 2-3% of the capital brought in by a third party such as PRISSMA. To be more competitive, the fee can be structured over the amount of capital raised, instead of over the total value of the fund, as is a common market practice. The possibility indicates that looking to impact investors in Brazil also as clients for securitization of international resources presents significant opportunities for PRISSMA.

Build a revenue model that is partially based on equity shares. Take on an equity stake in enterprises as a compensation for PRISSMA's services. This would expand PRISSMA's network among entrepreneurs, and also represent PRISSMA's long-term revenue stream.

Potential Business Development Strategies

Clearly define and differentiate PRISSMA’s products and services. The Brazilian market is saturated with project advisors offering general and technical consultancies for projects. Differentiating PRISSMA’s services by highlighting the company’s strengths, such as its connections and expertise with international financing, for instance, will give PRISSMA a greater advantage in the Brazilian market. With this in mind, it is also crucial that PRISSMA clearly defines the services it offers, whether it is intermediation, project financing or strategic consultancy.

Transform current relationships into sources of referral or actual clients, and enlist the support of past business relationships in Colombia and Peru, as well as the professional networks of PRISSMA’s team. This support can range from basic word-of-mouth promotion to written testimonials for use in promotional material.

Clearly summarize its value proposition on the front page of PRISSMA’s website. Doing so would differentiate PRISSMA from the competition, highlight its unique advantage(s) to clients, and act as a first point of contact for new website visitors by:

Specifically defining the target client	Highlighting a unique benefit and/or identifying what enables PRISSMA to serve its clients better than other consulting organizations	Defining PRISSMA’s specialization and expertise more narrowly
e.g. instead of “we support our clients or we support companies in”, define the client; “we support small-and-medium sized private, public and third sector organizations/ with x to y number of employees	e.g. PRISSMA’s access to networks of financial development institutions gives provides a competitive edge in reaching out to investors, or its competitive pricing policy that is lower than industry standards	e.g. what does PRISSMA mean when it describes itself as having “specialized methodologies” on its website?

Use past experience of grass root projects in other countries to help develop and outline PRISSMA's advantages to clients. (For example, did previous clients value PRISSMA's project management expertise in specific areas, or was it PRISSMA's ability to provide better access to a network of international investors that helped it secure its clients?)

Create a standard presentation about PRISSMA. Such a presentation can be used to facilitate conversations with new acquaintances or be shared upon request.

Expand its network and develop a portfolio of known projects and partners. By identifying entrepreneurs and promising MSMEs, especially in the rural areas where there is no financial or business infrastructure, PRISSMA could create a network and portfolio of potential projects that investors would eventually be interested in. This would help PRISSMA create a network and develop a strong brand name and reputation in the social entrepreneurship arena.

Increase advocacy and promote impact investing. By involving and educating entrepreneurs, and keeping them informed on various impact investing opportunities, PRISSMA can further enrich the Brazilian impact investing ecosystem. This makes market more attractive to investors, and unlocks potential funds.

Take advantage of public speaking opportunities. Such platforms can include the Social Enterprise World Forum (SEWF), the Annual Private Wealth Brazil Forum, and Impact Investing Conferences organized by academic institutions like University of St.Gallen (HSG), would highlight the expertise of the organization and its team. Furthermore, showcasing projects where PRISSMA has utilized different business models for impact investing in other countries would also improve its reputation. Constructive encounters between the participants at such conferences can lead to new joint project ideas and opportunities for PRISSMA.

Ensure that project files, photos, and video clips added to the website remain up-to-date and representative of PRISSMA's current portfolio.

Include a detailed section on PRISSMA's clients to make the website more informative for users. The section should describe the capacity in which PRISSMA is, or has in the past, engaged with each client. For example, the website currently lists the World Bank (WB) as a client; a fact PRISSMA can leverage to a significant extent in creating credibility for its brand name. However, no details are provided on how PRISSMA served the World Bank (name of the

project/duration/location/time). Logos of the clients currently listed can act as links that take allow users to obtain more information either through a drop-down option, or by linking to a different page with details.

Drive search engine traffic by adding regular updates and content that can be shared by users (such as small entrepreneurs in Sao Paulo or clients of the Impact Hub). Doing so would help increase the click through rates for Search Marketing (SEO), thereby increasing online

CONCLUSION

Entering a new market as vast, complex and extensive as Brazil requires extensive research, rigorous planning, and follow-throughs. As PRISSMA opens its office in Sao Paulo, with the aim of becoming one of the leading consulting firms in socio-environmental impact, project development and finance in Latin America by 2020, it will have to carefully and vigilantly analyze the market for its services. Furthermore, PRISSMA is embarking on a challenging course of business expansion in Brazil at a time when the country is facing critical economic and political travails. Based on its previous consultative experience, PRISSMA offers potential for involvement in the Brazilian financial market. However, it must carefully consider and weigh its target market opportunities and strategies to be successful.

In the report, the team has recommended a number of steps that the client may undertake to reach its objectives. Some may be quite new or different for PRISSMA, and yet in a difficult and complex financial environment that Brazil faces, they are worth considering. It is the team's belief that if PRISSMA embarks on a carefully structured approach, it will eventually reach its long-term objectives. Brazil offers immense financial opportunities; nonetheless, obtaining them requires discipline, focus and perseverance, which are the qualities the team believes PRISSMA possess.

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APPENDICES

APPENDIX I. PHASE 2 INTERVIEWS (JANUARY FIELDWORK)

Ana Paula Fava, *International Adviser*, State Secretariat for the Environment

Celia Regina Bueno Palis Poeta, *Executive Assistant*, CETESB

Cristiano Kenji Iwai, *Manager*, CETESB

Eduardo Mazzolenis Olivina, *River Pollution Expert*, CETESB

Francesco Sirangelo, *Technical Manager for the Environment*, SINDUSCON -The Construction Union

Francisco Antunes de Vasconcellos Neto, *Environment Vice-President*, SINDUSCON - The Construction Union

Guilherme do Couto Justo, *Sustainability Specialist*, Bunge

José Roberto Costa, *Executive Assistant*, CETESB

Larissa Faresin Furtado, *Sustainability Coordinator*, Ernst & Young

Leonardo Dutra, *Sustainability Director*, Ernst & Young

Marina Helena Martins, *Air Quality Expert*, CETESB

Nelson Monegor Junior, *Soil and Water Quality Expert*, CETESB

Oswaldo Lucon, *Technical Adviser*, State Secretariat for the Environment

Patrick Johann Schindler, *International Cooperation Adviser*, Sao Paulo State Government

Rodrigo Spuri, *Sustainability Specialist*, Bunge

Rosângela Pacini Modesto, *Underground Water Expert*, CETESB

Rui Brasil Assis, *Water Resources Engineer*, State Secretariat for Water Resources

Samuel Roiphe Barreto, *Water Expert*, Nature Conservancy Brazil

Sylmara Dias, *Professor, EnvironmentandSocietySpecialist*, Universidade de Sao Paulo

APPENDIX II. PHASE 3 INTERVIEWS

Alex Podolsky, *Latin American PE/VC Finance Professional*

Antonio Miranda, *Specialist in Latin American Equity, Fixed Income and Alternative Investment Management*

Christopher Sabatini, *Adjunct Professor of Political Development of Developing Countries, Columbia University in the City of New York*

Fernando Sotelino, *Adjunct Professor of International Banking and Business Strategy for Financial Institutions, Columbia University in the City of New York,*

Frederic De Mariz, *Executive Director, UBS*

Julia Wilkinson, *Social Impact Investor and Consultant, President of the Board, Finance for Good Brazil*

Lina Salazar Ortegon, *Corporate Communications, Inter-American Investment Corporation (IIC)*

APPENDIX III. PHASE 4 INTERVIEWS (MARCH FIELDWORK)

Bernardo Rangel, *Associate*, Patria Investimentos

Daniel Carvalho, *Executive Director*, CICLA Brasil

Daniel Izzo, *Partner and Executive Director*, Vox Capital

Mario Engler, *Professor and Master's Coordinator*, Escola de Direito da Fundacao Getulio Vargas

Paulo Mattos, *Investment Specialist*

Thierry Besse, *Project Manager*, PPP Metro Line 6 at Sao Paulo State Metropolitan Transport Secretariat

Tomas de Paula, *Director*, Companhia Paulista de Parcerias

APPENDIX IV. SAMPLE INTERVIEW GUIDE 1

A Sample Interview Guide: Government Authorities

Interviewee: Representatives, the Secretariat for the Environment of Sao Paulo

Interviewer: EPD Workshop Group

Location: Sao Paulo, Brazil

Introduction

Good morning/afternoon. Thank you for meeting with us today. My name is _____ and this is _____. We are student researchers from Columbia University in New York and are working on a research project to identify the key environmental problems affecting the Southeast Region of Brazil.

We are not employed by any external organization and we are not getting paid for conducting this research. The information we gather during this research project will be incorporated in a report to help organizations better understand the demand for structuring and financing environmental development projects in Brazil.

The interview will take about one hour. You do not need to answer all of the questions, and you may stop the interview at any time. Before we begin the interview, we would first like your permission to record our conversation. The recording will help us remember what you say, and it will help us engage with your responses more deeply during the interview session. We will keep the recording in an encrypted format until we finish our study, and it will be deleted after the research is done. We will not record your name on tape if you prefer.

Would you be willing to answer some questions for us? **(Wait for consent.)**

May we identify you as a representative of the Secretariat for the Environment? We will not use your name or position unless you agree. **(Wait for consent.)**

Will you allow us to record today's interview? **(Wait for consent.)**

***If she/he says no:** I completely understand your concern, and we will proceed with our discussion without a recorder. Thank you for your honesty.*

Do you have any questions before we begin? **(Wait for questions.)**

A. Ice-Breaking & Rapport-Establishment

1. Could you begin by talking a little bit about the organization you are working for and your professional background?
 - a. How long have you been working for the Secretariat for the Environment of Sao Paulo?
 - b. What are your main responsibilities?

Transition 1: As a Secretariat professional, you must be familiar with the environmental challenges. Now, we would like to talk a little bit more in-depth about key problems of Sao Paulo concerning specific areas of environmental sustainability.

B. Environmental Challenges of Sao Paulo

1. What do you see as the main environmental challenges in Sao Paulo?
 - a. Issues to consider: Rainforest deforestation and conservation, drinking water supply, waste-water management etc.
2. In your opinion, what is the most crucial environmental problem that has the highest impact?
 - a. Probe: How does this environmental problem affect citizens?
 - b. Is this problem specific to the state of Sao Paulo?
 - c. How long have you been facing this problem?
 - d. What are the most challenging issues you are facing with regards to this environmental problem?

Transition 2: Now, we have gained deeper understanding of the key problem areas of Sao Paulo. We would like to look beneath the surface to understand what institutional / legal structures, or economic, political and social factors may contribute to the current situation.

C. Roots of Environmental Problems

1. What do think are the causes of the key environmental problem that you have mentioned?
 - a. Issues to consider: Inefficient irrigation systems, low levels of waste-water reuse, waste culture of population etc.
 - b. Probe: Could you elaborate from various perspectives, such as financial, social, and maybe cultural perspectives?
 - c. Is the current regulatory system sufficient to deal with the situation?

Transition 3: Now, we have established causes of environmental problems, and we would like to switch gears to understanding the ways or policies for addressing these issues.

D. Overcoming Challenges

1. How are issues related to environmental sustainability prioritized at the government level?
 - a. What are the major agencies involved in this process?
2. In what ways does your office seek to address the key environmental problem that you have mentioned?
 - a. Probe: Could you tell us more about related policies or measures to overcome this environmental problem?
 - b. What is your assessment of their effectiveness?
 - c. How could they be improved?
3. In your opinion, what should be done to overcome this environmental problem?

E. Role of Private Sector

1. Do you think private sector companies are actively implementing policies to improve environmental sustainability?
 - a. [If no] What can be the main reason for that?
 - b. [If yes] Could you give us an example, what kinds of policies they are implementing?
2. Are there any incentives that the government provides companies to improve their social responsibility?
 - a. [If yes] Could you describe the process that companies must go through in order to benefit from these incentives?
3. How can companies be encouraged to promote environmental sustainability at a deeper level?
 - a. Probe: Do you think that consulting firms are useful for helping companies enhance their environmental sustainability efforts?

Transition 4: We are nearing the end of our interview.

F. Closing questions

1. Is there anything, you would like to share that we didn't ask about?
2. Do you have suggestions of anyone else we should talk to?
3. Is there any information you shared that you would like us either not to publish or not to attribute to you?
4. May we include your name in the list of people we met in our final report?
5. If we have follow-up questions or requests for factual confirmations, can we contact you again?

G. Conclusion

That concludes our interview. Thank you very much for your time, and for sharing your valuable insights. The information you shared today is incredibly useful for our research. If you are interested in receiving more information about our report, or if you have further questions at a later time, please contact [name] at [email/phone]. Thank you again for your time and we really appreciate your insights on this issue.

APPENDIX V. SAMPLE INTERVIEW GUIDE 2

A Sample Interview Guide: Impact Investors

Interviewee: Representatives, Impact Investors

Interviewer: EPD Workshop Group

Location: New York, U.S.A

Introduction/Background

Good morning/afternoon. Thank you for meeting with us today. My name is _____ and this is _____. We are student researchers from Columbia University in New York, and are working on an impact investing research assignment with the Latin American consulting firm PRISSMA whose work focuses on identifying and supporting the development of projects in the fields of social innovation and environmental sustainability. Our team would like to research and understand the main factors and criteria of funds when selecting potential impact investing projects, as well as the overall dynamics associated with the process, in particular when matching potential investors with promising environmental projects in Brazil.

The interview will take about _____. You do not need to answer all of the questions, and you may stop the interview at any time.

Would you be willing to answer some questions for us? **(Wait for consent.)**

A. Ice-breaking & Rapport-Establishment

1. Could you begin by talking a little bit about the organization you are working for and your professional background?
2. Can you briefly describe how your organization is involved in impact investing?

Transition 1: Now, we would like to talk a little bit more in-depth about the impact investing arena.

B. Impact Investment Arena

3. Where do emerging markets figure in the impact investing arena?
 - a. Where does Brazil in specific figure in the impact investing arena?
 - b. What do you see as future growth trends in impact investing in Brazil?
4. What are the main sectors that you focus your investment on? In other words, do you take a narrow specific sector approach or a multi sector one?
 - a. How much of your investment focus is on environmental sustainability?

Transition 2: Thank you for sharing that information. We would now like to talk in more detail about the main factors and criteria of funds when selecting potential impact investing projects

C. Selecting Potential Impact Investing Projects

7. How do you select potential investees, and do you use intermediaries for the purpose?

a. [If Yes] Do you pay a finder's/origination fee?

Probe: What is the range of the fee that you generally pay?

8. What are the criteria you use to identify potential investee companies?

a. Are there any specific conditions under which you invest in these companies?

b. Are there any growth stages you focus on? (issues to consider: scale stage/ seed capital providers,/ accelerators)

9. What is the average range of your investments?

Probe: Is there a minimum or maximum cut off criteria for investment?

8. How do you determine the risk of your investment?

a. What would you say that the major risks are in Brazilian environmental space, and how do you go about mitigating them?

Transition 3: Now we would like to talk a bit more specifically about the investment vehicles and asset classes used for impact investing

D. Investment Vehicles and Asset Classes

9. What are major investment vehicles and asset classes you use for impact investing? (e.g. equity, debt)

a. Based on what do you select the asset class for investing?

Probe: Do you usually select debt for riskier markets?

11. If debt is the primary asset class that you use, can you tell us a bit more about the terms of that investment?

a. Loan vs Bond (Issues to consider: If bond, ask about maturity date and yields)

b. Could you talk a little about the interest rates and repayment periods that are employed?

c. Are there any other special terms that potential investees should be mindful of?

12. If equity is the primary asset class that you use, what percentage of equity do you usually prefer to have?

a. How much operationally do you get involved for business whose equity you own?

13. What kind of financial returns do you expect from your investments?

Probe: Would you settle for lower financial returns if you invest in organizations that have stronger philanthropic aims and social missions?

Transition 4: We are nearing the end of the interview. But before we end it, we would like to gain insight into your perspectives on some of the key challenges facing impact investing.

E. Challenges

14. With regards to Brazil, what are some of the key challenges facing impact investing?

a. Are stability and corruption issues of primary concern to you at this point?

[If Yes] Can you briefly describe how long it would take for your organization to start investing in Brazil again?

[If No] How do you plan to mitigate such risks?

F. Closing Questions

1. Do you have suggestions of anyone else we should talk to?

2. Is there any information you shared that you would like us either not to publish or not to attribute to you?

3. May we include your name in the list of people we met in our final report?

4. If we have follow-up questions or requests for factual confirmations, can we contact you again?

G. Conclusion

That concludes our interview. Thank you very much for your time, and for sharing your valuable insights. The information you shared today is incredibly useful for our research. If you are interested in receiving more information about our report, or if you have further questions at a later time, please contact [name] at [email/phone]. Thank you again for your time!

APPENDIX VI. SWOT ANALYSIS FOR PRISSMA

Strengths	Weaknesses
<ul style="list-style-type: none"> ▪ Already present in two Latin American countries (Peru and Colombia) ▪ Qualified and diverse team ▪ Existing professional network and outreach of current team members (WB, IDB etc.) ▪ Engagement with the Impact Hub in Sao Paulo provides PRISSMA with insight into the needs of entrepreneurs ▪ Revamping of website is a positive development towards the improvement of its online presence 	<ul style="list-style-type: none"> ▪ Lack of brand visibility in the field of consulting ▪ Geographical reach in Brazil is limited ▪ Very broad scope of services being offered (trade-offs between scope of work and ability to position itself as an expert in a certain field) ▪ New to the Brazilian market
Opportunities	Threats
<ul style="list-style-type: none"> ▪ Opportunities to improve business and financial literacy among entrepreneurs ▪ Opportunities to expand services to rural areas where investments are scarce ▪ Opportunities to develop a niche in providing advisory services to the public sector ▪ Opportunities to work in waste management which has become a promising sector following legislation in 2010 ▪ Opportunities to target small and medium sized entrepreneurs who often lack the know-how of project development and struggle to secure investments 	<ul style="list-style-type: none"> ▪ Macroeconomic landscape in Brazil impacted by economic and political turmoil; difficulties in predicting future trends ▪ Investment landscape could make it difficult for PRISSMA to find investors in environmental and social sectors ▪ Investors opting for in-house assessment of potential projects to invest in pose a threat for PRISSMA

§



Strategic Focus Report

PRISSMA: Projects of Social Innovation and Environmental Sustainability

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Introduction

As specified in our workplan, please find below the Strategic Focus Plan that is based on our initial desk research and field trip in January. The report outlines the main areas of focus for PRISSMA's research and helps further define our forthcoming March field trip, as well as future primary and secondary research. The report is divided into two major sections (environmental issues and impact investment issues) and gives an overview of the next steps ahead.

Environmental Sector Analysis

The primary goal of our January fieldtrip was to identify two to four of the most pressing environmental issues in Sao Paulo. In order to do so, we conducted interviews with several representatives of the state government, governmental agencies, unions, private companies, academia and civil society organizations (Please see Annex 1 for the full list of interviews conducted).

Three main issues were emphasized: water management, waste management, and emissions reduction. It is, however, important to highlight that these findings are preliminary, and based on the interviewees' views and opinions. These are subject to adjustments, and will be confirmed on a second fieldtrip that is scheduled for the third week of March

(1) Water Issues

Brazil, sometimes referred to as the “Saudi Arabia of water,” with one-eighth of the world’s fresh water and mighty rivers such as the Amazon, is suffering from a severe water shortage (Romero, 2015). Currently, many residents are facing water shortages and officials anticipate rationing of water services. Water specialists have warned against the crisis augmenting and hampering the country’s efforts to strengthen its economy (Romero, 2015). According to a recent study, cutting down trees decreases the capacity of humidity release in the air, affecting the amount of rainfall in southeast Brazil (Romero, 2015). This has also begun affecting Rio de Janeiro, Minas Gerais, and other states. However, it is the most acute in Sao Paulo. According to the interview with The Nature Conservancy Brazil, Sao Paulo has been facing a decrease in the stock of water in its main water supply system since 2010 (S. R. Barreto, personal communication, 2016). The main sources of drinking water within the Sao Paulo Metropolitan Region are the Cantareira and Alto Tiete which together provide the water consumed by 70% of the population (S. R. Barreto, personal communication, 2016).

Figure 1: Total Volume (m³) of Water Supply Systems (2010-2015)¹³

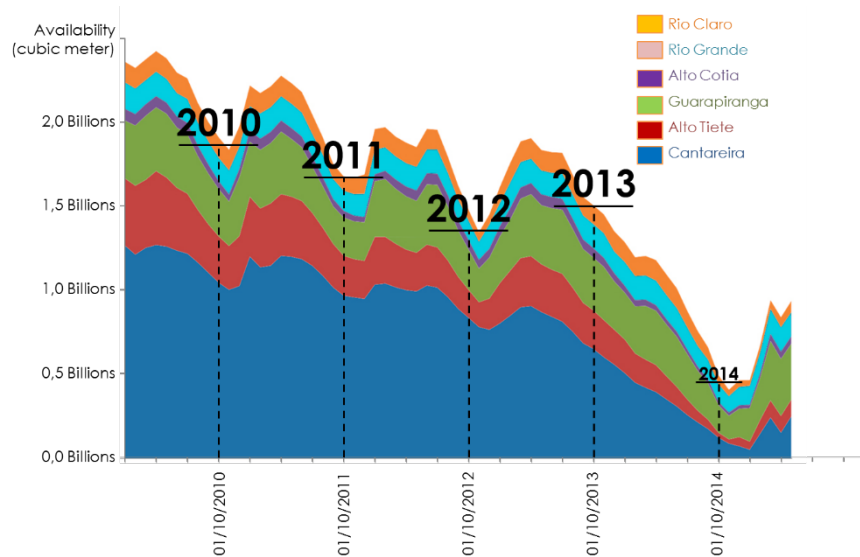


Figure 1 illustrates the decrease in the water availability in each water supply system operator. As can be seen, the stock of water has decreased most in Cantareira and Alto Tiete watersheds. “The Alto Tiete watershed, which provides 15% of the MRSP’s¹⁴ total water supply and encompasses 99.5% of the population of Greater Sao Paulo, has annual water availability of just 201 m³ per capita and is in the most critical condition of all the twenty-two watersheds in the State of Sao Paulo” (The World Bank, 2012, p.3). The Cantareira watershed, on the other hand, is running on emergency reserves as of January 2015, operating with 5% capacity. The Nature Conservancy Brazil emphasizes that it is the first time for Sao Paulo state to use technical reservoir which occurs when water stock decreases to 5% level (S. R. Barreto, personal communication, 2016).

¹³ The Nature Conservancy Brazil. (2016).

¹⁴ Metropolitan Sao Paulo Project (MRSP)

CAUSES OF WATER ISSUES IN BRAZIL

Several factors contribute to decreased water quality and availability. The largest reservoir system near Sao Paulo, the Cantareira System, is near depletion, mainly due to an existing severe drought, polluted rivers, deforestation, and population and growth (Romero, 2015). The water resources have been strained by dramatic population growth in the second half of the 20th century together with unplanned land use, and rapid industrial development (The World Bank, 2012). According to the Nature Conservancy Brazil, accelerated growth of the cities and the inequality within them also exacerbates the water problem (S. R. Barreto, personal communication, 2016). The governor of Sao Paulo state has also cited climate change as a reason for the water crisis (Romero, 2015). Climate change has also been emphasized as the underlying reason for water crises as well as all other environmental problems in the interview with the State Secretariat of the Environment (O. Lucon, personal communication, 2016).

Growing water scarcity and rising pollution of drinking water reservoirs are further worsened by inadequate provision of urban services including sanitation (The World Bank, 2012). The interviews conducted with the State Secretariat for Water Resources and Sao Paulo State Environmental Control and Regulation Agency (CETESB) have also revealed the sanitation problem of Sao Paulo state. According to State Secretariat for Water Resources, in Sao Paulo state, 85% of sewage is collected and only 70% of this volume is treated due to lack of adequate resources (R. B. Assis, personal communication, 2016). Even though Sao Paulo state has a good record in water supply and sanitation compared to the national average, it is still worse compared to other developing countries (R. B. Assis, personal communication, 2016). Additionally, inequality within cities contributes to the water problem. According to CETESB, improvised

neighborhoods often lack adequate sanitation services and discharge sewage or solid waste directly to the rivers and reservoirs (S. Dias, F. Vasconcellos, F. Sirangelo, G. Justo, A. P. Fava, O. Lucon, R. Spuri, among others, personal communication, 2016). To illustrate, most of the two million residents in the Guarapiranga water supply system live in informal settlements and only half of the dwellings have sewage collection systems and contribute to rising sewage pollution in reservoirs and rivers, wastewater and garbage discharge, and storm water runoff (The World Bank, 2012).

Stress on water availability is also aggravated by inefficient water use and water management. To illustrate, in 2011, average per capita water usage in Sao Paulo was about 180 liters per day, whereas this amount is less than 120 liters per day in Germany (The World Bank, 2012). Also, according to the State Secretariat for Water Resources, in Sao Paulo state, the loss of water during water transfer is around 31% (20% inefficient pipelines and 11% illegal usage) (R. B. Assis, personal communication, 2016). Network distribution losses are too high compared to other developing countries; therefore, the government pursues the objective of improved operational efficiency of the current pipeline system and improved monitoring and control of illegal use. Additionally, the industrial usage constitutes 15% of the total water distributed, while the rest is produced by the industries themselves through extracting groundwater (Costa Ribeiro, 2011). However, “increased use of groundwater in the MRSP takes place under a setting of insufficient monitoring and control of groundwater use” that contributes to water supply problems in the short and medium term (The World Bank, 2012, p.4).

POSSIBLE WATER SOLUTIONS

In Sao Paulo, a significant proportion of water use is intended for residential and industrial purposes. Therefore, it is important to decrease the pressure in the pipeline system by decreasing the water demand of residents, industries, and agribusinesses.

Below are examples of measures that can be implemented to address these water issues:

- Encouraging the reuse of water (by petrochemical companies, construction sites etc.) to decrease water consumption. Currently, only 2% of companies reuse treated wastewater (The World Bank, 2012).
- Promoting agribusinesses to use efficient irrigation systems (S. R. Barreto, personal communication, 2016).
- Changing the behavior of people to decrease residential usage (S. R. Barreto, personal communication, 2016). For example, Sao Paulo state recently tried to reduce water consumption in toilets, showers, or taps by initiating different buttons for varying levels of water usage (R. B. Assis, personal communication, 2016).

Besides demand-side solutions mentioned above, water problems can also be mitigated through changes in the supply system, such as:

- Increasing sewage treatment, which ultimately releases water for secondary uses, such as industrial usage.

- Improving current pipeline systems and reducing the pipeline leakage (both physical loss and illegal use).
- Promoting green infrastructure and conserving and restoring priority areas in order to increase quality and quantity of water and decrease erosion (S. R. Barreto, personal communication, 2016).

The supply-side solutions, mainly focused on water infrastructure expansion and improvement activities, offer potential investment opportunities for PRISSMA.

(2) Waste Management

Waste management was considered an extremely important subject by the majority of interviewees, both as an issue and as an investment opportunity. The issue has been historically neglected, and did not seem to be a priority for decades of urban planning in the country. Garbage dumps have been a common solution – as of 2014, around 40% of Brazil’s waste still ended up in dumps (Agência Senado, 2014), and companies were not held accountable for their products’ waste removal processes. CETESB was said to be effective in its monitoring processes (comparatively with the rest of the country) which means the situation in the state of Sao Paulo is slightly more advanced in proper waste management implementation (S. Dias, F. Vasconcellos, F. Sirangelo, G. Justo, A. P. Fava, O. Lucon, R. Spuri, among others, personal communication, 2016).

In 2010, after over 20 years of discussions, the National Policy of Solid Waste was passed, under the Federal Law¹⁵. The law represents a social and environmental landmark, due to the following elements:

- It forbids dumps, and establishes a fine of up to 50 million reais in addition to other punitive measures for those who do not respect the law (Carvalho, 2014).
- It establishes a shared responsibility for waste management, calling for the participation of society, public sector, and private companies in the process.
- It launches the concept of Reverse Logistics in Brazil, requiring that package producers create a recycling system for the products they sell in the market.
- It calls for municipalities from smaller cities to create partnerships for waste management.
- Lastly, it promotes social inclusion for waste collectors, by prioritizing the hiring of their cooperatives by companies and municipalities seeking to comply with legislation (Ministério do Meio Ambiente, 2015).

All of these elements represent a strong paradigm shift in waste management and logistics in the country. According to legislation, companies and municipalities were given until 2021 to adapt and implement new systems in line with the new legislation. Whether such legislation can provide opportunities for investment in different sectors is a question that needs to be studied in more detail.

¹⁵ Federal Law number 12.305, August 2010

However, there are challenges for such implementation, some of which relate to the complexities of the Sao Paulo region. Supporting an extremely populated region, with large cities such as Campinas, Sao Paulo and Ribeirao Preto, the systems for recycling, collection and overall management are also very complex. In the city of Sao Paulo alone, for instance, there are numerous companies that provide waste collection from households, and have numerous systems in place, and waste often has to travel many miles to reach landfills outside of the city (O. Lucon, A. P. Fava, personal communication, 2016). Another relevant factor is the type of waste: because Brazil is a developing country, most of its waste is organic which limits recycling possibilities. Lastly, lack of funding was another issue mentioned, in spite of the inevitable need to comply with legislation (S. Dias, personal communication, 2016).

Nevertheless, there are also advantages in the region that may offer some opportunities for investments. Since CETESB is more active in monitoring than other environmental agencies in Brazil, stakeholders in Sao Paulo are expected to feel more pressure to actively comply with legislation. Moreover, the complexity of the processes and many actors involved also seem to present a greater number of projects that may require funding and consulting services, including many innovative projects and policies that are currently being created to address the issue (S. Dias, A.P. Fava, O. Lucon, E. M. Olivina, F. Neto, among others, personal communication, 2016).

POSSIBLE WASTE SOLUTIONS

The 2010 Solid Waste Landmark requires a standard of compliance to be reached by all segments involved in the solid waste management chain. The need to reach implementation standards can present a potential opportunity for PRISSMA in this sector.

Below are examples of a few efforts that could potentially inform future trends in the waste management sector:

- Recycling is a sector that is growing and gaining more traction since landfills need to be phased out to comply with new legislation.¹⁶
- Development of pioneer projects such as the one led by Professor Sylmara Dias (University of Sao Paulo) that seek to find a destination for organic waste from street food markets (feiras).
- Development of projects that involve waste collector cooperatives and invest in their capacitation (S. Dias, 2016). Development of monitoring projects such as SIGOR, SINDUSCON's online tracking system that focuses on detecting whether waste from construction sites was disposed of properly (F. Neto, personal communication, 2016).

(3) Atmospheric Emissions

Atmospheric emissions and impaired air quality were identified as other major environmental issues in the State of Sao Paulo during the interviews conducted. According to CETESB, there has been a decrease in air pollution since 2000, but emissions are still an issue due mainly to the amount of motorized vehicles in the city, which are a source of particulate matter, carbon monoxide, and nitrogen oxides (CETESB, 2001). Better air quality can be attributed to technological improvement of vehicles and implementation of industrial controls (CETESB, 2016). The deindustrialization process within the city, dealing with factories and industries moving

¹⁶ Brazil Federal Law No. 12,305/2010 (Solid Waste Management)

to adjacent cities and rural areas, has contributed to these efforts. In spite of these advances, Sao Paulo suffers from excessive congestion with over 8 million cars and a precarious public transportation system, leading to increased pollutant emissions and deteriorated air quality (G1, 2014). Additionally, the interviewed representatives of CETESB informed that levels of more harmful pollutants such as ozone have increased, worsening this scenario (M. H. Martins, personal communication, 2016).

During the interview with sustainability specialists from the agribusiness and food company Bunge, emissions were said to be a global rather than local problem, not exclusive to Sao Paulo but a global problem (R. Spuri, personal communication, 2016). Right now, high emission sectors (e.g. chemical and energy sectors) have to disclose their amounts of emissions. This has led companies such as Bunge to invest heavily in controlling emissions. The specialists from Bunge stated that the company currently has a clean energy matrix, as 94% of its energy consumption is from renewable energy (R. Spuri, personal communication, 2016). The company produces biomass from sugar cane mills through burning waste sugar cane, generating the electricity needed for heating in their industrial processes.

During the interview with representatives of the State Secretariat of the Environment (SMA), the interviewees explained that Brazil has an environmental threat of energy efficiency and carbonization (P. J. Schindler, A. P. Fava, O. Lucon, personal communication, 2016). Sao Paulo state has adopted policies and actions that are leading to effective improvements in air quality, and is pioneering actions against climate change in comparison to other Brazilian states.

Sao Paulo state's law on climate change was enacted in 2009.¹⁷ The state launched a voluntary climate change protocol, by which organizations such as state-owned enterprises, legal entities, and private companies have to report their emissions. In the opinion of the representatives of the SMA, the state is trying to motivate companies to sign the climate protocol, but in spite of these efforts there is little incentive for mitigating air emission problems, and scarce financial resources thereto, which has led climate action to rely heavily on the private sector for funding (O. Lucon, personal communication, 2016). Initiatives such as the one headed by SINDUSCON and FGV University created a method for companies to measure Green House Gas emissions in the construction sector. Representatives of SINDUSCON explained that a protocol was signed with the SMA to strengthen this tool and incentivize disclosure of emission levels by companies, thus motivating the improvement of monitoring, emission reduction, and overall sustainability practices (F. A. Vasconcellos Neto, F. Sirangelo, personal communication, 2016).

POSSIBLE ATMOSPHERIC EMISSIONS SOLUTIONS

Considering that, according to representatives of CETESB, the current main source of air pollution in Sao Paulo are vehicle emissions (M. H. Martins, personal communication, 2016), solutions and improvements in air quality for the city are related to urban mobility. Increasing public and alternative means of transportation, as well as urban planning can reduce the amount of vehicles in circulation, and consequentially vehicle emissions, as well as bring benefits to health (WHO, 2014). Other improvements, however, rely on policy and management changes that require a shift in regulation (e.g. increased industrial control processes), or on technological improvements. In this regard, the interviewees from CETESB do not see any change that would

¹⁷ Sao Paolo State law 14.933

drive improvements in air pollution in the near future (M. H. Martins, C. Poeta, personal communication, 2016).

On the other hand, promoting renewable energy like wind and solar power could contribute to reducing consumption of fossil fuels, and consequentially of carbon emissions that accelerate climate change (UCSUSA, 2015). The interviewees from SMA see infrastructure as the main challenge for solar energy, and the intermittency of this energy source (O. Lucon, personal communication, 2016). Projects in both urban mobility and renewable energies might present potential opportunities for PRISSMA to enter the Brazilian market.

Impact Investing Sector Analysis

While water, waste management, and emission reduction have been identified potentially the most problematic environmental issues in Sao Paulo, the team also analyzed the impact investing landscape in Brazil. The team has begun a multifaceted and extensive research into the Latin American (primarily Brazilian) impact investing realm. This research includes primary research of the impact investing landscape, private funds, and development banks. It aims to include interviews with the employees of private funds and development banks who could potentially be interested in partnering with PRISSMA. Furthermore, direct interviews with the thought leaders in Latin American impact investment space are also planned. Included in Appendix 2 is a list of target companies for interviews.

Similar to the environmental research approach, the combination of primary and secondary research will allow for an accurate assessment of the current state of the impact investing in Brazil,

recent developments in this field, future outlooks, and market and nonmarket risks. The next section includes some preliminary research findings relevant for the project's objectives.

The Focus on Impact Investing in Latin America

In the last decade, the impact investing landscape in Latin America has seen a drastic increase in activity. Starting out with two or three specialized funds, the sector now consists of over 50 local and international players investing across different stages of the business life cycle, sectors and geographies (Bain & Company, 2014). The capital committed by impact investment funds in Latin America increased from US\$160 million to approximately \$2 billion between 2008 and 2013, representing a growth of 12times in half a decade (Bain & Company, 2014).

Challenges have emerged alongside such rapid growth in the region. Pipeline for investment remains limited, measuring impact in a standardized way is difficult, and legal frameworks are not consistent. Despite this, however, some funds have made successful exits from initial investments after positive social and financial returns, others have managed to raise second rounds of capital, and certain cities such as Bogota, Mexico City and São Paulo are becoming concentrated hubs of activity. Government inefficiencies also provide areas of opportunity for large investors including pension funds (Bain & Company, 2014).

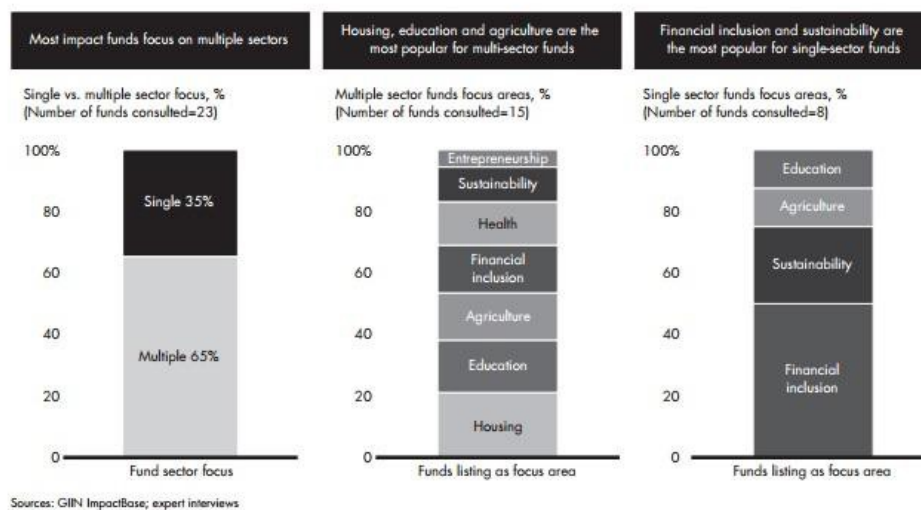
By the end of 2013, \$5 billion of the \$10.6 billion capital committed to impact investment funds had been invested. The Latin America region as a whole comprises 19% of the impact investing global market, with an approximate \$2 billion dedicated to investments (Bain & Company, 2014). In terms of capital already invested, Latin America represents 16%

(approximately \$800 million), from which Brazil has the largest share in region (Bain & Company, 2014). While most impact investors in Latin America came from abroad, recent trends suggest that there is an increase in the creation and development of more local funds.

“Local funds such as Ignia in Mexico, Inversor in Colombia and Vox Capital in Brazil were among the first movers and have laid the pathway for the more than 40 locally originated funds now headquartered in the region: Roughly 20 of which are in Brazil and about 10 in Mexico, with the rest spread throughout the region.” (Bain & Company, 2014)

The presence of local funds in the region is crucial. More local funds can increase the volume of investments, provide more early stage capital compared to foreign-based funds and can navigate the legal frameworks more effectively (Bain & Company, 2014).

Figure 2. Impact Investing by Sector¹⁸



¹⁸Leme, A., Martins, F., & Hornberger, K. (2014). The State of Impact Investing in Latin America (Rep.). Bain & Company.

SECTORS

In a survey of funds investing in Latin America, Bain & Company found that the most common areas of investment include agriculture, education, financial inclusion and housing. Regional impact investing firms targeting a single sector predominantly provided funding in financial inclusion and sustainability. Gera Investimentos focusing on education in Brazil, Eco Enterprises focusing only on sustainability investments in Latin America, and Kaete Investimentos specializing in sustainability investments in Brazil's Amazon region, are examples of this approach.

OVERVIEW OF IMPACT INVESTING IN BRAZIL

Brazil currently faces complex challenges affecting its entire population. As mentioned above, a recent prolonged drought increases the risks of water and electricity rationing which could have dire consequences for economic activity and overall growth (World Bank: IBRD, IDA, 2016). Brazil also experiences extreme regional disparities in social indicators such as health, infant mortality, and nutrition (World Bank: IBRD, IDA, 2016). Over the past fifteen years, Brazil's social policies and economic growth have helped lift 40-60 million people out of poverty (Price, Impact Alpha, 2015). Despite having achieved success in reducing poverty and reaching universal coverage of primary education, Brazil is still struggling with its overall levels of inequality and the quality of education being provided (OECD, 2013).

While government programs, private sector investment and other forms of philanthropy have played an important role in helping the improvement of social indicators, their efforts have proven to be insufficient (Forca Tarefa de Financas Sociais, 2015). This presents a need and an

opportunity for the country to garner capital to finance innovative solutions that can respond to social problems and scale effectively. Impact investors seem to be entering the Brazilian market as more and more development agencies are making their exit (Price, Impact Alpha, 2015).

The emergence of the field of Social Finance in the country proves this. Composed of investments achieving a double bottom line, i.e. creating financial *and* social impact and returns, social finance businesses tend to be different from conventional businesses in four main ways. They: i) have missions that are social and/or environmental, ii) monitor social and/or environmental impact, iii) have economically viable business models and, iv) include effective and inclusive governance (ForcaTarefa de FinancasSociais, 2015).

Previously, entrepreneurs and investors were rare in Brazil. More recently, together with other large corporations, foundations, banks and multilateral institutions and governments, entrepreneurs and investors have now become a part of a growing ecosystem combining social impact and financial returns. Over the coming years, they are expected to have transactions close to 50 billion reais in Brazil (ForcaTarefa de FinancasSociais, 2015).

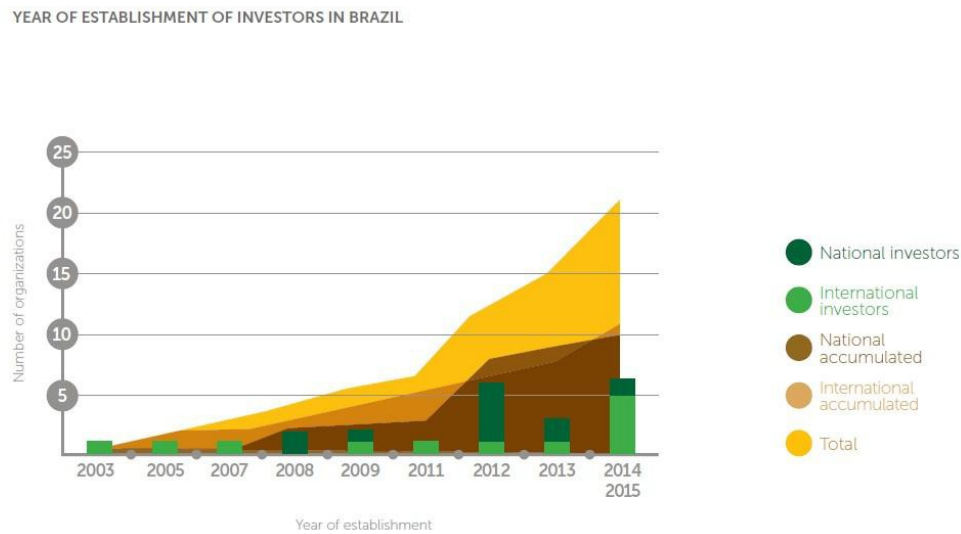
In line with the overall impact investing trajectory of Latin America, Brazil has seen a significant development in its impact investment space. Up until five years ago, only a few players considered themselves to be impact investors. Very few social sector organizations had the ability and capacity to receive investments, and co-investing was unheard of. More recently, there has been a sharp increase in the number of investors, the amount of capital available for investment, and the level of coordination required for implementation (ANDE, LGT VP, Quintessa, University of St. Gallen, 2014).

Findings from a study conducted by the Aspen Network of Development Entrepreneurs, LGT Venture Philanthropy and Quintessa Partners in collaboration with the University of St. Gallen, show significant market growth in the sector. Some of Brazil's largest impact investors include fund managers, foundations, banks, and family offices. The study revealed the following key trends:

- 15 new impact investors entered the sector between 2012 and 2013, illustrating increasing levels of interest and growth.
- Fund managers have set a fundraising target of US\$150 million for 2014-2015 compared to a total of US\$177m raised in the past decade. This also indicates growth in the investment pipeline in terms of scope.
- As far as volume of investments is concerned, deals were expected to increase by 100%, going from 68 to 136 in 2014.
- Areas of investing focus and priority include the following sectors: education, health, financial inclusion, housing, pollution reduction and prevention, waste management and renewable energy.
- Investors are ready to expand their geographical reach to cover more areas of Brazil, particularly the Northeastern region.

The financial return expected from the investments has been estimated to vary between 10 and 35%. (ANDE, LGT VP, Quintessa, University of St. Gallen, 2014).

Figure 3. Overview of Investors in Brazil¹⁹



Important to the impact investing landscape in Brazil are also the demographic trends the country is experiencing. As an emerging market, entrepreneurs who are able to deliver high-quality services at affordable rates are rushing to meet the demands and needs of the growing 112 million lower and middle class population (Price, Impact Alpha, 2015).

RISKS AND CHALLENGES FOR IMPACTING INVESTING IN BRAZIL

While the trajectory and potential for impact investing in Brazil remains high and positive, it is important to take note of the country’s macroeconomic circumstances for medium to long-term considerations. Brazil is currently experiencing an economic crisis that threatens its political stability. The economy largely focuses on the commodity sector. Sharp declines in the prices of oil, iron ore and food staples have severely pinched Brazil compared to other countries, resulting in an economic contraction (Constable, 2015). Added to this is a rising inflation rate. According

¹⁹ A., L., Q., & U. (2014). Mapping the Impact Investing Sector in Brazil (Rep.).

to Banco Central do Brasil, inflation in 2015 was more than double its target rate (4.5%) at 9.5% (Constable, 2015). Attempts to revive the economy using monetary policy tools is extremely risky; lowering the interest rates as a strategy for economic stimulation might further amplify inflation.

This economic instability has resulted in Brazil being downgraded by rating agencies as Standard & Poor's has cut the debt rating to 'noninvestment' grade (Constable, 2015). The depreciation of the Brazilian real against the dollar over the past year has only made matters worse. These conditions are not conducive for investments, local or international. The persistence of these challenging economic circumstances could result in investors pulling funds out of Brazil and others not wanting to enter the market. This could deeply hurt the impact investing space, and particularly hurt its current momentum of expansion.

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