

# Água Potável Infrastructure Fund

## Providing Households with Clean Water and Sewage Treatment in Brazil

### FUND SUMMARY

<b>Size:</b>	US\$ 250 million
<b>Life:</b>	35 years
<b>Fees:</b>	1.5% of AuM; 15% of gains subject to a 7% hurdle rate
<b>Sector:</b>	Water and sewage infrastructure
<b>Geography:</b>	Ceará, Northeast Region, Brazil
<b>Social impact:</b>	Health, education and productivity benefits for 270,000 households

### THE PROBLEM: SANITATION IN BRAZIL

In Brazil, 53% of the population – or 160 million people – has inadequate access to piped water and sewage services. Moreover, a 2014 World Bank report ranked Brazil 112 out of 200 countries for sanitation infrastructure<sup>1</sup>.

Recognizing the dire state of sanitation infrastructure, the Government of Brazil increased its investment in the sector between 2009 and 2013, before Brazil's recent economic downturn again reduced investment. Thus, in 2014, access to sewage systems increased by a mere 0.3%. At that rate, it would take 129 years to reach the federal government's goal of universal access to sanitation, a stark contrast to the stated timeframe of 17 years.



Brazil's inadequate sanitation infrastructure poses a clear health concern. Last year, Brazil received international attention after members from the German and British Olympic Sailing Teams fell ill in the polluted waters of Rio de Janeiro while training for the 2016 Olympics.

Furthermore, evidence suggests that the Zika Virus and dengue epidemics – spread by mosquitoes that breed over standing water pools – have been exacerbated in Brazil due to inadequate drainage and sewage systems.

Beyond these newsworthy impacts, improper waste disposal is correlated with diminished long-term health prospects, as well as a number of social challenges, including reduced environmental damage, a less productive workforce, and lower education scores in affected communities.

The Água Potável Infrastructure Fund seeks to address this important public health issue by attracting private investment capital to water infrastructure projects in the Brazilian state of Ceará.

### THE OPPORTUNITY: PRIVATE CAPITAL OVERCOMING STATE LIMITATIONS

While the Federal Brazilian government has identified water infrastructure as a priority, there are a number of political obstacles that prevent public actors from driving investment in the sector:

1. *There is a lack of public capital allocated towards sanitation in Brazil.* Before 2014, government funds allocated to health-related services could be used towards sanitation. A new mandate in 2014 removed sanitation projects from this earmarked budget, and so public funds for clean water and sanitation projects have dried up.
2. *Politicians are poorly incentivized to implement long-term projects.* Sanitation infrastructure projects take years to complete and most benefits accrue several years after completion. Therefore, the politician who invests in sanitation infrastructure will likely not see the benefits while in office, instead enabling successors to claim credit.
3. *Infrastructure companies serving government entities typically overcharge for their services.* A recent study reported that, on average, the Government of Brazil overpays for large-scale projects by 40%. This is likely a result of poor oversight and management systems among contractors and limited regulation that enables collusion.

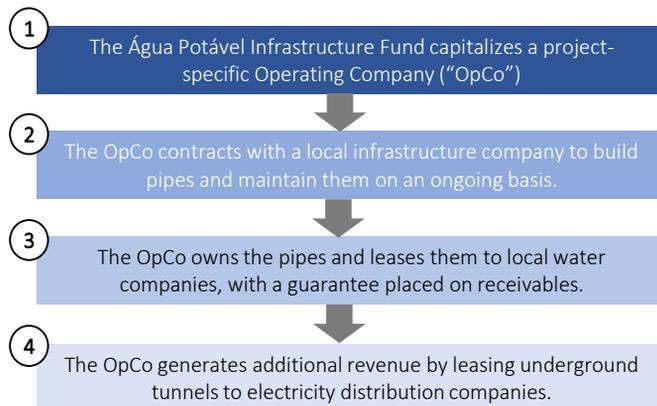
### INVESTMENT THESIS

The aforementioned obstacles present a market opportunity for the Água Potável Infrastructure Fund. In particular, our investment product capitalizes on these opportunities by:

1. Using **upfront private capital** to fund sanitation projects in Brazil in a way that matches the timing of social benefits and government cash outflows, inciting public support
2. Providing **best-in-class project governance and third-party auditing** to ensure fair prices in negotiations with government
3. Generating **additional revenues** from infrastructure assets, thereby decreasing lease payments while still providing healthy returns to investors

### THE SOLUTION: THE ÁGUA POTÁVEL INFRASTRUCTURE FUND

The Água Potável Infrastructure Fund provides capital for a number of infrastructure development projects in Brazil. An illustrative project will operate as follows:



Water companies interact with their customer base as they do in traditional government-funded projects, so households will not experience any different financial outcomes than they would under any other water project.

### TARGET MARKET: MIDDLE-SIZED CITIES IN THE NORTHEAST REGION

The Água Potável Infrastructure Fund targets projects in mid-sized urban communities in the Northeast region of Brazil – towns such as Juazeiro do Norte, Caucaia and Itapipoca – where sanitation coverage rates are below 30%. The fund size is R\$1 billion (US\$250 million) and will support infrastructure projects that will reach 270,000 households.

In the future, the fund could expand its reach by investing in other communities in the Northeast region. Despite representing only 27% of the population, 38% of the people without access to sewage systems live in the Northeast region.<sup>6</sup> Due to their lower-than-average socio-economic profile, these communities will also derive higher health and productivity benefits than other parts of the country.

Moreover, governments in the region tend to be receptive to private investment in sanitation, demonstrated by the recent privatization of water and waste management companies in the states of Pernambuco and Sergipe. Sanitation infrastructure for the entire Northeast region would require investments in the order of R\$100 billion (US\$25 billion) and achieving 100% coverage in Brazil would cost around R\$480 billion (US\$120 billion).<sup>7</sup>

# Água Potável Infrastructure Fund

## FUND DESCRIPTION AND CAPITAL STRUCTURE

The size of the Água Potável Infrastructure Fund will be \$250 MM of equity capital.

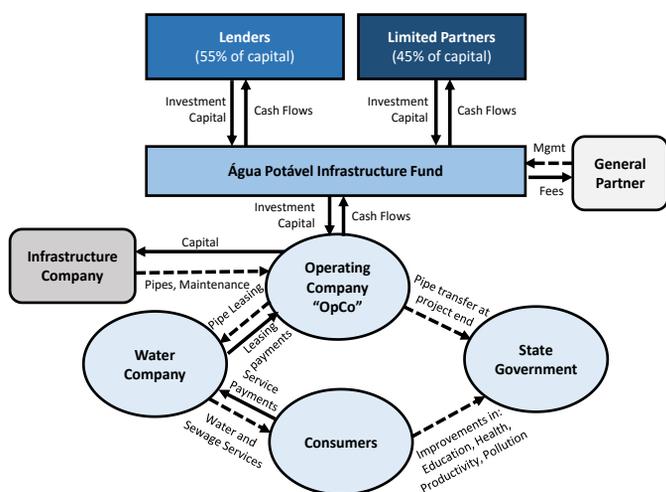
Capital will be deployed to new projects over 5 years. An individual project will return cash flow over 30 years (after a 2 year deployment period). Final fund cash flows will accordingly be realized within a 35-year fund life.

The target gross IRR for equity investors is 15% (calculated net of inflation, assuming inflation-tracking contracts).

Fees for the fund are 1.5% of drawn AuM and a 20% incentive fee on returns which is incurred once the original invested capital and a 7% hurdle rate have been returned.

Debt will be raised from banks at a 55%:45% ratio relative to the equity raise. The interest rate on bank debt is assumed to be 5% real, in line with rates from local public banks.

## LEGAL AND FINANCIAL STRUCTURE



Notes: Dashed lines are not cash flows. Social benefits are not valued as part of the returns analysis. An OpCo will be created for each investment project.

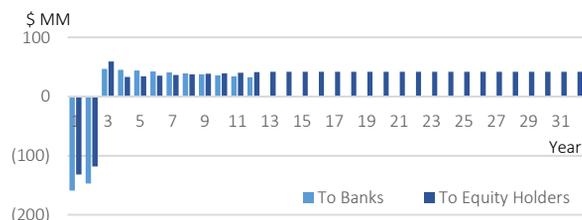
## TARGET INVESTORS

The Água Potável Infrastructure Fund will primarily aim to raise capital from Sovereign Wealth Funds. SWFs suit the Fund's profile because they can allocate capital at scale, usually have global mandates and seek long-term investments. A secondary target group will be developed-country pension funds that have experience with making Latin American investments.

Given the social impact created by the Fund's activities, it may also be possible to raise incremental capital from mission-driven investors such as family offices and foundations making Program-Related Investments.

To fund the debt portion of the Fund's capital stack, financing will be raised from Caixa and the national development bank BNDES. These Brazilian public institutions will be able to provide attractively priced funding. Other domestic financial institutions including Itaú, Bradesco, and Banco do Brasil will also be approached.

## ILLUSTRATIVE FUND CASH FLOW PROFILE



## ASSUMPTIONS

- Illustrative assuming all projects start in Year 1
- Equity investment requirement of R\$ 4K per household
- Running costs of R\$ 350 per household per year
- Alternative revenues of R\$300 per household in year 1
- Leasing fees set so that government is 2% better off on a pure NPV basis between this project and investing itself
- Cash flows shown on a real basis, assuming all contracts will be inflation-tracking
- Debt repaid within 10 years

## RISKS AND MITIGATION

Risk	Probability	Impact	Mitigation
<ul style="list-style-type: none"> <li>▪ <b>Risk of high inflation and currency risk</b>, given Brazil's recent economic volatility</li> </ul>			<ul style="list-style-type: none"> <li>• As standard practice in Brazil, contract pricing will be inflation-indexed</li> <li>• Investor base will be institutions focused on Latin America</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Brazil's economic stability</b>: risk of asking for payment reduction or defaulting (in extreme scenario)</li> </ul>			<ul style="list-style-type: none"> <li>▪ Stability risk is already implicit in the required discount rate (comes from government bonds)</li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>No reduction in 40% overrun costs</b> (i.e. having no efficiency advantage relative to government)</li> </ul>			<ul style="list-style-type: none"> <li>▪ Fund must be diligent to ensure efficient management and control systems for corruption, as well as better procurement practices</li> <li>▪ Worst case (with 40% overrun) still provides a 9% equity return</li> </ul>

## IMPACT

<b>Social</b>	<ul style="list-style-type: none"> <li>• Lower number of hospitalizations due to gastrointestinal diseases caused by contact with human waste</li> <li>• Increased education scores (with long-term economic benefits) due to better water quality and reduced contact with pathogens in human waste</li> </ul>
<b>Economic</b>	<ul style="list-style-type: none"> <li>• Lower work absenteeism and increased productivity rates due to improved healthcare</li> <li>• Improved tourism in the region</li> <li>• Increase in real estate property values</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>• Reduction of soil and water pollution</li> </ul>

Note: Social benefits have not been valued

## REFERENCES

- 1 The Next Battle for Brazil: Public Sanitation, <http://www.forbes.com/sites/arthurmachado/2015/01/05/the-next-battle-for-brazil-public-sanitation/#41a49e453a03>
- 2 At Current Pace, Brazil Will Take 129 Years to Reach Federal Sanitation Targets, <http://www1.folha.uol.com.br/internacional/en/brazil/2015/04/1622051-at-current-pace-brazil-will-take-129-years-to-reach-federal-sanitation-targets.shtml>
- 3 Rio backpedals on key legacy projects before Olympics, <http://www.usatoday.com/story/sports/olympics/2015/02/24/rio-de-janeiro-olympic-legacy-promises/23942105/>
- 4 Deputados aprovam orçamento de R\$ 23,6 bilhões para o Ceará em 2015, <http://g1.globo.com/ceara/noticia/2014/12/deputados-aprovam-orcamento-de-r-236-bilhoes-para-o-ceara-em-2015.html>
- 5 O Custo da Corrupção no Brasil, <http://www1.folha.uol.com.br/fsp/opiniaofz0903201001.htm>
- 6 Benefícios Econômicos do Saneamento, [http://cebds.org/wp-content/uploads/2014/03/Relatorio\\_Beneficios-Economicos-do-Saneamento.pdf](http://cebds.org/wp-content/uploads/2014/03/Relatorio_Beneficios-Economicos-do-Saneamento.pdf)
- 7 idem
- 8 Mapping the impact investing sector in Brazil, [http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/ImpactInvestingStudy\\_FINAL\\_VERSION\\_ENGLISH.pdf](http://www.aspeninstitute.org/sites/default/files/content/docs/pubs/ImpactInvestingStudy_FINAL_VERSION_ENGLISH.pdf)