

CARBON FINANCE IN SOLID WASTE MANAGEMENT – INNOVATION AND OPPORTUNITIES

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Integrated Solid Waste Management and Carbon Finance Project

In 2009, Caixa Econômica Federal (CAIXA) – the second largest development bank in Brazil, signed an agreement with the World Bank to develop a program that would finance solid waste management and Emissions Reductions activities

Motivation: Limited use of Caixa's funding for SWM due to insufficient municipal capacity to:

- Prepare financially sustainable projects that are viable and attractive to the private sector
- Access carbon markets
- Manage environmental licensing procedures
- Deal with social issues related to the presence of waste pickers in open dumps and landfills

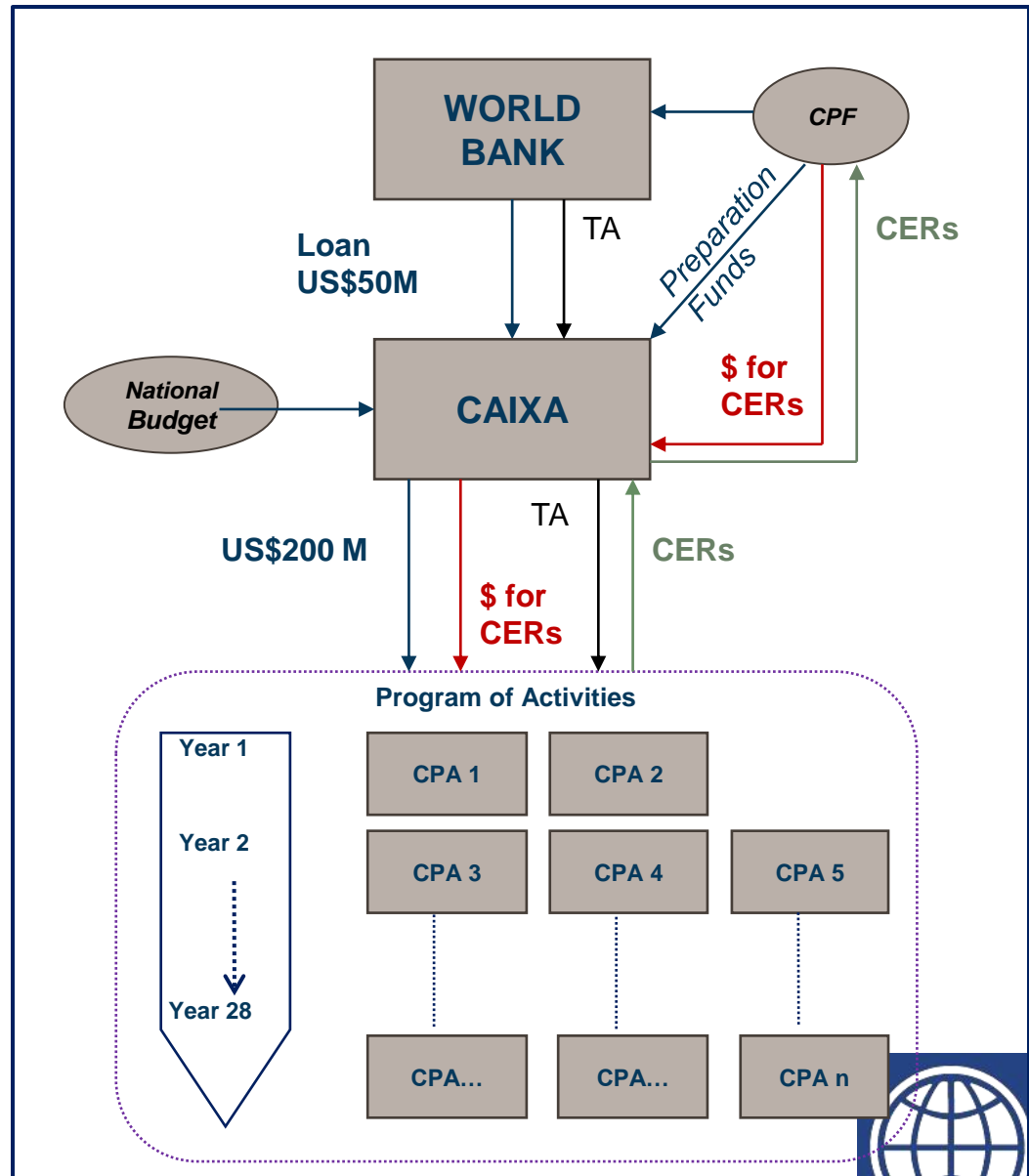


- Objectives of the project fully consistent with Solid Waste Management Law (2010)
- Project will provided much needed capacity at municipal level



Building on economies of scale

- The project combines WB loan (US\$ 50 million) with Caixa financing (US\$ 150 million)
- CAIXA is a financial intermediary, which on-lends to municipalities and to the private sector for investments in solid waste management
- Caixa is the coordinating entity of the only solid waste management POA in Brazil, promoting the use of carbon finance in the sector

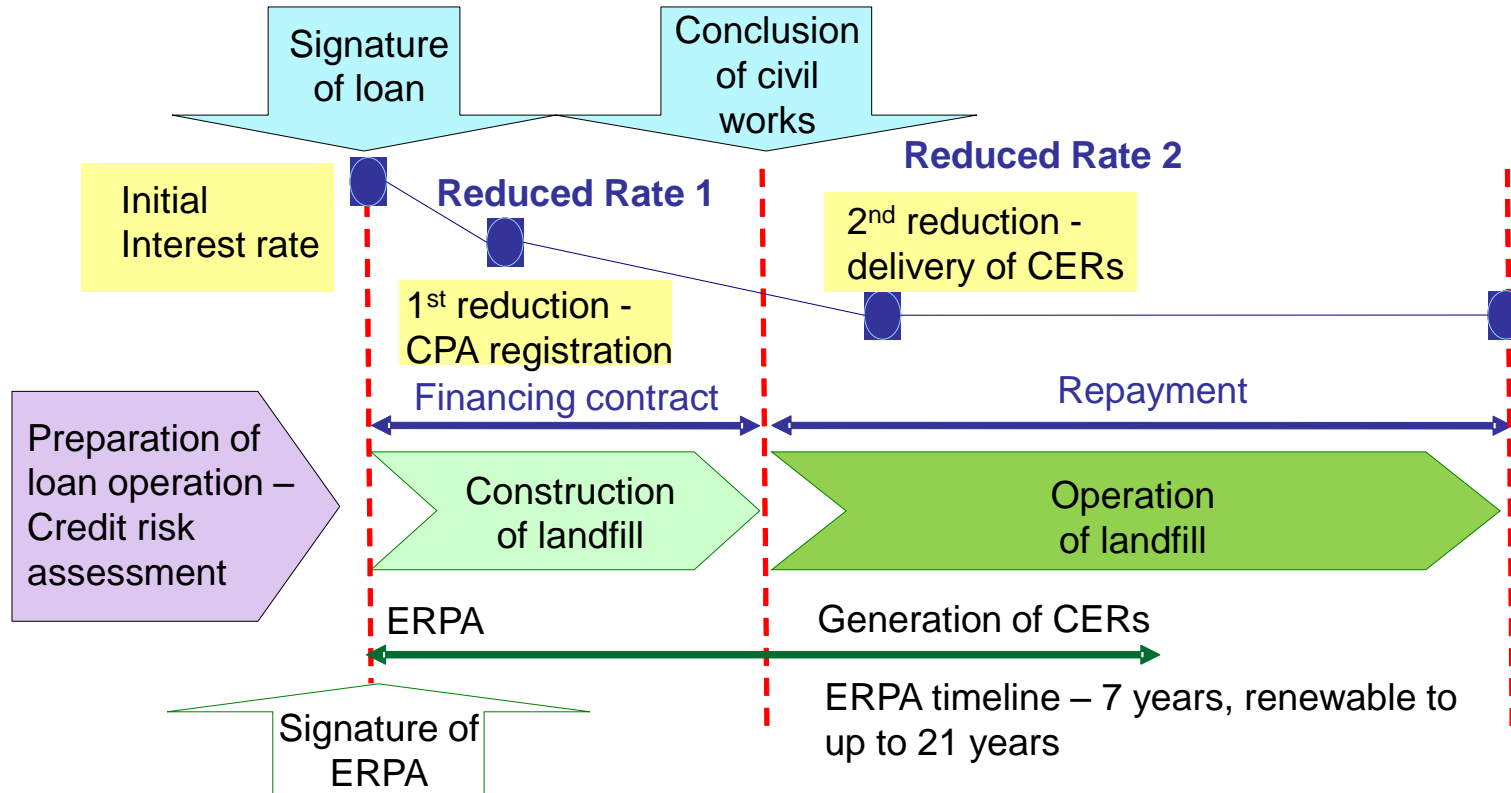


Financial innovation: Results-based interest rate adjustments

- **UNDERLYING ASSUMPTION** – Landfills with LFG capture are better managed/operated than others with no gas capture
- **INNOVATION** – Calculations of credit risk for SWM operations that are included in Caixa's POA account for this improved model of management, resulting in lower risk ratings
- **DIRECT INCENTIVES TO BORROWERS** -
 1. Interest rate of loans for SWM are reduced based on the progress of linked carbon finance operations:
 - First reduction: Applied to the interest rate of outstanding loan balance after CPA is registered with UNFCCC
 - Second reduction: Applied to the balance of the loan after completion of the 1st delivery of CERs, consistent with ERPA delivery schedule
 2. Future carbon revenues accepted as partial guarantee towards the loan



Performance-based, built-in incentives over time



- Interest rate reductions are maintained until the end of the contract, upon confirmation of CER delivery, consistent with ERPA terms
- Non-delivery of CERs brings interest rates back to Reduced Rate 1



Conclusions

- 1. Innovative program designed to address major barrier for private sector investment in SWM in Brazil**
- 2. Financial incentives for private sector are significant given the potential costs of SWM infrastructure investments**
- 3. Project addresses major gaps in municipal capacity for SWM, consistent with National SWM Policy**
- 4. Results-based model is replicable to other sectors and other countries**
- 5. Blending of CF and IBRD operation is achieving global environmental impacts with clear local benefits**
- 6. Project will achieve a substantial financial leveraging effect**





Thank you very much!

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