

**Document of
The World Bank**

Report No: [93631]

**NOTE ON CANCELLED OPERATION
(P096469)**

ON A

PURCHASE OF EMISSIONS REDUCTIONS

IN THE AMOUNT OF
US\$10.4 million

TO

THE REPUBLIC OF CHILE

FOR THE

CHILE SANTIAGO COMPOSTING PROJECT

January 5, 2015

Social, Urban, Rural and Resilience Global Practice
Argentina, Chile, Uruguay, and Paraguay Country Management Unit
Latin America and the Caribbean Region

CURRENCY EQUIVALENTS

Currency Unit = US Dollar (\$)

FISCAL YEAR
[July 1 – June 30]

ABBREVIATIONS AND ACRONYMS

CBP	Community Benefit Plan
CDCF	Community Development Carbon Fund
CDM	Clean Development Mechanism
DNA	Designated National Authority
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
LoI	Letter of Intent
ODL	Oficina de Desarrollo Limpio
PDO	Project Development Objective
PE	Project Entity
tCO ₂ e	Tonne (metric ton) of carbon dioxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change

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Sector Manager:	John Henry Stein
Project Team Leader:	Daniel Hoorneweg
ICR Team Leader:	John Morton

Republic of Chile

Santiago Composting Project

CONTENTS

Data Sheet

- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Ratings of Project Performance in ISRs

1. Context, Project Development Objectives and Design
2. Post-approval Experience and Reasons for Cancellation
3. Assessment of Bank Performance
4. Assessment of Borrower Performance
5. Lessons Learned

A. Basic Information

<i>Country:</i> Republic of Chile	<i>Project Name:</i> Santiago Composting Project
<i>Project ID:</i> P96469	<i>L/C/TF Number(s):</i> TF057506
<i>NCO Date:</i> January 8, 2015	
<i>Lending Instrument:</i> Carbon Finance	<i>Borrower:</i> Agroindustrial Pullihue Ltda
<i>Original total commitment:</i> USD 10.4 M	<i>Disbursed Amount:</i> USD 0.0 M
<i>Environmental category:</i> B	
<i>Implementing Agencies:</i> Agroindustrial Pullihue Ltda	
<i>Co financiers and Other External Partners:</i> N/A	

B. Key Dates

Process	Date	Process	Original Date	Revised/Actual Date(s)
<i>Concept Review:</i>	Not undertaken	<i>Effectiveness:</i>	Never defined	Never achieved
<i>Appraisal:</i>	04/26/2007	<i>Closing:</i>	12/31/2016	N/A
<i>Approval:</i>	07/04/2007			

C. Ratings Summary

Performance Rating by NCO	
<i>Outcome:</i>	Unsatisfactory
<i>Risk to Development Outcome:</i>	N/A
<i>Bank Performance:</i>	Moderately Unsatisfactory
<i>Borrower Performance:</i>	Unsatisfactory

D. Sector and Theme Codes

	Original
Sector Code (as % of total amount)	
1. Sewerage	100
	Original Priority
Thematic Code (Primary/ Secondary)	
1. Climate change	100

E. Bank Staff

Positions	At NCO	At Approval
<i>Vice President:</i>	Jorge Familiar	Pamela Cox
<i>Country Director:</i>	Jesko Hentschel	Marcelo Giugale
<i>Sector Manager:</i>	Anna Wellenstein	Makhtar Diop, Jack Stein
<i>Project Team Leader:</i>	Unassigned	Daniel Hoornweg
<i>NCO Team Leader:</i>	John Morton	
<i>NCO Primary Author:</i>	Anna Perkinson	

F. Ratings of Project Performance in ISRs (if available)

N/A

1. Context, Project Development Objectives, and Design

The objective of the Santiago Composting Project was to build and operate a composting facility to treat urban biodegradable waste and non-toxic wastewater sludge. This would be done through the operation of a composting facility in Santiago, Chile to treat urban biodegradable waste and non-toxic wastewater sludge. The operation was designed to reduce greenhouse gas emissions that usually occur as waste degrades in landfills through the diversion of waste to the composting facility and was also anticipated to contribute to sustainable waste management in Santiago. The reduction in greenhouse emissions would be verified and sold as Verified Emissions Reductions to the World Bank, acting as a trustee for the Spanish Carbon Fund. The private company sponsoring the compost project, Agroindustrial Pullihue Ltda., would retain the resulting revenues.

Project Background

At the time of appraisal, Chile had no major composting or other treatment facilities for organic waste and the plant to be developed as part of the Carbon Finance Operation was Chile's first such initiative. It would not only treat organic waste that would otherwise have been disposed in the city's landfills but would also serve as an example for other urban areas facing similar waste management challenges. As one of the first of its kind in Latin America, the Carbon Finance Operation would also demonstrate that carbon finance can catalyze environmentally sustainable and profitable waste management practices. The carbon finance operation was consistent with the strategy in the Country Assistance Strategy to sustain rapid economic growth and improve public health and environmental management. Having ratified the Kyoto Protocol in April 2002, the Carbon Finance Operation also supported Chile's intention to develop its carbon market and was part of a series of carbon finance operations being promoted by the World Bank in Chile and more broadly in the solid waste sector in Latin America.

At appraisal the Carbon Finance Operation included one plant to treat biodegradable waste and non-toxic sludge produced from wastewater treatment plants within the city. It was estimated that the plant would treat 18,000 tons per month or 22% of the 83,320 tons of organic waste produced in the city of Santiago, which amounted to 10% of the entire waste produced in the city. The composting plant was to be located in a rural area of the municipality of Maipu on a plot of land on the University of Chile's property. The project sponsor was Agroindustrial Pullihue Ltda., a private Chilean company with a solid track record of recycling and composting urban waste in Chile. The composting project was to be financed by a local bank loan (25%) and Agroindustrial Pullihue Ltda's equity investment (75%).

World Bank Carbon Finance Operation

This Carbon Finance Operation was to be financed under the Spanish Carbon Fund, which was created based on an agreement between the World Bank and the Ministries of Environment and Economy of Spain and was capitalized using public and private funds. The World Bank acted as trustee of the Spanish Carbon Fund.

An Emissions Reductions Purchase Agreement would be signed between the World Bank and the Agroindustrial Pullihue Ltda specifying the terms of the purchase including expected annual delivery of Verified Emissions Reductions which was based on a projection of avoidance of methane emissions from the treated organic matter. The project would be monitored by Agroindustrial Pullihue Ltda and audited by a third party at which time payments could be made. The World Bank would assume the responsibility and risk of registering the project as a CDM project with the CDM Executive Board and certifying any Emissions Reductions produced.

Risk Analysis and Appraisal

The project appraisal included a financial analysis and assessment of the financial standing of Agroindustrial Pullihue Ltda; a technical analysis of the chosen technology; and an assessment of social and environmental safeguards compliance. The environmental and social analysis was based on assessments and acknowledged existing social challenges and the necessity for further consultations. It also included a thorough institutional analysis of Agroindustrial Pullihue Ltda and due diligence on the likely emission reductions and technical eligibility of the project under what was a calculation methodology that was not yet approved by the CDM Executive Board.

Many of the risks (resource, technical, country, rescinding the Letter of Intent, Kyoto Protocol and financing) at appraisal were categorized as low. The appraisal did acknowledge some important risks:

Operating License Not Issued (high): The Municipality still had not issued an operating license for the composting plant at the time of appraisal in part due to the public opposition. This was to be mitigated through planned dialogue with municipal officials, sharing international experiences and additional consultations to be held by the proponent. These along with the construction of the facility were included as conditions of effectiveness for the Emissions Reduction Purchase Agreement.

Community Opposition (high): The Environmental License for the plant was rejected by the regional agency CONAMA in September 2006 and still not issued at the time of appraisal primarily due to community opposition. This was mitigated by full and ongoing involvement of CONAMA and Bank support and review of the EMP.

Baseline Risk (mid-low): The project would require a Methodology to calculate emissions reductions to be prepared and approved by the CDM Executive Board. There were risks of delays in the approval and in changes in the amount of emission reductions that could be eligible. This was to be mitigated through World Bank involvement in the methodology preparation and approval process and inclusion it as a condition for effectiveness of the Emissions Reduction Purchase Agreement.

Market Risk (mid-low): The market for disposal of waste and for the production of compost would necessitate that the sponsor will compete via price with existing solid waste operations. This was mitigated by not including revenues from selling compost in the financial analysis.

2. Post-Approval Experience and Reasons for Cancellation

The Carbon Finance Operation finished appraisal in April 2007 and an Emissions Reductions Purchase Agreement was signed in July 2007. The Emissions Reductions Purchase Agreement never became effective due to the fact that the Environmental License was never issued by CONAMA and the composting plant was not constructed. Some effort was made to include alternative facilities but this never came to fruition. These factors, combined with the reduced prospects for emissions reductions due to the estimation approach used in Methodology eventually approved by the CDM Executive Board led to the cancellation of the operation. In particular:

Environmental License: The reasons for the rejection of the license application in September 2006 by the Regional CONAMA were concerns over increased truck traffic, potential odors, and a belief in the local community that the Maipu area was increasingly becoming Santiago's 'dumping ground' for waste. After this time, in addition to more consultations, Agroindustrial Pullihue Ltda made an effort to resolve the issue. In particular there was discussion of contributing US\$0.50/tCO_{2e} from the agreed purchase price to create the Fondo Ambiental y Social to benefit the local community by supporting the "Parque Tres Poniente," a 39 hectare green area for the community. A "Comite de Seguimiento" was also proposed to enhance trust between the community, local authorities and Agroindustrial Pullihue and money from the Fondo Ambiental y Social would have been used for these efforts. In the end the efforts made were not enough to assuage the community concerns about another waste management plan in the area, and after appealing the ruling to the National CONAMA, the license was once again denied.

CDM Methodology: The initial methodology used at appraisal for calculating the emissions reductions expected during the lifetime of the project led to an overestimation of emissions reductions at appraisal. This initial approach allowed for the inclusion of all emissions reductions over a longer period of time (outside of the crediting period agreed upon in the Emissions Reduction Purchase Agreement). In addition the lack of clarity regarding the eligibility of the composting of sewage sludge (which was 80% of the project input) to receive carbon credits, contributed to the limited prospects for emission reductions.

3. Assessment of Bank Performance

Rating: Moderately Unsatisfactory

The World Bank's performance for this Carbon Finance Operation is rated as moderately unsatisfactory. The World Bank undertook the necessary analysis at appraisal, however, the project risks that remained were too significant both in terms of the number of risks and their nature. Risks related to community opposition and the lack of an operating license for the project were rated as "high", however the project moved forward even without assurances from the project sponsor or government that the license would eventually be issued. Considering the

context, the issuance of an Environmental License was an unusually high risk item to be left as a condition of effectiveness.

4. Assessment of Borrower Performance

Rating: *Unsatisfactory*

Agroindustrial Pullihue Ltda. received a rating unsatisfactory. While the issuance of the Environmental License that was necessary for the success of this project was out of their hands, they did not adequately address initial concerns about the issuance of the License after the first Environmental License was denied and the facilities were never constructed.

5. Lessons Learned

Operating and Environmental Approvals. This Carbon Finance Operation provides a clear lesson on the necessity of an Environmental License. All licenses and approvals from local and national authorities should be secured or there be reasons to be confident that they will be approved in a timely manner.

Community Feedback. Taking into account the input of community stakeholders of a project that involves sensitive subject matter like waste management is very important. Underestimating the importance of the opinions of the host community led to the failure of the Carbon Finance Operation.

Emission Reduction Calculation Methodology. The Carbon Finance Operation took on the risk related to the uncertainty of the Methodology to calculate emissions reductions, which was not developed or approved at the time of appraisal. As this was at a time when the CDM mechanism was still evolving for many types of projects, this kind of risk was common and often times paid off in the long term by pioneering the mechanism for certain project types. Composting was an example where this risk did not pay off for this project or for future projects of a similar type.

Risks in Performance Based Operations. The risk assessment completed during the appraisal stage identified the risks which in the end contributed to its termination. Because of the nature of the CDM mechanism and its performance-based approach, the World Bank assumes a lower burden of these risks relative to investment lending or grant financing mechanisms. This may have led to the Carbon Finance Operation moving ahead even with multiple high risks remaining at appraisal. The risks were too high in terms of significance and number to justify the effort and transaction costs made to sign the Emissions Reduction Purchase Agreement and supervise the initial stages of implementation. The risks needed to be mitigated further at appraisal or the Carbon Finance Operation dropped completely. It acts as a reminder that even in performance-based projects, risk assessments should be considered carefully at the stage of project appraisal.