

**INTEGRATED SAFEGUARDS DATASHEET
APPRAISAL STAGE**

Report No.: 53604

Date prepared/updated: March 17, 2010

I. Basic Information

1. Basic Project Data

Country: Brazil		Project ID: P096337	
		Additional Project ID (if any):	
Project Name: Reforestation with Native Species Around AES-Tiete Reservoirs			
Task Team Leader: Maria Isabel J. Braga			
Estimated Appraisal Date: March 16, 2010		Estimated Board Date: N/A	
Managing Unit: LCSEN		Lending Instrument: BioCarbon Fund	
Sector: Forestry (80%), General Water Management (20%)			
Theme: Climate Change (P), Biodiversity (P), Water Resources Management (S)			
IBRD Amount (US\$m.):			
IDA Amount (US\$m.):			
GEF Amount (US\$m.):			
BioCF Amount (ERs): 400,000			
Other financing amounts by source:			
Environmental Category: B			
Is this a transferred project	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Simplified Processing	Simple <input type="checkbox"/>	Repeater <input type="checkbox"/>	
Is this project processed under OP 8.00 (Rapid Response to Crises and Emergencies)	Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>

2. Project Objectives:

The proposed Reforestation Using Native Species Around AES-Tietê Reservoirs Project seeks to improve techniques and methodologies for reforestation of areas of permanent conservation (*áreas de preservação permanente* – APPs) using native tree species, as well as for the evaluation and monitoring of carbon sequestration in the reforested areas. The availability of tested protocols for reforestation, as well as the possibility of leveraging carbon financing to partially offset the costs of such activities, could potentially stimulate other reservoir operators to implement reforestation of APPs at much larger scales. Through the generation and sale of the initial 400,000 ERs to the BioCarbon Fund (BioCF), the AES Tietê project will be an important pilot for a strategy to secure additional environmental benefits from this type of infrastructure, including carbon sequestration, fostering the establishment of biodiversity corridors, and contributing to improvements in water quality in the reservoirs.

3. Project Description:

The proposed project would support the reforestation of at least 2,500 ha with a minimum diversity of 80 and up to 126 species of native trees, and deliver the first 400,000 ERs to the

BioCF. These are selected based on their natural occurrence within the reforested areas, as well as, their ability to provide for a long term sustainable riparian forest habitat. *Resolução SMA 47/2003* of the State of São Paulo encourages reforestation activities within protected areas with high biodiversity levels. The selection of species is guided by *Resolução SMA 8/2007* which establishes minimum standards for environmental restoration activities within the State of São Paulo. In addition to the first 400,000 ERs to be delivered to the BioCF, AES Tietê intends to generate another 4.3 million ERs by 2030 through the expansion of the reforestation program to restore forest vegetation in a total of approximately 13,939 ha of unmanaged grasslands along the margins of 10 hydropower reservoirs in the State of São Paulo, Brazil. The BioCF carbon revenues will be used to fund planting more trees towards meeting the target goal.

All the areas are owned, controlled and operated by the project proponent, AES-Tietê. The project has also developed, and will field test, a new methodology (AR-AM0010) specific for afforestation and reforestation activities implemented on unmanaged grassland in reserves or protected areas that are not likely to be converted to any other land use except forestry, and which have no potential to revert to forest without direct human intervention.

It is important to note that, in addition to contributing to the mitigation of GHG emissions, the project would also contribute to the adaptation agenda because the rehabilitation of degraded APPs through reforestation will reduce soil erosion and improve watershed functions in those areas – two very important issues in combating climate change in the State of São Paulo.

Forest planting and management techniques have been designed taking into account the local knowledge of the species and research and development experience of AES Tietê professionals and partners in the region since the 1980s. The technology implemented in the project in different project activities, such as seedling development, site preparation, planting, and plantation management, are based on the research and development activities initiated by AES Tietê's project team and other partners in the area during 2001 to 2007.

4. Project Location and salient physical characteristics relevant to the safeguard analysis:

The project boundary consists of approximately 19,900 hectares of mostly old grasslands around ten hydropower reservoirs in the state of São Paulo, Brazil, which constitute the project activity boundaries: Ibitinga, Promissão, Bariri, Barra Bonita, Nova Avanhandava, Mogi Guaçu, Caconde, Euclides da Cunha, Limoeiro, and Água Vermelha. These ten reservoirs intersect with the territories of 92 municipalities.

In the ten reservoirs, a strip of land of about 30 meters from the maximum level of the waterline was expropriated at the time of their creation to allow for reservoir implementation. Prior to the construction of the hydroelectric plants and incorporation of the reservoirs, nearly 100 percent of those areas already constituted of pastures covered by exotic grass species. In 1985, all areas around hydropower reservoirs in Brazil, extending to 100 meters from the maximum level of the waterline, were legally designated as APPs with the objective of allowing for natural regeneration of forest. As such, the 30-meter strips of land controlled by AES Tietê around its reservoirs are classified as APPs. Unfortunately, contrary to all expectations, natural regeneration of native vegetation has not taken place as envisioned even after human interference was

removed from such areas, due to the aggressive nature of the invasive grasses (such as *Brachiaria*) and highly depleted soil seed banks or other sources of seed propagules.

In order to determine the non-contiguous areas of unmanaged grassland APPs eligible for afforestation/reforestation, Quickbird satellite imagery was applied to interpret two specific boundary points: the normal and the maximum operational level of waterline for each individual hydropower plant. The analysis indicates that, out of the total project boundary, about 13,939 ha would be eligible for the project activity. Exclusions are due to illegal occupation, rocky soils, water bodies, and existing forest fragments.

5. Environmental and Social Safeguards Specialists on the Team:

Maria Isabel J. Braga (environmental specialist)

6. Safeguard Policies Triggered <i>(please explain why)</i>	Yes	No
<p>Environmental Assessment (OP/BP 4.01) The project has been rated a Category “B” as the impacts are limited in scope, localized, temporary and reversible. AES Tietê has carried out an Environmental Assessment and prepared an Environmental Management Plan (EMP). The only identified potential negative environmental impact, the use of herbicides and pesticides to control aggressive weeds and leaf-cutter ants, would be localized and temporary. The environmental benefits of the proposed reforestation activity would greatly surpass such temporary negative impacts.</p>	X	
<p>Natural Habitats (OP/BP 4.04) The project will contribute to the restoration of forests in selected stretches of permanent conservation areas (APPs) around existing AES Tietê reservoirs. These areas are legally protected under Brazilian legislation and commercial or productive use of the reforested areas would not be allowed.</p>	X	
<p>Forests (OP/BP 4.36) The project envisions the establishment of approximately 2,500 ha of native riparian forests in the Atlantic Forest and Cerrado biomes, with positive impacts on native biodiversity. These forests would be located within areas of permanent protection (APPs), a legal designation under Brazilian legislation which ensures that no commercial or productive use would take place in those forests.</p>	X	
<p>Pest Management (OP 4.09) When necessary, the control of leaf cutter ants during the two to three initial years after planting will be done using well tested ant baits (Class IV), and respective mitigation measures are identified in the Project Environmental Management Plan.</p>	X	
<p>Physical Cultural Resources (OP/BP 4.11) Although unlikely to happen, AES Tietê already has in place tested procedures to deal with potential findings of archeological material during project implementation. AES Tietê is currently undertaking an archeological diagnostic study of the areas surrounding all of its 10 reservoirs, after important archeological artifacts were found during construction activities at the Água Vermelha hydropower reservoir. AES Tietê has built a museum at the Água Vermelha site to house all the artifacts, and currently sponsors educational activities for local students at the museum.</p>	X	
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)		X
Safety of Dams (OP/BP 4.37)		X
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

II. Key Safeguard Policy Issues and Their Management

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

The project does not entail any potential large scale, significant and/or irreversible negative impacts, but it is expected to generate large and permanent positive environmental impacts on biodiversity through reforestation of native riparian forests. The only envisioned potential impacts are related to the use of herbicides and pesticides to control invasive grass species and leaf-cutter ants during the first two to three years after planting takes place.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area:

None are expected because, under Brazilian legislation, no commercial or productive activity can take place in APPs.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts:

AES Tiete has considered the possibility of implementing the proposed project without the sale of carbon credits for emission reductions, but this option would not be viable from a financial point of view.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described:

The project has been rated a Category “B” as the impacts are mostly limited in scope, localized, temporary and reversible. AES Tietê has carried out an Environmental Assessment and prepared an Environmental Management Plan. The only identified potential negative environmental impacts, the use of herbicides and pesticides to control aggressive weeds and leaf-cutter ants, would be localized and temporary. The environmental benefits of the proposed reforestation activity would greatly surpass such temporary negative impacts. Their control and respective mitigation measures are identified in the Project Environmental Management Plan and implementation will be under the responsibility of AES Tietê’s permanent technical team, composed of five professionals, including one agricultural engineer, one biologist/forester, one biologist, one agro-chemical engineer, and one environmental technician.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people:

Main stakeholders would be the 92 municipalities with territories that intersect with one of the reservoirs, landowners around the reservoirs, state and federal environmental agencies, and the scientific community. The project, including the EA, has been disclosed and discussed in several academic seminars and other public meetings related to opportunities in the carbon trade market, as well as in AES Tietê’s website. In addition, AES sent letters directly to (i) the 92

municipalities, (ii) state and federal environmental agencies, (iii) state and federal Public Attorney's Office, (iv) state and federal Legislative bodies, and (v) environmental and social NGOs. The project design is fully supported by other partners, including the State Forum on Global Climate Change and Biodiversity, as evidenced in many presentations of the project in public events. The Brazilian DNA has been very supportive of the project as well. All relevant project documents can be viewed and downloaded from the World Bank's Infoshop and from AES Tietê's website: <http://www.aestiete.com.br>.

<i>B. Disclosure Requirements Date</i>	
Environmental Assessment/Audit/Management Plan/Other:	
Was the document disclosed <i>prior to appraisal</i> ?	Yes
Date of receipt by the Bank	09/01/2006
Date of "in-country" disclosure	
Date of submission to InfoShop	06/24/2008
For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors	
Resettlement Action Plan/Framework/Policy Process:	
Was the document disclosed <i>prior to appraisal</i> ?	N/A
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	
Indigenous Peoples Plan/Planning Framework:	
Was the document disclosed <i>prior to appraisal</i> ?	N/A
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	
Pest Management Plan:	
Was the document disclosed <i>prior to appraisal</i> ?	N/A
Date of receipt by the Bank	
Date of "in-country" disclosure	
Date of submission to InfoShop	
* If the project triggers the Pest Management and/or Physical Cultural Resources policies, the respective issues are to be addressed and disclosed as part of the Environmental Assessment/Audit/or EMP.	
If in-country disclosure of any of the above documents is not expected, please explain why:	

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP 4.01 - Environment Assessment
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Does the project require a stand-alone EA (including EMP) report?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
If yes, then did the Regional Environment Unit or Sector Manager (SM) review and approve the EA report?	Yes		
Are the cost and the accountabilities for the EMP incorporated in the credit/loan?	N/A		
OP/BP 4.04 - Natural Habitats			
Would the project result in any significant conversion or degradation of critical natural habitats?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?			
OP 4.09 - Pest Management			
Does the EA adequately address the pest management issues?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Is a separate PMP required?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
If yes, has the PMP been reviewed and approved by a safeguards specialist or Sector Manager? Are PMP requirements included in project design? If yes, does the project team include a Pest Management Specialist?			
OP/BP 4.11 – Physical Cultural Resources			
Does the EA include adequate measures related to cultural property?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on physical cultural resources?	N/A		
OP/BP 4.10 - Indigenous Peoples			
Has a separate Indigenous Peoples Plan/Planning Framework (as appropriate) been prepared in consultation with affected Indigenous Peoples?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
If yes, then did the Regional unit responsible for safeguards or Sector Manager review the plan?			
If the whole project is designed to benefit IP, has the design been reviewed and approved by the Regional Social Development Unit?			
OP/BP 4.12 - Involuntary Resettlement			
Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
If yes, then did the Regional unit responsible for safeguards or Sector Manager review and approve the plan/policy framework/process framework?			
OP/BP 4.36 – Forests			
Has the sector-wide analysis of policy and institutional issues and constraints been carried out?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>

Does the project design include satisfactory measures to overcome these constraints?	
Does the project finance commercial harvesting, and if so, does it include provisions for certification system?	
OP/BP 4.37 - Safety of Dams	
Have dam safety plans been prepared?	Yes [] No [] N/A [X]
Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?	
Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?	
OP/BP 7.50 - Projects on International Waterways	
Have the other riparians been notified of the project?	Yes [] No [] N/A [X]
If the project falls under one of the exceptions to the notification requirement, has this been cleared with the Legal Department, and the memo to the RVP prepared and sent?	
What are the reasons for the exception? Please explain:	
Has the RVP approved such an exception?	
OP/BP 7.60 - Projects in Disputed Areas	
Has the memo conveying all pertinent information on the international aspects of the project, including the procedures to be followed, and the recommendations for dealing with the issue, been prepared	Yes [] No [] N/A [X]
Does the PAD/MOP include the standard disclaimer referred to in the OP?	
The World Bank Policy on Disclosure of Information	
Have relevant safeguard policies documents been sent to the World Bank's Infoshop?	Yes [X] No [] N/A []
Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?	Yes
All Safeguard Policies	
Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?	Yes [X] No [] N/A []
Have costs related to safeguard policy measures been included in the project cost?	N/A
Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?	Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?	Yes
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D. Approvals

<i>Signed and submitted by:</i>	<i>Name</i>	<i>Date</i>
Task Team Leader:	Maria Isabel J. Braga	03/01/2010
Environmental Specialist:	Maria Isabel J. Braga	03/01/2010
Social Development Specialist		
Additional Environmental and/or Social Development Specialist(s):		
<i>Approved by:</i>		
Regional Safeguards Coordinator:	Glenn S. Morgan	
Comments:		
Sector Manager:	Karin E. Kemper	03/19/2010
Comments:		