

## 1. Project Data

GEF Project ID	1343
IA/EA Project ID	BRA/02/G31/A/1G/99
Focal Area	Multi-Focal
Project Name	Demonstrations of Integrated Ecosystem and Watershed Management in the Caatinga, Phase I
Country/Countries	Brazil
Geographic Scope	Regional
Lead IA/Other IA for joint projects	UNDP Country Office
Executing Agencies involved	Forest and Biodiversity Secretariat (SBF) under the Ministry of Environment
Involvement of NGO and CBO	Among the executing agencies
Involvement of Private Sector	Yes- Beneficiary
Operational Program or Strategic Priorities/Objectives	OP 12: Integrated Ecosystems Management EM 1: Integrated Approach to Ecosystem Management
TER Prepared by	Nelly Bourlion
TER Peer Review by	Neeraj Kumar Negi
Author of TE	Angela Cordeiro
Review Completion Date	
CEO Endorsement/Approval Date	09/01/2004
Project Implementation Start Date	03/02/2004
Expected Date of Project Completion (at start of implementation)	31/12/2010
Actual Date of Project Completion	30/12/2010
TE Completion Date	31/12/2011
IA Review Date	N/A
TE Submission Date	11/12/2012

## 2. Project Financing

Financing Source	At Endorsement (millions USD)	At Completion (millions USD)
GEF Project Preparation Grant		
Co-financing for Project Preparation		
Total Project Prep Financing	-	-
GEF Financing	4.00	4.00
IA/EA own		
Government	0.29	0.80
Other*	22.30	21.40
Total Project Financing	26.59	26.20
Total Financing including Prep	26.59	26.20

\*Includes contributions mobilized for the project from other multilateral agencies, bilateral development, cooperation agencies, NGOs, the private sector, and beneficiaries.

## 3. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF Evaluation Office TE Review
Project Outcomes	S	S	N/A	S
Sustainability of Outcomes	N/A	S	N/A	MS
Monitoring and Evaluation	UA	UA	N/A	MU
Quality of Implementation and Execution	N/A	S	N/A	S
Quality of the Evaluation Report	N/A	N/A	N/A	S

#### 4. Project Objectives

##### 4.1. Global Environmental Objectives of the project:

According to the project appraisal document, the project aimed "to develop a biome-level framework guiding land-use in the Caatinga Forest from an integrated ecosystem management perspective, increasing the sustainability of baseline development and poverty alleviation programmes and contributing to the capture of global benefits in Biodiversity, Climate Change, Land Degradation, and Integrated Watershed Management".

To achieve this objective the project design considered the implementation of site-specific demonstrations areas at the State level and multi-sectoral capacity building actions to enhance replication throughout the biome.

The expected result is to demonstrate how development and poverty alleviation can be consistent with biodiversity conservation, the capture of atmospheric carbon and reduction of emissions, avoidance of land degradation and restoration, all in a context of integrated ecosystem management using watersheds as planning units.

This project is also expected to expand the limited view of problems and solutions from a local perspective to a bio-regional and global scale. The choice is to take action from a biome-level perspective, but at the local and State level, to demonstrate integrated and global-environment friendly development in selected watersheds as landscape planning and intervention units, to ensure involvement of all relevant institutions (governmental, non-governmental, academic, research, productive, religious groups, local unions, associations).

There were no major changes in Global Environmental Objectives noted in the Terminal Evaluation or final PIR.

##### 4.2. Development Objectives of the project:

The project log frame in the project appraisal document presents the following development objective:

"Provide rural inhabitants and industries in 8 Priority Intervention Areas (PIA) in the Caatinga Biome with integrated management options for different socio-environmental scenarios ;

strengthen the Caatinga States financial, institutional and legislative capacities to facilitate the implementation of these options, and supply key information required for their replication in other PIA throughout the biome".

Initially, the project was designed considering two implementation phases; (1) implementation in nine priority areas, according to previous definitions of priority conservation areas for Caatinga Biome, (2) implementation in the remaining priority areas not covered during phase 1. However, changes and adjustments were necessary, the time schedule was reduced and the project worked on five sites only.

According to the Terminal Evaluation report "the budget cuts and losses due to US dollar devaluation forced reduction in planned activities and implementation sites".

No other change in the project development objectives was documented in the Terminal Evaluation or in the PIRs.

4.3. *Changes in the Global Environmental Objectives, Development Objectives, or other activities:*

Criteria	Change?	Reason for Change
Global Environmental Objectives	No	
Development Objectives	No	
Project Components	Yes	Exogenous conditions changed, due to which a change in objectives was needed
Other activities	No	

**5. GEF EO Assessment of Outcomes and Sustainability**

5.1. *Relevance – Satisfactory*

This project target is the Caatinga Biome, and it is highly relevant from a social, economic, and environmental perspective. The project is highly relevant in meeting the objectives of the UNCBD, UNDP and GEF, in responding to the development objectives of Brazil, and in meeting the needs of the target beneficiaries. It also addressed issues related to the climate change and desertification, being in line with other international agreements signed by the Brazilian government such as the UN Convention on Biological Diversity, the UN Framework Convention on Climate Change, and the UN Convention to Combat Desertification.

Moreover, the project is highly relevant to GEF operational priority called integrated ecosystem management.

According to the Terminal Evaluation report, the project's design was satisfactory and the project document offered a convincing approach to address the existing problems, though the timing and objectives were too ambitious in relation to the budget and time available.

5.2. *Effectiveness – Moderately Satisfactory*

Project Effectiveness is rated as moderately satisfactory. It achieved most of its expected outcomes but some had moderate shortcomings.

The outcome related to the output 1 ("Integrated management options tested, demonstrated and adapted for different socio-environmental scenarios of the Caatinga Biome") was achieved, the project demonstrated sustainable forest management techniques as well as eco-business initiatives for non-wood species. Structural constraints at regulatory and policy level were the main barriers to a wide adoption of practices promoted by the project.

The expected outcome from the output 2 ("Techniques and practices for increasing the efficiency of wood transformation demonstrated and adopted by the charcoal, brick, tile and plaster industries in four Priority Areas with the aim of reducing carbon emissions and increasing the sustainability of the region's energy matrix") were reached. The only shortcomings were a lack of data that did not allow the estimation in the reduction of carbon emission that resulted from the project, and some structural difficulties faced by small industries that limited the scale up of the proposed technology for energy efficiency at industry level.

The outcomes of output 3 ("Three ecological corridors with a mosaic of protected areas of different categories and sustainable land-uses, created as a strategy for conservation of biodiversity at the landscape level") were very ambitious and depended on many external factors. Only two out of three ecological corridors were implemented. Sustainable management plans were implemented only in Xingó Region. The replication of management plans to other priority areas would need additional financial resources and extra institutional capacity at State level. The consolidation of committees in all nine States was not ensured, despite the official establishment of six State Committees of the Caatinga Biosphere Reserve.

The outcomes of the output 4 ("Incentives for Caatinga integrated ecosystem management created and tested at the biome level") were achieved however, in cases institutional weakness at the Ministry of Environment were a barrier to the full implementation of some funds. Considering the available fund before the project, the expansion of funding for Caatinga biome was not enough to cover existing demands.

Moreover, the project did not obtain progress on adjustments and improvements in credit lines already available. According to the Terminal Evaluation report, it would be strategic to include sustainable forest management in the rural credit lines operated by public and private banks.

The project efforts in accomplishing outcomes for output 5 ("Multi-sectoral capacity developed for integrated ecosystem management") resulted in expressive improvements at policy level, both at federal and state level. However, unavailability of monitoring data prevents any impact analysis regarding the amount of wood obtained from sustainable management areas as a result of investments in capacity building of governmental agencies.

The outcomes of output 6 ("Knowledge base developed to enhance the adoption of integrated ecosystem management of the Caatinga at the Biome level and to determine the national and global benefits that could be derived from this") only had minor shortcomings; the limited budget and the time restrictions. The project produced many technical bulletins but they were issued in limited number. The experiences on non-wood products were not documented for wide dissemination. And project results were not published in peer review journals.

According to the Terminal Evaluation report, "the dissemination of the sustainable Caatinga forest management and the green energy approach has been the major contribution of this project. Despite shortcomings faced during implementation, the project was effective in achieving its expected outcomes. The strategy to establish a broad partnership with different actors was very important to overcome budget and personnel constraints. The management adaptability and flexibility were key elements in the implementation".

### 5.3. *Efficiency – Satisfactory*

Project was completed on time and most of the outputs were delivered.

However, there was a lack of actual information, due to operational problems occurring after implementation of the UN ATLAS system (all project expenses were allocated to the Output 1, not allowing financial analysis by each output). These issues did not allow a precise cost-effectiveness evaluation. According to the Terminal Evaluation report, the project can be considered cost-effective considering the achievements and the conditions for implementation.

### 5.4. *Sustainability – Medium/Significant Risks*

The risk to sustainability of the project's outcomes is rated as medium to significant risks.

Socio-Political risks:

The investments from the project on training and dissemination increased the national capacity and skills on forestry management at the Caatinga Biome. Several Universities started to develop research projects on the subject, and forestry engineers involved in the training activities of the project had the opportunity to improve their technical skills.

According to the Terminal Evaluation report, partner organizations are expected to internalize the project outcomes and to work to scale up, at least in their working areas.

However, more efforts on training are necessary to increase the number of professionals skilled to meet the potential demand.

Financial risks:

The sustainability and the scaling up of the project outcomes depends on availability of funding for technical services, such as the Caatinga Fund. According to the Terminal Evaluation report, farmers cannot get funds to pay forestry engineers services, and "by the end of year 2010, the

Bodega da Caatinga, one of the most successful achievements of GEF project, had not enough funding to cover the costs of networking activities".

However, the project contributed to raise awareness about the Caatinga Biome and created opportunities to increase the amount of funding for projects in the region.

Institutional framework and governance:

The replication of sustainable forestry management and the green energy approach requires a set of conditions at regulatory and policy level as well as enhancement of institutional capacity of governmental bodies.

In recent years, Brazilian legislation has changed and some federal services have been transferred to States level. However, most of States do not have the institutional capacity required to work properly, especially the issue of permits and analysis of forestry management plans. According to the Terminal Evaluation report, farmers and private sector complain that the process to get a permit is very complicated and time consuming, thus discouraging farmers to adopt sustainable forestry management.

Environmental risks: There are no environmental risks to sustainability reported in the Terminal Evaluation report.

## **6. Processes and factors affecting attainment of project outcomes**

### **6.1. Co-financing**

6.1.1. To what extent was the reported co-financing essential to the achievement of GEF objectives? Were components supported by co-financing well integrated into the project?

Unable to fully assess. Budgetary reviews were carried out annually, however, due to operational problems, after the implementation of the UN ATLAS system all project expenses were allocated to the Output 1, not allowing for a precise financial analysis.

According to the Terminal Evaluation report, the co-financing allow the support local communities' projects in the Xingó Region, the technological improvements in fruit processing unities implemented by Araripe Foundation, the dissemination of eco-stoves for domestic use, the dissemination of sustainable forestry management in local communities, the development of sustainable forest management plans for 18 local industries, and finally the realization of studies on sanitary norms.

6.1.2. If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project's outcomes and/or sustainability? If it did, then in what ways and through what causal linkages?

The project started with a budget of US\$4,391,262 considering financial resources provided by GEF and the Brazilian Government. During project implementation, the Ministry of Environment managed to obtain additional funding, adding US\$510,000 to the original budget.

## 6.2. Delays

6.2.1. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project's outcomes and/or sustainability? If it did, then in what ways and through what causal linkages?

There were several reasons of delay during the project implementation:

(1) The Execution Agency main officer and the project technical coordination did not share the same approach regarding sustainable wood management. An internal dispute arose, and the Execution Agency main officer did not give the permits to establish the partnership with a private farm to implement a pilot large scale project on sustainable wood management. The experience was aborted and this conflict interfered in the project coordination structure, delaying the implementation of some activities.

(2) The Execution Agency main officer did not accept NGOs as implementation partners, this delayed agreements signature for almost one year.

(3) The implementation of State Committees depends on the approval of governmental officers at State level. The general elections realized in the end of year 2006 resulted in changes of governmental officers, delaying the negotiation process for committees' creation.

(4) The sustainable forestry management approach is not internalized by governmental agencies yet. Therefore, technical staff from governmental agencies does not feel confident to issue permits, delaying the approval process.

(5) The transfer of Caatinga data to a portal experienced some delays when the MMA was modified.

(6) At the end of the project implementation there were some delays in GEF transfers.

## 6.3. Country ownership

6.3.1. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability, highlighting the causal links:

This project was based on a decentralized implementation strategy. This strategy requires a good management system in order to keep a good information flow among all partners, otherwise project ownership does not occur properly.

The decision to implement the project in a decentralized way involving multi-sectoral organizations was crucial to overcome budgetary and personnel limitations. This strategy also created the conditions for dissemination of good practices, reducing the risks of lack of ownership after the project termination. This strategy to work with a broad and diverse range of partners facilitated a greater ownership by stakeholders.

According to the Terminal Evaluation report, the great geographic distance between project sites created difficulties for bilateral exchange among partners. Therefore, partners' ownership was restricted to issues they worked with.

## **7. Assessment of project's Monitoring and Evaluation system**

### **7.1. M&E design at entry- *Moderately Unsatisfactory***

M&E design at entry was moderately unsatisfactory.

According to the project appraisal, project monitoring and evaluation was in accordance with established UNDP and GEF procedures. The log frame provided progress, performance, and impact indicators for the project implementation along with their target and means of verification. The indicative work plan, the corresponding budget, the responsible parties, and the time frame were defined.

However, according to the Terminal Evaluation report, the M&E framework developed by an external consultant in the beginning of the project implementation was not "properly internalized by the coordination team and the project partners". The proposed indicators were not the best one for a results oriented management approach. The weakness of the M&E system was explicit during the terminal evaluation, creating many difficulties to track results based on the defined indicators.

### **7.2. M&E implementation- *Moderately Unsatisfactory***

Evaluation this system failed as a monitoring tool. The lack of resources led to the interruption of updating the system before the end of the project.

Three evaluations meetings were carried out during project implementation. Additionally, in 2006, an external evaluator carried out a midterm review. However, the proposed recommendations were not considered feasible by the project team and partners. Regarding the operational issues, six substantial reviews were carried out resulting in changes in partners and project schedule. Regarding planning activities, initially all project partners and consultants prepared planning and reports monthly. These documents were shared through e-mail and later they were uploaded to the management system available in the internet for project partners. Based on this information, the Regional Coordinator prepared the annual planning. Activities development assessment was carried out annually before preparing the PIR and the progress report requested by the Brazilian Cooperation Agency.



The indicators were not practical. It is important to keep a set of indicators relevant for project management and feasible to assess. Otherwise, the M&E system is not useful for a results-oriented management approach. In the case of this project, the M&E system was not used for planning purpose, but was used mainly for monitoring targets and filling the PIR sheets.

Finally, UNDP was responsible for the financial management and according to the Terminal Evaluation, this process worked timely and satisfactorily. The accounting and financial system used by the project management team was satisfactory. UNDP used the SAP system at first and then changed to UN ATLAS. These systems provided accurate and timely financial reports for the regional coordination.

## **8. Assessment of project's Quality of Implementation and Execution**

### **8.1. Overall Quality of Implementation and Execution – Satisfactory**

#### **8.2. Overall Quality of Implementation - Satisfactory**

The quality of the project implementation is rated as satisfactory and is supported by the following arguments:

(1) The design was technically good, even though the timing and the geographic coverage were ambitious in relation to the amount of financial resources available.

(2) UNDP played an important role as the implementing agency, giving important inputs during the conceptualization stage. Its political neutrality was important to facilitate dialogue among different sectors within Brazilian government, and the UNDP Country Officer provided liaison between different partners, sharing its own network in Brazil and promoting exchanges between different projects working in similar issues.

(3) The three years' time gap between the project conceptualization and the project approval required some adjustments during implementation, which included changing sites, partners, and activities. During this time, the dollar devaluated reducing the budgetary provisions by US\$ 1 million, and the Brazilian norms changed, creating barriers to hire a project team as predicted during the formulation phase.

(4) The lack of internalization of the project by the headquarters of the Ministry of Environment created some difficulties for implementation. The coordination team operated in reduced capacity, overloading the project staff.

(5) Changes in Brazilian rules regarding hiring of consultants also affected the implementation. The project staff was reduced to four people transferred from other governmental institutions to carry out project activities.

#### **8.3. Overall Quality of Execution- Satisfactory**

The quality of execution of the project can be rated satisfactory supported by the following reasons:

The Executing Agency was the Forest and Biodiversity Secretary, a body under the Ministry of Environment. The project management structure included a national coordination in the HQ and a regional coordination closer to the implementation sites. This regional coordinator had a seat at the Caatinga Working Group, a forum created by the Ministry of Environment to follow project activities.

According to the Terminal Evaluation report, the project execution strategy was well designed, considering the establishment of partnership with different kind of institutions; NGOs, research institutions, and governmental agencies. "This network approach provided the conditions to scale up project outcomes and to overcome staff and financial resources constraints".

However, at the time of implementation, the project's subject was not internalized properly by the Ministry of Environment. In fact there were a lack of visibility, knowledge and understanding of the complexity of the Caatinga Biome at the Ministry's officer's level. This fact lead to a lack of political support from the Execution Agency main officer, interfering negatively in the project implementation.

One important issue in the execution was the disagreement between the Execution Agency main officer and the project technical coordination. This conflict interfered in the project coordination structure.

## 9. Quality of the Terminal Evaluation Report

Criteria	Rating	GEF EO Comments
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	<b>Satisfactory</b>	The Terminal Evaluation report makes a strong assessment about the relevant outcomes and impacts. Each objective is well defined, and the achievements are explicitly detailed. The result of each output is described in detail. However, clearer statement about relevance, efficiency, and effectiveness would have been helpful.
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	<b>Moderately Unsatisfactory</b>	The Terminal Evaluation report is consistent and well documented about the evidences. However, major parts of the Evaluation are not rated and/or missing. The report is very detailed about the attainment of objectives and results of the output, but few information are available on catalytic role and replication, stakeholder participation, country ownership, preparation and readiness, monitoring and evaluation. The financial part is also missing some components but this was mainly out of control of the Evaluator since there were some operational problems in the financial system.
To what extent does the report properly assess project sustainability and/or project exit strategy?	<b>Satisfactory</b>	The sustainability of the project is described in the Terminal Evaluation report. However, the breakdown in categories is not detailed. There is no full description of each kind of risks; financial, socio-political, institutional, and environmental.
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	<b>Satisfactory</b>	The lessons learned are supported by the evidence found in the report. They are comprehensive. However, the reasons why the project was reduced from two phases to one phase would have been helpful.
Does the report include the actual project costs (total and per activity) and actual co-financing used?	<b>Satisfactory</b>	With the few information available, and the operational problems faced with the system, the Terminal Evaluation report contains the actual costs and co-financing used by the project. The cost break down per activity are estimated costs. However, a general table with more details should have been included in the report.
Assess the quality of the report's evaluation of project M&E systems:	<b>Highly Satisfactory</b>	The report clearly states the limitations of the M&E system and what improvements should be implemented.

## Annex I – Project Impacts as assessed by the GEF Evaluation Office

Did the project have outputs contributing to knowledge being generated or improved?

Yes

### WHAT OUTPUTS CONTRIBUTED TO KNOWLEDGE BEING GENERATED OR IMPROVED?

189 management plans prepared by 2007.  
APNE in partnership with the Caatinga Forestry Management Network developed guidelines for sustainable management for tannin extraction.  
The Araripe Foundation developed methods for sustainable management of Pequi, Licuri, Babaçu, Umburana, Janaguba e Fava D'Anta (important NWFP species for local communities).  
APNE developed a study on the land use in the Caatinga biome in partnership with other donors, resulting in a land use map of the Caatinga biome

Is there evidence that the knowledge was used for management/ governance?

Yes

### HOW WAS THIS KNOWLEDGE USED AND WHAT RESULTED FROM THAT USE?

The area with management plans increased by 136% between 2006 and 2010, increasing from 125,000 to 295,000 hectares. The efforts on training and dissemination of demonstration plots results contributed to the growing trend of management plans in Caatinga Biome.  
The guidelines were used by the Ministry of Environment that included the species in the National Program for the Promotion of Socio-biodiversity Products Chain Value.

Did the project have outputs contributing to the development of databases and information-sharing arrangements?

Yes

### WHAT OUTPUTS CONTRIBUTED TO INFORMATION BEING COMPILED AND MADE ACCESSIBLE TO MANY?

A network of partners called “Bodega da Caatinga” was created to manage the recognition of non-wood forestry products as fair trade products. The network obtained great visibility at national and international level.  
A coordination of the partners managed to disseminate project concepts and outcomes to several other institutions.  
The project coordinator participated as speaker in several Conferences and Meetings, promoting the sustainable management of Caatinga forest and disseminating project outcomes, and the data gathered in the demonstration plots. These meetings included international events such as the Sixth Conference of Parties of the Convention on Biological Diversity and the Second International Conference on Climate, Sustainability and Development in Semi-Arid Regions – ICID.  
The results of studies on the importance of wood products in the energy matrix of Northeast Region were widely disseminated, attracting the interest of private companies to incorporate sustainability criteria in their energy matrix.

Is there evidence that these outputs were used?

Yes

TO WHAT EXTENT HAVE THESE OUTPUTS BEEN USED?

WHAT HAS RESULTED FROM INFORMATION BEING MADE ACCESSIBLE TO OTHERS?

After participating in one meeting, the environmental agency of Sergipe State decided to implement a forestry management plan at state level, requesting advice from the project coordination team. The project worked closely with the governmental agency responsible for regional planning, which included the data found by the project in its annual statistics newsletter. This information created by the project was included in the Northeast Center for Plant Information - CNIP database developed by APNE. The database structure covered a broad content, including data about protected areas and botanical information of caatinga species. This database has been available in the Internet and accessed intensively by a wide audience, including researchers from other institutions. However, by the end of the project there was no clarity regarding the continuity of this database.

Did the project have activities that contributed to awareness and knowledge being raised?

Yes

WHAT ACTIVITIES CONTRIBUTED TO AWARENESS AND KNOWLEDGE BEING RAISED?

The project consisted of several activities such as research, demonstration plots, public awareness, policy advocacy, training, knowledge development, and information dissemination, that contributed to awareness and knowledge being raised. The project achieved great press coverage, in radio, television and newspapers. According to project reports, the project achieved more than 200 quotations in digital and printed press, project outcomes were broadcasted by TV shows at least in seven different occasions, three of which at national level, the Bodega da Caatinga produced 40 radio spots, which were disseminated at regional level. The guidelines produced were available through training activities and at the National Information Center of Northeast Plants website. Contacts with researchers and Universities provided support to training activities. The network participated actively in the most important Brazilian handicraft exhibition, and in the National Market of Family Agriculture organized by the Ministry of Agrarian Development. At international level, the network participated in the exhibition organized by the Slow Food Movement.

Was any **positive** change in behavior reported as a result of these activities?

No

WHAT BEHAVIOR (POSITIVE OR NEGATIVE) HAS CHANGED AS A RESULT?

No changes in behavior are reported in the Terminal Evaluation report.

Did the project activities contribute to building technical/ environmental management skills?

Yes

WHAT ACTIVITIES CONTRIBUTED TO **TECHNICAL/ENVIRONMENTAL MANAGEMENT SKILLS** BEING BUILT OR IMPROVED?

Several activities contributed to technical and environmental management skills being improved.

(1) The implementation of demonstration areas to improve sustainable management practices. The project supported the implementation of two processing units in Araripe region, benefiting 320 families of small farmers. The demonstration plots were managed in private farms, including several training activities for farmers, technical staff from governmental institutions, NGOs, undergraduate students, and industry managers.

(2) The organization of workshops in 21 communities by AGENDHA. They focused on teaching such as how to build the eco-stove, the sustainable management of firewood, and the concept of energy security at household and community level.

(3) The implementation of training meetings for small farmers from 20 land reform settlements located in the corridor region. The training contents included issues related to the sustainable management of Caatinga forest as well as sustainable agricultural and cattle production.

(4) The establishment of a farmers' eco-business network called "BODEGA DA CAATINGA". This network joined 35 Farmers Associations, involving directly 5,133 families living in 21 municipalities from five States. Bodega da Caatinga promoted both the development of sustainable management techniques as well as market chain value for products from Caatinga forest. Most of the beneficiaries are rural women.

(5) The publication of 10 institutional folders, four technical booklets, 12 technical bulletins, two magazines, and two books.

Is there evidence of these skills being applied by people trained?

No

HOW HAVE THESE SKILLS BEEN APPLIED BY THE PEOPLE TRAINED?

Lack of a local partner and financial resources to follow up training activities did not allow for measuring the impacts of training activities on farmers' practices.

Did the project contribute to the development of legal / policy / regulatory frameworks?

Yes

Were these adopted?

Yes

WHAT LAWS/ POLICIES/ RULES WERE ADOPTED AS A RESULT OF THE PROJECT?

- (1) In March 2007, IBAMA and the Environmental Agency of Pernambuco - CPRH signed an agreement to implement the Mata Nativa Program in the Araripe Region, consisting of training activities and intensification of field surveillance.
- (2) After a consultation process with industry owners, the governmental bodies implemented agreements with the private sector to reduce deforestation and illegal use of Caatinga forestry resources.
- (3) Major governmental programs have included sustainable management and the green energy approach in their agenda, such as the National Plan to Combat Desertification and the Plan for Combating Caatinga Biome Deforestation.
- (4) The project participated actively in the development of regulatory framework for sustainable management plans of Caatinga forest.
- (5) In June 2009 the Ministry of Environment published the Norm Instruction # 1, defining rules for the sustainable management of Caatinga Forest.

At the federal level, the project coordination worked closely with the Ministry of Environment to develop the National Policy for Sustainable Use and Conservation of Caatinga Forest

Did the project contribute to the development of institutional and administrative systems and structures?

Yes

Were these institutional and administrative systems and structures integrated as permanent structures?

UA

**WHAT OFFICES/ GOVERNMENT STRUCTURES WERE CREATED AS A RESULT OF THE PROJECT?**

A partnership with the Brazilian Agricultural Research Corporation - EMBRAPA and the University of São Francisco Valley was established to organize training activities for technical staff from governmental agencies on restoration of degraded areas through the implementation of agroforestry systems.

Did the project contribute to structures/ mechanisms/ processes that allowed more stakeholder participation in environmental governance?

Yes

Were improved arrangements for stakeholder engagement integrated as permanent structures?

UA

**WHAT STRUCTURES/ MECHANISMS/ PROCESSES WERE SUPPORTED BY THE PROJECT THAT ALLOWED MORE STAKEHOLDERS/ SECTORS TO PARTICIPATE IN ENVIRONMENTAL GOVERNANCE/ MANAGEMENT ACTIVITIES?**

The project design process included consultation with a broad range of stakeholders, involving governmental officers from State and Federal level, experts from Universities, and representatives from civil society and private sector. A consultation seminar was organized involving representatives from 70 institutions, and another smaller seminar organized in 2001 joined governmental officers and NGO experts. This process of consultation ensured a very satisfactory degree of stakeholder participation.

The project also created State Committees to ensure broad participation of stakeholders.

The efforts of the regional coordination and UNDP to get the best value for the project lead them to establish several partnerships with Universities and research institutions.

The results obtained in Araripe Region motivated a partnership with the NGO SOS Sertão and brick industries. This initiative attracted the attention of the Brazilian Support Service to Micro and Small Enterprises- SEBRAE, which opened calls for proposals for implementing sustainable forestry management plans in the Serido Region.

The project established partnership with governmental bodies at State level to develop the regulatory framework and forestry management plans. This strategy improved the involvement of stakeholders.

Did the project contribute to informal processes facilitating trust-building or conflict resolution? No

WHAT PROCESSES OR MECHANISMS FACILITATED TRUST-BUILDING AND CONFLICT RESOLUTION?  
WHAT RESULTED FROM THESE?

<p>Did the project contribute to any of the following:</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 80%;">Technologies &amp; Approaches</td> <td style="border: 1px solid black; text-align: center;">No</td> </tr> <tr> <td>Implementing Mechanisms/Bodies</td> <td style="border: 1px solid black; text-align: center;">No</td> </tr> <tr> <td>Financial Mechanisms</td> <td style="border: 1px solid black; text-align: center;">No</td> </tr> </table>	Technologies & Approaches	No	Implementing Mechanisms/Bodies	No	Financial Mechanisms	No	<p>Please specify what was contributed:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> <tr><td style="height: 20px;"></td></tr> </table>			
Technologies & Approaches	No									
Implementing Mechanisms/Bodies	No									
Financial Mechanisms	No									

Did **replication** of the promoted technologies, and economic and financial instruments take place? Yes

SPECIFY WHICH PLACES IMPLEMENTED WHICH TECHNOLOGIES/APPROACHES OR ASPECTS OF A TECHNOLOGY/APPROACH.  
WHAT WAS THE RESULT IN THOSE PLACES (ENVIRONMENTAL & SOCIOECONOMIC)?



The Terminal Evaluation reports that this project allowed the implementation and adoption of strategy and technology in other places.

The strategy applied to design this project was replicated by other projects; the government of Pernambuco and Sergipe State used the same approach to develop the State Plan to Combat Desertification. The “Mata Branca” Project supported by the World Bank used the same implementation strategy applied in this project, decentralizing implementation through sub-projects. The Ministry of Environment also used this same strategy at least in two other projects. At the time of Terminal Evaluation writing, the same approach was being considered for another project, being formulated by UNDP and FAO.

The success of eco-stove spread beyond the project boundaries, UNDP disseminated the proposal to other areas in Brazil, including a project involving indigenous people. The eco-stove has been also recognized as a model technology by the National Climate Change Fund and the National Environment Fund. According to the Terminal Evaluation report, several NGOs have been demanding AGENDHA assistance on the eco-stove technology.

The dissemination of results from the demonstration plot motivated other initiatives, and the Brazilian Forestry Service and the Land Reform Institute established a partnership to disseminate sustainable forestry management for small farmers from 32 land reform areas, of which 18 based in Pernambuco State and 14 in Paraiba State. This Program is involving 801 families and 5,900 hectares of Caatinga forest.

Moreover, the Ministry of Environment and the public bank Caixa Economical Federal signed and agreement transferring US\$ 3,5 million to FNMA for funding projects on energy efficiency and sustainable management of Caatinga forest.

Did **scaling-up** of the promoted approaches and technologies take place?

No

SPECIFY AT WHAT ADMINISTRATIVE & ECOLOGICAL SCALE AND WHICH TECHNOLOGIES/APPROACHES OR ASPECTS OF A TECHNOLOGY/APPROACH WAS ADOPTED.

HOW WAS IT MODIFIED TO FIT THE NEW SCALE? WHAT WAS THE RESULT AT THE NEW SCALE/S (ENVIRONMENTAL & SOCIOECONOMIC)?

The Terminal Evaluation report indicates that lack of institutional capacity of governmental bodies to approve forestry management plans timely, and unavailability of credit to pay the costs of plans design were the main constraints for scaling up the project.

Moreover, according to the Terminal Evaluation report, 80% of Brazilian industries working in the brick, gypsum or tile production are small companies and do not have financial resources to afford technological improvements proposed by the project, therefore the scale up of the green energy approach depends on the expansion of financial support from public and private banks at competitive interests rates. In 2011, Brazilian Government announced the creation of the Climate Fund and it is expected that the Brazilian Development Bank will provide 150 million to the Fund to support technological investments on energy efficiency.

Did **mainstreaming** of the promoted approaches and technologies take place?

Yes

SPECIFY HOW (MEANS/ INSTRUMENT) AND WHICH ASPECTS OF THE TECHNOLOGY/APPROACH WAS INCORPORATED INTO THE EXISTING SYSTEM. WHAT WAS THE RESULT OR STATUS (ENVIRONMENTAL & SOCIOECONOMIC)?

The project has contributed to the development of policies and regulations at the federal level and in several Northeast states that now include measures and the best practices to conserve biodiversity. The production sectors affected are forestry management, non-timber forest products, and energy efficiency. The organizations and businesses that have better addressed biodiversity are OEMAs, IBAMA, Environmental Ministry, Agrarian Development Ministry, SEBRAE/CEPIS, Plaster Industries, Brick and Tile Industries, INCRA. Moreover, according to the last PIR "continued lobbying has ensured that best practices have been included in the Caatinga Fund and FNMA, as well as mainstreaming into public policies, which are significant results".

Did **removal of market barriers** and sustainable market change take place?

SPECIFY HOW DEMAND HAS BEEN CREATED FOR WHICH PRODUCTS/ SERVICES THAT CONTRIBUTE TO GEBs.

Based on most of the project's components and/or what it generally intended to do, what type of project would you say this is?

 <--dropdown menu

If "combination", then of which types?

 &  <--dropdown menu

*QUANTITATIVE OR ANECDOTAL DETAILS ON HOW ENVIRONMENTAL **PRESSURE HAS BEEN REDUCED/PREVENTED** OR ON HOW ENVIRONMENTAL **STATUS HAS CHANGED** AT THE DEMONSTRATION SITES AS A CONTRIBUTION/RESULT OF PROJECT ACTIVITIES. FOR SYSTEM LEVEL CHANGES, SPECIFY THE ADMINISTRATIVE AND/OR ECOLOGICAL SCALES.*

Was stress reduction achieved?

If so, at what scales?

Please mark 'x' for all that apply

<input checked="" type="checkbox"/> Local	<input checked="" type="checkbox"/> Intended (local)	<input type="checkbox"/> Unintended (local)
<input checked="" type="checkbox"/> Systemic	<input checked="" type="checkbox"/> Intended (systemic)	<input type="checkbox"/> Unintended (systemic)

How was the information obtained?

<input checked="" type="checkbox"/> Measured	<input type="checkbox"/> Anecdotal
--	------------------------------------

Was there a change in environmental status?

If so, at what scales?

Please mark 'x' for all that apply

Local

Intended (local)

Unintended (local)

Systemic

Intended (systemic)

Unintended (systemic)

How was the information obtained?

Measured

Anecdotal

#### Evidence of intended stress reduction achieved at the **local level**

The project supported the development of a domestic stove that requires 60% less firewood than the conventional model.  
The improvements in the production chain reduced the consumption of firewood to produce 1,000 bricks from 1 m st to 0.2 m st.  
By the end of 2008, the number of industries with environmental permits reached 85% of 115 industries operating in Araripe Region.

#### Evidence of intended stress reduction at a **systemic level**

The results of the Mata Nativa Program registered an "*expressive reduction in deforestation*", according to the Terminal Evaluation report. There was also a reduction in the use of native forest species for firewood purpose, and the Terminal Evaluation found that at least 5,000 ha of Caatinga Forest remained preserved thanks to the Mata Nativa Program.  
The project contributed to the protection of 7 million hectares with support to improved enforcement. This had direct impacts on biodiversity conservation of world dry forests. The reduction of deforestation promoted by Mata Nativa Program contributed to reduce biodiversity losses. The sustainable management approach demonstrated and disseminated in Araripe and Xingo sites lead to positive changes in land use, contributing for conservation of biodiversity and traditional knowledge.  
However, the lack of data did not allow for estimation of the reduction of carbon emissions resulting from the project.

#### Evidence of intended changes in environmental status at the **local level**

A company impacted by the project obtained the GeoPark label from UNESCO. The technological improvements qualified the industry to apply for carbon credits.  
The project supported the creation of the Caatinga Ecological Corridor, which linked eight protected areas situated in five Brazilian States and covers an area of 5 million hectares.

#### Evidence of intended changes in environmental status at a **systemic level**

The lack of data does not allow for a quantitative estimation of global benefits. According to the Terminal Evaluation report, the project did contribute for the global environment, the technological improvements tested by gypsum industries resulted in 11% - 56% reduction of firewood consumption and the eco-stove technology reduced the demand for firewood in about 60%. Therefore, it seems reasonable to expect that the dissemination of these technologies will reduce deforestation and greenhouse gas emissions, with positive impacts on the global climate.

Evidence of unintended changes in stress or environmental status at the **local level**

The project indirectly helped create the Capivara-Confusões Ecological Corridor, covering an area of 1.78 million hectares between two National Parks in Piauí State.

Evidence of unintended changes in stress or environmental status at the **systemic level**

Were arrangements to collect data on stress reduction and environmental & socioeconomic status in place during the project?

Environmental

No

Socioeconomic

No

To what extent were arrangements in place and being implemented during the project? Briefly describe arrangements.

Lack of monitoring data did not allow a precise estimation of sustainable management plans implemented in the region, and an evaluation regarding the quality of these management plans or how close they were from the technical proposal disseminated by the GEF Caatinga project.

To what extent did these arrangements use parameters/ indicators to measure changes that are actually related to what the project was trying to achieve?

Were arrangements to collect data on stress reduction and environmental & socioeconomic status in place to function after the project?

To what extent were arrangements put into place to function after GEF support had ended? Briefly describe arrangements.

Was there a government body/ other permanent organization with a clear mandate and budget to monitor environmental and/or socioeconomic status?

According to the Terminal Evaluation report, the monitoring data should be managed by governmental environment agencies at state level. However, these agencies do not have institutional capacity to collect and monitor information on sustainable management plans timely. By the end of the project, none of the States agencies had proper structure to provide follow-up to management plans. Due to the absence of computerized databases, they could not provide updated information regarding the evolution of land area under sustainable management.

Has the monitoring data been used for management?

How has the data been used for management? Describe mechanisms and actual instances.

Has the data been made accessible to the public?

How has the data been made accessible to the public? Describe reporting systems or methods.

*“SOCIOECONOMIC” REFERS TO ACCESS TO & USE OF RESOURCES (DISTRIBUTION OF BENEFITS), LIVELIHOOD, INCOME, FOOD SECURITY, HOME, HEALTH, SAFETY, RELATIONSHIPS, AND OTHER ASPECTS OF HUMAN WELL-BEING .AS MUCH AS POSSIBLE, INCLUDE “BEFORE” AND “AFTER” NUMBERS, YEARS WHEN DATA WAS COLLECTED, AND DATA SOURCES.*

Did the project contribute to **positive** socioeconomic impacts?  Yes

If so, at what scales?

Please mark 'x' for all that apply

Local     Intended (local)     Unintended (local)  
 Systemic     Intended (systemic)     Unintended (systemic)

How was the information obtained?

Measured     Anecdotal

Did the project contribute to **negative** socioeconomic impacts?  No

If so, at what scales?

Please mark 'x' for all that apply

Local     Intended (local)     Unintended (local)  
 Systemic     Intended (systemic)     Unintended (systemic)

How was the information obtained?

Measured

Anecdotal

Evidence on intended socio-economic impacts at the **local level**

The smoke reduction in the plant attracted more women labors, which now correspond to 30% of the workforce. The adoption of management plan for the wood production areas that supplies the industry opened 200 jobs.

Evidence on intended socio-economic impacts at **systemic level**

The Bodega da Caatinga Network demonstrated the potential of Caatinga forest for income generation, especially for the poorest families. Technical solutions developed and promoted by the project also demonstrated that instead of being a “marginalized area”, the Brazilian semi-arid area is an important asset, both at national and global level.

Briefly describe the key lessons, good practice or approaches mentioned in the terminal evaluation report

The following lessons were identified by the Terminal Evaluation report:

- (1) The time gap between formulation and implementation affects project results, and the adjustments required are time-consuming, with implications on the project's implementation.
- (2) Projects involving innovative concepts and practices should better take into account the timeframe and budget.
- (3) Lack of political support let project managers in an isolated position, constraining institutional ownership of project results.
- (4) Project log frame and M&E matrix should be developed in the early stages, in a participatory way.
- (5) A decentralized strategy and multi-stakeholder involvement in project implementation increase the sustainability and reduce the risks associated with shortcomings at executing agency level.
- (6) Decentralized and multi-sites projects require a well-designed communication system, which has to be part of the project logic.
- (7) The network approach is a strategic element for project implementation, and enables sharing and expansion of existing capacities, increasing project efficiency and efficacy.
- (8) Adoption of new technologies that increase energy efficiency by small scale industries depends on access to credit and technical assistance.
- (9) Scale up of the project depends on adjustments on regulatory framework, dissemination of technical capacity, financial support, and access to market.
- (10) Projects should consider the whole production chain, including processing and market.
- (11) The strategies that ensure early stakeholders involvement in protected areas design and provide support for sustainable management of buffer zones are more effective.

Briefly describe the recommendations given in the terminal evaluation

Based on the evaluation findings, the recommendations are as follow:

- (1) Ensure ownership and maintenance of project data by the Ministry of Environment.
- (2) Provision of extra funding for follow-up of documentation activities, and of training activities.
- (3) Continuous efforts to include the sustainable forest management as part of credit lines already available. This is an essential step to scale-up sustainable wood managed areas and to create more incentives for sustainable management of NWFP.
- (4) Continuous efforts to expand credit lines for investments in energy efficient, considering special lines oriented to small scale industries.
- (5) Continuous efforts to build up institutional capacity of governmental agencies at State level on forestry management issues.
- (6) Continuous efforts to include the sustainable forestry management in the research agenda. The experience of project partners and local communities should be considered in defining research priorities.
- (7) Consider the local communities when planning the creation of protected areas in the Caatinga Biome.