



FINAL EVALUATION

Third National Communication to the United Nations Framework on Climate Change – UNFCCC Brazil

**United Nations Development Program
Global Environment Facility**

UNDP Project ID: 71915
GEF Project ID: 4299

Final version

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***Third National Communication to the United Nations
Framework on Climate Change – UNFCCC
Brazil***

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EVALUATOR CONSULTANT - MARY DAYSE KINZO

Brief Description

This Enabling Activity project will assist Brazil to prepare the Third National Communication (TNC) to the UNFCCC. The objective is to extend coverage of the annual Brazilian Inventory of Anthropogenic GHGs to the period 2000-2010, focusing on the sectors/gases that have a significant share of GHG emissions and/or a large degree of data uncertainty. A new integrated global model for climate change studies and downscaling of global models will be developed to reduce the uncertainties in V&A assessments for different sectors. Brazil's description of national circumstances will be updated, as well as the steps to be taken or envisaged to implement the Convention. Finally, the project will continue to build institutional capacity for implementing the Convention in Brazil, including activities related to climate change education and awareness.

Acknowledgements

The evaluator thanks all those who contributed their knowledge and views to the preparation of this Final Report Assessment (TA).

It is expected that the conclusions and recommendations that emerged from the analysis of data collected during the evaluation will contribute to the improvement of other work and achievement of goals.

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LIST OF ABBREVIATIONS

ABAL	Brazilian Aluminum Association
ABC	Brazilian Cooperation Agency
ABCM	Brazilian Society of Mechanical Sciences and Engineering
ABIA	Brazilian Food Industry Association
ABPC	Brazilian Association of Lime Producers
ABRABE	Brazilian Beverages Association
APR-PIR	Annual Project Review – Project Implementation Report
BRACELPA	Brazilian Pulp and Paper Association
BRL	Brazilian Real
CATI	Integral Technical Assistance Coordination
CDM	Clean Development Mechanism
CETESB	Environment Sanitation Agency of the State of São Paulo
CNPq	National Council for Scientific and Technological Development
CO ₂	Carbon Dioxide
COP	Conference of the Parties
COPPE-UFRJ	Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering of the Federal University of Rio de Janeiro
CPTEC	Center for Weather Forecasts and Climate Research
E&E	Economy & Energy
EMBRAPA	Brazilian Agricultural Research Corporation
FBDS	Brazilian Sustainable Development Foundation
FBMC	Brazil Climate Change Forum
FNC	First National Communication
FUNCATE	Foundation for Space Science, Applications and Technology
GEF	Global Environment Facility
GHG	Greenhouse Gas
GWP	Global Warming Potential
HFC	HydroFluoroCarbon
IABr	Brazilian Steel Institute
IEMA	Energy and Environment Institute
INPE	National Space Research Institute
IPCC	Intergovernmental Panel on Climate Change
IRGA	Riograndense Rice Institute
IVA	Impact, Vulnerability and Adaptation
LULUCF	Land-Use, Land-Use Change and Forestry
M&E	Monitoring and Evaluation
MBSCG	Brazilian Model of the Global Climate System
MCTIC	Ministry of Science, Technology, Innovation and Communication
MMA	Ministry of Environment
MME	Ministry of Mines and Energy
MRE	Ministry of External Relations
NEX	National Execution
OC	Climate Observatory
PETROBRAS	Brazilian Oil Corporation
PMU	Project Management Unit
PRODOC	Project Document

PSC	Project Steering Committee
R&D	Research and Development
Rede Clima	Climate Network
SIRENE	National Emissions Registry System
SNC	Second National Communication
SNIC	National Cement Industries Association
SNIEC	National Union of the Coal Extraction Industry
TNC	Third National Communication
ToR	Terms of Reference
UBIBRA	Brazilian Wine and Grape Growers Union
UnB	University of Brasilia
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
V&A	Vulnerability and Adaptation

Executive Summary

Project Summary Table

Project Title: BRA/10/G32 –Third National Communication to the United Nations Framework Convention on Climate Change

GEF Project ID:	4299		<i>At endorsement (Million US\$)</i>	<i>At completion (Million US\$)</i>
UNDP Project ID:	71915	GEF Financing:	5,720,000	5,720,000
Country:	Brazil	IA/EA own:	0	0
Region:	RBLAC	Government:	6,500,000	6,500,000
Focal Area:	CC	Other:	0	0
FA Objectives, (OP/SP):	EA	Total co-financing:	6,500,000	
Executing Agency:	MCTIC	Total Project Cost:	12,220,000	12,220,000
Other Partners involved:	N/A	ProDoc Signature (date project began): October 29, 2010 (Operational) Closing Date: Proposed: November 2014 Actual: June 2016		

This Enabling Activity Project was designed to assist Brazil to prepare its Third National Communication (TNC) to the UNFCCC. It corresponds to the fulfillment of obligations assumed by the country in relation to the Convention on Climate Change, which sets out an overall framework for intergovernmental efforts to tackle the challenges posed by climate change. The commitments reflect recognition that the climate system is a shared global resource and that its stability can be affected by emissions from agriculture, industry and other sources of carbon dioxide and other greenhouse gases (GHG). The resulting commitments concern the development, periodic updating, publication and delivery to the UNFCCC of inventories of anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, through National Communications. The Global Environment Facility (GEF) has been the financial mechanism of the UNFCCC, helping developing countries with necessary financial support to be able to draw up national inventories, strategies, action plans and reports under the Convention by means of so-called "enabling activities." Brazil presented its First National Communication in December, 2004, at the COP-10 Conference of the Parties to the UNFCCC. After this, Brazil asked for new support from Global Environment Facility to assist in the preparation of the Second National Communication (SNC), which began in February 2006, and was delivered to UNFCCC in 2010. The Third National Communication (TNC), object of the present evaluation, started to be implemented in 2010 and was delivered in April 2016.

According to the Project Document (PRODOC), the proposed Third National Communication (TNC) sought deeper understanding of the driving forces of GHG emissions related to LULUCF as inputs for the development of public policies. The TNC products and results provided a strategic asset for the Brazilian Government to produce reliable information to be used in adaptation plans and projects based on a more precise

vulnerability assessment in the key sectors. The TNC project extended coverage to the period 2000 to 2010 and improved the existing time-series data from the previous NCs for key sectors. Other results sought to improve the performance and accuracy of downscaling methodologies for GCM climate models applied to Brazil in order to reduce uncertainties in V&A assessments in different sectors. Finally, the project results updated Brazil's description of national circumstances and strengthened the institutional capacities, including actions of education and awareness-raising about climate issues.

The GEF funding for the preparation of the Third National Communication was implemented through the United Nations Development Program (UNDP). The UNDP project document was signed in November 2010 with a GEF budget of US\$5,720,000 and Government co-financing in kind of US\$6,500,000. Work began in early 2011, executed by the Ministry of Science, Technology and Innovation (MCTIC). The original closing date was November 2014, but was extended to 2015.

According to regulations of UNDP and GEF, an evaluation of a project needs to be done after the completion of the project. The final evaluation was conducted in August 2016 by a consultant, Mary Dayse Kinzo, and this report includes the main findings, conclusions and recommendations.

The UNDP Project Document mentions that “The project **goal** is: “To enable the Government of Brazil to enhance available emission data, performing targeted research, and strengthening technical capacity and institutions to address both mitigation and adaptation.” The project **objective** is: “To assist the Government of Brazil to perform the activities necessary to prepare the Third National Communication to the Conference of Parties in accordance with the UNFCCC.” This objective has been met as the Third National Communication was deposited in the UNFCCC Secretariat in April 2016 in three volumes, which contain the follows items:

Box 1

Volume I

1. National Circumstances
2. Other Information Considered Relevant to the Achievement of the Objectives of the Convention
3. Relevant Institutional Arrangements for the Implementation of the Convention in Brazil

Volume II

1. Programs Containing Measures to Mitigate Climate Change
2. Vulnerabilities and Adaptation to Climate Change

Volume III

1. Introduction

2. Summary of Anthropogenic Emissions by Sources and Removals by Sinks of Greenhouse Gases
3. Anthropogenic Emissions by Sources and Removals by Sinks of Greenhouse Gases by Sector
4. Uncertainty of the Estimates

The Project Document was structured to produce technical reports as **outcomes** that have provided the basis for the above-mentioned three volumes. These outcomes and outputs are presented in the box below.

Box 2

Outcome 1 The national GHG inventory for 2000-2010 has been produced and time-series for 1990-2000 have been refined for key emission sectors.

Outcome 2 National circumstances, steps taken or envisaged, constraints and needs have been assessed as inputs for the implementation of the UNFCCC in Brazil.

Outcome 3 Sector and regional vulnerabilities to climate change have been assessed using improved methodologies and climate models.

Outcome 4 The Brazilian Third National Communication has been published and presented to the Government and national stakeholders.

The MCTIC engaged partners and stakeholders. The Third National Communication mentions that “The preparation of the III Inventory involved a significant portion of the Brazilian scientific and business community, as well as several government sectors, with direct participation of 230 experts representing 98 institutions”. Scientific experts with recognized competence in their respective areas of expertise and from a variety of sectors (energy, industry, forestry, agriculture/livestock, waste treatment etc.) were involved. Considering this multiplicity of stakeholders from the public and private sectors and their strong participation, the preparation of the Third National Communication has promoted the **mainstreaming** of climate change issues in Brazil. This was an effort to improve scientific understanding, influence national policies and increase national awareness about climate change.

It is important to emphasize the contribution of the Brazilian Research Network on Global Climate Change (Rede Clima). The Rede Clima was created in November 2007 aiming to generate and disseminate knowledge, to face the challenges of climate change and to bring together national experts and expertise on climate issues. The role played by the Climate Network and its Sub-Networks was relevant and its contribution is a result of their involvement in the preparation of the TNC. Their participation is highlighted from the beginning of the work, particularly with the estimates of greenhouse gas emissions set out in the III Brazilian Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of GHGs not controlled by the Montreal Protocol and the modeling of future scenarios and subsequent studies of impacts and vulnerabilities in strategic sectors of Brazilian society, according to M. Rojas da Cruz.

Project BRA/10/G32 was extended for another two years, according to the Review of October 2016, agreed by MCTIC, ABC-MRE and UNDP. However, the products being delivered had to be approved by the Presidency of Republic as per an official review. This review took time and created delays to present the results to the UNFCCC. They were delivered in April 2016. The TNC results had to be clarified and only after this process could it be translated into English and published. Some other problems caused the delay in finalizing the results, such as:

- Establishing agreements with many public and private institutions related to the results and Project Document products took time for administrative reasons within these institutions as well as government ministries;
- The inventory based on GHG emissions data from different sectors of the economy is very complex and gathering information from various sources and processing took great time and effort of the participants. On the other hand, efforts were sufficient to complete the data and modeling application;
- Others kind of political and institutional problems were also responsible for the delay in the completion and delivery of documents to the UNFCCC.

It should be emphasized that such delays should be identified as risks in future National Communications.

It is true that Brazil has been aware of the global warming problems and has played an important role in international discussions and scientific assessment of climate change. However, without the intervention of the GEF resources, the National Communications would have faced enormous difficulties in what was achieved. This also occurred in the preparation of the TNC, as the financial resources for these activities are scarce in the Brazilian budget. UNDP/GEF support may be deemed highly relevant.

Considering the issue of replicability, the project produced advanced approaches to TNC with the application of new methodologies and tools, particularly regarding the inventory and the issues of assessment of vulnerability and adaptation, which will be shared with similar national and international organizations. The inputs will also contribute to analyses conducted by the IPCC.

In relation to sustainability, there are risks that were considered in the preparation of the implementation of the TNC proposal. However, the strong network of actors proved to be engaged in the process and this fact led to the sustainability of the results obtained. The existence of a coordination unit on climate change in the MCTIC is also a sustainability factor in the results of the BRA/10/G32 Project. The project performance is summarized below.

Rating for project design and outcome implementation

Evaluation Ratings:			
1. Monitoring and Evaluation	Rating	2. IA& EA Execution	Rating
M&E design at entry	S	Quality of UNDP Implementation	HS
M&E Plan Implementation	S	Quality of Execution - Executing Agency	HS
Overall quality of M&E	S	Overall quality of Implementation / Execution	HS
3. Assessment of Outcomes	Rating	4. Sustainability	Rating
Relevance	R	Financial resources:	L
Effectiveness	S	Socio-political:	L
Efficiency	S	Institutional framework and governance:	L
Overall Project Outcome Rating	S	Environmental :	L
		Overall likelihood of sustainability:	L

According to the Evaluator, the rating of the project *as a whole* is **Satisfactory (S)**, meaning that the project had only minor shortcomings.

Conclusions, Recommendations and Lessons

Considering the conclusions and recommendations that emerged from the Technical Workshop for Final Evaluation of Project BRA/10/G32 on the Third National Communication of Brazil to the UNFCCC, the main recommendations for future reports to comply with obligations of the country with the Convention are the following.

- Since the short time available was a challenge for concluding the inventory of LULUCF sector emissions, it is recommended that the next National Communication carry out as soon as possible the signing of contracts needed for work on research and data collection and processing;
- The fact that the CGMC/MCTIC includes career civil servants was advantageous leads to the recommendation that more such people be incorporated in the team;
- Because of the precarious nature of fellowship grants, primarily for the Climate Network, it is recommended that high-level agreements between MCTIC and CNPq be made about continuity;
- Since there were difficulties in the use of the super-computer, it is recommended that resources be allocated to overcoming this weakness of infrastructure, namely, the use of data and forms of backup and storage. It is also recommended that a person be placed in charge of coordinating use of this infrastructure;
- Considering the importance of the training component in the implementation of the TNC, continuous investment is recommend in training new specialists for the preparation of the inventory of the sectors in question;
- Better understanding is need of stocks and flows of underground carbon under various land uses;

- It is also recommended also that there be a workshop to carry out comparison of different South American and Central inventories so that the various countries can share their difficulties, challenges and experiences;
- Considering the advance of forest inventories in the states, coordination is recommended between CGMC/MCTIC and the Brazilian Forest Service (SFB) of the Ministry of Environment (MMA) to integrate and use data from the National Forest Inventory (IFN);
- As recommended in an interview, there should be contact and cooperation with the Brazilian Institute of Geography and Statistics (IBGE), which would be important for preparation of the Fourth National Communication;
- It was also recommended to prepare projections about the possible impacts of the adoption of various public policies on climate change;
- It was also recommended, according to a TNC participant, that the MCTIC seek partnerships not only with federal ministries, but also with state environmental agencies, so that they create teams to analyze GHG emissions with the support of the Ministry;
- Another recommendation that emerged from the assessment workshop in June of 2016 concerns the importance of enhancing the role of the Ministry of External Relations, which should be encouraged to participate in technical meetings;
- Finally, it was recommended that UNDP review the bureaucratic procedures to the extent possible under existing government regulations to expedite the execution of the next National Communication and its projects so that resources, hiring and services can be as expeditious as possible.

The corrective actions, follow-up, future directions and best and worst practices are as follows:

Corrective actions for the design, implementation, monitoring and evaluation of the project

This project is concluded, but for future national communications, it would be important to assure sufficient funding for the various activities of the Climate Network, which provides important inputs.

Actions to follow up or reinforce initial benefits from the project

From now on, wide dissemination of the results to decision-makers and the public will reinforce initial benefits from the project. Additional benefits can be achieved by making full use of the data base.

Proposals for future directions underlining main objectives

Future directions could include continuation and deepening of the engagement of other ministries as well as state and local governments, especially the local governments of the largest cities.

Best and worst practices in addressing issues relating to relevance, performance and success

The best practices include involving contributions by the members of the Climate Network, including faculty and students, who then continue working on the subject in years to come. No worst practices were found.

1 Introduction

The first report on global change climate based on international scientific collaboration was released in 1990, having been prepared by the Intergovernmental Panel on Climate Change (IPCC). Scientists warned of the fact that in order to stabilize the growing levels of carbon dioxide (CO₂) and other greenhouse gases in the atmosphere, it would be necessary to reduce emissions by 60% of the total reported in 1990.

In 1992, at the Earth Summit in Rio de Janeiro, participating countries signed an international treaty, the United Nations Framework Convention on Climate Change (UNFCCC), to jointly consider what they could do to limit the growth of average global temperature.

Measures needed be developed rapidly in order to protect food sources, ecosystems and sustainable development. The Convention encompassed the “principle of differentiated common responsibility,” meaning that all countries should be responsible for environment protection. Brazil, in spite of meeting the obligations established, has demonstrated concern about the problems of global warming and has played an important role in international discussions on scientific assessments on climate change and setting up the current international institutional framework.

In 1995, the second report prepared by IPCC scientists concluded that the first signs of climate change had already emerged. The analysis of the evidence pointed to significant effects of man-made factors on global climate.

Therefore, other IPCC reports and other scientific publications have been suggesting that the increase in global temperatures over the past 200 years directly related to anthropogenic causes will be felt most by the population of developing countries. The constant search for data and information about the causes of climate change is of great importance to identify vulnerabilities and design public policy instruments to promote adaptation to these changes.

As per the commitments to the UNFCCC, paragraph 1 of Article 4 of the Convention, Brazil provided the Initial, Second and Third National Communications to UNFCCC, with the necessary information on the status of implementation of such obligations. National Communications are required to include an inventory of net anthropogenic emissions of GHGs not included in the Montreal Protocol and an overview about procedures such as policies, programs and projects taken or planned to implement the Convention in the country. A system of grants and loans set up through the Convention is managed by the Global Environment Facility (GEF) as the UNFCCC financial mechanism (Article 11). Therefore, GEF supports projects and programs as well as “enabling activities,” which aim to help countries prepare national inventories, strategies, action plans and reports according their commitments with UNFCCC.

The Third National Communication (TNC) with information on GHG emissions and vulnerabilities and adaptation to climate change in its three volumes was presented to UNFCCC. Implementation of the project is the object of the present Final Evaluation.

1.1 Purpose of the evaluation

The purpose of this Final Evaluation is to analyze the implementation, results and successes of the "Third National Communication to the UNFCCC (TNC)", Project BRA/10/G32, drawing lessons learned that can improve the sustainability of actions proposed by this project and others that may follow it. The evaluation aims to show the products and results of project implementation and the procedures followed to achieve the specific objectives and recommend actions that can improve the design and implementation of other related projects and programs.

The goal of the BRA/10/G32 Project was to support Brazil in preparation of the Third National Communication to the UNFCCC, expanding coverage of Brazil's annual GHG inventory. The project sought to establish an integrated global model for conducting climate change research to reduce uncertainties in assessments of vulnerabilities and adaptation among the different sectors. It also aimed to update the data on the national situation with regard to climate change, and to update the measures and procedures to be taken to implement the Convention. Building institutional capacity and carrying out activities related to the education and awareness of climate change were part of the project scope.

1.2 Scope and methodology

1.2.1 Scope

By identifying and analyzing the documentation of the activities of Project BRA/10/G32, the evaluation should also promote findings and recommendations and suggest ways to improve development of activities related to the scope of the project, providing contributions to the possible continuation of the current project or for a new national communication project for UNFCCC.

In addition to the above-mentioned purposes, the Final Evaluation aims to present to the institutions involved in project implementation all findings and recommendations resulting from the analysis of documents and procedures, visits to institutions involved in project execution and interviews with thematic experts and those responsible for implementing the BRA/10/G32 Project.

1.2.2 Final evaluation methodology

The completion of this evaluation has been possible through the selection of a consultant by UNDP/MCTIC, based on pre-established terms of reference. The duties and qualifications of this consultancy are in Annex 5.1. This consultant established a work plan based on the Terms of Reference enclosed in Annex 5.2.

The evaluation process included data collection through interviews, meetings, visits to institutions and analysis of relevant technical and administrative-financial documents provided by project teams to obtain information on project execution procedures. The data collected in the field allowed for the formulation of objective questions with flexible contents.

The main actors involved in the management of Project BRA/10/G32 at both MCTIC and other partner institutions were interviewed. The list of respondents is in Annex 5.3. The analysis of progress reports and other project implementation documents and referant academic documentation were the basis for analysis and preparation of this terminal evaluation report.

As for the ethical aspects, in this report the informants are not mentioned by name.

1.3 Structure of the evaluation report

The Terminal Evaluation Report structure follows the guidelines proposed by UNDP/GEF, including:

1.3.1 Structure

- Executive summary;
- Introduction with an overview of the assessment process and a concise description of the project document, the problems that the project sought to address, the objectives to be achieved, key stakeholders and the expected results;
- Project description and development context;
- Project findings; and
- Conclusions and recommendations

1.3.2. Criteria for the assessment and key issues to be analyzed

The report analyzes the five assessment criteria laid down in the document "Guidance for Conducting Terminal Evaluations of UNDP - Supported, GEF - Financed Projects", which are: relevance, effectiveness, efficiency, impact and sustainability.

The overall key issue that permeates the TCN report is to address the proposition: how to respond and undertake any and all efforts to understand and act on the planet's atmosphere that result in significant socioeconomic and environmental vulnerabilities? These concerns are part of Brazil's commitments as a signatory to the UNFCCC. Among these commitments are the National Communications to the Convention, with periodic publication of data and information contained in the Brazilian Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of GHG not controlled by the Montreal Protocol.

The project has an important contribution to make to Brazilian climate change policies, emissions mitigation options, reduction of vulnerabilities and ways of adapting to climate change. Above all, the project sought to fulfill and follow international standards in relation to climate change as set out in the Project Document (PRODOC):

- **Relevance:** is evaluated in relation to the problem faced, within the larger context of the effort to stabilize GHG concentrations at levels that do not generate disastrous climate change consequences. Relevance refers to the demand for

information on climate change, vulnerability and adaptation, contributing to the country's sustainable development and contributing to public policy at the global level. Or, to quote the Matrix GEF Evaluation Criteria, "What is the Project's relationship with the main objectives of the focal areas of the UN Convention on Biodiversity and Climate Change and the GEF, and environmental and development priorities at local, regional and national levels?"

- Effectiveness and efficiency: this criterion analyzes the achievement of the expected results and the respective products, reflecting the contribution of project actions to climate change policies, the development of capabilities in related areas and projects and programs of the institutions involved in the implementation of reduction of vulnerability and activities to adapt to climate change, as expressed in specific objectives and development of this project. Did the project achieve the expected results and products by promoting capacity development? Or, "To what extent were the expected results and objectives of the project achieved?"
- Efficiency: has the project disbursed the resources offered with a minimum of waste, to achieve the expected results and products? Was the project implemented efficiently, according to the rules and international and national standards?
- Sustainability: Did the project offer financial and institutional and governance conditions to continue efforts during and after the period of its implementation? Do the socioeconomic and environmental trends point to the continued implementation of the Convention as national commitments to reduction of GHG emissions? Do conditions exist to support the benefits and results related to the project?
- Impact: Does the project provide knowledge about possible climate change impacts and their consequences for the national and global population, and can the information on climate change be a basis for public policy? What are the current results and potential in the long term of the activities supported by the Project?

2 Project description and development context

2.1 Project start and duration

According to Project Document BRA/10/G32, the project started in November 2010 and the end date was to be November 2014

2.2 Problems that the project sought to address

Since preparation of the National Communications involves activities considered by the Government of Brazil as having great importance, it has allocated resources and efforts to achieve them. Among these activities there is need for training activities that allow building institutional capacity. Even with the completion of the SNC and considering the size of Brazil and its regional differences, the main challenge to carry out a national inventory of anthropogenic emissions to the Convention is collection of data and information. The problem of lack of access to data and information was crucial for the proposed development of the TNC, overcoming unsolved problems in previous national communications.

The previous NCs involved sectors indicated by the IPCC. However, the TNC proposal put emphasis on specific sectors which constitute major problems regarding control of GHG emissions in Brazil, requiring intensive research and partnerships with the scientific community. These specific sectors, in the case of Brazil, were identified as problems regarding the land use, land use change and forestry (LULUCF) and agriculture. Uncertainties regarding both the data and the emission factors for LULUCF are large and the problem to be verified and treated in this project was the lack of sufficient data on and knowledge about the underlying processes. The use of the IPCC default values for emission factors is therefore called into question in the Brazilian case. Considering the weight of the LULUCF sector in Brazil, the project proposal for the development of TNC recognized the need to search for more accurate data and information.

The BRA/10/G32 Project, to support the preparation of the Third National Communication (TNC) did its utmost to reach a deeper understanding of the driving forces behind GHG emissions related to LULUCF, in order to support public policies aimed at reducing the impacts of climate change. The TNC results and products constitute a valuable and strategic asset and contribution to the Government of Brazil and its policies regarding adaptation to climate vulnerabilities.

The FNC included an inventory of anthropogenic GHG emissions in 1990-1994 and the SNC covered 1990-2000. The TNC extended coverage to 2000-2010 and improved the existing time series of previous NCs for key sectors. It also sought to improve the performance and accuracy of downscaling methodologies for global climate models applied to Brazil, which will reduce the uncertainties in the V&A assessments in different sectors. In addition, it updates data and information on national circumstances as well as the definition of planned measures to implement the Convention. Finally, the project sought to improve institutional capacity and includes activities related to education and awareness building.

2.3 Immediate and development objectives of the project

The project “Third National Communication to the UNFCCC” has the following goal and objective:

The project goal is: “To enable the Government of Brazil to enhance available emission data, performing targeted research, and strengthening technical capacity and institutions to address both mitigation and adaptation.”

The project objective is: “To assist the Government of Brazil to perform the activities necessary to prepare the Third National Communication to the Conference of Parties in accordance with the UNFCCC.”

2.4 Baseline Indicators established

	Indicator	Baseline
Project Objective¹ To assist the Government of Brazil to perform the activities necessary to prepare the Third National Communication to the Conference of Parties in accordance with the UNFCCC.	(A) National GHG inventory for the sectors: (i) energy; (ii) industry; (iii) agriculture; (iv) LULUCF; and (v) waste for 2000-2010 produced; and time-series 1990-2000 refined; (B) Publication of formal communication on national circumstances to the UNFCCC; (C) Publication of Third National Communication; (D) Building institutional capacity in Brazil for education, training and public awareness related to climate change.	(A) SNC; (B) SNC; (C) SNC; (D) SNC.
Outcome 1² The national GHG inventory 2000-2010 has been produced and time-series 1990-2000 have been refined for key emission sectors.	(A) National GHG inventory for the sectors: (i) energy; (ii) industry; (iii) agriculture; (iv) LULUCF; and (v) waste; for 2000-2010 produced and time-series 1990-2000 refined; (B) QA/QC plan for GHG emission data per sector; (C) Database of emission factors and activity data.	(A) GHG inventory available for the periods 1990-1994 (FNC) and 1990-2000 (SNC); (B) QA/QC pilot has been designed and implemented under SNC; (C) Pilot database available under the SNC.
Outcome 2 National circumstances, steps taken or envisaged, constraints and needs have been assessed as input for the implementation of the UNFCCC in Brazil.	(A) Assessment of national circumstances in Brazil; (B) Assessment of constraints and needs to implement the Convention in Brazil; (C) Identification of activities and CC measures to implement the Convention in Brazil; (D) Publication of formal communication on national circumstances to the UNFCCC.	(A) SNC (data until 2005); (B) SNC (data until 2005); (C) SNC (data until 2005); (D) SNC (preliminary SNC results made public by April 2010).
Outcome 3 Sector and regional vulnerabilities to climate change have been assessed using improved methodologies and climate models.	(A) Status of “Brazilian Global Model of the Climate System ((MBSCG))”; (B) Detailed climate change scenarios based on Brazilian Model of the Global	(A) SNC (no Brazilian Global model, only Eta/CPTEC regional model);

¹ Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR

² All outcomes monitored annually in the APR/PIR. It is highly recommended not to have more than 4 outcomes.

	Climate System and regional Eta model; (C) Climate change impact assessment for key sectors (agriculture, water resources, energy, megacities and urban areas, biodiversity, human health); (D) Mapping of vulnerability of key sectors and regions to climate change impacts.	(B) Limited climate change scenarios generated under SNC; (C) Limited CC impact assessment has been prepared under SNC; (D) Inadequate insight in key V&A sectors due to limitations of data and methodologies under SNC.
Outcome 4 The Brazilian Third National Communication has been published and presented to the Government and national stakeholders.	(A) Sharing of project outputs (reports, GHG inventories, website); (B) Publication of Third National Communication; (C) Final Evaluation Report.	(A) Project outputs not produced; (B) Preliminary SNC results made public (April 2010); (C) No FEV.

2.5 Main stakeholders

Under the proposed TNC Project, it is envisaged to allocate GEF resources for providing STA to Brazil to enhance its ongoing R&D programme on climate and climate impact modelling (see below). This support is instrumental for delivering the envisaged sector V&A assessments under the TNC.

It must be noted that in 2007 the Brazilian Research Network on Global Climate Change (Rede Clima) was launched with the aim to generate and disseminate knowledge to enable Brazil to face the challenges of climate change more adequately. The Steering Committee of Rede Clima is composed of representatives from:

- National Academy of Science;
- Brazilian Forum on Climate Change;
- National Council of State Secretariats on Science, Technology and Innovation;
- National Council of Research Support Foundations;
- Ministry of Environment;
- Ministry of Foreign Affairs; and
- Ministry of Agriculture and Ministry of Health.

Rede Clima represents an important step forward towards integrating national experts and expertise on climate issues and to enhance the effectiveness of scientific research programs.

2.6 Expected Results

According to PRODOC, the project components, outcomes and outputs are stated bellow:

Outcome #1 The national GHG inventory 2000-2010 has been produced and time-series 1990-2000 have been refined for key emission sectors.

Output #1.1 The national GHG inventory for the sectors: (i) energy; (ii) industry; (iii) agriculture; (iv) land use, land-use change and forestry (LULUCF); and (v) waste has been produced for the period 2000-2010; and time-series results for the period 1990-2000 have been refined.

This component aims at updating and improving GHG inventories for emission sectors which account for a significant share of the national emissions and/or need improved data. Priority is given to LULUCF and agriculture, the most relevant sectors for Brazil. LULUCF is analyzed by applying Tier 3 methodology. More accurate estimates of GHG emissions are obtained through interpretation of satellite images for all of Brazil to identify land-use transitions. By relating this mapping with other spatial data, driving forces are traced, providing input for design of mitigation measures. The Project identifies and fills category gaps, extends data coverage to 2000-2010, enhances data consistency and strengthens the national structure for GHG estimation.

Output #1.2 An analysis of key GHG emission categories has been carried out, an uncertainty analysis has also been carried out and a QA/QC plan and a database of emission factors have been established.

This output includes the development and implementation of quality control and quality assurance procedures (QC/QA) for the information and data collected. Archiving procedures are updated to improve transparency and data security.

Outcome #2 National circumstances, steps taken or envisaged, constraints and needs have been assessed as inputs for the implementation of the UNFCCC in Brazil.

Output #2.1 National circumstances in Brazil have been assessed, taking into account development priorities, institutional arrangements and concerns that derive from CC effects.

The report includes national and regional development priorities and their linkages with climate change issues, indicators to assess the sustainability of the National Communication process and a report about special circumstances regarding adverse effects of climate change and/or of the implementation response measures.

Output #2.2 Activities and CC measures to implement the UNFCCC in Brazil have been defined and described, including an assessment of needs and constraints.

This output describes programs regarding climate change mitigation and adaptation, transfer of technologies, research, education, training and public awareness, capacity building, information and networking with impacts on anthropogenic GHG emissions for Brazil to comply with its commitments regarding mitigation and adaptation.

Outcome #3 Sector and regional vulnerabilities to climate change have been assessed using improved methodologies and climate models.

Output #3.1 The Brazilian global climate model “Brazilian Model of the Global Climate System (MBSCG)” has been completed.

The output is the Brazilian Global Model of the Climate System to generate scenarios for Brazil and Latin America.

Output #3.2 The regional climate in Brazil has been modelled using the Brazilian Model of the Global Climate System in combination with models from climate centers abroad, including simulation of relevant climate change scenarios.

Regional scenarios use an improved version of the Eta-CPTEC regional model, including aerosols, a dynamic vegetation scheme and ocean dynamics. The model is forced with different GCMs so as to assess uncertainty margins. Climate change scenarios are generated for other countries.

Output #3.3 Studies at a regional level using different climate change scenarios and impact assessments for key sectors have been carried out.

Studies at a regional level use different regional climate change projections and impact assessments for key sectors for various emission scenarios until at least 2050;

Output #3.4 A mapping of regional and sector vulnerabilities to CC effects has been performed.

The estimated impacts and vulnerability to climate change are presented in national and regional reports and thematic maps for three different time horizons up to 2100 to design adequate adaptation measures, reduce vulnerability and increase resilience.

Outcome #4 The Brazilian Third National Communication has been published and presented to the Government and national stakeholders.

Output #4.1 National GHG inventories, publications and documents from the NC have been disseminated to the IPCC, national stakeholders and the general public.

Building institutional capacity for promoting public awareness as well as training and education, enhancing MCTIC's website and disseminating updated information. Workshops and seminars are targeted at key stakeholders and national and international experts and team participation in public events;

Output #4.2 The Third National Communication has been published and presented to the national Government.

Integration of the results of supported studies in the TNC, workshops to obtain feedback from relevant stakeholders and thematic reports published in full version for each activity;

Output #4.3 A monitoring and evaluation program has been designed and implemented.

Implementation of monitoring and evaluation as per UNDP and GEF guidelines with complementary monitoring, according to Brazilian procedures and quality standards.

3 Project Findings

3.1 Project Design/Formulation

Design of the Enabling Activity project was based on Brazil's commitment as Party to the UNFCCC. The Parties have common obligations, considering different national and regional priorities regarding objectives and circumstances. In paragraph 1 of Article 12, the Convention further specifies the rationale for Global Environment Facility (GEF) involvement. According to UNFCCC, GEF is a financial mechanism to support developing country Parties. Thus, the TNC was designed to use GEF resources in accordance with UNFCCC guidance. This project was implemented by UNDP Brazil, executed by the Ministry of Science, Technology, Innovation and Communication (MCTIC) and endorsed by the Brazilian Government in a letter dated April 13, 2009.

One of the commitments was the objective of the present project, which is to prepare the Third National Communication to the UNFCCC. The project goal is "to enable the Government of Brazil to enhance available emission data, performing targeted research and strengthening technical capacity and institutions to address both mitigation and adaptation". Thus, the project design corresponds to paragraph 1 of Article 4 of the Convention.

Project components include their objectives and activities to be developed, contributing to the achievement of the desired and explicit results in the official project document, signed on October 29, 2010.

The project was designed specifying activities to be carried out over a period of four years, with completion originally scheduled for November 2014. The final end date was revised to June 2016.

3.1.1 Analysis of LFA/Results Framework

The project work plan shows the GEF outcomes, activities and outputs related to each year. The project formulation includes arrangements for management and monitoring and evaluation activities and means of monitoring execution of the financial budget.

The logic in the project document is that capacity building and institutional strengthening contribute to the impact of project actions. In the specific case of this project, these factors allowed for the achievement of results and products in line with its goals.

According to the Evaluation Consultant, the formulation of the Enabling Activity Project BRA/10/G32 resulted from effective discussions and consensus among experts and academic institutions.

The logical framework provided a plan for the structure of the project, establishing forms of intervention, procedures and working methods, organized from more complex to more specific, and required for actions of information collection, processing and analysis of data on anthropogenic emissions by GHG sources and sinks not controlled by the Montreal Protocol.

The targets and indicators of the logical framework function so as to signal problems or unwanted results. Analysis of the project structure shows that these elements were clear and feasible to achieve the project results and deliverables. In addition, the indicators allowed periodic project monitoring and evaluation of implementation in relation to the established baselines.

3.1.2 Assumptions and Risks

<p>Project Objective³ To assist the Government of Brazil to perform the activities necessary to prepare the Third National Communication to the Conference of Parties in accordance with the UNFCCC.</p>	<p>Risks: No major risks have been identified in the implementation of this project since the Government of Brazil is strongly committed to its obligations under the international agreements on Climate Change and in particular to the reporting under the UNFCCC⁴. Assumptions: The Government maintains its support to implement the UNFCCC in Brazil.</p>
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No major risks have been identified in the implementation of the project, since the commitments of the Parties took into account common obligations, undertaking the responsibility to develop and publish inventories of anthropogenic GHG emissions by sources and sinks. In addition, Brazil has taken on responsibility to prepare estimates and improve emissions projection calculation methodologies, following the National Policy on Climate Change, established by Law. 12.187/2009.

<p>Outcome 1⁵ The national GHG inventory 2000-2010 has been produced and time-series data for 1990-2000 have been refined for key emission sectors.</p>	<p>Risks: (1) Coordination with stakeholders may cause delay since a large number of actors from different economic sectors of society are involved. (2) Difficulty in hiring qualified personnel. Assumptions: (1) TNC will benefit from experience gained with FNC and SNC; (2) The Project can draw on a pool of experts; (3) The Government maintains its support to implement the UNFCCC in Brazil.</p>
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The risks set out in the logical framework in relation to Outcome 1 actually occurred, but the monitoring of activities reduced the impact of delays caused mainly by the large number of experts involved and sectors covered in a country the size of Brazil.

The assertion that the TNC would benefit from the experience of previous communications was confirmed. The government, as expected, maintained its support for implementation of commitments under the Convention. However, there were

³ Objective (Atlas output) monitored quarterly ERBM and annually in APR/PIR.

⁴ A potential implementation risk exists due to the reduced value of the US Dollar (USD) compared to the Real (BRL). The SNC was negotiated with the USD value at 3 BRL, but during project implementation its value fell to 1.85 BRL. The USD depreciation and/or fluctuation could force adjustments in the project outputs and compromise project performance.

⁵ All outcomes monitored annually in the APR/PIR.

considerable unforeseen risks in terms of political and institutional changes within the MCTIC and federal and state governments.

<p>Outcome 2 National circumstances, steps taken or envisaged, constraints and needs have been assessed as inputs for the implementation of the UNFCCC in Brazil.</p>	<p>Risks: (1) Limited political support to Climate Change issues; (2) Difficulty in hiring qualified personnel. Assumptions: (1) TNC will benefit from experience gained with FNC and SNC; (2) Project can draw on a pool of experts; (3) The Government maintains its support to implement the UNFCCC in Brazil.</p>
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To achieve Outcome 2, the project had to identify national development priorities, the necessary institutional arrangements, blockages or constraints to climate change policy and its vulnerabilities as well as other circumstances. The expected risks are real, since political support and hiring qualified specialists are problems that indeed have to be faced. Furthermore, there have been political and institutional changes that impact the activities of all government sectors.

<p>Outcome 3 Sector and regional vulnerabilities to climate change have been assessed using improved methodologies and climate models.</p>	<p>Risks: Several minor risks have been identified: (1) Complex coordination with stakeholders may cause project delays; (2) Access to supercomputers; (3) Delay to generate regional climate change scenarios; (4) Technical problems during the completion of the Brazilian Global Model of the Climate System; (5) Delays in the preparations of reports. Assumptions: The Government maintains its support to implement the UNFCCC in Brazil.</p>
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Outcome 3 requires a survey of sector and regional vulnerabilities related to climate change. The project proposed evaluation of these factors using specific methodologies and climate models. The risks are indeed numerous and sizable because the complexity of project methodology and the coordination of the diverse actors involved. In addition, use of a supercomputer requires competent and responsible experts. All these factors caused delays in reaching the outputs and outcomes.

Another unforeseen risk concerns the enormous amount of data accumulated in a supercomputer with few experts available to manage the information. There is risk of loss of information and data.

<p>Outcome 4 The Brazilian Third National Communication has been published and presented to the Government and national stakeholders.</p>	<p>Risks: No specific risks have been identified. Assumptions: (1) The Government maintains its support to implement the UNFCCC in Brazil; (2) Project stakeholders correctly understand UNDP/GEF M&E principles.</p>
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No risk was identified for accomplishment of Outcome 4, but a major unforeseen risk arose regarding political and institutional changes that led to divergent views among Brazilian government managers on methodologies and models and their results on GHG

emissions. These risks, which were beyond external control, have caused the delay in complying with commitments under the Convention.

3.1.3 Lessons from other relevant projects

Project BRA/10/G32 on the Third National Communication benefited from lessons learned and from exchange with other projects under way or already implemented in both the executing agency, MCTIC, and the partner institutions, non-governmental organizations and UNDP, the implementing agency.

Projects that supported the implementation of the first and second communications provided data of great importance for further research and for preparation of the Third National Communication.

- The **First National Communication Project** prepared a detailed inventory of GHG emissions and a general description of the measures taken or envisaged to implement the Convention. It also reviewed the most important sources and sinks of GHG in sectors of energy, agriculture and livestock, industry, changes in land use and forestry and waste. The results and products were very important for the continuation of work developed, for further research to obtain more accurate data in the TNC project.
- The **Second National Communication Project** with GEF support broadened the scope to cover the Brazilian annual inventory of anthropogenic emissions and removals of GHG for the period 1990-2000. The project was focused on sectors responsible for significant shares of GHG emissions or that involve a high degree of uncertainty.

The results expanded the scale and scope of activities to be carried out, including assessments of vulnerability and adaptation (V&A) and studies on measures to reduce the scale of global circulation models using regional models. In addition, the project strengthened institutional capacity to implement the Convention in Brazil. The SNC involved increase in the number of partner institutions and academic experts involved in the project.

All these results offered important inputs and lessons learned that contributed to the continuity of work for the implementation of TNC and deeper understanding of the subjects covered.

In addition to these projects, others such as those carried out by Climate Network (Rede Clima), the Brazilian Agricultural Research Corporation (EMBRAPA), Environment Sanitation Agency of the State of São Paulo (CETESB) and many others provided significant contributions to the implementation and achievement of results and products of the Third National Communication project.

In sum, the lessons learned and successful experiences in other projects prior to the BRA/10/G32 project were highlighted in the terminal evaluation process of this project. It was found that many benefits of all these projects were fundamental to the implementation of TCN, incorporating and exchanging experiences and promoting conditions for knowledge about and possible action to face climate vulnerabilities and adaptation regarding GHG emissions.

3.1.4 Planned stakeholder participation

The institutional arrangements and partnerships were planned and carried out by establishing cooperation agreements with academic, governmental and non-governmental institutions. This was necessary because implementation of project activities depended on state and local cooperation, such as logistical support in collecting data and information for processing and analysis.

The processing was performed by applying models such as the Brazilian Model of the Global Climate System (MBSCG), which was developed at the National Institute for Space Research (INPE), in collaboration with climate centers in South America, South Africa, India and Europe. The Brazilian Model of the Global Climate System proposed to establish a global climate model for long-term climate change projections based on the structure of the Center for Weather Forecasts and Climate Studies (CPTEC) climate model.

The TNC project was important to provide financial support for the generation of detailed assessments of climate change impacts, vulnerability and adaptation in Brazil. GEF funding was used to finalize the scientific evaluation of aspects of modeling of climate change. For this purpose, the BRA/10/G32 project established partnerships with institutions such as INPE and CPTEC.

Similarly, other partnerships were designed to produce future scenarios of climate change. The project to support the preparation of the TNC made possible improvements of the SPC Eta model including dynamic changes of vegetation and land use. The partnership planned with CPTEC enabled the coupling of the Eta model with CPTEC regional models and impact models and offered understanding of the evolution of variables such as crop productivity, crop disease, energy production and human health under different climate change scenarios.

Implementing stakeholder participation foreseen in the Enabling Activity Project, the BRA/10/G32 Project worked with INPE to identify in key categories (LULUCF and agriculture) the effects of choice of GHG metrics on the results. The proposal for TNC stated that while data on land use conversion as such are reliable, the problem is to estimate the biomass content, which varies among different regions, even for different parts of the Amazonian forest (Fearnside 2016⁶). The partnership improved and expanded the studies on activity and emission factors in these sectors, contributing to the inventory and providing more reliable results.

An important partnership was established between the BRA/10/G32 Project and the Brazilian Research Network on Global Climate Change (Rede Clima) and its various sub-networks created by Executive Order MCTI no.728 of November 2007. Since then it has been active in supporting the preparation of national communications. The Climate Network was important for catalyzing national experts and experiences on climate issues, mainly related to research on vulnerability and adaptation.

⁶ Fearnside, P.M. 2016. Brazil's Amazonian forest carbon: The key to Southern Amazonia's significance for global climate. *Regional Environmental Change* (special issue on Southern Amazonia). [open access] doi: 10.1007/s10113-016-1007-2 (Online 11 July 2016).

The Climate Network Steering Committee is composed of representatives from the National Academy of Science, the Brazilian Forum on Climate Change, the National Council of State Secretariats of Science, Technology and Innovation, the National Council of Research Support Foundations, the Ministry of Environment, the Ministry of External Relations, the Ministry of Agriculture and Ministry of Health.

3.1.5 Replication approach

According to this evaluation, execution of the activities of the BRA/10/G32 Project provided for wide replicability, primarily through the dissemination of information in various ways. Publications disseminated both methodological and scientific progress and specific research results on vulnerability and adaptation, promoted by the MCTIC partnership with the Climate Network. This dissemination constitutes a solid basis for replication at the national and regional levels as well as the international level.

The National Emissions Registry System (SIRENE) which is a computerized system established by MCTIC to provide results from the Brazilian Inventory of Anthropogenic Emissions by Sources and Removal by Sinks of the GHGs not controlled by the Montreal Protocol as well as information from other accounting initiatives of the emissions. SIRENE constitutes a solid and transparent source for replication at various levels. In addition, this tool is extremely useful for other inventories and to support public policies on climate change at the federal, state and municipal levels, generating scientific knowledge and contributing to adoption of mitigation measures. The portal is accessible at the address <http://sirene.MCTIC.gov.br>.

3.1.6 UNDP comparative advantage

UNDP is known in Brazil for its efficiency in the implementation of international technical cooperation projects. However, the bureaucratic procedures established by the Brazilian government for implementing projects through UNDP can sometimes cause delays in implementation. The lack of funds for research and development required that many project actions be carried out through the personal efforts of civil servants, experts from the academic community or consultants dedicated to the cause. Such contracts required more efforts in order to reduce delay.

Although centralized management is recommended, various bureaucratic procedures for approval of activities to be developed at the implementation level and others at the execution level caused some delays in activities. The centralization of financial performance for the development of activities in the central instance or place of partner institutions sometimes created difficulties for the process of co-management of the range of products and results of the project on time. However, it is always necessary to evaluate the capacity of partner institutions to perform financial administrative functions and it is clear that UNDP has long experience in project implementation and therefore has a comparative advantage. UNDP's legal responsibilities need to be made clear to partner institutions.

3.1.7 Linkages between project and other interventions within the sector

The Enabling Activity Project for the preparation of TCN had links with some other projects on climate change. These projects provided useful information and inputs, mainly for the construction of the inventory of emissions.

The most noteworthy among them are the projects carried out by Environment Sanitation Agency of the State of São Paulo (CETESB) and EMBRAPA showing the impacts of climate change.

CETESB, according to the report on its website, developed the First Inventory of Direct and Indirect Anthropogenic GHG Emissions in the State of São Paulo from 1990 to 2008, showing, that in 2005 the state emitted 88,844 gigagrams (GgCO₂) of CO₂. This number, according to the report, will serve as the benchmark for achieving the reduction target of 20% by 2020, as established by the State Policy on Climate Change of São Paulo (State Law no. 13,798/2009). According to experts, the state's inventory was carried out in accordance with methods approved by the Intergovernmental Panel on Climate Change (IPCC), in the same way as the federal publication, seeking coherence and consistency with national results.

According to report of the Technical Workshop for Final Evaluation of Project BRA/10/G32, for the Third National Communication of Brazil to the UNFCCC, which was carried out by MCTIC/UNDP in June of 2016, in which CETESB participated, MCTIC staff involved in the project highlighted the institution's contribution to the preparation of international documents on climate change.

According to the report, CETESB, “in addition to having prepared the first three national estimates of GHG in the areas of waste treatment and disposal, also contributed to the Federal Government in the development and improvement of methods for inventory of emissions and organization of the Database of Emission Factors (EFDB) by the Intergovernmental Panel on Climate Change (IPCC).” It further states that this partnership between MCTIC and CETESB has lasted over twenty years, allocating financial, physical and technical resources, in addition to financial support from GEF/UNDP.

MCTIC linkages with EMBRAPA, based on its research, have contributed to national estimates for the agricultural sector. The EMBRAPA Satellite Monitoring center detected and quantified signs of degradation of large forest areas and developed an early warning system for irreversible impacts on ecosystem services in the Amazon, such as regional and global climate, water resources, biodiversity and human and economic activities of local communities, according to the EMBRAPA website. Other projects also contributed to more profound analysis of the data and information included in the products and results of the BRA/10/G32 Project.

In addition to these institutions, the project included contributions from other research institutions such as the Alberto Luiz Coimbra Institute of Graduate Studies and Research in Engineering (COPPE) of the Federal University of Rio de Janeiro (UFRJ), which is responsible for the national estimates of the energy sector, and the National Institute for Space Research (INPE), which is responsible for the national estimates for the sector of land use, land use change and forests, according to the MCTIC report.

The wide range of linkages has been very useful for the preparation of national communications. The MCTIC, which coordinates the national estimates for the industrial sector, operates with the support and contributions of the productive sector such as the Brazilian Chemical Association (ABQUIM), the Brazilian Steel Institute (IABr), the Brazilian Association of Lime Producers (ABPC) and others.

3.1.8 Management arrangements

The TNC Enabling Activity Project was executed by the General Coordination on Global Climate Change (GCGCC) at the Ministry of Science, Technology, Innovation and Communication (MCTIC) under the National Execution (NEX) modality. The MCTIC is responsible for the technical implementation of the project as a whole. Furthermore, MCTIC is the technical focal point for climate change issues in Brazil and is responsible for preparing the National Communications to the UNFCCC. It is the presidency of the Designated National Authority of the Clean Development Mechanism (CDM) in Brazil. Partnerships with key partners facilitated the Third National Communication implementation, especially the arrangements made with the Climate Network.

According to the Project Document (PRODOC), UNDP is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. UNDP is the implementing agency of the GEF. As the Project BRA/10/G32 is an enabling activity project with Global Environmental Facility resources, supervision of project activities is carried out by UNDP staff, working closely with MCTIC.

The Project Steering Committee (PSC), including the Brazilian Cooperation Agency (ABC), MCTIC and UNDP was established in the project starting. The Project Director is a senior member of the government executing agency staff and was responsible for the execution of the project, along with the coordinator and other team members, following the policy and national standards. The Project Director represented the project at national and international high-level meetings and kept the Minister of Science, Technology, Innovation and Communication updated on the progress and challenges of the project.

The Project Management Unit (PMU) was responsible for overall coordination, including operational planning, supervision, administrative and financial management and adaptive management based on data from M&E plan. The PMU was responsible for overseeing the implementation of the day-to-day project activities. This includes the direct supervision of the activities of sub-contractors for design experts and other institutions, as well as those implemented by MCTIC.

The PMU exercised activities such as: (i) management and project implementation; (ii) coordination of the management of financial resources; (iii) reporting on the application of resources; (iv) supporting the preparation of management reports to MCTIC, PSC, GEF and UNDP; (v) promotion of inter-institutional coordination; and (vi) monitoring and evaluation and dissemination of project results. The National Project Coordinator was appointed by the Project Director to coordinate the PMU.

The implementation of the TNC project established partnerships with governmental and non-governmental organizations, including private sector entities. The main partnership established was with the Climate Network (Rede Clima) and its Sub-Nets, which counted with the multiple programs. These research programs have filled information's by sectors, as follows:

Box 3 – Rede Clima arrangements by sectors

LULUCF	Rede CLIMA UnB FUNCATE (colaboração de INPE, UFG, UFU)
Agriculture	Rede CLIMA EMBRAPA
Waste	Rede CLIMA Cetesb (collaboration of the EMBRAPA, ABIA, UNESP-FEG, USP, IBGE, ABRELPE e ABETRE)
Energy	Rede Clima COPPE/UFRJ (collaboration of the ANAC, Petrobras, SATC, CTCL, SIECESC, ABCM, DNPM do RS e SC)
Industrial Processes	MCTIC Consultants, Industrial Associations (IABr, CSN, Rima Industrial S.A., ABPC, ABIQUIM, MME, SNIC, White Martins)

The Government of Brazil committed in-kind co-financing for an amount of US\$ 6,500,000. The resources were used according to the budget and mainly for hiring consultants and services from national providers, according to UNDP ATLAS budget lines 71300 and 72100. The project established formal partnerships with national stakeholders. The project partners kept track of committed resources using acceptable accountancy standards, as per applicable rules and regulations.

3.2 Project Implementation

3.2.1 Adaptive management

Adaptive management is a structured and systematic process for improving management during project implementation as well as making improvements regarding decisions, management policies and practices by learning from the outcomes and outputs related to project objectives.

The Enabling Activity Project for BRA/10/G32 was formulated with precise and specific objectives and means to achieve outputs and outcomes, as defined in November 2010.

During implementation of the project, some revisions were necessary, but only changing product delivery dates and dates for the final processing of the results. The revisions were submitted to the Brazilian Cooperation Agency (ABC) and approved.

Whereas this item relates to changes in the design of the project and outputs and there were no such changes, there was need for Adaptive Management does not apply for this evaluation. As already explained, it is a specific project with the involvement of various institutional actors and experts from academia and the products foreseen depended on the collection of data and information, its processing and production of articles and reports.

3.2.2 Partnership arrangements

Partnership arrangements were very important for the implementation of the Project on the Third National Communication and were part of the proposal.

It is important to recognize the involvement of Brazilian researchers in the discussions and implementation of national communication projects that are part of the country's obligations to the UNFCCC. This involvement means that information on GHG emissions and climate change is obtained by means that assure accuracy, transparency and security.

This is demonstrated by the institutional arrangements of this project, where the Brazilian Research Network on Global Climate Change (Rede Clima) played an essential role. In this sense, the MCTIC mobilization strategy involved many Brazilian experts through Climate Network Sub-networks focused on climate change issues.

The Climate Network is based at the National Institute for Space Research (INPE), which acts as its Executive Secretariat. The Climate Network is composed of a Board of Directors, a Scientific Committee and an Executive Secretariat, in support of a network of public institutions, including research institutions and universities.

The Climate Network was established in 2007 by the Ministry of Science, Technology, Innovation and Communication (MCTIC) with a mission to generate and disseminate knowledge about the causes and effects of global climate change. With the financial support of MCTIC and GEF/UNDP, it produced information for the formulation and evaluation of public policies on climate change and offered contributions for Brazilian negotiations under the UNFCCC. The network involves 13 thematic sub-networks: Agriculture, Biodiversity and Ecosystems, Cities, Natural Disasters, Regional Development, Economics, Renewable Energy, Climate Modeling, Oceans, Water Resources, Health, Environmental Services and Coastal Areas.

The Economics Sub-Network of the Climate Network, for example, focuses on methods of analysis of socio-economic impacts of climate change in Brazil, with emphasis on building computable general equilibrium models at the regional level, as well as development of the interface of these economic models with other relevant research on climate change, such as energy, agriculture, demography and health issues. Researchers from this sub-network pioneered the first simulations of the economic impacts of climate change in Brazil.

Experience and competence at the national and international experts mobilized during the implementation of the TNC project provided useful inputs for formulation of public policies on climate change. The engagement and expansion of capacities of institutions and research centers in the country are critical to the development of more appropriate responses to the national context of vulnerability and adaptation to climate change. In this sense, mobilization of the Climate Network Sub-nets constituted a solid partnership with

the possibility to bring together representatives of academia and policy decision makers at the same table, resulting in significant synergies to improve the overall process of development of new instruments of the GHG emission control for a solid National Policy on Climate Change.

Other partners from NGOs are:

- Brazilian Climate Change Forum (FBMC);
- Climate Observatory (OC);
- Energy and Environment Institute (IEMA);
- Economy and Energy (E&E).

During the execution of the project it was possible to count on the collaboration of some civil society organizations, especially on the occasion of the TNC public consultation. When appropriate, they participated in technical discussions.

The private sector also involved important partnerships, such as:

- Petrobras;
- National Union of the Coal Extraction Industry (SNIEC);
- National Cement Industries Association (SNIC);
- Brazilian Association of Lime Producers (ABPC);
- Brazilian Chemical Industry Association (ABIQUIM);
- Brazilian Aluminum Association (ABAL);
- Brazilian Steel Institute (IABr);
- Brazilian Pulp and Paper Association (BRACELPA);
- Brazilian Beverages Association (ABRABE);
- Brazilian Food Industry Association (ABIA);
- Brazilian Wine and Grape Growers Union (UBIBRA);
- Integral Technical Assistance Coordination (CATI);
- Riograndense Rice Institute (IRGA);
- Paraíba Valley Regional Center for Technological Development;
- Foundation for Science, Technology and Space Applications (FUNCATE).

These institutions provided information, data and analyses used in the preparation of the Third National Communication. Especially for the preparation of the national inventory of GHG emissions, these institutions provided new data and, whenever possible, specific emission factors for Brazil.

3.2.3 Feedback from M&E activities used for adaptive management

Whereas the Enabling Activity Project for the Third National Communication to the UNFCCC was a specific project, as already explained, addressing Brazil's commitments with regard to the Convention, procedures for adaptive management did not have to be applied. The objectives were previously established by the Convention and the outputs and outcomes were delivered in the report to the UNFCCC. Since commitments

established by the country were met, feedback from M&E activities were not needed for application of adaptive management procedures.

3.2.4 Project Finance

The TNC Enabling Activity in Brazil was proposed by MCTIC and supported by UNDP. The Brazilian government requested administrative and financial resources from the GEF and pledged to co-finance the implementation of the project with funds totaling US\$6,500,000. These resources have been used according to the budget approved by the GEF/UNDP, which foresaw US\$5,720,000, for a total of US\$12,220,000.

The funds were used in accordance with the provisions in the budget by output/outcome and were monitored by UNDP, as the implementing agency of the GEF. The Project Management Unit was responsible for financial monitoring and administrative coordination, supervising and monitoring the spending and delivery of products, according to inputs from the M&E Plan.

A table with the project budget specifications is presented below.

Table 1: Project Annual Expenditure

Project 00058030

Project Title: BRA/10/G32 – Third National Communication to UNFCCC

Output	Key Activities	Year Start	Year End	Expenditure
00071915 – BRA10/G32 Third National Communication	National Circumstances	1/11/2010	31/8/2016	23,028.40
	Project Management	1/11/2010	31/8/2016	296,830.45
	Sector and regional Vuln. and Adapt.	1/11/2010	31/8/2016	434,211.11
	The Brazilian Third National Communication	1/11/2010	31/8/2016	613,557.27
		1/11/2010	31/8/2016	0.00
TOTAL				
1,367,627.23				

GRAND TOTAL	1,367,627.23
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Source: Annual Work Plan

Report Date: 29/06/2016

Table 2: Financial Performance by Years

Main Source of Fund: GEF

Executing Agency: NEX

Award ID: 00058030 BRA/10/G32 – Third National Communication		
Project# : 00071915 BRA/10/G32 - Third National Communication		
Financial Performance by Years (US\$)		
Budget Expenditure By Year	UNDP Disbursement	Total Expenditure
2011	424,933.45	424,933.45
2012	198,466.17	198,466.17
2013	429,837.83	429,837.83
2014	2,415,351.50	2,415,351.50
2015	910,127.96	910,127.96
2016	1,341,283.09	1,341,283.09
TOTAL		
5,720,000.00		

Source: Combined Delivery Report by Project

3.2.5 Monitoring and Evaluation: design at entry and implementation

As explicit in the Project Document (PRODOC), monitoring and evaluation was carried out by both the General Coordination on Global Climate Change (GCGCC) at MCTIC under the National Execution (NEX) modality through the coordination of the project as well as through the Project Management Unit (PMU/UNDP).

Monitoring consisted of systematic monitoring of the implementation of activities to obtain the outputs proposed, according to the project objectives as well as through the preparation of periodic evaluation reports, according to the GEF/UNDP rules. Data for the reports came from workshops, meetings and field visits that were included in the work plans.

Furthermore, monitoring and evaluation of project implementation were systematically carried out through the annual progress reports, according to data requested by the Annual Progress Report/Project and Implementation Review (PIR), which is used by UNDP/CO

and UNDP/GEF to assess progress of activities as well as providing inputs to be used in mid-term and final projects reports, as foreseen in the project document.

Project Coordination at MCTIC and the PMU/UNDP worked together for monitoring and evaluation activities of the project components and outputs/outcomes, in a way that fulfilled the objectives in the timeframe proposed by the work plan. The guarantee of achieving the project outputs and outcomes also depended on fulfillment of the proposed indicators, the baseline data and targets to be achieved, which were achieved in a way that was highly satisfactory.

The management of information also involved concern and commitment of the MCTIC/UNDP team coordinating the project, which sought to systematize the data and information in a system designed to contain the project results, the SIRENE system. The ongoing collaboration of the various actors involved in project implementation ensured the monitoring and periodic evaluation of the activities and the range of outputs and outcomes of Project BRA/10/G32.

Concluding, the outcomes achieved are in accordance with the criteria "Smart":

- Were consistent with the specific nature of the issues involved and presented in language accessible to target groups and with great transparency and accuracy.
- The planning of the outcomes was in accordance with established and relevant indicators requested by the UNFCCC;
- They were within the capacity of partners involved in implementation;
- They were highly relevant at the national and international levels and contributed to the priorities set out in the Convention and Brazil's National Climate Change Plan; and
- The results were not an end in themselves, but the basis for the continued improvement of data and other findings to reduce the impacts of climate change.

3.2.6 UNDP and implementing partner implementation/execution coordination and operational issues

UNDP and implementing partner implementation

As already mentioned, UNDP is an institution recognized in Brazil for its efficiency in the implementation of international technical cooperation projects. A few operational problems were identified during project implementation regarding the bureaucratic rules of bidding and financial performance, which sometimes caused delay in achieving the outputs and outcomes, although delays were primarily due to changes in project strategy.

However, the problems were minor in relation to the scope and complexity of the activities proposed and carried out by the participants in the governmental and non-governmental institutions that had commitments depending on information obtained in the field or through application of specific metrics and methodologies for climate change.

Furthermore, the project focus on Climate Change Mitigation was followed according to the outcomes proposed in the project document.

According to the evaluation consultant, the UNDP Project Management Unit carried out activities to support the partners' implementation activities by assisting in developing terms of reference and making provisions for seminars and travel for data and information collection and participation in events, among other activities. Although there were some delays in these and other procedures, they did not prevent achievement of outputs.

Progress reports were prepared by the project coordination with support from PMU/UNDP and their contents corresponded to the reality of facts and factors involved in project implementation.

Regarding the fulfillment of project term duration, the UNDP and MCTIC spared no efforts so that the deadlines could be met. The delays in the presentation of project outputs and outcomes were out of their control, being under the control of higher levels of the Brazilian government.

In conclusion, the evaluation can be considered **Highly Satisfactory**.

Execution coordination and operational issues

As for Implementing Partner Execution, the partners for the Third National Communication were experts from universities or research centers and some non-governmental institutions, who have limits regarding their time for writing articles or reports based on data processing. However, they maintained the defined focus consistent with the proposed outcomes.

The data and information obtained were suitable for the application of the proposed models, the Brazilian Model of the Global Climate System (MBSCG) developed by INPE/CPTEC in collaboration with other international climate centers and the Eta RCM Model used to produce scenarios of future climate changes, which included vegetation and land use and land use changes in the TNC. Moreover, the Eta Model was suitable for coupling with the CPTEC regional model, providing a view of impacts.

Importantly, though delivered with some delay, the reports were subject to evaluation by government bodies linked to the Presidency of the Republic.

In conclusion, the outputs and outcome were delivered to the UNFCCC and the execution of the project with the close involvement of the partners was considered **Highly Satisfactory (HS)**.

3.3 Project Results

Project results were published in three volumes presented to the UNFCCC that reflected the fulfillment of the commitments and obligations of Brazil with regard to climate change issues and the country's vulnerabilities.

3.3.1 Overall results and activities

The four results of the project as stated in the Results/Activity table correspond to products delivered to the UNFCCC. This section evaluates the activities involved in the preparation of products per year. The presentation of the volumes and their contents are shown in the table below. The main purpose of preparation of the Third National Communication was reached in relation to the results proposed by the project. The main studies were carried out by the Climate Network partners through its subnetworks under the supervision and monitoring of actions carried out by MCTIC Coordination/UNDP.

This report information was based on reports provided by UNDP (progress reports and the final report, including the UNDP-GEF annual APR-PIRs (Annual Project Reports and Project Implementation Reviews), the final report of the Second National Communication and its various technical reports, and verified with the information obtained from the interviews conducted during the process of evaluation.

The overall results were considered **Satisfactory** regarding objectives and activities achieved as presented in Table 3:

Table 3: Overall results attained to objectives and activities

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
Objective	To assist the Government of Brazil to perform the activities necessary to prepare the Third National Communication to the Conference of Parties in accordance with the UNFCCC.				<p>A. In 2013, the data sets of the SNC inventory were expanded adding the emissions estimates for sectors (i), (ii), (iii), (iv) and (v) up to 2010. This exercise was completed by establishing emission factors, which required improvements in data for each sector. These activities were achieved through the Climate Network (Rede Clima) partners contracted by UNDP.</p> <p>In 2014, Cooperation Agreements were signed. The emission estimates for sectors (ii) and (iii) were completed and the estimates for other sectors were in advanced stages.</p> <p>In 2015, the national GHG inventories for sectors (i), (ii), (iii), (iv) and (v) were completed for 2000-2010 as well as being refined for 1990-2000. The Brazilian government was evaluating the inventory results for approval from the end of 2015 to April of 2016.</p>
		(B) Publication of formal communication on national circumstances to the UNFCCC;	(B) SNC;	(B) TNC;	<p>B. Level at 2013/2014/2015</p> <p>B. In 2013, information on economic development, education and other areas was provided to MCTIC by different government institutions. At this time, national circumstances were being prepared with information arising from the preliminary material published by the Brazil Climate Change Panel (PBMIC). The data released by the Panel were in studies of three different working groups: Climate Change Physical Basis; Mitigation Actions; and Vulnerability and Adaptation. In addition, a Letter of Agreement was being prepared to formalize the existing cooperation with INPE/Climate Network on climate as well as studies of socio-economic scenarios.</p> <p>In 2014, all information provided by government institutions was included in the draft on National Circumstances, after being reviewed by its suppliers, including the material published by the PBMIC. An agreement of UNDP and MCTIC Coordination with INPE was formalized in a letter of intent to cooperate with MCTIC in all studies of climate modeling to be developed as part of the Third National Communication. The letter was signed including climate modeling and scenario generation, which were developed satisfactorily.</p>

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
					In 2015, all information about National Circumstances and modelling studies was revised by MCTIC's technical team. At the end of 2015, the complete document was under evaluation by the Brazilian government. In 2016, it was approved for submission to the UNFCCC.
		(C) Publication of Third National Communication;	(C) SNC;	(C) TNC;	C. In 2013, meetings with the sector responsible for institutional communication were held for planning forms of editorial review, translation and printing. New supervisors of the project were hired in order to strengthen links with institutional partners responsible for specific studies on the inventory and national circumstances. In 2014, meetings with the institutional communication sector continued to be carried out, for monitoring translation, grammar review and diagramming activities. The contacts with partners continued so that there was a refinement of the products. In 2015, the institutional communications was supporting the activities needed for TNC publication. Moreover, the document translation was starting and the bidding process for the graphic service was under way.
		(D) Building institutional capacity in Brazil for education, training and public awareness related to climate change.	(C) SNC;	(D) TNC.	D. In 2013, the Climate Network received government funding through scholarships and infrastructure for research in areas related to NCs and for studies of emission factors and other subjects related to the TNC. In 2014, the Climate Network played a major role in discussions on climate modeling activities, in the design of TOR for hiring consultants and data refinement and emission factors for the GHG inventory. All these activities contributed to consolidation of this network as a key partner in UNFCCC implementation in Brazil. In 2015, the Climate Network continued playing an important role. From October 2014 to January 2015, the TNC document was made available for public consultation and participation of experts and representatives of civil society. To strengthen institutional capacity in education, public training and information on climate change, a workshop was held to provide access and discuss the results presented in the TNC.
Outcome 1	The national GHG inventory 2000-2010 has been produced and time-series	(A) National GHG inventory for the sectors: (i) energy; (ii) industry; (iii)	(A) GHG inventory available for period 1990-1994 (FNC) and	(A) GHG inventory available for the period 1990-2010, including	A. In 2013, as a result of coordination meetings carried out by the MCTIC, working groups within the Climate Network discussed sector inventories and began to develop individual sector reports. CETESB was already conducting discussions on waste, EMBRAPA on agriculture, FUNCATE on LULUCF, UFRJ on energy and INT on industry.

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
	1990-2000 have been refined for key emission sectors.	agriculture; (iv) LULUCF; and (v) waste; for 2000-2010 produced and time-series 1990-2000 refined.	1990-2000 (SNC);	refinement of time-series 1990-2000;	In 2014, a technical seminar was held to consolidate the discussions on the preliminary results of sector stocks. Sectors (ii) and (iii) concluded their emissions estimates and all the others were near completion of their reports. In 2015, the preparation of the National Inventory for GHG sectors (i), (ii), (iii), (iv) and (v) was completed. The document was passed to the Brazilian government for evaluation and approval, which occurred in 2016.
		(B) QA/QC plan for GHG emission data per sector;	(B) QA/QC pilot has been designed and implemented under SNC;	(B) Analysis of key GHG emission categories and uncertainty analysis available, and a QA/QC plan established;	B. In 2013, the general coordination of the Climate Network mobilized a group of experts on climate change, which was responsible for the evaluation and analysis of methodological applications on GHG emissions In 2014, the general coordination of the Climate Network with support from the group of experts held a technical workshop to assess the quality of data and methodological aspects. In 2015, the analysis of the categories of emission and uncertainty analysis was performed. In addition, the experts from the Climate Network assessed the quality of data and methodological aspects.
		(C) Database of emission factors and activity data.;	(C) Pilot database available under the SNC;	(C) Data base of emission factors available.	A. In 2013, an information technology specialist was hired to operationalize the national platform of GHG emissions data. The optimization of resources and the dissemination of knowledge meant that the platform was designed and organized by MCTIC in the General Coordination of Systems Development. In 2014, the first phase of platform development was completed and it was decided to create a simplified database for searching the results of the TNC inventory. In 2015, a simplified database platform was completed and entered the validation phase by the technical team of MCTIC.
Outcome 2	National circumstances, steps taken or envisaged, constraints and needs have been assessed as input	(A) Assessment of national circumstances in Brazil;;	(A) SNC (data until 2005);	(A) TNC (data until 2013);	A. In 2013, information on economic development, education and other areas was made available by government institutions to MCTIC. The national circumstances volume was also prepared with information from PBMC primary material. The data provided by the Panel includes studies of three working groups: Climate Change Physical Basis; Mitigation Actions and Vulnerability and Adaptation. The Letter of Agreement on climate and studies on socio-economic scenarios was established with the INPE Climate Network.

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
	for the implementation of the UNFCCC in Brazil.				<p>In 2014, the information made available by government institutions was included in the national circumstances volume after review of providers, including primary material published by the PBMC. UNDP and INPE as a unit of MCTIC decided to formalize a letter of intent to cooperate with the Ministry in relation to climate modeling studies for the TNC. The letter was signed by INPE and the activities of climate modeling and scenario generation have been developed satisfactorily.</p> <p>In 2015, the information made available by government institutions was compiled into a single document and reviewed by various government partners. The document was evaluated by the Brazilian government and was released by the Presidency of Republic in 2016.</p>
		(B) Assessment of constraints and needs to implement the Convention in Brazil;	(B) SNC (data until 2005);	(B) TNC (data until 2013);	<p>B. In 2013, estimates of evolution of GHG emissions for each sector were made to verify the effectiveness of the continued efforts of mitigation policies.</p> <p>In 2014, the assessment of the sectorial evolution of GHG emissions was carried out to verify the effectiveness of mitigation efforts. The review of the National Climate Change Policy was completed with the participation of governmental partners involved.</p> <p>In 2015, all information provided by government institutions was compiled into a single document and reviewed by government partners. The document was delivered for evaluation of Brazilian government upper levels and submitted to UNFCCC in 2016.</p>
		(C) Identification of activities and CC measures to implement the Convention in Brazil;	(C) SNC (data until 2005);	(C) TNC (data until 2013);	<p>C. In 2013, estimates of the evolution GHG emissions for each sector were made in order to verify the effectiveness of mitigation efforts. In addition, the National Climate Change Plan was updated to take into account the needs and constraints faced since the beginning of the Convention's implementation.</p> <p>In 2014, an assessment of GHG emissions was made for each sector, verifying the effectiveness of mitigation policies. The review of the National Climate Change Policy was completed with the participation of governmental partners involved.</p> <p>In 2015, all information made available by governmental institutions was compiled in a single document and reviewed by the governmental partners. The document was evaluated and released in 2016.</p>
		(D) Publication of formal communication	(D) SNC (preliminary SNC results	(D) TNC (preliminary TNC results	D. In 2013, meetings with the institutional communications sector were developed. New project supervisors were hired.

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
		on national circumstances to the UNFCCC;	made public by April 2010);	made public by April 2013).	In 2014, the project supervisors who were hired conducted institutional communications satisfactorily. In 2015, the information made available by government institutions was compiled into a single document and reviewed by government partners. The document was delivered for evaluation by higher levels of the Brazilian government.
Outcome 3	Sector and regional vulnerabilities to climate change have been assessed using improved methodologies and climate models.	(A) Status of Brazilian Model of the Global Climate System (MBSCG);	(A) SNC (no Brazilian Global Model, only Eta/CPTEC regional model);	(A) Brazilian Model of the Global Climate System developed and Eta/CPTEC model improved with higher resolution for a larger domain;	In 2013, the coupled ocean-atmosphere BESM (formerly Brazilian Model of the Global Climate System) was developed and tested on the supercomputer Tupã installed at INPE. This BESM version allowed the generation of global climate change scenarios to the year 2100 as in the fifth IPCC report. In 2014, the IBIS surface was coupled to BESM for detecting the dynamics of vegetation cover and the complete carbon cycle, which is also a part of the oceanic component MOM4p1 through the TOPAZ model. The carbon cycle of the atmosphere component was developed in BESM and was prepared to work coupled to the HAMMOZ model for aerosols and the chemical atmosphere. In 2015, the Global Climate Model System (Brazilian Model of the Global Climate System) and the regional model Eta/CPTEC were improved with higher resolution to a higher domain. The version coupled ocean-atmosphere model of Brazil Earth System (BESM) - formerly Brazilian Model of the Global Climate System - was implemented and tested on the supercomputer Tupã. This version of BESM was able to generate scenarios of global climate change up to 2100. However, preliminary analysis identified the need for improvements in some of the models used. It was necessary to investigate these gaps and needs. This was a process that included Brazil's entry into the Federation of Earth Grid System (ESGF) through INPE. To enhance the evaluation of data and the country management capabilities which was critical to develop the BESM and after extensive research, INPE proposed that MCTIC fund the Institute and its role in Earth System Grid Federation (ESGF). This is a network of ultra-scale data which provided for online communication for exchange of information among experts who contributed to the completion of the BESM. Thus, along with the acquisition of equipment and software necessary to make Brazil an ESGF member, an expert was hired to conduct workshops aimed at training INPE, researchers and public managers of other institutions in use of this new tool. INPE's researchers are using the ESGF-INPE platform and the second workshop was planned and carried out by the consultant supported by the TNC Coordination team.

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
		(B) Detailed climate change scenarios based on Brazilian Model of the Global Climate System and regional Eta model;	(B) Limited climate change scenarios generated under SNC;	(B) Higher number (at least 4) climate change scenarios generated under TNC;	B. In 2013, the climate scenarios for the next 100 years, based on scenarios RCP 4.5 and 8.5 and RCP HadGEM generated by BESM and used by the IPCC in its AR5, were prepared by experts in climate modeling from the Climate Network. In 2014, the described climate scenarios for the next 100 years continued to be developed and used by the mentioned institutions and prepared by experts in climate modeling of the Climate Network. In 2015, the same activities continued to be used and prepared by experts in climate modeling of the Climate Network.
		(C) Climate change impact assessment for key sectors (agriculture, water resources, energy, megacities and urban areas, biodiversity, human health);	(C) Limited CC impact assessment has been prepared under SNC;	(C) Improved CC impact assessment has been prepared under TNC;	C. In 2013, specialists of specific sub-networks within Climate Network were mobilized to analyze the results of the predictive climate modeling. In 2014, a workshop was held at INPE, with the participation of sub-networks within the Climate Network. ToRs were prepared for each sector, to hire consultants who would work under the coordination of each sub-network, analyzing data generated by the scenario. In 2015, all ToRs prepared by Climate Network sub-networks were used for the hiring of consultants who worked under the coordination of each data sub-network, analyzing data generated by the scenarios. The reports were assessed by senior researchers from INPE and compiled into a single document describing vulnerability for each sector.
		(D) Mapping of vulnerability of key sectors and regions to climate change impacts.	(D) Inadequate insight in key V&A sectors due to limitations of data and methodologies under SNC.	(D) Improved insight in key V&A sectors due to improved data and methodologies under TNC.	D. In 2013, specialists of specific sub-networks within Climate Network were mobilized to analyze the predictive climate modeling results. In 2014, a workshop was held at INPE, with the participation of the Climate Network sub-networks. ToRs were prepared for each sector, to hire consultants who worked under the coordination of each sub-network of data, analyzing data generated by the scenarios. In 2015, all ToRs prepared by Climate Network subnets were used for the hiring of consultants who worked under the coordination of each sub-network, analyzing data generated by the scenarios. The reports were assessed by INPE senior researchers and compiled into a single document, describing vulnerability for each sector.
Outcome 4	The Brazilian Third National Communication	(A) Sharing of project outputs (reports, GHG	(A) Project outputs not produced;	(A) Project reports, GHG inventories and	A. In the 2013, the team of experts and consultants involved in TNC was mobilized to define, together with the MCTIC press office, activities that would result in the publication of TNC

Objective/ Outcome	Output Description	Description of Indicator	Baseline Level	Target Level at end of project	Results in 2013-2014-2015
	has been published and presented to the Government and national stakeholders.	inventories, website);		website updated and published;	outputs in different media. The data platform for the GHG inventory required joint hosting and phased process mapping was under development. In 2014, the team of specialists and consultants mobilized to define, along with the MCTIC press office, the activities needed for publication of all outputs. The data platform for the GHG Inventory had its hosting requirements defined and was in mapping processes stage. In 2015, the team of experts and consultants involved in the TNC, following the advice of the MCTIC press office, defined the activities for publication in different media of all TNC products and results. The data platform for the GHG inventory was completed and submitted for validation and testing.
		(B) Publication of Third National Communication;	(B) Preliminary SNC results made public (April 2010);	(B) TNC has been finalized and presented to the GoB;	B. In 2013, the team of specialists and consultants involved in the TNC was mobilized to define, along with the MCTIC press office, the activities for publication in different media of all outputs contained in the TNC. In 2014, the team of specialists and consultants of the TNC was mobilized to define with the MCTIC press office, the activities to publish in different media all outputs contained in the TNC. In 2015, the sector responsible for institutional communication supported the activities necessary for the TCN publication. In addition, the translation of the document was prepared and the bidding process for the printing services was done.
		(C) Final Evaluation Report.	(C) No FEV.	(C) FEV completed.	C. In 2013, a final evaluation of each study was prepared by MCTIC and the Climate Network. The report covered all aspects (positive and negative) of activities carried out in preparation of the TNC. In 2014, the final evaluation of each study was prepared by MCTIC and the Climate Network. This report covers all aspects (positive and negative) of the activities carried out in preparation of the TNC and was delivered. In 2015, the independent final evaluation was planned to be contracted by UNDP/MCTIC.

Fonte: Project Implementation Review (PIR), 2016

3.3.2 Relevance

The institutional framework on climate change was explained previously and showed the relevance of objectives and results, since it complied fully with international commitments with UNFCCC. In addition, the preparation of the Third National Communication Project fits within the National Policy on Climate Change (PNMC) that is highly relevant to GHG mitigation in the country.

Brazil established a National Policy on Climate Change through Law no. 12,187/2009 which defines the principles, objectives, guidelines and implementation mechanisms of the national policy. This law establishes the national voluntary commitment to adopt mitigation actions to reduce the country's GHG emissions between 36.1% and 38.9% compared to projected emissions by 2020. Federal Law no. 12,144/2009 established the National Climate Change Fund to provide financial support the actions of mitigation and adaptation, using resources petroleum royalties. The III National Inventory as part of the commitment to the UNFCCC has been updated and improved, based on previous inventories and presented as a relevant scientific work prepared with the participation of various academic and research institutions. These inventories have supported the provision of the input data to calculate the expected emission levels and reductions that can be achieved through appropriate measures in the key sectors involved.

In addition to the NPCC, the Action Plan for Science, Technology and Innovation for National Development 2007-2010 (PACTI) also included a "national program on climate change" specifying actions of Research, Development and Innovation in Strategic Areas. It aimed to expand Brazil's scientific and technological capacity on issues related to climate change in order to increase knowledge about the subject, identify the impacts on the country and support public policies to address problems of climate change, both at national and international. The results of the Third National Communication were of great importance for these policies, programs and projects, contributing significantly to the reaching the proposed objectives. Other programs also have exchanged scientific information and received relevant data both in relation to climate change and to issues of meteorology, hydrology and environmental forecasting.

Other related programs for climate change that have received scientific and technological advice or inputs from previous National Communications as well as receiving relevant data from the TNC include:

- National Air Quality Control Program (PRONAR);
- Various measures (legal, administrative, economic) against deforestation in the Amazon;
- Monitoring by remote sensing;
- Prevention of fires and burning (such as PROARCO⁷, PREVFOGO⁸;
- Cities for Climate Protection (CCP)

The GEF, recognizing the relevance of the actions proposed and developed by the National Communications and in particular the TNC, granted financial resources to meet the commitments made by Brazil. These resources have even allowed the continued

⁷ Program for the Prevention and Control of Burning and Forest Fires in the Arc of Deforestation.

⁸ National System for Preventing and Combating Forest Fires.

implementation of some activities financed by the federal budget under the coordination of MCTIC, especially empowering and maintaining personnel specialized in climate change issues.

Without GEF intervention, climate change reporting in Brazil would have been limited to the scarce financial resources allocated in the Brazilian budget, which would not have been sufficient to allow preparation of the three volumes of the Third National Communication document to the UNFCCC. The UNDP/GEF intervention can therefore be considered as quite **Relevant**.

3.3.3 Effectiveness and efficiency

The TNC report is available in three volumes in print and in electronic form and can be downloaded from the climate change website, www.mct.gov.br of Ministry of Science, Technology, Innovation and Communication (MCTIC). The three volumes of the Third National Communication follow the UNFCCC guidelines⁹:

- The first volume presents the scenario of the main socio-economic aspects to be considered in relation to implementation in Brazil of the Climate Convention, in a so-called National Circumstances section. It also presents the Special Circumstances section, which is based on the First Brazilian Panel Report on Climate Change. In addition, the first volume of the TNC shows the Relevant Institutional Arrangements for the Preparation of the National Communication on Permanent Basis, reflecting the consolidation of policies in fulfilling the commitments made to the Climate Convention;
- The second volume of the TNC presents the legal framework regarding issues of climate, highlighting the initiatives on National Policy on Climate Change (PNMC), regulated by Decree no. 7390/2010 and enumerating the Sectorial Plans for Mitigation and Adaptation to Climate Change. This volume also presents initiatives that result in reduction of national emissions, in the Convention's framework. The PNMC also defined the Sectorial Plans which should include adaptation actions, such initiatives and even measures to reduce the vulnerability of natural and human systems to current and expected effects of climate change. In this context, MCTIC's efforts were evidenced by the actions of qualifying studies of sectoral vulnerabilities, with insights into research and multidisciplinary approaches obtained by the effort of institutional arrangements and the integration of the entities of actions that make up the Climate Network. Sectoral analysis includes state of the art of eight different areas of expertise such as agriculture, biodiversity, energy and natural disasters. Methods downscaling or regionalization (downscaling and consequent increase in resolution) were developed from global models and the effort was concentrated on improving the projection of scenarios where, following the trend of increased spatial resolution of global models, the regional model Eta increased spatial resolution of 40 km to 20 km, covering an even larger area, which encompasses all of South America and Central America.

⁹ "Guidelines for the preparation of National Communications from non-Annex I Parties to the Convention" (Decision 17/CP. 8).

- The Third Volume of the TNC document to the Convention comprises the Brazilian Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of GHG not controlled by the Montreal Protocol for the period 1990-2010. The preparation of the III Inventory involved a significant portion of the Brazil's scientific and business communities, as well as several government sectors, with direct participation of 230 experts representing 98 institutions. The results are shown in Table I, which summarizes the estimates of GHG for the years 1990, 1995, 2000, 2005 and 2010. In relation to 1990 to 2005, the III Inventory updates the information presented in the II Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of GHGs not Controlled by the Montreal Protocol.

As efficiency and effectiveness of project implementation, it is important to highlight the development of the National Emissions Registry System (SIRENE) by MCTIC to deliver results and data about Brazil's III Inventory on Anthropogenic Emissions by Sources and Removals by Sinks of GHGs not controlled by Montreal Protocol. The tool has given security and transparency to the data and made significant contributions to decision-making on climate change policies.

Box 1 presents the outline of the three Parts of the Third National Communication. The Executive Summary of the National Communication is presented together with the three volumes of the TNC to the Convention.

The preparation of the Inventory was based on the following technical guidelines of the Intergovernmental Panel on Climate Change (IPCC):

- Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (1997);
- Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (2000); and
- Good Practice Guidance for Land Use, Land-Use Change and Forestry (2003);
- 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

The CGMC (General Coordination on Global Climate Change) of MCTIC has been in charge of coordinating activities related to Brazil's Third National Communication to the UNFCCC. In terms of division of labor for the Third Inventory, as mentioned, many institutions participated. The Ministry of Mines and Energy (MME) coordinated the energy sector; FUNCATE was in charge of the forestry and land use sector; EMBRAPA, the agriculture and livestock sector; CETESB, the waste treatment sector; and the coordination of the industrial sector was up to each of the main trade associations, such as aluminum (Brazilian Aluminum Association - ABAL) and cement (National Cement Industry Union - SNIC), among others.

The role played by Climate Network should be highlighted. The contributions arise both in the work with the estimates of GHG emissions contained in the III Inventory as well as the modeling of future scenarios and subsequent studies of impacts and vulnerabilities in strategic sectors of Brazilian society. These contributions allowed consolidating and advancing the scientific knowledge obtained in the years in which Brazil has been a party of the Climate Convention, favoring the generation of positive externalities for the development, construction and consolidation of technical and institutional capacities. All

this is seen as efficiency and effectiveness resulting from implementation of GEF Project BRA/10/G32.

The project effectiveness and efficiency were considered **Satisfactory**.

3.3.4 Country ownership

Brazil was the first signatory to the UNFCCC in June 1992. Ratification by Congress followed in 1994. Brazil presented its Initial National Communication in December 2004, the Second National Communication in November 2010 and the Third National Communication in April 2016.

UNDP provides assistance to Brazil under the Development Assistance Framework for 2007-2011, which was prepared in cooperation with the Brazilian Cooperation Agency (ABC). The project fits within UNDAF Outcome 5 “More efficient use of available resources is ensured to promote an equitable and environmentally sustainable economic development”. The Third National Communication has provided abundant information on GHG emissions needed for all relevant sectors of the national economy. It has also established baseline information for initiatives within UNDP’s and GEF’s portfolio that aim at curbing GHG emissions and formulating public policies on climate change in Brazil.

3.3.5 Mainstreaming

The overall key issue that permeates the TCN is to address the issue of how to respond in all ways to efforts to understand and act on the planet's atmosphere, which result in significant socioeconomic and environmental vulnerabilities. These concerns are part of Brazil's commitments as a signatory to the UNFCCC. Among these commitments are the National Communications to the Convention, with periodic publication of data and information contained in the Brazilian Inventory of Anthropogenic Emissions by sources and removals by sinks of GHG not controlled by the Montreal Protocol.

The project has made an important contribution to make to Brazilian climate change policies, emissions mitigation options, reduction of vulnerabilities and ways of adapting to climate change, as mainstreaming. Above all, the project seeks to fulfill and follow international standards in relation to climate change as set out in the Project Document (PRODOC).

3.3.6 Sustainability

Sustainability can be defined as the likelihood of continued benefits after the project ends.

The project offered financial, institutional and governance conditions to continue work during project implementation. Considering the period after the TNC execution, a new financial resource was foreseen to prepare implementation of the next National Communication to complement and update the TNC. The socioeconomic and environmental trends pointed to the continued implementation of the Convention as per

national commitments to reduction of GHG emissions. The groundwork has been laid to support the benefits and results of project execution.

The assessment of sustainability considered the risks that are likely to affect the continuation of the project's outcomes. The main risk mentioned in the project document can be described as "limited political support to Climate Change" and delays were identified in the delivery of reports, mainly because of problems related to Brazil's political and institutional changes that caused delay in delivery of documents to the UNFCCC. Similar delays in future work could happen in preparation of the next National Communication, even though they do not present risks to the sustainability of project.

Sustainability rating

The Government of Brazil is strongly committed to meeting its obligations under the international agreements on Climate Change and in particular to reporting under the UNFCCC. The Third National Communication products and results were prepared and submitted in April 2016, because the delays and political and institutional risks mentioned above. The sustainability of results is clearly demonstrated and the rating regarding sustainability in this evaluation is therefore **Likely**.

3.3.7 Impact

The project provided knowledge about possible climate change impacts, for example, the establishment of policies on issues of adaptation to climate change, such as the National Plan on Adaptation to Climate Change (PNA), considering the vulnerabilities identified in the TNC document. The TNC also identified issues regarding consequences for the national and global population, while the data and information on climate change were raised and included in the TNC volumes. Therefore, the implementation of the project and its results generated data about vulnerability issues that were the basis for formulation of public policies on climate change issues.

3.3.8 Ratings

GEF evaluation policy stipulates that ratings should be given to project relevance, effectiveness, efficiency and quality of the monitoring and evaluation system. The project impact was considered **Significant**. Table 4 presents all the ratings given by the Evaluator, based on the considerations already mentioned.

Table 4: Rating for project design and outcomes implementation

Evaluation Ratings:			
1. Monitoring and Evaluation	Rating	2. IA& EA Execution	Rating
M&E design at entry	S	Quality of UNDP Implementation	HS
M&E Plan Implementation	S	Quality of Execution - Executing Agency	HS
Overall quality of M&E	S	Overall quality of Implementation / Execution	HS
3. Assessment of Outcomes	Rating	4. Sustainability	Rating
Relevance	R	Financial resources:	L
Effectiveness	S	Socio-political:	L
Efficiency	S	Institutional framework and governance:	L
Overall Project Outcome Rating	S	Environmental :	L
		Overall likelihood of sustainability:	L

According the Evaluator, the rating of the project *as a whole* is **Satisfactory**, meaning that the project had only minor shortcomings.

4 Conclusions, Recommendations and Lessons

According to this evaluation, implementation of the project "Third National Communication to the UNFCCC" was conducted satisfactorily. Among the success factors and best practices, the key points of success were mobilization of experts and institutional arrangements. This occurred both in relation to setting up of a coordination unit for the preparation and execution of the National Communication by the MCTIC and the involvement of experts from various public and private sectors. The execution of future National Communications will undoubtedly benefit from having institutionalized teams.

The tasks involving the preparation of a report with such complex content as National Communications will require more work than before to the extent that the data will require greater precision to provide a basis for new obligations that the country has taken and will take in the context of the 2015 Paris Agreement and others. Thus, data collection has become increasingly complex and demands more time and staff dedicated to research and development.

As shown in this evaluation report, the TNC deepened and perfected data collection and analysis and produced more accurate knowledge in the area of vulnerability and adaptation to climate change through new studies with more consistent methodologies that help reduce uncertainties in the application of computational models. In addition, the

work done for this TNC resulted in improvements in the estimates of greenhouse gas emissions in the country and training for the preparation and processing of information on climate issues. According to the documents, the methods used have provided new data and emission factors to estimate emissions and greenhouse gas removals in priority sectors and especially in the sector of Land Use, Land Use Change and Forestry (LULUCF) and agriculture. Demands related to the TNC will increase in the near future.

It is true that several factors were responsible for delay in the delivery of documents to the UNFCCC, such as institutional arrangements and the time spent by experts in the completion of studies and research. There were also political and institutional issues. However, the complexity of the new methodologies should also be considered.

The application of new methodologies contributed to successful implementation, but also involved delays in implementation and approval for delivery to the UNFCCC. These methods have led to changes in emission calculations between Brazil Inventory II covering the period up to 2005 and the III Inventory that is contained as a product of Project BRA/10/G32 and covers the years from 1990 to 2010. For example, the calculation methodology for emissions due to changes in land use and practices in agriculture has been changed since the international databases that had been used in previous inventories were replaced by national data, as explained by an interviewed professor and a member of Minister of Environment. However, members actively participant of the III Inventory affirms that the change of methodology did not impact in the previous inventories.

These methodological changes will require that experts came to a consensus for the preparation of the next National Communications and, if need, can carry out adjustments. The time of experts and financial resources these revisions will require should be considered in the preparation and implementation of the next National Communication.

According to data and information about the TNC and resulting from interviews developed by the evaluator, the report shows that total emissions in 2005 were 2.74 billion tons of CO₂e. These data are known by most experts, since the TNC was placed in public consultation in 2015. As mentioned by the Climate Observatory in 2016, this will require greater emission reduction to reach the target set in the formulation of Intended Nationally Determined Contributions (INDC) of Brazil, which is 37% reduction.

The consensus among experts, in the case of climate change, is difficult because such complex subject will require discussions and further efforts. The national reports, especially the TNC, have been prepared with detailed data, but need revisions to provide consistency. This will require additional financial resources, which are currently scarce in Brazil's budget.

As a result of TNC contributions, some policies and plans are already being designed and produced, as can already be seen. In August of 2016, President Temer will deliver the official promulgation of Brazil's ratification of the United Nations Paris Agreement. The act will mean that the provisions of the Treaty, including the goal of limiting the rise in global temperature to well below 2°C above pre-industrial years, will become law in the country. According to government sources, the Brazilian government it is already preparing the implementation plan of its climate goal, so that INDC will be NDC.

According to the official proposal, the NDC, to be implemented starting in 2017, foresees a 37% cut in emissions from the country by the year 2025 as compared to 2005 levels. To this end, projects are being planned to rehabilitate one million hectares of degraded pastures and promote reforestation, among other measures.

The act of ratification and the new law are reflections of the efforts made by the country, in which the National Communications played an important and relevant role, applying lessons learned from the implementation of the Project BRA/10/G32 using information and data obtained and presented in the third Inventory.

However, it is important to note the increased demand for the next National Communication in terms of specialized personnel for collecting and processing data and even reprocessing previous inventories data. This will require more financial resources, which are very scarce in the country as a result of current economic and political difficulties. It will be a challenge to mobilize experts and maintain operation of the Climate Network, given scarcity of governmental funding for R&D from sources, such as the National Council for Scientific and Technological Development (CNPq).

Thus, this evaluation concludes that the implementation of the Third National Communication Project was highly satisfactory and that the preparation and implementation of the Fourth National Communication will require even greater effort and financial resources for processing and reprocessing of previous inventory information and the IV Brazilian Inventory of Anthropogenic emissions by sources and removals by sinks of greenhouse gases not controlled by the Montreal Protocol.

Considering the conclusions and recommendations that emerged from the Technical Workshop for Final Evaluation of Project BRA/10/G32 on the Third National Communication of Brazil to the UNFCCC, the main recommendations for future reports to comply with obligations of the country with the Convention are the following.

- Since the short time available was a challenge for concluding the inventory of LULUCF sector emissions, it is recommended that the next National Communication carry out as soon as possible the signing of contracts needed for work on research and data collection and processing;
- The fact that the CGMC/MCTIC includes career civil servants was advantageous leads to the recommendation that more such people be incorporated in the team;
- Because of the precarious nature of fellowship grants, primarily for the Climate Network, it is recommended that high-level agreements between MCTIC and CNPq be made about continuity;
- Since there were difficulties in the use of the super-computer, it is recommended that resources be allocated to overcoming this weakness of infrastructure, namely, the use of data and forms of backup and storage. It is also recommended that a person be placed in charge of coordinating use of this infrastructure;
- Considering the importance of the training component in the implementation of the TNC, continuous investment is recommended in training new specialists for the preparation of the inventory of the sectors in question;

- Better understanding is need of stocks and flows of underground carbon under various land uses;
- It is also recommended also that there be a workshop to carry out comparison of different South American and Central inventories so that the various countries can share their difficulties, challenges and experiences;
- Considering the advance of forest inventories in the states, coordination is recommended between CGMC/MCTIC and the Brazilian Forest Service (SFB) of the Ministry of Environment (MMA) to integrate and use data from the National Forest Inventory (IFN);
- As recommended in an interview, there should be contact and cooperation with the Brazilian Institute of Geography and Statistics (IBGE), which would be important for preparation of the Fourth National Communication;
- It was also recommended to prepare projections about the possible impacts of the adoption of various public policies on climate change;
- It was also recommended, according to a TNC participant, that the MCTIC seek partnerships not only with federal ministries, but also with state environmental agencies, so that they create teams to analyze GHG emissions with the support of the Ministry;
- Another recommendation that emerged from the assessment workshop in June of 2016 concerns the importance of enhancing the role of the Ministry of External Relations, which should be encouraged to participate in technical meetings;
- Finally, it was recommended that UNDP review the bureaucratic procedures to the extent possible under existing government regulations to expedite the execution of the next National Communication and its projects so that resources, hiring and services can be as expeditious as possible.

The corrective actions, follow-up, future directions and best and worst practices are as follows:

Corrective actions for the design, implementation, monitoring and evaluation of the project

This project is concluded, but for future national communications, it would be important to assure sufficient funding for the various activities of the Climate Network, which provides important inputs.

Actions to follow up or reinforce initial benefits from the project

From now on, wide dissemination of the results to decision-makers and the public will reinforce initial benefits from the project. Additional benefits can be achieved by making full use of the data base.

Proposals for future directions underlining main objectives

Future directions could include continuation and deepening of the engagement of other ministries as well as state and local governments, especially the local governments of the largest cities.

Best and worst practices in addressing issues relating to relevance, performance and success

The best practices include involving contributions by the members of the Climate Network, including faculty and students, who then continue working on the subject in years to come. No worst practices were found.

5 Annexes

- 5.1 ToR**
- 5.2 Itinerary**
- 5.3 List of persons interviewed**
- 5.4 Summary of field visits**
- 5.5 List of documents reviewed**
- 5.6 Evaluation Question Matrix**
- 5.7 Questionnaire used and summary of results**
- 5.8 UNDP-GEF TE Report Audit Trail**
- 5.9 Evaluation Consultant Agreement Form**

5 Annexes

5.1 ToR

Annex II - Terms of

Reference (ToR) RC 29648

TERMINAL EVALUATION TERMS OF REFERENCE

INTRODUCTION

In accordance with UNDP and GEF M&E policies and procedures, all full and medium-sized UNDP support GEF financed projects are required to undergo a terminal evaluation upon completion of implementation. These terms of reference (TOR) sets out the expectations for a Terminal Evaluation (TE) of the BRA/10/G32 –Third National Communication to the United Nations Framework Convention on Climate Change – UNFCCC (PIMS # 4299).

The essentials of the project to be evaluated are as follows:

PROJECT SUMMARY TABLE

Project Title:	BRA/10/G32 –Third National Communication to the United Nations Framework Convention on Climate Change			
GEF Project ID:	4299		<i>at endorsement</i>	<i>at completion</i>
UNDP Project	71915	GEF financing:	5,720,000	5,720,000
Country:	Brazil	IA/EA own:	0	0
Region:	RBLAC	Government:	6,500,000	6,500,000
Focal	CC	Other:	0	0
FA Objectives, (optional)	EA	Total co-financing:	6,500,000	6,500,000
Executing	MCTI	Total Project Cost:	12,220,000	12,220,000
Other Partners involved:	N/A	ProDoc Signature (date project started)	October 29, 2010	
		(Operational) Closing Date:	Proposed: November	Actual: June 2016

OBJECTIVE AND SCOPE: This Enabling Activity Project was planned to assist Brazil in the preparation of the Third National Communication (TNC) to the UNFCCC. Its objective is to extend coverage of the annual Brazilian Inventory of Anthropogenic GHGs to period 2000-2010, focusing on the sectors/gases that have a significant share of GHG emissions and/or present a large degree of data uncertainty. New integrated global model for climate change studies and downscaling of global models will be developed to reduce the uncertainties in V&A assessments for different sectors. Brazil's description of national circumstances will be updated, as well as the steps to be taken or envisaged to implement the Convention. Finally, the project continued

building institutional capacity for the implementation of the Convention in Brazil, including undertaking activities related to climate change education and awareness.

The TE will be conducted according to the guidance, rules and procedures established by UNDP and GEF as reflected in the UNDP Evaluation Guidance for GEF Financed Projects.

The objectives of the evaluation are to assess the achievement of project results, and to draw lessons that can both improve the sustainability of benefits from this project, and aid in the overall enhancement of UNDP programming.

EVALUATION APPROACH AND METHOD

An overall approach and method¹ for conducting project terminal evaluations of UNDP supported GEF financed projects has developed over time. The evaluator is expected to frame the evaluation effort using the criteria of **relevance, effectiveness, efficiency, sustainability, and impact**, as defined and explained in the UNDP Guidance for Conducting Terminal Evaluations of UNDP-supported, GEF-financed Projects. A set of questions covering each of these criteria have been drafted and are included with this TOR (Annex C). The evaluator is expected to amend, complete and submit this matrix as part of an evaluation inception report, and shall include it as an annex to the final report.

The evaluation must provide evidence-based information that is credible, reliable and useful. The evaluator is expected to follow a participatory and consultative approach ensuring close engagement with government counterparts, in particular the GEF operational focal point, UNDP Country Office, project team, UNDP GEF Technical Adviser based in the region and key stakeholders. The evaluator is expected to conduct a field mission to Brazil, including the following project sites (Brasília at Distrito Federal; and Cachoeira Paulista, Campinas and São José dos Campos in the state of São Paulo). Interviews will be held with the following organizations and individuals at a minimum: the Brazilian Cooperation Agency (ABC), the Ministry of Science, Technology and Innovation (MCTI), the Ministry of Foreign Affairs (MRE), and the Brazilian Network for Research on Global Climate Change (Rede CLIMA).

The evaluator will review all relevant sources of information, such as the project document, project reports – including Annual APR/PIR, project budget revisions, midterm review, progress reports, GEF focal area tracking tools, project files, national strategic and legal documents, and any other materials that the evaluator considers useful for this evidence-based assessment. A list of documents that the project team will provide to the evaluator for review is included in (Annex B) of this Terms of Reference.

EVALUATION CRITERIA & RATINGS

An assessment of project performance will be carried out, based against expectations set out in the Project Logical Framework/Results Framework (Annex A), which provides performance and impact indicators for project implementation along with their corresponding means of verification. The evaluation will at a minimum cover the criteria of: **relevance, effectiveness, efficiency, sustainability and impact**. Ratings must be provided on the following performance criteria. The completed table must be included in the evaluation executive summary. The obligatory rating scales are included in Annex D.

Evaluation Ratings:			
1. Monitoring and Evaluation	<i>rating</i>	2. IA& EA Execution	<i>rating</i>
M&E design at entry		Quality of UNDP Implementation	
M&E Plan Implementation		Quality of Execution - Executing Agency	
Overall quality of M&E		Overall quality of Implementation / Execution	
3. Assessment of Outcomes	<i>rating</i>	4. Sustainability	<i>rating</i>
Relevance		Financial resources:	
Effectiveness		Socio-political:	
Efficiency		Institutional framework and governance:	
Overall Project Outcome Rating		Environmental :	
		Overall likelihood of sustainability:	

PROJECT FINANCE / COFINANCE

The Evaluation will assess the key financial aspects of the project, including the extent of co-financing planned and realized. Project cost and funding data will be required, including annual expenditures. Variances between planned and actual expenditures will need to be assessed and explained. Results from recent financial audits, as

¹ For additional information on methods, see the **Handbook on Planning, Monitoring and Evaluating for Development Results**, Chapter 7, pg. 163 available, should be taken into consideration. The evaluator(s) will receive assistance from the Country Office (CO) and Project Team to obtain financial data in order to complete the co-financing table below, which will be included in the terminal evaluation report.

Co-financing (type/source)	UNDP own financing (mill.		Government (mill. US\$)		Partner Agency (mill. US\$)		Tot al	
	Planned	Actual	Planned	Actual	Planned	Actual	Actual	Actual
Grants								
Loans/Concessions								
• In-kind								
• Other								
Totals								

MAINSTREAMING

UNDP supported GEF financed projects are key components in UNDP country programming, as well as regional and global programmes. The evaluation will assess the extent to which the project was successfully mainstreamed with other UNDP priorities, including poverty alleviation, improved governance, the prevention and recovery from natural disasters, and gender.

IMPACT

The evaluators will assess the extent to which the project is achieving impacts or progressing towards the achievement of impacts. Key findings that should be brought out in the evaluations include whether the project has demonstrated: a) verifiable improvements in ecological status, b)

verifiable reductions in stress on ecological systems, and/or c) demonstrated progress towards these impact achievements.²

CONCLUSIONS, RECOMMENDATIONS & LESSONS

The evaluation report must include a chapter providing a set of **conclusions, recommendations and lessons**.

IMPLEMENTATION ARRANGEMENTS

The principal responsibility for managing this evaluation resides with the UNDP CO in Brazil. The UNDP CO will contract the evaluators and ensure the timely provision of per diems and travel arrangements within the country for the evaluation team. The Project Team will be responsible for liaising with the Evaluators team to set up stakeholder interviews, arrange field visits, coordinate with the Government, etc.

EVALUATION TIMEFRAME

The total duration of the evaluation will be 30 days according to the following plan:

Activity	Timing	Completion Date
Preparation	03 days	July 01st, 2016
Evaluation Mission	07 days	July 10th, 2016
Draft Evaluation Report	10 days	July 20 th , 2016
Final Report	10 days	July 30 th , 2016

EVALUATION DELIVERABLES

The evaluation team is expected to deliver the following:

Deliverable	Conte	Timi	Responsibilities
Inception Report	Evaluator provides clarifications on timing and method	No later than 2 weeks before the evaluation mission.	Evaluator submits to UNDP CO
Presentation	Initial Findings	End of evaluation mission	To project management, UNDP CO
Draft Final Report	Full report, (per annexed template) with annexes	Within 3 weeks of the evaluation mission	Sent to CO, reviewed by RTA, PCU, GEF OFPs
Final Report*	Revised report	Within 1 week of receiving UNDP	Sent to CO for uploading to UNDP ERC.

*When submitting the final evaluation report, the evaluator is required also to provide an 'audit trail', detailing how all received comments have (and have not) been addressed in the final evaluation report.

TEAM COMPOSITION

The evaluation team will be composed of 1 international /national evaluator. The consultant shall have prior experience in evaluating similar projects. Experience with GEF financed projects is an advantage. The evaluator selected should not have participated in the project preparation and/or implementation and should not have conflict of interest with project related activities.

The evaluator must present the following qualifications:

- Minimum 15 years of relevant professional experience;
- Knowledge of UNDP and GEF ;
- Previous experience with results-based monitoring and evaluation methodologies;
- Technical knowledge in the targeted focal area(s).

EVALUATOR ETHICS

Evaluation consultants will be held to the highest ethical standards and are required to sign a Code of Conduct (Annex E) upon acceptance of the assignment. UNDP evaluations are conducted in accordance with the principles outlined in the [UNEG 'Ethical Guidelines for Evaluations'](#)

PAYMENT MODALITIES AND SPECIFICATIONS

%	Mileston
40	Following submission and approval of the 1 st draft terminal evaluation report
60	Following submission and approval (UNDP-CO and UNDP RTA) of the final
%	terminal evaluation report

APPLICATION PROCESS

Applicants are requested to apply online by June 22, 2016. Individual consultants are invited to submit applications together with their CV for these positions. The application should contain a current and complete C.V. in English or Portuguese,

with indication of the e-mail and phone contact. Shortlisted candidates will be requested to submit a price offer indicating the total cost of the assignment (including daily fee, per diem and travel costs).

UNDP applies a fair and transparent selection process that will take into account the competencies/skills of the applicants as well as their financial proposals. Qualified women and members of social minorities are encouraged to apply.

5.2 Itinerary and Work Plan

Annex 2

BRA/10/G32 – Third National Communication to UNFCC Work Plan and Questionnaire

1. Leitura e Análise de Documentos do Projeto

- Project Document (PRODOC)
- Terms of Reference
- Evaluation Report
- Annual Progress Report
- Policy on National Climate Change
- Project Activity Report or activity sheet and financial execution in 2016
- Meeting Minutes Evaluation of TNC
- Audit Reports to the General Coordination of Climate Change Project BRA/10/G32
- Bulletins
- Implementation Report 2011-12-13
- PIR 2011/13/14/15
- National Adaptation Plan to Climate Change
- Third-Party Cost-Sharing Agreement
- UNDP Guidance for Evaluation
- Executive Summary of Products TNC

2. Data Collection: Field Research

Interviews with experts reporting on Climate Change, with Climate Network (Rede Clima) members and others with issues relating to criteria:

- 1) effectiveness of monitoring indicators that measured progress of the project;
- 2) how was the participation of civil society, NGOs and associations and stakeholders;
- 3) Did the implementation of the project have elements that could be replicable?
- 4) There are links with other projects or programs?
- 5) There is the possibility to include and incorporate more partners to components in future national communications? What would you recommend?
- 6) How to see the sustainability of project actions?

7) Do you think the project could have a correction in its design or in its formulation?

8) Considers it important to disseminate the project results?

10) As regards the level of civil society participation, NGOs or local groups in discussions on the implementation of the project components?

11) What, in his view, the best practices and worst practices from the implementation of the project? And what about the results impact?

- Data analysis will enable to raise the findings and lessons learned by the project and will also allow up recommendations for environmental public policies.

Search also must respond to the Final Evaluation questions on:

1) Relevance; 2) Effectiveness; 3) Efficiency; 4) Sustainability; 5) Impact

5.3 List of persons interviewed

Annex 3

List of Interviewed

Name	Institution	Locality
Marcio Rojas	TNC Project Diretor/MCTIC	Brasília
Marcela Aboim	TNC Project Coordenator/MCTIC	Brasília
Rosenely Diegues	UNDP/TNC Program Office	Brasília
Tania Jardim	Brazilian Cooperation Agency	Brasília
Carlos Klink	- University of Brasília - UnB, Ecology Department, Studies Environmental Sustainability, Research Methodology, and Climate Change. - Brazil's Secretary for Climate Change at the Ministry of Environment.	Brasília
Marcel Burstin	University of Brasília: Center for Sustainable Development – Rede Clima	Brasília
José Antonio Marengo	INPE/CPTEC	São José dos Campos
Carlos Castro	Ex-Coordinator of the Environment Unity/UNDP	Brasília
Paulo Nobre	INPE	São José dos Campos
Mercedes Bustamante	University of Brasília – Rede Clima	Brasília

5.4 Summary of field visits interviews

5.4.1.

Institution: UNDP/Brazil

Location: Brasília

Date: August 3, 2016

Main points of the interview:

- Overview of project implementation.
- People to contact in MCTIC.
- Delivered documents to be searched and analyzed.
- General guidance on the final evaluation and other explanations.

5.4.2.

Institution: Brazilian Cooperation Agency (ABC)

Location: Brasília

Date: August 16, 2016

Main points of the interview:

- The difficulties for the implementation of BRA/10/G32 Project were great. This is mainly because it is not easy to mobilize participation of academia and experts on climate change and engage these professionals with their tasks in the preparation of a complex report.
- The main findings of the project execution were related to the mobilization process obtained from the institutions and professionals. This involvement has brought good results to be translated into good practices to be replicated.
- The need to list the difficulties encountered in implementing the project and how these could be overcome.
- It was noted that there were delays in the implementation and discussion of the data, but they can be minimized by closer ties with the institutions involved. These delays were also related to political and institutional changes, for which one should be prepared because they will always be present. The biggest problem was that the TNC products were in the Presidency of Republic for evaluation for a long time.
- Importance of the ongoing process of training to be followed by the data collection activities, processing and dissemination of information obtained.

5.4.3.

Institution: Center for Sustainable Development – UnB, Climate Network: Sub-Network Regional Development

Location: Brasília

Date: August 20, 2016

Main points of the interview:

- The Climate Network works well, although we have not participated directly in the TNC project. But even so, we implemented several projects on V&A with involvement of masters and doctoral students.
- The research grants obtained from CNPq were of great importance, but the political and economic crisis in Brazil with consequences for the country's budget will also be reflected in the research and development area.
- Reiterated that for lack of resources, CNPq blocked research grants approvals planned for this year for the Climate Network. The researchers hope that this situation will be reversed, since the impact on the progress of the Sub-networks' research is very large. The structure of

Climate Network depends on the support of grantees to collect data on vulnerability and adaptation to climate change.

- Considers that the process of data collection and preparation of TNC was very rich and that sustainability will depend on the continuity of research with increasingly detailed knowledge on climate issues.
- Emphasizes that the National Plan for Adaptation to Climate Change cannot be forgotten in the implementation of the Fourth National Communication, seeking ways to reduce climate risks in Brazil and globally.

5.4.4.

Institution: University of Brasília - UnB, Ecology Department

Location: Brasília

Date: August 26, 2016

Main points of the interview:

- Considered that the process of TNC results preparation was very rich and UNFCCC received consistent data.
- The articulation of academic professionals and researchers with the Ministry of Environment could have been better done, but this intellectual process of analysis and data processing is very complex and sometimes very lonely.
- The final draft and evaluation of products took time and this was mainly because the documents were very complex.
- Consensus among climate experts is always difficult because of the need for consistency and depth in the data analysis.
- Considered that the delay in delivery of products to the UNFCCC was due to a number of factors and one of them were the methodological changes made in the values of GHG emissions in Brazil between the SNC which involved data up to 2005 and the TNC up to 2010.
- Some data have been changed, since international databases which had been used in previous inventories were replaced with national databases.
- These changes may force the government to also adjust the data from previous inventories, but the MCTIC is aware of these facts.
- The sustainability of the project can be seen by the National Communications that are increasingly strengthened and have brought benefits to capacity building and institutional strengthening.

5.4.5.

Institution: University of Brasília, Ecology Department

Location: Brasília

Date: September 2, 2016

Main points of the interview:

- The implementation time of planning needs to be better calculated. This is because the time spent on preparations or contracts with professionals and institutions was large, and then there is little time to the experts work.
- Considered the existence of weaknesses in how to incorporate the researchers in the Climate Network. The project must find other ways to engage and pay researchers for the collection and processing of data that is not only via CNPq. With the economic crisis in Brazil, resources for research and development will become increasingly scarce.
- It was recommended finding ways to maximize the use of supercomputer and to enhance the storage to prevent data loss.
- Considered important the continuity of investment in training new specialists for the development of sectoral inventories.

- The proposal for the next National Communication should work with the spatial data of biomass enhancement in the Cerrado biome.
- Considered important to strengthen the involvement in climate issues with joints at a higher level, so that government and non-government institutions are together in seeking strategies for climate risk management.

5.4.6.

Institution: INPE/CPTEC

Location: São José dos Campos

Date: September 8, 2016

Main points of the interview:

- Stressed the importance at TNC, as a data refinement tool and vulnerability studies presented which were robust and are already being used by universities teams and research groups, contributing to the increase in publications in this area.
- Affirmed that the TNC provided an opportunity to carry out on a larger scale studies of Impacts, Vulnerability and Adaptation (VAT), assisting in the formulation of public policies such as the National Plan for Adaptation to Climate Change.
- Considered the need for the country's own methodology, a fact that would reduce the uncertainties of climate models.
- Affirmed that the evaluation of uncertainties in climate models should be in the next national communication, although the TNC has already made great strides.
- Recommended greater attention to compliance with the delivery time of the products by the authors, requiring clarity in the terms of reference for the experts hiring for products, as argued at the workshop for TNC final evaluation.
- Recommended regular meetings for alignment of information and better interaction among authors and the project coordination team.

5.4.7.

Institution: INPE

Location: São José dos Campos/SP

Date: September, 2016

Main points of the interview:

- Emphasized the importance of UNDP actions, promoting conditions for Brazil's insertion in the matter of sampling models. He pointed out that Brazil is the only country in the southern hemisphere that develops and operates its own model. As was said at the final evaluation workshop, this fact has an important role in the formation of new chain of researchers with the capacity to transform knowledge into scenarios.
- Considered that the results of the TNC project were relevant and represent an important step for modeling science in Brazil and even promoting greater institutional rapprochement between science and public policies.
- As said on other occasions, communication is a political process and it is important to policy coordination for the government and other groups to understand the prestige and leadership position of Brazil. This fact has consequences, requiring greater investment in research and development and continuous training in climate change issues.

5.4.8.

Institution: CGMC/MCTIC

Location: Brasília

Date: August 31, 2016

Main points of the interview:

- Affirmed that the project was highly complex, involving various institutions and professionals of climate change area.
- Highlighted the success of project implementation due to the efforts of the Ministry and the teams involved and especially the Climate Network.
- Presented the main products of the implementation of the BRA/10/G32 Project.
- Stressed the importance of the sub-product that emerged from the implementation of the National Communications which is the National Emissions Registry System (SIRENE).
- A brief presentation emphasized the importance of the system as an instrument in relation to the results the transparency on GHG emissions not controlled by the Montreal Protocol.
- Highlighted and talked about next work for the consolidation of SIRENE, with data entry and integration with other databases, the realization of emissions calculation and reporting system for filters.
- Emphasized the importance of following the IPCC model and requesting voluntary collaboration of experts.
- Emphasized the importance of consensus among experts, which is very difficult to achieve. But we need to reduce political sensitivities to ensure consistency of data and analysis of climate change.

5.5 List of documents reviewed

Reading and analysis of documents related to the Project BRA 10 / G32:

- Project Document (PRODOC)
- Terms of Reference
- Evaluation Report
- Annual Progress Report
- Policy on National Climate Change
- Project Activity Report or activity sheet and financial execution in 2016
- Meeting Minutes Evaluation of TNC
- Audit Reports to the General Coordination of Climate Change Project BRA/10/G32
- Bulletins
- Implementation Report 2011-12-13
- PIR 2011/13/14/15
- National Adaptation Plan to Climate Change
- Third-Party Cost-Sharing Agreement
- UNDP Guidance for Evaluation
- Executive Summary of Products TNC

5.6 Evaluation question matrix

Evaluation Criteria	Questions	Indicators	Sources	Methodology
Relevance: How does the project relate to the main objectives of the GEF focal area, and to the environment and development priorities at the local, regional and national levels?				
<p>The four results of the project as stated in the Results/activity table correspond to products delivered to the UNFCCC. This section evaluates the activities involved in the preparation of products per year. The main purpose of preparation of the Third National Communication was reached in relation to the results proposed by the project. The main studies were carried out by the Climate Network partners through its sub-networks under the supervision and monitoring of actions carried out by MCTIC Coordination/UNDP.</p> <p>This report information was based on reports provided by UNDP (progress reports and the final report, including the UNDP-GEF annual APR-PIRs (Annual Project Reports and Project Implementation Reviews), the final report of the Second National Communication and its various technical reports, and verified with the information obtained from the interviews conducted during the process of evaluation.</p> <p>The GEF, recognizing the relevance of the actions proposed and developed by the National Communications and in particular the TNC, granted financial resources to meet the commitments made by Brazil. These resources have even allowed the continued implementation of some activities financed by the federal budget under the coordination of MCTI, especially empowering and maintaining personnel specialized in climate change issues.</p> <p>Without GEF intervention, climate change reporting in Brazil would have been limited to the scarce financial resources allocated in the Brazilian budget, which would not have been sufficient to allow preparation of the three volumes of the Third National Communication document to the UNFCCC. The UNDP/GEF intervention can therefore be considered as quite relevant.</p>				
Evaluation Criteria	Questions	Indicators	Sources	Methodology
Effectiveness: To what extent have the expected outcomes and objectives of the project been achieved?				
<p>The TNC report is available in three volumes in print and in electronic form and can be downloaded from the climate change website, www.mct.gov.br of MCTI (Ministry of Science, Technology and Innovation). The three volumes of the Third National Communication follow the UNFCCC guidelines¹⁰:</p> <ul style="list-style-type: none"> • The first volume presents the scenario of the main socio-economic aspects to be considered in relation to implementation in Brazil of the Climate Convention, in a so-called National Circumstances section. It also presents the Special Circumstances section, which is based on the First Brazilian Panel Report on Climate Change. In addition, the first volume of the TNC shows the Relevant Institutional Arrangements for the Preparation of the National Communication on Permanent Basis, reflecting the consolidation of policies in fulfilling the commitments made to the Climate Convention; • The second volume of the TNC presents the legal framework regarding issues of climate, highlighting the initiatives on Nacional Policy on Climate Change (PNMC), regulated by Decree no. 7390/2010 and enumerating the Sectorial Plans for Mitigation and Adaptation to Climate Change. This volume also presents initiatives that result in reduction of national emissions, in the Convention's framework. The PNMC also defined the Sectoral Plans which should include adaptation actions, such initiatives and even measures to reduce the vulnerability of natural and human systems to current and expected effects of climate change. In this context, MCTI's efforts were evidenced by the actions of qualifying studies of sectoral vulnerabilities, with insights into research and multidisciplinary approaches obtained by the effort of institutional arrangements and the integration of the entities of actions that make up the Brazilian Research Network on Global Climate Change (Rede Clima). Sectoral analysis includes state of the art of eight different areas of expertise such as agriculture, biodiversity, energy and natural disasters. Methods downscaling or regionalization (downscaling and consequent increase in resolution) were developed from global models and the effort was concentrated on improving the projection of scenarios where, following the trend of increased spatial resolution of global models, the regional model Eta increased spatial resolution of 40 km to 20 km, covering an even larger area, which encompasses all of South America and Central America. • The Third Volume of the TNC document to the Convention comprises the Brazilian Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of GHG not controlled by the Montreal 				

¹⁰ "Guidelines for the preparation of National Communications from non-Annex I Parties to the Convention" (Decision 17/CP. 8)

<p>Protocol for the period 1990-2010. The preparation of the III Inventory involved a significant portion of the Brazil's scientific and business communities, as well as several government sectors, with direct participation of 230 experts representing 98 institutions. The results are shown in Table I, which summarizes the estimates of GHG for the years 1990, 1995, 2000, 2005 and 2010. In relation to 1990 to 2005, the III Inventory updates the information presented in the II Inventory of Anthropogenic Emissions by Sources and Removals by Sinks of GHGs not Controlled by the Montreal Protocol.</p>				
Evaluation Criteria	Questions	Indicators	Sources	Methodology
<p>Efficiency: Was the project implemented efficiently, in-line with international and national norms and standards?</p>				
<p>As efficiency and effectiveness of project implementation, it is important to highlight the development of the National Emissions Registry System (SIRENE) by MCTI to deliver results and data about Brazil's III Inventory on Anthropogenic Emissions by Sources and Removals by Sinks of GHGs not controlled by Montreal Protocol. The tool has given security and transparency to the data and made significant contributions to decision-making on climate change policies.</p> <p>The preparation of the Inventory was based on the following technical guidelines of the Intergovernmental Panel on Climate Change (IPCC):</p> <ul style="list-style-type: none"> • Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories (1997); • Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories (2000); and • Good Practice Guidance for Land Use, Land-Use Change and Forestry (2003); • 2006 IPCC Guidelines for National Greenhouse Gas Inventories. <p>The CGMC (General Coordination on Global Climate Change) of MCTI has been in charge of coordinating activities related to Brazil's Third National Communication to the UNFCCC. In terms of division of labor for the Third Inventory, as mentioned, many institutions participated. The Ministry of Mines and Energy (MME) coordinated the energy sector; FUNCATE was in charge of the forestry and land use sector; EMBRAPA, the agriculture and livestock sector; CETESB, the waste treatment sector; and the coordination of the industrial sector was up to each of the main trade associations, such as aluminum (Brazilian Aluminum Association - ABAL) and cement (National Cement Industry Union - SNIC), among others.</p>				
Evaluation Criteria	Questions	Indicators	Sources	Methodology
<p>Sustainability: To what extent are there financial, institutional, social-economic, and/or environmental risks to sustaining long-term project results?</p>				
<p>Sustainability can be defined as the likelihood of continued benefits after the project ends.</p> <p>The project offered financial, institutional and governance conditions to continue work during project implementation. Considering the period after the TNC execution, a new financial resource was foreseen to prepare implementation of the next National Communication to complement and update the TNC. The socioeconomic and environmental trends pointed to the continued implementation of the Convention as per national commitments to reduction of GHG emissions. The groundwork has been laid to support the benefits and results of project execution.</p> <p>The assessment of sustainability considered the risks that are likely to affect the continuation of the project's outcomes. The main risk mentioned in the project document can be described as "limited political support to Climate Change" and delays were identified in the delivery of reports, mainly because of problems related to Brazil's political and institutional changes that caused delay in delivery of documents to the UNFCCC. Similar delays in future work could happen in preparation of the next National Communication, even though they do not present risk to the sustainability of project.</p> <p>The Government of Brazil is strongly committed to meeting its obligations under the international agreements on Climate Change and in particular to reporting under the UNFCCC. The Third National Communication products and results were prepared and submitted in April 2016, because the delays and political and institutional risks mentioned above. The sustainability of results is clearly demonstrated and the rating regarding sustainability in this evaluation is therefore "satisfactory".</p>				

Evaluation Criteria	Questions	Indicators	Sources	Methodology
Impact: Are there indications that the project has contributed to, or enabled progress toward, reduced environmental stress and/or improved ecological status?				
The project provided knowledge about possible climate change impacts, as an example, the establishment of policies on issues of adaptation to climate change, such as the National Plan on Adaptation to Climate Change (PNA), considering the vulnerabilities identified in the TNC document. The TNC also identified issues regarding consequences for the national and global population, while the data and information on climate change were raised and included in the TNC volumes. Therefore, the implementation of the project and its results generated data about vulnerability issues that were the basis for formulation of public policies on climate change issues.				

5.7 Questionnaire used and summary results

Annex 7

Questionnaire

Final Evaluation of the BRA/10/G32 Project

QUESTIONS

1. What are the main difficulties for the development of TNC?
2. In your view what were the main findings or findings that emerged from the document drafting process?
3. What recommendations would you raise for a possible NC?
4. What are the linkages established between the development of TNC with other projects and programs?
5. What is the relevance of TNC? Do you consider relevant and how it relates to the main objectives of the Convention?
6. Regarding the effectiveness, if achieved, results that relate to the project purpose?
7. Sustainability - consider TNC as a basis for implementation of policies, projects and programs in V&A to Climate Change?

5.8. UNDP-GEF TE Report Audit Trail

UNDP-GEF TE Report Audit Trail Template

Note: The following is a template for the TE Team to show how the received comments on the draft TE report have (or have not) been incorporated into the final TE report. This audit trail should be included as an annex in the final TE report.

To the comments received on (*date*) from the Terminal Evaluation of (*project name*) (UNDP Project ID-*PIMS #*)

The following comments were provided in track changes to the draft Terminal Evaluation report; they are referenced by institution ("Author" column) and track change comment number ("#" column):

Author	#	Para No./ comment location	Comment/Feedback on the draft TE report	TE team response and actions taken
RDP1		p.3	Por favor, remaneje a informação a fim de atender o formato solicitado: (i) corrective actions for the design, implementation, monitoring and evaluation of the project; (ii) actions to follow up or reinforce initial benefits from the project; (iii) proposals for future directions underlining main objectives; and (iv) best and worst practices in addressing issues relating to relevance, performance and success.	Done
RDP2		p.11	Favor usar o novo modelo de tabela (pagina 29) do guia e o novo padrão recomendado para as notas, anexo D (mistura notas e conceitos agora).	Done
RDP3		p.37	Como solicitado anteriormente,, favor rever as notas/conceitos conforme o novo guia. Grata.	Done
RDP4		P37	Creio que é preciso incluir nota aqui. Favor rever o item conforme o guia novo enviado com o TOR.	Done
RDP5		p.45	Idem ao comentário anterior.	Done
RDP6		p.46	Idem ao anterior. Agora é nota para este item.	Done

RDP7		p.49	O padrao agora é entre 4 – likely e 1 – unlikely. Favor rever, mencionando os novos critérios solicitados: overall, financial, etc.	Done
RDP8		p.49	Idem, agora há um novo critério para avaliar isto.	Done
RDP9		p.49	Favour inserir a nova tabela, que irá compor o executive summary. Grata.	Done
RDP10		p.50	Favor incluir os itens solicitados no guia, mesmo que nao exista muita informação relevante e especificar, se for o caso.	Done

5.9 Evaluation Consultant Agreement Form

Evaluation Consultant Agreement Form 30

Agreement to abide by the Code of Conduct for Evaluation in the UN System

Name of Consultant: Mary Dayse Kinzo

Name of Consultancy Organization (where relevant): _____

I confirm that I have received and understood and will abide by the United Nations Code of Conduct for Evaluation.

Signed at (place) on date

Signature: [Signature] September/2016

www.undp.org/unegcodeofconduct

Evaluation Consultant Agreement Form 30

Agreement to abide by the Code of Conduct for Evaluation in the UN System

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