



Fórum Internacional de Câncer
de Pulmão - Roche



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1. Introduction

Living in an age where the environmental problems cross local boundaries reaching global scale, where human pressure on natural systems has no precedent in our history. Nowadays the pattern of consumption on our society is greatly higher than what the planet Earth can support. The climate change is the result of such a behavior which are leading to deep and long term impacts on Earth.

In this panorama, consider nothing but the local impacts caused by an activity constitutes a mistaken approach. The impacts have to be analyzes in a holistic way, where a broad and multidisciplinary view of its causes and consequences has to be considered.

Following the environmental conditions' aggravation on our planet, a significant part of our society already know the importance of such questions and are engaged on change their predatory approach which the human relate to mother Earth. Inserted on this philosophy, our group searches its well being considering it relations with our fellows and the environment, expanding the next generation's perception of responsibilities.

Identify the negative interferences on the environment and voluntary mitigate it, implies in a new way of relationship with the environment and consequently with society. To promote this ideal is to incessantly search for the human improvement, through creative and innovative approaches.

The quest of serve the consumption needs in an environmental sound way is part of this approach. To reduce the consumption, extending the use of products and recycle the residues are practices of this approach. Quantify the GHG emissions implies on this expansion of this new paradigm of the human/ environment relationship.

2. Objective

The Carbon Free program has as objective, compensate the Greenhouse gases emissions (GHG) deriving from a given activity. In the case of events all the necessary infra structure to an events realization is analyzed.

The project consists in two stages. The first is the production of an GHG inventory related to

the event and the determination of the necessary number of native trees to be planted in order to absorb the same amount of carbon emitted the activity. The second stage is the implementation of the reforestation project to compensate these emissions and to promote a series of local environmental benefits.

Two stages will be performed on this context:

3. The Greenhouse gas inventory production

In the GHG inventory all the accounted emissions are expressed in tones of Carbon Dioxide equivalent (CO₂e), following the standard stipulated in the *Intergovernmental Panel on Climate Change* (IPCC), established to provide the decision-makers and others interested in climate change with an objective source of information about climate change. The CO₂e is a measurement to compare the emissions of different greenhouse gases and is the result multiplication of each gas global warming potential.

To calculate the GHG in a consistent way the procedures proposed by the GHG Protocol is utilized. The GHG Protocol is a partnership between the *World Resources Institute and The World Business Council for Sustainable Development*

Along with the GHG Protocol methodologies and emission factors developed by the IPCC (*2006 IPCC Guidelines for National Greenhouse Gas Inventories*) and the Brazilian Ministry of Science and Technology.

To produce the inventory, the events organizers inform the accounted data that are required through a previous survey. If necessary, The Green Initiative technical team visits the event location to refine the data quality.

3.1 Operational boundary

Three scopes are considered on GHG emissions accounting and publication.

Scope 1: Direct GHG emissions

Emissions that occur from sources that are owned or controlled by the company.

Scope 2: Electricity indirect GHG emissions

Emissions from generation of purchased electricity consumed by the company

Scope 3: Other indirect GHG emissions

This category is optional. The emissions are consequence of the company's activities, but occur from sources not owned or controlled by the company.

In the operational boundaries' delimitation we always consider the direct emissions related to the sources that belongs or are controlled by the company, as well all the indirect emissions, caused by the company's activities, even if they belong to other company. Always been careful to not double counting the same emissions source.

3.2 Organizational boundary

We believe that to consider the companies' decision maker responsible to the totality of the companies' emissions is a way to incentive the incorporation of more sustainable corporate practices. The adoption social responsibilities practices will promote important improvements, contributing to reduce its GHG emissions every year.

3.3 Project boundary

According to the methodologies proposed by GHG Protocol, The Green Initiative accounts the emissions related to the following sources:

- Land transportation
- Air transportation
- Refuse production
- Electricity and water
- Combustibles
- Consumption Materials

4. Reforestation project

This is the stage of the project implementation. From the results presented in the first stage, the total of GHG emitted by the event realization provides an estimated number of native to be planted.

Utilizing the biomass carbon fixation methodology and the equation 1 (see annex) and considering the conservative approach utilized by The Green Initiative on reforestation projects, the number of trees to be planted is determined.

The planting process is always initiated in the beginning of the raining season in the state of São Paulo, usually in the month of November. Many areas are analyzed during the year by The Green Initiative's technicians through field visits and satellite imagery.

The areas are screened, considering priorities to be included in our reforestation program. Among the priorities, the most important factors to elect an Atlantic Coastal Forest area are: river margins; water springs of major social and environmental benefits.

The reforestation project is implemented taking in consideration the criteria of maximum species diversity, established by the São Paulo State Environmental Secretariat (Resolution SMA 8, of 2007), respecting the local ecosystem characteristics. Planting a minimum of 80 different species each hectare, respecting the successional division criteria and the area's specific conditions, aiming to restore the area to its closest natural condition.

Pictures of the area, as well the geographical coordinates are published in The Green Initiative's web site after the project implementation.

5. Monitoring plan

In order to ensure the success of the reforestation project, and consequent, carbon fixation, the seedlings are planted and maintained by a local team for the period of two years – period of the trees establishment.

The Green Initiative monitors the recovered areas, during the carbon absorption period, estimated in 30 years, through satellite imagery and the monitoring methodology for reforestation projects AR-AMS0001 "*Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grasslands or croplands*" approved by the UNFCCC's executive board. Furthermore, due to legal character of the recovered area, there is enforcement of the state and federal agencies. In addition, the deforestation of these areas is considered a crime by the Brazilian federal law.

6. Results

The Project activity has as its objective to compensate GHG emissions from “Fórum Internacional de Câncer de Pulmão – Roche”. The Inventory’s final result, divided by the scopes is the following:

SCOPE 1: DIRECT EMISSIONS			
Source	Emission (t CO ₂ e)	Percentage (%)	Trees
Organization Vehicle	0,74	0,85	4,9

SCOPE 2: INDIRECT EMISSIONS - ENERGY			
Source	Emission (t CO ₂ e)	Percentage (%)	Trees
Electric Energy and Water Consumption	0,43	0,49	2,9

SCOPE 3: OTHER INDIRECT EMISSIONS			
Source	Emission (t CO ₂ e)	Percentage (%)	Trees
Consume Materials	0,31	0,36	2,1
Solid Waste	0,37	0,42	2,5
Air Transport	85,21	97,88	567,7

SUMMARY RESULTS	
Emission (t CO ₂ e)	Trees
87,06	580

The share of each emission source can be better viewed in the following chart.

