BERACA

Valuating Environmental Benefits Generated by Keeping the Standing Forest

EXECUTIVE SUMMARY

Beraca is a Brazilian business with expertise in the development of technologies, high-performance solutions and raw materials for the cosmetics and pharmaceutical industries. Beraca's activities are tightly associated with natural capital, since it operates with elements from the Brazilian biodiversity, using them as inputs for its products.

In order to work with sustainable extraction of non-timber forest products, Beraca´s production model values keeping standing forests. Extraction activities are held with no need for deforestation, since they rely on fruit and seeds to generate income for small family-based suppliers. The company is aware of the environmental benefits provided by the sustainable use of the standing forest and communicates those benefits, particularly the carbon stock contained in those areas. However, Beraca has not conducted any study to determine carbon emissions in case there were no forest areas with sustainable use.

In this context, using the methodology proposed by TeSE, Beraca valuated the global climate regulation ecosystem service, to calculate avoided deforestation. The analysis was conducted considering a 10-year period, for four business suppliers, distributed in four towns in Pará State, namely: Breves, Igarapé-Miri, Salvaterra and Anajás. All suppliers' properties are partially or totally in legal reserve area. Those suppliers were selected because they had reliable data available, since the areas have organic certification and Beraca has a project in partnership with the University of Sao Paulo (USP) and Columbia University to measure the impact its actions have on extractive communities.

Results show a positive externality of about BRL 180 thousand in avoided deforestation, given the use of land for extraction activities and organic farming. In case extraction activities were not held, the most likely occupation would be manioc cultivation, in which it is necessary to deforest and burn the area for cleaning before planting, which would release about 1.400 tons of carbon equivalent (tCO_2e).

Valuating ecosystem services allows for calculating one of the many environmental externalities related to extractive cultivation and implementation of organic certification, and it is relevant for Beraca to discuss with its stakeholders about the benefits of this production mode. When it comes to avoided deforestation, results corroborate the business statement that it is possible to get raw materials from the Brazilian biodiversity with no need to damage the natural environment.

Additionally, valuation results are expected to be incorporated into Beraca's Socio-environmental Management System in order to monitor the relationship between raw material provision and how society develops and uses the ecosystem in a sustainable way. The Socio-environmental Management System, which is an integral part of the Socio-Biodiversity Valuation Program, is described in further details in the ecosystem service management case, also produced by Beraca under TeSE business initiative.

Reporting of Dependencies, Impacts and Externalities

Responsible for completing: Érica Pereira

Project drivers

Goals: Understand the business relationship with ecosystem services.

Description: Beraca has been working with Brazilian socio-biodiversity for almost two decades and examines how it impacts on the environment and the lives of its suppliers. With the study of the global climate regulation ecosystem service related to avoided deforestation, we want to visualize the impact from maintaining the forest standing, because we understand that without the forest these regions could have a very different land from the current one, being the cassava plantation the most common case onserved in other places.

Project scope

Object of the Project Analysis: Project

Description: Extractive areas in the Amazon biome with organic certification and control.

Geographic Area: Four towns in Pará State: Breves, Igarapé-Miri, Salvaterra and Anajás

Step(s) of the Value Chain Included: Upstream (suppliers)

Type of Approach: Retroactive

Time Horizon: We considered a 10-year period, as average time of relationship with suppliers

Ecosystem Services: Global climate regulation

Global climate regulation

Role played by ecosystems in carbon and nitrogen biogeochemical cycles, thus influencing emissions of important greenhouse gases, such as CO_2, CH_4 and N_2O.

Method(s) Used: Replacement Cost Method (RCM).

Results:

Externality: BRL 180 thousand

Data Used:	Type of Data:
Net Emissions	
Actual emissions resulting from deforestation or environmental degradation, in tCO_2e: not applicable	
Actual removals resulting from environmental recovery, in tCO_2e: not applicable	
Avoided Deforestation	
Biome phytophysiognomy and land use: Alluvial Open Ombrophilous Forest and Pioneers with Marine Influence (Sandbank)	Secondary
Area of avoided deforestation, in ha: 2,350	Primary
Deforestation rate considered as base line: Covering four towns: Breves: 0,01% / Igarapé: Miri: 0,17% / Anajás: 0,02%/ Salvaterra: 0,10%.	Secondary
Deforestation rate with the project: 0%	Primary
Avoided emissions, in tCO_2e: 1.428	Primary

Further Information

Exchange rate used to convert the Social Cost of Carbon (SCC), in Brazilian Reais: 3.16.

Assumptions adopted in the valuation estimates: We considered four areas with organic certification. Only one phytophysiognomy is different from the other areas.

Adjustments or derivation applied to the methods and tools used: N/A

Others: We assumed extraction activities are held with no need for deforestation, since they rely on fruit and seeds to generate household income. In case the extraction activities were not held, the most likely occupation would be manioc cultivation, in which it is necessary to deforest and burn the area for cleaning before planting.

Notas explicativas:

- Four areas in the Amazon biome in Pará State are included. Three of them are located in forest areas having their central spot next to rivers, and one of them is located in a coastal area. All activities involve extraction of fruit directly from the plants or on the ground, observing the preservation of other species that eat that fruit. The extraction areas researched encompass all properties and places used by suppliers, including the legal reserve area.
- Out of the four localities considered, three of them have a secondary forest, and only Anajás relies on a primary forest.
- The baseline deforestation rates for each one of the four municipalities are the average of annual deforestation rates from 2006 to 2015 calculated from PRODES data: http://www.dpi.inpe.br/prodesdigital/prodesmunicipal.php

Analysis of the results

As we work with the goal of keeping the 'standing forest' as an income source for communities that supply raw materials of Brazilian biodiversity, it is important to know the externalities generated, so we can take actions to make improvements and discuss with our stakeholders about potential advantages and disadvantages produced by extraction activities. When it comes to avoided deforestation, we can state it is possible to get raw materials from the Brazilian biodiversity with no need to damage the natural environment.

Management of ecosystem services

Use of ecosystem service valuation results: Assessment of damages caused to natural resources; Environmental system management; Social and Environmental Assessement.

Description: In our Socio-Biodiversity Management System, which is an integral part of the Socio-Biodiversity Valuation Program, we have been monitoring social and environmental aspects in order to check whether there is any evolution or regression related to Beraca's activities. We want to associate raw material provision with the development of society and sustainable use of the corresponding ecosystem. The analysis of the ecosystem services we influence (or that influence us) is one of the aspects that needs to be monitored so as to determine the relationship between supply, use of the ecosystem and social development.