



Forest carbon stock assessment in Suriname

Suriname, like many other countries, gives attention to REDD (Reduced Emission from Deforestation and Forest Degradation) payments. This is the case since the UNFCCC (United Nations Framework Convention on Climate Change) conference in Bali, Indonesia, 2007. Along the process REDD was transformed into REDD+ when forest conservation, sustainable forest management and enhancement of forest carbon stocks were also considered. An essential step in any REDD+ strategy is the assessment of forest carbon stocks which will create data for carbon balance calculations. TBI Suriname has supported this important issue from the beginning. Additionally, the present assessment also received funding from the Capacity fund for Forest and Nature (CBN) which is managed by TBI Suriname.

In 2010 and 2011 a 'Forest carbon stock assessment' project was carried out by the ministry of Physical Planning, Land and Forest Management (RGB) with funding of the World Nature Fund (WWF Guianas) and TBI Suriname. The field coordination was carried by the Foundation for Forest Management and Production Control (SBB) and the Forest Service Suriname, the Centre for Agricultural Research in Suriname (CELOS), and the National Herbarium (BBS) were the project partners. Aidenvironment was contracted to increase the technical capacity of the participating institutes in order to develop an efficient monitoring system in compliance with IPCC (Climate Panel of the UN) criteria and to calculate a Carbon (CO₂).

Based on the existing human capacity in Suriname, and the equipment and laboratory facilities necessary to determine CO₂ stocks, a plan was designed to enhance the technical capacity of the participating organisations. Field and laboratory protocols were developed by Aidenvironment and the necessary equipment was purchased by RGB.

Training

Personnel from RGB, SBB, CELOS and BBS were trained in monitoring of carbon pools in aboveground biomass, necromass (dead stems and branches), litter (leaves, fruits and twigs) and soil organic matter. Due to the time consuming excavation of roots, the monitoring of belowground biomass was not considered during this present project.

The first part of the training took place during twelve days in November 2010 in the concession of Suma Lumber Ltd. in the Tibiti area (district of Para). There were thirteen participants from RGB, SBB, CELOS, and BBS, as well as three people from Suma Lumber. One transect of three 50 x 100 m field plots, each one at the distance of 1 km from the other, were established (figure 1).

The second part of the training took place during ten days in February 2011 in the concession of E-Timber Industries Suriname (ETS) Ltd. in the Mapane area (district of Para). Three people of the group, who participated in the first training, had been replaced and the group was joined by five people of ETS. The process was repeated and much attention was paid to accurate measuring and data recording.

Participants were trained to set up permanent plots and measure all trees with a diameter at 1.3 m breast height (dbh) greater than 5 cm. The measured trees were numbered and labeled, their common name was registered and their ecological status was evaluated. This includes the shape and position of

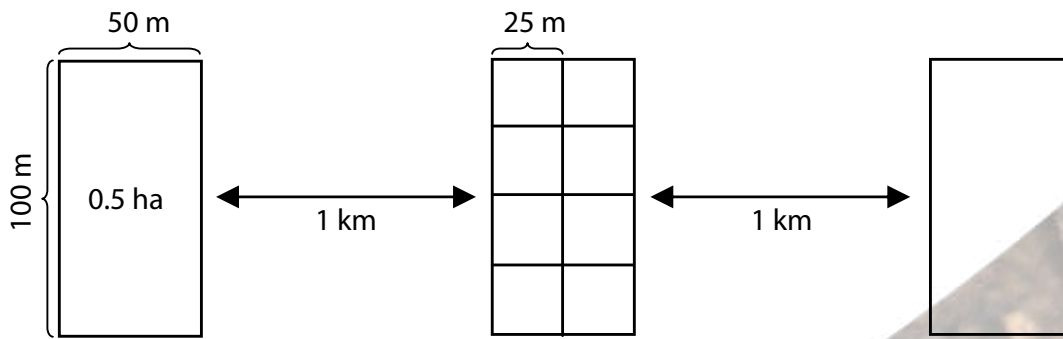


Figure 1. One permanent sampling plot consists of three (50 x 100 m) plots, each at a distance of 1 km.

the crown, and the shape and percentage of damage of the stem. Also tree height and canopy thickness were registered.

In the 50 x 100 m permanent plots (three in one transect) only non-destructive measurements were carried out. Within the plots the use of machetes is not allowed. No biomass must be destructed. This increases the degree of difficulty in wading a path through the forest and collecting research material. At the borders, outside of each permanent plot, four 3 x 3 m temporary plots were established for destructive sampling to determine dead wood, litter and seedling biomass. The vegetation was removed and chopped or sawn into pieces for weight measurement and laboratory analysis. Soil samples were also collected for the determination of organic matter content. The participants in the fieldwork gained or improved skills in compass reading, tree spotting, tree evaluation, soil sampling and weighing of plant parts.

During the training in November 2010 the field work was followed up by training at the CELOS Plant and Soil laboratory. Plant material from the temporary plots was oven-dried to determine its dry weight. Soil monsters were analyzed, by CELOS, on organic matter contents, which is the basis for calculating the CO₂ concentration.

Carbon balance

After the field and laboratory work, data is entered as input for a method on carbon stock calculations developed by Aidenvironment. The method will make use of already existing information in Suriname which complies with IPCC criteria. This includes information acquired in a TBI Suriname project "Baseline inventory of aboveground carbon stocks in different forest types" which was carried out during 2009 – 2010 with the partners CELOS, SBB and Alterra-WUR (The Netherlands). Regional and international carbon equations will also be of value to develop the carbon calculation method.

The training of personnel from key institutions in forest carbon stock assessment is an essential part in the further development of a national carbon monitoring, reporting and verification (MRV) system. In monitoring, measuring systems are used to identify changes in forest cover, carbon stocks and fluxes through systematic measurements and observations. Reporting implies the compilation and submission of the results of measuring and monitoring activities in accordance with UNFCCC guidelines. Verification is the independent confirmation of the reported data to be in accordance with UNFCCC guidelines.



For more information:

Tropenbos International Suriname, PO Box 4194 - Paramaribo South, Suriname
Leysweg - CELOS building Phone: +597-532001
E-mail: tropenbossuriname@yahoo.com