

Rio Kama and Rio Siquia Forest Management Plan

Executive Summary 2012

This executive summary provides an overview of the contents of the forest management plans for the Rio Kama and Rio Siquia Farms.

Section 1: General Information

EcoPlanet Bamboo's Rio Siquia Farm is located in the El Rama Municipality in the Region Autónoma del Atlántico Sur (RAAS) state on the Atlantic (eastern) coast of Nicaragua. The climate is predominantly tropical, with high temperatures and high humidity. Whereas, EcoPlanet Bamboo's Rio Kama Farm is located nearby in the Kukara Hill Municipality in the Region Autónoma del Atlántico Sur (RAAS) state on the Atlantic (eastern) coast of Nicaragua. The climate is also predominantly tropical, with high temperatures and high humidity. The topography of the El Kukara Hill municipality is part of the central mountain shield and contains as principal feature the Cordillera Amerrisque.

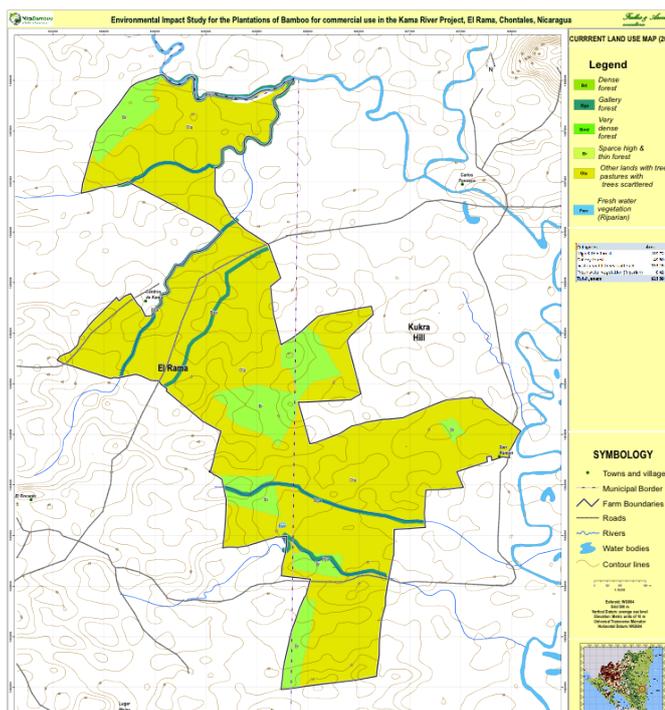


Figure 1: Rio Kama Farm boundaries with baseline land use

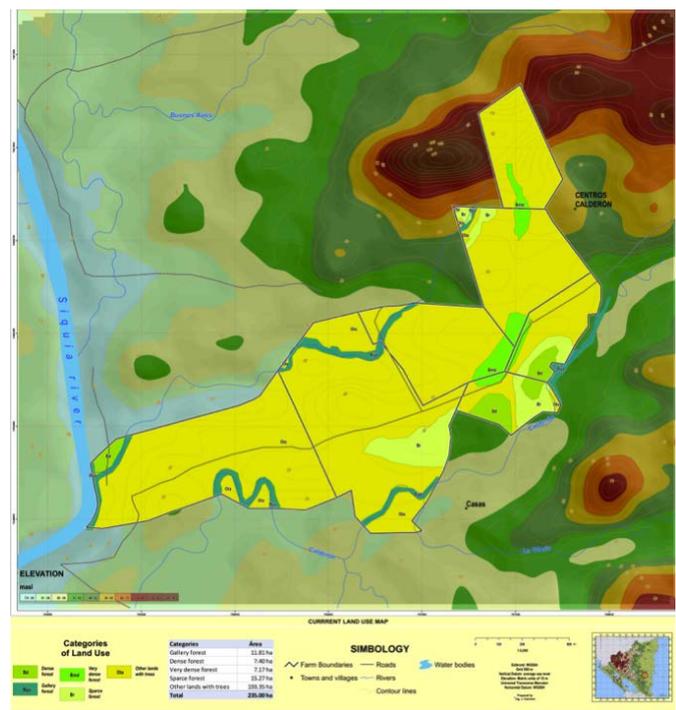


Figure 2: Rio Siquia Farm boundaries with baseline land use

The indigenous ecosystem type of the RAAS can be classified as lowland humid tropical rainforest. A highly diverse forest type with many later succession forest tree species, and old growth forests are still found in the region. Nearly 20% of Nicaragua's total landmass of 129,494km² is currently under protected status. The largest proportions of these areas are found within the two Atlantic states. Within the RAAS, the native vegetation is predominantly tropical rainforest, found primarily on highly weathered, aluminium-saturated soils.

The most common land use within the El Rama and Kukra Hill municipalities is shifting cultivation. When productivity declines to the point where the land no longer can produce food crops, low intensity cattle grazing occurs, and the land is burned repeatedly to release nutrients and stimulate new growth. The land is typically abandoned for 5 or 6 years and the cycle starts again. Deforestation, combined with the heavy agricultural activity on marginal farmlands, has accelerated soil erosion, rendering land unusable forcing farmers to further expand the agricultural frontier.

The region has traditionally featured low on Nicaragua's priority list for development. As such, statistics on things such as literacy, health and education, and economic development have been lower than the national average.

EcoPlanet Bamboo has prioritized the development of plantations of native *Guadua aculeata* at Rio Kama and Siquia Farms. Bamboo is an ancient woody grass widely distributed in tropical, subtropical and mild temperate zones. Although the commercialization of planted bamboo has been slow, bamboo is becoming an increasingly important economic asset in poverty eradication, economic and environmental development. Bamboo is an extremely fast growing plant, with some species obtaining growth surges of 100cm per 24 hour period. Most bamboo species grow to their full height within a single growing season.

The *Guadua* genus consists of 30 species, including *Guadua angustifolia* and *Guadua aculeata*, and is native to Latin America. *Guadua aculeata* is native to Nicaragua. The species fits in line with the company's objectives of: reducing global deforestation through addressing market demands for tropical hardwoods; contributing to efforts to reduce global climate change; and offering a triple bottom line (financial, social and environmental) to a pool of individuals whom timber was previously an inaccessible asset.

Section 2: Forest Management

EcoPlanet Bamboo contracted a specialist firm to carry out an in-depth environmental impact assessment (EIA) in April 2011 for Rio Siquia and in June 2011 for Rio Kama. EcoPlanet Bamboo has incorporated the assessment's findings into the development of plantation operations in order to identify any risks and incorporate mitigation activities.

Rio Kama and Rio Siquia Nursery Operations

Within Rio Kama Farm, a fully functioning nursery operation has been developed, which has become the primary nursery for all EcoPlanet Bamboo Central America's farms. Additionally, Rio Siquia also has nursery operations that were developed in December 2010 to begin the acquisition of propagation material as the result of mass flowering of *Guadua aculeata*, which occurred in Nicaragua in 2008-2011

Both nursery operations acquired propagation material as the result of mass flowering of *Guadua aculeata*. The acquired seeds are planted in seedbeds within in the nursery for germination. After germination, the seedlings are transplanted into seedling bags and moved to a specified location in the nursery. The seedling remains in the nursery for 3-4 months, where they are carefully monitored and watered regularly.

Within the nurseries, irrigation activities occur regularly with the frequency being dependent on the time of year and rainfall occurrence. Irrigation water comes from the Rio Siquia River for irrigation activities at Rio Siquia Farm and from the Rio San Juan River for irrigation activities at Rio Kama Farm. Irrigation water is disseminated through a sprinkle irrigation system or backpack sprayers. Steps are taken to ensure no diesel from the generator pump leaks into the soil.

The Rio Siquia nursery uses one non-organic chemical and the Rio Kama nursery uses three non-organic chemicals at the nursery while the seedlings are undergoing their development. EcoPlanet Bamboo Nicaragua has developed protocols relating to the application of these chemicals within the nursery. These protocols include weather condition protocol and personal protection protocol. Trainings of these protocols are provided to staff. Additionally, within the warehouse and the office is the rules and precaution list, which is posted for all staff to reference. The rules and precautions list includes rules, health precautions, chemical mixing procedure, procedures in the case of a spill, handling of spray equipment, procedures for accounting for, storing and purchasing chemicals, as well as procedures for safe container disposal. The Nursery Supervisor and Warehouse Supervisor hold the responsibility to follow and delegate the appropriate use of fertilizers and Chemicals.

The management structure varies slightly between Rio Kama and Rio Siquia Farms. At Rio Kama, the Nursery Supervisor and the Warehouse Supervisor, who are both managed by Rio Kama's General Supervisor, hold managerial responsibilities in the nursery. At Rio Siquia, the Nursery Supervisor, who is managed by Rio Siquia's General Supervisor, holds managerial responsibilities in the nursery and manages the Warehouse Supervisor. At both farms, the Nursery Supervisor is responsible for nursery operations including managing staff, procedures and inventory, and the Warehouse Supervisor oversees and reports on all inventory matters.

Rio Kama and Rio Siquia Plantation Management

For plantation operations at both Rio Siquia and Rio Kama, there is a General Supervisor for each plantation who manages the Warehouse Supervisor, the Drainage Supervisor, the Payroll Supervisor and the 4 Zone Supervisors. Under the management of each of the Zone Supervisors is an Assistant Zone Supervisor. Zone Supervisors are responsible for staking, hole, planting, and fertilization activities. The General Supervisor trains each zone supervisor on all tasks pertaining to their zone.

Land preparation activities began in April 2011 at Rio Siquia and in June 2011 at Rio Kama. The farms were surveyed and conservation areas identified. All watercourses and remnant forest sites were left untouched and zoned as the sites of enrichment plantings to enhance species diversity. The planting sites were then cleared and holes were prepared and treated with organic and chemical fertilizers. The plantings were established on a grid system, with some allowances made for natural features and plantings along elevation contours to help minimize erosion and ease maintenance.

As of June 2012, the use of chemical/synthetic fertilizers has been discontinued on both plantations. Each plant will receive an application of an organic fertilizer bi-annually to promote productivity. While Guadua has few known pests in Nicaragua, the plants will be monitored closely using EcoPlanet Bamboo Central America's Integrated Pest Management system. One organic fertilizer is currently used on the plantations and one organic chemical. EcoPlanet Bamboo Nicaragua has developed protocols relating to the application of these chemicals within the plantations. These protocols include weather condition protocol and personal protection protocol. The General Supervisors are fully responsible for the understanding and use of all EcoPlanet Bamboo's safety procedures, precautions, and are responsible for training his workforce to practice the use of fertilization safely. As stated above in reference to the nursery, within the warehouse and the office at both plantations is the rules and precaution list, which is posted for all staff to reference.

Maintenance activities occur around the plantations in order to create the most ideal environment for the plants. There are two types of maintenance performed on the plantations: plantation maintenance and construction and fence maintenance.

Although the risk of fire in Nicaragua is very rare due to the high precipitation and humidity, Rio Kama and Rio Siquia Farms have fire management plans. Rio Kama and Rio Siquia Farms have taken proper precautions in the event of an emergency with separate emergency procedures for small and large fires. 25 Staff have been trained in a two-day course given by the Bluefields Firefighters on fire precaution, prevention, and practice. Additionally, EcoPlanet Bamboo consulted experts and will implement firebreaks in 2-3 years after planting, with the intent to also use these firebreaks as roads for harvesting.

Rio Kama and Rio Siquia Farms have dedicated areas for conservation including forested areas with growth over ten years in age and riparian corridors. Additionally, all large remnant pasture trees of ecological value will be left to increase the project's overall environmental impact. Conservation areas have been mapped using GIS and GPS equipment, with forest conservation zones receiving a dedicated permanent status both in the plantations' GIS database, and on the ground. Signs have been posted all over the farms, including in buffer zones, to be concerned with the protection of the environment (No hunting, no fishing, no cutting trees and fire protection).

Section 3: Harvesting and Processing

Beginning at the end of the third summer of growth, the Company will begin the process of thinning the bamboo clumps. Thinning the clumps allows for greater light penetration and promotes growth of new bamboo shoots. This will not only promote healthy growth of the bamboo but will also gear towards our commercial revegetation, enhancing carbon sequestration, and also to keep the bamboo from growing too far outside the clumps area.

Guadua aculeata reaches maturity within 5-7 years and typically reproduces and thrives for over 80 years. The harvesting of the culms will occur in a sustainable manner with only mature culms to be harvested. Harvesting operations will occur primarily in the dry season. Dry season harvests will reduce logistical complications and increase worker safety. Harvesting will occur after marking of culms by the company's timber team, using informed plantation productivity specifications from monitoring sites and the harvest plan as prescribed by the harvesting manager.

Culms may be processed and dried on site, and/or shipped to the Company's processing facilities in Rama. All materials leaving the farms' gate will be weighed and tallied, fulfilling internal accounting needs, as well as FSC standards, and carbon project development requirements. Additionally, EcoPlanet Bamboo Management employs Geographic Information System as a core tool in its management portfolio, which allows for adaptive management of the plantations.

Section 4: Infrastructure and Equipment

EcoPlanet Bamboo has equipped Rio Kama and Rio Siquia Farms with a number of infrastructure and equipment ranging from buildings, vehicle and equipment, roads, and other equipment such as tools, office equipment, and horses.

Section 5: Employment Procedures

The Company has set up its operations in accordance with workers' rights legislation in Nicaragua. EcoPlanet Bamboo informs its workers of their rights as part of the staff training plan and allows them to exercise their rights within the plantation operations. Each month staff meetings are held and lead by EcoPlanet Bamboo Nicaragua's President to discuss the company's goals and objectives, staff concerns, staff trainings, and budgeting.

The Company preferably hires local residents from the municipalities close to the sites for all wage labor and temporary laborers positions. Higher order positions will need to be filled by qualified individuals, with preference given to locals and Nicaraguan nationals. Individual interviews are carried out for any applications, and EcoPlanet Bamboo does not hire based off gender, religion nor political inclination. The Company aims to hire at least 25% women as part of the company's seasonal and permanent staff.

EcoPlanet Bamboo provides education and capacity building programs to its staff in order to maximize local potential and involvement. EcoPlanet Bamboo not only invests in plantations but also in the local communities, generating stable employment and upward mobility to assure a stable base of social capital.

Protocols for health and safety and conflict resolution have been developed. Health and safety protocols are on display in the both Farms' offices and told to all supervisors. Training is provided to the Farm directors and supervisors from the nurses in the hospital of La Esperanza. Additionally, if conflict arises within either plantation, the supervisor is first in line to handle the issue, but if an issue needs more serious attention then senior staff will address the issue immediately. There is also a system in place by which employees can voice complaints anonymously.

Section 6: Monitoring and Evaluation

The Company monitors the growth rate of bamboo clumps across the farms. An annual plan of operations has been developed, which outlines quarterly activities. In addition to the monitoring and evaluation of the bamboo, social and environmental impact factors are evaluated against baseline studies.

Section 7: Financing

EcoPlanet Bamboo Group is the sole investor into the Rio Kama and Rio Siquia plantations. All financing occurs from the Company's headquarters in Chicago, against pre-agreed budgets. Carbon finance plays an integral role in meeting financial targets in the years preceding harvest of the plantations bamboo.