



Eco-Libris Assessment – Fourth Year of Operation (July 2010 – July 2011)

Sustainable Harvest International (SHI)

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1. General Information

- 1.1 Name of organization: Sustainable Harvest International
(<http://www.sustainableharvest.org/>)
- 1.2 Name of President: Florence Reed
- 1.3 Year of establishment: 1997
- 1.4 Registered in (country): USA
- 1.5 Countries of operation: Belize, Honduras, Nicaragua and Panama
- 1.6 No. of trees planted so far: 2,961,530
- 1.7 No. of trees planted in the 12 months ending on July 1st, 2011 (in total):
- 1.8 Average survival rate of trees: 90%

2. Eco-Libris tree planting's operations (these questions refer to the trees planted on our behalf – 12,550):

2.1 Out of total number of 12,550 trees and as of July 1st 2010, how many trees have been planted? How many are still growing as seedlings in nurseries and how many are at prior stage (seedlings haven't been purchased yet)?

As of July 2011, 12,550 tree saplings had been transplanted to their respective areas.

2.2 In what countries/areas the trees were planted? Please fill in the attached excel and be specific as possible.

Approximately one-half of the trees were planted in Panama (6,275) and the remaining portion in Belize. In Panama, reforestation occurred solely in the district of Coclé, the central portion of the country; whereas reforestation in Belize was primarily the southern districts, Toledo and Stan Creek.

2.3 Please provide the planting schedule in these areas (when the seedlings are planted in nurseries, what are the months of planting, etc.)

- **July to September '10:** nurseries established in Panama with **6,275** trees. Nurseries include *Tabebuia guayacan*, *Swietenia macrophylla*, *Tabebuia rosea*, *Citrus sinensis*, *Dalbergia retusa*, and *Coffea canephora*. **All trees were transplanted from December to January.**
- **August to November: '10:** Nurseries established in Belize for **6,275** trees including *Theobroma cacao*, *Moringa oleifera*, *Morus alba*. **Trees transplanted in between December and April depending on their initial planting schedule and variety.**

2.4 What species were planted, what is the genetic source (country of origin) of each species?

Species planted include: *Tabebuia rosea* (Savanna Oak), *Tabebuia guayacan*, *Swietenia macrophylla* & *humilis* (Mahogany), *Dalbergia retusa* (Cocobolo, Nicaraguan Rosewood), *Morinda citrifolia* (Noni, Indian mulberry), *Theobroma cacao* (Cacao), *Citrus* sp., *Inga Vera* (Bri-Bri Tree), *Cocos nucifera* (Coconut), *Moringa oleifera* (Moringa), *Persea americana* (avocado), *Byrsonima crassifolia* (Nance, craboo), *Annona muricata* (soursop).

All species came from local seeds with the exception of *Moringa*, which was purchased in Honduras but is acclimated to Belize soils and climate. Majority of the species are native and / or introduced (not invasive). Some introduced species might include *moringa* (India), and *noni* (Southeast Asia).

2.5 How many hectares were planted as mixed forest? Mixed of how many species?

Approximately 4 hectares were planted as mixed forest. At a minimum six species were utilized, both fruit and hardwoods. Note that some of the mixed forests plots were already in existence and were further enriched with the addition of new species.

2.6 How many hectares were planted as monoculture?

Zero.

2.7 How many hectares were planted for agroforestry uses? How much of it is inter-planted with crops? What crops?

Approximately 2.5 hectares were planted as agroforestry systems and involved an assortment of species. In Panama where new systems were established, farmers maximized the space by intercropping hardwood and fruit trees with basic grains and other staples like common beans (*Phaseolus vulgaris*), pigeon pea (*cajanus cajan*), banana (*musa sapientum*), plantain (*musa paradisiaca*) and cassava (*Manihot esculenta*). As hardwoods and fruits mature, farmers will cease the cultivation of basic grains and thus permit the agroforestry system to

develop. In the case of Belize, agroforestry systems typically revolve around the cash crop cacao and allspice.

2.8 What is the involvement of local communities with these planting activities? What are the social benefits of these specific trees that were planted, in present and in the future?

It is required that local communities participate in the establishment of nurseries and their eventual planting. SHI's role in tree planting is to facilitate the process, provide some materials as well as trainings on reforestation, habitat protection, species care and more. Families and schools would contribute to the building of nurseries, i.e. donate local materials such as palm thatch for roofing, or communal land for the actual nursery.

2.9 Are there any specific environmental benefits for the plantings in these specific areas?

Most species were planted with the intention of protecting local environments, generate income, or provide ecosystem services. Some species, specifically leguminous, facilitated in improving soils (moringa), whereas others serve to attract bird species or prevent soil erosion. Certain species such as *Annona* sp., *Byrsonima crassifolia*, *Citrus* sp., and *Persea americana* play prominent roles in improving habitat for migratory birds like the American Redstart or the Magnolia Warbler.

2.10 What is the management plan for the next five years for the trees that were already planted during the last year? What is the management plan for the next twenty years?

All families, groups and communities involved in reforestation projects are required to have a work plan for management of agroforestry systems and natural resources. SHI staff will conduct periodic visits and monitoring of trees planted and assess if families and groups are providing adequate care to reforested areas. Though tasks will vary, families are expected to periodically prune and fertilize species with sustainable and organic techniques. In the case of coffee and cacao, pruning or coppicing is necessary manage shade and prevent fungal diseases such as witches' broom. Note that species like madreao will require certain amounts of pruning and coppicing in order to permit the release of additional nitrogen into the soil.

2.11 Do you plant other species, which are not trees, in the same planting area? (Shrubs, Herbaceous, etc.) If you do, which species? What life form?

Yes in some cases when establishing new agroforestry areas, plantains and bananas are utilized for temporary shade. See question 2.7 for additional comments.

2.12 Out of the trees that were planted: 7,275 trees were in "clean/ new" areas, 3,113 trees were planted as fillings in areas with former plantations, 2,162 trees were planted as fillings in areas with natural vegetation.

2.13 Did you plant non native species? Which species? How many trees?

As was previously stated, a majority of the trees planted are native; however two species are introduced from Southeast Asia – moringa and noni. Approximately 37 noni were planted and 615 moringa.

For this section, you are most welcome to add any supporting material you find relevant to the questions.

3. Follow-up of the third year assessment

3.1 Were the 4,650 trees that were supposed to be planted out in December/January 2010 planted?

Yes all 4,650 were planted between December and January of 2010.

4. Ensuring the planting quality

With regards to our collaboration in our first year of operation, please choose for each characteristic shown in the table below the most suitable grade between 1-10 (1- cannot guarantee at all 10 – can fully guarantee) and add an X sign in the suitable cell. These grades should indicate your ability to ensure the quality of these characteristics. Please provide further explanations whenever necessary below the table.

	1	2	3	4	5	6	7	8	9	10
Additionally									X	
Planting the trees primarily as a mixed forest and not monoculture species										X
Full collaboration with local communities										X
Usage of native species									X	
Planting within one year from the payment										X
Ensuring trees planted on behalf of Eco-Libris will not be cut down									X	

Eco-Libris comments:

We thank SHI for their full cooperation in the preparation of the assessment and their willingness to provide all the requested details. Overall we are satisfied with the performance of SHI and believe that their commitment to high sustainable standards is maintained. We look forward to continuing our work together!