TCD field grant report - Summer 2018

PROJECT TITLE: THE PROMISE OF SWIDDEN FALLOWS TO INCREASE LANDSCAPE-LEVEL BRAZIL NUT (*BERTHOLLETIA EXCELSA*) PRODUCTION.

DEPARTMENT: FOREST RESOURCES AND CONSERVATION

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Project Abstract

Brazil nut is harvested from the giant, iconic Bertholletia excelsa tree in the Amazon. It is mostly collected from the wild by forest residents who rely on it as their major income source, playing essential role in local economy and biodiversity conservation. Much is known about B. excelsa recruitment and production in mature forest, but there is little knowledge on population dynamics in secondary forests regrowth from swidden agriculture. However, there is scientific evidence that B. excelsa could produce better in swidden fallows. This study will assess to what extent can forest residents increase nut production by abandoning swidden agricultural areas. Methods consist of in situ data collection performed to evaluate density and sizes of B. excelsa population, as well as unstructured and semi-structured interviews with open ended questions about plots' history, management and future intent. To finalize, a matrix population model will be used to represent population's growth, reproduction and survivorship to estimate fruit production. By the end of the study, we hope to enlighten a different perspective upon both management and conservation practices involving swidden fallows.

Report

Timeline could be fairly followed, allowing around one month in the study site (PAE Cachoeira, Xapuri, Acre) and two weeks in nearby cities (Xapuri and Rio Branco, both in Acre) looking for information that could not be acquired in the field. Field work consisted basically in asking forest residents about fallows that could be used in the study and inventorying them. Also, I interviewed the owners to know more about history and management of the plots. To the participants of the study from the previous year, I had a map containing the delimitation of each fallow study in his/her area and a summary of the Brazil nut trees found there. Adjacent work in nearby cities were to gather information such as delimitation of each property with government agency responsible for the study area and estimates of nut production.

In situ data collection

Me and my field assistant (local resident who I hired to help me) would delimitate the perimeter of the swidden fallows together with the forest resident (Figure 01). With the area delimitated, we decided how was the best way to subdivide the area, most areas were fairly squared, therefore we could use the longest edges as main trail and create small trails perpendicularly to it. The subplots made it easy to inventory and assess Brazil nut trees in the area, because it was easy to keep track of where we had been and where we had not (Figure 02). Identification of trees was made by carefully walking plot transects and searching

(Figure 03). When all the subplots were assessed we went back and performed the measurements: total height, diameter at breast height (DBH), crown characteristics (height, width and position), liana cover and vegetative competition (Figure 04a to 04d).

Figure 01 – Forest resident delimitating his area

Figure 02 – Dividing area in subplots

Figure 03 – Identifying Brazil Nut tree.

Figure 04 – a) measuring DBH, b) measuring height, c) assessing vegetative competition and d) estimating liana cover.

Interviews and return to previous participants of the project

As a return to the forest residents who participated last year I prepared a map of his/her area with the swidden fallows assessed and a small summary of each tree found in the plot (Figure 05 and 06), during this return I would also interview the resident about the plots we assessed (Figure 07). Participants who decided to join this year were also interviewed. Question were not intrusive, with objective to gather information about age and management of each plot (See Appendix 1 – Questionnaire sheet)

Figure 05 – example of map given to resident who participate in the study last year.

COLOCAÇÃO BAMBUZAL

Capoeira	Área (ha)	Número de árvores	Densidade (Árvores/ha)	Mínimo do diâmetro à altura do peito (cm)	Máximo do diâmetro à altura do peito (cm)	Altura mínima (m)	Altura Máxima (m)
J	1.01	6	5.93	0.5	4.6	1.77	8.5

Colocação	Capoeira	Número da árvore	Posição de copa	Diâmetro à altura do peito	Altura (m)
Bambuzal	J	06	Intermediária	2.20	3.20
Bambuzal	J	05	Suprimida	0.50	1.77
Bambuzal	J	03	Suprimida	1.50	2.80
Bambuzal	J	04	Suprimida	2.10	4.40
Bambuzal	J	01	Intermediária	4.60	8.50
Bambuzal	J	02	Suprimida	3.70	4.10

Figure 06 – Example of sheet with summary given to them.

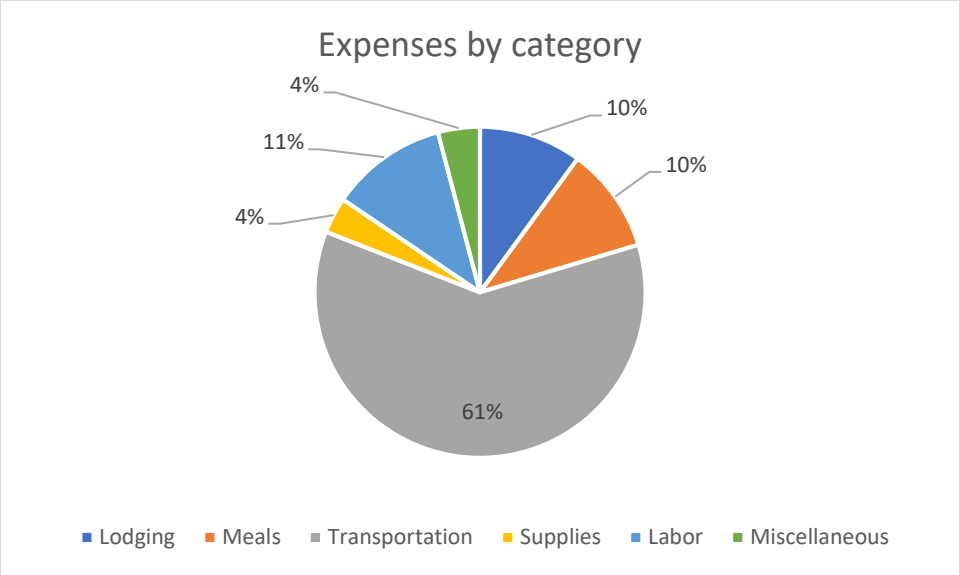
Figure 07 – Delivery of map and start of interview.

Budget

Expenses were divided in six categories lodging, meals, transportation, supplies, labor and miscellaneous. Lodging correspond to expenses with hotel or hostels while in the study site or in the way to the field. Meals represent expanses with restaurant, coffee shops (snacks) and groceries. Transportation cover air tickets and ground transportation such as buses and taxi services. Supplies were basically batteries and prints (maps and interview questionnaire sheets). As I mentioned before, I hired a local assistant to help me, this cost is represented under Labor. To finalized, miscellaneous correspond to everything else that is not cover by the other five categories.

Mostly of the budget was used to pay for transportation, which represent 61% of the final budget, Labor was the second highest cost (11%) but was way far from the cost of transportation. Detailed budget can be found in the receipts (Appendix 2 – Receipts). Conversion rate used was R$ 1.00 equal to US$ 0.25058 (OANDA, 2018)

	R$ (Real)	US$ (US Dollar)
Lodging	R$ 773.96	$ 193.94
Meals	R$ 794.30	$ 199.04
Transportation	R$ 4,667.74	$ 1,169.64
Supplies	R$ 229.02	$ 67.91
Labor	R$ 880.00	$ 220.51
Miscellaneous	R$ 36.00	$ 79.02
Grant Total	R$ 7,381.02	$ 1,930.06



Reference

OANDA, 2018. Currency convertor – BRL to USD. Retrieved from: https://www.oanda.com/currency/converter/. Accessed in August 22, 2018 at 11:30 am.