Cracking the Brazil Nut puzzle: Can Nut Gathering and Timber Harvesting Coexist?

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Introduction

Non-timber forest products (NTFPs) can provide a livelihood for forest communities in the tropics. Yet, forests are becoming more accessible to logging companies. Thus, it is vital to develop forest management practices that do not jeopardise NTFPs. Brazil nut (BN), Bertholletia excelsa, is important due to its high market value, and the need for near intact forest for production.

Objectives

1: Identify most important factors for BN productivity
2: Assess which forest management techniques can enhance BN production in natural stands and minimize trade-offs incurred during timber harvest
3: Assess effects of differing social and policy contexts on practices and stakeholder perceptions

Methods

Systematic review in “web of science” using the search string “Brazil nut” as topic on 25.08.2019 → 1249 papers

Refining results to relevant categories: forestry, environmental studies, plant sciences, biodiversity conservation, ecology, biology, agriculture multidisciplinary, agronomy, horticulture, entomology, environmental sciences” → 471 papers

Limited to documents containing search terms in title → 166 papers

Process above repeated with search string “Berthollettia excelsa” → 72 papers

Combination of both searches → 189 papers → overlapping results

Further selection according to the potential relevance estimated by analyzing the titles and abstracts → 61 papers

Results

• Main yield-influencing factors: size, crown position, liana load, yearly variation, genetics, climate, soil and pollination
• 98% of trees >40 cm diameter at breast height are productive
• Emergent rather than suppressed crown essential for productivity
• At DBH >100 cm, crown size most important factor
• Higher productivity on soils with higher CEC and available P
• Liana cutting greatly increases yield over time
• Improved regeneration in shifting cultivation fields compared to logging gaps

Conclusions

• Coexistence, even synergies between nut gathering and timber harvest are possible
• These depend on applied forestry practices, location and timing
• Logging activities should be planned with nut gatherers if they are not executed by them.
• Institutional barriers such as unclear and conflicting legal frameworks hinder the integration of both livelihoods