

Chapter 13

Exploring Biocultural Contexts: Comparative Woody Plant Knowledge of an Indigenous and Afro-American Maroon Community in Suriname, South America

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Abstract Despite the increasing use of quantitative methods in ethnobotany, there has been relatively little advance in understanding of cross-cultural patterns. Within three tropical forest vegetation zones, I documented and compared local plant knowledge, categorical use, and resource selection for a short-resident (± 300 years) Afro-American Saramacca “Maroon” community and an indigenous Cariban-speaking Trio community. For 3–4 male specialists at each site, the “recognition” and use of stems ≥ 10 cm dbh in forest plots (0.5–1 ha) was recorded. Comparative methods included quantitative *use value* indices and categorized uses (construction, edible, medicine, technology, and trade). The Trio emphasized medicinal uses regardless of vegetation zone. Saramacca *use value* was greatest within fallow forest, exceeded Trio knowledge for “construction” and “trade,” and emphasized timber and carving species. For both groups, the *use value* of most taxa (family and species) was correlated with “apparency” (abundance, species richness), with the exception of palms and major cultural species. As hypothesized, Trio indigenous knowledge was greater – with more biological species named (97.3% vs. 83.9%) and utilized (87.7% vs. 66.9%) and more uses cited per species. However, the shorter-resident Saramacca Maroon participants still revealed a robust knowledge and use of woody plant diversity.

Keywords Cross-cultural research • Quantitative ethnobotany • *Use value* indices • Traditional knowledge • Trio • Saramacca

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Introduction

Global-scale analyses have shown that the humid tropics possess an exceptional diversity of both plant species and biodiversity-dependent forest cultures (Collard and Foley 2002; Harmon 1996; Nettle 1998; Oviedo et al. 2000; Stepp et al. 2004; Sutherland 2003). The cultural diversity of neotropical forests includes thousands of indigenous groups, mixed ethnicity “folk” cultures (e.g., caboclos, ribereños, mestizos, creoles), and, of special interest in this volume, traditional Afro-American “Maroon” cultures formed by enslaved Africans and their descendants. The concept of “biocultural diversity” was coined in the 1990s to examine linkages between cultural and biological diversity and to emphasize the importance of both in conservation and community development initiatives (Etkin 2002; Harmon 2000; Hladik 1993; Maffi 2001, 2004; Posey 1999, 2001; Stepp et al. 2002).

A fundamental aim of ethnobotany is to examine and explain cultural similarities and differences in plant knowledge and use (Balée 1994b). Predictive knowledge of human-nature relationships contributes to both theory and conservation applications in ethnobotany. In recent decades, the capacity for pattern analysis has improved significantly due to the development of quantitative ethnobotanical methods (Castaneda and Stepp 2008; Hoffman and Gallaher 2007; Höft et al. 1999; Phillips 1996). Forest plot samples have been used widely to assess *knowledge or use diversity* (importance indices) for a given set of local *biotic diversity* (Balée 1987; Boom 1987, 1990; Byg and Balslev 2001; de Albuquerque et al. 2005; Galeano 2000; Grenand 1992; Johnston and Colquhoun 1996; Kristensen and Lykke 2003; Kvist et al. 1995; Lykke et al. 2004; Milliken et al. 1992b; Phillips and Gentry 1993a, b; Phillips et al. 1994; Pinedo-Vasquez et al. 1990; Prance 1972; Prance et al. 1987; Reyes-García et al. 2006; Torre-Cuadros and Islebe 2003).

While the emergence of quantitative methods in ethnobotany has substantially increased scientific rigor, there has been relatively little gain in understanding of cross-cultural patterns (Moerman 2005; Zent 2001). One challenge is a long-standing emphasis upon indigenous groups, often viewed as more “colorful,” more threatened, and in possession of “better” ethnobotanical knowledge than other forest peoples (Alcorn 1993; Brokenshaw et al. 1978; Clay 1988; Sillitoe 1999). From the late 1980s, the need to broaden the scope of ethnobotany was recognized and increasingly acted upon (Anderson 1990; Cocks 2006; Galeano 2000; Halme and Bodmer 2007; Parker 1989; Phillips et al. 1994; Silva et al. 2007; Soler Alarcón and Luna Peixoto 2008; Young 2005). Campos and Ehringhaus (2003) provided powerful evidence of the value of nonindigenous knowledge in a comparison of two indigenous groups and two folk societies in the Brazilian Amazon. They found that more than a third of the uses cited by indigenous informants for 17 palm species were learned from folk societies.

In the present study, I examine cross-cultural patterns in ethnobotany through quantitative and qualitative comparison of two distinct forest cultures in Suriname, an indigenous group, the Trio, and an Afro-American Maroon group descended from enslaved Africans, the Saramacca. I consider the Saramacca “nonindigenous”

due to their relatively brief residency (± 300 years) and connection with the African diaspora (Arends 2002; Price 1976; van der Elst 1971). Among the handful of ethnobotanical accounts of Maroons, this is the only published study I am aware of that has made a quantitative, empirical comparison between Maroon and indigenous plant use knowledge (see Grenand et al. 1987; Hurault 1965; van Andel et al. 2008a, b; van Andel and Havinga 2008; Voeks 1995, 1997).

Comparisons of universal and particular ethnobotanical attributes of the two cultures are presented within the following interrelated categories:

Extent of ethnobotanical knowledge: Who “knows more” about local biodiversity? It seems logical that a longer time frame (more experience) would support the accumulation of biodiversity knowledge through increased discovery and experimentation, observation of natural cycles and ecology, adoption of outside knowledge, adaptive management, and knowledge transfer. For pooled data and by vegetation zone, I addressed a “regional residency” null hypothesis that the body of ethnobotanical knowledge of a long-residing indigenous agrarian culture is no greater than that of a short-resident nonindigenous agrarian culture.

Categorical use patterns: How are forest types and forest species used? Use patterns often reflect cultural, socioeconomic, and spiritual contexts. I addressed a null hypothesis that the two forest cultures exhibit no major differences in the categorical use of resources (i.e., the relative importance of five use categories).

Resource selection patterns: What are the drivers of resource selection and what resources are most culturally important? I documented and compared the two cultures for (a) the ecological “apparency” hypothesis that more conspicuous taxa are more likely to be known or used (see de Albuquerque and de Lucena 2005) and (b) “inordinately important” plant resources, including the taxonomic affinities and use of these resources.

Research Location, Environment, and Biocultural Context

Research Country and Field Sites

The research was conducted in Suriname, a small tropical nation of 470,000 inhabitants in the remote *Guianan Shield* region of northeastern South America (Hammond 2005a) (see Fig. 13.1). Suriname has the second highest area of forest cover per inhabitant (34 ha) among tropical nations (FAO 2006). More than 80% of Suriname’s inhabitants live in the northern extreme of the country, in the capital city of Paramaribo and surrounding former plantation lands (Census 2007). Approximately 90% of Suriname’s land is relatively undisturbed tropical forest with communities of traditional forest peoples and small-scale gold-mining or timber operations.

I resided and conducted research in Suriname between 2004 and 2006. The research was conducted at two cultural field sites located approximately 200 km apart (see Fig. 13.1). The Saramacca Maroon (SA) research site was located in

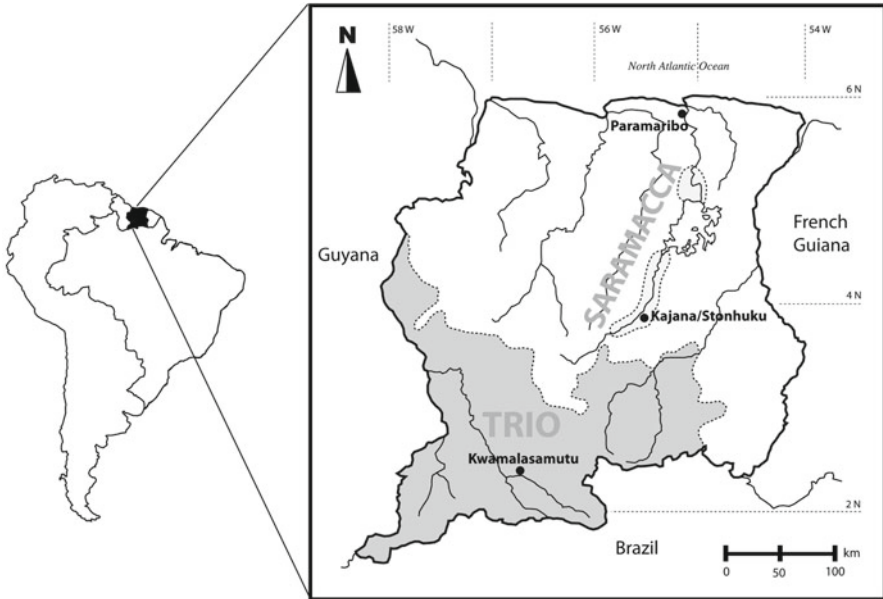


Fig. 13.1 Map of Suriname: lands and research villages of the Saramacca Maroons (Kajana/Stonhuku) and Trio Amerindians (Kwamalasamutu)

central Suriname, at Stonhuku village and adjoining lands on the upper Pikin Lio ($3^{\circ} 53' N$ latitude, $55^{\circ} 34' W$ longitude, 100 m elevation). The Trio (TR) indigenous research site was located in far southern Suriname at Kwamalasamutu village and adjoining lands ($2^{\circ} 21' N$ latitude, $56^{\circ} 47' W$ longitude, 200 m elevation).

Biophysical Context

The Köppen climate classification for the Saramacca site in central Suriname is *Af* (tropical rainforest), with 2,500 mm average yearly rainfall and a bimodal seasonal rainfall pattern (long wet→long dry→short wet→short dry). At the more southerly Trio site, the *Af* class merges with a drier, continental *Aw* class, resulting in somewhat reduced annual precipitation (ca. 2,000 mm) and a unimodal seasonal rainfall pattern (long wet – long dry) (Hammond 2005b; Köppen 1923; Nurmohamed and Naipal 2006; Teunissen et al. 2003).

At a regional scale, both field sites occurred within low-elevation humid tropical forest on rolling hills of brown sand and clay (Alfisols and Ferralsols). In contrast to high-diversity forests in northwestern Amazonia, lowland tropical forests of the Guianan Shield are low to moderate in α -diversity and uniquely abundant in Lecythidaceae and caesalpinoid Fabaceae species (de Granville 1988; Johnston

and Gillman 1995; Schulz 1960; Steege et al. 1993; van Andel 2001). Quantitative floristic accounts of central or southern Suriname forests were not available prior to this study. The tree diversity of southern Suriname forests was expected to be greater than central Suriname forests based upon large-scale diversity pattern analyses (Steege et al. 2001, 2003).

Cultural Context

The “Maroon” cultures of Suriname were established by groups of enslaved Africans that escaped into forests and swamps adjoining the plantations of Dutch colonial Suriname in the seventeenth and eighteenth centuries. The Saramacca were among the first of these groups to become established as a distinct culture with permanent settlements. Today, Saramacca villages occur along the middle and upper Suriname River, with an estimated population of 23,000–25,000 (Price 2002) (see Fig. 13.2a). Villagers speak mostly Saramaccan – a hybrid mix of English Creole (50%), Portuguese (35%), and “African” (10%, various origins) – or Sranantongo, the national English-based *lingua franca* (Smith 2002). I label the Saramacca “nonindigenous” due to their relatively brief residency (± 300 years) and sociocultural connection with the African diaspora (Arends 2002; Price 1976; van der Elst 1971).

The Cariban-speaking *Trio* culture is indigenous to southern Suriname and adjoining Brazilian lands. It is uncertain when their specific group formed, but Cariban-speaking peoples have existed in the region for thousands of years (Basso 1977). Trio live today in five widely dispersed villages, with 800–900 Trio speakers in the research site village of Kwamalasamutu (Carlin 2004) (see Fig. 13.2b). Some Kwamalasamutu residents are non-Trio minorities, including Okojana, Sikijana, Wai-wai (Tukujana), Mawajana, and Akurio peoples. Trio and Sranantongo are the most commonly spoken languages, but Dutch is used in formal communications and is taught in the government school.

Subsistence

The Saramacca and Trio are agrarian societies and the non-flooded forestlands around both research villages included mosaics of multiage swidden plots. Iconic Saramacca crops include African upland rice (likely varieties of *Oryza glaberrima* Steud, *O. latifolia* Desv., *O. rufipogon* Griff.), Asian rice (*O. sativa* L.), and tubers (*Colocasia* spp., *Manihot esculenta* Crantz, *Xanthosoma* spp.). In addition, many Saramacca families at Stonhuku supplemented their diet with wheat and rice from the city. The iconic staple for the Trio at Kwamalasamutu was cassava (*Manihot esculenta* Crantz), with many “bitter” and “sweet” varieties. The Trio did not grow rice but consumed coastally grown white rice from the city when possible. Both cultures are highly dependent upon local wild and semiwild plant and animal resources.



Fig. 13.2 (a) Kajana-Stonhuku villages and Saramacca research participants. (b) Kwamalasamutu village and Trio research participants

Economics

From the eighteenth century onward, the Saramacca have maintained economic ties with coastal society in Suriname through trade or wage labor. Many Saramacca individuals travel regularly by river and road between interior villages and Paramaribo to conduct business. The Trio, on the other hand, are geographically and socially isolated, and economic links are inconsistent and poorly developed. In Kwamalasamutu, only a few forest products such as Brazil nuts (*Bertholletia excelsa* O. Berg) and “maramara” seed necklaces (*Schefflera morototoni* L.) generated cash income. Opportunities for wage labor were few, and most individuals were not highly skilled in monetary transactions.

Forest and Resource Protection

The Saramacca have an elaborate land tenure system and traditional spiritual beliefs that result in strict controls over forest and resource use. During this research, old-growth forests in the village vicinity were off-limits to locals and researchers for two or more days a week to appease forest and ancestor spirits. Some plant taxa were taboo (e.g., *Ficus* spp., Saramacca=*taku*) and were avoided when cutting forest plots. Based upon Saramacca traditions, visiting the forest on a forbidden day, cutting down a taboo plant, or using a forest resource on someone’s land without permission could result in untold suffering or death for an entire lineage. By contrast, the Kwamalasamutu Trio practiced communal land use and, due to missionary influence, the influence of traditional spiritual beliefs upon forest visitation and resource use was minimal. I was able to conduct research on any day and in any location in the forests adjoining Kwamalasamutu village. It appears that the Saramacca sociocultural system, as currently practiced, affords greater ecological resilience and protection of biodiversity in local forests.

Methods

Research Initiation

The two culture sites were chosen because the overall context – an indigenous and nonindigenous group living within an ecologically similar forested landscape – facilitated research questions. The Pikin Lio area was chosen for Saramacca Maroon research due to the presence of more remote and “traditional” communities (Frits van Troon, a Saramaccan botanist and forester, personal communication 2003). The research was facilitated by the Amazon Conservation Team (ACT), a US-based NGO with an active, locally managed biocultural conservation program in Suriname. I held pre-research meetings with village heads and villagers in both communities to ensure understanding of the research and prior-informed consent at the local level.

Forest Plots

Local assistants at each village participated in the selection of three forest zone sites to establish plots and conduct ethnobotanical interviews, including examples of non-flooded “upland forest” (UP), “seasonally flooded or lowland forest” (LO), and fallow forest of greater than 15 years of age (FA). These broad ecological categories were salient to both local peoples and myself and are common in regional accounts of neotropical vegetation (Berry et al. 1995; Daly and Mitchell 2000; de Granville 1988; Huber 1995; Mori 1991; Steege et al. 1993). Plots were all within 1.5 h travel from village centers, and, therefore, prior and ongoing resource use was expected. The chosen old-growth sites had not been cleared or otherwise majorly disturbed within living local memory.

A total of 2.5 ha were delineated per research village, including 1.0 ha in UP vegetation, 1.0 ha in LO vegetation, and 0.5 ha in FA vegetation. 1.0-ha plot shapes varied from square (100 m × 100 m) to rectangular (20 m × 500 m) due to differences in topography and vegetation extent. Each plot was divided into 0.1-ha subplots with all tree and liana stems ≥ 10 cm dbh (diameter at breast height, 1.37 m) taxonomically assessed, numbered, and tagged by myself and local assistants. To analyze the floristic similarity of morphospecies and abundances between plots, I applied a nonmetric multidimensional scaling (NMDS) ordination in PC-ORD 5.0. I chose to use 1.0 (0.5)-ha plots rather than 0.1-ha sample plots, first, to allow comparison with the 1.0-ha plots of Phillips and Gentry (1993a, b) in Peru and additional 1.0-ha plots established in the Guianas (van Andel 2000b) and, second, because the first forest zone (LO) selected by Trio participants was too small for the establishment of long transects.

Botanical Collections

Specimens were collected for each new or questionable folk and/or biological taxon encountered within plots, and out-of-plot specimens were collected when relevant to the research. Pooling data from both research sites, I collected 1,435 botanical voucher numbers including more than 95% of the folk taxa named by research participants. Vouchers were sorted into morphospecies and, after preliminary identifications, were distributed to the National Herbarium of Suriname (BBS), US National Herbarium (US), Netherlands National Herbarium (L), and international specialists. Ulicate specimens were identified and returned to the BBS in Suriname.

Forest Interviews

Due to the large number of plant stems and species in plots, only 3–4 local people were able to participate in specialist knowledge interviews at each site. The participants were chosen nonrandomly through a two-step selection process. A larger group

of male forest specialists (10–12 people) were first chosen based upon local reputation and availability. These people were assessed for their plant knowledge and interview interest in 20-m pilot transects and trail walks. After this initial assessment, a smaller group was selected for the forest plot research. The final participants included three older Trio indigenous men (aged 50s–60s) and four older Saramacca men (aged 50s–70s). Initially, there were four Trio participants, but one of them left the village. For every numbered plant, participants were queried on plant recognition (“Do you know this plant?”), local name (“If known, what is it called?”), and uses (“Is this plant useful or has no use?” and [if used] “What is done with it?”). In some cases, additional ethnobotanical data was collected in open and semistructured village and “walk in the woods” interviews (Martin 2004). Sranantongo (English-based Creole) was spoken initially, and local languages (Saramacca and Trio) were used increasingly as my language skills improved. Unfortunately, female specialists could not participate in plot interviews due to cultural restrictions. Additional nonplot interviews to assess generalist plant knowledge were conducted with more than 30 individuals per site, including men and women. This additional data will be presented elsewhere.

Quantitative Ethnobotanical Analysis

Quantitative methods were used to compare ethnobotanical data between the two study groups. Categorical variables included cultural affiliation, taxonomic identity (kinds of plants), use (kinds of uses), and vegetation zones (kinds of places). Quantitative (interval) data included the number of plot species and stems named and used, the number of use citations, and *use value* indices (described below). Comparisons were based largely on averages and percentiles due to between-site differences in floristic composition and the unequal number of participants (four Saramacca participants, three Trio participants).

The consensus “use value” method for collecting ethnobotanical data was introduced in Phillips and Gentry (1993a, b) and Phillips (1996) (Table 13.1). As originally presented, every interview citation (one person, one plant, one use) is considered to be a statistical “event.” Initial data collection is a tally of citations without weighting by informant or researcher. The *use value* index or UV_s of a species is based upon the number of independent citation events divided by the number of participants. Family use value (UVF_s) is the sum of species UV_s within a given family and can be standardized through division by the number of species (Galeano 2000; Phillips and Gentry 1993a). My methods differed from the original Phillips and Gentry method as follows: (1) participants were not asked about the same plant more than once, (2) participants were chosen nonrandomly, (3) biological species were not lumped into folk taxa, and (4) to avoid inflated values for firewoods, only the “best” firewoods on a three-point participant-defined (emic) scale were included.

I sorted use citations into five broad categories: “construction,” “edible,” “medicine,” “technology,” and “trade/commerce” (Cook and Prendergast 1995; Prance et al. 1987). The “construction” category included both thatch material for roofs and wood material for poles, beams, and planks. The “edible” category included

Table 13.1 Formulas and description of use value methodology

Species use value		U_{is} = number of uses mentioned for species s by informant i and n_{is} = the number of “events” in which informant i cites a use for species s
	$UV_{is} = (\sum U_{is}) / (n_{is})$	Tally the number of plant uses mentioned for a given species (all uses equal) and divide by the number of “events” (all use citations over time of the study for a species by one informant)
Species use value (one species across all informants)	$UV_s = (\sum UV_{is}) / (n_i)$	n_i = total number of informants interviewed for species s Sum the informant use values for a species and divide by the total number of informants
Family use value (one plant family across all informants)	$UVF_s = \sum UV_s$	Sum the use values for all the species within a given family Relative $UVF_s = \sum UV_s / \text{no. of species}$

wild-harvested edible plants (e.g., *Spondias mombin* L., Anacardiaceae), semidomesticated plants, and animal hunting attractants. The “technology” category encompassed a variety of uses and products such as canoes, household tools, hunting and fishing tools, resins, and subsistence fibers. As with Milliken et al. (1992b), the “technology” category included uses placed in an “other” category in some studies (van Andel 2000b). The “trade/commerce” category included craft items for casual tourist markets (tourist seed jewelry, calabash, carvings) and timber and non-timber forest products for more established markets.

The “medicine” category included all plants that are used for therapeutic, bioactive, and ritual purposes, including poisons, charms, and repellants. Medicinal and ritual uses were combined into one category to address a major difference in use citations between the Saramacca and Trio. In forest interviews, Saramacca participants often ascribed general spiritual or ritual purposes to plant species and were less concerned with addressing specific physical ailments. In contrast, Trio participants very commonly linked specific physical ailments with specific plants and made a clear distinction between these plants and spiritual or ritual plants.

The *use value* index was used to compare use knowledge patterns and quantify “importance” for plant families and species. To test the hypothesis that “importance” is a function of “apparency” – based upon stem density (family and species) or species richness (family) – I used the “regression-residuals” method introduced by Moerman for medicinal plants (1979, 1991) and adapted by Phillips and Gentry (1993b). This method also allows the detection of outliers – species with either higher or lower than expected *use value* for their ecological “apparency” (see Galeano 2000; Phillips and Gentry 1993a). For each taxon of interest, a regression of UV_s (or FUV_s) (y -axis) versus abundance or species richness (x -axis) was run in Minitab 15. Following this, a scatterplot was made of UV_s (or FUV_s) versus the *standardized* residuals of UV_s (or FUV_s). Data points occurring beyond $\pm 1.96S.E.$

($\alpha=0.05$) revealed outlier species or families. For a review on “apparency” theory in ethnobotany and its origins in ecological theory, see de Albuquerque and de Lucena (2005).

Limitations of the *use value* methodology have been observed (Kvist et al. 1995; Phillips et al. 1994). Of concern is that statistically equal use citations (“events”) and researcher-defined (etic) use categories ignore cultural complexity and context. “Importance” may be exaggerated for a taxon with multiple minor uses and understated for a taxon with a single, yet unreplaceable use. I chose to apply *use values* and researcher-defined categories, despite their limitations, because I required strong data standardization for cross-cultural comparisons.

Results

Ecological Data

Species richness and stem density for the Saramacca (SA) and Trio (TR) forest plots (stems ≥ 10 cm dbh) are summarized in Tables 13.2 and 13.3. Comparing pooled-vegetation data sets between sites (2.5 ha per site), TR-site species richness was much greater than SA-site species richness (Fisher’s α index: SA 43.3, TR 78). Stem abundance was similar between the two sites. At both sites, there was a similar hierarchical relationship across vegetation zones in Fisher’s α . Tree diversity was greatest in non-flooded (UP) old-growth (31.67, SA; 59.96, TR), slightly less in seasonally flooded (LO) old-growth (29.22, SA; 47.85, TR), and much less in fallow (FA) forest (10.17, SA; 15.28, TR). Comparing specific vegetation zones, TR diversity was conspicuously greater in the two old-growth plots and moderately greater in the fallow plots.

Upland forest (UP) at both SA and TR sites was characterized by gently undulating ridges of brown sand, 25–30 m canopy height, and a relatively open understory. Caesalpinoid Fabaceae were abundant, comprising 21% (SA) to 35% (TR) of stems. A 5–8-m-tall palm, *Astrocaryum sciophilum* (Miq.) Pulle (Sranantongo: *bugrumaka*), was common at both sites (33% of stems, SA; 10% of stems, TR).

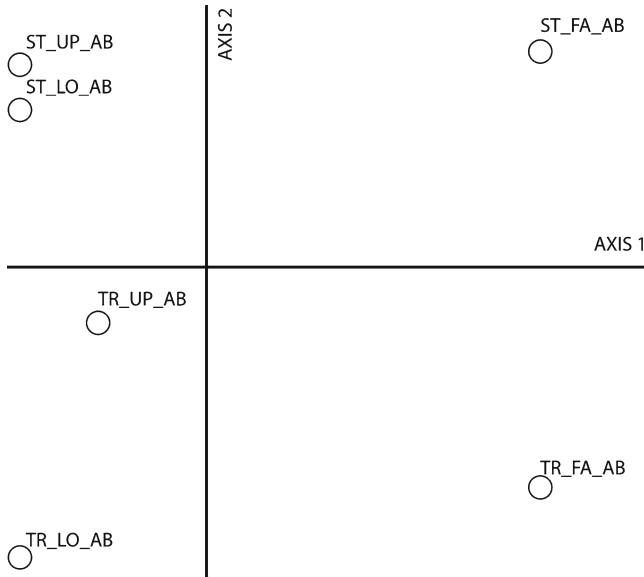
Seasonally flooded forest (LO) at both sites was characterized by alluvial soils on flat terrain, 25–40 m canopy height, and a relatively open understory. Caesalpinoid Fabaceae were abundant, comprising 48% (SA) to 30% (TR) of stems. Canopy emergents

Table 13.2 Woody plant diversity and abundance for plots pooled at the Saramacca (SA) and Trio (TR) research sites (stems ≥ 10 cm dbh)

	SA	TR
	2.5 ha	2.5 ha
Number of families	39	44
Number of genera	104	160
Number of species	153	234
Number of individuals	1,436	1,487
Fisher’s α	43.3	78.0

Table 13.3 Woody plant diversity and abundance by vegetation zone at the Saramacca (SA) and Trio (TR) research sites (stems ≥ 10 cm dbh)

	Upland (UP)		Lowland (LO)		Fallow (FA)	
	SA	TR	SA	TR	SA	TR
	1.0 ha	1.0 ha	1.0 ha	1.0 ha	0.5 ha	0.5 ha
Number of species	94	138	81	117	38	52
Number of stems	581	539	438	504	417	444
Fisher's α	31.67	59.96	29.22	47.85	10.17	15.28

**Fig. 13.3** Ordination of 335 morphospecies abundances (AB) at two cultural research sites

>100 cm dbh, such as *Ceiba pentandra* L. (TR) and *Pterocarpus* sp. (SA), were present at both sites. The TR site was distinguished by a high density of mid- to lower-canopy tree species, including *Inga* spp. (mimosoid Fabaceae), *Quararibea guianensis* Aubl. (Malvaceae), and *Sagotia racemosa* Baill. (Euphorbiaceae). Unique to the SA site were *Qualea* and *Vochysia* species (Vochysiaceae) in the upper canopy, and a high density of *Paypayrola guianensis* Aubl. (Violaceae) in the understory.

Fallow forest (FA) at both sites were characterized by gently undulating ridges of brown sand, 10–15 m canopy height, high light levels, and moderately dense shrub and herb layers. Common neotropical secondary forest genera dominated both sites, notably Urticaceae (*Cecropia*, *Pourouma*), *Vismia*, *Guatteria*, and *Casearia* at the TR site and *Henriettia*, *Jacaranda*, and *Isertia* at the SA site.

In the NMDS ordination (Fig. 13.3), a two-dimensional analysis explained 92% of variation (335 species, $r^2 = .92$, rel. Sorenson). In old-growth forest, diagram

clustering (similarity) was greater for geographically proximal, ecologically distinct plots (SA-UP vs. SA-LO, TR-UP vs. TR-LO) than for distal, ecologically similar plots (SA-UP vs. TR-UP, SA-LO vs. TR-LO). The closest similarity was observed between the two old-growth plots at the SA site. Regional proximity of old-growth plots was thus a stronger predictor of species composition than moisture regime. The two fallow plots were floristically distinct from one another and, as expected, distinct from all old-growth plots.

Because the comparative analysis of resource use between matching vegetation zones at each site was based upon proportional differences and the *use value* index, dissimilarity in species diversity and composition was unproblematic. A limitation to analysis, however, was the strong similarity in species composition of the two SA old-growth sites. As a result, SA intersite UP and LO comparisons were of less value than expected in addressing research questions.

Comparative Extent of Knowledge on Biodiversity

Data Pooled

Overall, both Trio (TR) and Saramacca (SA) participants exhibited considerable knowledge in the recognition and use of plant diversity (see Fig. 13.4). Knowledge of forest plot resources ranged from 83.9 to 98.7% of species “named,” 61.2–93.5% of species with one or more uses, 94.1–100% of stems “named,” and 89.7–100% of stems with one or more uses. *Use value* (UV_s – per species) data included medians of 1.25 (SA) and 1.67 (TR), means of 1.67 ± 1.13 S.D. (SA) and 1.98 ± 1.06 S.D. (TR), and maximums of 6 (SA) and 7 (TR).

On a percentage basis, the indigenous TR participants possessed a greater body of knowledge on local species than the Maroon SA participants. The TR group named 13.4% more of total species (83.9% SA < 97.3% TR) and “used” 20.8% more of total species (66.9% SA < 87.7% TR) (Fig. 13.9). The number of uses cited per species was 1.32 for the SA group and 1.94 for the TR group. Trio UV_s was statistically significantly greater than SA UV_s for all species ($t=5.4$, $p<0.001$) and for a reduced data set with “unnamed” (unknown) species excluded ($t=2.5$, $p<0.01$) (Table 13.4).

Per stem, the number of uses cited was 0.14 for the SA participants and 0.31 for the TR participants. By percentage, TR knowledge was a minor 3% greater for stems “named” (96.9% SA < 99.9% TR) and a moderate 7% greater for stems “used” (93% SA < 99% TR). *Per-stem* percent comparisons were complicated by the lower diversity and thus greater species dominance (many stems of few species) in all SA plots. This ecological dissimilarity equalized *per-stem* knowledge differences between the SA and TR participants. Although cross-cultural ethnobotanical research would ideally be based upon the same forest plots, this was impractical due to the localized context of traditional knowledge.

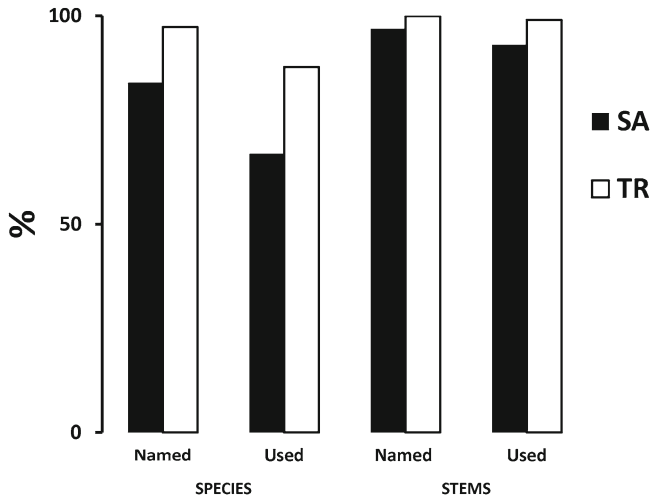


Fig. 13.4 Plots pooled knowledge-base comparison: percent of total plot species and stems named and/or utilized (≥ 1 use) by Saramacca Maroon (SA) and Trio Indigenous (TR) research participants (Species: [Trio, 234 species, 3 participants, 97.3% named, 87.7% used; Saramacca, 153 species, 4 participants, 83.9% named, 66.9% used]. Stems: [Trio, 1,487 stems, 99.9% named, 99.0% used; Saramacca, 1,436 stems, 96.9% named, 93.0% used]. A “used” species has ≥ 1 cited uses, only citations on the participant-determined “very good” firewood resources included)

Table 13.4 Plots pooled knowledge-base comparison: total and per-species use value (UV_s) for Saramacca (SA) and Trio (TR) participants

	SA	TR	
Total UV_s	1.27 \pm 1.13 SD	1.91 \pm 1.02 SD	
Per species UV_s named + unnamed	104	160	$t = 5.4^{***}$
Per species UV_s named	153	234	$t = 2.5^{**}$

SA ($n =$ four participants), TR ($n =$ three participants)

** $p < 0.01$; *** $p < 0.001$

Vegetation Zones

On a per-species percentage basis, TR knowledge exceeded SA knowledge within UP and LO old-growth zones – including species “named” (UP – 10.1% difference, LO – 8.5% difference) and “used” (UP – 27.9% difference, LO – 10.9% difference) (Table 13.5). On a per-stem percentage basis, TR knowledge also exceeded SA knowledge in old-growth plots, but to a lesser degree – including stems “named” (UP – 2.5% difference, LO – 5.9% difference) and “used” (UP – 7.9% difference, LO – 9.7% difference). Within FA plots, Saramacca plant knowledge more closely matched Trio plant knowledge. TR participants had a 6–7% edge

Table 13.5 Knowledge-base comparison by vegetation zone: % plot species and stems “named” and “used” by Saramacca (SA) and Trio (TR) research participants (stems ≥ 10 cm dbh)

	Upland (UP)		Lowland (LO)		Fallow (FA)	
	SA	TR	SA	TR	SA	TR
	1.0 ha	1.0 ha	1.0 ha	1.0 ha	0.5 ha	0.5 ha
Number of species	94	138	81	117	38	52
% Species named	87.2	97.3	90	98.5	92	98.7
% Species used	61.2	89.1	77.7	88.6	92	93.5
Number of stems	581	539	438	504	417	444
% Stems named	97.4	99.9	94.1	99.0	99.3	100
% Stems used	91.0	98.6	89.7	99.4	99.3	100

Saramacca (SA), four participants; Trio (TR), three participants; a “used” species has ≥ 1 cited uses, only citations on the participant-determined “very good” firewood resources included

over SA participants in the percent species “named” (98.7% TR, 92% SA), but percentage differences were minor for species “used,” stems “named,” and stems “used.” Use value (UV_s) index culture comparisons across vegetation zones were similar to per-species percentage results. TR UV_s was significantly greater than SA UV_s in old-growth plot comparisons and insignificantly different between fallow plots (ANOVA, $F=8.64$, $p<0.0001$) (Fig. 13.5). SA knowledge was more extensive within fallow forest, and TR knowledge was even across all three vegetation zones.

Comparative Categorical Use of Biodiversity

Data Pooled

Analyzing the distribution of UV_s by *use category*, I documented dissimilar patterns for the two study cultures (Table 13.6). The hypothesis that cultural differences in categorical use were insignificant was thus rejected. Trio participants cited *medicine* category uses to an inordinate degree – 56.1% of total TR UV_s . Only two categories, *medicine* and *technology*, comprised 80% of Trio UV_s . *Construction* (10.2%) and *edible* (9%) category uses were less frequently cited and *trade* comprised only 2.6% of UV_s . Saramacca UV_s was distributed more evenly across the five categories than Trio UV_s ($t=.20$, $p=0.84$, unequal variances, percentages arcsine transformed). Three categories, *construction*, *medicine*, and *technology*, comprised 80% of total SA *use value*. *Trade* (9.8%) and *edible* (9%) category uses were less frequently cited.

Trio *medicine* mean UV_s was significantly greater than Saramacca *medicine* mean UV_s (1.11 TR, 0.35 SA, MWU, $p<0.001$). There was no significant difference in mean *edible* UV_s (MWU, NS, $p=0.26$) or mean *technology* UV_s (MWU, NS, $p=0.26$) between study groups. Saramacca mean UV_s exceeded Trio mean UV_s , however, in the *construction* (0.30, MWU, $p<0.05$) and *trade* (0.13, MWU, $p<0.001$) categories.

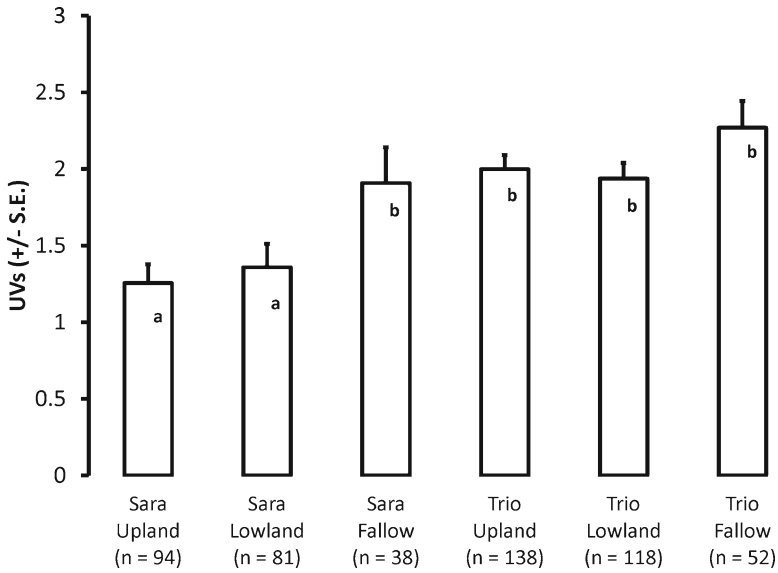


Fig. 13.5 Knowledge-base comparison by vegetation zone: mean per-species *use value* (UV_s) for Saramacca (SA) and Trio (TR) participants (ANOVA, $F=8.64$, $p<0.0001$) (n =number of species, total UV_s per vegetation zone for Saramacca (Sara) was 118 (upland), 110 (lowland), and 77 (fallow) – and for Trio was 273 (upland), 229 (lowland), and 116 (fallow))

Table 13.6 Resource use patterns: *use value* (UV_s) by use category for Saramacca (SA) and Trio (TR) participants

	SA site % of UV_s	TR site % of UV_s	SA site mean UV_s (SE)	TR site mean UV_s (SE)	Mann-Whitney
Construction (UV_c)	23.3	10.2	0.30 (0.03)	0.20 (0.02)	*
Trade (UV_t)	9.8	2.6	0.13 (0.02)	0.053 (0.01)	**
Edible (UV_e)	9.1	9.0	0.12 (0.02)	0.18 (0.02)	NS $p=0.28$
Medicine (UV_m)	27.3	56.1	0.35 (0.04)	1.11 (0.05)	**
Technology (UV_t)	31.1	22.5	0.48 (0.04)	0.44 (0.03)	NS $p=0.26$

SA $n=117$ sp., TR $n=229$ sp.; numbers in bold are significantly higher
 * $p<0.05$; ** $p<0.001$

Vegetation Zones

For the Trio, approximately the same distribution of categorical UV_s knowledge was observed for pooled data and for all three vegetation zones (Fig. 13.6). In other words, the Trio stuck to their preferential use pattern regardless of ecological or

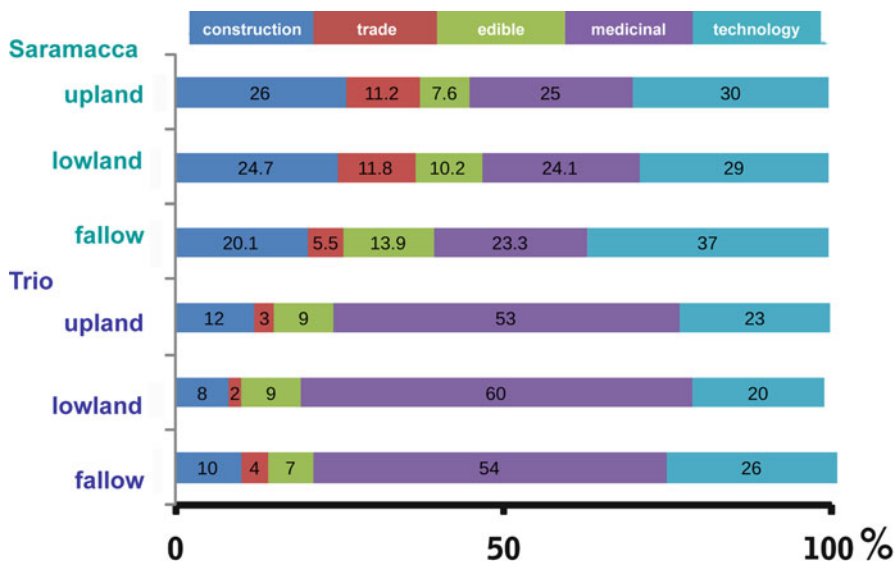


Fig. 13.6 Resource use patterns per vegetation zone: percent of total *use value* (UV_s) per use category for Saramacca (SA) and Trio (TR) participants (Upland=terra firme unflooded forest sites; lowland=seasonally flooded forest sites; fallow=older fallow (>15 years); total UV_s per vegetation zone for SA was 118 (upland), 110 (lowland), and 77 (fallow) – and for TR was 273 (upland), 229 (lowland), and 116 (fallow))

taxonomic variation. For the Saramacca, categorical UV_s distribution was similar for pooled and old-growth plots. Within the fallow (FA) zone, however, SA knowledge was more evenly distributed across use categories, due to a proportional increase in *technology* and *edible* uses. In the *medicine* category, TR knowledge exceeded SA knowledge in all three forest zones. In the *construction* and *trade* categories, SA knowledge exceeded TR knowledge only in the old-growth plots.

Patterns in Resource Selection and Use

Resource Use Patterns for Four Plant Families

In Fig. 13.7, I compare the distribution of family use value (UV_f) across use categories for four plant families important at both research sites. For both cultures, the *Arecaceae* family was used for a wide range of purposes with a significant component of *edible* UV_s (32% SA, 24% TR). The *medicine* category predilection of Trio participants was still apparent, but less extreme. For the three non-palm families in Fig. 13.10, the previously described dissimilar cultural patterns were observed. *Medicine* category uses were cited more by the Trio (e.g., *Lauraceae*: 0% SA, 40% TR) and the Saramacca emphasized *construction* (e.g., *Lauraceae*: 52% SA, 27% TR) and *trade* (e.g., *Lauraceae*: 31%, SA 0% TR).

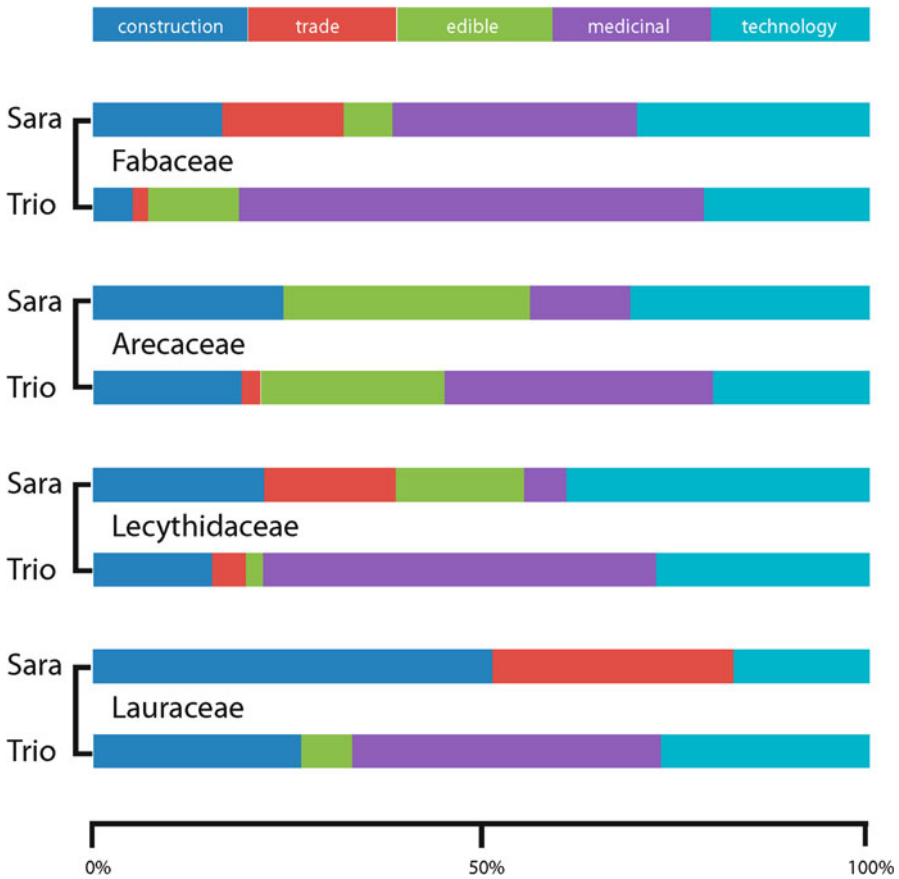


Fig. 13.7 Resource use patterns for four plant families: proportions of total *family use value* (UVF_s) per use category by Saramacca (SA) and Trio (TR) participants (Total UVF_s by family: Fabaceae (47, ST; 97.6, KW); Arecaceae (24.5, ST; 36.3, KW); Lecythidaceae (9, ST; 26, KW); Lauraceae (7.3, ST; 5, KW))

Ecological “Apparency” and Use Knowledge

If ecological “apparency” is a driver of ethnobotanical selection, then the most abundant or speciose taxa should also be the most useful. For large woody forest plants, species richness (*S*) and abundance (AB) are useful indicators of “apparency” (Phillips and Gentry 1993b). Sixteen plant families comprising the highest percentages of total *family use value* (UVF_s) in this study are shown in Fig. 13.8, arranged in descending order (green bars). The percent contribution of these families to total *S* (no. sp., blue bars) and total AB (no. indiv., red bars) is shown alongside % UVF_s .

At both sites, the Fabaceae (sensu lato, Password 2003) family had the highest % UVF_s and comprised a higher percentage of *S* and AB than any other family. For most

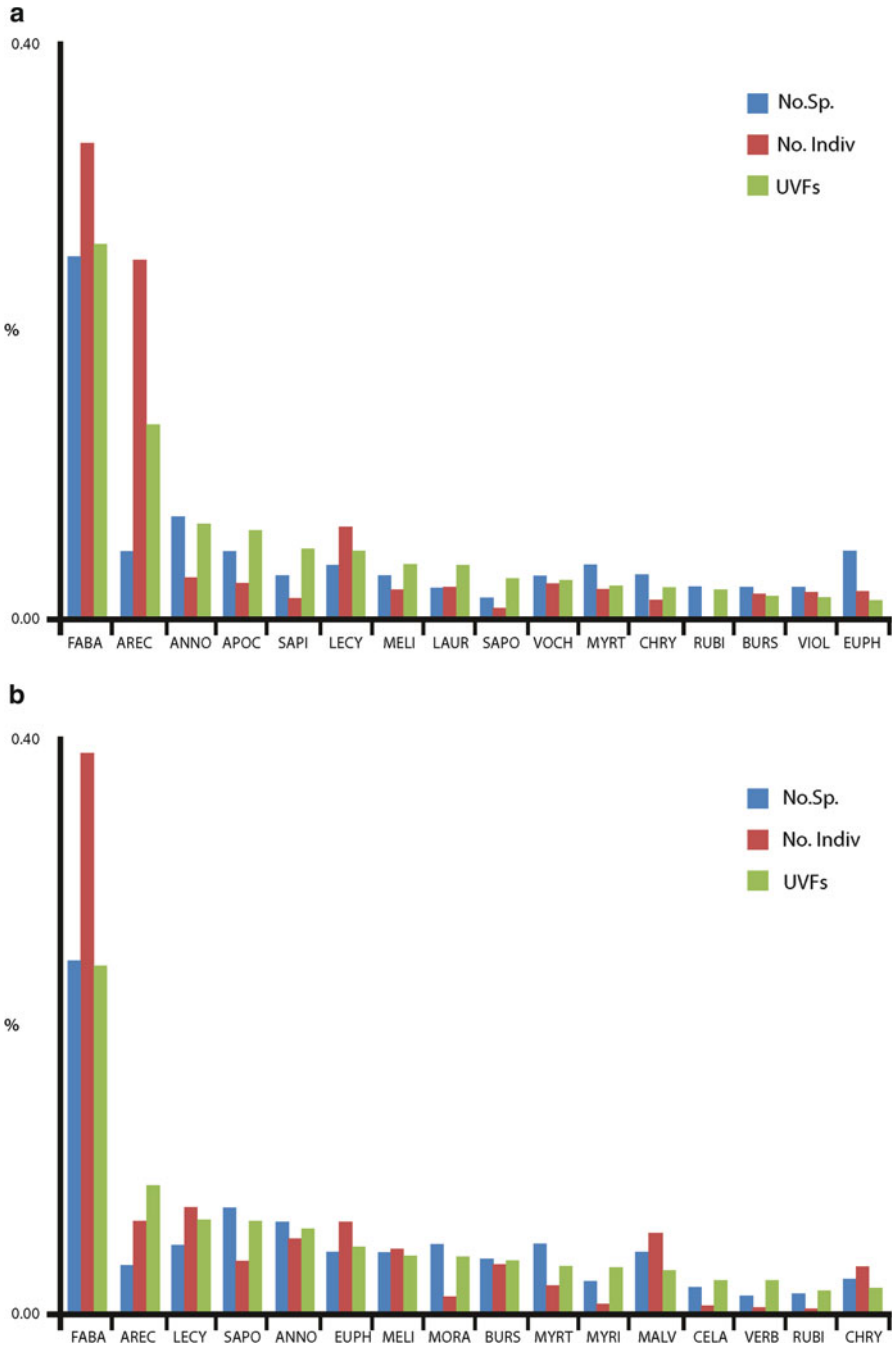


Fig. 13.8 (a), (b) Sixteen plant families compared by percent contribution to *family use value* (UVF_s), species richness (S) and abundance (AB) at the Saramacca (SA) and Trio (TR) research sites (arranged by high to low UVF_s) (*FABA* Fabaceae, *AREC* Arecaceae, *LECY* Lecythidaceae, *SAPO* Sapotaceae, *ANNO* Annonaceae, *EUPH* Euphorbiaceae, *SAPI* Sapindaceae, *MELI* Meliaceae, *LAUR* Lauraceae, *MORA* Moraceae, *BURS* Burseraceae, *MYRT* Myrtaceae, *MYRI* Myristicaceae, *MALV* Malvaceae, *CELA* Celastraceae, *VERB* Verbenaceae, *RUBI* Rubiaceae, *CHRY* Chrysobalanaceae, *VOCH* Vochysiaceae, *VIOL* Violaceae)

low UVF_s families, the percentages of S and AB were also low. These results suggest ecological “apparency” as a selection mechanism. The high *Arecaceae* % UVF_s , however, was matched by low S at both sites – suggesting that this family was valued for reasons beyond ecological abundance. This case is discussed in the following section.

Regression and residual analyses supported the “apparency” hypothesis for most families and species. UVF_s was positively correlated at the SA and TR sites with both S and AB (# species SA: $F=81.9$, $p < 0.001$, $r^2=0.78$; # species TR: $F=337.0$, $p < 0.001$, $r^2=0.92$; # stems SA: $F=93.4$, $p < 0.001$, $r^2=0.80$; # stems TR: $F=120.1$, $p < 0.001$, $r^2=0.80$). For species, I found a weak but positive relationship between UV_s and stem abundance at both sites (TR: $F=5.09$, $p < 0.05$, $r^2=0.01$; SA: $F=10.48$, $p < 0.01$, $r^2=0.11$). The regression-residual charts in Figs. 13.9, 13.10, and 13.11 show that the vast majority of taxa at both sites had no greater (or lesser) *use value* than expected for S and AB values.

Inordinately Important Plant Resources and Uses

Analysis of pooled citation data revealed an uneven distribution of use knowledge across taxa for both the Saramacca (SA) and Trio (TR) groups. Participants cited an inordinate number of uses (>5) for a minority of taxa and few uses (<2) for the great majority of taxa (Fig. 13.12). For some of the highest *use value* taxa, the positive correlation between ecological “apparency” and use knowledge did not apply. In Figs. 13.9 and 13.10, family outliers (to the right of the $+1.96$ S.D. line) were those “more-useful-than-expected.”

Palm Resources

In regression-residual analysis of species richness, the *Arecaceae* family was inordinately “important” for both the Saramacca and Trio (Fig. 13.9). Based upon abundance, the *Arecaceae* was not an outlier due to the high density of one species, *Astrocaryum sciophilum*, in SA and TR old-growth zones. The 14 highest UV_s species outliers at both research sites are shown in Fig. 13.13. By species, palms dominated in straight UV_s tallies and as “more-useful-than-expected” resources in regression-residual analysis. The Saramacca top 14 UV_s list included four *Arecaceae* species (the top three highest UV_s for any study species) and half of the Trio top 14 UV_s list were *Arecaceae*. The palm species in study plots included *Attalea maripa* (Aubl.) Mart (code: ATMA, SA and TR sites); *Astrocaryum sciophilum* (Miq.) Pulle (ASSC, TR site only); *Euterpe oleracea* Mart. (EUOL, SA site only); *Euterpe precatorea* Mart. (EUPR, TR site only); *Oenocarpus bacaba* Mart. (OEBA, TR site only); and *Socratea exorrhiza* (Mart.) H. Wendl. (SOEX, SA site only). Some additional *Arecaceae* species of local importance were not present or occurred outside of plots.

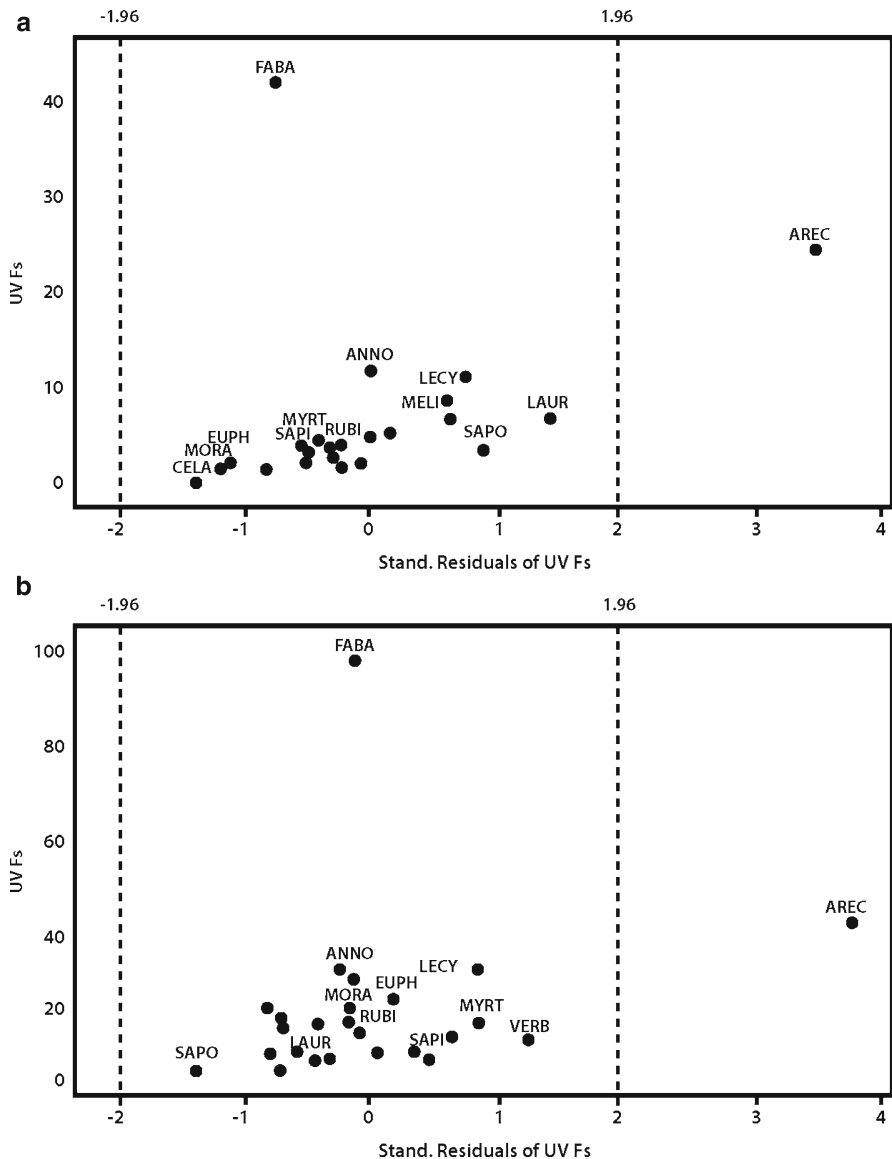


Fig. 13.9 (a) (SA), (b) (TR) Relationship of family “importance” (UVF_s) to species richness per family and detection of outliers (x -axis values are the standardized residuals of UVF_s , derived from the regression of species richness and rel. UVF_s) (Any family with standard residuals >1.96 or <-1.96 S.E. ($p < 0.05$) has, respectively, greater or lesser use value (UVF_s) than expected from its relative diversity. Families with less than two species or seven individuals were excluded (SA 24 families, TR 25 families))

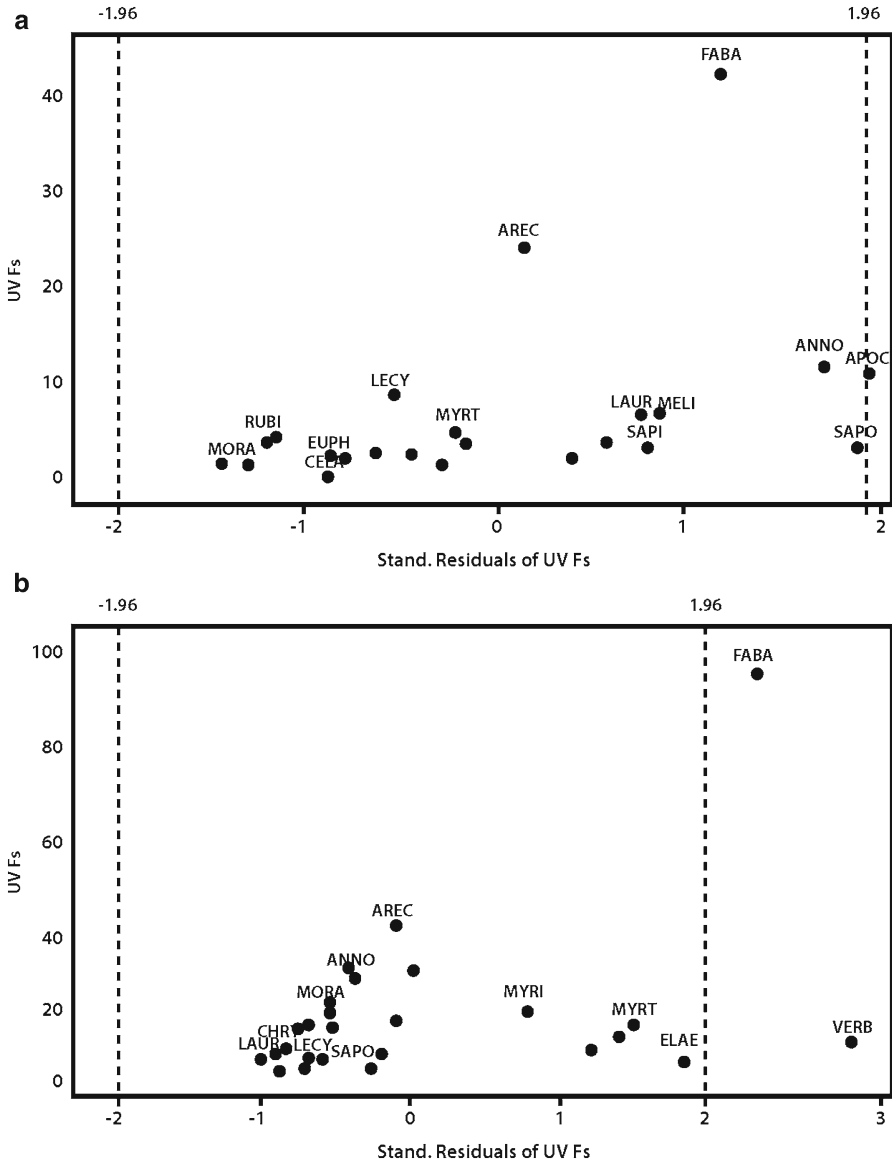


Fig. 13.10 (a) (SA), (b) (TR) Relationship of family “importance” (UVF_s) to stem abundance per family and detection of outliers (x -axis values are the standardized residuals of UVF_s , derived from the regression of stem abundance and rel. UVF_s) (Any family with standard residuals >1.96 or <-1.96 S.E. ($p < 0.05$) has, respectively, greater or lesser use value (UVF_s) than expected from its relative abundance. Families with less than two species or seven individuals were excluded (SA 24 families, TR 25 families))

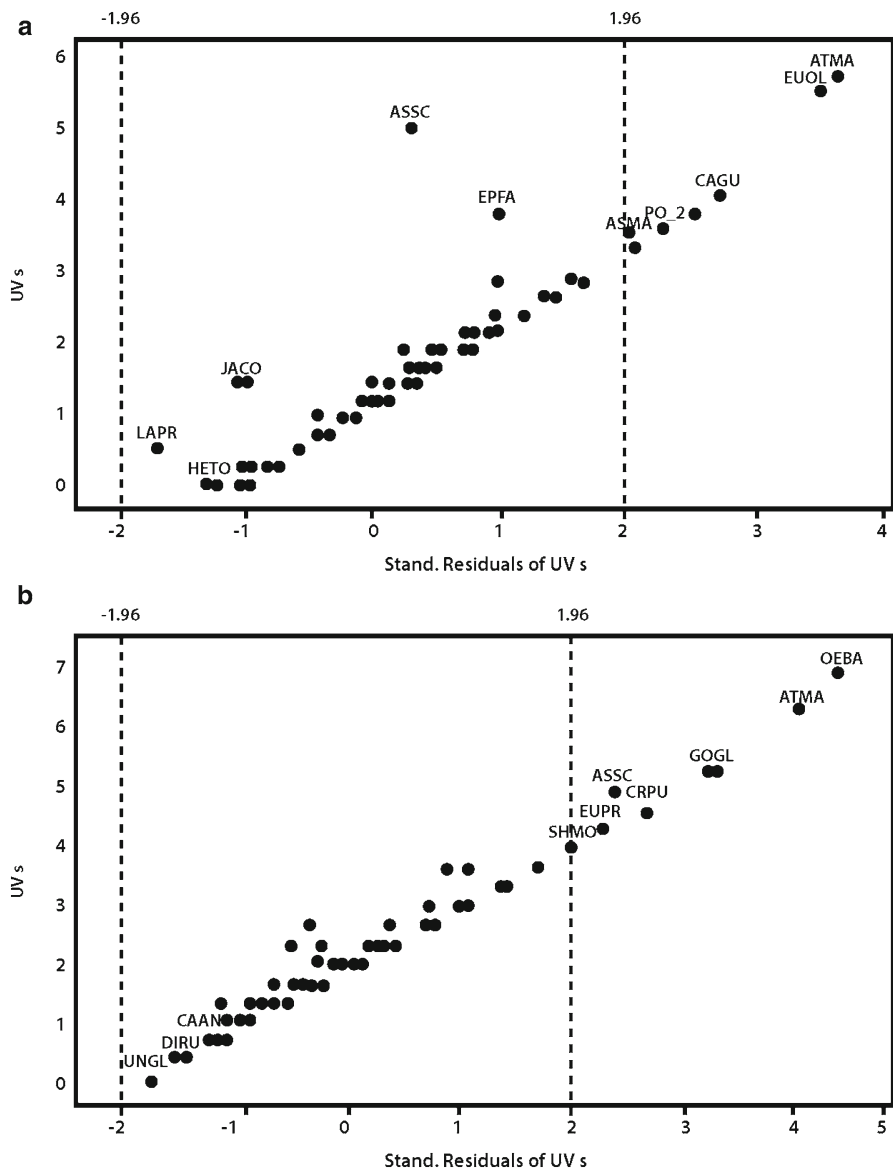


Fig. 13.11 (a) (SA), (b) (TR) Relationship of species “importance” (UV_s) to stem abundance per species and detection of outliers (x-axis values are the standardized residuals of UV_s, derived from the regression of stem abundance and rel. UV_s) (SA site, N=153; TR site, N=235; any species with standard residual >1.96 or <-1.96 S.E. (*p* < 0.05) has, respectively, greater or lesser UV_s than expected for its abundance)

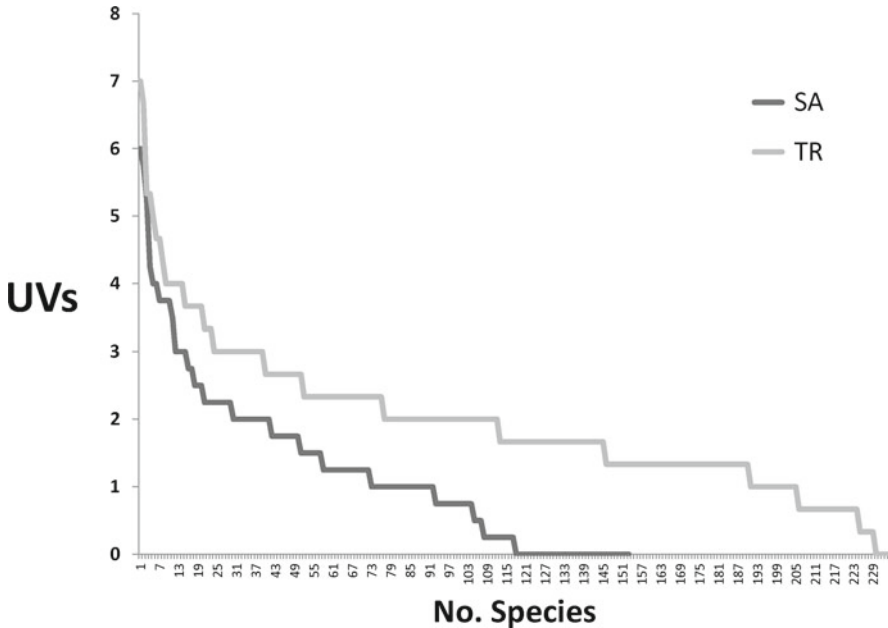


Fig. 13.12 Distribution of per-species UV_s data at the Saramacca (SA) and Trio (TR) sites

The categorical and specific uses of three high UV_s palm species are listed below:

- (a) *Attalea maripa* (Aubl.) Mart. (species code: ATMA) – uses cited by both groups: *construction* (leaves, thatch), *edible* (fruit mesocarp, oil), *technology* (seed, cosmetic oil, game attractants), and *medicine* (stem sap, healing wounds; leaves, ritual). Some Saramaccans additionally mentioned the production of salt (technology) from burnt fronds.
- (b) *Euterpe oleracea* Mart. (EUOL) – uses cited by both groups: *construction* (leaves, thatch; stem, planks), *edible* (fruit mesocarp, oil; apical meristem, palm beetle grubs [*Rhynchophorus palmarum* L.]), *technology* (seed, cosmetic oil), and *medicine* (stem sap, healing wounds; leaves, ritual). Saramacca participants again uniquely cited salt production. Unique Trio uses included a fruit beverage, craft and household tools woven from leaves, and medicinal remedies for malaria/fever, hepatitis, general sores, and leishmaniasis.
- (c) *Astrocaryum sciophilum* (Miq.) Pulle. (ASSC) – uses cited by both groups: *construction* (leaves, roof thatch), *edible* (fruit mesocarp, oil), *technology* (seed, cosmetic oil), *medicine* (stem sap, healing wounds; leaves, rituals). Trio use was distinguished by crafts and household tools woven from leaves, game attractants, and certain medicinal uses, including general sores and leishmaniasis.

There was a close correspondence in SA and TR use knowledge for these palms. The main differences were the greater number of TR medicinal uses and the SA production of salt.

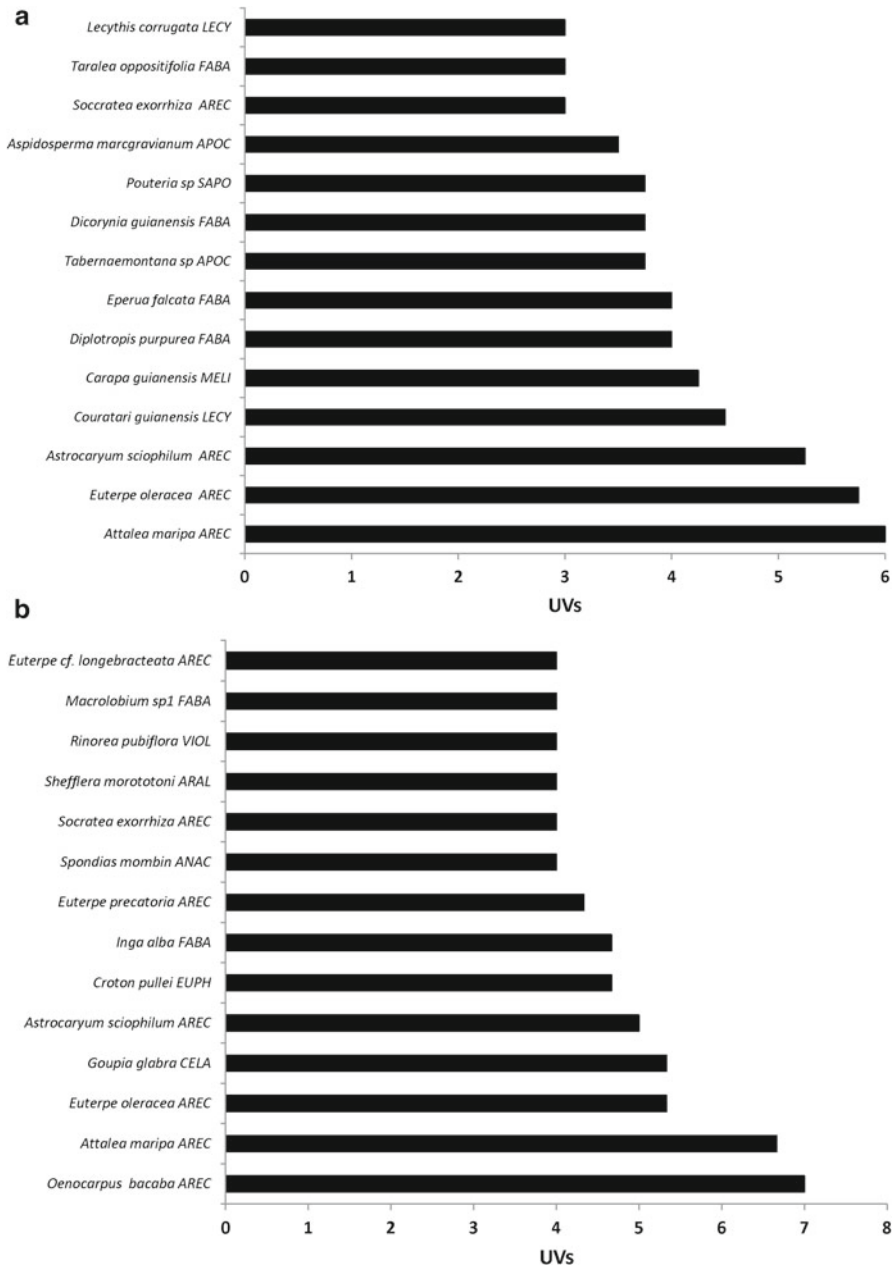


Fig. 13.13 (a), (b) Fourteen species with highest UV_s at the Saramacca (SA) and Trio (TR) sites

Table 13.7 Categorical and specific uses of the top five highest UV_s non-palm species at the Saramacca and Trio sites

	Construction	Trade	Edible	Medicine	Technology
Trio non-palm resources					
<i>Croton pullei</i> Lanj. (CRPU)	–	–	–	Sap: leishmaniasis	–
<i>Goupia glabra</i> Aubl. (GOGL)	Wood: house poles, planks	–	–	Sap: wounds	Wood: canoe, mortar
<i>Inga alba</i> (Sw.) Willd. (INAL)	–	–	Fruit	Sap: wounds	Sap: resin, paint; wood: firewood
<i>Schefflera morototoni</i> (Aubl.) Maguire, Steyerm. & Frodin (SCMO)	–	Seeds: tourist necklaces	–	Leaves/sap: ritual	Seeds: beads; wood: drums
<i>Spondias mombin</i> L. (SPMO)	–	–	Fruit	Sap: general health, ritual	–
Saramacca non-palm resources					
<i>Carapa guianensis</i> Aubl. (CAGU)	Wood: timber	Wood: timber	–	Seed oil: vermifuge, ritual	–
<i>Couratari guianensis</i> Aubl. (COGU)	Wood: timber	Wood: timber	–	Fruit pods: ritual	Wood: carved tools
<i>Diplotropis purpurea</i> (Rich.) Amshoff (DIPU)	Wood: timber	Wood: timber	–	–	Wood: carved tools
<i>Eperua falcata</i> Aubl. (EPFA)	Wood: timber, shingles	Wood: timber, shingles	–	–	Wood: carved tools
<i>Pouteria</i> sp. (PO__)	Wood: timber	Wood: timber	Fruit	–	Wood: carved tools

Non-palm Resources

In contrast to the Areaceae, the top UV_s non-palm species and uses for each research site were largely dissimilar (Table 13.7). The Trio top five UV_s non-palms included *Croton pullei* Lanj. (CRPU); *Goupia glabra* Aubl. (GOGL); *Inga alba*

(Sw.) Willd. (INAL); *Schefflera morototoni* (Aubl.) Maguire, Steyerl. & Frodin (SCMO); and *Spondias mombin* L. The Saramacca top five UV_s non-palms included *Carapa guianensis* Aubl. (CAGU); *Couratari guianensis* Aubl. (COGU); *Diploptropis purpurea* (Rich.) Amshoff (DIPU); *Eperua falcata* Aubl. (EPFA); and *Pouteria* sp. (PO__).

With the exception of *Croton pullei*, the high UV_s TR non-palm species were iconic, well-documented resources for many regional indigenous groups (Balée 1994a; Grenand et al. 1987; Milliken et al. 1992a; van Andel 2000a). In accordance with their “cultural syndrome,” the Trio selected taxa largely of medicinal and technology use. The only trade use was for tourist necklaces. *Goupia glabra*, the only well-known commercial timber species, was occasionally used by the Trio to make planks. By contrast, all five of the high UV_s SA species were commercial timber trees and, with the exception of *Carapa guianensis*, were not well-known regional indigenous resources (Lindeman and Mennega 1963). In accordance with their “cultural syndrome,” the Saramacca emphasized construction, trade, and carving resources.

Discussion

Extent of Knowledge

An extensive knowledge of plant diversity has been documented for many indigenous forest cultures (Balée 1994a; Berlin 1992; Conklin 1967; Plotkin 1986; Prance et al. 1987; Schultes and Raffauf 1990), but this knowledge has rarely been directly compared with nonindigenous cultures. On a basic quantitative level, this study supported the hypothesis that longer-resident, indigenous forest peoples “know more” about local biota than shorter-resident, nonindigenous forest peoples. Campos and Ehringhaus (2003) also documented a more extensive knowledge base on palm species for two indigenous groups compared to a ribereño and caboclo community in Brazil. These findings suggest that long-resident indigenous groups might have more to contribute to biodiversity-related projects (e.g., parataxonomy) when a choice must be made between two groups or two areas.

This study also supported a growing body of empirical evidence that short-resident, nonindigenous forest peoples are capable of developing robust utilitarian knowledge of local plant diversity (Da Cunha and De Albuquerque 2006; de Albuquerque et al. 2005; Halme and Bodmer 2007; Lira et al. 2009; Soler Alarcón and Luna Peixoto 2008; Voeks 1996; Young 2005). The 66.9% of upland old-growth woody species (≥ 10 cm dbh) used by Saramacca participants in this study was comparable to similar *terra firme* plot inventories among some indigenous (Prance et al. 1987, 61–78%; van Andel 2000b, 58%) and nonindigenous groups (Galeano 2000, 62.8%; Pinedo-Vasquez et al. 1990, 60%). I expect that Saramacca use knowledge would be quantitatively equal or greater than that of some indigenous groups, particularly

considering the widespread decline of indigenous languages, traditions, and knowledge transfer.

Ethnobotanical Divergences (Vegetation, Categorical Use, Resources)

Previous research has highlighted the cultural importance of *terra firme* old-growth forest for various indigenous groups (Prance et al. 1987), old growth and edges for the indigenous Guaymi (Castaneda and Stepp 2008), floodplain old growth for mestizos (Phillips et al. 1994), and secondary forests for indigenous and nonindigenous medicinal uses (Voeks 1996). However, there has been insufficient empirical research to reveal principles of habitat preference among indigenous, folk, and tribal Afro-American groups. Recognition of greater or lesser “importance” does not make any particular forest zone useless. Local peoples depend upon a mosaic of different vegetation and land use zones to meet their needs, and some zones may harbor essential resources that are rarely used (Grenand 1992; Young 2005).

As was expected for the long-resident culture, the Trio exhibited extensive use knowledge across all three vegetation zones and use categories. Trio knowledge was consistently skewed toward *medicinal* and *technology* uses. This consistency reflected the adaptive capacity of TR participants to satisfy their main needs or interests regardless of forest zone. The lack of commercial uses was not surprising given the lack of access to the coastal economy. The basis of Trio ethnobotany as a product of long-term experience and a largely subsistence economy was reflected in the prevalence of widespread, iconic indigenous resources in the “top UV_s” Trio species lists.

In contrast to the Trio, Saramacca knowledge was not consistent across all vegetation zones. In old-growth forests, the SA emphasis upon *construction* and *trade* uses follows a pattern documented in previous nonindigenous ethnobotanical studies (Galeano 2000; Phillips and Gentry 1993a; Soler Alarcón and Luna Peixoto 2008). The prevalence of commercial uses reflected the greater Saramacca experience and access to regional markets. Modern economic influences upon the Saramacca were reflected in the status of most “top UV_s” non-palm resources as commercial timber resources.

In comparison with the Trio, the Saramacca appeared, both quantitatively and qualitatively, to have a special relationship with fallow forest. The high SA *use value* index in fallow forest and greater emphasis upon *technology* uses reflected combined cultural, economic, and biological influences. The SA fallow plot contained softwood species amenable to wood carving – a very significant cultural and economic activity for the Saramacca. Research participants made a major cultural distinction between fallow and old growth that highlights the importance of understanding local contexts. The previously mentioned taboos upon old-growth forest visitation and resource use were rarely applied to farms, trails, and fallow forests.

Ethnobotanical Convergences

The positive correlation of ecological “apparency” (species richness or stem abundance) and resource selection, documented for both the Trio and Saramacca, is a widespread phenomenon. Similar patterns have been observed in Brazil (Da Cunha and De Albuquerque 2006) and Peru (Phillips and Gentry 1993a), for an Afro-American nontribal community in the Colombian Chocó (Galeano 2000), and among indigenous peoples in Ecuador (Paz y Mino et al. 1995), Belize (Amiguet et al. 2005), and Indonesia (Caniago and Siebert 1998). Working with a Mayan community in the Yucatan, Torre-Cuadros and Isbele (2003) found a weak but positive relationship between availability (ecological Importance Value Index, IVI) and *use value* (UV_s). While the idea that the conspicuous species are more likely to be used in some way is well supported, it cannot be assumed that such “apparent” species are highly significant cultural resources.

The multicategory use and cultural significance of the Arecaceae family and many species can be reliably predicted for traditional cultures everywhere in the tropics (Balick 1988; Byg and Balslev 2001; Kvist et al. 1995; Reyes-García et al. 2006; Soler Alarcón and Luna Peixoto 2008). It was no surprise that Saramacca and Trio ethnobotany converged upon Arecaceae species as extraordinarily significant resources. Documenting the knowledge and use of Arecaceae resources is always a good starting point in ethnobotanical pattern analysis.

Limitations and Future Directions

Limitations of *use value* indices and researcher-defined use categories were discussed in the methods section. Hybrid methods that incorporate more cultural relativity, such as participant-defined (emic) use categories and citation weighting, have begun to play a greater role in quantitative ethnobotanical research (McClatchey et al. 2006; Reyes-García et al. 2006; Torre-Cuadros and Ross 2003; Young 2005).

Galeano (2000) showed how regression-residual analysis can be put to practical use in identifying critical resources for management. Documentation of a higher *use value* than expected may indicate that a species is naturally rare or, more likely, that it was once common and has been impacted by use. Galeano identified Lauraceae species as potentially threatened timber resources.

Bennett and Husby (2008) criticized the regression-residual analysis method. First, they observed that the method is prone to subjective hypothesis tests and residual analysis. Second, they found that the assumption of homogeneity of variation is violated because *use value* variation increases with family size. These authors presented contingency table and binomial analysis. It would be useful in future research to test and compare this new approach.

Based upon unpublished free list interviews with the Saramacca, the contribution of medicinal knowledge to Saramacca *use value* would likely have increased

substantially if smaller plants, female informants, and anthropogenic zones had been included. A future study should document the knowledge of women, conduct interviews of plot-less generalist knowledge, include a greater variety of anthropogenic and forest zones, and sample a wider range of growth forms.

Conclusion

This study is unique as one of the relatively few direct, quantitative comparisons of indigenous and traditional nonindigenous people's knowledge and use of plants, and the only known such published comparison between an indigenous and Maroon culture. The overall aim of the research was not to assess the ethnobotanical "superiority" of any given culture but to explore dynamics and cross-cultural patterns in traditional plant knowledge. Documentation and comparison of multiple ethnobotanical contexts helps to build a predictive framework in ethnobotany and has conservation value, for example, in predicting and accommodating biocultural resource preferences. Etkin (2002) observed that the resource use knowledge of distinctive cultures is synergistic – understanding the forest resource use of more than one culture enhances the overall pool of adaptive knowledge and strategies for traditional peoples in the tropics. Further research is needed to document and elucidate use patterns in ethnobotany across biocultural contexts and scales. It is hoped that such research and dissemination of results will encourage greater exchange of ethnobotanical knowledge and/or materials between traditional peoples – particularly as the need for effective adaptive responses to global climate change increases.

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Appendices

Appendix 1 Kwamalasamutu (Trio) Plant List: Alphabetical by Scientific Name

Woody families and species in plots at the Kwamalasamutu (Trio) field site (≥ 10 cm dbh) – including habit (*T* tree, *L* liana), vernacular names, collection numbers (all B. Hoffman), species abundance within three vegetation zones (*UP* non-flooded, *LO* seasonally flooded, *FA* fallow), total *use value* (UV_s), and *use value* per use category (*CON* construction, \$\$\$ cash/trade, *EDI* edible, *MED* medicinal/ritual, *TEC* technology)

Appendix 1

Trio list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Anacardiaceae	<i>Spondias mombin</i> L.	T	mope	2,712	0	1	0	4	0	0	1	3	0
Anacardiaceae	<i>Tapirira</i> sp. 1	T	awaitmë	5,623	1	0	0	2	0	0	0.33	0.67	1
Annonaceae	<i>Anaxagorea</i> sp. 1	T	turimë	6,126	1	0	0	1.67	0.67	0	0	0.67	0.33
Annonaceae	<i>Annona haematantha</i> Miq.	L	ariminaimë (siminate)	6,370	0	1	0	1.67	0	0	0	1.33	0.33
Annonaceae	<i>Bocageopsis multiflora</i> (Mart.) R.E. Fr.	T	rasai	6,131	1	0	0	1.67	1	0.5	0	0	0.33
Annonaceae	<i>Duguetia cauliflora</i> R.E. Fr.	T	kapai ejamï (sikiman)	5,871	1	0	0	2.33	1	0	0	1	0.33
Annonaceae	<i>Duguetia</i> sp1	T	kapai ejamï (tikorijan)	6,035	1	0	0	2.33	1	0	0	1	0.33
Annonaceae	<i>Ephedranthus guianensis</i> R.E. Fr.	T	mekoro wewe	6,267	2	0	0	2.67	1	0	0	0.67	1
Annonaceae	<i>Fusaea longifolia</i> (Aubl.) Safford	T	kurija uru	6,103; 6,124	3	1	0	3	0.67	0	0.33	1.33	0.67
Annonaceae	<i>Guatteria punctata</i> (Aubl.) R.A. Howard	T	warumë	5,844	0	0	1	1.33	0.33	0	0	0.33	0.67
Annonaceae	<i>Guatteria</i> 1	T	warumë2	6,184	2	0	0	1.33	0.33	0	0	0.33	0.67
Annonaceae	<i>Rollinia exsucca</i> (DC. ex Dunal) A. DC.	T	karosiwa	6,200; 6,025	2	0	30	2	0	0	0	1.33	0.67
Annonaceae	<i>Unonopsis glaucopetala</i> R.E. Fr.	T	warumëimë 1	6,181	1	0	0	0	0	0	0	0	0
Annonaceae	<i>Xylopia nitida</i> Dunal	T	turi (sikiman)	6,201	2	0	5	2	1	0	0	0.67	0.33
Annonaceae	<i>Xylopia pulcherrima</i> Sandwith tamiring)	T	turi (tikorijan/ tamiring)	5,943; 5,942	0	0	6	2	1	0	0	0.67	0.33

Apocynaceae	<i>Ambelania acida</i> Aubl.	T	kamaki	5,629; 5,894; 5,957; 6,346	1	0	0	1.33	0	1	0.33	0
Apocynaceae	<i>Geissospermum argenteum</i> Woodson	T	wataki	5,569	6	0	1	2.33	0	0	2.33	0
Apocynaceae	<i>Lacmellea aculeata</i> (Ducke) Monach.	T	ariwepu	6,120	1	1	0	2.33	0	0	0.33	2
Araliaceae	<i>Schefflera morototoni</i> (Aubl.) Maguire, Steyer. and Frodin	T	maramara	6,149	1	0	1	4	0	1	0	2
Arecaceae	<i>Astrocaryum sciophilum</i> (Miq.) Pulle	T	murumuru	5,798	49	5	1	5	1	0	1	2
Arecaceae	<i>Attalea maripa</i> (Aubl.) Mart.	T	maripa	No coll	0	1	4	6.67	1	0	1	1.67
Arecaceae	<i>Euterpe longebracteata</i> Barb. Rodr.	T	wapumé/ wajime	5,935	1	0	0	4	1	0	1	2
Arecaceae	<i>Euterpe oleracea</i> Mart.	T	wapu	6,308	0	1	0	5.33	1	0	2	2
Arecaceae	<i>Euterpe precatoria</i> Mart.	T	mikiri	6,688	6	0	0	7	1	0.33	1.67	2.33
Arecaceae	<i>Oenocarpus bacaba</i> Mart.	T	kumu	No coll	2	0	0	4.27	1	0.5	0	2
Arecaceae	<i>Socratea exorrhiza</i> (Mart.) H. Wendl.	T	pteura	6,916	2	0	0	4.33	1	0	2	1.33
Bignoniaceae	<i>Adenocalymna inundatum</i> Mart. ex DC.	L	arawata kariwa	5,682; 5,791	1	1	0	1.33	0.33	0	0	1
Bignoniaceae	<i>Jacaranda copaia</i> (Aubl.) D. Don	T	marimari	6,226	0	0	35	1.67	0.33	0	0	0.33
Bignoniaceae	<i>Memora schomburgkii</i> (DC.) Miers	L	kuraiweimé	5,709; 6,304	0	0	1	2	0	0	0	2
Bignoniaceae	<i>Tabebuia</i> 2	T	arani 2	5,862; 5,993	1	0	0	1	0	0	0	1
Bignoniaceae	<i>Tabebuia serratifolia</i> (Vahl) G. Nicholson	T	arani 1	5,853	0	1	0	1.33	0	0	0	1.33
Bixaceae	<i>Bixa orellana</i> L.	T	wiseimé 1	6,148	1	0	0	2	0	0	0	0.67

(continued)

Appendix 1 (continued)

Trio list													
Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Boraginaceae	<i>Cordia cf. tentrandra</i> Aubl.	T	mami (itu)	6,298	1	0	2	1.33	0	0	0	0.33	1
Boraginaceae	<i>Cordia l</i>	T	mami (apun)	5,770	0	1	0	1.33	0	0	0	0.33	1
Bursaceae	<i>Crepidospermum goudotianum</i> (Tul.) Triana and Planch.	T	sirisiri 3	6,024	11	2	0	2.33	0.33	0.5	0	0.67	1
Bursaceae	<i>Protium apiculatum</i> Swart	T	sirisiri 1 (sikiman)	5,653	8	11	0	1.67	0.33	0.5	0	0.33	0.67
Bursaceae	<i>Protium decandrum</i> (Aubl.) Marchand	T	sirisiri 2 (tikorijan)	6,180	0	1	0	1.33	0.33	0.5	0	0	0.67
Bursaceae	<i>Protium tenuifolium</i> (Engl.) Engl.	T	kupapi	6,273	2	0	0	1.67	0	0.33	0	0.67	0.67
Bursaceae	<i>Protium decandrum</i> (Aubl.) Marchand	T	sawarëimë	6,690	1	0	0	2	0	0.33	0	0.33	1.33
Bursaceae	<i>Tetragastris panamensis</i> (Engl.) Kuntze	T	arita	6,157; 6,280	4	0	0	2.33	0.33	0	0.33	0.67	1
Bursaceae	<i>Trattinnikia rhoifolia</i> Willd.	T	awa, sororo	6,222; 6,333	0	0	2	2	0.33	0	0	0.67	1
Bursaceae	<i>Burs l</i>	T	pitire	6,142	1	0	0	1.33	0.33	0	0.67	0	0.33
Celastraceae	<i>Cheiloclinium hippocrateoides</i> (Peyr.) A.C. Sm.	L	sipun	6,150; 6,171	1	0	0	5.33	1	1	0	1.67	2
Celastraceae	<i>Goupta glabra</i> Aubl.	T	pasi	5,530	3	0	1	2	0	0	0	2	0
Celastraceae	<i>Prionostemma asperum</i> (Lam.) Miers	L	kapi	6,038	1	0	0	1.33	0	0	0	1.33	0
Celastraceae	<i>Salacia/Tontalea sp. l</i>	L	sipuniimë	5,673; 5,858; 6,057	0	1	0	2	0	0	0	1.33	0.67
Chrysobalanaceae	<i>Hirtella sp. l</i>	T	rapahkë ihpoti	6,069	4	0	1	1	0.67	0	0	0	0.33
Chrysobalanaceae	<i>Licania cf. micrantha</i> Miq.	T	paripo	5,730	7	4	0	1.67	0.67	0	0	0.67	0.33

Chrysobalanaceae	<i>Licania</i> sp. 2	T	paripo, pokoro apëri	6,140	17	0	0	1.33	0	0	0	1.33	0
Chrysobalanaceae	<i>Licania</i> sp. 3	T	paripo, tutuman	6,195; 6,128	2	0	0	0.33	0	0	0	0.33	0
Chrysobalanaceae	<i>Parinari rodolphii</i> Huber	T	paripoimë I	6,001	2	0	0	0.67	0	0	0	0.67	0
Clusiaceae	<i>Caraipa</i> cf. <i>densifolia</i> Mart.	T	opë	5,713	0	5	0	1	0	0	0	1	0
Clusiaceae	<i>Clusia palmicida</i> Rich. ex Planch. and Triana	L	wetu etaku	5,854; 6,078	0	1	0	1.67	0	0	1	0.67	0
Clusiaceae	<i>Rheedea macrophylla</i> (Mart.) Planch. and Triana	T	aimara ere toto	5,883	0	1	0	2.67	0	0	1	1.33	0.33
Clusiaceae	<i>Tovomita</i> sp. 1	T	kurepu	6,036; 6,818	4	0	0	2.67	0	0.33	0	1.33	1
Clusiaceae	<i>Tovomita</i> sp. 3	T	pieuraimë	5,906; 6,659	0	1	1	1.33	0.33	0	0	1	0
Clusiaceae	<i>Vismia guianensis</i> (Aubl.) Pers.	T	weri sepi (tikorijan)	5,599; 6,199	0	0	48	1.33	0.33	0	0	1	0
Clusiaceae	<i>Vismia</i> sp. 2	T	weri sepiime (sikiman)	6,015	0	1	23	1.33	0.33	0	0	1	0
Clusiaceae	<i>Vismia</i> sp. 3	T	weri sepiime (tamring)	6,100; 6,197	0	0	3	0.67	0	0	0	0.67	0
Combretaceae	<i>Combretum rotundifolium</i> Rich.	L	jekara	6,282	0	1	0	2	0	0	0.33	1.33	0.33
Combretaceae	<i>Terminalia</i> sp. 1	T	mapirjaimë	6,211	0	10	0	1.67	0	0	0.67	1	0
Convolvulaceae	<i>Maripa</i> cf. <i>glabra</i> Choisy	L	kuturimë	6,278	3	0	0	0.33	0	0	0	0.33	0
Dichapetalaceae	<i>Dichapetalum rugosum</i> (Vahl) Prance	L	awarimë pitëkënë	6,026; 5,877; 6,094	1	0	0	0.67	0	0	0	0.67	0
Dilleniaceae	<i>Davilla kunthii</i> A. St.-Hil. Dollicarpus spp.	L	ënkomikomi	5,220; 5,593; 6,182; 6,681; 6,379	1	0	0	1.67	0	0	0	1.67	0
Dilleniaceae	<i>Davilla nitida</i> (Vahl) Kubitzki	L	sakataetu	6,271	4	0	0	0.67	0	0	0	0.67	0
Elaeocarpaceae	<i>Sloanea</i> sp. 3	T	iwa	6,313	1	0	0	3	0	0.33	0.33	1	1.33

(continued)

Appendix 1 (continued)

Trio list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Elaeocarpaceae	<i>Sloanea</i> sp. 2	T	tépaime/ wisemé 2	6,118	1	0	0	1.33	0	0	0	0.67	0.67
Euphorbiaceae	<i>Conceveiba guianensis</i> Aubl.	T	okomoké	5,539; 5,605; 5,996; 6,054	3	1	0	1.67	0	0	0	1.67	0
Euphorbiaceae	<i>Croton pullei</i> Lanj.	L	katamimé	6,053	2	1	0	4.67	0	0	0	4.67	0
Euphorbiaceae	<i>Drypetes variabilis</i> Uittien	T	pakoko	6,139; 6,190	2	0	0	2	0	0	0	0.67	1.33
Euphorbiaceae	<i>Hevea guianensis</i> Aubl.	T	éwee	5,893	0	1	0	0.67	0	0	0	0.67	0
Euphorbiaceae	<i>Mabea</i> cf. <i>taquari</i> Aubl.	L	mèree asoso	5,835	0	1	0	1.67	0	0	0.67	1	0
Euphorbiaceae	<i>Omphalea dtandra</i> L.	L	wariké	5,748	0	2	0	1.33	0	0	0.33	1	0
Euphorbiaceae	cf. <i>Pera decipiens</i> (Tul.) A. DC.	T	nono ati	6,252	1	0	0	1.67	0.67	0	0	0.67	0.33
Euphorbiaceae	<i>Sagotia racemosa</i> Baill.	T	akoha/manari repi	5,764; 5,843; 5,988	24	32	0	3.67	0	0.33	0	2.67	0.67
Fabaceae	<i>Alexa imperatricis</i> (R.H. chomb.) Baill.	T	kinotoké	5,723; 5,913	24	60	2	2.67	0	0	0	1.67	1
Fabaceae	<i>Bauhinia</i> cf. <i>guianensis</i> Aubl.	L	mìrokoko ehe (tikorijan)	6,063	0	1	0	2	0	0	0	2	0
Fabaceae	<i>Bauhinia cupreonitens</i> Duecke	L	mìrokoko ehe (tamirin)	6,064; 6,239	7	2	0	2	0	0	0	2	0
Fabaceae	<i>Candolleodendron brachys- tachyum</i> (DC.) R.S. Cowan	T	kutari	5,952; 6,205	9	2	0	2.33	0.33	0	0	1.33	0.67
Fabaceae	cf. <i>Diptotropis</i> sp. 1	T	èrukèu	6,269; 6,144	1	0	0	1.67	1	0	0	0.67	0
Fabaceae	<i>Copaifera guyanensis</i> Desf.	T	mapataru	6,283	1	0	0	2.67	0	0	0.33	1.67	0.67
Fabaceae	<i>Crudia aromatica</i> (Aubl.) Willd.	T	wapa	6,002; 6,111	16	0	0	1	0.33	0	0	0.33	0.33
Fabaceae	<i>Derris amazonica</i> Killip	L	inekuipè	6,644	0	1	0	0.67	0	0	0	0.67	0
Fabaceae	<i>Dialium guianense</i> (Aubl.) Sandwith	T	tokiriman	6,061	0	4	1	3	0	0	0.67	2	0.33

Appendix 1 (continued)

Trio list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Fabaceae	<i>Inga</i> sp. 1	T	karau, anakara	5,616; 5,720; 5,789	3	8	0	1.33	0	0	0	1.33	0
Fabaceae	<i>Machaerium</i> sp. 3	L	mikakējee 2	5,992; 6,391	4	0	0	1	0	0	0	1	0
Fabaceae	<i>Machaerium</i> sp. 4	L	mikakējee 1	5,833; 5,901	0	0	1	1	0	0	0	1	0
Fabaceae	<i>Macrobium angustifolium</i> Benth. R.S. Cowan	T	paree	6,317	0	1	0	2.33	0	0	0	1.67	0.67
Fabaceae	<i>Macrobium</i> sp. 1	T	tamara	5,657	0	2	0	4	0.33	1	0.33	1.33	1.33
Fabaceae	<i>Mimosa</i> sp. 1	L	pai tūtkūfikikai	5,508; 5,876	0	1	0	0	0	0	0	0	0
Fabaceae	<i>Ormosia</i> cf. <i>coarctata</i> Jacks.	T	wētēu	5,523	1	0	0	3.67	0	0.67	0	1.67	1.33
Fabaceae	<i>Parkia nitida</i> Miq.	T	siri apēri	6,160; 6,386	2	0	2	0.67	0	0	0	0.67	0
Fabaceae	<i>Parkia pendula</i> (Willd.) Benth. ex Walp.	T	kunkui iputu	6,187	1	0	0	0.67	0	0	0	0.67	0
Fabaceae	<i>Pseudopiptadenia psilostachya</i> (DC.) G. P. Lewis and M. P. Lima	T	arimi putu	6,189; 6,332	1	0	0	1.67	0	0	0	1	0.67
Fabaceae	<i>Pterocarpus santalinoides</i> L'Hér. ex DC.	T	wakapurimē	5,811	0	30	0	2.67	0.33	0	0	2	0.33
Fabaceae	<i>Senna quinqueangulata</i> (Rich.) H.S. Irwin and Barneby	L	pokopoko uru	5,500; 6,685	0	1	0	1.33	0	0	0	1.33	0
Fabaceae	<i>Swartzia benthamiana</i> Miq.	T	kujjari empata	5,632; 5,945; 6,178	6	3	0	2.33	0	0	0	2	0.33
Fabaceae	<i>Swartzia panacoco</i> (Aubl.) R.S. Cowan	T	kurimao popeta	5,695; 6,210	0	2	0	3.33	0	0	0	2.67	0.67
Fabaceae	<i>Swartzia</i> sp. 3	T	kinoirawa	5,644; 5,714	1	1	0	2	0	0	0	1.33	0.67
Fabaceae	<i>Tachigali paniculata</i> Aubl.	T	sireinje	6,268; 6,335	2	6	0	1	0.33	0	0	0.67	0
Fabaceae	<i>Tachigali</i> sp. 1	T	arapani	6,136	1	0	0	1.33	0	0	0	1	0.33
Fabaceae	<i>Taralea oppositifolia</i> Aubl.	T	arimai	5,621; 6,130	0	9	0	1.33	0	0	0	1	0.33

Fabaceae	Unkn Fab 2	T	kanai iputu	No coll	0	0	1	0.67	0	0	0.67	0
Fabaceae	Unkn Fab 3	T	makureu	6,217	0	1	2	1.33	0	0	1.33	0
Fabaceae	Unkn Fab 4	T	taari jaran	5,692	0	3	0	2.67	0.67	0	1.33	0.67
Fabaceae	Unkn Fab 5	T	puura	6,156	1	0	0	2.67	0	0	1.67	1
Fabaceae	Unkn Fab 1	T	mëree	6,300	0	1	0	2	0	0	1	1
Fabaceae	<i>Youacoupa americana</i> Aubl.	T	wakapu	6,270; 6,274	22	0	0	2	0.33	0	0.67	1
Fabaceae	<i>Zygia cataractae</i> (Kunth) L. Rico	T	karau, jaran	5,719; 5,743; 5,796; 5,925	0	12	0	2	0	0	1.67	0.33
Humiriaceae	<i>Sacoglottis guianensis</i> Benth.	T	makararan, makara- imë	6,079; 6,145	2	1	0	1.33	0	0	0.67	0
Lamiaceae (Verbenaceae)	<i>Vitex compressa</i> Turcz.	T	manakaimë 3	6,006	0	1	0	3	0	0	2	1
Lamiaceae (Verbenaceae)	<i>Vitex stahelii</i> Moldenke	T	manakaimë 1	5,732	0	2	0	3	0	0	2	1
Lamiaceae (Verbenaceae)	<i>Vitex triflora</i> Vahl	T	manakaimë 2	5,620	0	1	0	3	0	0	2	1
Lauraceae	<i>Licaria cf. chrysophylla</i>	T	wai 1 (mono)	5,672; 5,779	0	3	0	2	0	0	1.33	0.33
Lauraceae	<i>Licaria</i> sp. 2	T	wai 2 (pijasa)	6,076; 6,049	7	0	2	1.33	0.67	0	0.33	0.33
Lauraceae	<i>Licaria</i> sp. 4	T	waija	5,830	1	2	0	1.67	0.67	0	0.33	0.67
Lecythidaceae	<i>Couratari guianensis</i> Aubl.	T	pono	No coll	1	0	1	3.67	0.33	0	2.33	1
Lecythidaceae	<i>Eschweilera coriacea</i> (DC.) S.A. Mori	T	meripono 2	6,164	0	2	0	2.33	0.33	0	1.33	0.67
Lecythidaceae	<i>Eschweilera corrugata</i> Poit.	T	aimara ewa (tamiren)	6,229	4	4	1	3	0.33	0.33	0	1.33
Lecythidaceae	<i>Eschweilera corrugata</i> Poit. var. 2	T	aimara ewa (tikorijan)	6,363	1	27	0	3	0.33	0.33	0	1.33
Lecythidaceae	<i>Eschweilera decolorans</i> Sandwith	T	meripono 1	6,080	7	2	0	2.33	0.33	0	1.33	0.67

(continued)

Appendix 1 (continued)

Trio list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Lecythidaceae	<i>Eschweilera pedicellata</i> (Rich.) S.A. Mori	T	tuhaimë 1	5,774	0	8	0	3	0.67	0.5	0.33	1	0.67
Lecythidaceae	<i>Eschweilera sagotiana</i> Miers	T	watara	6,176	8	0	0	2.67	1	0	0	1.33	0.33
Lecythidaceae	<i>Gustavia hexapetala</i> (Aubl.) Sm.	T	arekore antura/ pakira antura	5,792	7	0	0	1	0.33	0	0	0.67	0
Lecythidaceae	<i>Lecythis poiteaui</i> O. Berg	T	ariwera	6,133	8	0	0	3	0.33	0	0.33	1.67	0.67
Lecythidaceae	<i>Lecythis zabucajo</i> Aubl.	T	turaran	5,512	1	1	0	2.67	0	0	0	2	0.67
Malpighiaceae	<i>Byrsonima stipulacea</i> A. Juss.	T	urutuma	5,944; 6,221	0	0	5	1	0	0	0	0.67	0.33
Malpighiaceae	<i>Diplopterys lucida</i> (Rich.) W.R. Anderson and C. Cav. Davis	L	karinama 3	5,852; 6,151	0	1	0	0	0	0	0	0	0
Malpighiaceae	<i>Stigmaphyllon cf. convolvulifolium</i> (Cav.) A. Juss.	L	matukru	5,205	1	0	0	1.33	0	0	0	1.33	0
Malvaceae	<i>Apeiba albiflora</i> Ducke	T	wikapau waku	5,654	0	1	3	2	0	0.33	0	0.33	1.33
Malvaceae	<i>Apeiba petoumo</i> Aubl.	T	mikëtë	6,167	2	0	12	1.33	0	0	0	0.67	0.67
Malvaceae	<i>Ceiba pentandra</i> (L.) Gaertn.	T	kumaka	6,320	0	1	0	1.33	0	0	0	1.33	0
Malvaceae	<i>cf. Herrenia</i> sp. 1	T	kajakë ipana	5,851	0	1	0	1	0	0	0	0.67	0.33
Malvaceae	<i>Luhea alternifolia</i> (Mill.) Mabb.	T	ponpokoi	5,741	1	0	0	1.67	0	0	0	1	0.67
Malvaceae	<i>Pachira aquatica</i> Aubl.	T	mekumpë	5,731	0	5	0	1	0	0	0	1	0
Malvaceae	<i>Quararibea guianensis</i> Aubl.	T	paaraimë	5,661; 5,823	0	29	0	1.33	0	0	0	1.33	0
Malvaceae	<i>Sterculia pruriens</i> (Aubl.) K. Schum.	T	pamahta	5,781; 6,265	3	4	0	0.67	0	0	0	0.67	0
Malvaceae	<i>Theobroma subincanum</i> Mart.	T	arikanama	5,757; 6,266	1	0	0	2	0	0	1	0.67	0.33
Melastomataceae	<i>Mouriri</i> sp. 2	T	pasisiimë	6,218	0	0	8	3	0	0	0	2	1

Meliaceae	<i>Carapa gualanensis</i> Aubl.	T	karapa	6,264	4	1	0	3.33	1	0	0	0	2	0.33
Meliaceae	<i>Cedrela odorata</i> L.	T	simajae	6,279	0	1	1	3	1	0.33	0	0	1.33	0.33
Meliaceae	<i>Guarea cf. kunthiana</i> A. Juss.	T	karapaimë 1	5,721	10	2	0	1.33	0.67	0	0	0	0.67	0
Meliaceae	<i>Guarea guidonia</i> (L.) Sleumer	T	karapaimë 2	5,829; 6,070	0	4	0	1.33	0.67	0	0	0	0.67	0
Meliaceae	<i>Guarea</i> sp. 1	T	mene	No coll	0	1	0	1.67	0	0	0	0	1.33	0.33
Meliaceae	<i>Trichilia cipo</i> (A. Juss.) C. DC.	T	aritaimë 1	5,795; 5,880; 6,674	1	0	0	1.33	0	0	0	0	0.67	0.67
Meliaceae	<i>Trichilia quadrijuga</i> Kunth	T	kuikëpën	5,550; 6,664	0	7	0	1.67	0.33	0	0	0	1	0.33
Meliaceae	<i>Trichilia</i> sp. 2	T	aritaimë 2	5,663; 5,826	0	4	0	1.33	0	0	0	0	0.67	0.67
Meliaceae	<i>Trichilia surinamensis</i> (Miq.) C. DC.	T	aritaimë 3	5,828; 5,855	0	14	0	1.33	0	0	0	0	0.67	0.67
Moraceae	<i>Bagassa gualanensis</i> Aubl.	T	pakasa	6,244	0	0	2	2.33	0.33	0	0	0	0.67	1.33
Moraceae	<i>Brosimum lactescens</i> (S. Moore) C.C. Berg	T	ararawao	5,697	0	2	0	0.67	0	0	0	0	0.33	0.33
Moraceae	<i>Clarisia racemosa</i> Ruiz & Pav.	T	pii	6,135	1	0	0	2.67	0.33	0	0	0	1	1.33
Moraceae	<i>Ficus maxima</i> Mill.	T	ruwii	5,518	0	1	0	2	0	0	0	0	1.33	0.67
Moraceae	<i>Helicostylis</i> sp. 1	T	pauraran	5,866; 6,247	1	0	0	2.33	0.33	0	0	0	0.67	1.33
Moraceae	<i>Unken Mora 1</i>	T	paara	5,728; 6,067	1	1	0	0.67	0	0	0	0	0.67	0
Moraceae	<i>Brosimum rubescens</i> Taub.	T	sjë	6,121	1	1	0	2.67	0	0	0	0	1.67	1
Moraceae	<i>Unken Mora 3</i>	T	mapanu	5,785; 6,254	1	0	0	2.33	0.67	0	0.67	0	0.67	0.33
Moraceae	<i>Helicostylis tomentosa</i> (Poepp. & Endl.) Rusby	T	pijapijaman	6,284; 6,296; 6,299	1	0	0	0	0	0	0	0	0	0
Moraceae	<i>Unken Mora 5</i>	T	ararama	6,039	1	0	1	0.67	0.33	0	0	0	0.33	0
Myristicaceae	cf. <i>Fryanthera</i> sp. 1	T	ponitküimë	5,637; 5,991	2	0	0	2	0	0	0	0	1.67	0.33
Myristicaceae	cf. <i>Compsonaura</i> sp. 1	T	waroro	6,186; 6,192	2	0	0	3.33	0.67	0.5	0	2	0.33	0.33
Myristicaceae	<i>Virola 2</i>	T	poniki	5,759; 6,107; 6,295	3	0	0	2	0	0	0	0	2	0
Myristicaceae	<i>Virola</i> sp. 1	T	wiri	5,737	0	1	0	3.67	0.67	0.5	0	2.33	0.33	0.33

(continued)

Appendix 1 (continued)

Trio list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Myristicaceae	<i>Virola surinamensis</i> (Rol. ex ottb.) Warb.	T	wētētē	6,159; 6,048	1	0	0	2.33	0.67	0	0	1.67	0
Myrtaceae	<i>Calycorectes bergii</i> Sandwith	T	miroko enu	5,711; 6,005	5	0	0	2	0.33	0	0.33	0.67	0.67
Myrtaceae	<i>Campomanesia aromatica</i> (Aubl.) Griseb.	T	sokui	5,987; 6,082	2	0	0	1.33	0	0	0	0.67	0.67
Myrtaceae	<i>Eugenia coffeifolia</i> DC.	T	mokoko enu	5,710; 5,693	1	2	0	0.67	0	0	0	0.67	0
Myrtaceae	<i>Eugenia florida</i> DC.	T	ēkēimē	6,009	0	1	0	0.67	0	0	0	0.33	0.33
Myrtaceae	<i>Myrcia decorticans</i> DC.	T	paijan epu 2	6,046	1	0	1	1.67	0	0	0	1.33	0.33
Myrtaceae	<i>Myrcia minutifolia</i>	T	mokoko enu	5,930	0	1	0	0.67	0	0	0	0.67	0
Myrtaceae	<i>Myrciaria floribunda</i> (H. West ex Willd.) O. Berg	T	soroisoroi irepa	5,990	1	0	0	2.33	0.33	0	0	1	1
Myrtaceae	<i>Unken Myrt 3</i>	T	saha	5,793	1	2	0	1.67	0.33	0	0	1	0.33
Myrtaceae	<i>Unken Myrt 1</i>	T	koi jaran	6,315	0	1	0	0.67	0	0	0	0.67	0
Myrtaceae	<i>Unken Myrt 2</i>	T	mami enu	5,696; 5,734	0	3	0	2	0.33	0	0	0.67	1
Nyctaginaceae	cf. <i>Neea</i> sp. 1	T	kariwaimē	5,716	1	1	16	1.33	0	0	0	1.33	0
Ochnaceae	<i>Ourotea</i> sp. 1	T	paripoimē 2	6,122	7	0	0	0.33	0	0	0	0.33	0
Olacaceae	<i>Minqvaria guianensis</i> Aubl.	T	otopimi	6,185	1	2	0	1.33	0.33	0	0	1	0
Olacaceae	<i>Psychopetalum olacoides</i> Benth.	T	japoko	5,609	1	0	0	2	0	0	0	2	0
Phytolaccaceae	<i>Seigueria aculeata</i> Jacq.	L	kurumuri 1	5,525	0	4	0	1	0	0	0	1	0
Picramniaceae	<i>Picramnia guianensis</i> (Aubl.) Jans.-Jac.	T	taari	5,504; 5,815	0	1	0	3	0	0.33	0	1.67	1
Rubiaceae	<i>Psychotria</i> sp. 1	T	pai empaha (sikiman)	5,825	0	2	0	1.33	0	0	0	1.33	0
Rubiaceae	<i>Uncaria guianensis</i> (Aubl.) J.F. Gmel.	L	pijana iroi	6,355	0	0	1	2.33	0	0	0	2.33	0
Rubiaceae	<i>Unken 2</i>	T	mirimirimē	5,658	0	2	0	3	0.67	0	0	1	1.33
Rutaceae	<i>Rauia subtruncata</i> Steyerl.	T	eri pakoro	5,515	0	10	0	2.33	0.33	0	0	1.67	0.33

Rutaceae	<i>Zanthoxylum rhoifolium</i> Lam.	T	werekii	5,926	0	0	2	2.33	0	0	0	1.33	1
Salicaceae	<i>Casearia grandiflora</i> Cambess.	T	maruhpè	6,381	0	0	21	1.67	0	0	0	1	0.67
Salicaceae	<i>Casearia pitumba</i> Sleumer	T	akuri ampiri	5,725; 6,311	0	2	0	1.33	0	0	0.33	1	0
Salicaceae	<i>Laetia procera</i> (Poeppl.) Eichler	T	maru	5,960	2	0	21	1.67	0	0	0	1	0.67
Sapindaceae	<i>Cupania hirsuta</i> Radlk.	T	jaranoimè	5,602; 6,042	0	0	1	0.67	0	0	0	0.33	0.33
Sapindaceae	<i>Cupania</i> sp. 1	T	anaaje	6,322	0	1	0	0.33	0	0	0	0	0.33
Sapindaceae	<i>Unken Sapi 1</i>	T	tikèkin	5,819; 6,679	0	2	0	1.33	0	0	0	1	0.33
Sapotaceae	<i>Chrysophyllum cuneifolium</i> (Rudge) A. DC.	T	èmorì	5,947; 6,275	2	1	0	2.33	0	0	0	2	0.33
Sapotaceae	<i>Mamilkara cf. huberi</i> (Ducke) Chevalier	T	awari parata	5,674	0	5	0	2	0.33	0	0.67	0.33	0.67
Sapotaceae	<i>Micropholis cf. cayennensis</i> T.D. Penn.	T	tarairuimè	6,183	1	0	0	2	0.67	0.5	0	0.67	0.33
Sapotaceae	<i>Micropholis</i> sp. 1	T	kuusa	6,129	2	0	0	0.33	0	0	0.33	0	0
Sapotaceae	<i>Micropholis</i> sp. 2	T	wapuri jaran	5,824	0	3	0	2.33	0.67	0	1	0.67	0
Sapotaceae	<i>Pouteria sagotiana</i> (Baill.) Eyma	T	tumuri	6,161	1	0	0	3	1	0	0	0.33	1.67
Sapotaceae	<i>Pouteria</i> sp. 10	T	rapopimè	5,537	2	0	0	2	0	0	0.67	1.33	0
Sapotaceae	<i>Pouteria</i> sp. 2	T	wapuri	6,056; 6,307	0	3	0	1.67	0.33	0	0.33	0.67	0.33
Sapotaceae	<i>Pouteria</i> sp. 4	T	kunumiimè	5,783; 5,905	2	0	0	1.67	0.33	0	0.67	0.67	0
Sapotaceae	<i>Pouteria</i> sp. 5	T	moweimè	5,817	0	1	0	3	0	0	0.67	1.33	1
Sapotaceae	<i>Pouteria</i> sp. 6	T	waki	5,738; 6,191	1	1	0	1.33	0	0	0	0.67	0.67
Sapotaceae	<i>Pouteria</i> sp. 8	T	mompè	5,733; 6,215	4	2	0	2	0	0	0.33	1	0.67
Sapotaceae	<i>Pouteria</i> sp. 9	T	tamareimè	5,907; 6,116	1	0	0	1	0	0	0	1	0
Sapotaceae	<i>Unken Sapo 1</i>	T	pakira auku	6,175	8	0	0	1	0	0	0	0.67	0.33
Sapotaceae	<i>Unken Sapo 2</i>	T	èmorijateimè	6,163	1	0	0	0.67	0	0	0.67	0	0
Simaroubaceae	<i>Quassia cedron</i> L.	T	pai emu	5,810	0	1	0	1.33	0.33	0	0	1	0
Siparunaceae	<i>Siparuna</i> sp. 1	T	irakèpu	5,939; 5,941; 6,232	1	1	1	2	0	0	0	2	0

(continued)

Appendix 1 (continued)

Trio list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Indet 1	Indet 1	T	aritamé 4	5,848	0	1	0	1.33	0	0	0	0.67	0.67
Indet 2	Indet 2	T	nere uru	5,787; 6,032	1	2	0	1.33	0	0	0	1	0.33
Indet 3	Indet 3	T	-	6,039	1	0	0	0	0	0	0	0	0
Urticaceae	<i>Cecropia obtusa</i> Trécul	T	kurere	6,219	2	0	69	3.67	0	0	0	3.67	0
Urticaceae	<i>Cecropia sciadophylla</i> Mart.	T	kurere, anatará	6,224; 5,950	2	0	72	2.33	0	0	0	2.33	0
Urticaceae	<i>Cecropia</i> sp. 3	T	kurere, ijuana	5,951	0	0	9	1.67	0	0	0	1.67	0
Urticaceae	<i>Pourouma</i> sp. 1	T	puruma, arawata	6,683	1	0	0	1	0	0	1	0	0
Urticaceae	<i>Pourouma</i> sp. 2	T	puruma, moi emu	6,041; 6,170	9	0	0	1.33	0.33	0	1	0	0
Urticaceae	<i>Pourouma</i> sp. 4	T	puruma, wirinaí enu	6,040; 6,250	1	0	1	1.33	0.33	0	1	0	0
Violaceae	<i>Rinorea pubiflora</i> (Benth.) Sprague and Sandwith	T	kurunje	5,503	0	1	0	4	0	0	0	3.33	0.67
Total					539	504	444	454	46.3	12.2	41	254	102

***Appendix 2 Stonhuku (Saramacca Maroon) Plant List:
Alphabetical by Scientific Name***

Woody families and species in plots at the Stonhuku (Saramacca Maroon) field site (≥ 10 cm dbh) – including habit (*T* tree, *L* liana), vernacular names, collection numbers (all B. Hoffman), species abundance within three vegetation zones (*UP* non-flooded, *LO* seasonally flooded, *FA* fallow), total *use value* (UV_{Σ}), and *use value* per use category (*CON* construction, \$\$\$ cash/trade, *EDI* edible, *MED* medicinal/ritual, *TEC* technology)

Appendix 2

Saramacca list

Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Anacardiaceae	<i>Loxopterygium sagotii</i> Hook. f.	T	sáangi udu	6,883	1	0	19	2	0.5	0.25	0	0	1.25
Annonaceae	<i>Anaxagorea acuminata</i> (Dunal) A.DC.	T	alukutú (matu)	6,533; 6,624; 6,721	1	1	0	0.75	0	0	0	0	0.75
Annonaceae	<i>Anaxagorea</i> sp. <i>I</i>	T	azau udu	6,566	1	0	0	1	1	0	0	0	0
Annonaceae	<i>Bocageopsis multiflora</i> (Mart.) R.E. Fr.	T	finu uwíí	6,438; 6,698; 6,873	5	0	0	1	0	0	0	0	1
Annonaceae	<i>Duguetia</i> cf. sp. <i>I</i>	T	watangóso	6,516	1	0	0	0.25	0	0	0	0	0.25
Annonaceae	<i>Duguetia paraensis</i> R.E. Fr.	T	akulí anza	6,506; 5,966	2	0	0	2.25	1	0	0	0.25	1
Annonaceae	<i>Ephedranthus guianensis</i> R.E. Fr.	T	SA- miombé; TR- mekoro wewe	6,463	3	0	0	1.75	0	0	0	1.75	0
Annonaceae	<i>Fusaea</i> cf. <i>longifolia</i> (Aubl.) Saff.	T	kaká pau	6,613	0	1	0	1.25	1	0	0	0	0.25
Annonaceae	<i>Guatteria atra</i> Sandwith; Guatteria punctata (Aubl.) R.A. Howard	T	baáka pau	5,968; 6,477	3	0	12	1.75	1	0	0	0.25	0.5
Annonaceae	<i>Xylopia cayennensis</i> Maas	T	agámokámal	6,347	0	0	3	2.25	0.25	0.25	0	1.25	0.5
Apocynaceae	<i>Ambelania acida</i> Aubl.	T	mambaái	6,396; 6,888	0	0	1	2	0	0	1	0	1
Apocynaceae	<i>Aspidosperma maregravii</i> - anum Woodson	T	apokíta (wéti)	5,545	1	0	0	3.5	0	0.75	0	0.75	2
Apocynaceae	cf. <i>Couma guianensis</i> Aubl.	T	unkn	6,630	2	2	0	0	0	0	0	0	0
Apocynaceae	<i>Geisospermum argenteum</i> Woodson	T	leletí	5,591	13	0	1	1.25	0	0	0	1	0.25

Apocynaceae	<i>Apocynaceae l</i>	T	tjantjuju	6,511; 6,550; 6,562	7	1	0	3.75	0.5	0.5	0	0.75	2
Apocynaceae	<i>Tabernaemontana undulata</i> Vahl	T	sneki bita	6,519	1	0	0	1	0	0	0	1	0
Araliaceae	<i>Schefflera morototoni</i> (Aubl.) Maguire, Steyer. and Frodin	T	atapí	6,149	0	0	2	0.75	0	0	0	0.5	0.25
Arecaceae	<i>Astrocaryum aculeatum</i> G. Mey.	T	awaá	5,596	0	0	1	2.5	0	0	1.25	0	1.25
Arecaceae	<i>Astrocaryum sciophilum</i> (Miq.) Pulle	T	mumúu/maka	5,798	194	42	3	5.25	1	0	2	1	1.25
Arecaceae	<i>Attalea maripa</i> (Aubl.) Mart.	T	maipá	No coll	0	1	12	6	1	0	2	1	2
Arecaceae	<i>Euterpe oleracea</i> (Mart.) Mart.	T	pina	5,973	0	6	1	5.75	1.75	0	1.75	1	1.25
Arecaceae	<i>Oenocarpus bacaba</i> Mart.	T	tjangá	No coll	7	0	0	2	0.75	0	0.75	0	0.5
Arecaceae	<i>Socratea exorrhiza</i> (Mart.) H. Wendl.	T	pazáá	6,916	0	1	0	3	1.5	0	0	0.25	1.25
Bignoniaceae	<i>Adenocalymna inundatum</i> Mart. ex DC.	L	gaán háti	6,717	0	4	0	0.25	0	0	0	0	0.25
Bignoniaceae	<i>Jacaranda copaia</i> (Aubl.) D. Don	T	jáífi	5,978	0	1	90	1.5	0.75	0	0	0.75	0
Bignoniaceae	<i>Memora flaviflora</i> (Miq.) Pulle	L	gaán háti unkn	6,493; 6,113	1	0	0	0	0	0	0	0	0
Bignoniaceae	<i>Tabebuia insignis</i> (Miq.) Sandwith	T	pantáá	5,775	0	1	0	0.75	0	0	0	0.75	0
Bignoniaceae	<i>Tabebuia serratifolia</i> (Vahl) G. Nicholson	T	giánti	6,724	0	1	0	2.5	0.5	0.25	0	1.75	0
Boraginaceae	<i>Cordia cf. tetandra</i>	T	tji-tji/túmba lobi	6,769	2	0	1	0.5	0	0	0	0	0.5
Bursaceae	<i>Protium morii</i> D.C. Daly	T	kandéa pau	5,740	2	0	0	0.75	0	0	0	0	0.75

(continued)

Appendix 2 (continued)

Saramacca list		Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Fabaceae		<i>Macrobolium angustifolium</i> Benth. R.S. Cowan	T	watapánu	6,623	0	2	0	0	0	0	0	0	0
Fabaceae		<i>Mimosa</i> sp. 1	L	akamáka tataí (bè)	6,655	2	1	0	1	0	0	0	1	0
Fabaceae		<i>Ormosia paraensis</i> Duke	T	ógi pau (baáka)	6,523	3	0	0	2.75	0	0	0	1.75	1
Fabaceae		<i>Parkia</i> cf. <i>pendula</i>	T	asau (bè)/agrobigi	6,704	3	0	0	2.25	0.5	0	0	1.75	0
Fabaceae		<i>Pterocarpus</i> cf. <i>santalinoides</i> L'Hér. ex DC.	T	musansi	No coll	0	1	0	1	0	0.75	0	0	0.25
Fabaceae		<i>Pterocarpus officinalis</i> Jacq.	T	gwegwe	6,610	0	4	0	1.75	0.75	1	0	0	0
Fabaceae		<i>Swartzia benthamiana</i> Miq.	T	wajiu (kaká búku)	6,539; 6,615	9	9	0	0.25	0	0	0	0	0.25
Fabaceae		<i>Swartzia schomburgkii</i> Benth.	T	búgubúgu	6,606	15	20	1	2	0	0	0	1	1
Fabaceae		<i>Tachigali albiflora</i> (Benoist) Zarucchi and Herend.	T	djedu	6,886	0	0	1	1	0	0	0	0	1
Fabaceae		<i>Tachigali guianensis</i> (Benth.) Zarucchi and Herend.	T	djedu (fini uwii)	6,649	0	2	0	1	0	0	0	0	1
Fabaceae		<i>Taralea</i> sp. 2	T	sánu pau (mujè)	6,531	2	0	5	3	0.75	1	0	0	1.25
Fabaceae		<i>Taralea</i> sp. 1	T	sánu pau (wómi)	6,617	0	1	0	3	0.75	1	0	0	1.25
Fabaceae		<i>Youcappota americana</i> Aubl.	T	boáni	6,642	16	3	0	2.25	1.25	0.25	0	0	0.75
Hugoniaceae		<i>Hebepetalum</i> sp. 1	T	kwasfikánu subí	6,571	1	2	0	0	0	0	0	0	0
Humiriaceae		cf. <i>Sacoglottis guianensis</i> Benth.	T	kóoko 3	6,480	4	0	0	1	0.75	0	0	0.25	0

Appendix 2 (continued)

Saramacca list Family	Species	Habit	Vern. name	Coll #	# UP	# LO	# FA	UV _s	CON	\$\$\$	EDI	MED	TEC
Moraceae	<i>Brosimum lactescens</i> (S. Moore) C.C. Berg	T	jijiji pau, letethout	6,786	0	2	0	2	0	1	0	0	1
Moraceae	<i>Brosimum parinarioides</i> Ducke ssp. parinarioides	T	sitopu oli	6,497	1	0	0	0	0	0	0	0	0
Moraceae	<i>Trymatococcus amazonicus</i> Poepp. & Endl.	T	jijiji pau, púu fínga	6,541	1	1	0	0	0	0	0	0	0
Moraceae	<i>Ficus</i> sp. <i>I</i>	T	unkn	No coll	1	0	0	0	0	0	0	0	0
Moraceae	<i>Pseudolmedia laevis</i> (Ruiz & Pav.) J.F. Macbr.	T	púu fínga	6,495	20	2	0	0	0	0	0	0	0
Myristicaceae	<i>Virola</i> sp. <i>I</i>	T	bómba	6,471	4	2	0	1.75	0	0.25	0	1.5	0
Myrtaceae	<i>Eugenia coffeifolia</i> DC.	T	nóunou duumí	6,512	2	5	0	0	0	0	0	0	0
Myrtaceae	<i>Eugenia patrisii</i> Vahl	T	gulan tjango	6,503; 6,515; 6,540	5	0	0	1.75	0	0	0	1	0.75
Myrtaceae	<i>Eugenia</i> sp. <i>I</i>	T	logosofuíta	6,639	2	6	0	1.25	0.25	0	0	0.75	0.25
Myrtaceae	<i>Myrciaria floribunda</i> (H. West ex Willd.) O. Berg	T	gujába, matu	6,784	0	2	0	0.75	0.25	0	0	0	0.5
Myrtaceae	<i>Myrcia</i> sp. <i>I</i>	T	kwépi	6,729	2	0	0	0.75	0	0	0	0	0.75
Oleaceae	<i>Minquartia guianensis</i> Aubl.	T	bagbagi	6,526	0	3	0	2	1.25	0	0	0.75	0
Quiinaceae	<i>Lacunaria crenata</i> (Tul.) A.C. Sm.	T	unkn	6,494	1	0	0	0	0	0	0	0	0
Rubiaceae	<i>Duroia cf. eripila</i> L. f.	T	maamaadósu	5,932	0	0	1	2	0	0	0.75	1.25	1.25
Rubiaceae	<i>Duroia micrantha</i> (Ladbr.) Zarucchi and J.H. Kirkbr.	T	siindja udu	5,611	0	1	0	2	0	0.75	0	0	1.25

Rubiaceae	<i>Iserita coccinea</i> (Aubl.) Vahl	T	pángapanga	6,305	0	0	77	0.5	0	0	0	0.5
Rubiaceae	<i>Rubi</i> sp. <i>I</i>	T	unkn	6,824	0	1	0	0	0	0	0	0
Salicaceae	<i>Laetia procera</i> (Poepp.) Eichler	T	agámokáma1	5,600	2	1	2	1.75	0.75	0	0	0.25 0.75
Sapindaceae	<i>Cupania hirsuta</i> Radlk.	T	gawentí	6,876	0	4	0	1.5	0	0	0	1.5
Sapindaceae	<i>Cupania scrobiculata</i> Rich.	T	gawentí (baáka)	6,458; 6,478	7	2	0	1	0	0	0	1
Sapindaceae	<i>Talitia megaphylla</i> Sagot ex Radlk.	T	azobene	6,508	3	0	0	1.25	0	0	1	0.25
Sapindaceae	<i>Talitia</i> sp. <i>I</i>	T	gawentí (bè)	6,602	0	1	0	0	0	0	0	0
Sapotaceae	<i>Pouteria</i> sp. <i>I</i>	T	kwátábóbi	6,517	7	1	0	1.75	0.25	0	1	0.5
Sapotaceae	<i>Micropholis</i> sp. 4	T	íntóóbi	6,790	0	3	0	3.75	0.75	1	0.75	0 1.25
Simaroubaceae	<i>Simarouba amara</i> Aubl.	T	astúmaípa	6,821	2	0	0	2.25	1	0.5	0	0 0.75
Siparunaceae	<i>Siparuna gutanensis</i> Aubl.	T	fèbè pau	6,563	1	0	0	1.25	0	0	0	1.25
Unkn 1–4	Unkn 1–4	T	unkn	6,527	1	0	0	0	0	0	0	0
Unkn 2–2	Unkn 2–2	T	unkn	6,603	0	1	0	0	0	0	0	0
Unkn 2–3	Unkn 2–3	T	unkn	6,600	0	1	0	0	0	0	0	0
Unkn 2–5	Unkn 2–5	T	unkn	6,612	0	1	0	0	0	0	0	0
Uncollected	Unkns (7 taxa)	T/L	unkns	N/A	3	1	3	0	0	0	0	0
Urticaceae	<i>Cecropia peltata</i> L.	T	panpantíi (mujèè)	5,652	1	4	10	1.25	0	0	0	0.75 0.5
Urticaceae	<i>Cecropia sciadophylla</i> Mart.	T	panpantíi (wómi)	5,651	0	0	10	1.25	0	0	0	1 0.25
Urticaceae	<i>Pourouma minor</i> Benoist	T	akadam suta	5,911; 6,587	3	1	0	2	0.75	0.25	0	0 1
Urticaceae	<i>Pourouma mollis</i> Trécul or <i>Pourouma vellutina</i> Mart.	T	panpantíi (bouwii)	5,911; 6,482	2	0	1	1.25	0.25	0	0	0 1
Violaceae	<i>Leonia</i> sp. <i>I</i>	T	awaá pau	6,521	1	3	0	1.25	0.75	0	0	0.5

(continued)

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