

UNDERSTANDING INFLUENCES ON HARVESTING SPECIES OF THE GENUS  
*HETEROPSIS* AND BASKET PRODUCTION BY INDIGENOUS YE'KWANA OF THE  
ORINOCO BASIN, VENEZUELA

By

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To those who believe in freedom

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## LIST OF ABBREVIATIONS

ACOANA	La Asociación Venezolana para la Conservación de Áreas Naturales
ECFC	Ecologically conscious fair-trade consumerism
NGO	Non-governmental organization
NTFP	Non-Timber Forest Product
SFIFM	Santa Fe International Folk Art Market
YEBP	Ye'kwana Earthbound Basket Project

Abstract of Thesis Presented to the Graduate School  
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UNDERSTANDING INFLUENCES ON HARVESTING SPECIES OF THE GENUS  
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By

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This paper examines factors that influence harvesting of a threatened epiphytic aroid and production of baskets by the indigenous Ye'kwana of Southern Venezuela. Areal roots of the hemi-epiphyte, *Heteropsis* spp., are used primarily for home construction and basket production. I examined the sociocultural factors, sustainable resource rules and economic factors that influence harvesting and production of the vine. Data were collected using semi-structured interviews, participatory mapping, participant observation and sales records. Results show that the most successful harvesters and producers are middle aged. Additionally, although the market price for baskets increased in 2012, weavers are willing to sell at a lower price through the trade of beads, which are used for ceremonial events. Moreover, outside NGOs have impacted harvesting practices and management adaptations toward an outcome of sustainable management. Overall, this population's adaptations of harvesting practices, which seek an outcome of sustainable management is a model that can be used by other communities seeking to commercialize species of the genus *Heteropsis*. The combination of strong indigenous political power, cultural identity and integration of

western science into traditional knowledge structures for resource management has allowed Medewa to increase value of their product, livelihood and adapt creatively to new resource pressures.

## CHAPTER 1 INTRODUCTION AND CONTEXT

### Introduction

Several species of the genus *Heteropsis*, epiphytic aroids, are the primary tying and lashing vines for a number of indigenous communities near and in the Amazon basin. However, they are highly threatened by over-exploitation. More knowledge of the factors that influence *Heteropsis* spp. growth rates<sup>1</sup> would help devise a sustainable management plan for future generations (Knab-Vispo 2003, Plowden et al. 2003).

The indigenous Ye'kwana of the Orinoco basin of Southern Venezuela partner with several different non-profit organizations to manage *Heteropsis* spp. One such organization is the Venezuelan and US-coordinated, Ye'kwana Earthbound Basket Project (YEBP). This project works with Ye'kwana women's cooperatives to commercialize baskets made from fibers of several species of *Heteropsis*, locally named, minñatö. They evaluate whether basket production is environmentally friendly through participatory research projects and workshops. These activities define growth patterns of minñatö and practices of harvesters to better manage extraction.

Their work represents a growing movement that strives to achieve sustainable development through ecologically conscious fair-trade consumerism (ECFC) (Strong 1997). Although, ECFC's projects like these encouraged conservation and development agencies, historically the goals of these projects are rarely achieved and even harder to measure (Lawrence 2003). In the case of the Ye'kwana, initial reports indicated traditional harvesting practices are sustainable (Pomeroy 2006). Nevertheless, minñatö

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<sup>1</sup> Further research on growth rates will soon be published by members of the Venezuelan based, non-profit La Asociación Venezolana para la Conservación de Áreas Naturales (ACOANA)

roots are seldom harvested sustainability (Plowden 2003). Additionally, reports of non-timber forest products (NTFPs) use by forest communities in Peru and Bolivia suggest that new markets promote more destructive harvesting practices (Lawrence 2003, Plowden et al. 2003).

Furthermore, along with clear biological realities, economic and cultural factors have an enormous impact on whether or not commercialization of NTFPs incentivizes conservation (Lawrence 2003). In response to these findings, the main goal of this study was to explore influences on the harvest of minñatö and the production of baskets by cooperative members of the YEBP.

### **Significance**

The intellectual merit of this study lies in its efforts to broaden the literature on NTFPs and sustainable development in Latin America. The region of study, the Orinoco, is a hotspot for bio-diversity and cultural conservation. Several indigenous groups, including the Yanomami and Sanema live nearby, and it houses a number of endangered flora and fauna, including the tapir and jaguar (Colchester et al. 2004).

This research not only contributes to a better understanding of how people use wild plants, but also how non-governmental organizations (NGOs) and other outside agencies have influenced traditional harvesting methods and production. It offers greater insight into how NTFPs are exported and marketed, and specifically responds to the need to understand better the anthropogenic effects on several species of *Heteropsis*. Additionally, this research contributes to literature and programs essential for forest managers, local communities, development agencies and fair-trade consumers by combining interdisciplinary approaches, participatory research and analysis of economics in international development. The results of this research will be

presented back to the community and used directly in the creation of a sustainable management plan for minñatö.

### **Study Site**

My research involves basket weavers from the largest Ye'kwana community, Santa Maria de Erebato, locally named Shiwitinña. The village is situated along the Erebato River in the upper Caura of the Orinoco basin (Figure 1-3). The basin covers an area of 45,336 square km and remains mostly pristine due to a low population density of approximately eight persons per square km (Colchester et al. 2004). Local and national reserves, such as Jaua-Sarisariñama National Park exist to preserve the region's many valuable resources.

The rainy season, between May and October, is principally responsible for the 3 to 4 meters of rainfall that drenches this vast and pristine black water, tropical river system annually. The system is part of the Guiana shield, which is a 1.7 billion year old, Precambrian geological formation overlaid by loose sediments, such as shale (Colchester et al. 2004). Its source begins 1,000 meters high in the mountains, at the southern end of the range that separates Venezuela and Brazil, Sierra Parima (3° 37' N) (Encyclopædia Britannica Online 2012). The highest elevations in the basin peak out at 1,500 meters with the exception of table mountains, locally named *tepuis*; these sandstone mesas reach up to heights of 2350 meters (Aubrecht 2011, Colchester et al. 2004) (Figure 1-2). Elevation drops to ~ 350-500 meters near Shiwitinña. Farther down river a huge waterfall, Para Falls, separates the upper from lower Caura; the top of the waterfall is 150 meters high and is located just south and above the Ye'kwana community of Playon. A vast difference in fish and plant diversity exists between the two regions. Additionally, it is a barrier to foreigners entering the upper Orinoco.

## People

Ye'kwana, literally translated, means canoe people (Figure 1-1). The Ye'kwana are an indigenous ethnic group of around 4,000 Carib speaking people who live in 40 to 50 widely dispersed communities in the Caura River Basin of Southern Venezuela and the Branco River Basin of Northwestern Brazil (Manelis-Klein and Stark 1985:75-79, Lauer 2006). Nearly 2,000 Ye'kwana live along the Cunucunuma, upper Orinoco and Padamo rivers (Lauer 2006). Among the twenty Ye'kwana communities that currently exist in Venezuela today, Shiwitinña is the largest; its population fluctuates between 300 and 400 people. Preceding its formation, Ye'kwana settlements consisted of a few extended families that united together to farm, hunt and gather until local resources were exhausted; population in these communities never exceeded one hundred (Guss 1989:18). Spanish conquistadors first contacted these communities in 1759 and gave them the name Makiritare (Civrieux and Guss 1980, Manelis-Klein and Stark 1985:75). The Spanish started trading with the Ye'kwana in 1767, which initiated a shift in Ye'kwana culture (Manelis-Klein and Stark 1985:76). Unlike the surrounding Yanomami and Sanema tribes, commodities, such as metal, became the mark of prosperity over traditional shamanistic expertise (Lauer 2006). By 1777, they rebelled against building settlements for the Spanish and began trade "first the Dutch, and later by the British, at the mouth of the Essequibo river in Guyana" (Manelis-Klein and Stark 1985:76). They also traded with Portuguese from Rio Negro and Rio Branco (Manelis-Klein and Stark 1985:76). During the 19<sup>th</sup> century, Ye'kwana territory was farther south than it is today. It was reduced due to Yanomama expansion that forced the Ye'kwana to live farther north. Consequentially, today the "Sanuma," a subsection of Yanomami" and the Ye'kwana share territory in the same region; they are "economically interdependent, but

they keep separate villages and rarely intermarry” (Manelis-Klein and Stark 1985:76-77).

During the late 19<sup>th</sup> century, the Ye'kwana were attracted once again to economic opportunity and labored in the rubber boom industry. The result of which was the spread of diseases from which several Ye'kwana died (Arvelo-Jiménez 1973:14-17).” Starting in the 1950s two major religious communities were formed, the New Tribes Mission and Shiwitinña. The New Tribe's Mission was controversial as they scorned Ye'kwana religious belief and evangelized the natives. They did however build a medical post, elementary school and adult literacy center in Cunucunuma (Manelis-Klein and Stark 1985:77).

In 1959, the French Catholic Congregation, “Fraternidad de Foucauld,” encouraged family members to join together to form a permanent settlement, Shiwitinña, with a constantly expanding population, the first of its kind (Inter American Indian Institute 1981). Its purpose was fundamentally different from their ancestors' temporary settlements; they worked to create a civilization rich with an airstrip, generators, radio and infirmary. These goods were purchased through external income from coffee production that continues today (Guss, 1989:18). These changes in lifestyle helped them defend against outside intrusion and adjust to the new requirements of political power in an increasingly politicized Ye'kwana community (Lauer 2006).

These cases of evangelization transformed social life, including the establishment of new settlement patterns and social organization. Lauer (2006) believed that the necessity to understand the institutions and practices of the contemporary national political system of Venezuela became the newest mark of power and

leadership. Nevertheless, “for all the Carib-speaking tribes that once dominated Venezuela, none have succeeded in maintaining their cultural identity as have the Ye’k[w]ana” (Guss 1989:15). Despite their differences, and political struggles, the Ye’kwana are united through their shared belief system, which culturally connects everything made, “*Tidi’uma*,” in the natural world to the “invisible world” (Guss 1989:69). “*Attas*,” or homes, an example of “*Tidi’uma*,” represent heaven’s inner circle recreating cosmology of the “invisible world” in the mortal world (Guss 1989:69). Other examples of “*Tidi’uma*” include canoes, *conucos* (gardens), and baskets (Guss 1989:70).

Of all “*Tidi’uma*,” baskets are most important to the Ye’kwana. Weaving baskets is a ritual that represents the stages in a Ye’kwana’s life. Embedded symbolism, weaved into the baskets, and technical artistry gives personal identity to each Ye’kwana (Guss 1989:71). In fact, if a Ye’kwana does not make baskets, they are considered a *criollo*, a non-indigenous foreigner. Spiritually, the Ye’kwana weave baskets as a way to counteract their effect on the visible world (i.e. hunting and harvesting). By weaving they can balance the negative effects (i.e. sickness and bad luck) caused by counterparts in the invisible world to restore balance.

The Ye’kwana’s long history of Shamanism and cultural heritage surrounding the “invisible world” could be described as animism. Originally coined by E.B. Tylor, “the religious belief that originated in the primordial mistake of attributing life, soul, or spirit to inanimate objects” (Taylor 2006:78). They attribute a powerful life force, “*akato*” to animate and inanimate objects, all of which make up the story of their people.

However, this reality is shifting dramatically in the region. As with a number of indigenous groups throughout Southern America, many Ye’kwana are moving to urban

centers to access medicine, education and job opportunities (Pomeroy 2006). Additionally, illegal mining has affected all aspects of life in the communities including trade, sickness and government intervention. Although the Ye'kwana's cultural roots remain strongly pronounced in their society, there is significant concern for the loss of cultural identity and diaspora because mercury contamination in their water causes them to leave their native lands for more healthy environs. Communities above Para Falls, such as Shiwitinña are less affected by the mining; they can self-sustain their communities without invasive interference from outside forces. Additionally, although most Ye'kwana oppose the mining, some Ye'kwana encourage the influx of outside goods gained by having mining communities in the area. When I asked Shiwitinña's president why this is so, he answered, "we are always changing, it is the way of our people<sup>2</sup>." The Ye'kwana have changed through every major impact on their society and they continue to remain strong because of their ability to adapt.

This paper is one of the very few documents that explores harvesting practices and commercialization of baskets in the upper Caura; previous work focuses mainly on the lower Caura. Little ecological research has been conducted above Para Falls because this physical barrier discourages access and the Venezuelan government deters outsiders from working there.<sup>3</sup> Published books and articles primarily focus on social, political and economic history of the Ye'kwana (e.g., Civrieux and Guss 1980, Coppens, W 1981, Frechione 1985; Guss 1986, Guss 1989, Arvelo-Jimenez et al. 1992, Knab-Vispo 2003).

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<sup>2</sup> The president described many changes of traditional ways and concluded this is the adaptation they have made as a people through the centuries. It was not only specifically made about the mining issue but the people as a whole.

<sup>3</sup> The work was accomplished by airplane travel.

## Study Plants

This study explores the use of several tropical plants for processing and weaving baskets of which at least one, *Heteropsis flexuosa* (possibly two others) are in the genus *Heteropsis* (minñatö). The other plant is *Bignonia chica* or *Arrabidaea chica*, a cultivated plant whose leaves are dried and used to for dying minñatö; its local name is “kiidayu.”<sup>4</sup>

### ***Heteropsis* spp. (Minñatö)**

*Heteropsis* spp. are flowering plants in the family Araceae. Minñatö are monocot hemi-epiphytes that grow in humid, moist, tropical environments (Croat 1988:38, Hoffman 1997, Bown 2000:201-297). They are highly threatened, as they require specific habitat, cannot be farmed, lack any formal resource management plan and are greatly desired by furniture exporters as the "rattan" decoration seen on many modern furniture pieces (Huber 2001, Knab-Vispo 2003, Balcázar-Vargas and Andel 2005, Soares et al. 2009).

Their seedlings climb up “host” trees and live on the bark until they reach maturation, grow leaves and drop new roots. Initial stems are neither parasitic nor symbiotic; epiphytes simply live upon the host species (Putz and Holbrook 1989). Maturation is reported to take an average of 61 years, after which their primary climbing stem dies and beetle-pollinated flowers and fruits develop on horizontal branches (Hoffman 1997, Knab-Vispo 2003)

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<sup>4</sup> Although specimens were not collected in the field, kiidayu was identified through deductive reasoning. *Bignonia Chica* is listed as a dye from the pigment of leaves and cited as locally named “Carayuru” (Posey et al. 1984) Its identity was confirmed visually by comparing images taken from the field were with digital herbarium records from the Botanic Garden and Botanical Museum Berlin-Dahlem ([http://ww2.bgbm.org/herbarium/view\\_large.cfm?SpecimenPK=241&idThumb=166353&SpecimenSequenz=1&loan=0](http://ww2.bgbm.org/herbarium/view_large.cfm?SpecimenPK=241&idThumb=166353&SpecimenSequenz=1&loan=0)).

Minñatö are aroid epiphytes (Figure 1-4). This growth pattern protects from flooding and fire; they survive on nutrients given by air, water and arboreal animals (Putz and Holbrook 1989). Unfortunately, their survival is threatened by lack of substantial nutrient sources and removal. Hemi-epiphytes compensate for nutrient scarcity by producing secondary root(s) that connect to the ground. These roots provide greater water and nutrient sources for the plant (Putz and Holbrook 1989, Knab Vispo 2003).

Seventeen species of *Heteropsis* have been identified in and around the Amazon basin (Plowden et al. 2003, Soares et al. 2009). Several are used in Ye'kwana basketry; to date only *Heteropsis flexuosa* has been recognized (Knab-Vispo 2003, Rodríguez et al. 2008). Knab-Vispo's (2003) research on *Heteropsis flexuosa* in the lower Caura shows it survives best at least 800 meters away from a village, in mature forests, where occasional flooding occurs and small amounts of light pierce through the canopy. They are absent from forests with "rocky outcrops and shallow soil," as well as highly flooded riparian environs (Knab-Vispo 2003). They prefer host trees with a DBH above 20cm, especially those between 20-49cm (Knab-Vispo 2003) Of all 90 host plants surveyed in Knab-Vispo's research, minñatö was found to live on all species except, the giant herb, *Phenakospermum guyannense* (Zingiberales:Strelitziaceae) (Knab-Vispo 2003).

### **Kiidayu**

Kiidayu is a widely distributed climbing plant of tropical South America (Devia et al. 2002). Its local name is also written Carayuru and Karayu (Moser and Tayler 1963, Posey et al. 1984). Kiidayu is the best known dye used by indigenous cultures along the Orinoco (Gentry 1992). Moser and Tayler (1963) observed that tribes along the

Piraparana and Apaporis rivers of south-east Colombia used *Bignonia chica* to produce red and black dyes for face and body paint. Ye'kwana women plant and cultivate kiidayu in their *conucos* and use it as a dye for coloring minñatö. Unlike minñatö, kiidayu is abundant within the community and has a shorter life span.

### **Processing for Basketry**

Processing begins when harvesters pull or cut secondary roots of minñatö in harvesting locations (Figure 1-5). Secondary roots grow down from the primary root structure of the plant, which connects to the host tree's branch. Harvesters pull vigorously to release them from the primary plant; afterward, they cut the root from the ground and roll them into a loop. These rolls are taken home for processing. Locally, three types of minñatö are used for basket weaving: Amamada, minñatö yadadü and minñatö tukatojo.<sup>5</sup> Amamada acts as a frame for the inside of the baskets; it is thicker than other minñatö types. Minñatö yadadü makes up the outside strips of the basket, providing a frame. It is initially cut into one-meter strips and subsequently roasted over a fire before being split and shaved (Figure 1-6). Minñatö tukatojo is the primary minñatö for weaving; it forms the basket's design and completes the outside of the basket (Figure 1-7). In order to create colorful designs, dried leaves from kiidayu are combined with the minñatö tukatojo for dying before it is split and shaved (Figure 1-8). They are layered in a pot over open flame with water and cooked approximately 20-60 minutes

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<sup>5</sup> This information was originally shared to me from members of ACOANA. It was confirmed through the reading of an unpublished document that summarized Ye'kwana completed with members of Shiwitinna. The document, *Proyecto Minñatö: Acciones para un plan de manejo de Minñatö en el territorio tradicional Ye'kwana y Sanema en la Cuenca del rio Caura, estado Bolívar – Venezuela*, was written by Bevilacqua, M., Medina, D., & Rodríguez, A. in 2008. Additionally, interviews and observations I accomplished in 2010, confirmed the three different classifications of minñatö given by the Ye'kwana.

per repetition. Minñatö is cooked once for the color red and 3 times for black (Figure 1-7).

### **Commercialization of Baskets**

Ye'kwana basketry is part of a larger cosmological context that interweaves and reinforces the cultural and spiritual identity of the Ye'kwana (Pomeroy 2006). Weaved baskets made by men use symbolism to reinforce their cultural and spiritual story of creation. All Ye'kwana use these designs for home construction, agricultural plots and basketry. Their most important myth explains how the "Wajisidi," the fierce monkey people, stole designs from the pockets of the great monkey shaman, Odosha, or the devil; men's baskets use often retell the Ye'kwana creation story of these made objects.

Beginning in 1995, several different Ye'kwana communities of the Caura River modified their traditional basketry for commercialization. Innovation came by way of decreasing the traditional size of the "*Wüwa*" basket for the home-decor market (Figure 1-9). Additionally, for the first time, Ye'kwana women were weaving cultural symbols into the traditional *Wüwa* baskets previously only found in the men's baskets. Initially, tourists in Playon, and the urban centers of Maripa and Ciudad Bolivar bought the baskets and Ye'kwana artisans relied on the tourism market, which fluctuated seasonally (Figure 1-10) (Pomeroy 2006).

Earthbound started working with the YEBP in 2001 to secure a market for Ye'kwana basketry. From this start, two cooperatives were formed: Medewa cooperative of Shiwitinña and Kanwasumi of Boca De Nichare. Medewa is headed by

leaders of a community two days up river from Playon above Salto Falls.<sup>6</sup> Kanwasumi is headed by the leaders of Boca de Nichare, which is closer to Maripa, a small urban trading post along the river. Through this work, a pricing structure, costs analysis and a business model were created and profit increased.

---

<sup>6</sup> The community of Playon, location of a great beach is the community most central to Ye'kwana communal affairs (Figure 4-1). They have a very large central meeting house, *Churuata (ÖttÖ)*, where they conduct meetings for Ye'kwana's governing board and Venezuelan government officials (Figure 4-2).



Figure 1-1. Image of Shiwitinña residents traveling in hand made canoes down river; Ye'kwana literally translates as canoe people. Photo taken October 21, 2010 at 5.48734,-64.6604 (Photo courtesy of Erica Carlsson).

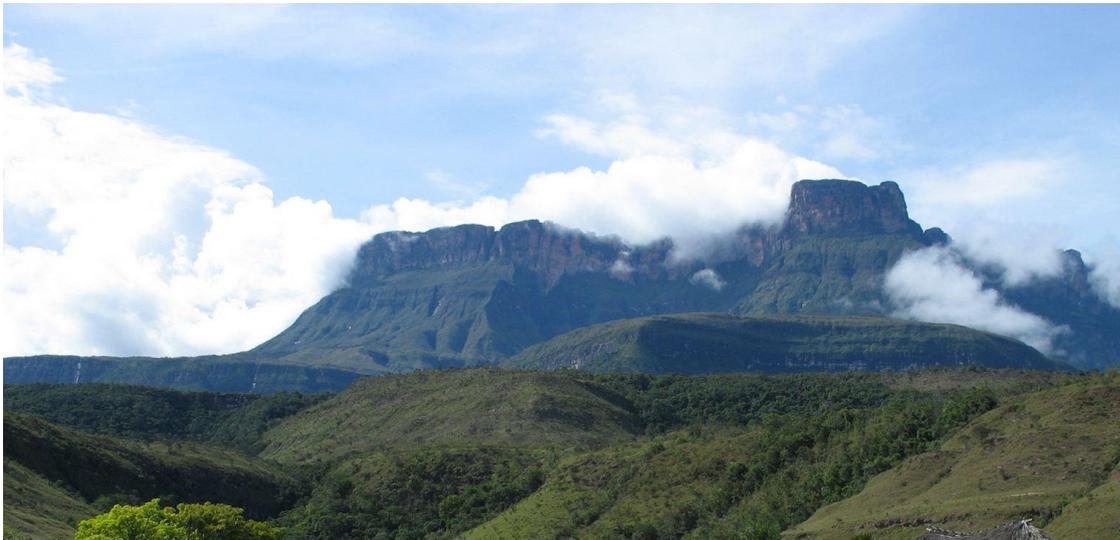


Figure 1-2. Table Mesa, Tepui, Orinoco basin, Venezuela. Date photo taken January 1, 2006 in Bolivar, Venezuela (Photo courtesy of Laurie Wilkins).

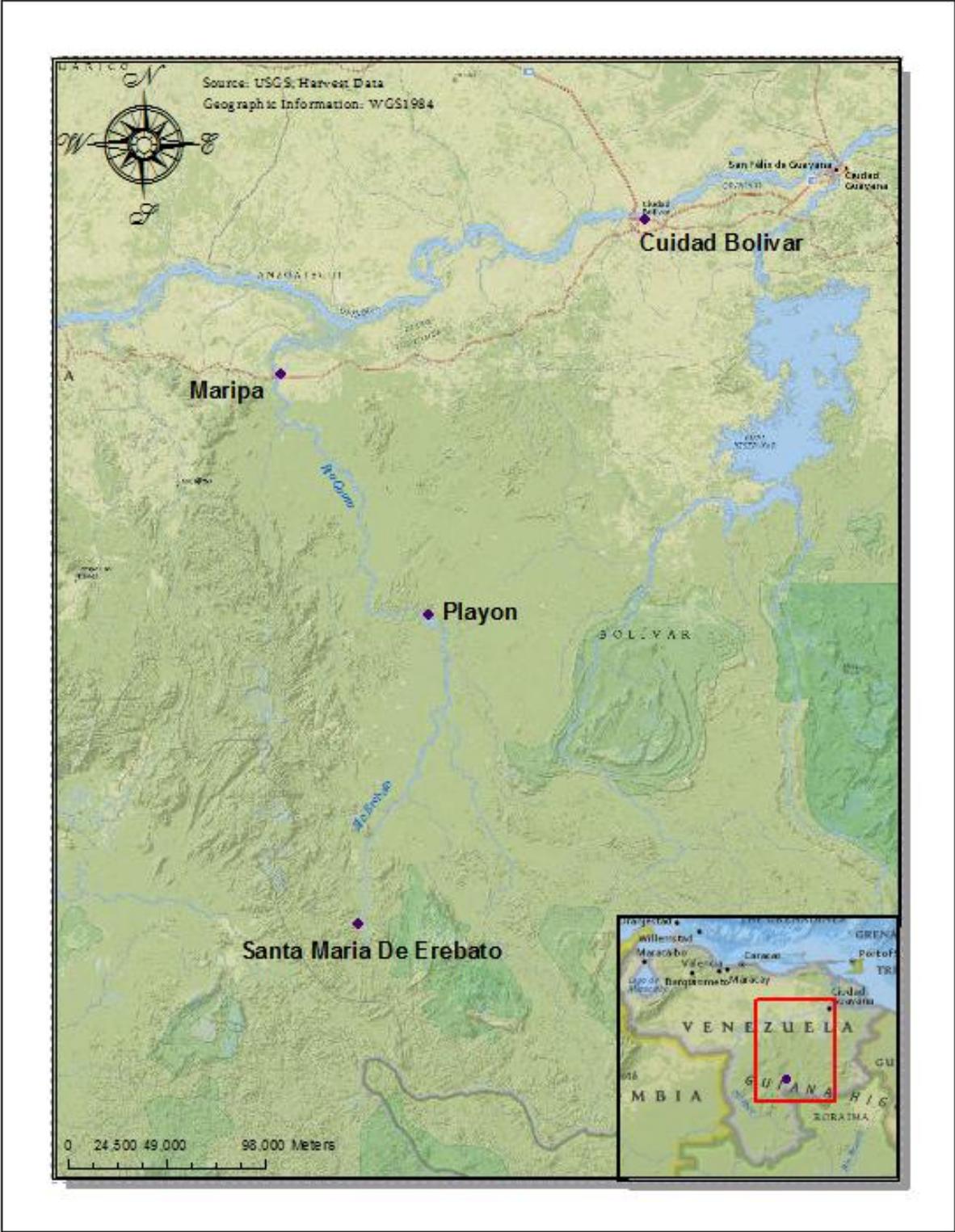


Figure 1-3. Ye'kwana territory map, featuring Ciudad Bolivar, Maripa, Playon and Shiwitinña.

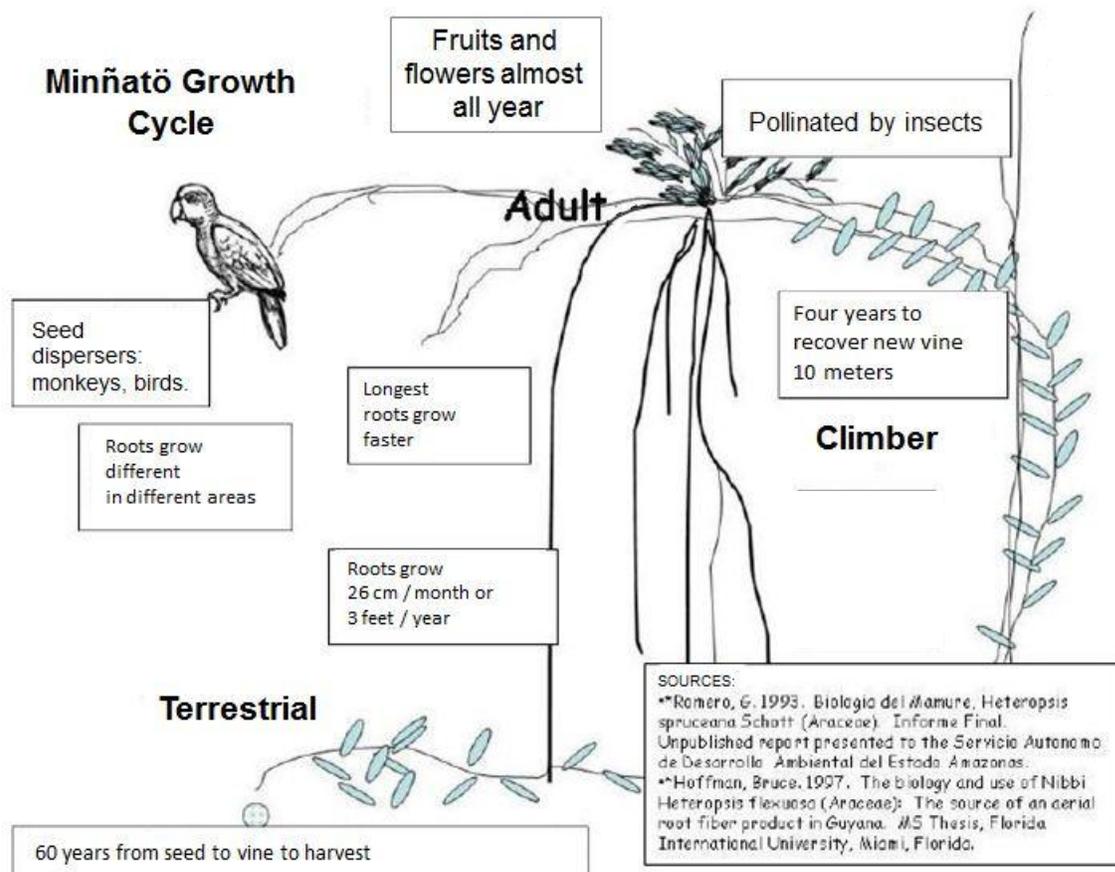


Figure 1-4. Minñatö growth cycle, drawn by Kanwasumi women of Boca De Nichare, September, 2003. Permission granted for use by Wendy Townsend of Earthbound.



A



B

Figure 1-5. Series of harvesting and processing minñatö A) harvesting, taken from Santa Maria chief's property 10/2/2010, pictured: Consuelo Garcia, B) processing yadadü, taken from Santa Maria chief's property before returning to the village 10/2/2010, pictured: Medewa cooperative member (Photos courtesy of Erica Carlsson).



Figure 1-6. Series of processing minñatö yadadü. A) unprocessed yadadü sticks taken from Shiwitinña chief's property 10/2/2010, B) yadadü roasted after returning to village, taken in Shiwitinña 10/5/2010, C) peeling the yadadü, taken from Shiwitinña 10/11/2010, pictured Miguelina Garcia, D)\* Yadadü after being died peeled and shaven, taken in Shiwitinña 10/8/2010, E) Lengthwise strips of yadadü used to shape outside of basket taken from Shiwitinña 10/11/2010, F) finished product, *Wüwa* basket, made by Clara Garcia, taken 10/15/2010. \*Shechajadu means shavings. (Photos courtesy of Erica Carlsson).



Figure 1-7. Series of harvesting and processing, minñatö tukatojo. A) unprocessed tukatojo roll taken from Santa Maria *Cacique's* property 10/2/2010, B) black and red rolls of tukatojo drying, taken from Santa Maria 10/5/2010, C) white and red rolls (tukatojo) taken from Santa Maria 10/8/2010 and D) Using tukatojo to start basket, taken from Santa Maria 10/8/2010. (Photos courtesy of Erica Carlsson).



Figure 1-8. Series of processing kiidayu A) Image of kiidayu taken from Shiwitinña 10/8/2010. B) dried kiidayu C) Dried kiidayu layered around minñatö for cooking B) After being cooked, leaves are wet and minñatö is removed. (Photos courtesy of Erica Carlsson).



Figure 1-9. Innovation; from the traditional “Wüwa” design to the modified design made for the home décor market. Permission granted for use by Laurie Wilkins of Earthbound.

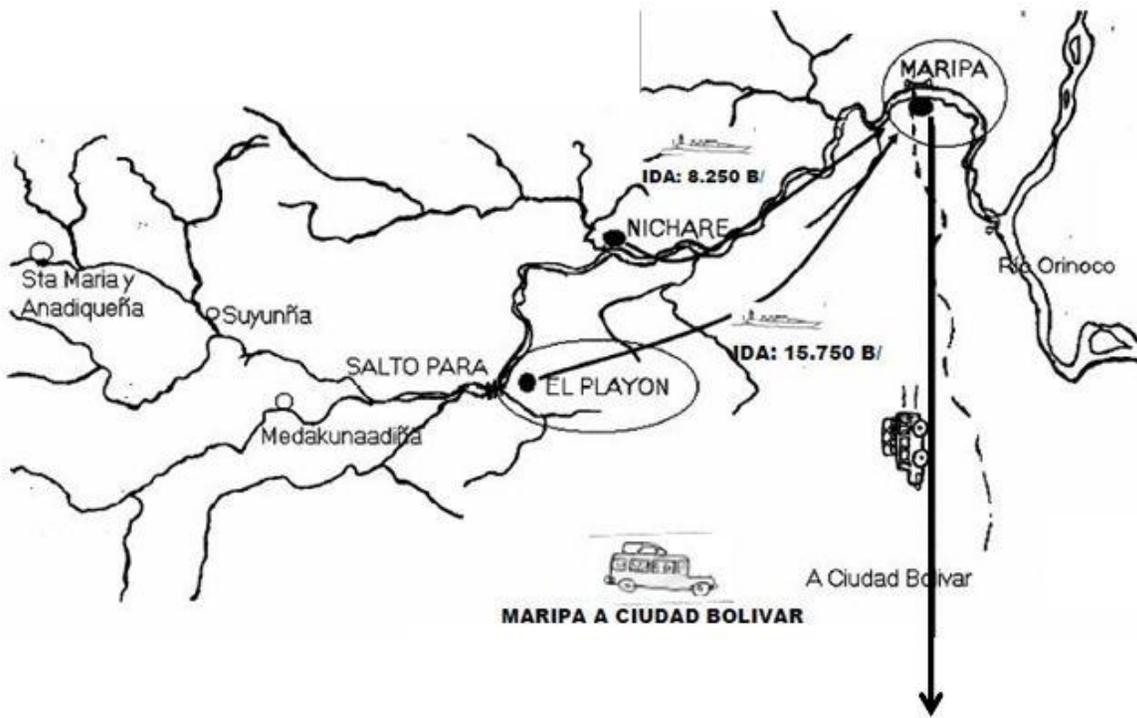


Figure 1-10. Map drawn by Medewa participants of regions traveled to sell baskets. Permission granted for use by Wendy Townsend of Earthbound.

## CHAPTER 2 LITERATURE REVIEW

Latin American countries have utilized export-led growth since the 1980s to improve economic and humanitarian well-being. The result of which has been significant losses for the environment, including deforestation and lack of bio-diversity (Altieri and Masera 1993). NTFPs, *non-timber forest products*, have suffered greatly; harvesting NTFPs has had a deleterious impact on tropical forests (Peters 1996). Arguments have been made that there is little ecological impact to NTFPs. Yet, even though “traditional” harvests generally yield less extraction than commercialization, gradual extinction over time is widespread and nearly undetectable (Peters 1996).

Fair Trade and Sustainable Development are meant to answer these woes by giving back the power to producers of goods (Mayoux 2001). Moreover, environmental conservation is stressed as a crucial aspect to any sustainable development plan (Strong 1997). Only recently have researchers and NGOs begun to define the conditions to achieve sustainability (Vos 2007). These conditions are different for each region and scenario; there is still yet no formalized criterion.

Sustainable forest management goals have been partially met through the sale and export of NTFPs. As forests have diminished in the Amazon and demands have increased, “the environmental services, recreation and non-timber products of forests have come to be appreciated as being equal to or more important than industrial timber and fib[er], particularly in developed countries” (Belcher 2005). Moreover, the literature publicizes commercialization of NTFPs as the ideal way to conserve forests whilst contributing to rural livelihoods (Ticktin 2004, Balcázar-Vargas and Andel 2005, Belcher 2005).

Although economic benefits are achieved by exporting NTFP's, there is also the risk of exploitation. *Heteropsis* spp. are crucial NTFP's in the Amazon region of Southern America. Demand for the roots of *Heteropsis* has increased in Brazil, Guyana, Venezuela and Peru since asian palm species supplies have been over-harvested or suffered from de-forestation (Whitehead and Godoy 1991, Plowden et al. 2003). Compounding the problem is that as with most NTFPs, only a few studies have attempted to understand the impact of harvest of *Heteropsis* spp.

Generally, rural communities who have lived for generations in forested areas acquire a deep understanding of their natural surroundings, which become part of peoples' language, behavior, livelihood and worldviews (Zent 1999, Berkes 2008). Additionally, within Indigenous communities,' harvesting practices are known to vary based on seasonal preference, traditional management policies, and external factors such as essential economic needs for livelihood (Hamilton 2004). Knab-Vispo (2003) observed that the traditional harvesting practices of the Ye'kwana do not seem to have an effect on the root's survival. Yet interviews revealed exploitation of minñatö is widespread.

Similar to wildlife, common-pool resources, such as minñatö, are subject to over-exploitation and misuse by individuals acting in their own self interests. They are pushed beyond the limits of sustainability and are therefore subject to congestion, depletion, or degradation (Randall 1983, Blomquist and Ostrom 1985). Schlager and Ostrom (1992) argue that communities who have rights of management and authority to determine how, when, and where harvesting may occur tend to develop responsible practices and mechanisms of collective action. The Ye'kwana of Shiwitinña have

recently responded to resource depletion by initiating a management plan that meets Schlager and Ostrom's criterion for responsible practices. It is an example of bio-cultural conservation as they integrate local habitats, harvesting habits, and cultural identity into minñatö management. (Rozzi et al. 2006, Rozzi et al. 2008)

## CHAPTER 3 RESEARCH METHODOLOGY

### **Data Collection Methods**

Primary research was conducted between September 29, 2010 and November 1, 2010 in the Caura River Basin, Venezuela. Due to the short field research period and language barriers, ecological studies and written questionnaires were not considered. Therefore, data were collected using oral semi-structured interviews, participatory mapping and participant observation. Additionally, sales records and non-profit reports were used for economic analysis and historical reference.

Approval for research and contact with the community was achieved through the help of two organizations: US based and UF affiliated non-profit, Earthbound and Venezuelan based, non-profit La Asociación Venezolana para la Conservación de Áreas Naturales (ACOANA). Earthbound, the sponsoring organization has been working with The Ye'kwana and this basket project since 2001. Their history with the Ye'kwana helped the Shiwitinña communal council accept my presence and increase confidence in my work.

### **Ethnographic Methods**

Following the approval of the research questions and instruments by The University of Florida IRB board, three data collection periods began<sup>1</sup> (Appendix A). They included preliminary, primary and follow-up research.

**Preliminary Interviews.** Preliminary research was completed in the summer of 2010 at a Ye'kwana exhibit held at Kanapaha Botanical Gardens in Gainesville, FL. Visiting cooperative leaders were interviewed to create a guideline for questioning once

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<sup>1</sup> The IRB approved only work with those over the age of 18.

in the field (Figure 3-1). Their suggestions and insight assisted in the modification of language used during interviews to include use more colloquial terms. For example, although *canasta* is most commonly used in Spanish as the name for a basket, the Ye'kwana learned the less common word, *cesta*, for all their baskets. Additionally, they recommended hiring interpreters because only roughly 20% of the women cooperative members speak Spanish; the others speak only Ye'kwana<sup>2</sup>.

**Primary Interviews.** The primary field data collection was conducted between September 29, 2010 and November 1, 2010 in and around the community of Shiwitinña, Venezuela (Figure 3-2). The population of Shiwitinña, the largest Venezuelan community, varies between 300 and 400 people. Interviews revealed that about 90 families are officially connected to Shiwitinña, but only 70 live there permanently, approximately 311 people. Preliminary contact with *Tujumoto*, the male led Shiwitinña organization which means community, was achieved through internet (Skype) via satellite and radio. A three day conference and workshop preceded the official interviews. This meeting outlined the new business agreements between Earthbound and the Shiwitinña led cooperative, Medewa.

Medewa met with the Earthbound in order to separate business affairs from the other cooperative, Kanwasumi<sup>3</sup>. Business rules were negotiated and I was introduced as a geography student from the University of Florida, who sought to work with the basket project and to understand the ways in which they harvested minñatö. During this month, I interviewed and observed the harvesting methods of the target group, women

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<sup>2</sup> Today, Ye'kwana children are taught how to read and write in both Ye'kwana and Spanish.

<sup>3</sup> The leaders of their Kanwasumi have more access to resources, such as a storing space and a computer, to transport the baskets to the United States.

basket artisans of the Medewa cooperative. A secondary group of those who influence the cooperative business were also interviewed.

Medewa's membership changes based on interest in the project, the opportunity cost of pursuing other economic activities and migration. Its membership fluctuates between 35 and 50 members depending on these needs each year, representing roughly 16% of the community. Interviews explored where, when, why and how "minñatö" is harvested<sup>4</sup>. In total, 37 interviews were conducted; representing roughly, the entire cooperative population, "the entire universe." They were accomplished, while harvesting, in family homes and during migration to and from the city along the river. Only 14 people interviewed spoke Spanish. Therefore, members of the community, such as the treasurer of the cooperative and one young gentleman volunteered to translate. Although individual interviews were preferred, they were not always possible, as family members, especially women are seldom separated. Moreover, family members older than 18 answered questions on behalf of minor children.

Of the 37 interviews, 29 of these interviews were conducted individually, 6 of which were male adults and 22 female adults. One man was interviewed separately after interviewing the family and one was interviewed to represent a family of 5 women. Of the seven group interviews 32 adults and 19 child weavers were represented; two were answered for or translated by their husbands and 5 were facilitated by a woman in the family. In total these interviews represent 62 adults and 19 youth of the cooperative in the community, some of which were not present and therefore could not be

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<sup>4</sup> In the process of interviewing, research questions were modified, including the addition of smiley faces to indicate how much minñatö was present at each harvest site.

interviewed separately. When referring to interviews we will refer to a population of total, 37 research units.

**Follow-up Interviews.** Follow-up Interviews were conducted in July 2011 at the Santa Fe International Folk Art Market (SFIFM), New Mexico and January 2012 in Gainesville, FL. These interviews were more informal and required no translation as the cooperative leaders speak Spanish. Additionally, contact via the social networking site Facebook was helpful during the research process to verify facts.<sup>5</sup>

### **Participatory Mapping**

Previously, the harvesting areas of the community of Shiwitinña were mapped in three different ways. Firstly, an international organization, Forest Peoples Program, worked with them to identify and geo-reference conservation areas to protect their natural resources (Colchester et al. 2004). Secondly, the community cooperatively mapped their harvesting plots, some of which are family owned and managed, in 2007 at a workshop completed by Wendy Townsend and Earthbound (Figure 3-3). These maps were used as a tool during the interview process to verify information collected in former years. Thirdly, in October of 2010, the acting president of the community drew areas of minñatö in which the community has proprietary access (Figure 3-4). These areas are also harvested by the Sanema, a less dominant and poorly documented indigenous group in the area.

### **Participant Observation**

Participant observation refers to living in a community and taking part in all of the daily routines such as cooking, gardening, hunting and taking care of the home (Martin,

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<sup>5</sup> Both cooperatives have access to internet in Ciudad Bolivar through representatives of their communities.

2004:96). It is an anthropological method which is most frequently conducted over a lengthy period of time, usually several years. Although my research spanned only one month, living, traveling and harvesting minñatö with the women was a crucial part of understanding the influences on harvesting and production.

### **Records**

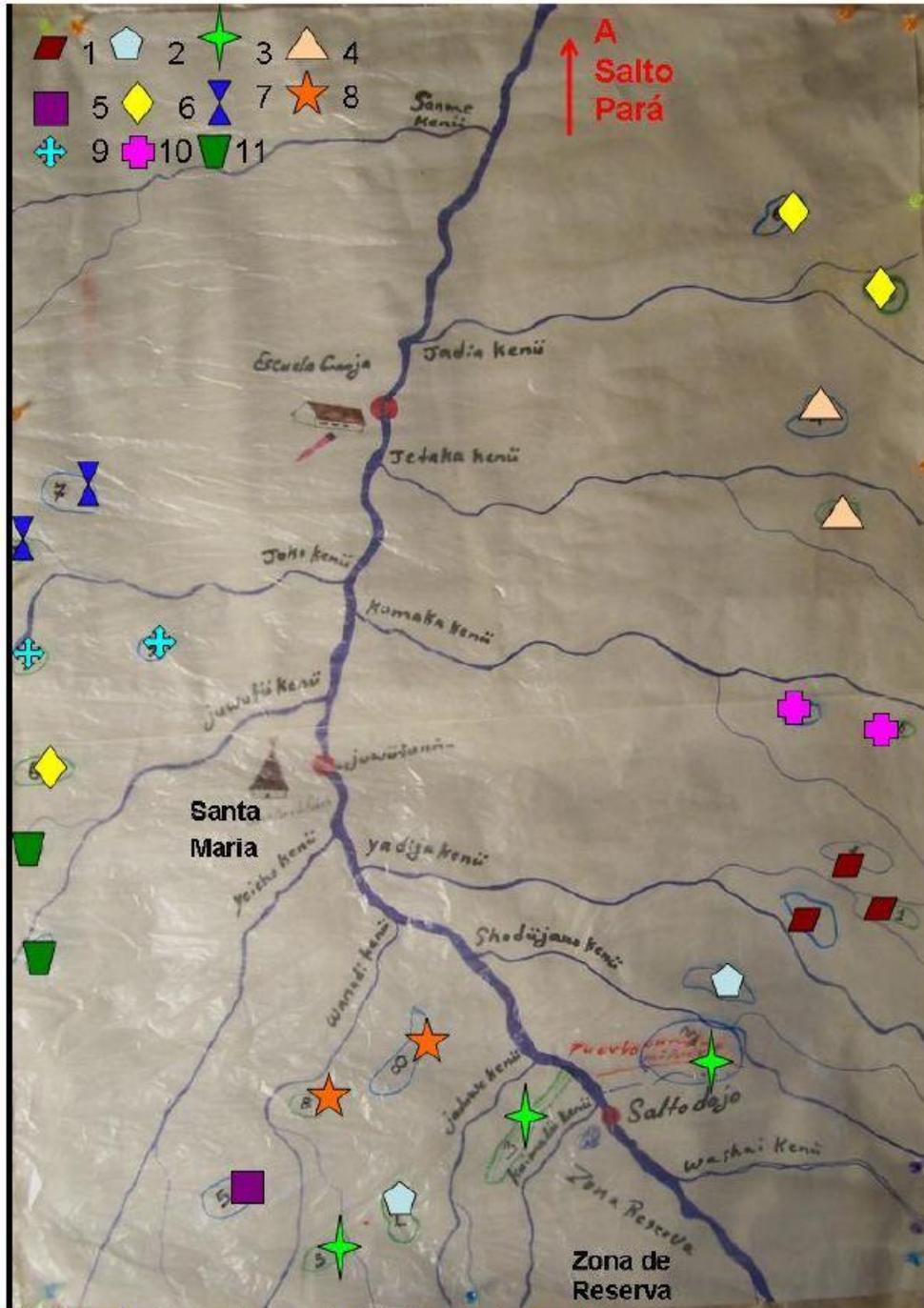
Secondary information was also vital to understanding the complex factors that influence harvesting and production. Information collected from the sponsoring Non-governmental Organization, NGO, included sales records and a number of workshops from previous years. These unpublished documents are called Memorias and will be referred to in this manner throughout this document.



Figure 3-1. Image of Ye'kwana Gainesville exhibit at Kanapaha Botanical Gardens. Photo taken August 1, 2010 at Kanapaha Botanical Gardens, Gainesville, FL (Photos courtesy of Katie Schuler).



Figure 3-2. Aerial image of Shiwitinña. Photo taken September 29, 2010 above the community of Shiwitinña (Photo courtesy of Laurie Wilkins).



Mapa con las Zonas de cosecha de Miñato y Amamada

Figure 3-3. Participatory maps completed by Medewa Cooperative members, 2007. Permission granted for use by Wendy Townsend of Earthbound.



Figure 3-4. Minñatö harvest areas, map created by Ye'kwana Biologist, October 21, 2010.

## CHAPTER 4 SOCIOCULTURAL FACTORS

### **Introduction**

Sociocultural factors influence both harvesting and production in several ways. Migration to the city to obtain employment in nursing, education, computer training and administration result in a loss of forest knowledge. Additionally, gender is an important factor. Overall, the Ye'kwana culture is male-led, but this project is the only women-led business activity. This is a unique development within Ye'kwana history.

Furthermore, age is one of the most crucial factors. For example, since 2007 more Medewa weavers learned to weave both because of the monetary benefits and the desire to preserve their cultural identity. Additionally, what language one speaks is an indicator of what harvesting practices they employ and how much income is earned. This chapter will detail explore these factors in the context of the basket project.

### **Effects of Migration**

The Ye'kwana's cultural survival throughout history is dependent not only on the deep spiritual connection with made objects, but also with "*mesoma*," which means outside forces. By separating "*mesoma*" from their cultural identity, the Ye'kwana have been able to not only differentiate the important aspects needed to sustain their culture but also expel outside forces, such as colonizers and missionaries from affecting their greater purpose and spiritual identity (Guss 1989:69). To the Ye'kwana, God, or Wanadi, will always provide minñatö. One older woman interviewed said that Wanadi guarantees that minñatö will always exist. Yet, migration and illegal mining are rapidly changing these values. Only a few people mentioned Wanadi whilst discussing basket weaving. Moreover, knowledge of minñatö is less prevalent among the younger

generation who live in the city than their relatives in the village. This suggests that migration erodes the Ye'kwana cultural fabric. When asked where minñatö grows and how many years the roots take to develop, a migrant of the cooperative answered, "I don't know because I live in the city." This theme also surfaces in later interviews.

### **Gender**

Gender is not the focus of this paper but it is necessary to discuss within the context of this research. My research focuses on a female-led cooperative, Medewa. Although the Ye'kwana are a male led society, women control business within the Ye'kwana Earthbound Basket Project (YEBP); they are the primary organizers and beneficiaries of income. In relation to harvesting and land possession, women have the upper hand. Historically, when a man marries, he leaves his childhood home and becomes a part of his wife's family (Guss 1989:80). In the case of Shiwitinña, this includes inheriting minñatö harvesting plots.

Overall, in Ye'kwana society, men are the leaders and decision makers. Their governing council is named *Tujumoto*. In Shiwitinña, where the Medewa cooperative is based, male leaders of Tujumoto generally do not interfere with the women's work. Yet, in the course of Earthbound's collaboration with both cooperatives, men expressed interest in managing the women's work. In 2010, when assigning which weavers would represent the cooperative in the United States, male communal decisions dominated Medewa cooperative votes. However, with this one exception, the project is maintained by female leadership.

### **Age**

Age influences how much minñatö is harvested, what types of baskets are produced, how many baskets are produced and how much income is earned. Ye'kwana

women start to weave at a very young age; many at age seven. My interviews were conducted only with adult weavers, who constitute the majority of the artisans who sell to the YEPB. The minimum age of those interviewed was 19 and the maximum ~80 years old. The mean age of the population was 39. Similarly, the most frequent age reported was 38, totaling 8 participants (Figure 4-3 and Table 4-1).

### **How Much Is Harvested?**

During a harvesting trip, 77 rolls of minñatö were counted and compared to the ages of harvesters from a sample of 16 members. Women ages 31-40 harvested the greatest amount of minñatö; ages 20-30 and 50-60 harvested the second greatest (Figure 4-4). Although women under the age of 10 and above 71 weave baskets, they do not harvest; it is too hard for them to travel and harvest. Therefore, family members gift rolls to them. They also gift rolls to their family members in the city and those who pursue other economic activities in the village during the harvester's absence. In fact, 37% of the population reported giving rolls to other family members.

### **How Many Baskets?**

Each business year for the YEBP starts in May after the Santa Fe International Folk Art Market. During the 2009-2010 season, women ages 41-50 produced the greatest number of baskets, 67% of all baskets made by Medewa weavers. By the 2010-2011 season, women ages 31-40 produced the greatest number of baskets, 29% of all baskets made by Medewa weavers. During the 2009-2010 season this same age group represented only 11% of all baskets made (Figure 4-5).

The youngest and oldest cooperative members do not produce as many baskets as those ages 20-60. Yet, even though those younger than 30 and above 61 produced

no baskets between 2009 and 2010, the next year, those under 20 and over 71 produced 7 baskets. Additionally, in 2011, one woman age 70 made 15 baskets.

Moreover, younger women are weaving more since 2007. Yet, quality is decreasing. This would indicate that the younger women are not as experienced as their elders; thus the quality is reduced. I believe that quality has reduced because older women, who are more skilled weavers often, encounter difficulty harvesting and weaving over the age of 60 and the younger women need more time to perfect their skills.

### **Earned Income**

Total income is based on how much money each individual basket was sold in USD per weaver. The greatest income is earned by those who are middle aged. Women ages 41-50 made \$1,881 USD between 2009 and 2011, representing 33.5% of all sales. Those 31-40 earned 29.6%; and others, 51-60, made 14.4% (Table 4-3 and Figure 4-7).

### **Language**

Language also influenced harvesting and production. Ye'kwana, a Carib based language is spoken by all members of the community. All the women interviewed were taught basic math and reading in primary school, however, very few needed to use these skills through adulthood. Conversely, the younger generation is taught both Ye'kwana and Spanish in local schools and they are expected to use both in the future. Today, Spanish is less frequently spoken, particularly by women, who have few opportunities for leadership positions and education. In my interviews, those that spoke only Ye'kwana represented 64% of the population (Figure 4-8). Only 36% of those involved in the basket project spoke Spanish, including 7 men, who all spoke Spanish (Figure 4-8). Among the 32 women interviewed, only 23% speak Spanish; the remaining

77% speak only Ye'kwana (Figure 4-9). Language also influences harvest frequency and income earned.

### **Harvest Frequency**

Spanish speakers have less knowledge of minñatö because they often migrate to and from urban areas, sometimes not returning for 5 years or more to their home community. Those who only speak Ye'kwana travel infrequently if ever and only wait on average one year or more between harvests, whereas Spanish speakers harvest more frequently and never wait beyond a year.

### **Effect on Income**

Although 23% of the women speak Spanish, only 5.5% of total Medewa basket income is produced by this group (Figure 4-10). This is substantial as the literature typical shows that the intermediary earns more income than the producers (Carruthers 2001, Belcher 2005). In this case, nearly all profits earned after paying for the costs, such as air travel, shipping and other costs, all go back to a rotating fund. The only extra monetary incentive, besides in-kind gifts, is an annual payment of 300 US \$ for a cooperative representative who works for an entire week at the Santa Fe International Folk Art Market (SFIFM), setting up the booth, selling baskets and representing the cooperative. Although there is no safeguard against the co-operative president making other use of the money, the Ye'kwana are extremely honest people and few abuses have been recorded. Furthermore, even if one includes the 300.00 US \$ paid to the representative and takes an average of income based on language, Ye'kwana speakers still make more money on average than those who speak Spanish (Figure 4-11).



Figure 4-1. Image of Playon, where the Ye'kwana gather for central meetings. View from the Caura River. Picture taken October 23, 2010 at Playon (Photo courtesy of Erica Carlsson).



Figure 4-2. Example of *Churuata* (ÖttÖ), communal house where every essential activity of the community is conducted. Photo taken October 19, 2010 in Shiwitinña (Photo courtesy of Erica Carlsson).

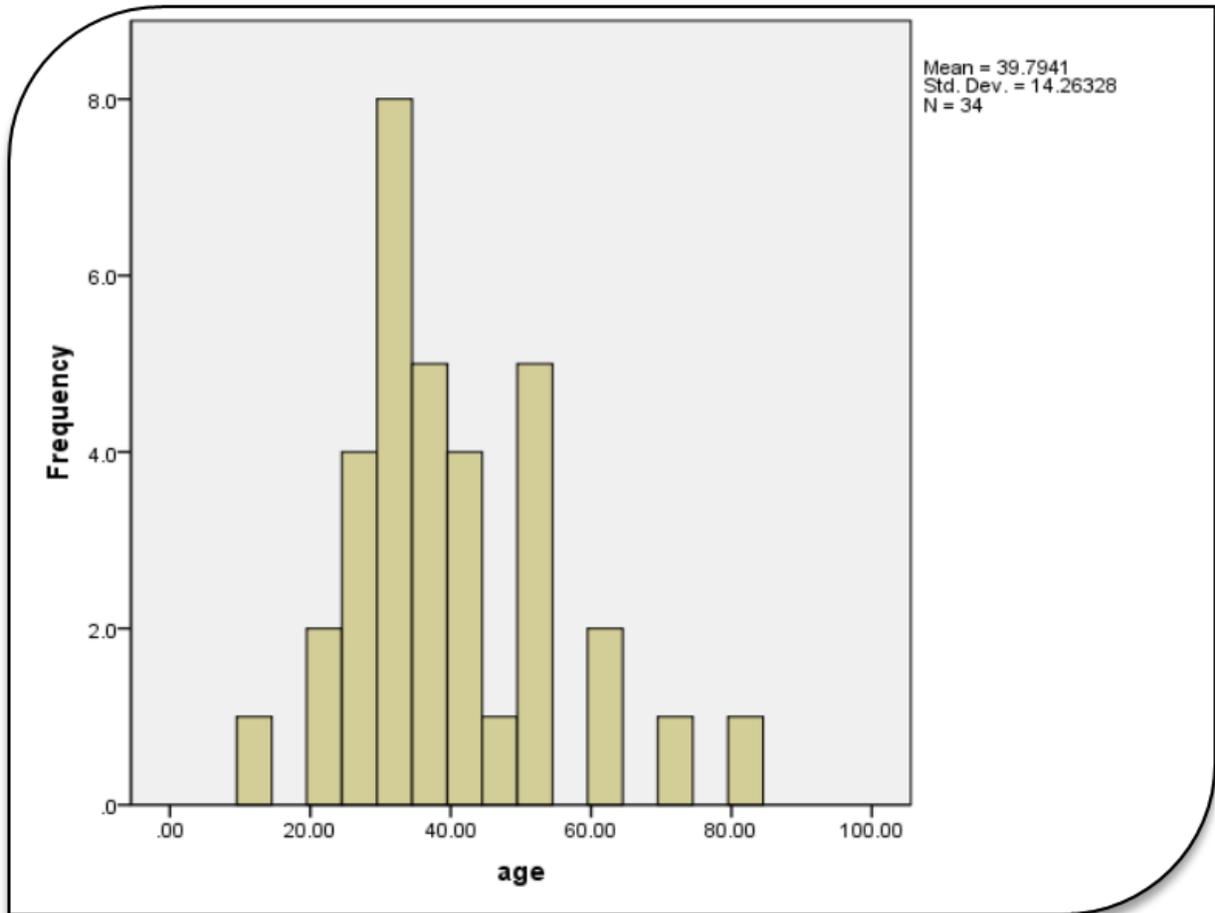


Figure 4-3. Frequency of ages in population

**Age vs. Average amount of Minñatö harvested October 2010 at Pedro's plot**

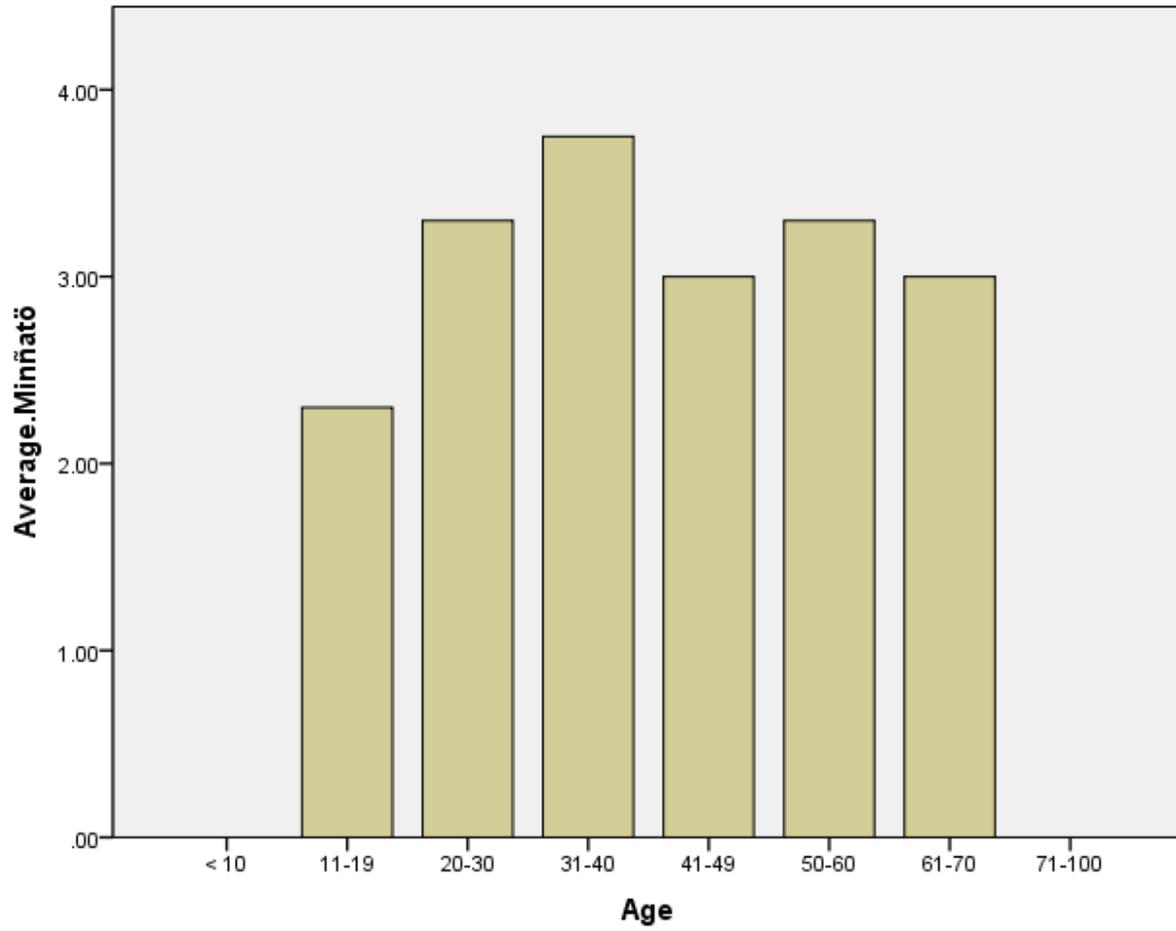


Figure 4-4. Harvesting trip; age vs. average amount of minñatö harvested, October, 2010

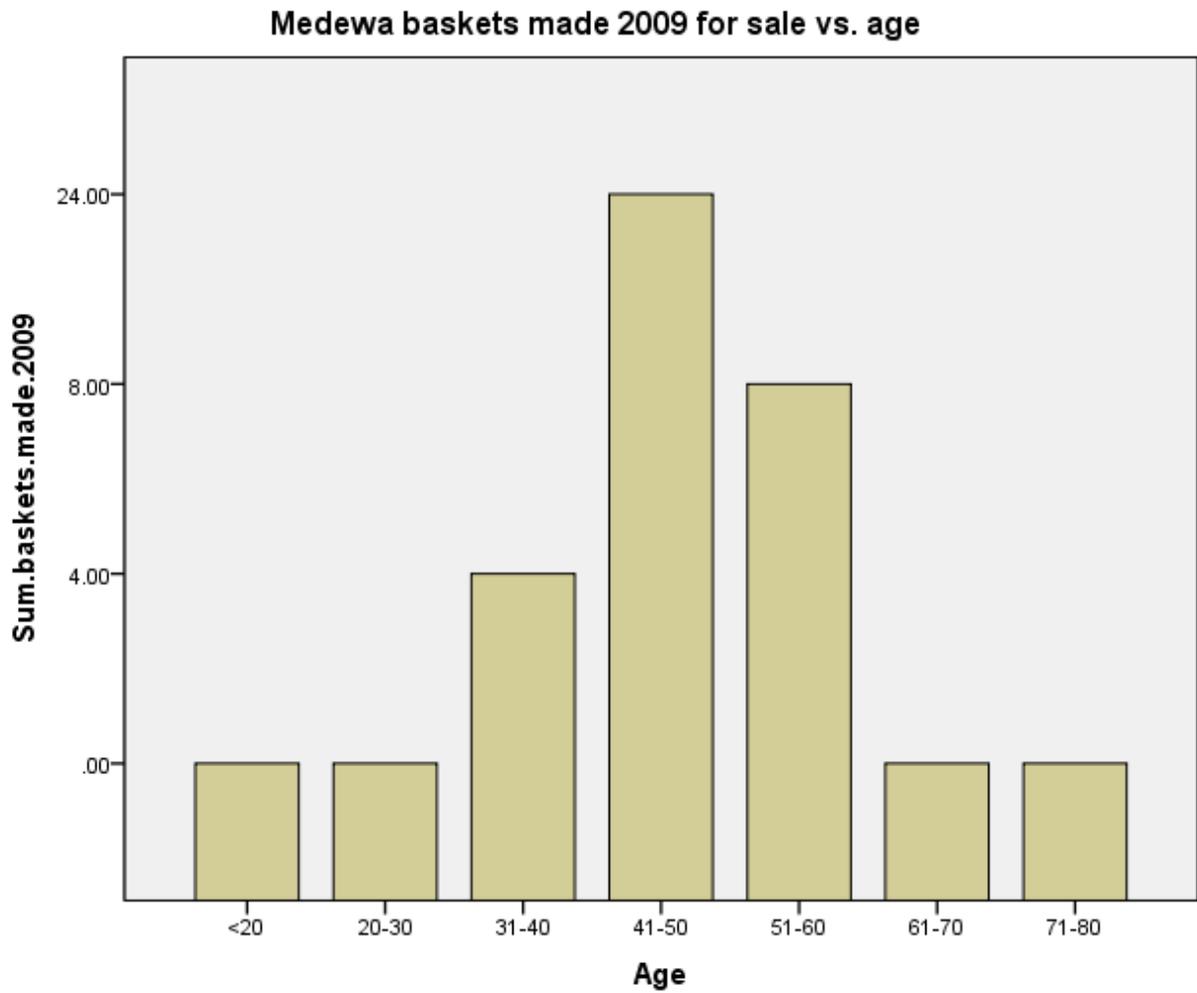


Figure 4-5. Medewa baskets made 2009, sale versus age.

Medewa baskets made 2010-2011 for sale vs. age

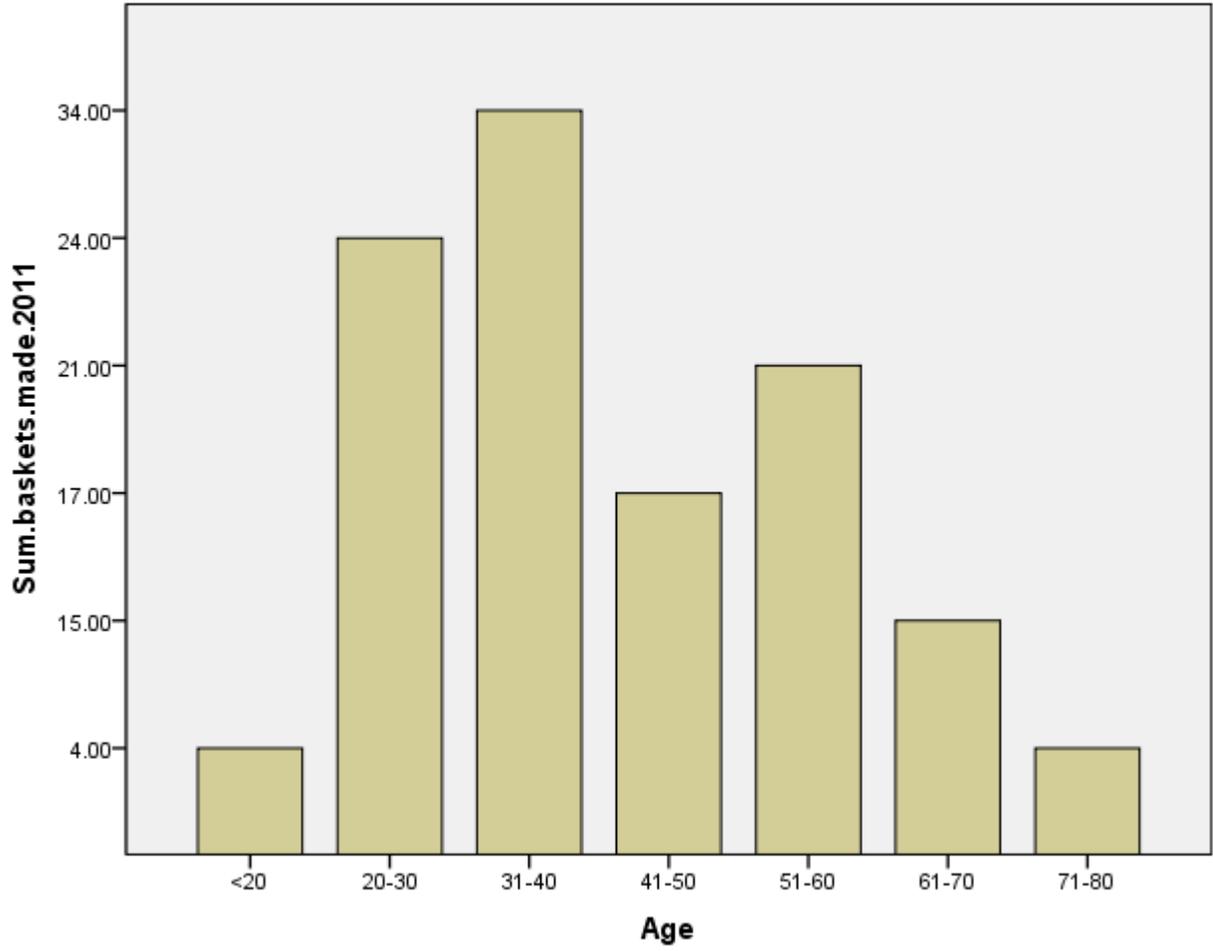


Figure 4-6. Medewa baskets made 2010-2011, sale versus age.

### Percentage gross income 2009-2011 for Medewa Cooperative vs. Age

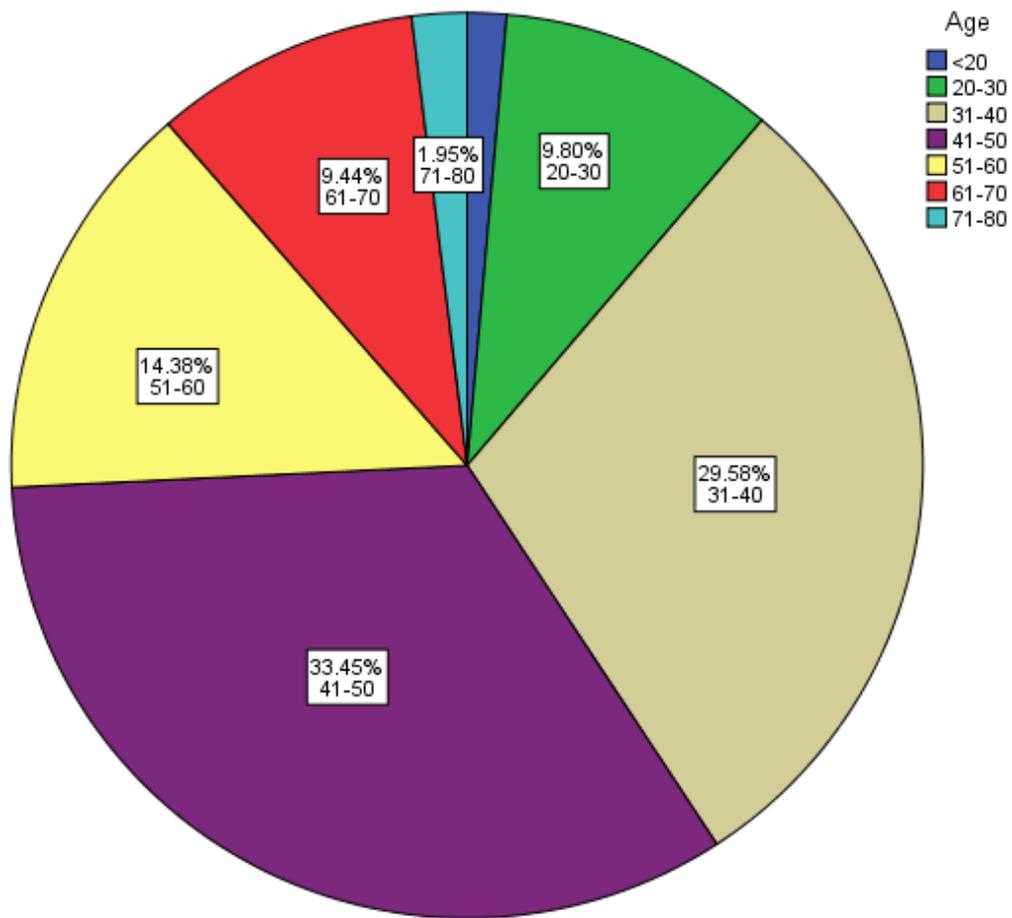


Figure 4-7. Percentage gross income 2009-2011 for Medewa vs. age

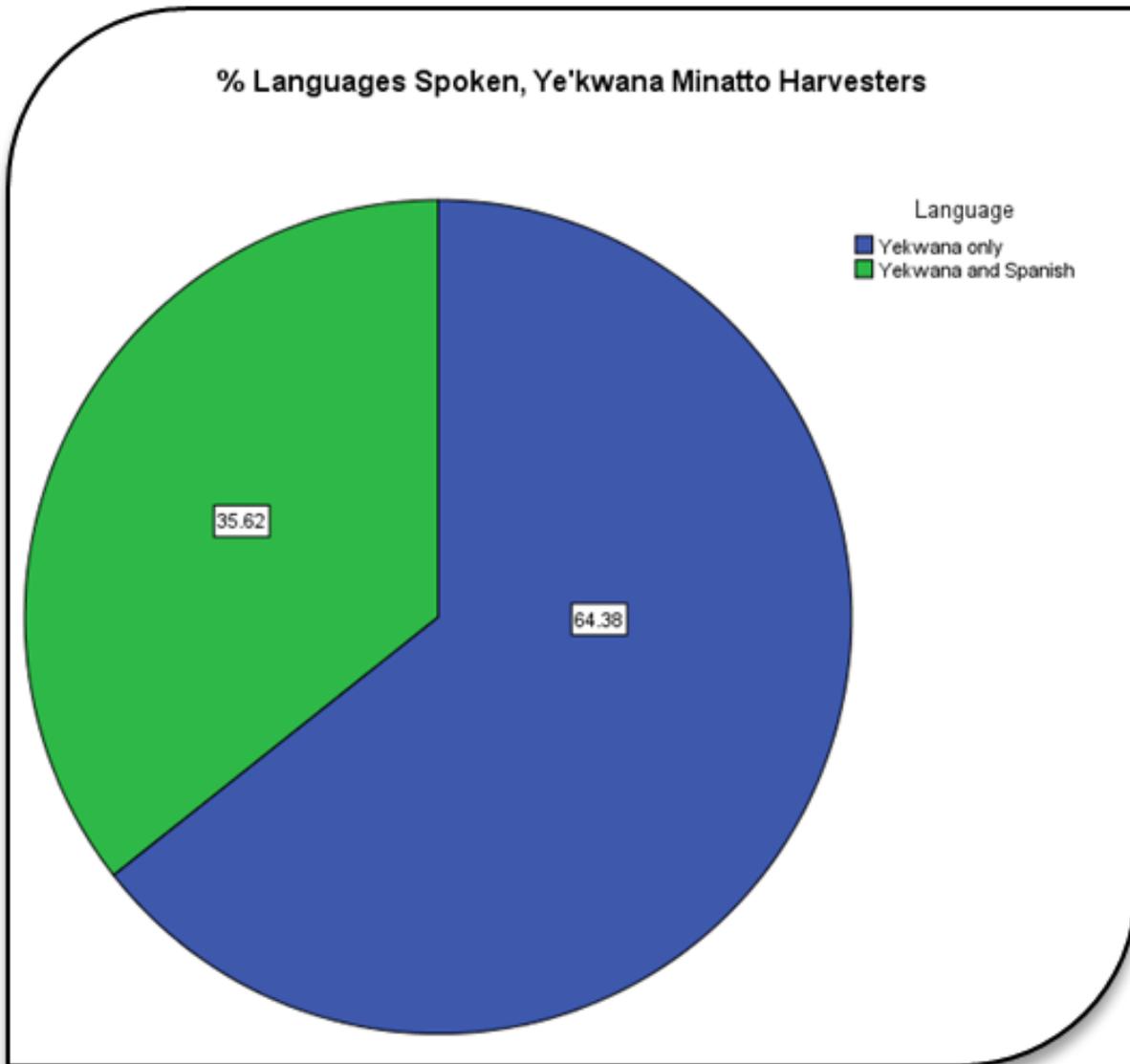


Figure 4-8. Percent language spoken by interviewed participants.

Percentage of Women who speak spanish (1) or only Ye'kwana (0)

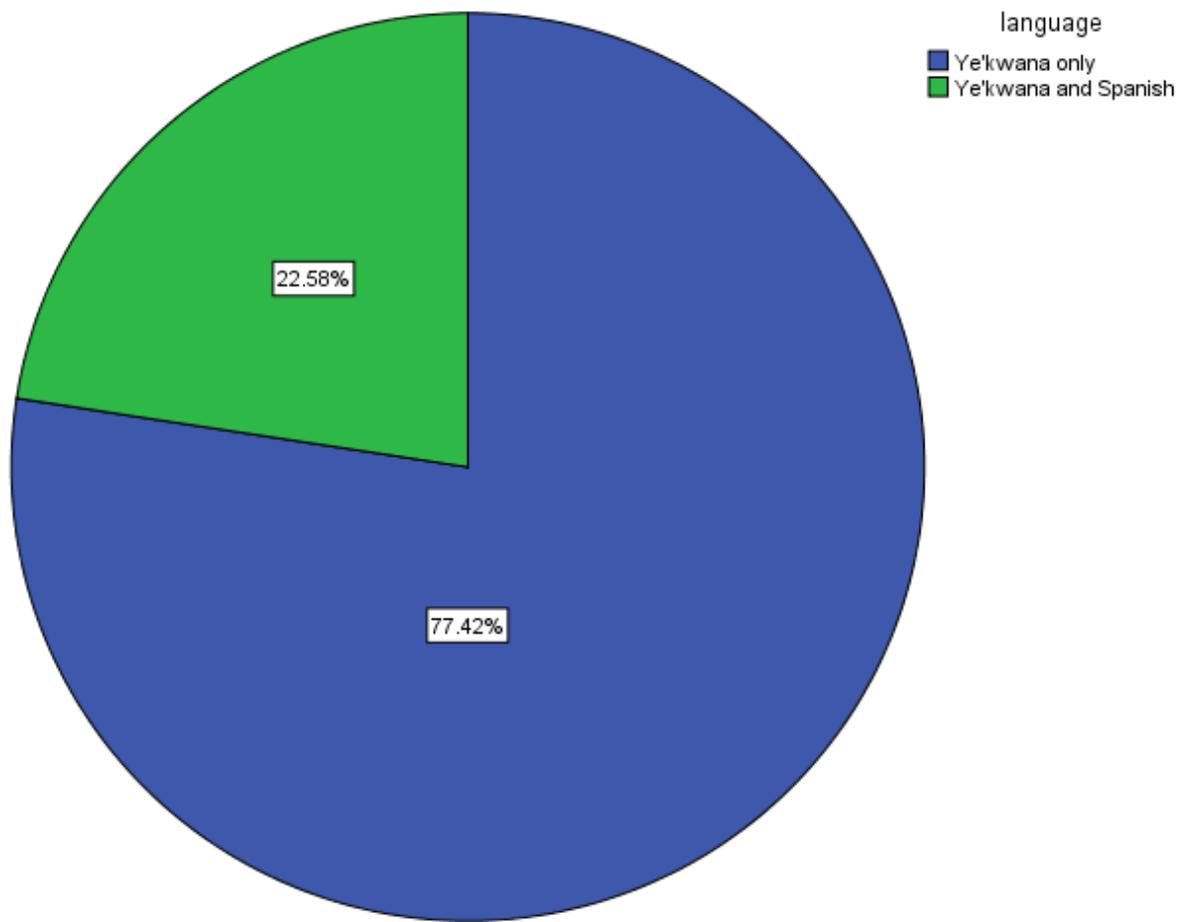


Figure 4-9. Percent language spoken by women interviewed participants

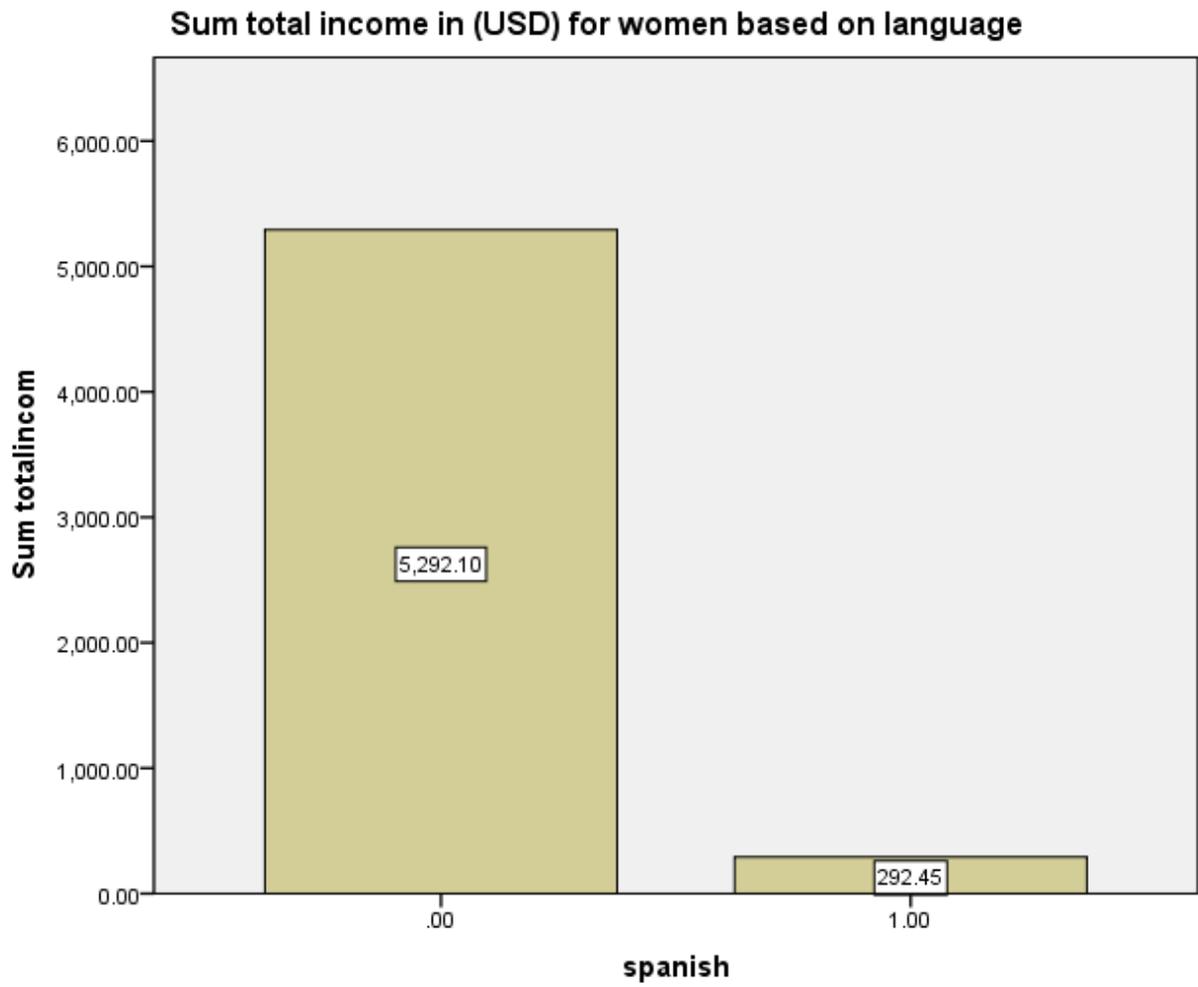


Figure 4-10. Sum total income earned (USD) for women based on language.

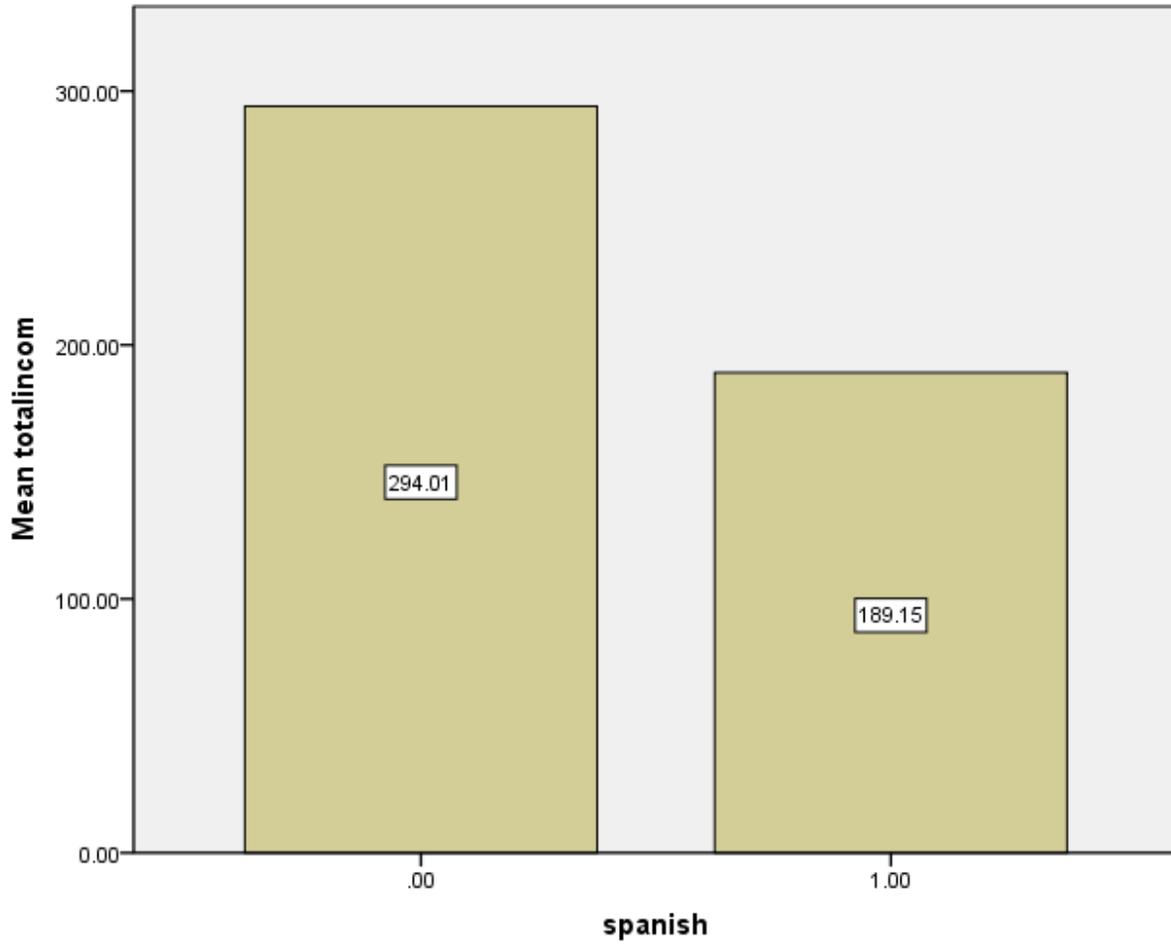


Figure 4-11. Mean total income earned (USD) for women based on language, including cooperative representative earned income.

Table 4-1. Descriptive Statistics of Ages of Medewa Cooperative Members

		Statistic	Std. Error
Age	Mean	39.9722	2.28747
	5% Trimmed Mean	39.0864	
	Median	37.0000	
	Variance	188.371	
	Std. Deviation	13.72482	
	Minimum	19.00	
	Maximum	80.00	
	Range	61.00	
	Interquartile Range	18.75	
	Skewness	1.018	.393
	Kurtosis	.942	.768

Table 4-2. Quantities of baskets sold compared to age of Medewa harvesters for 2009 season

Age	Sum	Percentage
<20	0	0
20-30	0	0
31-40	4	11.11111111
41-50	24	66.66666667
51-60	8	22.22222222
61-70	0	0
71-80	0	0
Total	36	100

Table 4-3. Medewa Gross Income earned in 2009 & 2011 compared with age

Age	Sum	Percentage
<20	78	1.39
20-30	551.45	9.80
31-40	1664	29.58
41-50	1881.5	33.45
51-60	808.8	14.38
61-70	531	9.44
71-80	109.8	1.95
Total	5624.55	100

## CHAPTER 5 SUSTAINABLE RESOURCE RULES

### **General Findings**

The community of Shiwitinña and Medewa cooperative developed a set of guidelines to provide for a future sustainable harvest of minñatö use and commercialization. This marks a transition from migratory harvesting methods to community forest management. In practice, these guidelines are not followed precisely. This section will explore how harvesting methods and new adaptations influence harvesting and production.

### **Ancestral Harvesting Methods**

From interviews, the local harvesters explained their ancestral lifestyles and techniques in this way; they harvest as they move, do not take every root from the plant and after a day of hard work they eat and sleep together in a house they make, named the *Churuata* (ÖttÖ) (Figure 4-2). After settling in Shiwitinña, they were not migrating as often as before and therefore harvested more frequently near their established communities. At the turn of the 21<sup>st</sup> century residents noticed that they had to travel farther away from the community to find minñatö. Accordingly, each community responded and adapted to these changes differently.

### **Conservation History**

The village of Boca De Nichare and the cooperative Kanwasumi responded to minñatö scarcity by coordinating with Earthbound to analyze the “impact of harvesting on the aerial roots” based on “common” harvesting methods (Pomeroy 2006). In 2006, Boca de Nichare created community plots that were chosen to be harvested at different intervals in one growing season to assess how harvesting affects the growth of minñatö

roots<sup>1</sup>. Initial results revealed that “aerial root development could be explained by a linear combination of harvesting practice (frequency), diameter, tree height, number of trees, and tree species” (Pomeroy 2006). The only statistically significant variable was tree diameter. Additionally, harvesting practice, the primary independent variable, resulted in a non-significant addition of .08 aerial roots. Pomeroy’s work with Kanwasumi concluded that “based upon common practices, the community has been able to manage their natural resources” (Pomeroy 2006).

Knab-Vispo (2003) discovered that tree diameter is a considerable factor in explaining *Heteropsis* spp. density. Density is an important factor in determining which minñatö is suitable for harvesting. Interviews in 2010 reported that very small, immature roots are not ideal for basket weaving; they need more time to thicken before they are processed. Knab-Vispo (2003) explored the variables that could explain *Heteropsis* spp. density. They used linear regression to evaluate the “effects of soil and structural characteristics as well as flooding on density of *Heteropsis* spp.” (Knab-Vispo 2003). Their independent variables included, concentration of exchangeable potassium, depth of fine – root mat (cm), species richness of host trees over 10cm DBH, density of small host species, and maximum flooding depth. That a .05 confidence interval species richness of host species is greater than 10cm DBH was the most statistically significant variable to explain density of minñatö. Both Kanwasumi and Knab-Vispo’s work confirm that larger tree hosts are statistically significant factors in the growth of minñatö. Knab Vispo’s reports that the presence or absence of minñatö does not seem to be modified

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<sup>1</sup> This work was completed by Earthbound and Wendy Townsend. The results are recorded in unpublished documents named Memorias from 2006. This project was conducted with Kanwasumi cooperative.

strongly by Ye'kwana root harvesting techniques. Parasitic moth larvae, a natural harvest control, deform the roots, making it unsuitable for basket weaving and greatly reducing the impact of harvesting (Knab Vispo 2003).

### **Resource Depletion**

Reports of overharvesting are present and increasing in the region. Knab-Vispo (2003) reported that *Heteropsis* spp. found in mature terra firme forests nearby a Ye'kwana village were not as dense as those further away. Overharvesting and fire are cited as possible anthropogenic reasons for this difference in density. Farther south, above the falls in Shiwitinña, weavers report less minñatö abundance surrounding the community than before (Figure 5-4).

To explore the reasons for this scarcity, Earthbound conducted 41 interviews with Medewa participants in 2007<sup>2</sup>. Fifty one percent confirmed that there is less minñatö than before. The mean time to travel and harvest was 1.6 hours. Interviews in 2010 reported the mean time to travel and harvest increased to 2.9 hours, an increase of 1.3 hours. According to interviews, overharvesting is the cause of this increase.

Although growth rate of *Heteropsis* spp. in the region is needed to understand scarcity, my interviews examine equally important aspects: common practices and spatial distributions of participants' harvesting practices. This will help integrate ecological observations with reported use in the region and better understand harvesting techniques and their influences.

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<sup>2</sup> These interviews were conducted in a group setting by Wend Townsend in 2007 in Shiwitinna.

## Resource Rules

After 2002, Shiwitinña developed new conservation strategies. They established three primary community resource goals: control of the harvest of minñatö for home building, control of the harvest of minñatö for basket production and management of slash and burn agricultural plots.<sup>3</sup> Previously minñatö growth sites were communally managed, but after 2002 they were separated into maternal family divisions. In order to control basket production, they encourage each weaver to harvest only every three years at their family plots. The *Cacique*, the name for a tribal chief, explained that they integrated *criollo* knowledge with their own to come up with this decision. The remaining parts of this chapter will explore weavers' reports (2010) of where they harvest, how they harvest, how much minñatö is available for harvest, how frequently they harvest and how many years it takes to develop.

### Where and When Do They Harvest

Sixty one percent of weavers interviewed harvest in family plots. These family plots are not uniform; their size depends on family status within the community. Roughly 14% reported that they harvest around their *conucos* near the community. The other 25% reported various responses: simply harvesting alongside nearby *conucos*, in higher altitudes, where there is an abundance of minñatö and far away (Figure 5-1). Many do not travel to their assigned plots to harvest due to lack of time. Instead, they harvest nearby the community sometimes to the detriment of the plant. During interviews, weavers reported how often they harvest at their family plots and how often they harvest

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<sup>3</sup> Slash and burn plots are located adjacent to minñatö harvesting sites.

at sites closer to the community. Results indicated that they harvest more frequently in areas near the community.

### **Common Practices: Minñatö Harvesting Qualities**

During interviews, I inquired how they chose which minñatö roots to harvest. They reported that they only take those which are hard enough, old enough and have the right color (Figure 5-2). Table 5-1 expressed all of their responses grouped into themes. The most common responses are themed sustainable management practices. They include species abundance, distance from community and time to harvest; this theme accounted for 54% of the population. The second most important factor was the appearance, i.e. quality for basket weaving, which include color of the root (yellow or green), strength, thickness of vine and whether or not there were notches on the roots. The people echoed Knab Vispo's (2003) findings that these notches make roots unsuitable for basket weaving, thus providing a natural control for the harvest. In fact, 28% reported this factor as important. Additionally, 13% of the population cited maturation of the root as an important factor. Further, they explained how many could be taken from each plant. Answers varied, but all agreed that depleting the entire root structure would result in the death of the plant. They reported that you can take 2 from 5, or 2 from 3, but only if the plant is ready.

The *Cacique* of the village explained how they harvest in this way: when there is a lot of minñatö to begin with they can harvest there. They harvest them where the roots fall into the ground. If there is a lot of minñatö, one can take 4 or 5 from each plant. If there are not many, one can take only 1 or 2. If there is one left, a waiting period of a year is needed before returning to harvest. According to the *Cacique*, the plant needs at least 5 roots to survive and when the tree is dead all roots can be harvested.

Participant observation confirmed that Ye'kwana harvesters do not take all minñatö roots of the plant. Yet, interviews indicate that some plots are over harvested.

**Harvesting Trip.** On October 22, 2010, 17 women in the Medewa cooperative traveled to the *Cacique's* family land to harvest minñatö. This land contains between 75 and 150 hectares of forest suitable for minñatö harvest. They arrived by boat and swiftly walked up a large hill, passing a very large *conuco* cleared for growing food in higher elevations. The women separated into approximately 5 groups and fanned out into different regions of the forest; each covered ~15 hectares of land in elevations between 400 and 500 meters and harvested around 5 hours with little rest. They traveled very swiftly and communicated over long distances with a series of hoots. They knew the forest without the modern benefits of maps or GPS units and very easily navigated through an area which would confound an outsider immediately.

Whilst harvesting, I witnessed a variety of decisions made by weavers in the field. The majority of time only half of the minñatö root structure was removed. Yet, several times I could only visibly see one root left attached to the ground. Although, literature suggests that the roots can survive after a tree has fallen, the Ye'kwana will harvest all the minñatö from the host. In fact during this journey, one tree was fallen and every woman in my group harvested every last minñatö from the tree.

### **How Much Minñatö Is Located at Harvesting Plots?**

Weavers used their previously drawn map of harvesting plots to locate harvesting locations in addition to answering questions on minñatö abundance. They reported on a likert scale from 1 to 5 how as to how much minñatö is located on their plots (relative abundance). For those who had trouble understanding the likert scale via numbers, smiley faces were used. However, this alternative was not quite successful. In the end,

each weaver responded in these four ways: they either reported there was not enough (1), enough (3), more than enough (4) or a great abundance (5). They were asked the abundance each type of minñatö at their plots. Tukatojo, used to weave the baskets, was the most commonly referenced type. More detailed information can be found in Figure 5-3.

Thirty two weavers reported how much tukatojo was available in their plots. Forty seven percent of the population reported that there was just enough (3). Twenty eight percent reported that there was a great abundance (5). In total 88% indicated that there was enough or more than enough tukatojo in their family plots. Only 13% indicated that there was not enough tukatojo to harvest.

Figure 4-4 uses mode to report the distance traveled to harvesting plots of all three types of minñatö and how that relates to abundance of the resource. Distance/time reported by weavers includes time travelling by canoe without and with motor and time traveled walking, in minutes. Our general findings support the literature that shows the over-harvesting will occur close to the community and more of the resource will survive farther away (Knab-Vispo 2003). Weavers reported 17 plots reserved for harvesting. One of which includes 3 total plots, owned by one family; in total, weavers harvest in 19 separate plots

Ten plots, 52%, are in areas greater than 5 hours away from Shiwitinña. In these plots, weavers reported mode minñatö abundance between 3 and 5 on the likert scale, representing general abundance. Nine plots, 48% are located within 5 hours from the community; they do not have enough minñatö (1). This report adds to the evidence that overharvesting occurs nearest to a community. In my research, time was the most

considerable factor as harvesters refer to distance in this way; their perceived distance, in time, affects where they choose to harvest. Figure 4-5 maps these regions for clearer interpretation. Although approximately 50% of the plots lack enough minñatö, this figure is a bit misleading. Many of those plots are no longer harvested. Weavers explained they did not understand how greatly they were affected throughout generations of harvesting. They reported that 87% of the plots they do currently harvest still contain an abundance of minñatö.

These plots are mostly family plots, which they have divided for better management. Those plots with little minñatö were explained by two major themes, theft and over harvesting. Figure 5-5 shows one region in red where theft has left a family without minñatö. This family explained that the last time they went to harvest it was all gone and so therefore they had to travel with Medewa to harvest at the *Cacique's* property, which has a great deal of minñatö and hadn't been harvested for three years. The president of the community then later explained that the stolen plot is on a major traveling route and that is why it was stolen. Another plot (marked in blue) in Figure 5-5, lacked sufficient minñatö because their family explained that they had too many people harvesting in their plot. As this case shows, the number of harvesters the lower the abundance of minñatö.

### **Harvesting Frequency**

Weavers also explained how harvesting frequency affects their plots. Their desire to conserve their resource for basket weaving has influenced their decisions about how frequent they choose to harvest. Pomeroy (2006), reports that frequency of harvest does not explain aerial root growth. Nonetheless, weavers in this community do engage in management based on harvesting frequency. One family reported that they wait one

year to go back to their plot so that it may grow back. Furthermore, following Earthbound's visit in 2007, the cooperative decided not to harvest in the largest plot of minñatö more than once every three years.

Although weavers expressed interest in conserving minñatö when asked how often they harvest the most common answer was once a year (50% of the population), with the second most common answer being twice year (Figure 5-6). Very few report they only harvest once every three years. This could be partially explained by the fact that they were answering how often they harvest and were not location specific with all their answers. Additionally, weavers harvest less frequently in plots farther from the community and more frequently in nearby plots.

### **Root Development**

Hoffman (1997) discovered that minñatö takes on average 60 years to develop from a seed. Interviews inquired as to how long weavers believe it takes for the roots to develop. Roughly 80% of the weavers reported that it takes 3 years for the root to develop (Figure 5-7). Although, no growth rates of minñatö have been recorded in the upper Caura, the *Cacique* explained that how much it can grow depends on the season; he observed that it grows more quickly during the rainy season.

There is a gap between how often they harvest and how long it takes to develop. Twenty percent think minñatö takes less than 3 years to grow. These weavers represent the lower and higher end of the age spectrum, ages 28, 32 and 60. Most middle aged harvesters, who are the greatest producers, report the roots take 3 years to develop. The majority reported that they harvest in their plots once a year; they also reported that it takes 3 years for them to grow. This may be accounted for by the fact that they do not

harvest in the same spot they did previously, but it still begs the question, is this gap the cause of their over-harvesting?

Where do they harvest Minnato? (Percentage)

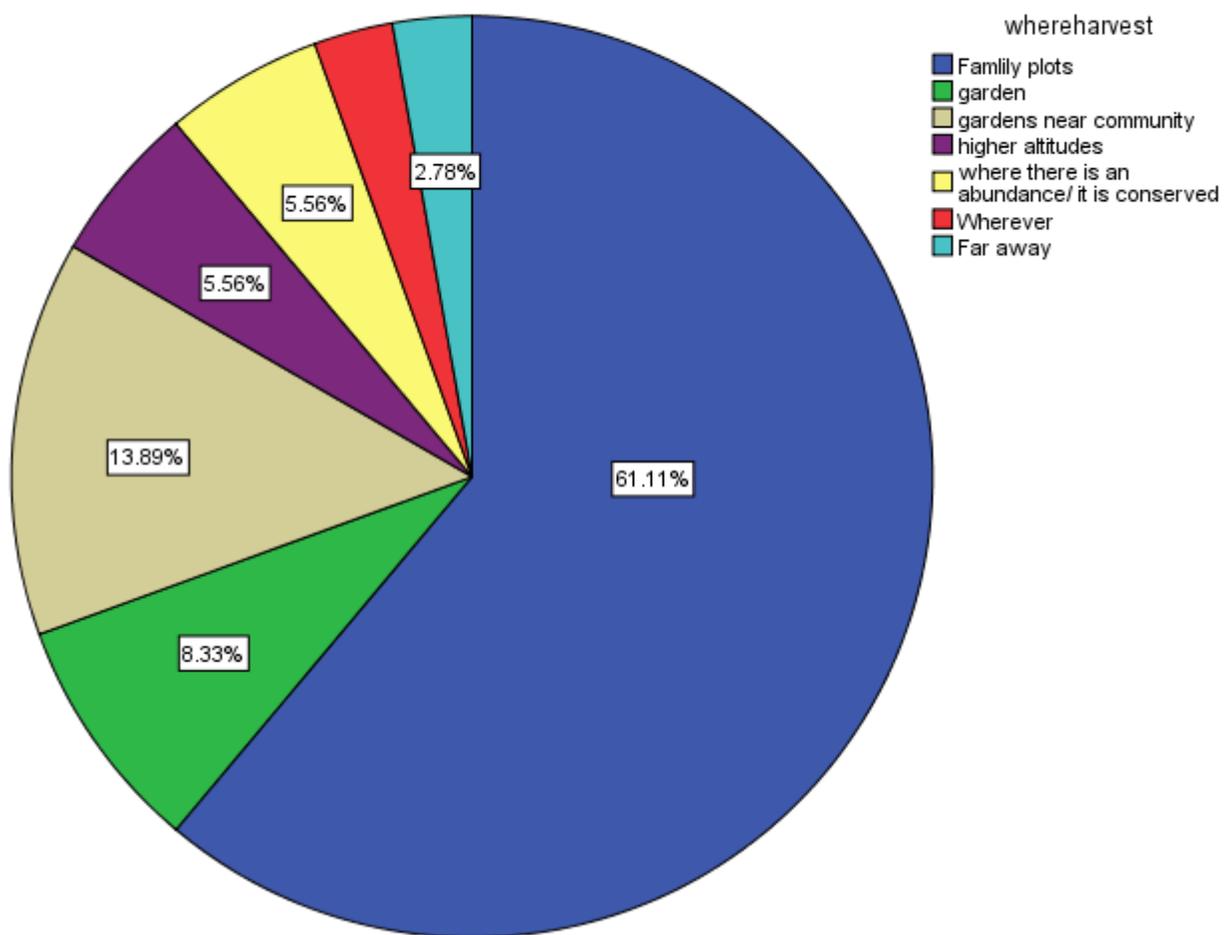


Figure 5-1. Harvest locations.



Figure 5-2. Good (left) vs. Bad (right) minñatö for harvesting. Photo taken October 17, 2010 at Shiwitinña (Photo courtesy of Erica Carlsson).

**Relative abundance of Minñatö (Likert scale (1-5))**

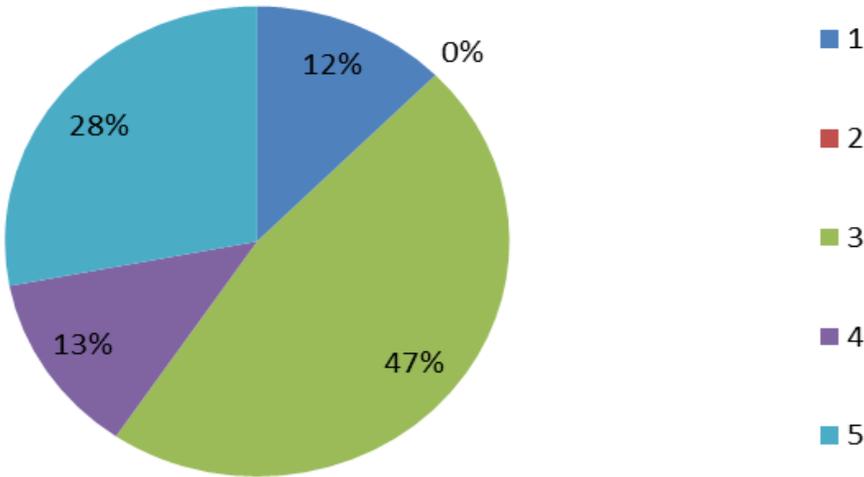


Figure 5-3. Relative Abundance of minñatö (Likert scale (1-5))

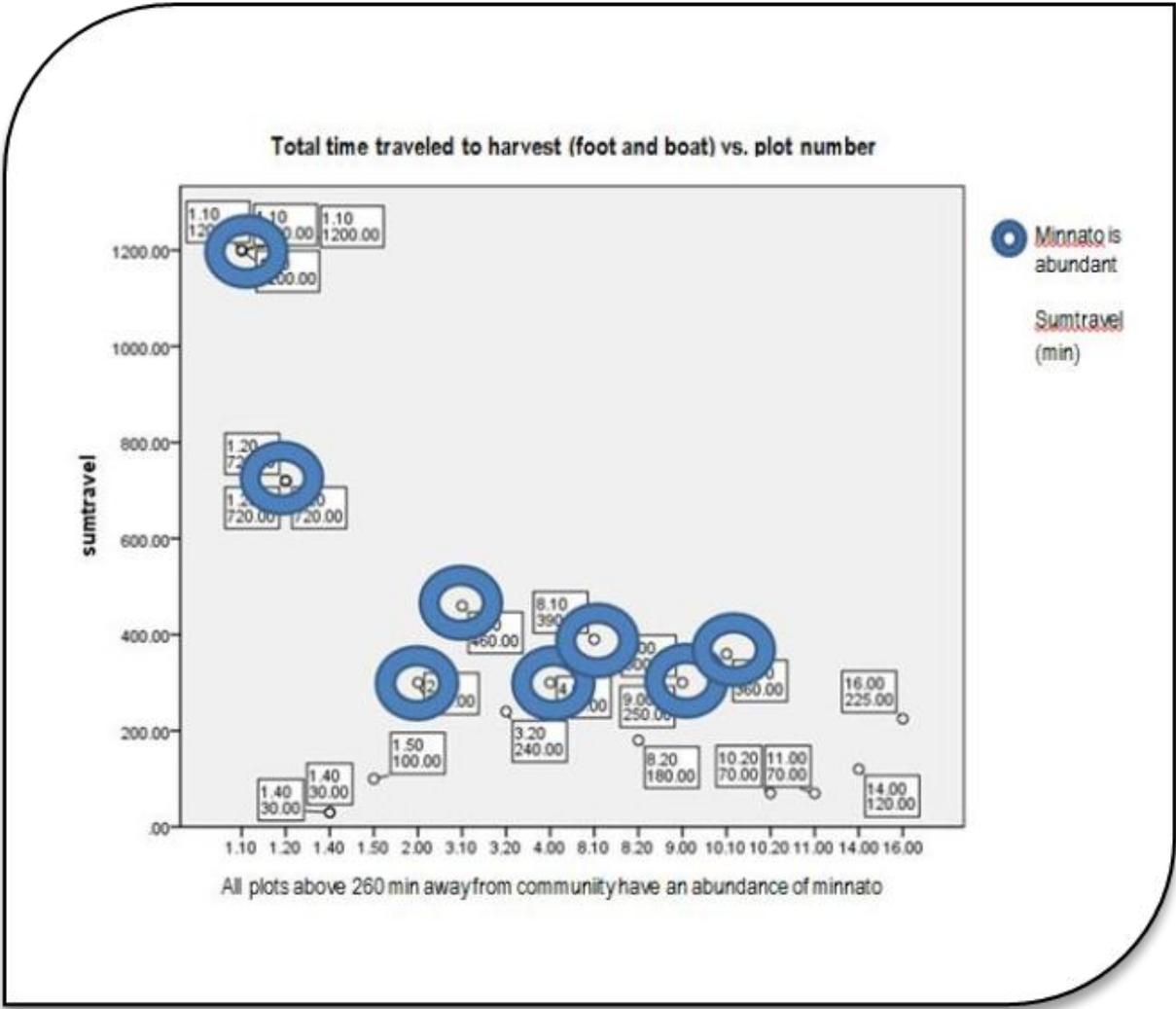


Figure 5-4. Distance/Time traveled vs. Reported Abundance

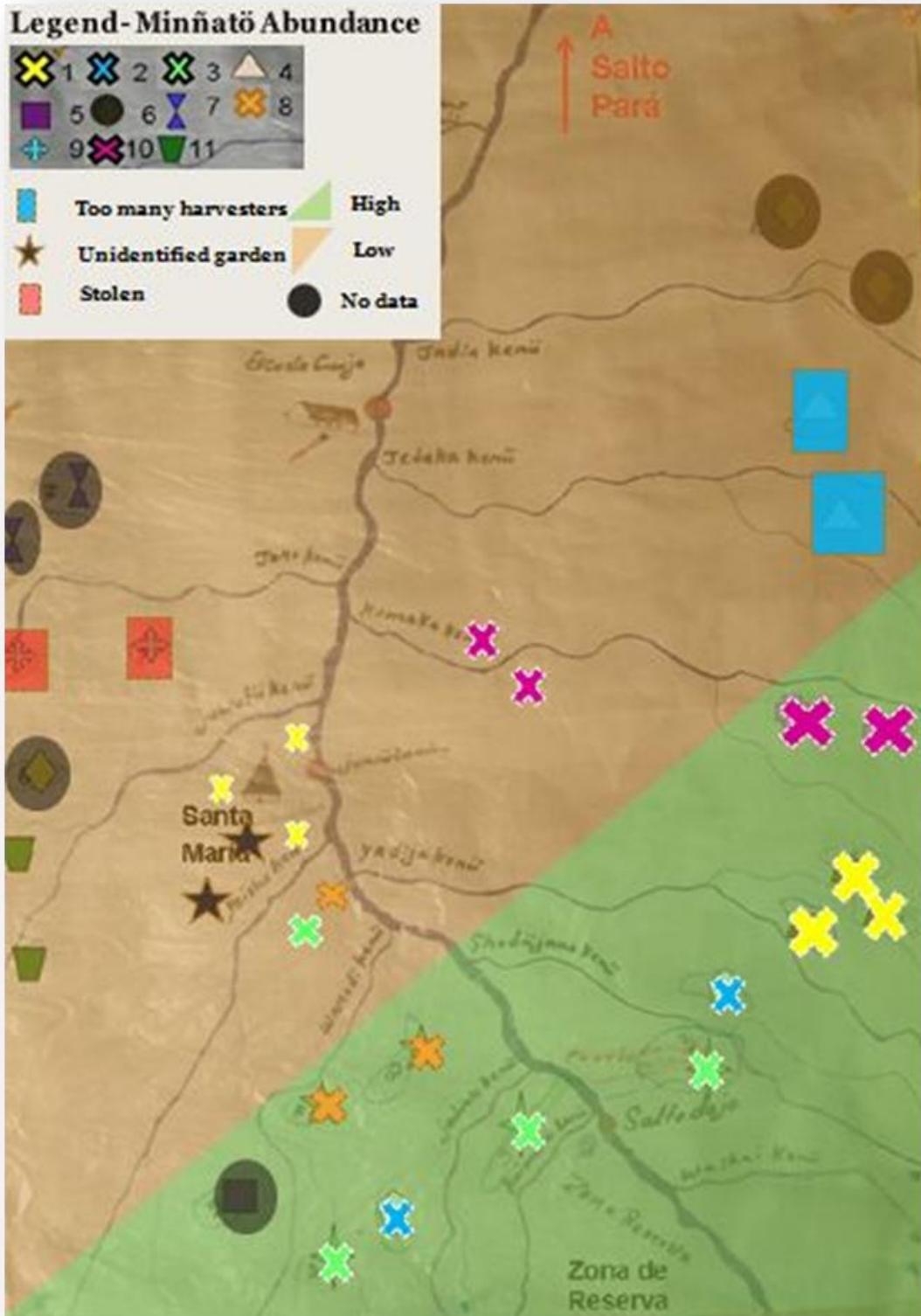


Figure 5-5. Map of harvesting plots and relative abundance of minñatö. For preliminary map permission was granted for use by Wendy Townsend of Earthbound.

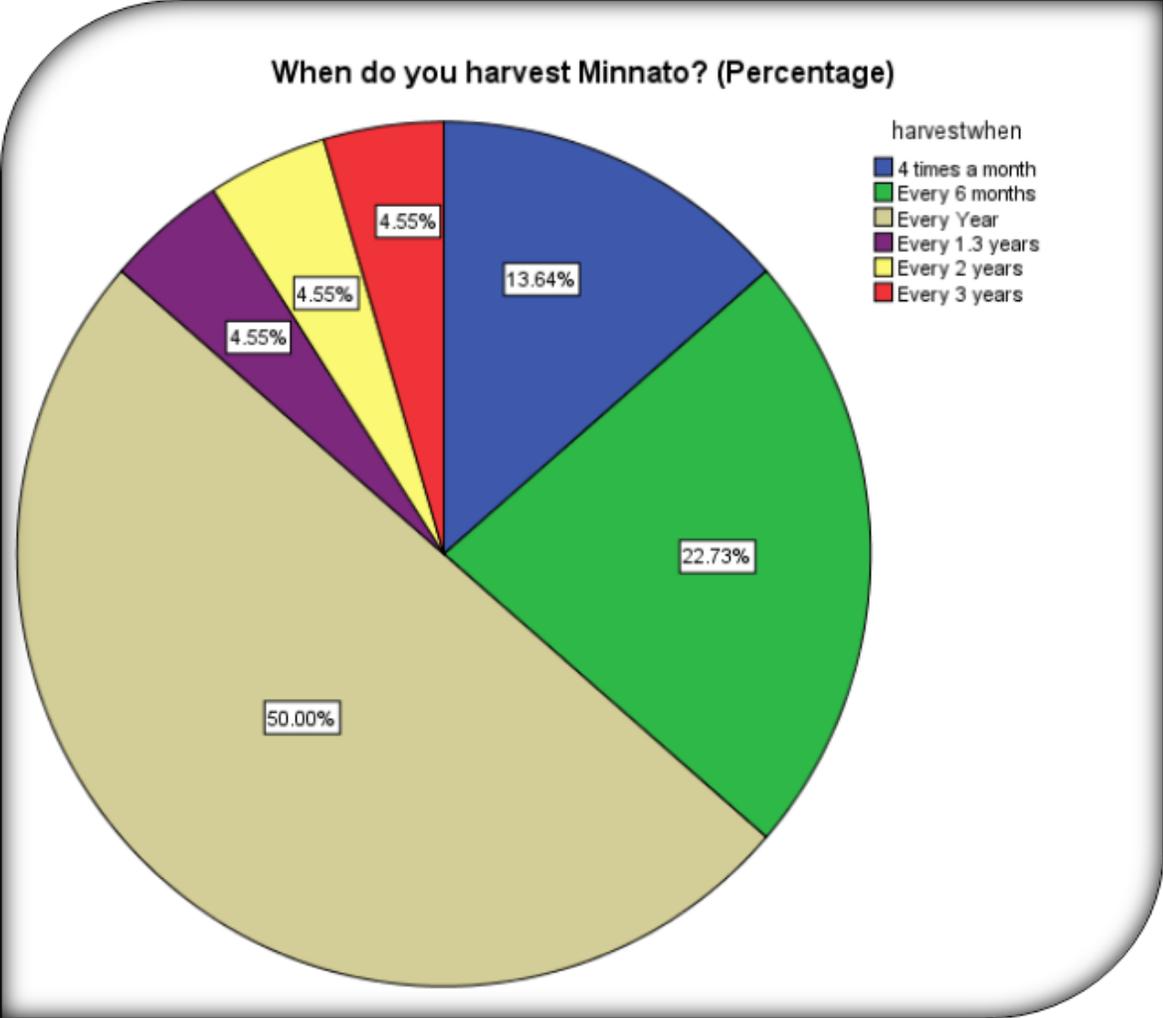


Figure 5-6. Harvest frequency.

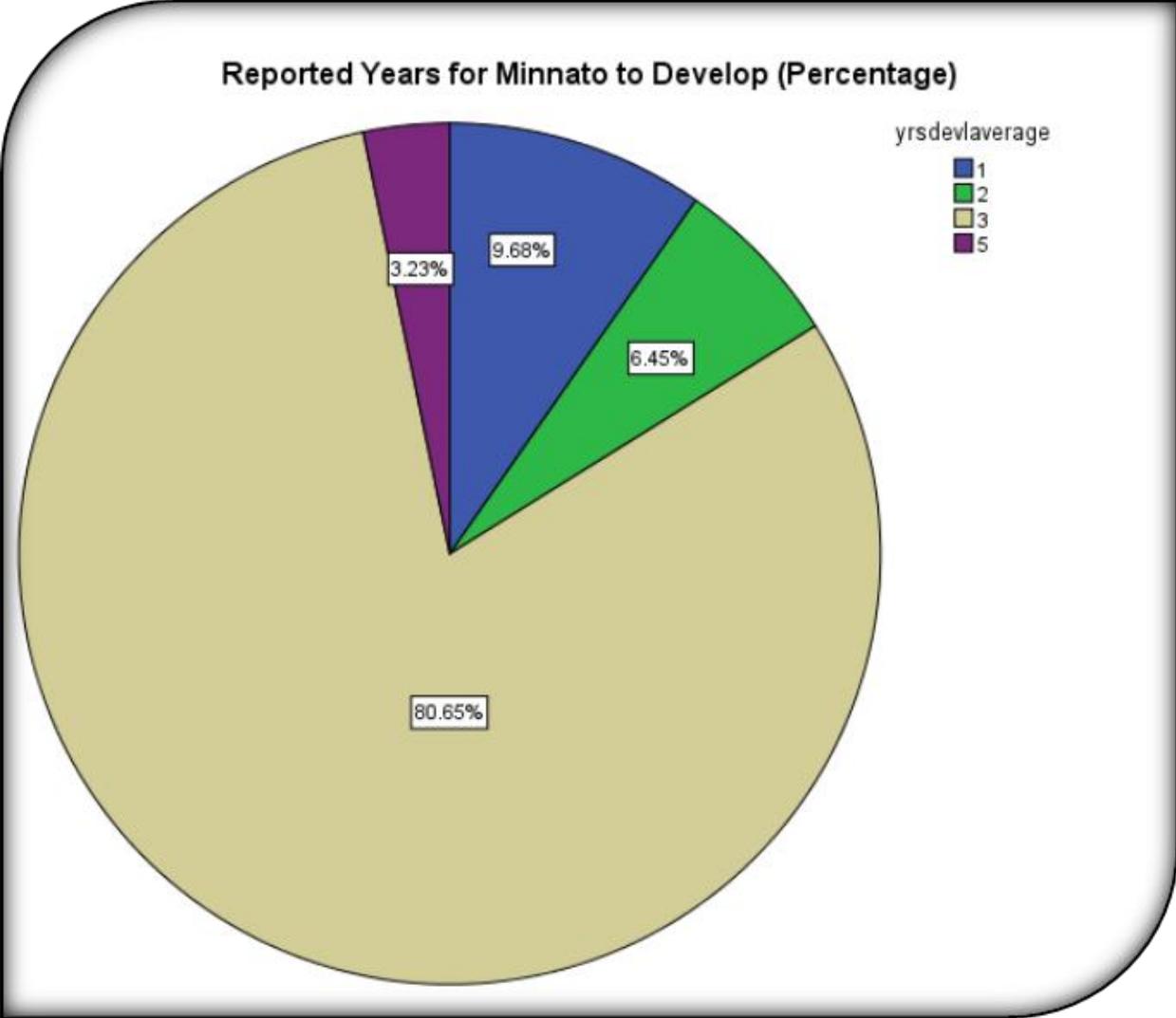


Figure 5-7. Reported years for root development for harvest.

Table 5-1. How do you choose what to harvest?

Description	Frequency	Percentage
Sustainable Management (abundance, distance and time)	21	54%
Appearance (color, how hard, no bulbs on root)	11	28%
Time- wait until ready or hard	5	13%
Other	2	5%

n=39

## CHAPTER 6 MARKETING IMPACT

### **General Findings**

One of the primary approaches to “achieving pro-poor growth” is “by increasing demands for assets with which the poor are endowed” (Marshall et al. 2006:12). Earthbound works to decrease poverty in Ye'kwana communities through arbitrage. Pomeroy (2006), uncovered that this strategy was useful within Venezuela; the farther away the baskets were sold from the point of purchase, the more income was earned. In 2006, the Venezuelan tourism market garnered 0.06 US \$ per “cm tall” as opposed to the YEBP's average of 0.19 US \$ per 'cm tall". This is an extreme improvement, which tripled the producer's individual profit.

Additionally, in 2006, new international markets, such as the Sundance catalog and Santa Fe International Folk Art Market (SFIFM) amplified demand, allowing weavers to raise their prices. In fact, increased demand for Ye'kwana baskets from new private buyers and museum curators in Venezuela since 2009 has increased, doubling the weaver's total profit from years previous (Table 6-1). Among other factors, these shifts in the market influenced both harvesting of minñatö and production of baskets. This chapter will uncover these influences.

### **History: Pricing and Costs**

Pricing the baskets has been a multifaceted yet simple process. Customarily, cooperative members price the baskets together and collate a list to bring to the SFIFM. First, they measure the basket's size. Size (cm tall) is measured first across the mouth of the basket, along the side and then down to the middle part of the bottom of the basket (Figure 6-1). Afterward, they assign the baskets a quality ranking. Two different

weaves of baskets are ranked: two point and one point. Two point baskets are most commonly weaved as they use less minñatö; their quality is ranked from highest to lowest (1+ to 4) (Table 6-2). In contrast, one point baskets are finer and most often received the highest quality rating, unless the basket was poorly designed. Based on the year, each quality is assigned a dollar amount per centimeter tall (Table 6-2). The “cm tall” is then multiplied by the price assigned to the quality ranking to determine the final price.

### **Production and Transportation Costs**

Although the weavers did not pay for the weaving and dying materials used, they did incur costs for producing the baskets. These include labor, transportation, materials and food. In this example, costs are calculated based on transporting three hundred, 28 cm tall baskets from Shiwitinña to Ciudad Bolivar.

**Labor Costs.** Labor activities include: harvesting minñatö and kiidayu, processing and dying minñatö and weaving the basket. The only monetary cost incurred during this part of production is the income spent on gasoline to travel to harvest (Table 6-5). Yet, there is also that matter of the labor hours... worked to produce these baskets... Between 2002 and 2010 a difference of 5 hours to the total labor hours<sup>1</sup> was added, totaling 51 work hours. This change is primarily due to the fact that minñatö reserves are much farther away to access than each year previous since 2001.

Of all these activities, weaving was by far the lengthiest activity reported, totaling 30 hours of work. Although, it is important to note weaving is not usually completed in one

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<sup>1</sup> Although some women collected more than the material needed to weave a 28cm basket in 2010 Medewa harvesting trip, not all did. Additionally, the majority of the lot harvested minñatö in 2010 at this harvesting location. Therefore I chose to use this figure for time traveled to harvest, because it adequately represents the distance that one may travel to get only enough material to harvest one basket

sitting. Other economic activities such as farming occur throughout a given day. However, for most women in the community, weaving is the only source of external income. Therefore, they take the time out of their busy schedules to weave.

**Transportation Costs.** Transporting *Wüwa* baskets from Shiwitinña to Ciudad Bolivar is a complicated and costly task that requires a great deal of coordination and planning. Transportation costs include among others gasoline and oil for outboard motors and arranging for Sanema porters to carry the bags of baskets and barrels of gasoline over Para falls (Table 6-4). The first, but separate transportation cost is the amount spent on gasoline to harvest the minñatö (Table 6-5). In 2002 these costs totaled 246 US \$ for 300 baskets or 0.82 US \$ for one 28cm basket. These prices were high; consequentially, starting in 2005, all cooperatives selling to Earthbound worked together to transport the baskets to the U.S. via Ciudad Bolivar (Figure 6-2). Without this cooperation, the trip down river from Shiwitinña to Maripa can take up to 7 days to arrive and 11 to return and costs were split between communities. In this model, weavers from above the falls were expected to transport the baskets to Boca De Nichare where Kanwasumi would pay .05 US \$ more per cm them and ship the baskets to the U.S.

Although this worked for a few years, eventually Medewa felt they did not benefit as much financially as they would like. Therefore, in 2010, the community of Shiwitinña started an independent relationship separate from the other communities. Subsequently, Medewa increased their prices from 0.24 US \$ to an average of 0.29 US \$ per basket and incurred their own shipping costs. These costs more than doubled since shipping

began in 2002<sup>2</sup>. Other costs include packing costs and food costs for those transporting the goods. Overall, total production costs increased 22% from 2002 to 2010 (Table 6-3).

### **Influences**

Several factors influence the harvesting of minñatö and production of baskets. First I will discuss demand as an influence on production. Then I will discuss how profit and time influence harvesting. Lastly, I will explain how gold is threatening this project and what influence it has on the project's sustainability.

### **Demand**

In 2006, the YEBP was accepted to the prestigious Santa Fe International Folk Art Market. The mission of this entrepreneurial 501 (c) 3 nonprofit organization is to "provide a venue for master traditional artists to display, demonstrate and sell their work." SFIFM empowers over 180 master artists yearly, from over 50 countries, to share their art and improve their livelihood. Participation in the event builds demand and provides a secure market for Ye'kwana basketry. Market sales yield enough money to cover overhead, pay basket weavers upfront and make a small profit; these acts as a rotating fund to subsequently purchase new baskets.

Throughout the years types of baskets purchased by consumers have been pretty consistent; they like tight designs and smaller baskets (less than 100cm). Each year the cooperative leader comes back with a more refined list of which baskets sell best. For example, in 2010, Earthbound suggested that no more traditional style to be weaved because they are not selling well. These preferences shape the art of weaving.

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<sup>2</sup>Between 2002 and 2010 total transportation costs from Shiwitinña nearly doubled from 246 US \$ to 450 US \$ for a shipment of 300 baskets to Ciudad Bolivar (Figure 6-4).

Women say they weave because it is a necessity for income generation. In fact, they weave more *Wüwa* baskets for commercialization than for use. That means for those women who sell to the cooperative, the designs and styles woven into the majority of their baskets are influenced by consumer preference<sup>3</sup>. In order to make an income, they will accommodate their styles for commercialization.

Additionally, increased demand for Ye'kwana basketry has increased value. From 2002 to 2010, prices changed little, averaging 0.22 US \$ per cm. All of a sudden new interest in Venezuela increased value. In fact, prices changed twice in the first half of 2012. Asking prices in January of 2012 were an average of 0.44 US \$ per cm. By April, the price jumped to an average of 0.58 US \$ per cm (Table 6-1). This increase more than doubles the revenues gained by basket producers.

### **Distance, Time and Profit**

In 2002 it took 45.5 hours to finish a 28cm basket; in 2010 that same basket took 50.5 hours to produce (Table 6-3). This difference is a function of distance. The data from 2010's totaled 9 hours to travel and harvest *minñatö*. In 2002, they only needed to travel 5 hours to travel and harvest *minñatö*. Although 9 hours was recorded in 2010's example, it is not the only time weavers take to harvest. I specifically witnessed one woman returning from a hard day of work in a *conuco* near the village; she removed the last *minñatö* root hanging from a tree along the path without much concern. In this case, it took her a total of 4.5 hours to travel to the site, harvest the *minñatö* and return<sup>4</sup>. The profit earned remained the same, 5.56 US \$ (Table 6-6). Yet, this time the basket took

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<sup>3</sup> The majority of women weavers in *Shiwitinña* sell their baskets.

<sup>4</sup> This figure was made by subtracting the 4.5 hours spent to weed the *conuco*.

only 45.5 hours in total to produce. In other words, the opportunity cost of harvesting father away from the village is the time gained to finish other economic activities. Moreover, the amount of money earned per hours increased to 0.17 US \$ per hour. The less time it takes to harvest and weave, the greater the economic return for the individual basket weaver. This could account for some women who harvest more haphazardly on lands closer to the community, without regard for harvesting less than 50% of the plant's roots.

Although, the economic benefit of harvesting nearer the community is greater than father away, those interviewed expressed great interest in conserving their resources. During an interview with the president of the community, he explained that Shiwitinña has the experience with overharvesting. He clarified that since they are successful at managing their minñatö by assigning familial plots for harvesting that they are responsible to teach other communities to do the same. In this case, overharvest is also a function of conservation. If they continue to harvest close by the community, as history shows they will have to travel even farther to harvest. As it stands, they are already facing critical destruction of minñatö around the community. Therefore, the Ye'kwana are anxious to employ new ways to reduce the costs incurred in harvesting and producing baskets for future generations.

## **Gold**

Traditionally the Ye'kwana treated gold as a precious resource. They say “that [God] put gold underground for Ye'k [w]ana use, but [that] it should be taken with great care and parsimony. People can only extract a little at a time, when they need to buy something, for greed infuriates [God].” (Ramos 2010). Today, Ye'kwana leaders are faced with this greed on a daily basis. Since, 2006, illegal alluvial mining operations

have stripped the soil and poisoned the water of the Caura River Basin. These miners came by way of Brazil, where increased enforcement against encroachment on indigenous lands forced them out of the country and into other nations. In addition, the value of gold jumped from 279 US \$ per ounce in 2000 to 603 US \$ per ounce in 2006, making even the hardest to reach gold in the Guiana shield desirable for mining (Figure 6-3).

Interviews revealed that diseases such as malaria, cancer and whooping cough spread since the miner's arrival in the Caura. Even though fish are their greatest source of protein, they reported that inhabitants below the mining operations won't fish from the river anymore for fear of toxic exposure. They only fish in canyons, which drain from rainfall in the mountains. The Chavez led, Project Caura that started April of 2010, sent thousands of troops to the area to work with the Ye'kwana to stop the illegal mining that disrupts and threatens the Ye'kwana way of life. Although they have been successful at stopping some operations, the mining continues. At times, all of the energy in the region is focused on tackling this issue. For example, during my visit in October, 2010, Playon had been occupied by military and government aid workers that came to give medical care to several Ye'kwana communities nearby, provide government ID cards and assist in the fight against the mining. This increased population near Playon led to environmental destruction. The community of Shiwitinña, who brought around 150 people to Playon, had to cut down the trees above the falls to make temporary dwellings. Whereas before, coconut and orange trees were abundant for harvest in Playon, none were to be found. The streams for which they traditionally bathe were overpopulated and full of a milky film. Additionally, there was not enough food for

everyone; their conucos were far away and there were too many mouths to feed. These reunions are seen as a necessary evil for the Ye'kwana as they wish to integrate into Venezuelan culture and defend their territory.

Interviews also address the fact that there is a huge opportunity cost associated with gold mining. The opportunity cost of one ounce of gold sold in the world market in October 2010<sup>1</sup> is fifty-four, 28 cm, *Wüwa* baskets sold at 24 US \$ a piece at the SFIFM. This represents 112.5 days of labor, not counting transportation costs. In 2010, Kanwasumi weavers suspended weaving. Their president stated that they aren't weaving because they are working to prevent the mining. For example, they are supporting their husband's work against illegal mining and don't have time to weave or they have left to live in Maripa or Ciudad Bolivar. Gold mining influences the decisions of basket producers. It reduces the opportunity for earning income from basket weaving through deforestation, disease and reduction of available work time.

### **Profit Analysis**

There are two parts of profit generation for these cooperatives. First, weavers earn an individual profit when they are paid by cooperative leaders for their baskets (Table 6-6). The second profit is made after operating costs have been paid from the money earned at the SFIFM. In 2011, a total of 310 were sold, grossing 9,895.00 US \$ (Table 6-7). The costs for participation in the fair and transporting the baskets to the United States totaled approximately 7850.57 US \$. Additional costs included, 300 US \$ paid to the cooperative representative for her work at the festival and 600 US \$ given to

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<sup>1</sup> Prices in October averaged 1,300 US \$ per ounce. Source: [http://silver-and-gold-prices.goldprice.org/2010\\_10\\_01\\_archive.html](http://silver-and-gold-prices.goldprice.org/2010_10_01_archive.html)

the cooperative to apply to the rotating fund to buy more baskets. The remaining 1,144.43 US \$ was used to pay debts or purchase more baskets.

Overall return by the business is affected by the way in which baskets are priced for sale at the SFIFM. The YEBP balances the desire to sell all baskets during this three day event and the desire to make a good return on each individual basket. The rule in retail is to price at least 3 times the cost to purchase the baskets. In 2011, Earthbound priced the baskets a bit lower than previous years and consigned the rest that were not sold so that they would not have to ship baskets back to Venezuela. These strategies helped insure the success of their business at the SFIFM.

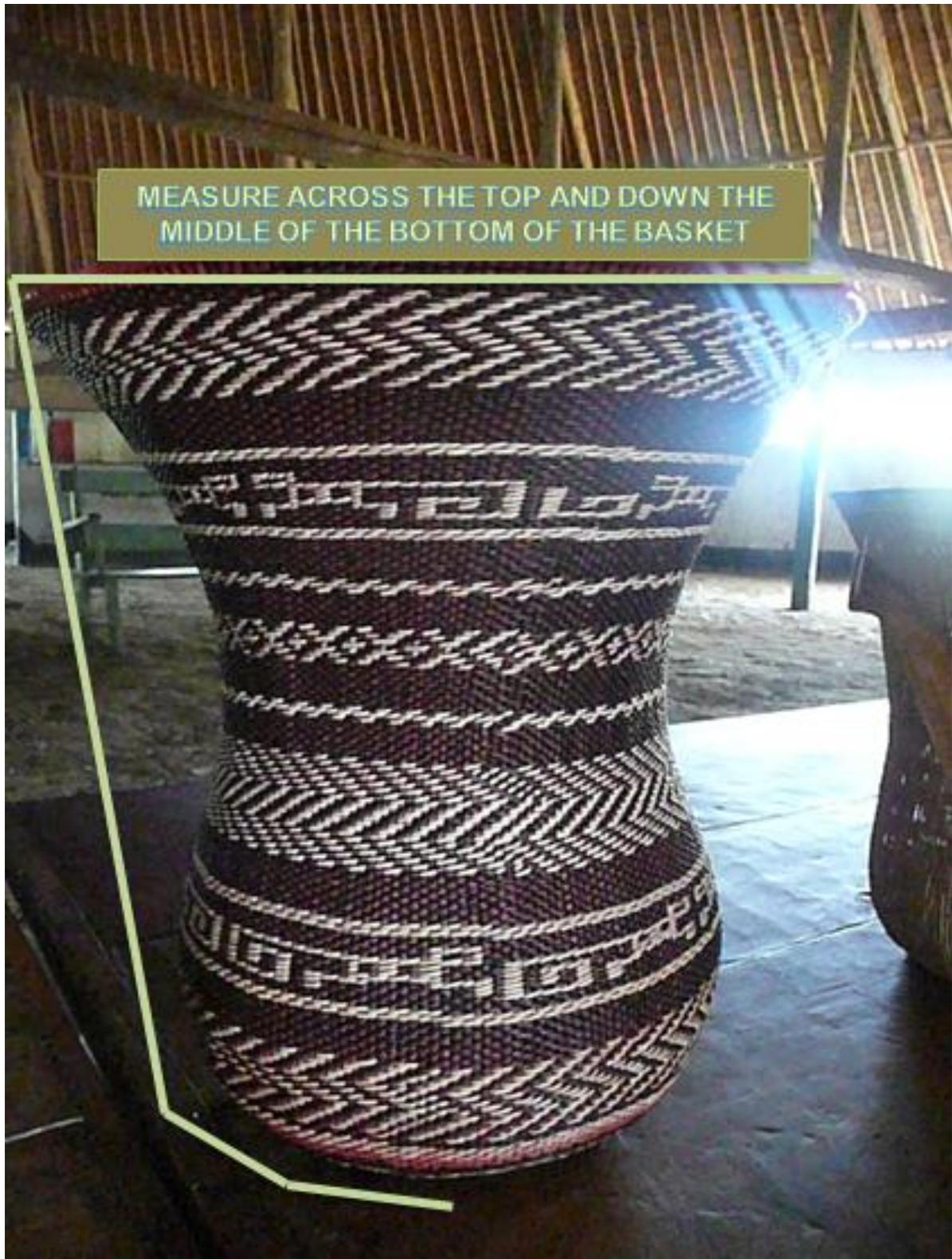
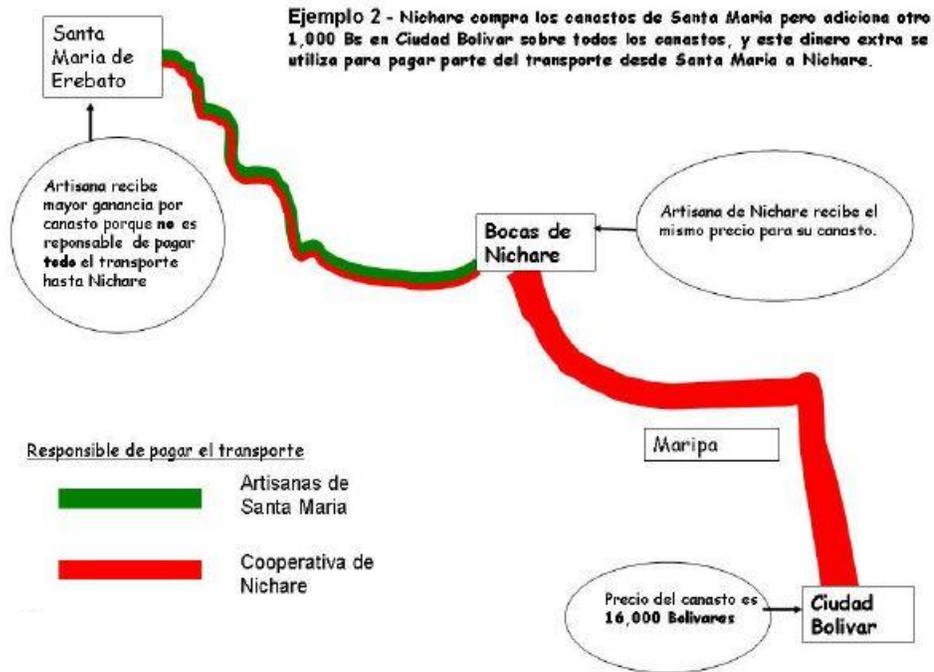


Figure 6-1. Method for measuring the *Wüwa* basket. Photo taken October 20, 2010 in Shiwitinña. (Photo courtesy of Erica Carlsson).

Después de mucho hablar, hicimos varias vueltas y cálculos y los participantes quedaron de acuerdo en usar el **MODELO 2**



Memoria IV Taller de Earthbound

Figure 6-2. Payment model. Permission granted for use by Wendy Townsend of Earthbound.

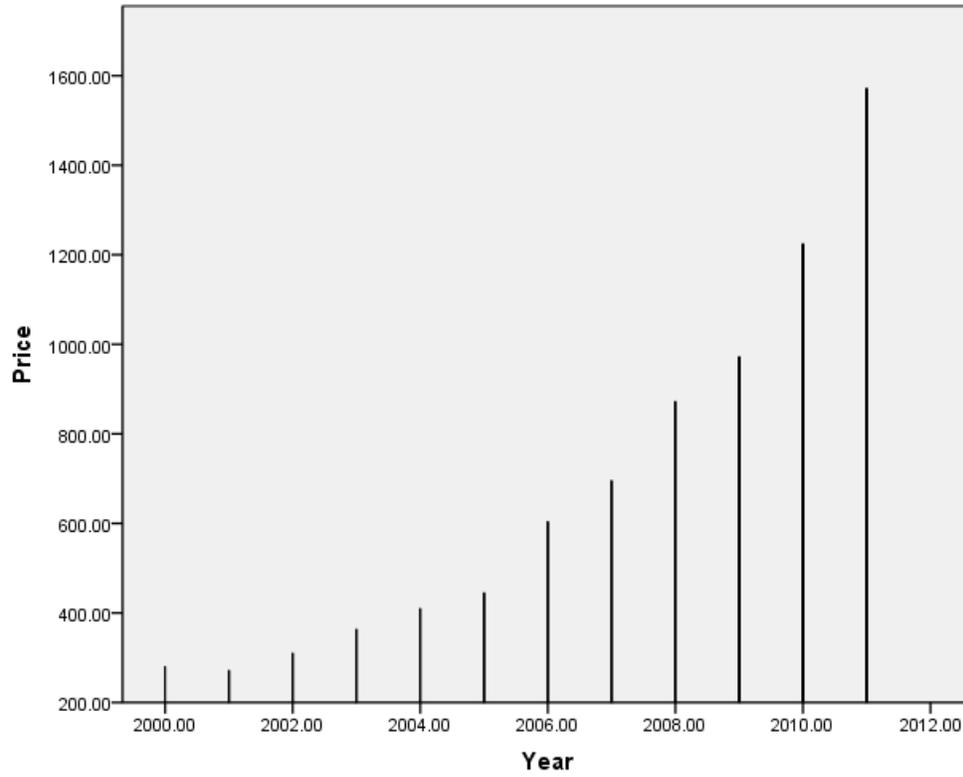


Figure 6-3. Price per ounce of gold in US \$ from 2000-2011. Taken from: [http://www.nma.org/pdf/gold/his\\_gold\\_prices.pdf](http://www.nma.org/pdf/gold/his_gold_prices.pdf)

Table 6-1. Average price (US \$) paid to artisan for baskets

Year	Cooperative	Price per cm US \$	Price per one 28cm basket US \$
12-Apr	kws	0.58	16.24
12-Jan	kws	0.44	12.23
2010	med	0.23	6.44
2005	kws & med	0.20	5.60
2002	kws & med	0.24	6.72

kws: Kanwasumi cooperative; med: Medewa cooperative

Table 6-2. Earthbound basket pricing matrix (2010)

Quality	Price (US \$) per cm	Price (US \$) paid to artisan per one 28cm basket
1+	0.36	10.08
1	0.34	9.52
2	0.24	6.72
3	0.27	7.56
4	0.22	6.16

\*cm x price per cm= basket price US \$ ; price = quality

Table 6-3. Comparison of 2002 and 2010 Labor costs in hours to produce one 28cm *Wüwa* basket.

Materials	2002	2010
Harvesting time (including travel)	5	9
Gather kiidayu for dying	3	3
Process minñatö	5.5	5.5
Dye minñatö	2	3
Weave basket	30	30
Total	45.5	50.5

Table 6-4. Shiwitinña transportation costs (300 baskets) 2002 versus 2010 (US \$)

	2002	2010
RT Santa Maria Maripa Shipping costs (including costs for boat, motorist and oil)	78	134
Maripa to Ciudad Bolivar taxi, bus, excess luggage	25	101
spark plugs	7	36
Porter costs over waterfall	137	179.13
<b>Total</b>	<b>246</b>	<b>450</b>

US \$ Conversion 2002, .00091, US conversion 2010, .00024 taken from El Banco Central De Venezuela at: <http://www.bcv.org.ve/cuadros/2/212a.asp?id=145>

Table 6-5. 2002 Costs per 28cm basket in shipment of 300.

	2002		2010	
Materials	Work hours	Costs US \$	Work hours	Costs US \$
Labor costs	48.5	0.69	50.5	0.83
Transporting baskets 7 days	0.2	0.82	0.2	1.5
Packing Materials	0.04	0.02	0.04	0.03
Food costs in C. Bolívar	null	0.06	null	0.11
<b>Total costs</b>	<b>49</b>	<b>1.59</b>	<b>51</b>	<b>2.5</b>

\*Translated and adopted from unpublished non-profit document (2002), El Playon, Rio Caura, Venezuela, Wendy R. Townsend

Total time for baskets to be transported and shipped (labor) is divided by the number of baskets 300 to get costs

Table 6-6 Price earned per hour for *Wüwa* basket (28cm); pre-shipment rate

<i>Wüwa</i> basket (28cm)	Price earned	Cost	Hours worked	Profit	Price earned per hour
2002	6.62	1.59	49	5.03	0.1
2010	8.06	2.5	51	5.56	0.11
2012	19.32	~2.5	51	16.82	0.33

\*Translated and adopted from unpublished non-profit document (2002), El Playon, Rio Caura, Venezuela, Wendy R. Townsend  
 US Conversion 2002, .00091, us conversion 2010, .00024, 2012 - .00023 (add cost)

taken from El Banco Central De Venezuela at:

<http://www.bcv.org.ve/cuadros/2/212a.asp?id=145>

Table 6-7. 2011 profit analysis from basket sales at Santa Fe Folk Art Market

Income Earned	USD
Gross	<b>9,895.00</b>
<b>Total costs</b>	<b>-8,750.57</b>
<b>Profit</b>	<b>1,144.43</b>
<b>Total costs – US</b>	<b>-7,059.57</b>
~ Amount paid for baskets	-2,700
Cost of booth and fixtures	-500
Earthbound travel to SFIF	-800
Air: Caracas to Santa Fe	-1000
Per diem x 6 days	-326
Hotel(s) X 6 days	-705
Airport shuttle (x3)	-120
Caracas trip to collect baskets	-458.57
Costs of shipping baskets	-450
<b>Total costs – Venezuela</b>	<b>-791</b>
Airfare	-59
Lodging	-52
Excess baggage and taxes	-134
Food	-50
Taxis and buses: Maripa, Caracas & Ciudad Bolívar	-83
Misc. cash	-100
Basket transportation costs: Shiwitinña to Maripa	-313
<b>Other costs</b>	<b>-900</b>
Annual pay for representative	-300
Rotating fund	-600

\*total number purchased by Medewa 310; total minñatö 15,663cm; total sold: 209; consigned: 28

## CHAPTER 7 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

In an effort to reveal the influences on the harvesting of minñatö and the production of baskets for commercialization by the Medewa cooperative of Shiwitinña, Venezuela, I conducted 37 semi-structured interviews with weavers. My key findings reveal a number of compelling influences.

Firstly, age influences both harvesting and production. The most successful harvesters and producers are middle aged. Similar literature around the world reports that the middle aged cohort are the most active non timber forest product, NTFP producers (Egbule 2005, Cocks 2011, Walsh 2011).

Secondly, although the market price for baskets has increased<sup>1</sup>, weavers are willing to sell at a lower price to Medewa because they trade baskets for beads. The literature confirms that "the closer a trade takes place to the informal economy end of the continuum<sup>2</sup>, the more likely it is to be motivated by the desire to satisfy a finite, identified need" (Shanley et al. 2002:304). Trading beads for baskets satiates a valuable finite need, fine materials (beads) that may be made into jewelry for ceremonial events sacred to the Ye'kwana.

Thirdly, outside NGOs have had an impact on harvesting practices and management adaptations. Mainly, after Earthbound's resource management

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<sup>1</sup> Market price has increased due to new markets.

<sup>2</sup> Shanley and Pierce (2002) describe a continuum of motivational factors in informal and formal economies for gathers/producers of NTFPs. In the informal economy, barter or trade is most common. Motivators include satisfactions of needs; regulators are social structures and networks. The formal market economy involves sales to a middle man. The motivators involved in this transaction include maximization of the utility of scarce needs; the regulators are market forces or the state.

workshops<sup>3</sup> conducted in 2007, harvesters reported and were observed to harvest a general ratio of 50% of secondary roots present<sup>4</sup> on any given minñatö plant. They also waited three years before harvesting in the Medewa plot harvested in 2007 at the *Cacique's* land. This is an interesting decision they made that does not reflect precisely the literature's management recommendations, but does adapt criollo knowledge into their own. The *Cacique* explained that they welcome integration, but that they ultimately have the control over their resources. This reflects the Kuyujani Originario program that began 1993 that instills ethnic pride; control and identity back the Ye'kwana through education and land demarcation (Arvelo-Jiménez 2004:41).

These three findings help us to better understand the variety of influences that impact harvesting of minñatö for commercialization. In 2012, Ye'kwana women weavers who sell to the YEBP are most likely to be middle aged, desire beads for ceremonial purposes and influenced by communal resource management decisions that are informed by workshops conducted by NGOs.

Foster (1965) in his theory of limited good explains that one person who benefits more than others financially, in a given community creates an in-balance in the society's structure and so they will not seek out the extra income for fear of taking what rightfully belongs to their neighbor. Other literature shows that an increase in price may actually decrease harvesting because harvesters are mainly looking for resources for a particular goal; once that goal is met, they no longer seek out that money (Shanley et al.

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<sup>3</sup> In 2007, Earthbound conducted resource management training that communicated the need to harvest no more than 50% of the secondary roots of minñatö and the need to modify harvesting frequency and location in order to maintain the survival of minñatö.

<sup>4</sup> Unfortunately, this does not account for other persons harvesting the same plant or how many roots originally grew from the mature flower.

2002:231). These opposing theories make it hard to understand the entire situation. Yet, in the Medewa cooperative, those that seek beads for payment represent about half of the population; the others desire cash to purchase goods. Although paying less for the baskets by cooperative leaders through beads could be perceived as predatory, in this case it is necessary for sustained functionality of the business. If every basket in 2010 was worth what it was in 2012 the cost the cooperative incurred to buy the baskets for resale in the US would more than double, the cooperative would make no profit, be in debt and have no money to buy more baskets. Trading baskets for beads would reduce the total cost incurred by the cooperative to buy baskets and it could reduce the impact on the resource.

Although the picture is clearer, it is important to note that not all outside NGOs or agencies are welcome to work with the Ye'kwana. Historically, the Ye'kwana have had conflicting relations with outside organizations. The knowledge brought into their world through evangelization led to a separation of belief structures (Shamanistic vs. Christian) that resulted in the need for the Kuyujani Originario program (Arvelo-Jiménez 2004:41). While Ye'kwana leaders were once open-minded about outsiders' investigations, after the 1990s, they denied that knowledge acquisition sought by scientists and anthropological researchers improved their quality of life (Arvelo-Jiménez 2004:40). Nonetheless, they did partner with a few NGOs in order to achieve short term goals of economic advancement or health and wellness<sup>5</sup>. In fact, they only allowed my work with the community because of the financial benefit they received from the

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<sup>5</sup> Likewise, ACOANA benefits Ye'kwana communities through malaria prevention education and resources. They also provided a solar powered satellite in Shiwitinna for improved communications via the World Wide Web.

purchasing of baskets by Earthbound and Medewa. One woman said, we will work with you, because Earthbound, who you have come with, buys our baskets and contribute to our wellbeing.

The success of the YEBP as an economically independent project that reinforces ethnic/cultural renewal of basket weaving instead of commodifying indigenous knowledge or art is dependent on a number of factors. Stephen (1991) outlines the qualities of four indigenous craft market in Latin America that resulted in economic development that is self-managed and strengthens local institutions. These qualities included 1) a high degree of control over marketing and distribution as well as income reinvestment into the community 2) “continued community control over significant amounts of land through most of the colonial period” and 3) maintenance of local ritual cycles, cultural identity and strong political relations with outside forces. Additionally, Richards (1997) explains that resilience to outside market pressures was reduced with the marketed item was culturally significant.

Though this project does not have a high amount of control over marketing they do control distribution, they have maintained their lands throughout colonial expansion and maintained their cultural identity. These features suggest that Medewa is poised to be a financial success without eroding their cultural heritage. Kusters et al. (2006) “found that higher livelihood outcomes are associated with lower environmental outcomes and conclude that NTFP trade is not likely to reconcile development and conservation of natural forest[s].” Careful monitoring and management have been the only ways that NTFP producers have conserved their resources. My data indicates that in 2010, the YEBP was yet able to balance the financial and conservation needs of the

project. Yet, their adaptations of harvesting practices that seek an outcome of sustainable management is a model that can be used by other communities seeking to commercialize species of the genus *Heteropsis*. The combination of strong indigenous political power, cultural identity and integration of western science into traditional knowledge structures for resource management has allowed Medewa to increase value of their product, livelihood and adapt creatively to new resource pressures.

At the end of this study, there are four recommendations that I believe will prove useful to this project and the goal of sustainably harvesting minñatö. Firstly, more work needs to be completed with the community, specifically harvesters to complete a thorough growth rate analysis of *Heteropsis* species in the upper Caura. This ought to be used in the creation of a formalized experiment cooperatively, managed by Medewa leaders that would replicate data collected by Kanwasumi on traditional harvesting practices. Secondly, two factors ought to be included in Medewa's formation of a management plan. Plots not already divided into familial plots ought to be included in overall management efforts and the other uses of minñatö, such as making *Wüwa* baskets for use must be added to adjust total need for minñatö. Thirdly, the Ye'kwana live in a region of great change. Competing extraction of minñatö by indigenous communities, government intervention and illegal gold mining activities all threaten this project. Theft of minñatö is a new concern for the communities. As the resource becomes more limited there will be an increased risk for illegal activities, especially, since the rattan market desires minñatö for furniture production. Consequentially, it is imperative that monitoring of illegal activities be watched by communities to prevent theft. Lastly, the greatest producers are middle aged women. I recommend that

economic capacity building training mostly target women weavers, ages 19-30, who are interested in weaving, speak more Spanish and will become the prominent leaders in their society.

APPENDIX A  
RESEARCH QUESTIONS

**Questions to ask the local people:**

1. When do you harvest “minñatö”?
2. Where do you harvest minñatö?
3. How do you choose where to harvest “minñatö”?
4. How much “minñatö” is there to harvest?
5. How do choose which minñatö to harvest?
6. How many years does it take for minñatö to develop?
7. How many baskets did you make last and the time before that?

APPENDIX B  
YE'KWANA TERMS TRANSLATED

<b>Language</b>		
<b>Ye'kwana</b>	<b>Criollo</b>	<b>English</b>
Tidi'uma	Todo Echo	All things made
Wajisidi	Gente de Mono	Monkey people
Akato	Fuerza de vida	Powerful lifeforce
Conuco	Jardin	Garden
Churuata (ÖttÖ)	Casa Communal	Communal House
Kiidayu	<i>Bignonia chica</i> (Latin name)	<i>Bignonia chica</i> (Latin name)
Mesoma	Las Fuerzas Externas	Outside forces
Shechajadu	Virutas	Shavings
Shiwitinña	Santa Maria De Erebató	Santa Maria De Erebató
Tidi'uma	Todo Echo	All things made
Tujumoto	Comunidad	Community

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