

# Exploring the Role of Emigrants in Managing and Using Watershed Commons through Transnational Family Networks

Carylanna K. Taylor<sup>1</sup>

## ABSTRACT

As transnational labor migration stretches families and communities across national borders, the ways in which those remaining at home interact with their natural environment become colored by transnational social and economic relations. Physically distant emigrants play a tangible role in the development and conservation of the patchwork commons of privately and publicly owned farmland, pasture, forest, streams, and groundwater that is their watershed of origin. Among Honduran hillside farmers, emigrants contribute to “watershed impacting practices” (WIP) by directly and indirectly investing remittances in cattle and agricultural inputs, communicating with family members, entrusting others with the use and management of their land, and contributing to potable water systems.

This paper evaluates the methodology of a fourteen month mixed-method, multi-sited dissertation project designed to capture these and other ways in which transnational emigrants affect how their households and village of origin use this commons. At the heart of the study lie four transnational family networks that originate in a rural Honduran village and stretch to the United States. The case study was built through a) a village-wide survey of emigration and watershed impacting practices that led to the selection of families, b) site visits and interviews focused on watershed resources (firewood, water, land, pasture) and microwatershed conservation efforts, c) diaries and recall interviews tracking remittance transfer and expenditure, and d) four months of structured interviews and participant observation with transnational family members now living in New York and Florida.

Tracing the interactions present in even a relatively small microwatershed is complex. Focusing on transnational family networks – balanced by the survey and informal interaction with nonmigrant households – has helped tame a potentially unruly project. The paper explores the successes and limitations of using transnational family networks to study the role of emigrants in their village of origin’s watershed commons.

## KEY WORDS

Natural resource management, Honduras, migration, families, watersheds, ethnography

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## INTRODUCTION

The nearly one million Honduran emigrants who reside in the United States send approximately US\$935 million home each year, equivalent to 21% of the nation’s GDP and two times the combined official development assistance and foreign direct investment (Inter-American Development Bank and Multilateral Investment Fund 2006; Solimano 2004). *Economic remittances* in Honduras are among the fastest growing in Latin America and subsidize the basic necessities and livelihoods of those remaining in this second poorest nation of the Americas (Sladkova 2007, 2008). Flows of people and funds carry with them ideas and values (*social remittances*), which further impact livelihood strategies in their households and communities of origin (Levitt 1998).

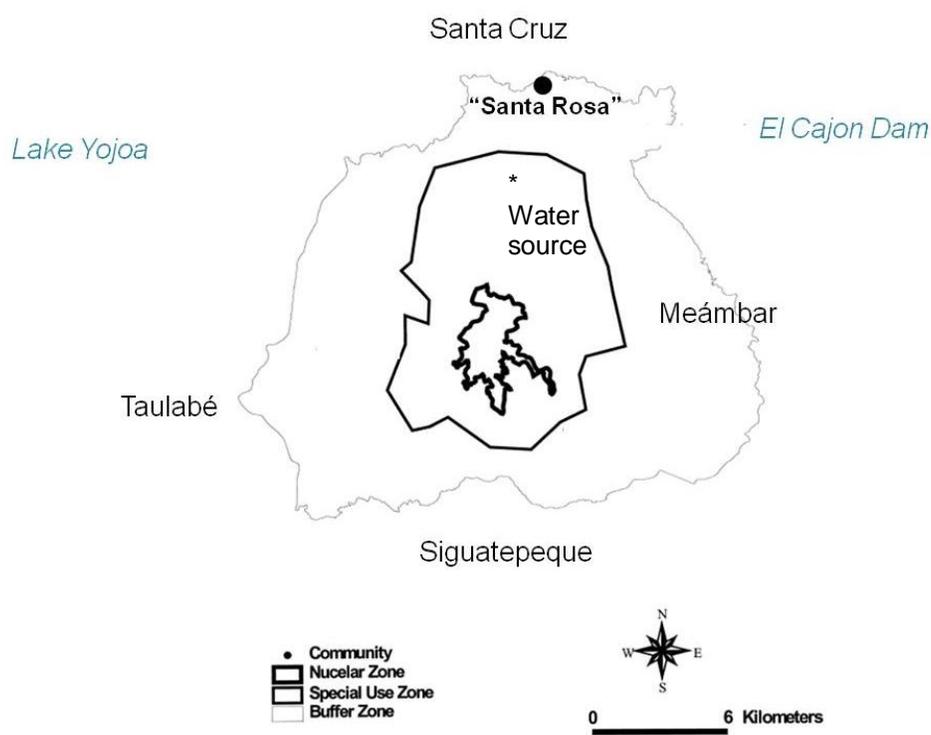
Intersections between emigration, economic remittances, and social remittances are especially evident in impoverished rural communities pushed high up the steep, forested hillsides of central Honduras, where erosion, deforestation, and contamination of water supplies have spurred emigration as a central livelihood strategy. Hillside farmers tend to spend economic remittances on food, home repair, health, education, and farm maintenance (Agencia de Cooperacion Denesa 2005). A significant proportion of transnational migrants earmark funds to consolidate investments for an eventual return by purchasing land, coffee farms, and cattle, hiring farm workers, or increasing productivity of existing farms. All of these practices carry potential consequences for natural resources and their use and management. This paper focuses its discussion of natural resource management on the microwatersheds (catchment basins) that encompass the springs and streams that provide village drinking water.

In large part, this research is an argument for community natural resource management (CNRM) based projects and policies to take domestic and transnational migrants into account in their conceptualization of “community” (Taylor Bahamondes 2007; Taylor 2010). Water conservation and watersheds are central to Honduran national environmental conservation policy. Reflecting a global trend towards the decentralization of conservation efforts, Honduran national policies place responsibility for rural drinking water supply in the hands of community water councils. Development

and conservation organizations often turn to these councils when implementing projects, making them primary agents in community natural resource management (CNRM) initiatives (República de Honduras 2006; USAID 2005; Taylor Bahamondes 2007). This is the case in Cerro Azul Meámbar National Park where this project is based. The park (PANACAM by its Spanish acronym), is co-managed by four municipalities, a Honduran non-governmental organization, and the national forestry conservation institute. A 2007-2008 rewrite of the park management plan refocused conservation efforts along the watersheds which feed two major hydroelectric projects in central Honduras (El Cajón Dam and Lake Yojoa). The refocusing brings an even greater role for watershed conservation by the 64 communities located in the buffer zone surrounding the nationally vital cloud forest at PANACAM's core (Proyecto Aldea Global 2007).

Figure 1 provides a sketch of PANACAM's management zone and shows the location of the buffer-zone case-study village, Santa Rosa, and the water source (including the upper reaches of the microwatershed) in the special use zone.

Figure 1. Zoning map of Cerro Azul Meámbar National Park, Honduras (modified from Pfeffer et. Al (2001))



According to Kerr (2007) “watershed development seeks to manage hydrological relationships to optimize the use of natural resources for conservation, productivity, and poverty alleviation. Achieving this requires the coordinated management of multiple resources within a watershed, including forests, pastures, agricultural land, surface water and groundwater, all linked through hydrology.” He argues that management of

all but the smallest microwatersheds, is difficult. Indeed, when considering that many relevant stakeholders live outside of the region, even coordinating projects in the relatively small microwatershed surrounding Santa Rosa's water source is complex. As Kerr might predict, there has been greater success with renovating the potable water project infrastructure than with any more diffuse conservation efforts.

The term "watershed impacting practices" (WIP) was adopted to make clear that the study looks at changes in human behavior – not changes in the natural environment as measuring ecological impacts is beyond the scope and resources of the dissertation research. WIP include natural resource management related behaviors taken on individual farms or as part of community or park projects that relate to watershed function, for example tree cutting, soil conservation, application of pesticides, community-built infrastructure to supply water to individual houses, or petitioning a municipality for equitable compensation for farm land appropriated for municipal water provision. Focusing on "watershed impacting practices" also emphasizes that the microwatershed on which Santa Rosa residents depend for water, fuel, food, and livelihoods is affected by *all* practices within it, whether they be on the whole positive or negative, aimed at production or conservation, or carried out on private or public land. Moreover, as suggested by the holistic watershed concept, none of these farms or forests are self contained: whether on public or private property, soil erosion, runoff of agrochemicals, deforestation etc. affect all residents and users of what is essentially a microwatershed.

The dissertation methodology discussed in this paper was designed to explore the effects of flows of economic and social remittances on watershed impacting practices. The family-centric multi-method ethnographic approach builds on existing multi-sited ethnographies (Gupta and Ferguson 1992; Marcus 1995; Burawoy 2000; Kearney 1995; Sahlins 1993) and on the use of kinship for studies of transnational migration (Olwig 2007, 2003; Parreñas 2005; Schmalzbauer 2005, 2004, 2008; Wilding 2006; Boyd 1989). Qualitative and quantitative data collection was carried out between January 2009-May 2010 in households and communities in rural and urban Honduras and in the United States. Case-studies of four transnational families originating in the rural village of "Santa Rosa," Honduras were documented by remittance diaries, village survey, in-depth interviews and extended visits with emigrated family members. The transnational family methodology is designed to maximize limited project resources to capture expansive flows of people, funds, and ideas across transnational space and the impact that they have on the beliefs and practices of real people in a real place. Whether it has been successful is the topic of this paper.

With particular attention given to the rationale for focusing on transnational families, the next section discusses the analytical framework behind the project and its methodology. After describing the settings bridged by transnational families, those methods are outlined in greater detail. The following section uses kinship charts to discuss some ways in which the four transnational families use the watershed commons. It is included primarily to show the kinds of insights possible through the study methodology. The paper concludes with a discussion of the challenges and opportunities of focusing on transnational families to study watershed impacting practices.

## CONCEPTUAL FRAMEWORK

### *Political ecology of transnationalism & community natural resource management*

In order to understand how transnational emigration affects family and community relationships within the watershed commons, the study brings together literature on transnational migration and political ecology. Focusing on the distribution of power within human/environment relations, political ecology (Bryant 1997; Peet and Watts 2000; Stonich 1993, 1995; Wolf 1972; Robbins 2004) provides a theoretical framework through which to consider the historical, political, economic, and environmental factors (local, national, and global) that shape household watershed management and use practices.

Most literature on the impact of transnational migration on sending communities focuses on economic remittances and development. (Whether remittances are a source of development or underdevelopment is an active debate (Cohen 2001; Taylor 2008; Cohen, Jones, and Conway 2005) The few researchers studying the impact of emigration and remittances on sending-community resources or resource-impacting practices note the paucity of empirical research (Adger 2002; Appleyard 1989; de Sherbinin et al. In press). Work that does look at the environmental impact of emigration focuses on impacts on land, labor, investment, and consumption, or on the presumed positive benefits of decreased population (c.f. Neill and Lee 2001). With a few notable exceptions that touch on impacts of remittances and emigration on conservation and resources (Adger 2002; Aryal 2006/2007), discussion of remittances and environmental conservation is limited to the indirect impact of consumption, construction of houses, purchase of agricultural land, poor caretaking of rented parcels, or imperfect substitution of hired labor for family labor.

Though not all self-identify as political ecology, scholarship on Community Natural Resource Management (CNRM) illustrates the importance of attending to issues of power and control over resources, equitable participation, and locally-managed decision-making processes in watershed management (Agrawal and Gibson 1999; Nygren 2004; Brosius, Tsing, and Zerner 1998, 2006; Nygren 2005). CNRM scholarship (though not necessarily projects) also offers a nuanced view of communities not as homogenous entities, but rather as comprised of individual actors with competing interests. Communities, and by extension community natural resource management, operate within transnational social fields formed by local, national, and global flows of people, money, and ideas (Levitt and Glick Schiller 2004). Here, these flows are characterized as social and economic remittances moving across transnational social fields formed by transnational family networks.

### *Transnational families*

Migrant transnational families are those with households that are located in two or more nation states (Levitt 2001; Parreñas 2005). Family and kinship networks spread among

these households, motivating the departure of migrants, aiding in their movement, and helping them to integrate into their new community and economy (Goldring 1998). "Transnational families" live some or most of the time separated from each other, yet hold together and create something that can be seen as a feeling of collective welfare and unity, namely 'familyhood,' even across national borders" (Bryceson and Vuorela 2002). Even those families who successfully use a combination of economic and social ties to stay connected across borders are not homogenous entities; instead, like communities, families are better conceptualized as heterogeneous bundles of dynamic relations shaped by interests that may not always align (Macisco 1972).

Studying transnational families has allowed ethnographers to see how family composition and dynamics shape the flows of economic and social remittances. Through her work with transnational families in San Pedro Sula and a small town in Honduras, Schmalzbauer (2005:57) found that remittances are contingent on work situations, marriage opportunities, distribution of children, and on length of stay, availability of work, and the ability to make a living in the host country (Schmalzbauer 2005: 57). The shape of individual households affects the quantity (and duration) of remittances, for example, remittances are proportional to the number of children remaining in the sending community, to the age of children and of adults, and to how many family members migrated. Expenditure of remittances also varied greatly by family make-up, rural vs. urban, income levels, class, and community development needs, etc. (Schmalzbauer 2005:62).

Relations within these transnational families are fueled by remitting (and lack thereof) and by the emotional, caretaking, and economic work carried out in both receiving and sending countries (Levitt 1998; Schmalzbauer 2004). Reciprocity among households in Honduras in the US takes the form of helping out, sharing phones, TV, space, and food. Maintaining transnational networks can help keep poverty at bay and, as with rural-urban migrants in Africa (Cliggett 2003; Trager 2005) and Puerto Rican migrants to the mainland U.S. (Aranda 2007), it can also be an investment in old age and the ability to return to household, community, and kin (Schmalzbauer 2005:100). Understanding remittances as gifts that move in and out of overlapping economic systems and that the manner in which they move may be impacted by social and physical space, is useful in analyzing the transnational and market-based relations in which remittances are generated, transferred, and spent (Cliggett 2005, 2003). Studying relationships within transnational families makes it easier to document these social, financial, and nonmonetary relationships and tease out those that affect watershed impacting practices.

### *Communication and social remittances*

Communication is at the center of transnational family networks – and of the transmission of social remittances, "the ideas, behaviors, identities, and social capital that flow from host- to sending-country communities" (Levitt 1998). Telephones, cell-phones, videos, camcorders, and email have become essential to the formation of community (Anderson 1991; Levitt 2001; Schmalzbauer 2004, 2005; Smith 1998) and the "production of simultaneity" which allows migrants and those at home to experience

parallel lives. Denser communication through telephones, cell-phones, camcorders, and email has increased the importance of social remittances vis-à-vis past migrations (Schmalzbauer 2005). For some sending-community family members, telephones and cable TV are now considered basic household expenses (Schmalzbauer 2004); in other cases sharing television sets or telephones in order to maintain communication with emigrated family members has become routine. These ICTs are, however, dependent on availability and they are more available to some than others (Wilding 2006)... making the socio-cultural context of family and community important to the transfer of ideas and values related to watershed use and management.

Levitt notes that their importance to community development in the sending community is widely acknowledged but that it is less understood how ideas and practices are transformed in the host country and retransmitted to the home country “such that new cultural products emerge and challenge the lives of those who stay behind” (2001:55). Levitt’s work on the flow of social remittances within the “transnational village” originating in Miraflores, Dominican Republic addresses this gap. She shows that the content of social remittances is shaped by their passage through transnational family and community networks, by migrant and non-migrant members. Social remittances continue to be shaped as they are carried into the wider home community. This could be an opportunity for community workers, such as environmental educators, to better understand the transnational influence on local beliefs and identities and to capitalize on remitted ideas. The impact of social remittances on attitudes towards natural resource management is indirect and subtle, travelling through channels such as these. Does wanting a better future for their children translate into valuing an environmentally better future for migrants? Do migrant’s values lead to decisions about allocation of financial remittances in a way that affects natural resource management? Remitted ideas also interact with values in the families, communities, and external influences such as education. Studying social remittances through transnational family networks reveals how ideas are shaped between the sender and receiver and suggests their impact on watershed impacting practices.

## TWO SETTINGS BRIDGED BY TRANSATIONAL FAMILIES

The 2100 person village of “Santa Rosa” is located in the mountainous buffer zone of Cerro Azul Meámbar National Park (PANACAM) where 20,000 residents are spread across 67 villages and hamlets (Proyecto Aldea Global 2007). Residents are allowed to live, raise cattle, and farm (primarily coffee, corn, beans, yucca) within the buffer zone; others labor off-farm in sugarcane fields, poultry farms, cattle ranches, and trucking.

The buffer zone forms a protective ring around the water-generating cloud forest at the park’s core. Established in 1987, PANACAM is considered vital to the nation’s supply of hydroelectricity, as it is part of the watersheds of El Cajon Dam and Lake Yojoa, both with important hydroelectric plants. With varying degrees of responsibility and involvement, the park is administered by a Honduran NGO (Aldea Global) and co-managed by the national parks service (ICF, formerly COHDEFOR), two states

(Comayagua and Cortes), and four municipalities (Siguatepeque, Meámbar, Taulabé, and Santa Cruz de Yojoa). In keeping with Aldea Global's CNRM approach, efforts are made to include resident-communities even though they are not official co-managers.

Finding it difficult to manage the 20,000 hectare park with only two rangers and limited support from police, military, and municipalities, the NGO is calling on buffer zone communities to more actively patrol their own microwatersheds: the areas of the park that directly contribute to the well-being of the spring supplying their community's water. At the edge of the agricultural frontier where buffer zone meets more restricted use zones, incursions are common for hunting, gathering firewood, and clearing forest with machetes, chainsaws, or fire to make way for crops or cows. Permits are required to cut trees and are exceedingly difficult for small land owners to obtain. Communities are expected to discourage incursions into the forest and contamination of the water supply with agrochemicals and manure and to report cutting and burning to municipal authorities.

As with much of rural Honduras, during the past ten-fifteen years Santa Rosa has experienced extensive emigration to domestic urban areas (San Pedro Sula, Tegucigalpa) and abroad (the US, Spain, Italy, Mexico and other Central American countries). A third of households have at least one emigrant member abroad; over half have received international monetary transfers. Well over a tenth of the village currently resides in the United States. These proportions reflect national trends: 750,000 Hondurans live in the US, the equivalent of a tenth of the national population and a quarter of the working age population (Instituto Nacional de Estadística 2006). Also reflecting national trends, the majority of emigrants in my study households are male (7 of 9 immediate family; 12 of 19 total interviewed) and in their 20s and 30s. The resulting labor shortages, remittances, and absentee ownership, have led to new natural resource use and management dynamics that complicate sustainable agriculture and conservation.

In the Freeport/Huntingdon area of Long Island alone there are 300-400 emigrants from Santa Rosa, some planning to stay only a couple of years to make enough money to build a house or business and others rooted in the United States through spouses, children, and the American dream who plan to voluntarily return only if visiting or retiring. No formal associations bind them, but Santa Rosa emigrants meet up through family occasions (holidays, birthdays, wakes), in Honduran delis and around town, and churches catering to Spanish-speaking immigrants. Ties are strongest among family members (siblings in the case of all four of my study families) and looser among emigrants from the Santa Rosa area and Honduras more generally. Connections are maintained through telephone conversations, visits, and, less frequently, through posting photos and messages on the social networking websites, Facebook and Hi5.

Most emigrants from Santa Rosa work in construction or restaurants. "Construction" encompasses everything from prospering general contractors with a dozen employees to low-paid low-skilled construction assistants hired day-by-day at local "esquinas." ("Esquina," literally "the corner," refers to the point where job foremen stop and pick up

workers out of a crowd of aspirants, largely on a first-come-first-serve basis.<sup>2</sup> ) In the study sample, restaurant jobs ranged from assistant branch manager of a high end chain restaurant to dishwasher. Other jobs included house cleaner, coat check attendant, and real estate agent. Most Honduran emigrants with whom I have spoken have been underemployed for at least part of the past year. Two participants are formally laid off and collecting unemployment, working occasionally under the table.

During the course of the study, the Honduran political crisis and deepening U.S. economic crisis dramatically depressed the local economy as agriculture subsidies were eliminated and emigrants struggled to send regular remittances which had previously local consumption and construction. Emigrants in the study constantly weighed the ability to make a living in Honduras against struggling to earn enough in the States for rent, food, gas, and remittances while dealing with the threat of deportation or nonrenewal of visas. Though many talked about it, one Long Island study participant voluntarily returned to Honduras in November, believing he would do better harvesting his own coffee and taking care of his own cows than he would working sporadically as a construction day laborer and sending money to a friend to manage his cattle and crops on his behalf. From the improved condition of his pastures a few months later, the gamble seemed to have paid off.

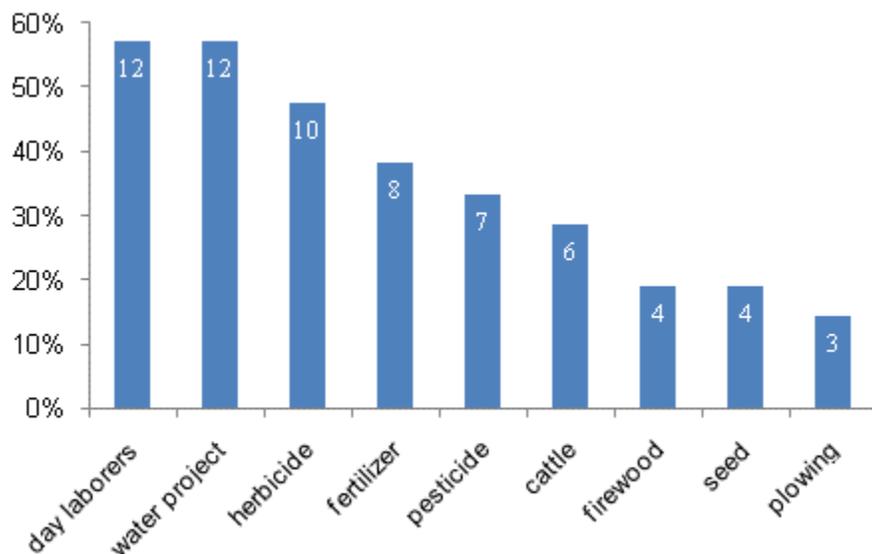
Remittances received by Santa Rosa households follow a variety of patterns including once or twice total, packages of clothes and toys at holidays, biweekly transfers of \$150-200 for routine expenses, and multiple large transfers totaling thousands of dollars to pay for surgeries, home construction, agriculture machinery, or pasture. Emigrants wire funds via Western Union and Money Gram, which their relatives (usually wives and mothers) pick up at a bank in the neighboring city.

Remittances are most commonly sent for health, general expenses, the community water project, and food. Emigrants report that money they send is used towards a number of watershed related expenses: day laborers, agrochemicals, cattle, and plowing, even if that was not necessarily the expressed purpose of the transfer (Figure 2). Multiple families reported buying herbicides directly after collecting remittances. Direct transfers for care of cattle are larger and more common than for agriculture.

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<sup>2</sup> In Freeport, Hempstead, and Huntingdon NY the esquina refers to the parking lot by the Home Depot or the Dunkin' Donut where day laborers wait for work. Study participants' use of the esquinas varied widely, and speaks to radically different emigration experiences. One Santa Rosa-born contractor has six regular employees and goes to the esquina when he has bigger jobs, paying US\$90/day with lunch, U\$100 without. The contractor takes home about \$1000/week. Another Santa Rosa born study participant, said that in the current economy, he might spend six days waiting from 7-11am and feel fortunate to secure 2 or 3 days of work. The contractor is debating buying a home here, while the day-laborer returned to Honduras in late November, calculating that he would be better off taking care of his cows, coffee fields, and house in Santa Rosa.

Figure 2. Remittance spending on watershed impacting practices according to 21 emigrant remitters



## METHODS

This paper draws on January 2009- May 2010 research with residents of and emigrants from “Santa Rosa,” a village in Cerro Azul Meámbar National Park chosen for its relatively large size and variety of emigration experiences and productive activities. The methodology is designed to capture the role of social and economic remittances in watershed impacting practices through a multi-sited ethnography in which households with emigrant members are conceived of as part of “transnational family networks” (Bryceson and Vuorela 2002; Olwig 2003; Parreñas 2005; Schmalzbauer 2005) operating in “transnational social fields” (Levitt and Glick Schiller 2004). Such networks are comprised of transnational and domestic movements of people, ideas, and funds. Interactions, though occurring in transnational space, are also embedded in physical places with historic, social, and environmental particularities that shape the movement and impact of migrants and the funds and ideas they remit. Hence, this multi-sited ethnography takes into account the experiences and ideas of remitting family members, while grounding the study in the watershed inhabited by their community of origin, the sites of physical impact of social and financial remittances on natural resource management. Each of the sites in the network (in Honduras and the U.S.) is a “transnational locality” that is rooted in the primary site of Santa Rosa, anchored there by geographic and social space (see Smith 2006). For the sake of this study, “family” is based on the heads’ of household own definition, including extended biological and cultural kin as appropriate. The transnational family network includes the originating household of physical residence in Santa Rosa, any emigrants from that household, and any other emigrants who are remitting money to the Santa Rosa household.

Fieldwork proceeded in roughly four phases: I) developing and implanting a village-wide survey (Honduras), II) selection transnational families and initial remittance diaries (Honduras), III) interviews with US based family members (Florida, New York), IV) follow up with case studies, addition of survey households, and interviews with development and conservation professionals.

**Village-wide survey & participatory group interviews:** In order to depict migration patterns, remittance transfer and use, content of social remittances, and watershed resource use, between February 2009 and July 2009 a survey was designed in consultation with community members and administered to Santa Rosa households. An abbreviated version of the survey was administered between February and May 2010 for a total of 50 households (28 with international emigrants), Follow up surveys were administered to the 32 families (18 with international emigrants).

Four two-hour participatory group interviews laid the groundwork for the village-wide survey (4-8 residents each, 2 with men, 2 with women, held February-March 2009). The 2009 survey households were selected randomly using lists of water system customers (which include all village households), in proportion with the distribution of emigrant/non-emigrant households in each of the six village neighborhoods. Cases added in 2010 oversampled households with emigrants and agricultural activities to better delve into remittance related practices. Survey responses were entered into a database in Access. Select quantifiable variables will be transferred to SPSS (2007) to correlate remittance and WIP data.

**Practitioner interviews:** During this period, 18 interviews about the role of migration in conservation and rural development were conducted and documentation gathered at national and international organizations operating in Honduras. Interviewees included representatives from the NGO and municipal government office managing PANACAM, the national agencies for forest conservation, agriculture, and coffee (ICF, SAG, IHCAFE), the US Agency for International Development, the Food and Agriculture Organization (FAO), and the International Organization for Migration (IOM).

**Focus families & remittance diaries:** Four survey households receiving economic remittances from abroad were chosen to reflect varying combinations of economic capital, social capital, and emigration experiences. Ethnographic interviews, site visits, and participant observation with members of the four case study families in Santa Rosa were carried out between April and July 2009 and continued between February and May 2010. Four female heads of household (A19, C1, D5, F5 in Figure 4) were asked to keep “remittance diaries” to record the receipt and expenditure of migradollars as well as to track migration and environment related phone conversations with emigrant family members. Sample remittance diary pages are shown in Figure 3. Recall interviews were held every other week during June and July 2009 and then continued by phone during US based fieldwork from August to November to track financial remittances and WIP related phone conversations. Each transaction was entered as a line-item in an Excel database of the diaries which will later be used to reconstruct remittance patterns within each family and compare across the four families. The diaries were rounded out by follow up interviews in February-March 2010.

Figure 3. Pages from the remittance diaries kept by case study families

**JUNE 2009** ID#: \_\_\_\_\_

Date of call	who in US	who in Honduras	who initiated the call	TOPICS	education	home construction	health: Honduras	health: US	household economy: Honduras	household economy: US	remittances: sending logistics (how, when, who...)	remittancespendings (need for, how to spend)	agriculture	cattle	environment: Honduras (water, air, forests, firewood, trash...)	firewood US (water, air, forests, firewood, trash...)	community of Santa Rosa	migration	
ex.	Pedro	Carolina	Carolina				x		x		x	x			x (air)	x	x		
June 29, 2009				Please place an 'x' in the box corresponding to the topic discussed.															
June 30, 2009																			
July 1, 2009																			
July 2, 2009																			
July 3, 2009																			
July 4, 2009																			
July 5, 2009																			

**June 2009** ID#: \_\_\_\_\_

lunes	martes	miércoles	jueves	viernes	sábado	domingo
1 <i>-example-</i> US\$100 from Juan (health, expenses) Transportation L\$24 Telephone L\$50	2 <i>-example-</i> Box from Elsa (S, E) Food L\$26	3 <i>-example-</i> L\$1200 mother's health L\$450 groceries & food P L\$48	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

1) Please write down the remittances or packages on the day they were received. Please indicate if remittances were sent for something specific.

2) Please mark expenses on the day they were made.

- |                          |   |                           |                              |
|--------------------------|---|---------------------------|------------------------------|
| A) <u>a</u> griculture   | F) <u>f</u> amily/friends (different household) | K) <u>c</u> able          | S) <u>s</u> hoes and clothes |
| B) <u>l</u> abor/workers | G) <u>g</u> as                                  | L) <u>l</u> ight          | T) <u>t</u> elephone         |
| C) <u>c</u> attle        | H) <u>h</u> ouse                                | O) <u>f</u> irewood       | W) <u>w</u> ater             |
| D) <u>d</u> onations     | I) <u>i</u> nvestments                          | P) <u>t</u> ransportation | X) " <u>e</u> xpenses"       |
| E) <u>e</u> ducation     | J) <u>h</u> ealth                               | R) <u>g</u> roceries/food |                              |

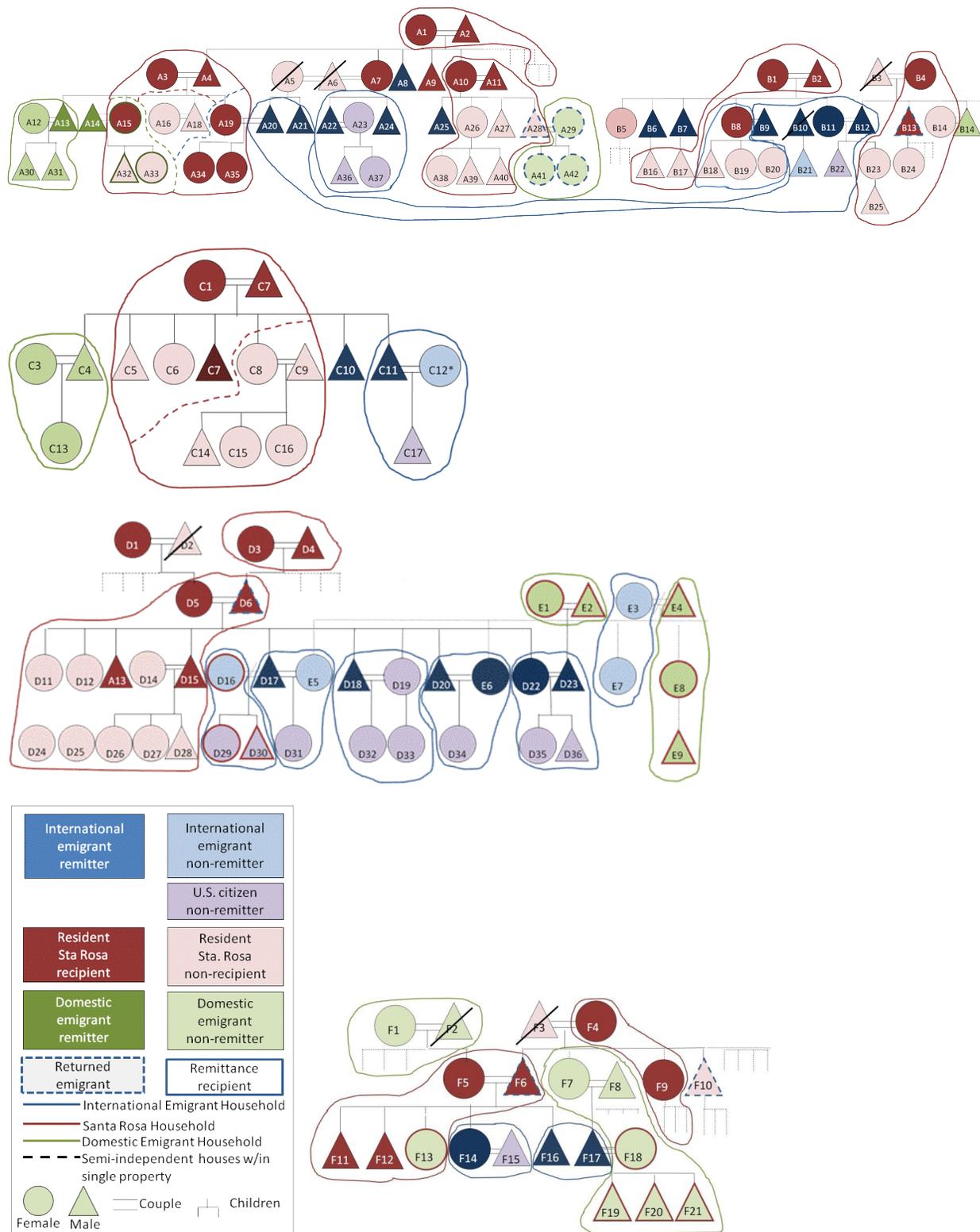
**US emigrant interviews:** August through November 2009 was spent interviewing and observing the four transnational families (1 in south Florida and 3 on Long Island, New York) and their U.S.-based networks. In two-sitting, recorded interviews, family members (8) were asked about remittance transfer and expenditure, involvement in community conservation activities, farming and animal husbandry experience, land purchases, and plans to invest in or return to Honduras. An abbreviated question set was asked of their spouses, siblings, and housemates (6 from Santa Rosa, 6 from elsewhere in Honduras, and 1 from the United States.) Formal interviews were supplemented by ethnographic interviews with them and other members of their transnational family networks, visits to emigrants' places of works, and participation in routine household and family activities. Upon returning to Honduras in February 2010, additional family members were interviewed informally. Serendipitously, several survey households were related to case study families. Because of their close ties with Family A, three households from Family B were interviewed in depth and included in the household survey (B1, B4, B11 in Figure 4). Responses related to economic remittances were entered into Excel to create frequency and budget charts such as those included in this paper. All interviews are being transcribed and will be analyzed in Spanish using the qualitative software program Atlas.ti (Muhr 2004).

Taken together, the village-wide survey, resource-use oriented site visits in Honduras, remittance diaries and recall interviews, in-depth interviews in the United States, extensive fieldnotes, and participant observation throughout paint a picture of how the flows of ideas and funds within transnational families affect their watershed impacting practices. It is through these practices and relationships that physically distant emigrants shape the watershed commons in their community of origin.

## WATERSHED COMMONS USE AMONG FOUR TRANSNATIONAL FAMILIES

In order to visualize the watershed impacting relationships among individuals in Honduras and the United States, I turned to kinship charts. The World Bank's Social Capital Assessment Tool (Grootaert and Van Bastelaer 2002) on which the community survey is partially based, suggested that this old staple of the ethnographers' toolbox could be especially helpful in charting out economic households and remittance flows. Each kinship chart in Figure 4 strings together multiple households in Santa Rosa (shades of red), elsewhere in Honduras (green) and the U.S. (blue). Dark blue signifies emigrants remitting money or goods; dark red indicates direct recipients. Solid lines around clusters of individuals donate economic households (co-resident, strongly linked earnings, expenditures, and shared resources) while dotted lines show separate homes on the same property.

Figure 4. Kinship charts for the four transnational case study families



### *Farming from abroad*

Transnational connections are made through 1) direct remittances to family for food and housing (ex. A20's remittances are the sole monetary income for his wife and children; ex. A24 purchased his mother's A7 house), 2) lending of land (ex. A22 loans his uncle A4 land for corn, who gives A22's mother a share of the harvest in return), and 3) caretaking (ex. A11 cares for his wife's nephew's A21 land as if it were his own in exchange for proceeds from harvesting coffee and bananas).

Sharing residences, food, rides, and jobs in NY ties two unrelated families (A,B) from Santa Rosa and binds brothers (A20,21,22,24) who had little contact in Honduras. These ties affect each emigrants' income, expenses, and ability to remit. For example, renters pay the mortgage on B11/B12's \$350,000 home, freeing funds that they can remit to their parents and daughter and helping make their substantial cattle investments possible. Their suspension of A20's rent during months without work (along with A22/A23' gifting of food) allowed A20 to remit a few dollars and allowed his wife (A19) to contribute to food sharing within her extended family.

A19 and her parents and siblings live in adjacent houses connected through shared food, money, goods, childcare, labor, and land. For example, A19 uses money sent by her husband A20 to give groceries and medicines to her mother and herbicide to her father. Meanwhile, her sister (A15) sells tamales that she and A3 made with corn harvested by A4 and lard bought with funds sent by her domestic emigrant husband (A14), sharing several with her parents, siblings, and nieces

Unable to find steady work, B13 left his brother's home in NY and returned to Santa Rosa to care for their 42 cattle, taking over from a salaried caretaker whose negligence led to degraded pasture and emaciated cows.

B12 sends money to B13 for related expenses and purchases land and cattle on now-yearly visits to his mother, daughter, and grandson. A fifteen year resident of NY – and one of the more successful emigrants from Santa Rosa – B12 dreams of retiring to Honduras at 50, when his son goes to college.

This paper emphasizes transnational families A and B because of the complexity and variety of ties, and because of the proximity of their property to the community water source and national park. However, each family demonstrates interesting links between emigration and farming. For example, emigrant brothers (C10/11) remit funds to their parents to pay the mortgage on the family's home, fields, and pastures. When work was better, they sent a small stipend to their brother (C13) to care for their 11 cows. Falling remittances and cancelled mortgage subsidies have tightened funds for their household of origin, which gets by tailoring clothes, selling corn, beans, pigs, and metal silos, and sharing food and childcare with their daughter (C8) and her teacher husband.

Work and play unites four NY households of Family D siblings. D17 and D20 share a contractors' license and employ their brother (D18) and brother-in-law (D23). The eldest (D17) has not invested directly in Santa Rosa, but coordinates emergency remittances

among the four siblings (ex. \$6000 D5's heart surgery) and recently sent a pump to provide water for his parent's cows. D22 and D23 built a lovely but empty two-story house and purchased pasture used by her parents 90+ cows, considering them safer investments than a Honduran bank account or U.S. home that would be lost if deported. D18 helps with toys, clothes, and money for emergencies but prefers to invest in NY with his American wife. The youngest (D20) invests directly in cattle, pasture, and equipment. He alone anticipates joining the family dairy business.

Closer study of transnational families reveals relationships between emigration, remittances, agriculture, and cattle that are hidden by summary statistics, such as:

- Remittances allow some families to redirect money that would have otherwise been spent on food, housing, health, etc. towards agricultural inputs.
- Money is typically pooled not earmarked. Cash flow and urgency often determine which funds are spent on what.
- Nonmonetary exchanges within transnational families affect farming and cattle raising expenditures and practices.
- Reciprocity between households in the U.S. shapes how remittances are earned, sent, and spent.
- Production and consumption of food within closely related households in Honduras is fluid and often not mediated by money. Remittances play a part through gifting of supplies.
- Emigrants' investment in cattle over agriculture has resulted in extensive conversion of farmland into pasture. Less land is available for landless farmers to rent or borrow for staple crops. Caring for cattle provides full time work for one or two individuals, but employees few day laborers.
- More than houses, vehicles, or even agricultural land, cattle and pasture mark divisions of wealth and help families maintain remittance-driven status.
- Emigrants' sense of security in the U.S. and thoughts on returning to Honduras are major factors influencing investment decisions
- Earlier emigrants (B,D) have invested more successfully than those arriving within the past five years (A,C), largely because of the U.S economy and immigration policies. The study is colored by the U.S. economic crisis and Honduran political crisis. These depressed the entire local economy as remittance based consumption and construction slowed and housing and agriculture subsidies were suspended.

### *Public/private conflict in the watershed commons*

Community natural resource management policies and practices related to Cerro Azul Meámbar National Park not only fail to account for the role of migration and remittances in the management of watershed commons, they fail to adequately address that in the park buffer zone, the boundary between public and private resources is blurred. Attention is given to the advance of the agricultural frontier into park-protected cloud forest or cutting for firewood around the community water source – these fall clearly in the domain of national government and community responsibility. They are clearly ‘commons’ with recognized local, regional, and national stakeholders. Yet, the management of patchwork of farms, pastures, forests, fallows, and residences that cover the hillsides in the middle and lower reaches of the microwatershed plays an equally important role in the health of the microwatershed. About a fifth of microwatershed land is held by associations of farmers. While ostensibly owned by private individuals (with or without clear legal title), the remainder of the microwatershed is subject to mix use that includes farming by owners, renting land, working crops or pastures on behalf of an absentee owner, or, more fluidly, loaning plots to friends and relatives for farming in exchange for a share of crops given to themselves or relatives, clearing and monitoring the land, and/or more diffuse relationships of generalized reciprocity. Large privately-owned coffee farms become a de facto commons when community members enter to harvest fruits and firewood, at times with explicit permission and at times trespassing. As more and more land has become owned by the park or private individuals, as deforestation has limited the extent of non-park forest, and as declining remittances (due to the US economic crisis) lead families to substitute firewood for natural gas, trespassing has become more common and the risk of being shot, robbed, or raped while attempting to gather firewood greatly increased.

Fallow (resting) land is a major site of tension between park and private interests, including transnational emigrants. As fallow land reverts to secondary forest, strict cutting regulations put them out of reach of productive use, providing a powerful incentive for migrants with property near the park to rent or lend it to keep it in use, even when they would prefer the soil be left to rest. Coffee and bananas become an attractive alternative to some. Similarly, national regulations encourage squatters and agricultural cooperatives to take over land that has been left ‘unproductive’ for more than 5 years.

The spring that provides water to Santa Rosa is 2 kilometers away. The point of water collection and upper reaches of the microwatershed fall within the park’s more heavily regulated special use zone that lays between the core and buffer zones (see

Figure 1). While park managers have been quite successful in preserving the difficult to reach core, the boundary between the buffer and special use zones marks the agricultural frontier where incursions are common into the special use zone for hunting, gathering firewood, and using machetes, chainsaws, or fire to make way for crops or cows.

On the border of the people-included and people-excluded park management areas, the presence of emigrants in the microwatershed is palpable. The properties bordering the

park are actually owned by three brothers living in NY (A21, A22, A24 on the kinship chart in Figure 4) and used in their stead by their uncles (A4, A8, A11). Food produced here reaches a large extended family, some of whom are also supported by direct remittances (most of Family A and some not pictured). The parcels were once part of their grandfather's (A2) much larger holding, some of which has been surrendered to the park. Indeed, A8's residence, corn fields, and successful banana plots legally belong to his nephew (A24). The property lies within the special use zone and is the site of an uneasy truce with the park, which puts up with A8's presence in exchange for informal monitoring of illegal hunting and cutting around the community water source. Similar tolerance is granted to A4, a former park ranger, whose regular presence deters violators even while his clearing of scrub brush on the edges of A8's land keeps it from reverting to untouchable secondary forest. Fortunately, unlike in non-park communities (see Taylor Bahamondes and Davis-Salazar 2007), all Santa Rosa farms and pastures are downstream of where Santa Rosa and neighboring communities draw their water, meaning herbicides, fertilizers, and manure do not directly enter their water supply. (The surface and groundwater downstream is another issue, too contaminated to drink without treatment.)

A2's remaining property was divided among sons and grandsons who have further divided the property through sale, renting, or lending. During an interview in New York, A24 commented that he has little control over his uncle's agricultural practices. He knows that his uncle relies heavily on inorganic fertilizers and herbicide, but can do little even though his own preference would be for more sustainable methods. Ironically, the uncle has successfully appealed directly to A24's brother (A22) to send money for the purchase of agrochemicals. In other words, watershed impacting practices of renters or borrowers may be very different from those used by (or desired by) emigrant owners. The occasional phone calls through which the uncles and brothers communicate are too short and too infrequent to allow for much communication beyond basic requests and logistics of transfers. This was increasingly the case as the economic crisis made airtime even more precious. Preliminary analysis suggests that differing environmental values between emigrants and residents had more to do with generational differences and pragmatic responses to emigration-driven declines in labor availability.

#### DISCUSSION: WORKING WITHIN TRANSNATIONAL FAMILIES TO CAPTURE THE EFFECT OF EMIGRATION ON WATERSHED IMPACTING PRACTICES

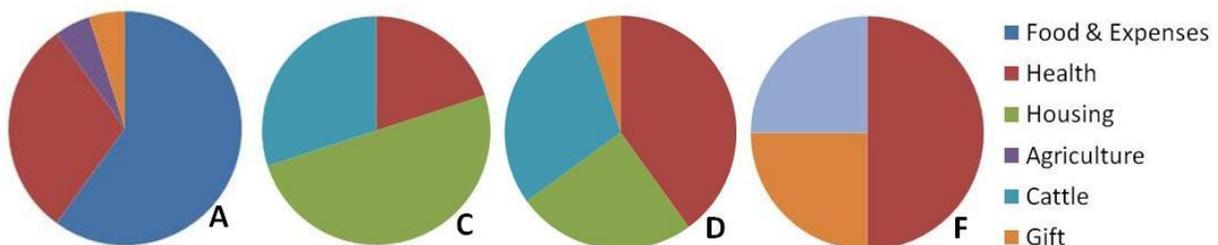
Trying to capture transnational flows of funds and ideas and gauge their impact on watershed commons within the scope of a yearlong individual dissertation project required two major adaptations: 1) examining watershed impacting *practices* instead of watershed impacts and 2) looking at transnational families instead of communities. The two are further tied through emphasizing economic and social remittances as the primary means through which emigrants affect WIP. With fieldwork completed and data entry and analysis underway, this section takes a preliminary look at these choices and some of the methodological advantages and challenges that came with them.

### *Watershed impacting practices and remittances*

The first of these was to look at watershed impacting *practices* (WIP) instead of watershed *impacts*. Project documentation, interviews, and existing studies of the area provide context and suggest likely outcomes (Loker 2004; Pfeffer et al. 2005; IFPRI 2006; RDS-HN 2008), but, directly measuring water quality and flow, land cover change, soil erosion, etc. was beyond the scope of the project. The survey, interviews, site visits, and project documentation make it feasible to identify behaviors – and gauge differences between households that receive remittances and those that do not.

Economic remittances were emphasized because of their importance to household production and consumption, the community water project, and maintaining ties within families. As the study period is relatively short (14 months), getting a sense of change over time comes primarily through respondents' self-reporting of practices now compared to 10 years ago, before the explosion of emigration from Santa Rosa. While this accounting of time is an inadequate proxy for a long-term study, it does provide a rough picture of how life has changed for the village as a whole and across different family experiences. Remittances are also a useful object of analysis as they have the advantage of being measurable through self-reported wire transfers, family budgets, expenditures on agricultural inputs, etc. Worries about the intrusiveness of economics heavy survey questioning abated as most respondents were surprisingly willing to share the frequency and value of wire transfers from their emigrant members, monthly household expenditures, and yearly agricultural spending. Memory was less an issue in reconstructing economic patterns than were the more fluid household expenditures for which there is very little paper trail. Particularly with expenditures on agricultural inputs, the *absolute* numbers given in the survey were amazingly detailed. While the remittance diaries and recall interviews provided more accurate results for the focus families, monetary data is most useful for comparing spending *proportions* across households. Figure 5, for example, draws on remittance diaries and emigrant interviews to show that the four case study families vary greatly in their use of remittances.

Figure 5. Case study family remittance spending as proportion of remittances received



It is still early in the data analysis, but there are a few issues to note, some of which are ameliorated and others aggravated by the family focus. The surveys work well as a backdrop to the case study families, but the relatively small number makes finer grained statistical analysis difficult. To allow for more robust analysis, twenty surveys were

added in February-May of 2010 to the thirty completed between April and July 2009 (for 50 total); yet, these survey interviews were carried out nearly a year later, after the Honduran political crisis and significantly reduced remittances due to the US economic crisis had significantly reduced remittances had further weakened the local economy.

Within transnational households, emigrant and home perceptions of remittance receipt and spending do not line up exactly, because of varied perceptions, priorities, and imperfect information. This is partly an artifact of reporting: while most Santa Rosa survey interviews were “cold calls,” I had usually seen emigrants several times by the time I did the formal interviews. By that point, the level of trust and concern about what I might do with the information were very different. Emigrant reporting of believed expenditures were used above, because the numbers better aligned with observations.

Capturing social remittances has been a challenge, the contours of which will not be fully revealed until completing the transcriptions and text analysis. Recall interviews and sections of the survey and emigrant interviews document mechanisms of transfer and give suggest a few major WIP related ideas and values transmitted within families, but without observing or recording phone calls and other resident/emigrant interactions it is difficult to know the details of any WIP related content. Properly studying how social remittances are transformed through transnational family networks is a dissertation unto itself. At a minimum, it would require a rigorous discursive analysis comparing WIP related ideas held by Santa Rosa with those held by emigrant family members and then looking to television, radio, Internet, church, work, neighborhood delis, and other potential site in the US that shaped emigrant views and then trying to determine the degree to which particular idea(s) took root in Santa Rosa. Such a project would be more along the lines of the master’s thesis which looked at how water conservation discourse in PANACAM varies between park residents, park rangers, national legislation, and funding documentation (Taylor Bahamondes 2003).

Recall interviews and remittance diaries were sufficient to show that WIP related discussions became more infrequent as falling incomes and remittances caused phone calls to grow shorter and more irregular. Even “how are the crops doing?” often did not make the “cut” in precious calls ever-more distilled to health, education, and the logistics of remittance transfers. Working within transnational families allowed me to “hear” these conversations from both sides, especially useful as different respondents may recall different aspects of conversations. Transcriptions of relevant interview and survey questions should allow some finer grained comparison of WIP related ideas and values.

### *Transnational families*

Focusing on transnational family case studies was the second major adaptation to the study. The theoretical rationale for the decision is discussed in detail above – essentially economic and social remittances flow within families so it makes sense to study the families in enough depth to trace the flows. The choice was also pragmatic. Using the family as research “site” narrowed the scope of the emigrant component of the research from all Santa Rosa emigrants. Instead of arbitrarily selecting site(s) where Santa Rosa emigrants have settled I was able to go to the homes of all emigrated family members

and from there interview other emigrants who were an important part of their US lives. Formal interviews included a series of questions aimed at reconstructing US and transnational social networks- these led to the inclusion of Family B, which has very tight ties with Family A emigrants. (Interestingly, members of the two extended families residing in Honduras are not particularly close.) Working within family networks opened doors to emigrants' homes in the United States that would have otherwise been very difficult to access because of mistrust (particularly as over half of emigrants interviewed were undocumented), not to mention the difficult logistics of *finding* emigrants without prior knowledge of names, cities, or phone numbers. Knowing family members "back home" and being able to share photographs of the community and, often, family members was an invaluable tool in building rapport and authenticating my connection with Santa Rosa. Birthday parties, beach trips, backyard barbeques, Thanksgiving dinner, church services, visits to emigrants' places of work, shopping, even watching TV were all valuable opportunities for participant observation that would have been much harder to come by and more scattered had it not been for the family focus.

Showing photos of the park and village on my notebook computer was a great way to "hang out" without the formality of an interview. Often, pictures of the farms or park would spark conversations about past watershed impacting practices or how they would do things upon returning "home." Formal interviews served to further examine these reflections. Returning to Honduras the photographs were a good way to let participants know I had returned and served to further probe family relationships. In sharing photographs I took on a bridging function within the families, in many cases having a chance to visit relatives who had not seen each other for many years. This remitting/bridging role was accentuated when transporting homegrown coffee, freshly baked bread, and cash for relatives. My privileged position of being able to travel at will between the US and Honduras was apparent to me and to participants, with bittersweet results. I became something of an ambassador – a piece of home or a family friend bearing witness to emigrants' wellbeing. My travels also became a reminder of the formidable financial and legal barriers to travel faced by study participants. The morning I returned to the US in May 2010, the mother of the Florida based siblings (F5), was visibly upset: it was unfair that while she had not seen her children in ten years and had failed twice to obtain a visitor's visa, I would be seeing her son (F16) that evening in the Miami airport to handoff the bread she had made the night before. My role paralleled that of wealthier, more mobile family friends, who serve as carriers of money, goods, and news. Like them, I acted as a vehicle for the transfer of financial and social remittances, particularly through sharing photographs. The bridging function made my movement within the transnational family networks more natural, and likely made the research quicker and more effective, than it would have been had I worked through a community- or place- based methodology of site and participant selection.

The four focus families were chosen from among survey households to reflect a variety of remittance and WIP patterns. Their interest in the study, ability to dedicate time to the budget diaries and recall interviews, willingness to introduce me to US-based family members, and rapport were also important considerations. Considerable non-interview time was spent with each family and with several survey households without emigrants. Prior to the coup I had considered adding these households as nonemigrant case

studies, complete with budget diaries and recall interviews to balance the transnational case study families. Unfortunately, this plan was derailed by the June 28 coup d'état, which caused me to reverse the last two stages of the study, leaving Honduras three months early (July instead of October 2009), move up the US portion of the study (August-December 2009), and later return to finish fieldwork in Honduras (February-May 2010). As is, the budget diaries had to be continued by telephone from the US, which served to record major economic transfers and decisions but was inadequate for capturing social remittances, especially as cost and poor connection quality limited the effectiveness of calls. Even without budget diaries and recall interviews, economic data from nonemigrant family's household and agriculture surveys, informal interviews, and opportunities for participant observation do provide a rich counterpart to the emigrant family case studies.

In general, the shortened remittance diaries and inability to formally include nonemigrant case study families were the parts of the study most affected by rearranging phases of data collection. While not having stronger numbers in this area is unfortunate, the information compiled is more than adequate for describing how economic remittances flow within families, but inadequate for calculating the proportion of conversations in which families discussed a given topic as would have been possible through the original format. Rearranging the study phases did have the advantage of being in New York during good weather with more opportunities to visit work sites and take part in family outings, as opposed to winter months when most participants would have been out of work and remitting less. It also meant that I was able to carry out recall interviews over a longer period – continuing into April as opposed to the initially proposed October. This more extended involvement also provided an opportunity to observe changes due to the worsening economic crisis in the US and Honduras.

Kinship charts have proved useful on a number of levels. Mapping out the transnational families provides a visual of the composition of physical and economic households, relationships between households with an extended family, and location of family members. The kinship charts included here are the core components of much larger extended family charts that were reconstructed from network portions of surveys and US emigrant interviews and revised with the help of the heads of households of the four case study families.<sup>3</sup> They were helpful in sparking discussion with informants, clarifying, and seeing how different families connect through social and economic relationships. More can be done with the charts. They are currently shaded to reflect family location and transmission of financial remittances, but could be retooled, for

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<sup>3</sup> Building the kinship charts was made easier by the ID scheme developed during the survey to maintain confidentiality. Each household surveyed in San Isidro, including the four transnational families, was provided with a unique four digit code indicating neighborhood and whether or not they had emigrant members. Each individual named in surveys and formal emigrant interviews received a unique network ID to indicate physical household in Honduras (100s), economic household in Honduras (200s), physical household in the US (300s), economic household in the US (400s).

example, to indicate individuals interviewed or highlight WIP related communication or nonmonetary economic ties.

Focusing exclusively on transnational family networks runs the risk of missing other important watershed commons related dynamics going on in the village in which the families do not participate. The village-wide survey and interviews with community leaders and representatives from conservation and development organizations helped broaden the family-centric picture and contextualize family practices. In particular, alternative lines of questioning allowed for understanding the basic commodity chains for some of the most important elements impacting the watershed commons: land, labor, firewood, and cattle. Accompanying workers during water system repairs, touring the project, and asking water-project related questions in formal and informal interviews, allowed for better understanding of household and emigrant participation in the community water project.

*Did the transnational family focus help meet research goals?*

The transnational family focus has already proven successful in addressing one of two main hypotheses: that the domestic and transnational emigrants remit to their households of origin (economic remittances) are invested in watershed impacting practices (WIP) by households, the corresponding village community, and the park. Further analysis will show how well it can also address the second: that the social remittances (ideas, perceptions, and values) which domestic and transnational emigrants transmit to members of their households of origin result in prioritization of specific watershed management related practices (WIP) in the household, village, and park. Certainly, the family based methodology will prove more effective in showing the movement and content of social remittances than would have the survey or emigrant interviews alone.

The transnational family focus of survey interviews, remittance diaries, recall interviews, participant observation, and emigrant interviews was instrumental to achieving the project's specific research goals, several of which would have been difficult to achieve without the focus and rapport provided by working within the family networks. These goals include:

- Document domestic and transnational emigration from the households.
- Record the transmission and receipt of economic remittances received by Santa Rosa households within the household, village, and park. Record watershed management related uses for remittances such as protection of water supply and sustainable agriculture practices.
- Examine the flow of economic remittances within three transnational families, including Santa Rosa residents, domestic emigrants, and transnational emigrants.
- Determine if emigrants designate remitted funds to watershed impacting practices in the household, village, or park.

- Identify emigrants' attitudes and ideas about household, community, and park natural resource management and compare to those expressed in households of origin.
- Show that, in terms of watershed impacting practices, a "family" or "community" extends beyond the spatial boundaries of homes, village, watershed, or park.
- Situate the data collected through Santa Rosa and the transnational family case-studies in the broader context of the park through several consultations with park co-managers and groups of residents from other villages.

A third research hypotheses and related research goal remain elusive: considering the relationships between the distribution of economic and social remittances to the distribution of economic and social capital within the village. Data was gathered through the surveys and emigrant interviews on aspects of each (consumer goods, land, formal education, leadership, training opportunities, etc.), but strong WIP-related connections between the distribution of remittances and capital are not readily apparent without finer grained analysis.

## CONCLUSIONS

A number of challenges and opportunities were generated by focusing on transnational family networks to understand how emigrants affect the management and use of the watershed on which their households and community of origin depend. Working within family networks led to more nuanced and better contextualized understandings than would have a survey alone, as is suggested by the preliminary results shared here.

Following remittances and nonmonetary ties within families helps string together data and observations, and reconstructs the broader community through relationships between extended family households. The research process mimics experiences of the emigrants and families – experiencing firsthand the difficult logistics of maintaining families across time and space. The community-wide survey was useful in selecting the families and putting them in the context of the broader community. Multiple visits with each case study household in Honduras, built a level of rapport and trust that extended through family networks – allowing for a much quicker entry into the homes of emigrants than would have otherwise been possible. The same was true in Honduras when following up with additional households tied to the case study family through remittances and reciprocity. Indeed, identifying and entering many of the households would not have been possible without introductions given by family members.

Kinship charts, an old anthropology standby, were useful tools for visualizing (and confirming) relationships, interconnections between households, and even basic remittance flows. While unforeseen changes to the research schedule diminished their potential, remittance diaries and recall interviews remained useful for tracking the social and economic remittances most likely to affect watershed impacting practices.

Inevitably, focus on household case-studies over community case-studies meant that some community-wide dynamics were missed or downplayed. The survey, participant observation of community events, and practitioner interviews and document collection help reconstruct the community experience and contextualize the relationships between remittances and WIP in light of park and national policies and practices.

Further data entry and analysis will provide a more nuanced understanding of the methodology's strengths and limitations, particularly in correlating remittance flows and changes in watershed impacting practices. It is clear from fieldwork and preliminary analysis, however, that focusing on transnational family networks is effective for moving between spatially distant sites in a way that mimics the transnational flows of people, funds, and ideas that shape use and management of the watershed commons.

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