

Community Cohesion and Distrust: Tracing the Roots of Resource Use and Social Equity in Maranhão, Brazil

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ABSTRACT

A comparative examination of trajectories of two communities in the Eastern Amazon experiencing land struggles in the 1980s sheds light on factors triggering their differential resource use patterns and contrasting ways in which social relations are manifested. While in one case community institutions were able to enhance local livelihoods and residents' welfare, institutions regulating resource-use in the other case have failed to establish rules for a sustainable system. The examination of social relations over extended periods supports our understanding of today's socioeconomic configurations in the two communities, and their interaction with the environment. Improved land-use planning is seen to require a state of affairs in which internal cooperation supersedes discord. Cooperation and agreement in one case, and discord and individual orientation in the other resulted from social facts that marked the communities during land occupation and subsequent state-supported land privatization. Processes examined reflected the contrast between a background of hierarchical, subordinated social relations, and a more egalitarian social structure. Today's discrepancies in land-use trajectories and social life were traced back to attitudes and the agency of local residents as they confronted socio-structural and ecological opportunities and constraints in the past.

[Keywords: Eastern Amazon; peasant communities, political ecology, kinship networks; land-use trajectories]

1. Introduction

In this paper I assess contrasting smallholder resource allocation decisions and their respective land use outcomes through an approach that combines the socio-structural and political-ecological dimensions influencing social and environmental trajectories. The approach assumes that resource use dynamics integrate temporal, spatial, and organizationally specific choices by individuals reacting to cumulative historical processes that interactively reshape their structural constraints. I apply this approach to study resource use trajectories of two smallholder, shifting-cultivator peasant communities at the easternmost fringe of the Brazilian Amazon. Both communities, established in the 1920s within the same municipality, experienced acute land struggles with ranchers in the mid-1980s, and recovered land access through State intervention and common tenure schemes. Despite apparent sociocultural and ecological similarities, these communities present rather distinct land allocation trajectories in the past quarter century, since tenure recovery. The first community features a balanced association of palms, pastures, and

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swidden fields, while slash-and-burn shifting cultivation of annual fields prevails in the second community. In order to understand the fundamental reasons for such discrepancy, continuity and breakdown in the communities' social relations, cohesion and social positioning over extended periods were examined. The main contention of the paper is that interaction with the environment and resource allocation decisions in each community can be only explained through a detailed comprehension of their differential responses to critical social processes occurred in the past that shaped their current configuration.

Predominant features characterizing social interaction within the communities were observed through long-term ethnographic observation. Among such features, the differential occurrence of episodes of violence was clearly detected, serving as an indicator of the level of community stress and conflict, and assumed to be implicated in resource allocation decisions and land use practices. Genealogies were then employed to study the relevance of kindred groups and the association between kinship networks and community cohesion, and helped to explain violent outbreaks. The communities' respective historical trajectories are then traced and compared, providing robust explanations to their current contrasting situations, which are also exemplified through life histories.

This study was initially informed by ten years in which I worked as a development practitioner and lived close to peasant communities in the study area, when I witnessed first-hand their struggle to cope with restrictions to access to resources. It also benefitted from subsequent visits and anthropological fieldwork conducted from 1996 to 2002 while I was conducting graduate studies. The study thus emphasizes the assessment of community features in the period starting with intense land struggles of the 1980s and ending with the post-conflict of the early 2000s. Research included ethnographic methods such as participant observation, open-ended, semi-structured and interactive interviews focusing on life-histories and community social trajectories. The methodology also included the study of kinship through genealogies, and the gathering of spatial data on landownership, land-use and land-cover. To preserve identities, aliases were used for the names of communities, families, and individuals reported in this paper.

The paper is structured as follows. After this introduction, I situate the study within relevant fields of anthropology used to explain smallholder resource use trajectories. After this discussion I introduce the research site both in terms of broader processes taking place at large in the studied area, and of specific discrepancies observed in the two communities, regarding resource use trajectories and aspects of social cohesion. I follow these observations with sections that progressively contextualize such distinctions, first in terms of the differential expression of violence, then on the contrasting role assumed by kinship, and finally on the ultimate differential responses to critical social processes taking place during communities' key historical moments. Next, differential trajectories are reinforced through specific accounts of the role of extended family groups. I conclude arguing for the validity of approaches that coherently connect socio-structural and political-ecological dimensions of resource use trajectories.

2. Anthropological approaches used to explain contrasts in resource use

Proper assessment through complex chains of explanation and the progressive contextualization of interfering factors leading to differential resource use serves to the ultimate purpose of identifying the social roots of resource use transformations, and the expression and motivations for diverse resource use routes. An overview of the scholarly contributions relevant

to understand socio-environmental interactions is thus initially adopted to guide the identification of relevant dimensions through which these connections are manifested.

In this analysis I acknowledge two research approaches that despite disputing academic precedence complement their strengths and gain in validity and robustness when integrated. One of the approaches emphasize causal explanations for human action and environmental change, as attested by contributions recently presented in three edited volumes (Vayda 2009; Vayda and Walters 2011; Walters et al. 2009) following the initial presentation of *event ecology* and *progressive contextualization* by the lead authors. The other approach incorporates multiple developments that in the last three decades have been associated to the field of political ecology (PE), as attested by scholars who recently revisited the diversity of such contributions (Biersack 2006; Robbins 2011; Rocheleau 2008). PE's turn back to ecology and its combination of structure and agency has been indeed highlighted by practitioners who have been addressing the perennial issues of development and conservation taking into consideration questions of cultural survival, gender equality and political autonomy through analyses increasingly made *with* and *for* social movements and their constituencies (Rocheleau 2008: 721).

The scholarly contention between the two approaches can be traced as a reaction to the first wave of PE's influential investigations that refused the adaptationist paradigm of cultural ecology and exposed that human actions at the local level are integrated within wider political and economic processes that impacted the social and biophysical environments (Blaikie 1985; Blaikie and Brookfield 1987; Fairhead and Leach 1995; Hecht and Cockburn 1989; Little and Horowitz 1987; Peet and Watts 1996; Peluso 1992; Redclift 1987; Schmink and Wood 1987; Stonich 1993). Critiques to early political ecological work emphasized the deterministic role given to wider political-economic factors to environmental degradation outcomes, resulting in insufficient attention to the nature of the environmental event in question, and the disregard to important interactive factors leading to it.

Vayda and Walters challenged the attribution of ecological labels to what they predominantly interpreted as studies on the political control or political contest over natural resources. Their alternative "event ecology" formulation has "*a focus on the environmental events or changes that we want to explain and then ... construct chains of causes and effects leading to those events and changes*" (1999:169). Event ecology draws on Vayda's previous formulation of progressive contextualization (Vayda 1983:266), inspired by the rationality premise that explains people-environment interactions through the initial examination of "specific activities ... performed by specific people in specific places at specific times", and by an investigation of causes and consequences of these activities. Event ecology, however, seems to overrate the role of individual rationality and decision-making models in the identification of adaptive mechanisms, and underestimates structural constraints. Human agency goes beyond adaptive behavior discerned by rational choice. It comprises the inherent capacity of resource-users to dynamically assimilate and/or transform causation effects of "multiple social structures" (Jansen 1998:21).

Preexisting social relationships, hierarchies, and agency are indeed central aspects of practice theory (Bourdieu's 1977), an approach that emphasizes social and cultural contexts as both medium for and outcome of the reproduction of practices by individual actors (Nyerges 1997:8). Nyerges (1997, 1993, 1992), based on the anthropological derivations of actor centered and practice models of human action (Orlove 1980; Ortner 1984; Vayda 1986), appraises individual agency as directly involved in the generation of practices that result in resource

competition, control, and exploitation. The approach examines how conflicts emerging over access to and control of resources are incorporated into individual social lives, and alter the use of resources. The ecology of practice relates the position of individuals in local social hierarchies to the culturally constructed mechanisms and productive activities adopted to exploit natural resources (Nyerges 1996:123, 1997:7-10). The approach assumes that management strategies within hierarchical systems are shaped by heavily institutionalized social asymmetries resulting in the incorporation of processes of ecological adaptation into social interactions and practices (Nyerges 1997:9-10).

While in this paper I draw on the ecology of practice to explain mechanisms through which resource managers respond to local socio-structural conditions, I expand the analysis to levels other than the very local. Guided by a problem-centered approach, I combine domains of explanation capturing the temporal and spatial cross-scale dynamics involved in socio-environmental transformations. The approach used here therefore integrates socio-cultural and political-ecological dimensions of land use dynamics that result from choices made by resource-users who operate within structural constraints. Resource-allocation decisions, therefore, are local responses to the conjugation of cultural, ecological, economic, historical, and political factors, often positioned at different levels within the system. In the remainder of this paper I use the approach to examine and discuss contrasting resource use trajectories in the communities of Ibiapa and Outeiro.

3. Socio-environmental transformations in the Mearim Valley

Ibiapa and Outeiro are located in the Mearim Valley, Maranhão state. The state has the largest rural population share in Brasil: 38% in 2010, as opposed to a national average of 16% (IBGE 2010). State figures for social exclusion, poverty, unemployment, and social inequalities are among the highest in Brazil (Campos et al. 2003). Rural dwellers in the Mearim Valley are predominantly agro-extractive, shifting cultivator smallholders relying on rice, cassava, and on the extraction of products from the babassu palm (*Attalea speciosa*), a species that grows sparsely in primary forests but proliferates after land clearing, constituting a dramatic example of Amazonian oligarchic forests (Peters 1992). According to the last Brazilian agricultural census, some 175,000 families in Maranhão were engaged in shifting cultivation, and 40,000 extract babassu products (IBGE 2006), an activity that in addition to provide multiple products extremely important to local livelihoods is the source of cash income to peasant households since the early 20th century. Babassu has been described as ‘tree of life’ (Anderson and Anderson 1985) or ‘subsidy from nature’ (Anderson et al. 1991; Hecht et al. 1988), phrases that transmit its importance to the livelihoods and social reproduction of thousands of smallholders relying on its products and services.

The Mearim Valley is indeed at the core of the so-called “babassu zone,” which experienced significant changes in resource use since the early 20th century. Predominant landscapes changed from species-rich mature forests to babassu-dominated secondary succession, to pasture or croplands containing palms at various densities. Intense land struggles between ranchers and peasant communities marked the conversion of palm forests to pastures in the 1970s and 1980s. During the peak of the struggles, local livelihoods have increasingly relied on services and products obtained from babassu: slash-and-burn shifting agriculture on lands covered with palms that provided enough biomass for reasonable harvests, and the extraction and sale of babassu kernels carried out predominantly by women.

Ibiapa and Outeiro emerged from land conflicts with most of their area covered by pastures of *Hyparrhenia rufa*, locally called jaraguá or lajeado grass. The expansion of ranching and conversion to pasture in Lago do Junco, the municipality where the communities are located, began in the 1960s. Processes of internal differentiation and the arrival of outside ranchers increased land concentration, and by the mid-1980s most smallholders had no tenure security. By that time, 80% of the smallholdings occupied just 6% of the land, contrasting with the almost 50% occupied by the 36 largest estates (IBGE 1998). Facing exclusion, an active peasant social movement engaged in struggles that resulted in significant land recovery. Between 1985 and 1995, 450 peasant families in Lago do Junco recovered eighteen estates totaling some 6,000 hectares. Ibiapa and Outeiro were among the first communities to recover their land.

Following tenure recovery in the late-1980s, the different forms through which smallholders of these communities managed pastures or converted them into secondary growth, and later used the land for cultivation, provided evidences that, despite similarities, their diverse socio-environmental configurations responded differently to processes that influenced land-use/cover outcomes. Different resource use responses tend to be explained by variation in tangible asset endowments and material conditions. The examination of these two communities' trajectories shows that social relations and hierarchies have strongly influenced the differential expression of agency and collective action through decisions and practices that resulted in distinctive land-use/cover outcomes. Before discussing in detail socio-structural and organizational distinctions derived from the historical trajectory of these two communities, their different land and resource use routes are presented next.

4. Examining contrasting resource use routes

While a balanced association of palms, pastures, and swidden fields (and therefore an agro-pastoral-extractive economy) currently prevails in Outeiro, land use in the post-conflict of Ibiapa has been almost exclusively represented by slash-and-burn shifting cultivation, with the lack of planned initiatives and internal regulation mechanisms such as annual field aggregations and maximum field limits established in Outeiro. These measures have also secured greater coverage of the area with babassu palms. Discontinuity of babassu extraction, particularly in vulnerable contexts, undermines local livelihoods and generates household instability, as women have greater difficulty to generate their income.

A remote sensing analysis of land cover change between 1986 (pre-conflict) and 2002 (post-conflict) shows basic differences in land use trajectories between the two communities. Table 1 highlights four major patterns of land cover change observed in the two communities: (1) open pasture decreased in both, but at a higher rate in Ibiapa; (2) palm/pasture associations decreased in Ibiapa but did not change in Outeiro; (3) fallow/annual fields had a substantial increase in Ibiapa, but decreased in Outeiro; and (4) forest/advanced second growth increased in both, but at a higher rate in Ibiapa (for detailed spatial analysis, see Porro 2002, Chapter 5). Ibiapa's condition of higher proportion of land under secondary succession, however, is not likely to be channeled to the enhancement of local wellbeing. Even though Ibiapa's families have access to almost twice as much land on a per capita basis (Table 2), resource use planning targeting long-term utilization is better executed and enforced in Outeiro.

Table 1. Area and proportion of land-cover classes in Ibiapa and Outeiro

	Ibiapa					Outeiro				
	1986		2002		Δ %	1986		2002		Δ %
	ha	%	ha	%		ha	%	ha	%	
Forest	410	12.9	873	27.4	112.9	198	10.3	342	17.9	73.3
Second-growth	534	16.7	742	23.2	38.9	378	19.7	325	17.0	-13.8
Palm/pasture	1755	55.0	1279	40.1	-27.1	1005	52.5	1002	52.3	-0.3
Open pasture	470	14.7	192	6.0	-59.1	325	17.0	190	9.9	-41.4
Bare soil	14	0.4	90	2.8	545.8	8	0.4	50	2.6	513.3
Water	9	0.3	16	0.5	70.5	1	0.0	5	0.2	750.0
Total	3193		3193			1914		1914		

Source: Porro, 2002

Table 2. Land tenure status of resource-users in Ibiapa and Outeiro, 2001

Land tenure status	Outeiro		Ibiapa		Total	
	hholds	ha	hholds	ha	hholds	ha
Total	118	1,440	119	2,759	237	4,199
Average land availability (ha/hhold)		12.2		23.4		17.7
Land reform commons		470		2,024		2,494
Farmers only on common land	21		75		96	
Farmers with additional private land	10	142	2	43	12	185
<i>Sub-total "land reform" farmers</i>	<i>31</i>	<i>612</i>	<i>77</i>	<i>2,067</i>	<i>108</i>	<i>2,679</i>
	<i>26%</i>		<i>65%</i>		<i>46%</i>	
Private land						
Small 1-20 ha	16	138	7	74	23	212
Medium 20.1-200 ha	8	481	6	618	14	1,099
Large > 200 ha	1	209	-	-	1	209
<i>Sub-total private land</i>	<i>25</i>	<i>828</i>	<i>13</i>	<i>692</i>	<i>38</i>	<i>1,520</i>
	<i>21%</i>		<i>11%</i>		<i>16%</i>	
<i>Sub-total landless</i>	<i>62</i>		<i>29</i>		<i>91</i>	
	<i>53%</i>		<i>24%</i>		<i>38%</i>	

Source: Lago do Junco socioeconomic survey (Porro, 2002)

Greater land availability partially explains Ibiapa's lower tendency toward agricultural intensification and resource use planning. Yet, household welfare trends in both communities suggest that social and institutional factors should also be accounted for in the analysis of resource-use dynamics. Indeed, as seen in Table 3, greater natural resource endowments in Ibiapa were not translated into better livelihood conditions. To the contrary, socioeconomic indicators are considerably worse than those in Outeiro.

Table 3. Indices of socioeconomic status in Ibiapa and Outeiro

Indices	Ibiapa		Outeiro		ANOVA significance	Total	
	mean	st. dev.	mean	st. dev.		mean	st. dev.
Productive assets ¹	22.6	(33.6)	65.5	(147.7)	0.003**	44.6	(110.3)
Durable goods ²	220.6	(204.7)	235.6	(239.4)	0.616	228.3	(222.9)
Housing conditions ³	435.0	(127.3)	541.1	(166.2)	0.000***	490.0	(157.6)

*** p<0.001, ** p<0.01, * p<0.05. (Source: Porro 2002, pp.256)

Table notes:

1. Productive assets are comprised by (a) livestock: cattle, draft animals, swine, and poultry; (b) pasture; and (c) perennial and semi-perennial crops: fruit trees, banana groves, pineapple, passion fruit, and papaya.

2. Durable goods: television, satellite dish, refrigerator, gas stove, bicycle, sewing machine, stereo system, radio, and clock.

3. Housing conditions: roof, floor, wall materials, size, electricity, water supply, and latrine.

Figures for the indices should be read as follows. The Productive Asset Index and the Durable Goods Index were based upon monetary values of their components, indexed to a maximum value of 1,000. Monetary values of productive assets and durable goods owned by households (August 2001 prices) were added and indexed, normalized by maximum amounts verified for each case. Maximum amounts for productive assets and durable utensils were indexed to 1,000. The Housing Index reflects weights given to the 12 constituent items. The maximum index corresponds to a dwelling made of bricked walls, tiles on the roof, cemented floor, measuring 100 m², with 10 internal divisions, latrine, tapped water, water filter, and with electrical power, a porch, a raised garden, and a courtyard of one hectare.

The imprint of socio-cultural and institutional features of both communities on their resource-use trajectories, and, ultimately, on the landscapes that result from these practices is observed through land use planning and management. To sum up, Ibiapa's overall economy relies on the cultivation of annual fields carried out in an overly individualistic manner, with limited development of the social capital required to improve resource-allocation. While the engagement of Ibiapa settlers in ranching is occasional for the majority, a minority of producers has enclosed common land for private use, therefore reproducing processes of economic differentiation of the past. Individuals who hold power take advantage of common goods and assets, appropriating resources for their private benefit.

Conversely, Outeiro featured a gradual improvement in land-use planning. Formal and informal rules have been developed and enforced, and the more limited resources were optimized over the years. Portions of the common lands were set apart and managed as collective pastures, while the remaining area was split between fallow and agriculture. Systematic practices to choose, demarcate, and burn land for crops have been carried out in a spirit of cooperation and by agreement, reducing losses and the accidental spread of fire. Several of the settler families diverted economic gains of the last few years to expand their productive basis by purchasing livestock and nearby private smallholdings. Ranching has been integrated with crops and babassu extraction by a larger number of families, and is no longer viewed as a taboo or as a symbol of oppression. A collective herd is owned by the local association, used both as a source of income for local investments, and for periodical redistribution. As for private herds, when families reach an agreed limit for the use of common pastures, cattle are taken to adjacent, private smallholdings. Practices for pasture and herd management indicate that livestock became incorporated into the productive system, absorbing household labor and resources. In this regard,

the maintenance of babassu-filled pastures provided conditions for the integration of the extractive activity within agro-pastoral livelihood systems.

To corroborate the differential trajectories in these two communities, next section examines the discord and instability that pervade social relations in Ibiapa and contrast them with the cooperation and collective action noted in Outeiro.

5. Perceiving and understanding the expression of cooperation or discord

Several years of interaction with residents of the two communities allowed me a detailed understanding of differential social processes taking place in each one. Outeiro is indeed viewed as a community with institutions able to consolidate alliances enhancing local livelihoods and residents' welfare. Local leadership played a central role in guiding community members in the assimilation of development projects, and their incorporation of the sustainable development discourse. Outeiro was referential for other groups that later pursued similar trajectories. Community leaders successfully transferred to the post-conflict period the abilities they had shown in the process of recovering land rights. Internal struggles did occur, but with scant interference in resource-use.

A different trajectory took place in Ibiapa, where land struggle was followed by post-conflict episodes that exacerbated internal disparities. Social relations became irreconcilable with proper common resource management, as frictions involved leadership disputes over prestige and material conditions. Conflict resolution within the group resembled clashes during past confrontations against ranchers. Incompetence, rivalry, suspicion and betrayal were terms frequently attributed to villagers, which were portrayed by images of violence, distrust, and lack of managerial skills. The post-struggle trajectory in Ibiapa was a failure according to community organization and participatory development viewpoints.

Social relations within Ibiapa are loaded with tension and discord, and impose heavy burdens to common initiatives, as contested relations inform practices that are likely to undermine the future integrity of the environment. Local institutions regulating access to common goods and resource-use have failed to establish rules for a sustainable and equitable system. Clearing and cropping on common lands are done at the will of individuals, resulting in frequent disputes within the group. While Ibiapa's greater availability of land and resources can be considered a strong factor for lower efficiency in overall land-use planning, internal discord and inability to provide proper governance has also hindered optimal resource-management. Conversely, resource use optimization in Outeiro can be attributed to the community's internal cohesion during the post-struggle period.

A careful examination of the historical background of the communities sheds light on what triggered not only their different land-use trajectories, but also the contrasting ways in which social relations and community life are manifested. Learning from communities' historical trajectory points out to the different forms through which their residents experienced and acted during crucial moments in the formation of their social structure. The examination of continuities and breakdowns in social relations and social positioning over extended periods thus supports our understanding of the operation of today's socioeconomic configurations, and the interaction of community members with the environment.

Indeed, scarcity or abundance of land suitable for shifting-cultivation should not be viewed as the only underlying factor that explains land use dynamics in these two communities.

Cooperation and agreement in Outeiro, and discord and individual orientation in Ibiapa result from social facts that marked the communities during the period of land occupation and subsequent state-supported land privatization. These processes and relationships reflect the contrast between, on the one hand, Ibiapa's historical background of hierarchical and subordinated social relations, and on the other hand, Outeiro's more egalitarian structure. Today's discrepancies in land-use trajectories and social life can be thus traced back to the attitudes and the agency of residents in the communities as they confronted socio-structural and ecological opportunities and constraints in the past.

To illustrate the difference in current social conditions of the two communities, I begin by focusing on the expression of violent episodes taking place in Ibiapa and the absence of violence in Outeiro. If the lack of proper land use planning in Ibiapa reflected the absence of internal cohesion, violence reinforced the stress that was already evident. Violence was not suppressed within social relations in the post-conflict of Ibiapa, periodically leading to extreme outcomes.

6. The differential expression of violence

One of the most telling indicators of the social conditions prevailing in human settlements is the expression of violence. Violent events are often associated with the occupation of frontier lands. Violent episodes tend to diminish over time with the emergence of notions of citizenship that accompany the integration of such lands into spheres of institutionalized social organization. To some extent, people who engaged in land conflicts apply practices and attitudes that already defined their social setting, diverting to new ends the older forms of violence present in their ordinary interactions. When the material conditions for the existence and reproduction of the social group are at stake, previously existing traits are thus replicated, strengthened, and infused with new ideological and symbolic dimensions. The point here is that ordinary violence permeates much of the routines in local towns and peasant communities, played out in different forms and degrees of intensity. Thus, the study of violence is not only essential to a comprehension of daily rural life, but is also an entry point for understanding changes in social relations, and the effect that such changes carry for land- and resource-use.

Violence within peasant communities in Maranhão assumes rather personal dimensions. Violent episodes are frequently associated with the breach of honor due to extramarital (or pre-marital) relations, or involve disputes for social prestige or dominance. Violent transgressions often take place in social gatherings, mostly under the influence of alcohol. Illegal drugs were implicated in recent cases involving youths, both in the city and rural communities. Violent events are also related to economic stress and to political disputes. Once a visitor establishes rapport with communities, he/she will identify various degrees of violence permeating human relations. Ibiapa and Outeiro are however clearly distinct in this regard.

The expression of violence in Outeiro is generally restricted to minor episodes that rarely come to attention outside the community. In Ibiapa, in contrast, violence has been one of the major features of community's social relations. Even in the post-conflict, Ibiapa's residents used to carry guns and knives, usually brought to social gatherings. It is not surprising that several incidents bestowed on Ibiapa the notorious reputation as a violent and dangerous place. Incidents that came to my attention suggested a connection between violence and the lack of governance. Whereas not a single such case was reported in Outeiro, extreme cases of violence occurred in the post-conflict period in Ibiapa. The episodes below, which I transcribe from undisclosed

narratives of Ibiapa's residents, corroborate that violent relations are a critical aspect of social life in the community.

“After classes are over, residents are authorized to watch television in the school. On one of those nights, Maria, who is 14 and not a student, was in the building and was violently raped by two young men. One was the teacher himself. The other, who lives across the street, also had secondary education. They tied Maria and covered her face with clothes, so she could not yell. The fathers of both young men were active during the land conflict, and to this day they are regularly consulted regarding community organization.”

“Amâncio and Juvenal were friends and drinking partners. Amâncio's parents were senior residents of Ibiapa. Juvenal, recently arrived, was married to the daughter of a local family. On a Sunday afternoon, Amâncio killed Juvenal. He first used a shotgun. Then, once Juvenal was down, he cut his throat, nearly severing his head. Amâncio left the village, joined by his family. People say that drugs were implicated in the murder.”

“In late 2001, a 15 year-old boy killed his younger buddy. They were fishing and the younger was more successful. When the older demanded a share of the catch but was refused, he just took the shotgun he was carrying and shot his young companion to death. The killer's family abandoned Ibiapa. The parents of the deceased, disgusted with the episode, also left.”

“Juca is an outsider. He had recently married the daughter of the former head of the community's women's club. Juca is an alcoholic, and often threatens his wife and in-laws. He claims to have learned martial arts, and often expresses disdain toward others. Two brothers from one of the largest and powerful families in the village did not accept Juca's attitude. They attempted to kill Juca in an ambush just outside the village. He barely escaped.”

These events are not new in the community. In the early 1990s, a quarrel pitted the Pereira and Paiva families against each other, and destabilized community's social relations and balance of leadership. The quarrel culminated in a clash that left Riba Pereira deeply wounded by Chico Paiva's knife, to demonstrate that the Paivas would not tolerate the courtship between a married man and Chico's younger sister. Another incident that marked the community took place a few years earlier.

“In the late 1980s, soon after land conflict resolution, Antonio was drunk and defied a group gathered in the chapel. Antonio was not trusted by those involved in the land confrontation. He entered the church yelling cusswords and hit a large knife against benches. He wounded two who were in the church, provoking the rage of the congregation. The men attending the service overpowered and dragged Antonio outside, proceeding to kill him by smashing rocks over his skull.”

Acts of such physical brutality have not been the only expression of violence in Ibiapa. A representative case of the state of affairs in the community occurred with Dona Nilza, who was claiming retirement benefits. Dona Nilza was instructed to file for retroactive reimbursement, as her checks had not been released. It took several years, but she finally learned that she was about

to receive a large amount, equivalent to near US\$5,000. She paid one-fourth to a broker from the community, who supposedly sped up the paperwork, and arranged her travel to receive the money in the city. Aware that the broker deceived her, she was nonetheless happy when I first spoke with her about the case. She was expanding her house, and had recently purchased a cow. Yet, she reported that as soon as she got the money, people from all over the community approached her for loans.

When I returned one year later, I found Dona Nilza completely distressed. She had fallen ill, with a skin problem that, as she said, was burning her entire body to a point that she could not wear clothes. Dona Nilza told me that after she finished the construction of her house, she found a strange piece of clay in her porch, just like clay from the local graveyard. She regrets she did not realize she should not touch it. It was placed there as a witchcraft ritual. Soon after that, Dona Nilza began to feel the symptoms of her illness, and never recovered. In her view, that clay was put there by someone from the community who could not tolerate her wealth. Another interpretation, however, is that Dona Nilza herself never came to terms with the fact of earning a large sum of money. In a place where the norm is to seek advantage from the better off, Dona Nilza suddenly came herself to be the object of envy, a role that she had never experienced before.

During most of the time, Ibiapa resembles other communities such as Outeiro. Yet, the succession of violent episodes and incidents impregnated with deviant social behavior denote a pattern of human relations that constantly disturb the social fabric. Recurrence of such episodes creates a social environment of distrust that undermines and renders unfeasible the execution of collaborative efforts. Still, questions that remain are why human relations are impregnated with this feature in Ibiapa, but not in Outeiro? What are the underlying features that prompted violent episodes and unstable social relations in one place, while people in the other managed to build a safety network to overcome internal differences and promote community welfare? I began to better understand such differences when studying the composition of the communities. Next, I present evidences that substantiate the assertion that much of the differences between Ibiapa and Outeiro, including the different levels of violence permeating social life, are related to the structure and composition of the communities, particularly in terms of kindred and extended family networks.

7. Extended family groups and kinship networks in Ibiapa and Outeiro

Ibiapa and Outeiro present many similarities. Both communities were formed in the 1920s. Initial settlers and also those who subsequently arrived have similar racial and ethnic backgrounds. From the establishment of the villages and up to the late 1950s, the formation and development of a peasant society characterized both communities. Ibiapa and Outeiro also experienced subsequent periods of economic differentiation (late 1950s to late 1970s) and social stratification (late 1970s to late 1980s) (Porro 2005). People in both communities were oppressed to the point of revolt against better-off ranchers, and in both places peasants struggled for their tenure rights. Settlement projects were installed in the late 1980s, marking the beginning of the period of transformation in the configuration of these communities. Ibiapa and Outeiro are also geographically close to each other, and share biophysical attributes. Both are located in the same municipality, being therefore subjected to the same governance. Agriculture, babassu extraction, and ranching are carried out using similar technologies. Yet, there are substantial differences between the communities.

Neither the duality between scarcity and abundance of resources, nor the level of social organization of each community, should be treated as the ultimate cause of these differences. Improved land-use planning as part of more cohesive local institutions of governance requires a state of affairs in which harmony and internal cooperation supersedes discord. By studying the composition of the communities, I concluded that compared to Ibiapa, Outeiro has a more solid and connected network of relatives and kin. I argue that stronger and more complex kinship networks, and multiple instances of social interaction attenuate disagreements over specific issues and subjects.

Differences between the communities' internal structure and composition are first evident in the longevity of residence (the time that heads of nuclear households reside in the village). As seen in Table 4, while the average length of settlement in Outeiro was nearly 30 years for males and 25 years for females, average residence in Ibiapa was considerably shorter: 20 years for males and 17 years for females. These differences are not captured when comparing the age-structure of the two communities, as average are statistically similar.

Table 4. Age structure and longevity of residence in Ibiapa and Outeiro

	Outeiro		Ibiapa	
	Males	Females	Males	Females
Entire community				
N	105	111	79	86
Average age	41.7	38.5	43.8	39.5
Average years living in the community	29.5	25.3	19.4	17.2
Individuals 40 years and older				
N	49	45	46	37
Average age	55.2	53.7	54.2	53.7
Average years living in the community	35.8	34.0	21.7	20.9
Percentage of life in the community	67.3%	65.2%	42.2%	39.4%

Source: Lago do Junco socioeconomic survey (Porro, 2002).

Table 4 thus examines the subset of individuals who were at least 40 years old in 2002. The average age in the 40 and over subsets for Ibiapa and Outeiro is once again similar. However, the older residents of Outeiro (both males and females) were settled there an average of 14 years longer than Ibiapa's older residents. On average, older residents in Outeiro moved to the village in the mid 1960s, compared to the late 1970s for Ibiapa. This difference, as will be presented, results from differential responses to key events in the communities at that period.

Genealogies provide another instance to assess community structure. In order to compare the presence of extended families, or the extent to which nuclear families relate to each other through direct descendents or marriage, I examined and sketched the genealogy of all nuclear families in Ibiapa and Outeiro. A nuclear family may be part of more than one extended family. The largest and oldest family-groups in the area span up to four generations. Therefore, the positioning of a nuclear family as first, second, third, or fourth generation will determine the number of connections, or kinship links, with other families, and its participation in one or more of such extended-groups. I have established a threshold of at least five connected nuclear families to constitute a large extended-family-group.

Table 5 summarizes the size and number of generations of such large extended-family-groups in both communities. Ibiapa presents only five large extended-family-groups, and none of the groups had more than ten households. Only three nuclear families in Ibiapa belonging to these extended families constitute the third generation of their respective groups, denoting a relatively “young” social network. Taken together, these five groups include only 37% of Ibiapa’s nuclear families (32 out of 87), indicating a fairly heterogeneous kinship basis for the community. In contrast, the village of Outeiro presents 14 large extended-family-groups formed by at least five nuclear families. Nine of these groups had 10 or more families. Taken together, these 14 groups include more than 94% of the village’s nuclear families (84 out of 89). In addition to being more extensive, the social fabric internal to Outeiro is more mature. All but two of these groups include at least a third generation of adult household heads, and six groups are already in the fourth generation. A total of 35 nuclear families are third or fourth generations of their extended-family-groups.

Table 5. Size, longevity, and internal connections of extended families in Ibiapa and Outeiro

Name of family-group	First arrival in village	Generations in village	Nuclear families* in extended-family	Cumulative households of village	Extended groups with direct links
Outeiro					
I. Liborio	1958	4	15	15 (17%)	II, III, IV, V, VIII, IX, XIII
II. Sotero	1949	3	14	24 (27%)	I, III, IV, VI, IX, XIII
III. Vidigal	1953	4	13	35 (39%)	I, II, VII, XII, XIII
IV. Heleno	1958	4	12	43 (48%)	I, II, VII, IX, X
V. Sobral	1953	4	11	52 (58%)	I, VIII, IX
VI. Viriato	1958	3	11	60 (67%)	I, II, VII, VIII, IX, X
VII. Linhares	1956	2	11	63 (71%)	III, IV, VI, VIII
VIII. Arcanjo	1945	3	10	65 (73%)	I, IV, V, VI, VII, X
IX. Norberto	1952	3	10	72 (81%)	V, VI, XIV
X. Eneas	1970	3	8	74 (83%)	I, IV, VI, VII, VIII, XI
XI. Barreto	1960	3	7	80 (89%)	I, X
XII. Pestana	1948	4	6	83 (93%)	III, XIII
XIII. Patrocínio	1940	4	6	83 (93%)	I, II, III, XII
XIV. Medrado	1970	2	6	84 (94%)	II, IV, VI, IX
Ibiapa					
I. Narciso	1959	3	9	9 (10%)	II
II. Coelho	1976	3	8	16 (18%)	I
III. Pedreira	1966	3	7	23 (26%)	IV, V
IV. Pascoal	1971	2	6	27 (30%)	III
V. Everdosa	1996	2	6	32 (37%)	III

Source: Lago do Junco socioeconomic survey (Porro, 2002)

* figures for nuclear families in extended-family show the number of resident nuclear families in the community that belong to the respective extended-family.

Even more valuable is the visualization of internal links among large extended-family-groups. The study of genealogies show a more connected and complex kinship network in Outeiro than in Ibiapa. The last column in Table 5, which is presented in more detail in Table 6,

gives an idea of the contrast between communities. The number of kinship connections (marriages between large extended-family-groups) in Outeiro is markedly greater than in Ibiapa. Indeed, each of the large extended-groups in Outeiro has direct kinship connections with at least two other groups. Ten of them are connected to at least four other extended-groups, thus composing a much denser network. In Ibiapa, the greatest number of connections between one large extended-group and another is two. The absolute number of direct connections between extended-groups through inter-family marriages is 68 in Outeiro (average of 4.9 per group), and only 4 in Ibiapa (average of 0.8 per group). The existence of a more complex kinship network in Outeiro is also supported by indirect connections, as is the case when one large extended-family-group anchors the relationship between two others. While such indirect connections consolidate the density of internal social relations in Outeiro, connectivity among extended-family-groups in Ibiapa is not significant.

Table 6. Connectivity among extended-family-groups in Outeiro and Ibiapa

Outeiro	I	I	I	I	V	V	V	V	V	X	X	X	X	X
		I	I	I	V	V	V	V	V	X	X	X	X	X
II	5													
III	2	2												
IV	1	3												
V	2													
VI	2	3												
VII			3	4		1								
VIII	3				4	1	1							
XIX					2	1								
X	1			1		1	1	5						
XI									1					
XII			3											
XIII	1	1	6						2		2			
XIV		1		1		1								

Ibiapa	I	II	II	I	V
			I	V	
II	1				
III					
IV			1		
V			2		

Source: Lago do Junco socioeconomic survey (Porro, 2002)
 Note: Connectivity values express the number of paired inter-familial connections within each community (eg. extended-family-groups I and II are connected through five nuclear families)

Contrasting kinship structures in Ibiapa and Outeiro influenced the internal balance of economic and political power, and the entire social environment in these communities. The incidence of marriages with outside partners is proportionally greater in Ibiapa than in Outeiro. More importantly, while outside partners in Outeiro are predominantly women (in a 3:1 ratio), the proportion of male outsiders who arrive in Ibiapa through marriages is the same as that for females (1:1 ratio), and more than three times greater than the proportion in Outeiro (31% against 9%). Despite Outeiro's comparatively lesser land and resources, the assimilation of newly formed nuclear families occurs with little turmoil in the community. In most cases both partners are already part of the local social fabric. The fact that most of the outside partners are

females attenuates disputes over resources otherwise associated with the arrival of outside males. The latter situation is frequent in Ibiapa (Table 7). Greater proportion of male outsiders among the younger generation (couples in which the husband is younger than 40 years-old) requires a continuous process of internal readjustments that creates tension and reinforces opportunities for conflict. There are enough evidences that Outeiro is a community with comparatively larger and more connected extended-family-groups than Ibiapa. In the next session I discuss why this is a consequence of critical events that occurred in important moments for the formation of both communities.

Table 7. Insiders and outsiders in marriages in Ibiapa and Outeiro

	Outeiro		Ibiapa	
	N	%	N	%
Total marriages (male younger than 40)	33		29	
Both partners from the community	21	(64)	15	(52)
Female is an outsider	9	(27)	5	(17)
Male is an outsider	3	(9)	5	(17)
Both partners are outsiders	0	-	4	(14)

Source: Lago do Junco socioeconomic survey (Porro, 2002)

8. The social roots of communities' differential trajectories

During the 1960s and early 1970s the two communities experienced processes of economic differentiation in rather different ways. In short, families in Outeiro endured concentration of land and wealth, while most of Ibiapa's residents decided to move out. These differential responses were, on the one hand, influenced by previous historical events in the communities. These responses, on the other hand, set the stage for further socio-natural trajectories with consequences for subsequent land-use strategies respectively adopted in the communities.

By carefully examining the historical background of Ibiapa and Outeiro, it is possible to identify a sequence of contrasting developments accounting for the differences in their today's configurations. The first contrast dates from the period of land occupation, from the late 1920s to approximately 1950. In this period, when occupation in the villages was restricted to long-term local residents of mixed ethnicity, the "Maranhenses," a more complex social hierarchy was formed in Ibiapa than in Outeiro. Bertoldo, who was Outeiro's founder, was unable to effectively establish his family in the area, while Romualdo, Ibiapa's founder, was more successful in his economic undertakings. In Outeiro, during the 1930s and 1940s, a sort of power vacuum allowed the initial development of a relatively egalitarian socioeconomic configuration. Contrarily, Romualdo's son became Ibiapa's political and economic leader.

Because they were unable to improve their socioeconomic status during the two decades subsequent to the formation of the village, the then residents of Outeiro did not sufficiently enforce their tenure rights. When migrant families from the northeastern states of Ceará and Piauí arrived in the 1950s escaping from the drought and lack of resources, they encountered in Outeiro an open terrain to establish a relatively unconstrained peasant society. Today's largest extended-family-groups in the community (the Liborio, Sotero, Vidigal, Heleno, Sobral, and

Linhares) date back to those days. In the course of six decades in Outeiro, these families became hegemonic in the social composition of the community, superseding the older Patrocínio, Pestana, Sinésio, and Felinto families. Most importantly, these families perceived themselves as entitled to the land and resources they worked, ignoring landlord claims. At least one member of each extended-family-group was able to accumulate resources that, although limited, provided an economic base that supported and enabled the extended-group to endure the subsequent period of land struggle.

In Ibiapa, on the other hand, the political and economic control long exerted by Romualdo inhibited the formation of an egalitarian peasant society. Faced with the political centralization imposed by Romualdo, migrant settlers sought other places to settle. Those who remained in Ibiapa established social roots in a subordinated position. Unable to accumulate even limited wealth, most of those families decided to leave the village when faced with state initiatives to title land to outside ranchers.

The second contrast between Outeiro and Ibiapa was therefore the manner in which the concentration of land and wealth took place, and, in addition, how local families reacted to this process. Since the 1970s, the individuals who enlarged their landholdings in Outeiro were Ademir, and, to a smaller extent, Norberto. Both were part of the community, and were themselves members of extended-family-groups that today still play a prominent role in Outeiro's social structure (groups IX and XI, in Tables 4 and 5). Although with no means to promptly contest the economic expansion of the better-off, the residents of Outeiro never perceived Ademir's and Norberto's claims to larger holdings as legitimate.

In Ibiapa, by contrast, state-led land privatization in the 1960s and the transfer of private property to outside ranchers in the 1970s aggravated pressure on families who had long experienced conditions of domination. In the 1950s, Ibiapa was one of the largest villages in the region. A massive departure of its early residents to other lands in the state and further west in the Amazon took place during the late 1960s and 1970s. Upon their departure, a contingent of other families moved to Ibiapa, mostly at the invitation of foremen working for the new landowners. Although offered land to work, they ultimately served as a labor force in the conversion of forest to pasture and through the planting of jaraguá grass while cultivating their annual fields. Thus, before land conflict, the families that today constitute the majority of Ibiapa's population had never considered themselves as legitimate owners of the land. The few families that endured the process of land privatization, on the other hand, were denied full access to their land claims. During the time spent in Ibiapa, neither of these groups experienced the condition of being part of a truly free peasantry.

Differences in present socioeconomic configurations can thus be traced to earlier stages of community formation. By progressively connecting these historical facts, we are able to grasp the explanations for Outeiro's extended kinship networks. Consolidated networks resulted in more harmonious social relations, avoiding extreme conflicts and the open manifestation of violence that allows a social environment favoring the achievement of common interests. A rather distinct perspective characterized the social positioning of Ibiapa's residents, who felt more constrained in their social and economic life. These families ultimately rebelled against oppression, and, through collective action, were able to access land and resources. However, they did so through a loose kinship network, embedded in a social setting that was much broader and differentiated. Once the struggle against outside ranchers was over, there were no previous practices, nor was there sufficient time to exercise mechanisms to resolve internal conflicts. The

consequence was greater competition and the individualization of objectives, the periodical resurgence of discord and violence, and an omnipresent feeling of social insecurity. Solidarity and harmony were however not expressed only in abstract terms. In the next section I discuss the importance of tangible, material support derived from extended-family-groups, another contrasting feature through which residents of the two communities experienced economic differentiation and land struggle.

9. Enduring land conflict through tangible extended-family support

While kinship structure and internal composition were key to communities' connectivity, another critical aspect was the material support provided by extended-family-groups. Assets and property owned by members of these groups enhanced the endurance of their kindred during periods of hardship. Family members who accumulate resources may thus enable an entire community to get through difficult times. Contrary to Ibiapa, the support of better-off extended-family members in Outeiro proved to be decisive for the social resilience of the community during and after the land struggle.

Four residents of Ibiapa were landowners at the onset of the struggle, owning land ranging from 35 to 191 hectares. Two others had land in more distant locations. None of them, however, were part of the largest extended-family-group of the community. Three of these families positioned themselves against the land struggle and in favor of the ranchers' interest. By the mid-1980s, these properties were almost entirely converted to pasture. After the conflict, and up to the mid 2000s, no one else in Ibiapa purchased private property, what is partly explained by the relatively abundant area of Ibiapa's land reform project.

In Outeiro, at least one member of eight of the largest family-groups owned land near the village. All but two of these families played critical roles during the land struggle. After conflict resolution, several other Outeiro residents gained access to small tracts of land, forming a group of 35 private landowners, with a total area of 970 hectares. The importance of these private lands can be appreciated at two distinct moments. Landowners provided for themselves and for other families during land struggles. Cropping in their land ensured the survival and reproduction of the group during the years when Outeiro's settlement land was off limits. Those who owned cattle also supplied meat to the displaced during critical periods. Even the provision of shelter and place in the woods for safe hiding was critical during the peak of the conflict. These peasant landowners, by allowing families to use their property and resources, created a strong norm of redistributive attitudes, and such notions of collective welfare were transmitted to subsequent challenges and common undertakings.

Private lands fulfilled a rather different role in a latter period, when land conflict was over and a State-sponsored settlement project was installed with collective landownership. In Outeiro, the availability of private lands owned by relatives of community members turned out to be critical to a more leveled community structure in terms of access to production factors. Those whose families owned private land had already access to resources that guaranteed their survival. Contrary to cases in which the head-start of certain households brought greater inequality, in Outeiro it strengthened social harmony.

Some of Outeiro's community leaders had access (through extended-family links) to additional private property. Such assets enabled them to forego part of their entitlements to enhance benefits for the entire community. During initial stages of the land reform project, these

individuals consciously opted to rely less on collective resources. In doing so, they transferred a greater share of these benefits to other families who had no private land, indirectly redistributing goods and services within the group. The same did not occur in Ibiapa, where the size of the settlement project prevented the need to rely on additional property. The absence of private property arguably directed all the expectations towards the common land, enhancing disputes over rights and resources.

10. Conclusion: multiple dimensions of differential resource use routes

In this paper I progressively traced the factors that led to collaborative efforts in Outeiro, and to the less organized land-use planning witnessed in Ibiapa. The discussion emphasized the importance of internal cohesion within peasant social systems. I have shown the extent to which discord and distrust in places like Ibiapa were latent issues that affected the community's ability to deal with external shocks. By studying the genealogy of family groups in both communities, I noted that collaborative relations in Outeiro were partly due to the larger and more consolidated kinship and social networks. Finally, I argued that such developments were the result of the histories of social positioning that characterized critical moments in the construction of the socio-natural configurations of the two communities. Of particular relevance in this respect were Ibiapa's greater social hierarchy and centralization during the initial period of land occupation, and the endurance of Outeiro's residents during the time in which land was privatized and social cleavage more pronounced. Comparing trajectories of Outeiro and Ibiapa's residents at the time of land struggles, while the former constituted a truly free peasantry, the latter occupied a rather subordinated condition.

I make no claim that the features described in this paper were the only factors implicated in the distinctions between resource-use allocations in these communities. However, progressively tracing connections among those features served to identify key factors that produced alternative outcomes at the community and landscape levels. There is no single path characterizing socio-natural trajectories of peasant communities. The diversity of such transformations can only be assessed through the integration of multiple explanatory domains.

REREFENCES CITED

- Anderson, A. B., and Anderson, S. (1985). A 'tree of life' grows in Brazil. *Natural History* 94(12): 40-47.
- Anderson, A. B., May, P. H., and Balick, M. J. (1991). *The Subsidy from Nature: Palm Forests, Peasantry, and Development on an Amazon Frontier*. New York, Columbia University Press.
- Biersack, A. (2006). Reimagining political ecology: Culture/power/history/nature. In Biersack, A. and Greenberg, J.B. (eds), *Reimagining Political Ecology: New Ecologies for the Twenty-First Century*. Durham, NC, Duke University Press, pp. 3–42.
- Blaikie, P. M. (1985). *The Political Economy of Soil Erosion in Developing Countries*. New York, Longman.
- Blaikie, P. M. and Brookfield, H. (1987). *Land Degradation and Society*. New York, Methuen.

- Bourdieu, P. (1977). *Outline of a Theory of Practice*; translated by Richard Nice. New York, Cambridge University Press.
- Campos, A., Pochmann, M., Amorim, R., and Silva, R. (2003). *Atlas da Exclusão Social no Brasil. Vol. 2. Dinâmica e Manifestação Territorial*. São Paulo, Brazil, Editora Cortez.
- Fairhead, J., and Leach, M. (1995). False forest history, complicit social analysis: rethinking some West African environmental narratives. *World Development* 23(6): 1023–1035
- Hecht, S. B. and Cockburn, A. (1989). *The Fate of the Forest: Developers, Destroyers and Defenders of the Amazon*. London, Verso.
- Hecht, S. B., Anderson, A. B., and May, P. H. (1988). The subsidy from nature: shifting cultivation, successional palm forests, and rural development. *Human Organization* 47(1): 25–35.
- IBGE - Instituto Brasileiro de Geografia e Estatística. (2010). *Censo Demográfico 2010: Características da População e dos Domicílios - Resultados do Universo*. Rio de Janeiro, Brazil, IBGE.
- IBGE - Instituto Brasileiro de Geografia e Estatística. (2009). *Censo Agropecuário 2006: Brasil, Grandes Regiões e Unidades da Federação*. Rio de Janeiro, Brazil, IBGE.
- IBGE - Instituto Brasileiro de Geografia e Estatística. (1998). *Censo Agropecuário 1995-1996*. Rio de Janeiro, Brazil, IBGE.
- Jansen, K. (1998). *Political Ecology, Mountain Agriculture, and Knowledge in Honduras*. Amsterdam, Netherlands, Thela Publishers.
- Little, P. D., and Horowitz M. M., with Nyerges, A.E. (eds.). (1987). *Lands at Risk in the Third World: Local-Level Perspectives*. Boulder, CO, Westview Press.
- Nyerges, A. E., (ed.). (1997). *The Ecology of Practice: Studies of Food Crop Production in Sub-Saharan West Africa*. Amsterdam, Netherlands, Gordon and Breach Publishers.
- Nyerges, A. E. (1996). Ethnography in the reconstruction of African land use histories: a Sierra Leone example. *Africa* 66(1): 122–44.
- Nyerges, A. E. (1993). “The ecology of wealth-in-people: agriculture, settlement, and society on the perpetual frontier.” *American Anthropologist* 94(4): 860–881.
- Nyerges, A. E. (1992). Coppice swidden fallows in tropical deciduous forest: biological, technological, and sociocultural determinants of secondary forest successions. *Human Ecology* 17(4): 379–400.
- Orlove, B. (1980). *Ecological Anthropology*. *Annual Review of Anthropology* 9: 235–73.
- Ortner, S. B. (1984). Theory in Anthropology since the sixties. *Comparative Studies in Society and History* 26: 126–66.
- Peet, R., and Watts, M. (1996). Liberation ecology: development, sustainability, and environment in an age of market triumphalism. In Peet, R., and Watts, M. (eds), *Liberation Ecologies*, London: Routledge, pp. 1–45.
- Peluso, N. L. (1992). *Rich Forests, Poor People: Resource Control and Resistance in Java*. Berkeley, University of California Press.

- Peters, C. M. (1992). The ecology and economics of oligarchic Amazonian forests. *Advances in Economic Botany* 9: 15–22.
- Porro, R. (2005). The political and practical ecology of ‘agro-extractive/shifting-cultivators’ in Maranhão, Brazil. *Human Ecology* 33(1) 17–55.
- Porro, R. (2002). *Palms, Pastures, and Swidden Fields: Political Ecological Trajectories and Socio-Natural Transformations in Peasant Communities in Maranhão, Brazil*. Ph. D. Dissertation. University of Florida.
- Redclift, M. (1987). *Sustainable Development: Exploring the Contradictions*. New York, Methuen.
- Robbins, P. (2012). *Political Ecology: A Critical Introduction*. Second edition. West Sussex, UK, Wiley-Blackwell.
- Rocheleau, D. E. (2008). Political ecology in the key of policy: From chains of explanation to webs of relation, *Geoforum* 39(2): 716–727.
- Schmink, M., and Wood, C. H. (1987). The ‘political ecology’ of Amazonia. In Little, P. D., and Horowitz, M. M. (eds.), *Lands at Risk in the Third World: Local-Level Perspectives*, Boulder, CO, Westview Press, pp. 38–57.
- Stonich, S. (1993). *I am Destroying the Land: The Political Ecology of Poverty and Environmental Destruction in Honduras*. Boulder, CO, Westview Press.
- Vayda, A. P. (ed.). (2009). *Explaining Human Actions and Environmental Changes*. Lanham, MD: Altamira Press.
- Vayda, A. P. (1986). Holism and individualism in ecological anthropology. *Reviews in Anthropology* 13: 295–313.
- Vayda, A. P. (1983). Progressive contextualization: methods for research in human ecology. *Human Ecology* 11(3): 265–81.
- Vayda, A. P., and Walters, B. B. (eds.). (2011). *Causal Explanations for Social Scientists*. Lanham, MD, Altamira Press.
- Vayda, A. P., and Walters, B. B. (1999). Against political ecology. *Human Ecology* 27(1): 167–79.
- Walters, B.B., McCay, B.J., West, P., and Lees, S. (eds). (2009). *Against the Grain: The Vayda Tradition in Human Ecology and Ecological Anthropology*. New York: Altamira Press.
- Wolf, E. R. (1969). *Peasant Wars of the Twentieth Century*. New York, Harper & Row.