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Migration, **Rural Livelihoods** & Natural Resource Management

Edited by: Susanna Hecht, Susan Kandel and Abelardo Morales

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Some of the ideas that were developed as part of the project emerged at a workshop in Chalatenango (El Salvador) in February 2011. Participants in the workshop included the teams from Mexico, Honduras, El Salvador, China, Cambodia, Syria and Zimbabwe, officials from IDRC and the Ford Foundation, and other international scholars and experts and officials from the Government of El Salvador, including Ngin Chanrith,

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Preface

From the early origins of the human species to the dawn of agriculture, migration has been so intimately connected with human life that it has virtually defined the passage of time for people in all corners of the world. The constant movement in pursuit of new plant stuffs or prey was integral to the development of early human civilization. With the possibility of cultivating and harvesting food, this mode of life changed dramatically, as one by one migratory peoples began settling land best suited to their newly discovered crops. Of course, not all groups settled at this time. Even today, 10,000 years later, nomadic pastoralists continue to migrate seasonally, preserving a lifestyle that although resilient, is continually threatened with extinction. The proliferation of borders and complicated political, social, cultural and economic barriers restrict the movement of the last remaining nomads, while the pastures and resources on which they depend become increasingly unstable and unpredictable.

Yet, migration is not limited to nomadic communities. Large-scale displacement of populations has been omnipresent throughout human history as communities have fled wars, pests, natural disasters, and political persecution. These push-factors have intensified dramatically over the last century, increasing the rate of displacement. The International Organization for Migration (IOM) estimates that in 2011, approximately one in every seven people were migrants, for a total of 215 million international migrants and 740 million internally displaced people. Clearly, there are many more migrants today than at any other point in human history, including pre-settlement. Despite the global nature of migration, its characteristics and impacts are highly context-dependent with major variations across continents and even within countries. As the chapters of this volume will demonstrate, international migration has long been and continues to be a powerful force in Latin America, while in Africa and Asia rural-urban migration within countries is more prevalent, although with a marked tendency towards international migration as well.

Regardless of its frequency or drivers, migration is always a dramatic event in the lives of people and communities. In societies built around the nucleus of the family, the migration of one or more family members can be traumatic. Although people migrate in hope of improving the precarious situation of the families they leave behind, their absence can have lasting impacts on family ties. Out-migration also affects the structure

and functioning of communities, as the remaining population tends to be very young and very old. Young women, who migrate less frequently than young men, are forced to assume roles, responsibilities and decisions that had previously been the exclusive domain of their husbands, brothers, fathers or elders.

Migration not only affects people, but also the local environment. When the emigrants finally obtain work and send money back to their families, the sudden influx of capital accelerates the use of natural resources, again changing the way people relate to their environment. In some cases, remittances are used to hire agricultural laborers with a view to intensifying agricultural production, in other cases to purchase livestock or land, or to bring new land under production. Less often, remittances are used to diversify into new, non-traditional activities such as aquaculture, floriculture, artisanal production, small businesses and others. In some cases, land purchased with remittances cannot be incorporated into productive activities and is 'abandoned', left to lie fallow or regenerate into forest. It is not rare to see remittances being used for reforestation projects or to preserve forest and water resources. That these changes are occurring simultaneously in many places signals a considerable impact on the shape and functioning of rural ecosystems worldwide.

As early human settlement and agricultural advances fundamentally changed the earth's landscapes, it is unsurprising that ten millennia later we see large-scale population migration again changing the shape, components, and functioning of ecosystems in ways that we are only beginning to understand.

Until now, most of the migration literature has focused on the impacts of migration on family and social ties, violence in countries of origin or destination, evolving gender relations, and more recently on the economic processes associated with remittances. Little is known about how migration and remittances are changing not only rural landscapes in countries of origin but also the fundamental relationships between people and the natural resources on which they depend.

In an attempt to address this lacuna, IDRC launched a 2008 call for proposals for research on the interactions between migration and the use and management of natural resources in migrants' communities of origin. The large number of proposals received (over 200) was a testament to the scientific community's interest in this topic and the pressing need for answers. Following a rigorous external review, seven projects were selected for development, led by research teams in Africa, Asia, the Middle East and Latin America. The projects were completed in 2010. Parallel to IDRC's work, the Ford Foundation, through its Mesoamerican regional office, also supported research on this

topic in countries of Central America. If indeed all projects made important advances in understanding the multiple links between migration and natural resource use in their respective regions, it became clear that broader lessons, with wider applicability, could be distilled from a comparative analysis of findings from across studies.

Thus, in mid-2010, IDRC and the Ford Foundation joined forces to convene the leaders of the seven projects to present and discuss their research findings with a view to extracting common lessons and points of divergence from across studies. The result was a discussion and synthesis workshop, coordinated by PRISMA in El Salvador in 2011 and attended by project leaders and other renowned academics in the field. The outcomes of this reflection and analysis are presented in the chapters of this volume. We are confident that this work will help shed light on an important area of knowledge for national and international decision-makers, local governments and most importantly for the communities that are profoundly affected by migration.

As in every area of knowledge, with new answers come new and important questions. In the process of writing this book, it became clear there is an urgent need to understand the perspectives of the migrants themselves, particularly how they understand their role and the role of the remittances they struggle to send their families. There is no doubt that seasonal or permanent migration has been and will continue to be an essential adaptation strategy for communities in the face of extreme social and natural events. In a century marked by increasingly frequent natural disasters and socioeconomic and environmental processes of truly planetary reach – from climate variability and change to the globalization of commodity and capital markets – exploring how migration can facilitate local adaptation to global threats is essential. There is a long way to go in harmonizing the incipient efforts of governments to cooperate in easing the transition of migrants with the efforts of migrant associations and communities to maximize benefits from remittances. Attempts must be made to ensure that remittances, often a major driver of developing countries' economies, are used effectively to catalyze development processes in migrants' home countries.

On behalf of IDRC, I would like to express gratitude to the research teams of all of the projects represented in this volume as well as to PRISMA for successfully organizing the synthesis workshop and coordinating the work of the editors, without whose dedicated efforts, this volume would not have been possible. Sincere thanks to David Kaimowitz of the Ford Foundation for his important contributions to the culmination of this work and especially to my colleague Hein Malle of IDRC for hatching the idea that gave birth to this process. Thanks also to Wendy Manchur of IDRC for her support with the call for proposals. We trust that these efforts, which are the result of many days of work

on the part of many people, including IDRC and Ford Foundation program officers, will serve to advance the understanding of the motivations, implications, and scope of global migration processes and their present and future impacts on the natural resources on which communities depend for their livelihoods. Research and analysis such as that presented in this volume, lay the foundation on which knowledge of migration will be rapidly built in the coming decades.

Marco Rondón, IDRC

Ottawa, May, 2012

Introduction

Migration and Natural Resources: Comparative Case Studies in Politics, Localities and Ruralities

Susanna Hecht,¹ Susan Kandel,² Abelardo Morales³ and Nelson Cuéllar⁴

Environment and Migration

For much of the 20th century, environment and migration discourses centered on environmental catastrophes, such as the Sahelian drought or widespread deforestation. Initially rooted in Malthusian premises of rural overpopulation and technical insufficiency, the popular language focused on “environmental refugees,” such as those of the Sahel, or pyromaniac “slash and burn” farmers destroying resources in their unbalanced circuits of agriculture and fallow, while migrants to tropical frontiers ravaged forests in the New World tropics. This narrative viewed interactions between people and environment in tropical countries as essentially destabilized and destabilizing with the prospect of environmental migrants of one sort or another looming on the horizon, violent and ravaging, leaving ruin in their wake (Coomes et al. 2011; Homer-Dixon et al. 2011; Keck et al. 1994; Lawrence et al. 2010). That there have been severe environmental crises of epic proportions throughout the tropics is indubitable, but as seen in Davis’ study of the impacts of El Niño droughts (Davis 2001), as well as in modern studies of land use change, migration and violence (Durham 1979; Hecht & Cockburn 1989; Peluso & Watts 2001), the political ecologies are a good deal more complex than the simple equation of degradation equals migration. At least as pernicious as Malthusian assumptions was the idea, derived from rural modernization theory, that opportunity costs of migrant labor to their home communities were negligible—that rural areas were awash in surplus labor (for review, see Akram-Lodhi & Kay 2010a; Akram-Lodhi & Kay 2010b).

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These models of earlier crises are now harnessed to climate change and weather-related catastrophes, prompting assertions about 200 million climate refugees by 2050 (Myers 2005). Climate change interacting with new internal migratory flows to frontiers or to regions with high variability in weather patterns has raised concerns over the destabilization of entire biomes, such as Amazonia, the Sahel and Brazilian *cerrados* (Adger 2006a; Armesto et al. 2010; Asner et al. 2010; Barbosa et al. 2006; Bush et al. 2007; Chavunduka & Bromley 2011; Jepson 2005; Rao et al. 2006; Soares et al. 2010). These studies couple rises in population, inadequate resource management and increased climate change impacts—whether incremental or catastrophic—to rising instability in local livelihoods and out-migration. While catastrophic and incremental events can clearly undermine local economies, imagining rural populations as helpless or clueless as large-scale effects unfold does not capture the nature of their vulnerabilities nor their capacities (Adger 2006a, b; Adger et al. 2011). Nor does it necessarily capture the drivers of migration, which in the case of much of Latin America have far more to do with structural change than environmental degradation (Carr 2009; Cohen 2001; Gravel 2007; Perz et al. 2010). The emphasis in much of the mainstream ecological literatures remains much more focused on resource degradation as a driver of migration, with the model of the Sahel firmly in mind even as extensive areas there have been reforested (Campbell 1977; Haglund et al. 2011; Reining 1979). These habits of thought dominate the climate—resource-management—migration nexus.

What is less appreciated is that out-migration may strongly affect environments, since human labor is necessary to manage complex ecosystems, and loss of labor for management may be as problematic as overuse. This reversal of emphasis does not appear very much in the literature on migration/environment. With the magnitude of current structural changes, the decline in the role of small farmers as food producers, the reconfiguration of rural labor availability, enclosures of many commons, the complexity of household livelihoods, emergent markets for tree crops, and the rise of remittances and conservation politics, the new rurality has enormous implications for tropical landscapes.

The case studies in this book look at migration from all over the world, engaging several optics from the international and regional levels to the national, and analyze several kinds of resources, including water, agricultural land, pasture and forests and the complex management of “landscape” that includes all of these. What this research reveals is how little is really known about the impact of the massive movement of populations—now about 10% of the world’s people—on local natural resources, or the effect of their remittances, now close to 350 billion dollars per year (World Bank 2012), on land use and landscape structure. At a general level, the processes of out-migration have triggered forest recovery throughout much of Latin America (Aguilar-Stoen et al. 2011; Chowdhury 2010; de Jong 2010; Hecht 2010; Hecht 2012; Hecht & Saatchi 2007; Klooster 2003;

Lambin & Meyfroidt 2010; Perz 2007), but frontier migration, as a general rule, triggers deforestation. The dynamics of forest loss and recovery in long-settled landscapes, the places that now send out migrants, appear to be affected in many ways, and remain largely unstudied.

The impact of these movements on natural resources is largely undocumented, mostly because assumptions about migrants were deeply rooted in a model of migrants as low-productivity farmers of annual crops, with the opportunity costs of their labor hovering near zero. Yet an emerging literature suggests that the labor decline in these systems may be creating “low labor landscapes” either of secondary successional forests of varying diversity patterns or low intensity pasture, and affecting the institutional structures that mediate resource use (Aguilar-Stoen et al. 2009; Barbieri & Carr 2005; Bever 2002; Bezaury 2007; Black et al. 2011; Davis & Lopez-Carr 2010; de Sherbinin et al. 2008; Fitting 2006; Lewis & Runsten 2008; Moran-Taylor & Taylor 2010). Furthermore, the dynamics of violence, internal migration and international migration structure the different ways that resources are allocated, controlled and managed in common property regimes. We outline a few large themes that capture some of the main forces that are shaping the socio-natures of migration. These involve the labor in the human shaping of complex rural landscapes, the mechanisms of labor loss, and how macro-policies have increasingly destabilized rural livelihoods.

The Social Lives of Landscapes

Mosaic environments, environmental services and labor loss

Recent research on peasant production systems have shown that they are far more complex than the earlier understanding of these systems had suggested, with elaborate agro-ecologies, genetic mixes of traditional crops, forest resources and complex domestic and institutional structures framing labor, resource access rights, and management obligations (Altieri 2009; Balmford et al. 2002; Bray et al. 2006; Bray et al. 2004; Chowdhury 2007; Irimie & Essmann 2009; Klooster 2003; Sendzimir et al. 2011; Southworth & Tucker 2001; Wezel et al. 2009). Ecologists and conservationists had largely viewed peasant landscapes as uninteresting ecological sites and irrelevant or negative for regional biodiversity management. This view is changing to some degree as decades of work on indigenous production systems coupled to matrix ecology emphasizes the importance of landscape mosaics for supporting biodiversity and especially ecosystem services on which conservation and human production systems depend at both local and larger scales (Armbrecht et al. 2006; Chappell et al. 2009; Greenberg et al. 2008; Perfecto et al. 2007; Perfecto & Vandermeer 2010; Perfecto et al. 2009). Fragmented agrarian landscapes, at

least in Central America and Mexico, are often highly wooded and becoming more so in smallholder systems. In Mesoamerica for example, 98% of farms had more than 10% tree cover, 81% had more than 30% and more than half (52%) had 30% woody cover (Zomer et al. 2009), and this trend is seen in El Salvador and Mexico, as our chapters show. Agricultural matrices throughout much of the tropics where farms are often small, can include multiple land uses and diverse plantings of trees (living fences, land demarcations, orchards, agroforestry, forage trees, medicinal trees, etc.) and even a single land use type, such as coffee, can show remarkable structural and floristic diversity within a relatively small region. Many of these systems build on a rich legacy of local knowledge systems with diverse livelihood products and a range of management practices, and at larger scales, institutional structures (Diemont & Martin 2009; Freire 2007; Laurie et al. 2005; Posey & Balée 1989; Posey & Balick 2006; Schmidt & Peterson 2009). Numerous studies focus on the conservation role of embedded trees in the agricultural matrix, including trees in pastures, agroforestry systems, as land demarcations, fences, among other situations. The research highlights three main points:

- 1) Significant biodiversity persists in agricultural landscapes and is often created and supported by human efforts, and the structure of this biodiversity has important support roles in regional conservation by providing corridors, alternative sources of food, and seasonal habitats (Abrantes 2003; Blockhus & IUCN Forest Conservation Programme 1992; Brandon et al. 2005; Chomitz et al. 2006; Crepaldi & Peixoto 2010; Dawson et al. 2008; DeClerck et al. 2010; Erickson 2006; Heckenberger et al. 2007; Posey & Balée 1989; Bray 2006).
- 2) The integration of non-domesticated or wild biodiversity in agricultural systems can make contributions to ecosystem services, such as pollination or pest control in agricultural systems, and to commercial and subsistence products. In this larger sense, the idea of “domesticated landscapes” with degrees of intervention provides a much more tractable framework for longer term regional management than the dichotomies (agriculture versus forest) and simple classification systems that still dominate the perception of tropical landscapes in many policy contexts. What is key is that most of these dynamics occur on the holdings of rather small farmers, so that any regional conservation initiative almost by definition must include small farmers.
- 3) Environmental markets that support complex forested landscapes and the people who manage them are certainly a central element for any carbon plan for the 21st century, but these landscape mosaics now confront the consequences of migration in the loss of labor for managing higher diversity landscape systems, social constraints on the deployment of labor, and, in a parallel way, investment choices that undermine natural resources, as in the

investment in low intensity pasture. This is significant as forms of regional investment in environmental services (payment for environmental services-PES) may depend increasingly on managed landscapes.

Migration dynamics and the politics of landscapes

Migration has deep historical roots in Latin America and has always been a resilience strategy to address the problems of armed conflict, economics, and socio-political and periodic environmental problems. The effects of these drivers have been enhanced by recent policies that increased rural insecurity, including changing land rights that marginalized traditional land uses, conservation enclosures (Boone et al. 2009; Gilroy 2004; Jacoby 2001; Mannigel 2008; Peres & Zimmerman 2001), colonization programs and violent expulsions (Figueroa et al. 2009). Perhaps most salient, because of its broad impact, has been the extension of cheap food policies that have undercut the returns of small farm annual cropping systems throughout the tropical world (Boerner et al. 2007; Horlings & Marsden 2011; McMichael 2011). Long-standing structural conflicts continue to drive migratory flows. In general, the literature has prioritized national case studies, and some limited comparative studies, but relatively little attention has focused on the global dimensions of migration and their subregional impacts, and even less attention has focused on environmental implications (however, see Adamo 2010; Barbieri et al. 2009; Carr 2009; Carr et al. 2009; Conway & Cohen 1998; Davis & Lopez-Carr 2010; Fearnside 2008; Garcia-Barrios et al. 2009; Goulbourne 2002; Gray 2009; Kull et al. 2007).

Macro dynamics and regional outcomes

Agrarian policy

Cheap food policies and the contraction of credit for small farms have affected producers profoundly. Food supplies became increasingly based on grain imports from global markets or national agro-industrial producers and on rural land use by changing their land use profile away from annual crops, and significantly altering their impact on and interaction with forested systems. Peasant producers were drastically destabilized as producers, even as they benefited as consumers (de Janvry 2010). This had the effect of supporting products such as tree crops including coffee, avocados and cashews (the so-called agroforestry intensification dynamic), which enhanced forest dependence including on non-timber and other forest products. More centrally, multi-sourced forms of income became key for livelihoods, with wage labor and national and international migration increasingly structuring livelihoods. While political changes supported recognition of local knowledge systems, forest property regimes, forest-based livelihoods and participatory planning as important elements of

development analysis and practice, natural resources analysis remains highly abstracted and its relation to migration remains poorly developed (Cronkleton et al. 2010; Escobar 2008; Garcia-Lopez & Arizpe 2010; Hayes 2006; Jepson et al. 2010; Klooster 2003; Larson 2010; Mason & Beard 2008; Pieck & Moog 2009; Segebart 2008).

Urbanization

While half the world's population now lives in cities, Central America sustained high proportions (60%+) of its people in the countryside. But even as proportions of the total population became more urban, absolute populations often remained constant or increased in many rural zones, so the "hollowed out" image of empty rural areas is incorrect. Further, urban migration was often associated with multi-sited households engaged in both rural and urban livelihoods and networks for the flow of goods, people and money. Thus, separation into "urban" and rural may not be such a useful way of thinking about these processes and the structural integration of rural and urban landscapes is tighter than usually thought. This current form of migration is thus more complex and less definitive than earlier migratory flows (Barbieri & Carr 2005; Blanc 2009; Brondizio et al. 2011; DeFries et al. 2010; Maxwell 1996; Padoch et al. 2008; Perz et al. 2010; Robson & Berkes 2011; Rudel et al. 2009; Stark & Ossa 2007; Stoian 2005). Among our case studies on internal migration, Chinese women, Zimbabwean migrants and Syrian migrants all returned to their rural hearths or maintained their connection with them, and, in the case of Zimbabwe, relied on them while they migrated to new forest frontiers. Migrants from Mexico and Central America all participated in both rural and urban labor, product and land markets.

Forest transitions, remittances and resources

"Forest transitions" were initially described for Europe (Mather 1992) and the United States (Foster 2002). Euro-American forest transitions were seen as the outcome of national and endogenous processes, such as urbanization, labor displacement and agricultural relocation, that produced depopulated areas where forests took over abandoned farmland. For many reasons analysts find this model limited. The Latin American and Asian tropics show extensive areas of forest recovery in the short and long term as parts of fallow-based agriculture and periodic abandonment due to social unrest and climatic and tectonic events (Armesto et al. 2010; Arons 2004; Bush et al. 2004; De Toledo & Bush 2007; Dull 2004; Endfield et al. 2004; Farrera et al. 1999; Nevle et al. 2011; Williams 2002). In Central America, the larger scale environmental context of hurricanes, volcanism, mass movements and antiquity of human settlement may have produced a legacy of relatively resilient forests. What the forest transition, especially in Central America, has NOT produced is "empty"

forested landscapes as in the northern Euro-American case (Hecht et al. 2006; Hecht and Saatchi 2007; Astier et al. 2011; Chowdhury 2010; de Jong 2010; Klooster 2003; Kull et al. 2007; Lambin & Meyfroidt 2010). Population levels in many rural areas remain as high as they were during their periods of maximal clearing. Thus, a new kind of dynamic, sometimes uneasy, between forests and human settlement seems to be evolving, often as part of farmer agroforestry/agroecology intensifications in a context of diversified income sources from wages, farming, natural resources, commerce and clandestine economies, supplemented with state or family transfers.

Forest transitions are extremely contingent phenomena, reflecting both endogenous and globalized processes and characteristics of place. Reforestation for environmental services (such as soil erosion control and watershed management), regional development programs, markets for tree crops, plantation development (for pulp and palm biofuels), as well as new tenurial regimes, agrarian reform, urbanization and development of new conservation zones are widespread national initiatives that have stimulated these transitions. But in Central America, globalized processes - whether proxy wars, international or national migration and their remittances, pensions and entitlement payments - have been important sources of capital flow and livelihood supplements that reduced agricultural dependence and have restructured the economies in ways that result in less annual cropping, and increased forest cover (Redo et al. 2009; Robson & Berkes 2011; Rudel et al. 2002; Turner 2010; Hecht et al. 2006; Hecht and Saatchi 2007). Remittances have been key to this transition in El Salvador (Hecht 2010; Hecht et al. 2006; Hecht & Saatchi 2007) and are regionally important in other sites, such as our case studies in Oaxaca (Mathews 2003; Robson & Berkes 2011), Yucatan (Chowdhury 2007; Radel et al. 2010; Turner 2010) and Honduras (Bonta 2005; Eakin et al. 2006; Hayes 2010; Larson et al. 2007; McSweeney 2005; Nagendra et al. 2003; Redo et al. 2009). In the case of Mexico, funds from programs like "Oportunidades," which provides a supplement to the household if the children attend school, have also had a significant effect, as our studies show.

While subsistence agriculture remains important, the supplements from migration at least partially drive land use change (often into agroforestry intensifications or natural successions, or low intensity livestock) and increasingly, complex household and extended family strategies are part of a more diversified income portfolio. What the impact of these transfers suggests, is that even small supplements to income can have significant impacts on land use and resources (and forest management) over relatively short time periods. The nature of the rural is changing in its biotics, its governance and its economies, and perhaps the Malthusian premises, the "idiocy of rural life" and the negligible impact of migration, need to be reassessed.

In light of all these dynamics, this volume focuses on teasing out a series of central trends:

- 1) The impact of migration on different forms of resource use and governance from households to communities to regions; and what we may be able to say about these differences. Detailed ethnographic narratives (China) contrast with much broader communal analyses of southern Mexico.
- 2) How natures of different resource systems intersect with migration effects. The ejido cases from southern Mexico discuss this in some detail.
- 3) How do these dynamics relate to different traditional and emerging forms of power at different levels; and, have these changed prestige, access rights, gender rights and caliber of management or forest trends in collectively managed resources? How have these shifted in areas of private ownership?
- 4) What were the impacts of gender? Since women can be “left behind”—and the feminization of the “campo” is a widespread phenomenon—does migration enhance female power in local decision-making? Do female migrants have more say over resource management on their return, and have institutionalities changed to accommodate different roles, access and livelihood strategies? Have women’s rights been enhanced by legal or community institutions? What are the effects on local forms of income and livelihood in these different contexts and how have these affected natural resources? Virtually all our cases discuss these points, which overall point to the lack of social and institutional gains even as women take on more responsibilities for resource management.
- 5) What about labor availability and resource use? As male labor becomes scarcer and more expensive in rural zones, what effect has this had on resource management?
- 6) What were the impacts of migration on tenure and access?
- 7) How has and does violence affect migration pulses, and what is the relative impact of new forms of violence (narco versus civil wars, military expropriation, militarization of the countryside as part of wars on insurgency)?
- 8) What have been the impacts of climate change on migration and on the use of remittances, insofar as this can be tracked at this time (Syria)?
- 9) What are the implications of remittances for larger regional dynamics on forest, water and livelihood support? The El Salvador case reveals an unusual dynamic, but forest cover is expanding throughout the region.

- 10) What about intensification of resource use? The Honduran and Syrian cases show increased investment in annual agriculture, with the Oaxacan and Yucatan cases showing investment in tree crops. In reality, the dynamics are complex and “intensification” per se does not capture the nature of land investments.

We have tried to introduce the context and complexity of the issues of migration and natural resources, but what is clear is that this is an emerging topic that has thus far received little attention by tropical development analysts. As we move into the 21st century, the interactions among people, governance and environmental change will need more socio-ecological analysis. The chapters that follow engage this new set of questions for rural development.

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Chapter I

Multiple Migrations, Displacements and Land Transfers at Ta Kream in Northwest Cambodia

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The Cambodian case examines migration, land tenure and land management, in a context of conflict and the use of force in land transfers since the time of the Khmer Rouge regime to the present, by studying five agro-ecological zones close to the Kamping Pouy irrigation system in Battambang Province. The study combines analysis of demographic and socioeconomic characteristics of household use of land and labor with a historical and ethnographic review of conflict and institutional factors in successive land administrations. Continuing in-migration is reflected in population increases in Battambang and other provinces of Northwest Cambodia in conditions of limited land availability and landlordism, and conflict over expropriation of land by armed groups and business interests. Land transfers to a growing wealthy class of businessmen and government officials have contributed to the creation of a subclass of very poor, landless households whose livelihoods depend on agricultural wage labor, locally and in Thailand, and access to the commons. Access to land for a substantial proportion of the community depends on either tenancy, sharecropping or wage labor on the land of wealthier farmers. Three problematic processes that run counter to the Cambodian Constitution and Land Law are systemic: 1) the usurpation of land rights by locally operating armed groups; 2) legitimation of such land acquisition by military-business-government officials by corrupt officeholders and local government officials; and 3) the capture of rents or profits by agencies responsible for safeguarding natural resources.

Introduction: Migration contexts and history

In northwestern Cambodia, increasing population and agricultural frontier expansion from the central rice plain into forested uplands are creating new agrarian systems. A region that was the cradle of the Khmer Rouge uprising in the 1960s and the rear guard of their resistance against governmental forces in the eighties and nineties, is now the site of large-scale forest conversions, occurring over the last 10 years, into food and non-food cropping systems. Pioneer settlements in the peripheral uplands were associated with voluntary migration of groups from all across the country, although most came from the southeastern rice-growing provinces where, from the 1950s onwards, growing population density outstripped the capacity of farmers to maintain livelihoods. Peasant households acquired forestlands in the uplands of Northwest Cambodia mainly through unregulated or even illicit transfers. These population movements remained largely out of the control of State agencies, and might be seen, together with a movement into agricultural wage labor, as an expression of peasant household agency in responding to rural poverty (Diepart & Ly 2010).

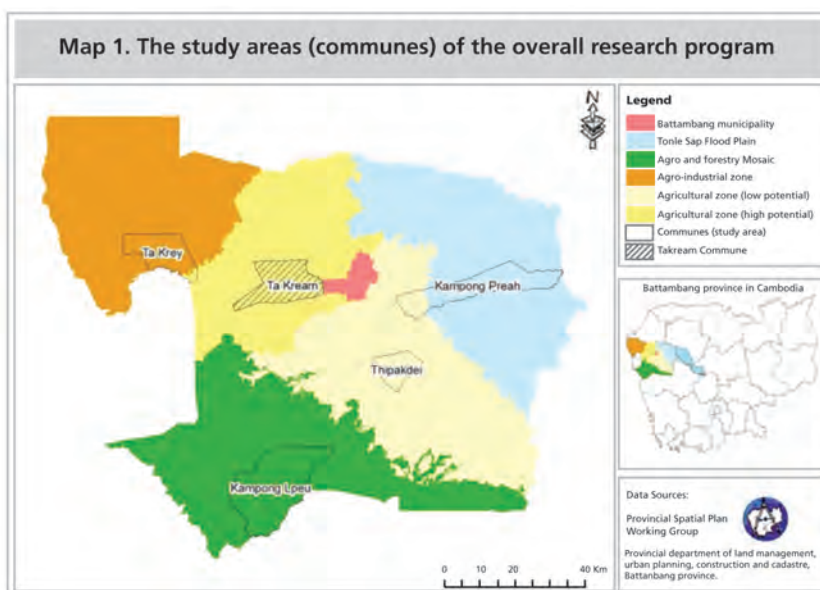
Regional migration has a complex history of obligatory and spontaneous population movements starting with the forced settlement under State driven agrarian development schemes in the 1950s (under the Sihanouk government) and the 1970s (under the Khmer Rouge regime) aiming to resettle farmers from the southwest to the northwest of the country. The development of the Khmer Rouge resistance and armed conflicts with governmental and Vietnamese armies were also associated with forced migrations, which were further complicated by the return of war refugees from Thai camps in the early 1990s. At the end of the nineties, the Cambodian Government's Khmer Rouge reintegration policy, hoping to build sustainable peace in the northwest, had designated new resettlement and administrative areas where Khmer Rouges ex-combatants, soldiers and followers had been farming large areas of land along the border with Thailand; most in western Battambang were allowed to resettle. Some former senior Khmer Rouge officials are now members of provincial governments responsible for land policy management, including continued responsibility for land allocation formalized in the 1993 Constitution and then in the 2001 Land Law. Our research examines how land acquisition and transfers in resettlement villages following the 1991 Peace Accord have occurred and how they relate to the differing agro-ecological situation and history of the villages and what this has meant for rural people. Sometimes land acquisition and transfers occurred under threat of force by ex-military groups still under arms, seizing and transferring land in collusion with local administrations and business interests; or, in the context of rising values of land and crop prices (especially irrigated land), wealthy urban and government interests also engaged in land speculation.

This chapter explores migration, land tenure and land use management in the context of differing institutional and agro-ecological characteristics of villages in one commune, Ta Kream, in the vicinity of the Kamping Pouy irrigation system, where these processes of conflict and the use of force in land transfers have continued. Our research examines how peasant households and communities fared in relation to land acquisition, in managing livelihood diversification, and in coping strategies. It has also explored how armed force structured the new institutional frameworks in agrarian development through the legitimation of transfers of public or peasant lands by military units to officials and business interests. The research examines ways in which multiple resettlement linked to land administration by successive regimes has led to the formation of new agrarian classes, a process observed in other contexts in Southeast Asia (Li 2010). Against this background, we explore how households manage cyclical movements of labor and natural resources in strategies to maintain and diversify livelihoods and to cope with shocks inherent in land shortages or landlessness.

Methodology

Study area

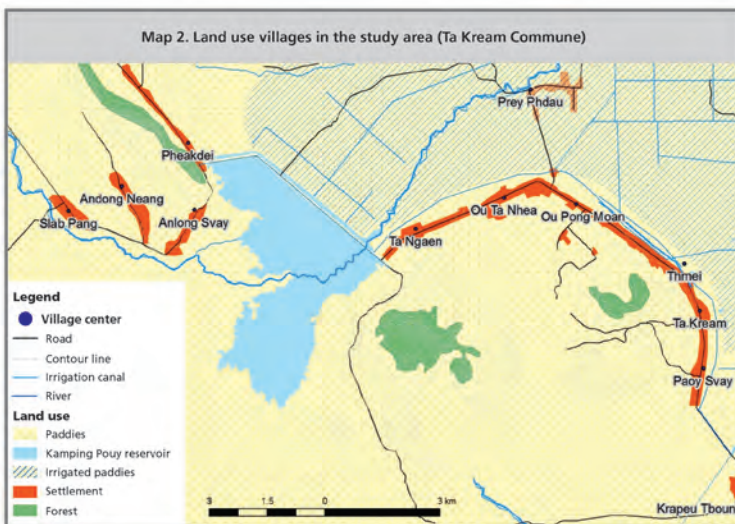
This study was conducted in five communes throughout Battambang Province, chosen for their typicality in respect of differing agro-ecological systems (Map 1). These agro-ecosystems range from the seasonally flooded Tonle Sap plain (fishing and floating rice-growing areas), to the rice growing areas of the central lowlands, to forested uplands typified now by cash crop production, and in the northwest of the Province, forest clearance and industrial cash crop plantations.



Ta Kream commune is within the intensive flood-fed and irrigated rice production zone, with scattered forest adjoining irrigated rice production in the Kamping Pouy irrigation system, giving way to rain-fed rice areas to the west in the catchment areas in and around its reservoir. The commune is located in Banan District, Battambang Province, about 36 km northwest of Battambang Town.

The area features an important reservoir (Kamping Pouy Lake), which can irrigate about 13,500 hectares (ha) (Thuon 2010). The research is based on studies of four villages in the commune of Ta Kream: Thmei village (the administrative center of the commune) and Ta Ngaen village (at the junction of the road with the retaining dike), which have land within the command area of the irrigation system, and Andong Neang and Slab Pang, which are located in the non-irrigated catchment areas to the west of the reservoir (Map 2).

The villages lie along an access road, which follows successive westward in-migration and settlements. It is marked by the development, post-Khmer Rouge, of relatively intensive administration and services at Thmei and other villages lying within the irrigation project, with diminishing commerce and administrative presence in the more recently settled and less closely administered villages of Andong Neang and Slab Pang. Settlements differed from one village to the other by date of settlement and type of land acquisition. East to west migration and settlement processes at Ta Kream should also be seen in the context of the historical change of land ownership patterns and natural resource use in the Tonle Sap Basin over a period of half a century. A predominantly rice-based economy and peasant use of localized forest resources gave way to large-scale exploitation of forested areas on the eastern and western uplands and to both peasant and commercial production of rain-fed food and oil crops, reflecting different kinds of migration and land reform and differences in access to resources and services, including differences in forest administration.



Scope and methods

The research reviews four different data sets:

- An analysis of land use change based on different time-series satellite images and aerial photographs of the area from 1993, 1997, 2002, 2006 and 2008. Input data for the study area were available at the Provincial Department of Land Management (Battambang Provincial Spatial Plan Sub-Working Group 2009).
- The 2008 demographic census data allowed for a detailed description and analysis of population dynamics in the area, including permanent migrations (Royal Government of Cambodia 2009).
- A quantitative agro-economic household survey was conducted in March 2009 using a statistically representative sample of households in each village. A total of 190 households were studied.
- An ethnographic/institutional analysis of multiple migrations and agrarian change was conducted in 2010 in the area, using qualitative research methods.

The research design aimed to identify the diversity of land transfers, migratory history and household production systems and understand the dynamic of socioeconomic differentiation among them.

Agrarian development and settlement in the Kamping Pouy reservoir area: Complexity and continuity in agrarian politics

A characteristic of military conflict during the nineties in Northwest Cambodia was the way in which conflicting forces asserted control over lands, their allocation and thus over populations. Land has emerged as a nexus of conflict between migrating populations and the military forces. From 2000 onwards, land access and control were further modified through the implementation of modern neoliberal land tenure regimes promoting private property rights, land titles, access to land by market transactions, land zoning and other land use planning instruments. The introduction of these modern tools is consistent with the increased commoditization of land and labor, and with increased administrative control. But coupled with the threat of force initially employed by the military for territorial acquisition and control in warfare, this cumulative process of administrative control has become institutionally problematic because land acquisition and transfers brought about by force are later legitimized by local government agencies and directed to private interests (Pilgrim 2010). The complexity and sequence of programs and settlement plans is provided in Table 1.

Table 1. Chronology of agrarian development and migration: 1971 to 2009

| |
|---|
| 1971-1975 Khmer Rouge occupation and southeastern Cambodia migrations to Battambang to obtain land. |
| 1977-1978 Khmer Rouge Construction of Kamping Pouy Reservoir and Main Channel. |
| 1979-1989 Eviction of farmers in two waves: Eviction by the Vietnamese-backed regime from land allocated by the Khmer Rouge and expulsion or voluntary movement of around 200,000 people to refugee camps in Thailand or to camps under Khmer Rouge protection along Thai border. Eviction of families from central areas of the province to the Thai border arising from continued conflicts among National, Vietnamese and Khmer Rouges armies. |
| 1985-1989 Vietnamese administration of Krom Samaki (solidarity group) land distribution. |
| 1991 Paris Peace Accord leads to cease fire and absorption of Khmer Rouge into administration. |
| 1992-1993 UNCTAD Government of Reconciliation's return resettlement of Khmer Rouge refugees from Thailand to be settled at Anlong Svay and in new villages around the reservoir. |
| 1993 Cambodian Constitution establishes land ownership on the basis of private property determined through existing occupation and use, the free market and contracts. |
| 1993-1997 Founding of Andong Neang and Slab Pang villages, progressive clearance of forest and development of rain-fed rice lands, with substantial areas experiencing ex-military assertions of ownership and sales to big men. |
| 2001 Land Law codifies individual land ownership and protection on the basis of existing occupation and use, provides legal measures against expropriation and malpractice or public sector involuntary acquisition of private land, and creates a national and provincial land dispute resolution structure through Provincial Cadastral Commissions and the National Agency for Land Dispute Resolution. |
| 2007-2009 Global increases in crop and land prices are reflected in large-scale land acquisitions, especially of irrigated rice land, by businessmen and administrators. |

Early history

Sequential migration to the region often began with voluntary migration by land-poor farm families from the country's southwest, who undertook the trek to join the Khmer Rouge, mainly seeking land and an escape from the Sihanouk rice-land tax. It was then marked by forced displacement and resettlement, beginning with the villages settled in the 1970s and 1980s in and around the Kamping Pouy irrigation system. Later, some 200,000 people who had followed the Khmer Rouge to the northwest were expelled or fled to United Nations (UN) camps across the border in Thailand or went to camps and villages along the Cambodian side of the border to areas under Khmer Rouge administration after the intervention of the Vietnamese army and frontline fighting at Ta Kream in 1992-1993. These people most often returned to landlessness or to dispossession at the hands of military groups still under arms and non-official command.

Migrating populations expected that Battambang would provide abundant land for them to acquire through clearance and which would be a permanent basis of their livelihoods. This mainly unrealized expectation was common among Khmer Rouge adherents, as well as post-Khmer Rouge in-migrants. In-migrants to Ta Kream moving in after the Peace Settlement from other districts of Battambang and from neighboring provinces also hoped to acquire land by forest clearance but found themselves employed by Army or ex-Khmer Rouge military groups still engaged in opening up these “pioneer frontier” areas for cash crop production (Map 3). This in-migrating population, faced with enforced landlessness, became tenants, squatted on vacant land or purchased house plots and engaged in local seasonal wage labor, and circular migration to agro-industrial plantations or to construction, fishing or factory work in Thailand. They also relied on access to the commons for fish and forest products. The emergence of a landless wage-laboring class is seen throughout Northwest Cambodia.

Differing aspects of the character of land acquisition and transfers, which can be discerned from the research areas, are the changing and differential penetration and observance of national land law and of related administrative systems, and the related presence and imposition of armed force as a factor in land acquisition and land transfers. In a number of ways, these can be seen as being at odds with the Constitution and the 2001 Land Law, which detailed the specific land and fixed-property laws that theoretically gave Khmer citizens the rights to the land they occupied and used, and protected them from land expropriation unless for the public good and with fair compensation. This presupposed good governance of the land rights of the rural population as basic to the rural economy and social system. Though the Khmer Rouge regime period is described historically as a period of turmoil, our research revealed that prior to 1993, land allocations were more or less formally and equitably administered by successive military regimes although certainly not without forced migration, expulsions and refugees. This historical process is reflected in the continued occupation and ownership of land by the reservoir by households who came as Khmer Rouge adherents to Anlong Svay. The relative wellbeing of households in this area reflects both their relative stability prior to the Peace Accord and return of refugees, immersion in stable market systems and administration, and current high market prices for crops. With Vietnamese intervention in the late 1980s, the Khmer Rouge’s administration of relatively equitable land rights, which was common in the research area, was destroyed.

Land dynamics after 1993, however, reveal a story of arbitrary and forced land expropriation by military factions asserting governmental authority in land distributions and control over land institutions and allocations under the new civil administration, using this institutional power for financial gain from transfers to officials and wealthy businessmen.

1992 and beyond

Migration and settlement that took place around the creation of new small villages around and to the west of the reservoir, on marginal upland and forest, was initially mainly refugees resettled by the Provincial Government and UN in 1992-1993, by people moving in from the Thai border, and since about 1995, augmented by settlers from elsewhere in Battambang Province. There are repeated cases of violence and forced seizure of land at this time, both between armed military units and villagers, and between neighboring villages. In some cases, ex-military remained as landlords or sold land they had seized to businessmen or government officials, legitimized by the issue of land certificates at commune or provincial levels of local government. One result of this pattern of land acquisition is that a high proportion of farm households now have access to rain-fed rice farms by tenancy, renting or sharecropping. Tenancy income is supplemented by diversified sources of livelihoods, including agricultural wage labor and dependency on natural resource extraction of forest products and firewood, both for consumption and for sale. Income from farming under tenancy was severely affected by increases in land prices and rents in 2008-2009, and is reflected in the demand of landowners for cash payment rather than sharecropping (Table 1).

The agrarian situation of the villages was severely distorted by two periods of commercial land transfers following the 1991 Peace Settlement and the return of Khmer Rouge refugees and their resettlement in the Kamping Pouy reservoir area. First, continuing to the present time, former military groups of both parties to the conflict acquired land by forest clearance and the use of force to remove peasant settlements and agriculture in the villages where (in 1993 to 1995) returning refugees were resettled. There were also major land purchases by local government officeholders and business interests, often from military or former military groups, in the irrigated areas during periods of high crop prices. This process was especially acute in the area of irrigated rice land inside the Kamping Pouy system, and resulted in some two-thirds of village lands being transferred to three urban owners at Ta Ngaen. This process is widely seen elsewhere in the province, related also to property prices in the Cambodia land and housing market in the wake of global market surges, continuing up to the time of the research in 2009 and 2010.

The effects of these externally governed transfers on peasant household livelihoods have been seen in increased dependency on tenancy for rice production and on the growth of agricultural wage labor as a source of income, including that of wage migration to industrial crop plantations in Northeastern Battambang and to Thailand. Both the impact of military and business interests on landholding—often coupled with investments by officeholders in the provincial government—and the impact of landlessness in the growth

of agricultural wage labor, including migrant wage labor, are seen in our wider research as being generalized throughout Battambang and appear uniform throughout Northwest Cambodia. An associated factor is that of reliance on acquisition of house plots by purchase, subject to allocation and certification by village and commune authorities, as a basis of legitimate residence and community membership, marked by possession of a family book and access to services. These marks of “citizenship” and social rights were not necessarily shared by all migrants.

Three themes run through these developments, which are at odds with the Constitution and the Land Law:

- Usurpation of land rights by locally-operating armed groups.
- Legitimation of this land acquisition and the transfer of such holdings to military-business-government officials by colluding officeholders and local government officials.
- Taking of rents or profits in the exercise of office by agencies responsible for safeguarding natural resources.

Demographic change

An analysis of the 2008 demographic census data for the four villages studied illustrates high levels of in-migration. The number of migrants is especially important in Andong Neang and Slab Pang, which emerged with the return of Khmer Rouge refugees in 1993. By comparison, the villages located in the eastern part of the commune, which are more “time-rooted” settlements (Thmei and Ta Ngaen), have fewer migrants. These different migratory dynamics are shown in Table 2.

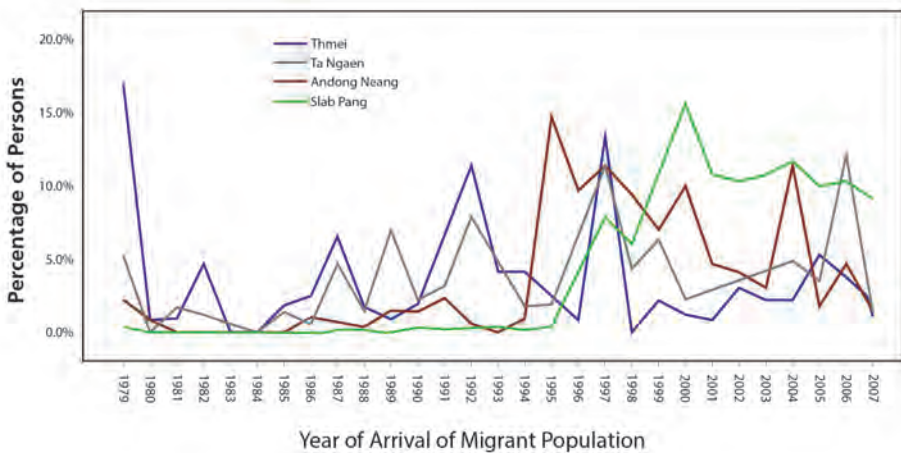
Table 2. Proportion of migrants in total population

| | Total number of individuals | Administrative Divisions | |
|--------------|-----------------------------|--------------------------|---------|
| | | Non-Migrant | Migrant |
| Thmei | 2244 | 92.5% | 7.5% |
| Ta Ngaen | 3873 | 80.1% | 19.9% |
| Andong Neang | 644 | 41.5% | 58.5% |
| Slab Pang | 1427 | 26.3% | 73.7% |

Data source: 2008 demographic census.

The demographic census database allows the visualization of the differing patterns of migration into the four villages (Figure 1). In Thmei and Ta Ngaen, the villages located to the east of the commune adjoining the irrigated areas of the Kamping Pouy system, migrations took place earlier, with one peak in 1979 at the end of the Khmer Rouge, another peak in 1987 after the withdrawal of the Vietnamese army, and again in 1993, with the return of refugees from Thailand. The more west one goes, into the forested area of the reservoir catchment, the more recent are in-migrations, mainly to the villages of Andong Neang and Slab Pang. There, the peaks are clearly visible in 1997 (during re-integration of ex-Khmer Rouge army in Andong Neang) and even later in 2001-2002 in Slab Pang (a satellite village still in the process of settlement, land clearance and allocations in 2010). The linkage of this migratory movement with deforestation can be seen in Map 3 in comparing forest cover in the successive photographic record from 1997 to 2008, which we discuss later in the paper.

Figure 1. Temporal dynamics of migration in the study area



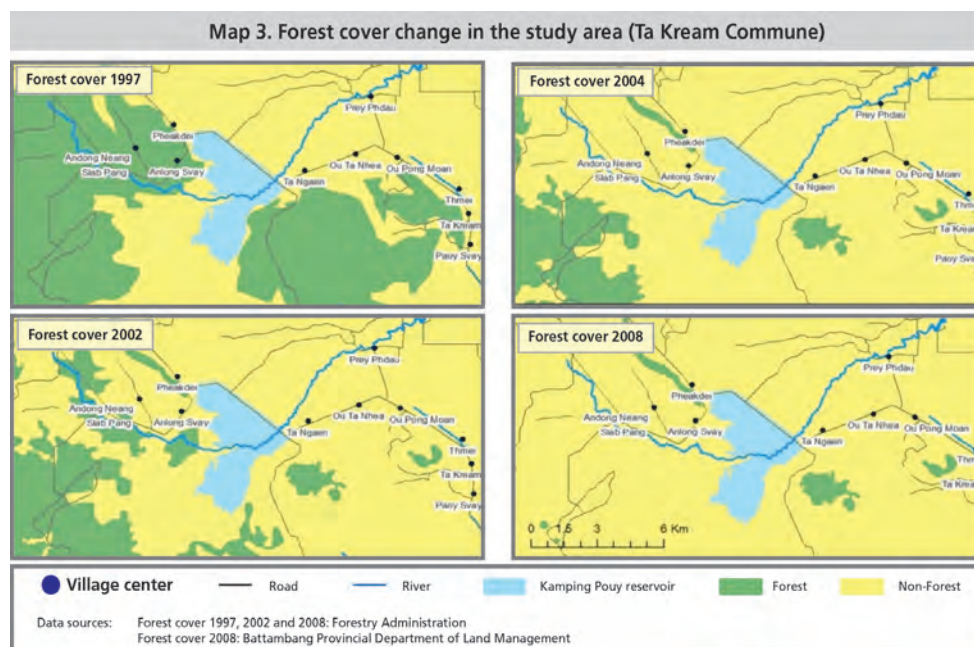
Data source: 2008 demographic census.

Migration in land-cover change

The process of land use change can also be seen in Map 3, showing successive deforestation occurring particularly in the areas of Andong Neang and Slab Pang in the areas to the west of the reservoir where post-1992 resettlement of returned refugees and later in-migration occurred.

Results from the time-series for land-cover change over the last 15 years (Map 3), combined with the dynamic of migration in the area (Figure 1 and Table 2), clearly

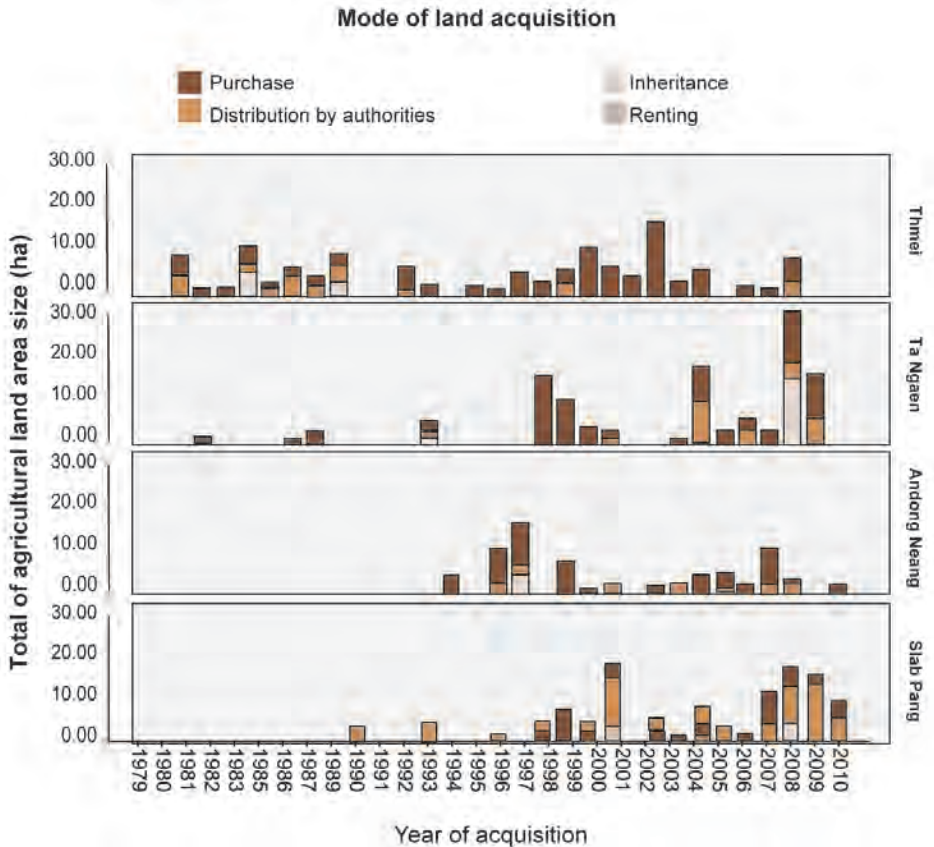
indicate pioneer deforestation from the eastern part of the commune toward the west; deforestation fuelled by the resettlement of returned refugees, sustained migrations of people in need of agricultural land and by the land and commercial interests of ex-military groups.



Processes of land acquisition

Figure 2 shows the process of land acquisition in the four villages, by year and by mode of acquisition. It is worth noting that the process of land acquisition in each village follows the migration profiles identified above quite well. Our sample survey data correlate with the census data. Figure 2 confirms the finding that land in Ta Ngaen and Thmei villages was distributed earlier than in the other two villages. It also shows that this land was mainly acquired through redistribution by authorities, including by successive armed units of the Khmer Rouge, the Vietnamese-dominated regime and the post-settlement Government. The purchase of land came into play in a second stage of the land acquisition process, starting at the end of the 1990s, and peaking in 2008 with major land acquisitions.

Figure 2. Mode of land acquisition by village



Data source: Household survey, 2009.

Effect of land transfers on household land endowments

In order to identify the linkage between landholding and status, we have broken down land acquisition and tenure by four agrarian classes: landless, land leaser, landowner and landlord. The distribution of landholding area sizes per household is very unequal in all four villages (Table 3). Values for standard deviation and Gini indexes of land distribution are high in the four villages. The classification of households reflects the different types of access to land and reveals that the incidence of landlessness is very high for all villages (Table 3). At the same time, the number of households who do not actually possess land but rent land from others is also significant in most villages. Landlordism contributes to the high level of land concentration (Table 3).

Table 3. Distribution of agricultural landholding per household in the study area

| Village | Total number of investigated households | Agricultural landlessness | | | | | Distribution of households per type of land access (agrarian classes) | | | |
|-------------|---|---------------------------|-------------|------|--------------------|------------|---|-------------|----------------|----------|
| | | Mean (ha) | Median (ha) | Max. | Standard deviation | Gini Index | Landless wage worker | Land tenant | Land possessor | Landlord |
| Thmei | 39 | 2.93 | 2.0 | 22.0 | 4.40 | 0.62 | 23.1% | 0.0% | 64.1% | 12.8% |
| Ta Ngaen | 43 | 1.69 | 0.0 | 10.0 | 2.82 | 0.74 | 32.6% | 25.6% | 27.9% | 14.0% |
| AndongNeang | 45 | 1.15 | 0.0 | 7.5 | 1.86 | 0.74 | 46.7% | 8.9% | 35.6% | 8.9% |
| Slab Pang | 63 | 1.16 | 0.1 | 6.0 | 1.57 | 0.67 | 34.9% | 14.3% | 47.6% | 3.2% |

Data source: Household survey, 2009.

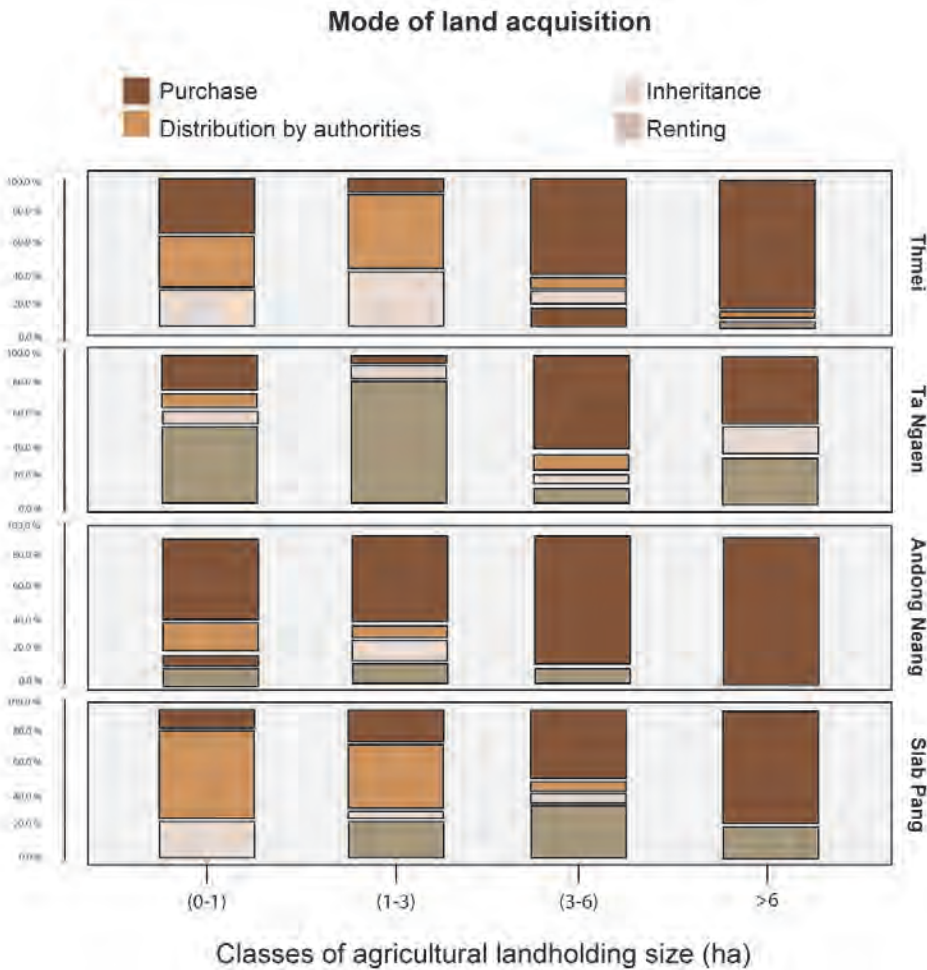
The database allows for analyses that link the land endowment per household and their mode of land acquisition (Figure 3). Households with large landholdings are the most involved in land purchasing. This observation supports the finding that land concentration is aggravated by access to land from the market, a phenomenon that emerged in the early 1990s (Figure 2).

The data support the qualitative research finding that most recent land conveyances were to commercial interests or to wealthier farmers from poorer farmers. The research sheds further light on the census data in showing that in Ta Ngaen a major part of village lands were transferred to absentee owners. Average land sizes mask the very large farm sizes of absentee and of some local farmers and the displacement and movement out of landholding of a substantial proportion of the community.

The ethnographic and historical data that accompany this analysis indicate that displacement and failure of land acquisition by much of the population were a result of military conflict and military management of land allocation in 1) the regulated administration of reservoir and irrigation development, forest clearance and land allocations by Khmer Rouge and succeeding regimes; and 2) illicit land acquisition by force or the threat of force exercised by armed ex-military groups, leading to commercial land transfers to business or local government interests and to large-scale tenancy of peasant farmers. The data in Table 4 and Figure 3 illustrate the extent to which these factors have given rise to differential landholding as between Thmei, Ta Ngaen and the two westernmost villages without irrigated rice lands, Andong Neang and Slab Pang, where resettlement of refugees took place from 1993 to 1995. Figures from a 2008 study in the same area (Thuon 2010) tally with the preliminary results of our 2009-2010 household data in demonstrating a widely seen association between landlessness

and dependency on labor migration (Table 4). Another feature of these households is the highly diversified income strategies that prevail in the lower-income echelons to optimize returns to their labor force in the face of inequitable access to natural and institutional services including Community Forests or Farmer Water User Communities, or access to a true market. These community structures form part of rural resource management and of programs for poverty reduction, and correlate with physical and social distance from the market and public sector institutions at the commune center at Thmei.

Figure 3. Classes of agricultural landholding size, by village and mode of land acquisition



Data source: Household survey, 2009.

Table 4. Landlessness and wage migration by village

| Village | Total number of investigated households | Agricultural landlessness | | Reliance on job migration | |
|--------------|---|---------------------------|------------|---------------------------------------|------------|
| | | Number of households | Percentage | Number of households with job migrant | Percentage |
| AnglongSvay | 405 | 63 | 15.55 | 66 | 16.29 |
| O'Porng Morn | 432 | 63 | 14.58 | 43 | 10.00 |
| Thmei | 373 | 100 | 26.80 | 105 | 28.15 |
| Slab Pang | 330 | N/A | N/A | 5 | 1.52 |
| Prey Pdao | 227 | 34 | 14.97 | 5 | 2.20 |
| Ta Kream | 281 | 43 | 15.30 | 58 | 20.64 |
| Ta Ngaen | 763 | 140 | 18.30 | 140 | 18.30 |
| AngkotThnung | 233 | 32 | 13.73 | 10 | 4.29 |
| O'TaNhea | 275 | 38 | 13.81 | 13 | 4.72 |
| PoySvay | 284 | 94 | 30.21 | 24 | 8.45 |
| Total | 3,471 | 607 | 17.49 | 469 | 13.51 |

Data Source: Thuon 2010.

Table 4 indicates that the impact of indebtedness and other pressures to sell in the face of massive land and crop price increases in 2007 to 2009 were felt mainly in the fertile areas of the irrigation systems with double cropping, notably in Thmei and Ta Ngaen, with 26.8% and 18% of households dependent on work migration, respectively.

In both agro-ecological zones, irrigated and non-irrigated, dependency on agricultural wage labor and wage migration, including illicit migration to Thailand, has become central to the livelihood strategies of landless households. Agrarian and economic change shifted labor resources and incomes out of family farms and into agricultural wage labor in local commercial crop production, or in labor migration to Thailand or into garment, construction or household management of labor, in temporary or seasonal work in Cambodia or internationally. This is graphically illustrated in the following transcript of a focus group discussion at Ta Ngaen (Figure 4):

Figure 4. Transcript from taped focus group discussion at Ta Ngaen, Ta Kream Commune

Young woman, married, 25 years old, seven months pregnant:

Life is difficult for me, because there is not enough paid work [in the village], and we have no land. My parents were living with my father's brothers, my uncles, so my parents moved here to find land, and then my father died. My husband does fishing in the reservoir: 1 to 2 kg per day. I work in the village as a farm laborer. I get R.5,000 to 6,000 per day, rice harvesting, planting, cassava planting and harvesting. Mainly I collect fuel wood, clearing the land for upland cash crop farms for people, working in a group of three to five people, sometimes with my husband, my mother, other relatives or neighbors.

I will not move to any other place in the future. I will go on working for others. My husband might go to work in Thailand, as he was doing, but sometimes he is cheated by people there and gets nothing back. We are illiterate. What else can we do?

Male, 35, husband of young woman above:

There are many kinds of jobs in Thailand: construction, aquaculture, agricultural labor. The problem is the agent often cheats us by calling the police when pay is due, so we get no payment for our work. The Thai police put us into prison and then send us to the border, so we have to beg. When they arrest us, they take all our money but feed us in prison; then at the border, people beat us and do not feed us. We earned a little money by clearing grass at the station. The Thai police confiscate our money, but the Khmer police are worse, because they check through our belongings and take anything valuable.

I spent six months in prison in Thailand. As I was the first arrested, I had to wait until the Thai police had collected 100 illegal workers together to send them back to the border. During my time in prison, I could not contact anyone. My wife did not know what had happened to me.

My boss in Thailand cheated me. He did not give me money until after a few months, and then told the police to arrest me. So I told the police myself, so that at least I could have food to eat. The Thai police beat us, but they beat Burmese illegal immigrants terribly.

Source: Qualitative survey (RUPP 2010).

The number of households at Ta Ngaen without paddy, and that are dependent on migrant wage labor (140 households) reflects the heavy loss of rice land in the irrigated project area, which is related to land sales by villagers to provincial government officials during 2007 and 2008. They also illustrate that a factor in land sales is the availability of high wages in migrant agricultural labor on cash crops. From 2000 to 2010, this was notably from the commercial and small-farmer production of bio-fuel and animal feed crops such as cassava, for which there was an expanding world market, including marketing to China, and for which both prices and the market have increased dramatically from 2007 to 2010.

The massive transfer of land at Ta Ngaen—70% of the community's land—can partly be explained in this analysis by the intensive use of diminishing household land by those farmers who received land in allocations. This suggests that at a given point, farming becomes less attractive and profitable to households than capitalization of their land and the diversified use of their labor in local and migrant wage earning. Intervening mechanisms in land transfers involve the threat of armed expulsion of the kind that

had recently occurred at Anlong Svay and Andong Neang, diminishing farm sizes in the face of population pressure, and the indebtedness of farmers to merchants and wealthier farmer neighbors.

The rise of landlessness

The general failure to obtain land and the mortgaging and transfer of land or both is resulting in the emergence of an underclass of landless wage laborers as an increasing proportion of the population. This “proletarianization of the peasant” had three main points of origin in the specific history of Ta Kream, but which are widely present in the region. The first involves an early group of-migrant households that received or bought house plots but no agricultural land and who were dependent from the start on wage labor and gathering of natural resources from the commons, seen notably in the villages around the reservoir that were created or expanded by the resettlement of returned refugees from 1993 to 1995. Next were the growing numbers of farm households selling their irrigation paddy to absentee landlords in the command area of the Kamping Pouy irrigation system and elsewhere in the Tonle Sap basin where a combination of multiple cropping and access to roads offers high returns to irrigated rice land ownership. Third was the indebtedness of small farmers.

Most of the debt examined in this and related research in Cambodia from 2005 to 2010 is “distress” debt, to meet health or other crises, or simply to keep the household and the farm production system going, to repay earlier debt to others, or even to pay for the costs of wage migration of a household member. Debt to informal moneylenders, who are larger farmers or rice millers, is often linked to dependency on the lender for equipment or farm inputs, and is usually at exorbitant interest rates of 10% per month. Interest rates that assume that borrowing is for short-term production gain or for coping with an emergency have become a powerful instrument for land transfer when, as is frequently the case, they become long-term transfers of income. Local credit is as much about acquiring land and indentured sharecropping by creditors as it is for cash profit, and is a major driver in land transfers. Forced displacements of this kind were accompanied by migration and the emergence of agricultural wage laboring as the principal long-term source of livelihood of a growing landless rural population.

Migration, natural resources, forest institutions and degradation

As we have argued, multiple migration streams coupled to conditions of limited land availability and landlordism, and conflict over and continued expropriation of land by ex-military and business interests have contributed to the creation of a subclass of very poor, landless households dependent for their livelihoods primarily on wage labor and on access to the commons, especially on access to community forests.

While the Kamping Pouy irrigation system and the productivity obtained on rice land in the project area, plus the early development of land administration and infrastructure and services in the seven villages making up that section of the commune (studied at Thmei and Ta Ngaen in our research) appear to have led to early and relatively stable services and land management, the picture in the post-Peace Treaty settlement villages around and to the west of the reservoir differs. There, the history of settlement and land tenure and use is one of harassment of emergent village communities after initial settlement, conflict over land rights, with other villages or with military groups, and poor management of natural resources, notably of neighboring forest commons.

The process of settlement and deforestation involves the changing character of community forests, in terms of their resource make-up, administration and the access by adjacent communities. The level of depletion of marketable economic forest resources, such as building timber, bamboo and bamboo shoots, is a determining factor in how they are administered, as seen in the character and stability of government and community management of forests at Thmei, the long-settled commune center, and at the more distant Andong Neang. Both have participatory community forest management, introduced and sanctioned by the Forestry Administration Cantonment, but differing in the level of autonomy and in the resources they possess and the use made of them by neighboring villagers and others.

The Community Forest at Thmei is locally organized to manage all aspects of access to and use of the small adjoining forest, sanctioned by the Forestry Administration, and including all members of the village. It provides protection against the cutting of timber, and of other access to forest products by outsiders. It informally regulates the collection of fuel wood, basically brushwood and fallen timber. Other products that are collected, usually by small family groups or neighbors, are mainly mushrooms, berries and wild fruit, and vegetable leaves for soups and salads. The stability and ease of management of the Community Forest reflects the fact that the forest has, for the past decade, been depleted of building timber and of any other product that would be sold at market.

The forest at Andong Neang and also adjacent to Anlong Svay, is formally administered by the Anlong Svay Community Forest group, but has an ongoing presence of Provincial Forest Administration personnel, and is a major source of building timber and fuel wood and charcoal, which are transported to district and highway sales points and small charcoal producers. Villagers regard the uniformed forestry patrol officers as primarily engaged in controlling and profiting from the removal of cut firewood and timber at exit points from the forest for small local commercial groups and farmers, at a standard charge of 3,000 Riels per cartload.

The attitudes of local people to the presence and role of forestry officers, illustrated in the following transcript of a focus group discussion on natural resource management at Andong Neang, are clear in recognizing that forest “management” is not primarily for purposes of the conservation of the forest, but rather for timber and fuel wood extraction. The transcript also indicated that, reflecting the uncertain reach and legitimacy of administration in these more remote villages, it is not even clear to the villagers whether the people collecting fees are forestry administration personnel, military or police militia.

Box

Before you get into the forest, have you ever asked for permission from the forestry officer?

No. If we get into the forest, they do not care. All we have to know is to pay. If we load more, we have to pay more. It depends on the size of the tree stem. If it is big, we have to pay more. It can be up 10,000 Riels per cart. On the other hand, the fee is fixed by the officers. I have no power to argue. We have to pay as much as we are asked, for we are just ordinary citizens. We don't dare to do anything with them. The other day, I had an argument with them. I told them that the wood on my cart was from my rice field. I have to clear my rice field to grow rice. The wood was not from the forest. But they did not listen to me. They replied that they asked for money once the wood was on the generator-pulled cart. So, how could I make a further claim with this kind of language?

Now, in your opinion, tell me about the roles of forestry officers.

I think they have their own professional skills. I think their role is to collect money from wood collectors. The forestry officer is there to arrest people and collect money from people. They wait for us outside the forest area and as soon as we are out of the forest, they ask for money. They never give any instruction not to cut any particular trees. The only thing they know is money from the collectors. We are not sure if they are forestry officers. All we know is that they have authorities collect our money. I usually find that they are in army uniform. They did not talk to us about anything else except asking for money when we are out of the forest. They usually wait for us at the village. They never arrest us in the forest area. The way that our authorities arrest people is different from Thai authorities. Thai authorities seek and arrest people in the forest, while our authorities arrest people in the village. Yes, they are afraid of monkeys in the forest, so they have to stay in the village. I am OK if they do not ask for money from the firewood collector, but this is not the case. They arrest all the carts and ask for money. If we pay, we can go. They keep doing like this until there is no more cart in the queue.

What are the advantages of forest management?

I do not think that we have forestry officers who manage our forest. We do not think that forestry officers manage our forest, for they have never been to the forest while they are in the village asking for money. Their office is not in the forest but on the road and they arrest people for money.

Two conclusions may be drawn from the data on forestry administration at Thmei and at Andong Neang in the context of migration and the settlement and management of community land and forest resources:

- First, that community-based natural resource management in the form of the Community Forest works effectively where forest use and degradation have led to a depletion of marketable commodities, and where forest products are largely for subsistence: fuel wood, berries, mushrooms and vegetable leaves. It is ineffective where marketable products, primarily timber, provide opportunity for exploitation by outsiders or by means of illicit charges.
- Where community forests are still stocked with accessible timber they are subject to control and appropriation by armed force and by commercial interests supported by armed force and by authorities closely linked to deforestation for purposes of land clearance and acquisition.

Conclusions

Our research shows several macro-processes:

1. Military meddling in land acquisition in the period immediately following the resettlement of refugee households in 1992 and 1993 continues sporadically into the present, and is more prevalent in Andong Neang and Slab Pang, the villages that are physically and institutionally remote from the commune center. These villages have taken the brunt of in-migration of returned Khmer Rouge refugees in 1992 and 1993 up to 2009 and 2010. These villages experienced forced expropriation of land by militias and then its commercial transfer to urban landlords, and later the transfer of state or village lands by purchase by new migrant farmers mainly from Battambang.
2. The impact of high crop and land prices has been felt more strongly in villages with irrigated land at the center of the commune. Double cropping, stable services and good road access have made the Kamping Pouy irrigation system attractive to business interests and government officials both for production and as a prime target for land speculation. A consequence was displacement of peasants, often linked to indebtedness, the rapid rise of landlessness and dependency on agricultural wage labor.

These processes are matched by deforestation for purposes of land acquisition, but also for timber and fuel wood extraction, in which the role of the military, using or threatening the use of force, is endemic, and is systemically linked to irregular action

(i) in the management of forests and (ii) in the transfer of deforested land from common to private ownership.

The repeated evidence of these phenomena in the qualitative research on land allocations and expropriations by military quasi-governmental administrations, conflict over land rights, and of dependency on seasonal cross-border wage migration, in often desperate household economic circumstances and at high risk demonstrate a linkage between migration, rural poverty and natural resource management that has arisen from specific factors of agro-ecologies, location and time. The rights and practicality of land acquisition and secure holding by peasant households, written into the 1993 Constitution, were tempered by accommodation, on the one hand with the immediate threat of armed force at the hands of ex-military, still present in the research area, and on the other with the land purchasing power of a wealthy urban and administrative elite. Access to land for a substantial part of the population has given way to access to agricultural wage laboring and migration as a more secure source of livelihoods.

It is probable that these findings, described here for research at Ta Kream, are true for most of Battambang and other border provinces and populations in Northwest Cambodia. The migratory flow of voluntary and forced migrations ended up producing landlessness and dependency on wage labor and on access to the commons for a major part of the rural population of the Cambodian Northwest.

A further dimension to this movement into poverty and into a stratified rural society is the extent to which the use of force or the threat of the use of force has become normalized and may have far-reaching effects on the agrarian system. In these circumstances, measures such as the support given to community-based natural resource management as an instrument for the reduction of rural poverty and the protection of natural resources are a palliative, and not necessarily an effective one, or may actively serve the interests of a process of elite capture of natural resources and of the authority to control them.

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Chapter II

Land Reform Migrations and Forest Resources Management in Chimanimani District, Zimbabwe

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Land reforms in Africa provide an opportunity for understanding the impacts of internal migrations and natural resource management. In Zimbabwe, the Fast Track Land Reform Programme (FTLRP) initiated in 2000, was in response to unsuccessful initial post-independence land resettlement programs for redressing the colonial legacy of discrimination against the black majority, who were either forcibly relocated to segregated native reserve areas of inferior land quality and agricultural production potential, or coercively forced into labor on colonial settler farms. This study specifically examined the migration processes and the environmental consequences of the FTLRP in the Nyabamba A1 resettlement in eastern Zimbabwe. This A1 resettlement model was designed for landless people from communal reserve areas and focuses on community based management of grazing, woodland and water resources. The objectives include: decongest communal lands, extend and improve peasant agriculture, eliminate squatting and other disorderly settlements. The study found that migration produced high degrees of deforestation, but the new communities remained “forest dependent” for their livelihoods and are “multi-sited” as they continue to rely on their earlier homeland (both urban and rural) for food, etc. Given the communities’ ongoing dependence on forest, they would benefit from education and capacity building for good forest management, coupled with the strengthening of traditional institutions of governance. This is particularly relevant given migration can potentially weaken traditional use rights. However the study found that the local rules governing the preservation of sacred places in the surrounding forests,

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such as springs, mountains and rivers, were successful. The study also revealed disparities in the access to resettlement land between men and women, despite women's active participation in management of the farm land.

Introduction

Land reforms in Africa provide an opportunity for the investigation of the impact of internal migration and natural resource management. There is a copious literature on land reforms in southern Africa (May & Roberts 2000; Lahiff 2003) and particularly in Zimbabwe (Chaumba et al., 2003; Moyo 2004; Juana 2006), where recent land reforms have attracted an increasing amount of scholarship. Manjengwa (2006) documents a few positive experiences where land reform processes have provided opportunities for increased community environmental awareness and involvement in managing natural resources. In Zimbabwe, the Fast Track Land Reform Program (FTLRP) is the most recent of these and has attracted the most attention locally and globally due to its socioeconomic and political implications. Future land reform must be informed by the impact of previous reforms in order to achieve the intended societal benefits. Evaluation of such impact must focus not only on socio-political and socioeconomic aspects, as has been the case, but also on natural resources, because rural livelihoods in Africa are intricately linked to natural resources. There is a paucity of empirical evidence in the literature on the impact of FTLRP migration on the use and management of forest resources.

Background

In-migration to frontier areas can increase pressure on resources, increase conflict over them and undermine informal arrangements for their management. While some studies have found that migration has reduced pressure on local natural resources in the sending communities, other studies revealed that migration also affects the use of natural resources in the sending areas (Heilmann 2006). Migration has the potential to undermine community arrangements for natural resource management (NRM), in particular where collaborative action is required. At the community level, long absences from the village of a substantial part of the members may make it difficult to sustain collaborative processes for NRM or for migrants to maintain a recognized stake and role in management and governance of common pool resources. Migration fundamentally changes the relationship of households and communities with natural resource management. Migration streams tend to be gender and generation selective. As young men are more likely to migrate, women, children and the elderly remain behind in charge of managing natural resources and their households. This has been described as the feminization of agriculture (Doka & Monimart 2004).

Migration contributes to diversified livelihood strategies for the rural and urban poor in various parts of the world (Waddington 2003; Sabates-Wheeler et al. 2005). A livelihoods approach views migration as one of a set of strategies that households and communities use to diversify and support wellbeing (Waddington & Sabates-Wheeler 2003). In generally observed patterns, the ability to adopt migration as a livelihood strategy is affected by the degree of social inclusion or exclusion, reflected in access to and control over resources and that it is the poorest groups of people who typically are disproportionately represented in circumstances of 'distress migration'; i.e., migration as a response to severe livelihood constraints (Waddington & Sabates-Wheeler 2003). There is also abundant literature on natural resource management and its critical importance in rural livelihoods (Chambers & Conway 1991; Goodrich 2001). However, linkages between migration and natural resource management have not been adequately researched and are not clearly understood.

Study Site

The study was carried out in the Nyabamba A1 resettlement area in Chimanimani district in Manicaland Province of eastern Zimbabwe, located at 19°48' latitude south and 32°52' longitude east. Nyabamba falls in Agro-ecological Region I, which receives more than 1000 mm of rainfall per annum and experiences maximum daily temperatures of 18-26°C in summer and 12-15°C in winter. The area is mountainous with an average altitude of about 750m above sea level. More than 80% of the homesteads and agricultural land in Nyabamba are on steep terrain, and thus the soils are susceptible to erosion and land degradation. The hydrology of the area is characterized by numerous springs and perennial streams and rivers, such as the Nyahode and Nyabamba, which enable irrigation farming using gravitational water flow.

The general ecoregion of the area is montane forest-grassland mosaic (World Wide Fund, 2001). Miombo woodlands are scattered throughout the ecoregion, occurring on well-drained slopes. These woodlands vary from closed to open and are dominated by deciduous *Brachystegia spiciformis*, *B. tamarinodoide* and *Uapaca kirkiana*. Trees are about 3-6 m in height. Ground flora consists of grasses such as *Digitaria diagonalis*, *Loudetia simplex* and *Themeda triandra*, and dicotyledonous herbs, ferns (particularly brackenfern *Pellaea* spp.) and creepers such as *Smilax kraussiana* (Goodier & Phipps 1962). Small patches of moist evergreen forest occur on the eastern slopes of the Chimanimani Mountains. These patches of indigenous vegetation occur against a landscape of exotic forest plantations of pine and wattle.

Historical context

The context of Nyabamba A1 rural to rural migration derives from the colonial land occupation of Zimbabwe, which started in the late nineteenth century and spanned almost a century. Indigenous people were forcibly relocated to segregated native reserve areas of inferior land quality and agricultural production potential. Other black people were coercively forced into labor on colonial settler farms, in another form of forced rural to rural migration. On the native reserve lands, rural migrants found themselves with very restricted access to natural resources such as land, water and wildlife. Three-quarters of the land occupied by the native Zimbabweans was in the most arid and unfertile areas of the country (Sachikonye 2004; Chasi et al. 1994) and was inadequate to support even subsistence agriculture by the black population. There was severe overcrowding and land degradation in the native reserve areas. Poverty among the majority of black Zimbabweans in the native reserves was exacerbated by poor access to natural resources as well as by legal, social and economic barriers created by the colonial government. To cope with the very harsh environmental conditions in the native reserve areas, rural communities in Zimbabwe used natural resources such as forests as safety nets against poverty. Poverty among communal households reflected the concentration of people on poor and declining natural resource bases

Since independence in 1980, the government of Zimbabwe has taken steps to ensure that the formerly disadvantaged black majority population, constituting about 99% of the country's 11 million people (Central Statistical Office 1992), has access to productive resources such as land and water. The government of Zimbabwe initiated the Fast Track Land Reform Program (FTLRP) in 2000 (UNDP 2003) as a result of unsuccessful initial post-independence land resettlement programs and in response to the social and political pressures for faster implementation of land reform. This land reform program was dubbed 'fast track' because it was implemented almost spontaneously over a very short period and entailed the rapid movement and resettlement of thousands of black people on land formerly owned by large-scale white commercial farmers.

The FTLRP was implemented through A1 and A2 resettlement models. This study focused on A1 because A1 resettlement areas were primarily meant for landless people mainly from the communal area and because of the requirement for community-based management of grazing, woodlands and water resources, among others in this resettlement model. Furthermore, the Presidential Land Review Committee (2003) established that nationally about double the land area had been allocated to this model compared to A2, benefiting almost 20 times more households. Model A1 is a villagized type of settlement (Ministry of Lands, Land Reform and Resettlement 2007), where settlers were allocated individual residential and arable plots, but communally shared grazing, woodlots, forests

and water resources. This is similar to traditional communal land settlement, except that the individual household arable landholdings are larger in the A1 model. The objectives of the A1 resettlement model were to decongest communal lands, relieve land pressure in over-populated areas, extend and improve the base for productive agriculture in the peasant farming sector and eliminate squatting and other disorderly settlements in both urban and rural environs (Ministry of Lands, Land Reform and Resettlement 2007). The FTLRP resulted in migration of people from both rural and urban areas of origin to the resettlement areas. The government's specified main target population for the A1 model was the landless peasants in the communal areas, thus creating a predominantly rural to rural migration context, although in effect many people from urban areas benefited from A1 resettlement.

The size of land allocated to individual beneficiaries was guided by the rainfall potential of the area, where landholdings increased with depreciating rainfall. The government stipulated that land sizes for A1, inclusive of the communal grazing area, were to range from 12 hectares in the high rainfall agro-ecological region I to 70 hectares in the semi-arid agro-ecological region V, while the corresponding A2 range was 20 to 2000 hectares.

FTLRP was implemented concurrently in all the provinces of Zimbabwe to ensure socio-political equity. Nationally, a total of 2,652 farms with a combined hectarage of 4,231,080 had been allocated to 127,192 households under the A1 resettlement model as of 31 July 2003 (Ministry of Lands, Land Reform and Resettlement 2007). The FTLRP resettlement process generally comprised the following steps:

1. Farm invasions or '*jambanja*': the spontaneous initial occupation of large-scale, mainly white-owned commercial farms by the black masses. This initial process preceded the official resettlement process.
2. Official resettlement process: the government enacted constitutional and legislative provisions that enabled the identification and designation of commercial farms for resettlement under the A1 and A2 models.
3. Land allocation to settlers: farms were demarcated and designated to individuals.
4. Issuance of offer letters: this gave initial official recognition of settlers prior to official tenure.
5. Issuance of permits and leases.

After the land invasion, migrants settled illegally in Nyabamba until 2002 when the government legally designated the area as an A1 resettlement. Invasion group leaders working with traditional leaders assigned land to the invaders. On allocation of land, the invaders had to immediately occupy it and start the forest clearing process in preparation for cropping activities or risk losing the land to other people who could

be interested in the same area. The new land occupants would now wait for the formal process of land allocation by the responsible government agencies. The settlers had to be properly resettled, their plots demarcated and offer letters issued by government. Formal settler selection and emplacement for A1 was the responsibility of the Provincial Land Identification Committee, chaired by the provincial governor, and the District Land Identification Committees, chaired by the District Administrators. Settler selection was based on applications submitted to the Ministry of Lands, Agriculture and Rural Resettlement. Following the issuance of offer letters, migrants would wait for legalization of their tenure through the issuance of permits, which operate along the same lines as the communal area type of customary tenure.

The Presidential Land Review Committee (2003) reported that decongestion of communal areas had not been successfully effected, partly because of resettlement land inadequacy and also because most resettled farmers did not relinquish their former communal area landholdings. Such migrants have been referred to as economic migrants who maintain their homes in the communal areas and go to the resettlement land to farm (Moyo et al. 2003). Matondi (2005) has also reported transient movement of people across different schemes and tenure regimes, namely communal areas, A1 and A2 resettlement areas and urban areas. This could be attributed to insecurity of tenure in the resettlement areas.

Research approach

This study examined the migration processes and the environmental consequences of the FTLRP. It specifically examined the migration process, the importance of forest resources to migrants' livelihoods; the nature, extent and pattern of forest cover change due to the land resettlement process; and explored opportunities for working with migrant communities to formulate sustainable forest management strategies and to devise local solutions for addressing the degradation of forest resources. The study hypotheses were that forest resources were important pull factors for migration into Chimanimani A1 resettlement areas; access to forest resources for different gender groupings is a poverty-related factor among Chimanimani A1 migrants; and management of forest resources in Chimanimani A1 resettlement areas can be enhanced through improved local institutions and improved local capacity for forest management.

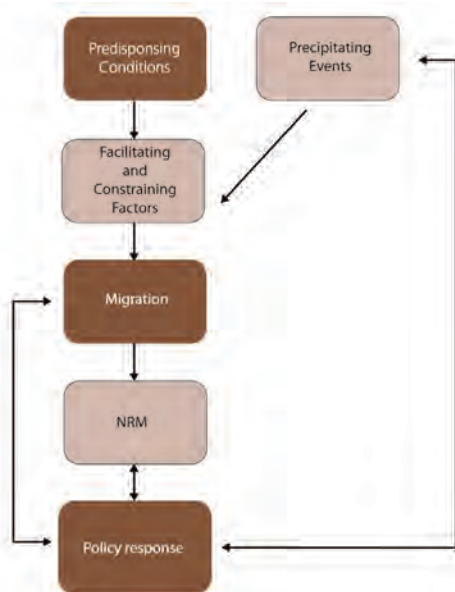
Forests were chosen as the natural resource domain for this study because of the abundance of natural and planted forests in Chimanimani, and the importance of forest resources to the local and national economy. Prior to the FTLRP, most of the forests in the district had remained fairly intact due to their inaccessible location and legal protection. However, a number of the forests were being threatened by agricultural expansion and invasion by alien plant species such as jacaranda and wattle (Shumba 2001). Such threats to forest

resources have national implications because Zimbabwe's forest stocks generate a wide range of timber and non-timber products and services. The products include fuel wood, sawn timber, pulpwood, building materials, wood for small artisanal crafts, fodder, fruits, honey, mushrooms, insects, bark for rope, medicines, leaf litter and gum.

Conceptual framework

The study adapted and advanced Hugo's simple model of environmentally induced migration (Figure 1). The framework posits that environmentally induced migration is shaped by the following elements: (i) the predisposing conditions, (ii) a precipitating event, (iii) the constraining and facilitating factors, (iv) the migration process, (v) natural resource management and (vi) the policy response. These elements have impacts on the environment and feedback effects on migration and environment. In the model, certain contexts are susceptible to environmental disruptions likely to lead to migration. These predisposing conditions include ecologically fragile ecosystems, forest degradation and soil fertility depletion. These are areas where poverty is rife and areas where land becomes less productive. In Zimbabwe, this is typified by communal areas that were created during the colonial land occupation of Zimbabwe. The overcrowding and land degradation and poverty in the communal areas was exacerbated by poor access to natural resources as well as by legal, social and economic barriers created by the colonial government.

Figure 1: Conceptual framework for natural resource management in Fast Track Land Reform migration, adapted from Hugo (1996).¹



¹ Hugo, G. (1996). Environmental Concerns and International Migration. *International Migration Review*, Vol. 30, No. 1, Special Issue: Ethics, Migration and Global Stewardship.

The resultant pressure on natural resources predisposes people to migration. These predisposing conditions can be better understood using the sustainability analytic framework defined by the International Union for Conservation of Nature (IUCN, 2002). This framework allows for an empirical characterization of the sustainable use of living natural resources from biological, ecological, social, economic, political, cultural and historical points of view.

Migration precipitating events are those that induce human movement or precipitate reactive migration. These factors are also influenced by the predisposing factors. Migration to A1 resettlement areas in Zimbabwe was mainly precipitated by the prevailing broader national political environment, which gave different groups of actors with a desire to own productive farmland the room to pursue their desires. The FTLRP was initiated in all parts of Zimbabwe in early 2000, with farm invasions mostly led by veterans (ex-combatants) of Zimbabwe's liberation war. News and information about this was spread through all forms of print and broadcast media and through the war veterans' information machinery. The government of Zimbabwe supported the invasion process by enacting constitutional and legislative provisions that facilitated the FTLRP (Moyo 2004; Presidential Land Review Committee 2003).

The decision to migrate is shaped by a range of constraints and facilitating factors, which exist in the sending areas (push factors) or destination areas (pull factors). According to Oglethorpe et al. (2007), major push factors that can result in migration, causing environmental damage, include scarcity of, or inadequate access to, land and resources, lack of employment opportunities, poverty, high population pressure, environmental degradation including loss of soil productivity, natural disasters and rites of passage when young people leave home to make their way in the world. Major pull factors that may directly or indirectly result in biodiversity impacts include access to land and natural resources (renewable and nonrenewable); employment opportunities; access to markets; access to facilities and amenities, such as social services, and transport, safety and security; and family reunification and networks. Migration pull factors are defined mainly by a consideration of benefits such as fuel wood, medicines, food and raw materials for crafts. The existence of kinship and social networks in the receiving area may provide facilitating factors for some migrants to move to areas where they have relatives and friends who can support them. The presence of such networks may act as facilitating factors while their absence may be a constraining factor. The presupposed pull and push factors for the FTLRP were the availability and access to land. Since the value of land can be enhanced by various natural resource endowments in the receiving areas, this study tested the hypothesis that forest resources were important pull factors in A1 resettlement areas.

The migration process in Zimbabwe's resettlement areas may be conceptualized as "impelled" migration. This is a subset of forced migration (Hugo 1999) in which migrants as social actors retain some power to decide whether to migrate, as opposed to forced migration where migrants are faced with death if they remain in their place of residence. The latter are often referred to as environmental refugees (Birmann & Boas 2008; Hartmann 2010; Homer-Dixon 1994), described as "those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life."

Zimbabwe's resettlement is also different from voluntary migration, where the decision to migrate is entirely left to the migrant's choice to initiate the movement. Much population mobility that can be conventionally seen as voluntary occurred in situations where people had little or no choice. Resettlement may only give the appearance of objective rationality to a choice (to migrate or not) that in reality did not exist, because for some migrants, there were no other alternatives. External pressure due to FTLRP hype was paramount in inducing people to move to new resettlement areas. However, original motivations to settle elsewhere existed, although the precipitating event was the FTLRP. As in many cases of migration, the resettlement process was a combination of a complex set of multiple pressures of which the FTLRP may be only the proximate cause.

Any understanding of the migration-environment nexus should recognize the importance of feedback effects on migration and impacts on environment. Figure 1 depicts feedback among policy responses, migration and precipitating events. For instance, while policy and legislative arrangements by government precipitated mass migration, further policy provisions and refinements were made to aid the FTLRP after migration. These overall FTLRP policy arrangements ultimately affected NRM due to migration to the A1 areas, while resultant NRM necessitates local and national legislative frameworks for conservation. Policy responses may influence further migration.

The study was premised on the understanding that management of forest resources in resettlement areas can be enhanced through improved local institutions and improved local capacity for forest management. This is on the premise that the rich forest resources can only be conserved by adequately informed and capable communities.

Data collection

Data used in this chapter were collected using a combination of household surveys and a range of participatory tools and geographic information systems (GIS). First, a survey

questionnaire was administered to 110 households from the Nyabamba A1 resettlement area, which was divided into geographic clusters in order to adequately cover the whole area. Within each cluster, systematic sampling was used whereby every third household was selected for the interview. For each household, one member was nominated by the household to lead in answering the questions while other household members would assist where necessary. The questionnaire sought information on themes that included household structures, the migration process, commencement of agricultural activities, land ownership and gender, utilization of forest resources and governance of forest resources.

To enrich survey data and to ensure that migrants effectively participated and identified with the study, a range of participatory tools were used in focus group discussions. Participants were grouped into small working groups to debate one of the four thematic areas, namely the migration process, livelihoods, natural resources endowments and governance. Gender was a crosscutting issue throughout the study as the researchers sought to understand the migration process, land acquisition, forest resources use and management from a gender point of view. Both women and men actors gave their feelings, views and thoughts on these issues, which were captured and analyzed. In addition, there was a deliberate attempt to have a female-only group to look at all the themes in all the four research sites. Other focus groups had men, women and youths deliberately mixed to capture a diversity of views from the participants. Each working group presented their results in a plenary session to allow further discussion and contributions by other participants.

The focus group discussion discussed issues pertaining to migration decision-making, the land allocation process, migration push and pull factors, timelines, livelihood strategies, utilization and governance of forest resources, and issues of gender and land ownership. To explore governance issues, institutional analysis, stakeholder matrices, Venn diagrams, SWOT analysis, interest and influence matrices as well as key informant interviews were used. These were meant to explore leadership structures in the various villages, management structures for forest resources and their roles and responsibilities, rules and regulations governing forests use and their effectiveness, conflicts over natural resources and how they were managed, sacred places in the area and any natural resource management projects in the area. These focus group discussions were complemented by key informant interviews. The key people included chiefs, village heads, members of the village assembly, ward councilors and war veterans.

In this study, the interactions among migration, gender, poverty and forest resources management and use were analyzed using the actor-oriented approach (Long & van der Ploeg 1994; Long 1988), whereby the social actor is the entry point in the analysis.

Herein, actors are individual men or women migrants or groups of migrants performing an action, i.e., migrating, invading forestland, undertaking farming activities and exploiting forest resources, in order to combat poverty. The term ‘actor’ is a social and cultural construction that refers not only to individuals but also to groups and institutions (Kujinga and Manzungu (2004). Analyzing issues of migration, gender and forest resources using an actor-oriented approach facilitates the identification of different actors, their interests, objectives and organizing strategies as they interact with other actors.

Participatory Geographic Information Systems (PGIS) were used to assess community perspectives on forest resources, to later relate these perceptions to actual change observed. PGIS methodology was used for spatial and temporal descriptions of forest resources and to draw on the fact that community members are expert repositories for different categories of spatial data. The PGIS was used to facilitate stakeholders’ participation in processes of spatial learning, decision-making and action. In addition to community sketch maps, GIS mapping of the area was done using Landsat TM data, comparing land cover classes for 2000 and 2009 using supervised classification with ArcView software.

Research partnership

Research was conducted through an institutional partnership of the Nyabamba community, three University of Zimbabwe departments—Institute of Environmental Studies (Project coordinator), Sociology, and Geography and Environmental Sciences—Chimanimani Rural District, Environmental Management Agency, Forest Commission and the Southern Alliance for Indigenous Resources.

Results

Migration process

Migration to the Nyabamba A1 resettlement area was predisposed by a colonial legacy of crowded communal areas of very poor land quality. Nyabamba migrants took part in the land invasion process because of a number of push and pull factors, though they all generally took advantage of the land reform process. The FTLRP acted as a precipitating event for migration. Both males and females who migrated from communal areas said the areas they migrated from had serious shortages of farming land because of overpopulation. This, and the fact that soils in these communal areas were reportedly infertile partly due to decades of soil nutrient mining with inadequate replenishment, led, according to the migrants, to very poor crop harvests. This is evidenced by the fact that 90% of the pull

factors were directly related to the land; e.g., better farmland, opportunity to own land and a less populated area. This finding thus rejects the research hypothesis that forest resources were important pull factors for migration into Chimanimani A1 resettlement areas. However, it is important to note that while forests were invaded and cleared for agricultural activities, indigenous forests did remain that provide a number of forest products and services to communities.

Proximity to the communal areas of previous residence, demand for land and historical land claims also featured most as factors that influenced people to migrate to Nyabamba. A major reason for targeting nearby farms, such as Nyabamba for people from the Dzingire communal area, was that migrants wanted to remain close to their original homes to maintain their line of food supplies while they established themselves on the new farms. People also migrated from Dzingire to Nyabamba to reclaim the land from which they had been forcibly removed by the colonial government in 1975.

Migrants in Nyabamba reinforced the notion of human agency, as they were able to impose their own will on the environment by settling on the property first without “official” permission and cleared the forest to embark on agricultural activities of their choice. In constructing their life-world, migrant actors managed to utilize FTLRP information to emigrate and their own resources (mainly human labor to clear the forests) despite the uncertainties that prevailed before they could get the offer letters and, eventually, tenure.

Gender and the migration process

In general, farm invasions in Zimbabwe were led mainly by males and a few female liberation war veterans. In Nyabamba, many women formed the group that invaded the forests, because their husbands were in employment elsewhere. Married women who managed to get land got it because they were able to actually fill out the application forms themselves, or were ex-combatants and members of the (Liberation) War Veterans Association, which ensured all its members obtained land regardless of their gender grouping. Indeed, the government required that 20% of all FTLRP land be allocated to liberation war veterans. To get to the offer letter stage, migrants had to complete official application forms. For the majority of married women, these application forms were completed by their husbands who put their own names as the applicants and not their wives' names. This meant that when the offer letters were issued, they were mainly in the names of men (73.5%), though the majority of the people who initially participated actively in the Nyabamba land invasion process were women. In only 7.7% of cases were both the husband's and wife's names on the same offer letter and 14.4% had only the wife's name. This whole issue of whose name is on the offer letter casts interesting

questions of how far the FTLRP advanced women's empowerment causes, considering that women were generally very active during the land invasion and land clearing phases. These two phases were consequential to someone actually getting an offer letter, and eventually a lease. Matondi (2005), writing on the FTLRP in Mazowe district, also makes similar observations of women being disadvantaged or being vulnerable to losses following divorce or widowhood.

Livelihoods and forest resource management

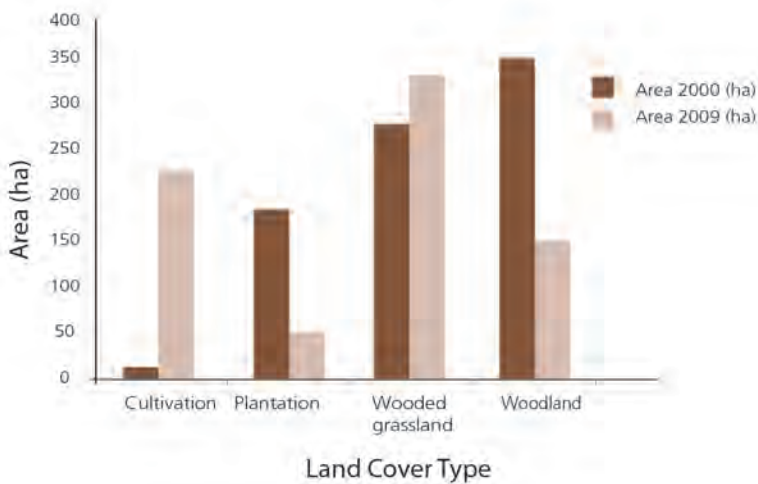
Communities in Nyabamba engage in a diversity of livelihood activities. Farming is the most common in all three sites and for this reason, 88% of FTLRP migrants to Nyabamba immediately cleared forests to commence agricultural activities. The staple maize as well as sunflower, finger millet, sugar beans, wheat, groundnuts, round nuts, cowpeas and sweet potatoes were the common crops. To augment their food security, almost 55% of households had gardens. According to the Nyabamba migrants, their welfare had generally improved because of land reform migration.

Other forms of livelihood activities generally practiced included piecework, well drilling, needlecrafts, vending, brick molding, livestock production, gardening and beekeeping. Eighty percent of Nyabamba households collected resources, including firewood, building poles, timber, herbs, grass, wild fruits, mushrooms, and wild animals for meat from the surrounding forests. Almost all the households relied on firewood as a source of heating and cooking energy on a daily basis. Migrants collected and bulked fuel wood during the winter season for use later in the year. Harvested forest resources were either utilized within households or sold to people within or outside the resettlement area. Firewood was sold to teachers at local schools, communities in business centers as well as to those who could not fetch firewood for themselves. Mushrooms, fruits and herbs were sold to fellow villagers as well as to people from outside the village. These resources were mainly sold by women to obtain cash for household needs.

Collection of resources from forests in the Nyabamba resettlement area was gendered. Women are mainly involved in the collection of resources such as firewood, herbs and wild fruits, while men collected resources such as construction poles and firewood for sale. Sixty-four percent of firewood collectors were women. Male migrants were mainly involved in making processed forest products, which were either sold or used by the households. Twenty-percent of migrants were involved in making secondary products from forest raw materials. These products required that certain tree species be cut down, and in most cases, these were not replaced. Cash generated from these sales was for household use and was generally controlled by male household heads.

Figure 2 shows that at the start of the FTLRP in 2000, the Nyabamba area had more extensive forest and woodland cover and very little cultivated area, compared to 2009. As with the greater Chimanimani district, in which more than 60% of the land was under commercial timber plantations (Ministry of Lands, Land Reform and Resettlement 2007) before the FTLRP, the Nyabamba area was endowed with both wattle and pine tree plantations and pockets of indigenous forests when the migrants moved in. As soon as a person was allocated a portion of land, the forest clearing process had to start. Most males who had not participated in the invasion phase joined their wives in clearing their allocated pieces of land. Eighty-six percent of the Nyabamba migrants had to clear the forest to commence farming. It took settlers from one to three months to clear both farming and residential land using equipment such as hoes, axes, machetes and, in a few cases (1.5%), motorized equipment such as tractors. Migrants also cut down trees for poles for constructing temporary housing structures. Since migration in 2000, 88% of resettled farmers in Nyabamba had cleared between 2.5 and 3 hectares of land per household. This suggests that between 600 and 700 hectares were collectively cleared by Nyabamba migrants, which led to over 70% reduction in forest cover in the area. The majority of migrants immediately commenced crop production during the 2000-2001 agricultural season. This immediate clearance of forested areas further supports the notion that agricultural land, and not forest resources was the main pull factor for migrating to Nyabamba.

Figure 2: Land cover changes in Nyabamba between 2000 and 2009



Conservationists may accuse migrants of the destruction of vital forest ecosystems, which might never be restored. The migrant actors in Nyabamba could defend their actions as being rational because they came for the land, and clearing the land of forests is part of

accessing that land. Outside intervention should thus not be merely aimed at stopping deforestation but also at facilitating a change in attitudes, to where forests are seen as an important part of the hydrological cycle, all of which will actually enhance the realization of better livelihoods from the newly acquired land. Indeed, Nyabamba migrants are not oblivious to the degradation occurring to their forest resources. They would like to see some improvements, such as afforestation (50%), conservation of the environment (23%) and gulley reclamation (9%).

Formal institutions regulating the use and management of forest resources included the Chimanimani Rural District Council, Environmental Management Agency and Forestry Commission, all three of which were state agencies. The effectiveness of these institutions was minimal, mainly due to their very limited resource capacity to implement their duties. Traditional leadership was the most important forest governance structure in Nyabamba according to 74% of the migrants. The traditional leader of the area was headman Manzou, of the Ngorima chieftainship.

The Manzou family had the headmanship of the area before the colonial government evicted families from the area to make way for commercial plantations. At the height of the farm invasions, the current headman Manzou joined the invaders in a bid to reclaim his clan's land. According to the migrants, his authority was recognized in the area and by the Ministry of Local Government and hence the rural district council. The headman was assisted by his village head in the management of forest resources. The fact that the headman is recognized as the most important agency means that any efforts to improve forest management practices in this area have to be centered on complementing the headman's existing strategies.

To ensure sustainable use of forest resources, there were rules and regulations that settlers in Nyabamba were supposed to observe, as indicated by 85% of the migrants; 70% of whom said they were put in place by the headman. Some of these rules and regulations are listed in Box 1.

Box 1. Rules and regulations for forest resource use and management in the Nyabamba A1 Resettlement Area

| | |
|---|---|
| <ul style="list-style-type: none"> ▪ Everyone should conserve natural resources. ▪ There should be no random cutting down of trees. ▪ Trees such as muonde (<i>Ficus</i> spp.), mukute (<i>Syzigium guineense</i>), mutohwe (<i>Azanza garckeana</i>) and muchakata (<i>Parinari curatelifolia</i>) should not be cut for any purpose. | <ul style="list-style-type: none"> ▪ Young growing trees should not be cut for firewood. ▪ Only dead and dry trees should be used for firewood. ▪ Forest fires should be prevented. ▪ Contour ridges should be constructed to avoid soil erosion. |
|---|---|

For some rules, enforcement was a problem due to high demand for the resource. For example, due to the high demand for wet wood for construction as well as for burning bricks, which is a livelihood strategy for some, adhering to rules and regulations on cutting of wet wood became problematic. The same applies to stream bank cultivation, which people resort to as a result of relying on rain-fed agriculture.

Local rules governed the preservation of sacred places, such as springs, mountains and rivers that were found in the surrounding forests. Residents were not allowed to cut down trees, start fires, draw water from natural sources using metallic and modern objects such as pots and cups, or bathe at the water sources. The sacred places were important because ancestral spirits were believed to reside there and they were venues and sites for traditional spiritual ceremonies such as rainmaking ceremonies and rituals for appeasing the spirits. Violating rules and regulations regarding the preservation of sacred places resulted in being punished by the headman and there was a belief that the ancestral spirits would also punish them. As a result, these areas were relatively intact, as the migrants believed that the spirits of their ancestors resided in these places and disturbing them would result in droughts and mysterious fires that could destroy the forests.

Non-sacred places seem not to be as well preserved and rules and regulations were largely not followed by the migrant community. The issue may not necessarily have to do with the effectiveness of the rules and regulations or governance but more to do with migrants' life-worlds. Nyabamba was well endowed with forest resources and this might have given the migrants a false sense of perpetual abundance. It might not have seemed urgent for them to immediately put in place strict measures for conservation of forest resources.

There have not been effective and powerful local institutions that could regulate access to forest resources in A1 resettlement areas. This explains why there is unrestricted access to forest resource in forests surrounding the Nyabamba resettlement area. Though there are unwritten rules meant to regulate the utilization of forest resources, these have not been very effective as there are no proper enforcement mechanisms.

Interestingly, only 2% of the migrants see forest conservation responsibilities as their own. Migration transforms the way people perceive their community. When migration weakens institutions that regulate resource use, it allows migrants to evade local responsibilities, thus weakening local and regional networks. Migration may alter social relationships among rural resource users and therefore may potentially disrupt or weaken systems of NRM governance (Mosse et al. 2002). With the migration of people, traditional use rights are weakened. This threat comes mainly from new users who refuse to recognize traditional rights.

The communities benefited from being made aware of the impact of poor forest management. There has been some change in attitude, seen in community action planning workshops, where communities requested education on natural resource management legislation and assistance in complying with this legislation. As a result, awareness workshops on natural resource management legislation were held. The communities have formed Environmental Management Committees (EMC) as required by law. The project facilitated the formation of Environmental Management Committees in the four project sites. The field partners also facilitated the formation of five additional EMCs beyond those formed through the project.

Implications

There was disparity in access to resettlement land between men and women. The proportion of female A1 land recipients in Manicaland Province (Chimanimani's home province) was 18% (Ministry of Lands, Land Reform and Resettlement 2007). This unequal access could accentuate poverty among vulnerable gender groupings, such as widows and child-headed households, in situations where they need to supplement their income from agricultural production. These gender disparities defeat the overall FTLRP objectives of improving migrant livelihoods.

The policy implication for governance of forest resources is that there should be efforts to strengthen traditional institutions, which seem to be the more recognized. Strengthening institutional capacities is necessary because of weak adherence to and enforcement of rules and regulations. Traditional institutions need to be complemented by external institutions

such as the Environmental Management Agency and Forest Commission. These other institutions have a role to play in educating communities on sustainable natural resource management and good stewardship. A strong partnership of all stakeholders, including farmer communities, government, nongovernmental organizations, commercial timber producers and the Rural District Council, should be supported by institutional and technical capacity building of communities.

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Chapter III

Migration, Rural Livelihoods, Natural Resource Management and Gender Relations: Evidence from the Syrian Drylands

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Poverty in Syria is a rural phenomenon, particularly prominent in dry areas. Almost two-thirds of rural households in Syria are involved in agriculture, and poor households rely on agriculture and animal husbandry, in addition to off-farm agricultural and non-agricultural activities. Natural resources are degraded with rising droughts due to climate change, further exacerbating rural poverty and complicating natural resource management. Accordingly, migration increasingly plays a key role in the livelihood strategies of the rural poor, with more than half of rural dwellers leaving their homes to seek work in irrigated regions or urban areas. This study focuses on the impact of migration and remittances on rural livelihoods and natural resource management, as well as on women left behind in the dry areas, in three rural areas (Jabal El-Hoss Samaan, Jabal El-Hoss Sfreh and Sfreh, the former two are rain-fed areas and the latter, a newly irrigated area). The research results reconfirmed that people from rain-fed areas were more likely than those from irrigated areas to migrate, and that the main migration flows are from rural to urban areas, with some international migration to neighboring countries where migrants can maintain strong ties and return often to respond to their farm and family needs. The study revealed that remittances have played an important role in influencing resource management and the livelihoods of rural families; but circular migration offsets labor loss, and the high proportion of female labor in livestock management makes up for the periodic loss of male labor while remittances help overcome some income constraints for investments in

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rural resources of various kinds, from animals to irrigation and land recovery. Contrary to expectations, male migration neither contributed to an increase in women's workloads in rain-fed agriculture nor greater autonomy for women. In conclusion, the study found that migration and remittances are essential in dry marginal areas and impact positively on natural resource management and livelihoods. Moreover, the landless, who are the poorest, rely mainly on small ruminants (sheep and goats) and have in-depth knowledge about their management and the processing of their products, making this a potential target for remittance investment.

Introduction

With globalization, flows of migrants and the resulting flows of money to their countries of origin will continue to increase. This additional income from remittances positively affects poverty reduction, consumer spending and investment in a variety of ways (Hertlein and Vadean 2006), playing different roles in different countries, depending on the economic and social contexts. Based on research conducted in China, Zhu (2006) indicated that international and national migration can have important, positive development effects on the migrant source areas through remittances, investment and the injection of new skills and ideas into local economies. In recent years, interest in rural migration and the impact of remittances on rural livelihoods has grown among academics, development agencies and policy makers. Previous migration studies in Syria based on national statistics (Khawaja, 2002) are not conclusive, as they do not reflect unregistered internal and international seasonal migrants. However, a number of micro-studies have shown clearly that migration is one of the livelihood strategies of the rural poor in Syria (Mazid and Aw-Hassan, 2002; Abdelali-Martini, 2003a; La Rovere et al. 2006a, 2006b, and 2009; Thomas, et al. 2009). Available studies and reports, and the results of a series of interviews with high-level officials, suggest that in Syria the importance of seasonal migration in the lives of rural communities is not well understood. Rural families perceive migration as a threat to social stability rather than an important source of income for improving their livelihoods. Inter-regional migration flows in Syria have been studied using national census data and data generated from household surveys (see Khawaja, 2002).

This chapter addresses the impact of migration on rural livelihoods and natural resource management (NRM), as well as on women left behind in the dry areas. It also outlines the determinants of livelihood strategies and the policy implications of such strategies. In particular, it examines both the potential use of remittances as safety nets to raise rural households out of poverty and the impact on rural households of the absence of men. We hypothesize that remittances have a positive impact on rural livelihoods, and that NRM is

further improved by acting together, which reduces transaction costs that arise, especially because migrants rely on social networks. We also expect an increase in the number of women actively managing farm resources.

The study uses qualitative and quantitative methods to analyze the relationship between household income and assets and the impact of migration on the individuals (both women and men) left behind in rural areas. The survey on which the data is based was carried out in 2008, which was one of the worst dry years in recent memory in Syria. We conclude by identifying ways in which policy options can work to enhance the positive outcomes of migration and provide support to reduce vulnerability, especially for poor individuals who migrate to ensure the survival of their families.

Background

Characterization of case study site

The total land area of Syria covers about 18.5 million hectares (ha), of which 13.7 million ha are devoted to agriculture. The total population in 2010 was 22 million. From 1988 to 2008, the rural population decreased from 49% to 46% of the total population. Agricultural growth as a percentage of rural population has decreased from 52% to 45% during the same period (FAOSTAT, 2009). Almost two-thirds of rural households are involved in agriculture, and poor households rely on agriculture and off-farm income. Natural resources are degraded with more recurrent droughts, due to climate change, which further exacerbate the situation and increase rural poverty. Precipitation varies from 1500 mm in the west to less than 100 mm in the southeast (Szonyi, et al. 2010). Drought is inherent in local systems, attenuated only by the gradual expansion of irrigation; 1.33 million ha are irrigated, out of the 5.42 million ha of arable land (FAOSTAT, 2003), mostly in the Orontes river valley in the west and Euphrates valley in the east.

Study area

Research was conducted in three rural sites in Syria where poverty, resource degradation and migration are prevalent. These sites are the Jabal El-Hoss Samaan area and the Jabal El-Hoss Sfireh, which are both rain-fed, and the newly irrigated area of Sfireh. The study area is characterized by a diversity of livelihood dynamics and degradation of natural resources, and is among the poorest in Syria. It is located in northern Syria, approximately 80 km southeast of Aleppo and covers about 157,000 ha, including 156 villages (Figure 1). The area falls between rain-fed agriculture and rangelands, and is located within Zone

2 and Zone 3 of the defined agro-ecological zones¹ in the country, with annual winter rainfall ranging from 200 to 250 mm.

Most villages have no shops, a very few have small ones, and the closest market for households is Sfireh (at about 45-50 km from the study villages), or Aleppo city markets. Sfireh also has a weekly market, where rural households buy and sell major commodities. This is an area marked by drought and limited natural resources, with limited access to both public and social services.

The selected sites represent three agro-ecological systems, and are representative of the patterns of migration, livelihoods and natural resource degradation in Syria as a whole. Agro-ecological conditions are major determinants of the livelihood strategies chosen by rural communities (which may include migration), and such conditions also influence women's involvement in the management of resources.

The rural communities in the study area are generally poor, and they use out-migration as a strategy to compensate for low incomes in that area. This area is targeted by development agencies and this provides an opportunity for research to assess and link the changes made in local communities through their intervention.

¹ Syrian Agricultural Stability Zones

In 1975, the government divided the country into five Agricultural Stability Zones according to rainfall and other agro-ecological conditions. These zones, which reflect traditional farming systems, are described below:

Zone 1A: Average annual rainfall is over 600 mm. Moisture is not a constraint and a broad range of rain-fed crops can be produced.

Zone 1B: Annual rainfall between 350 and 600 mm, with not less than 300 mm during two-thirds of the years. The main crops grown in Zone 1B are wheat, legumes (chickpea, lentil) and summer crops (sugar beet, potato, cotton, sunflower, vegetables). The area falling under this zone (A and B) equals 2,701,000 ha, which constitutes 14% of the total land area of Syria.

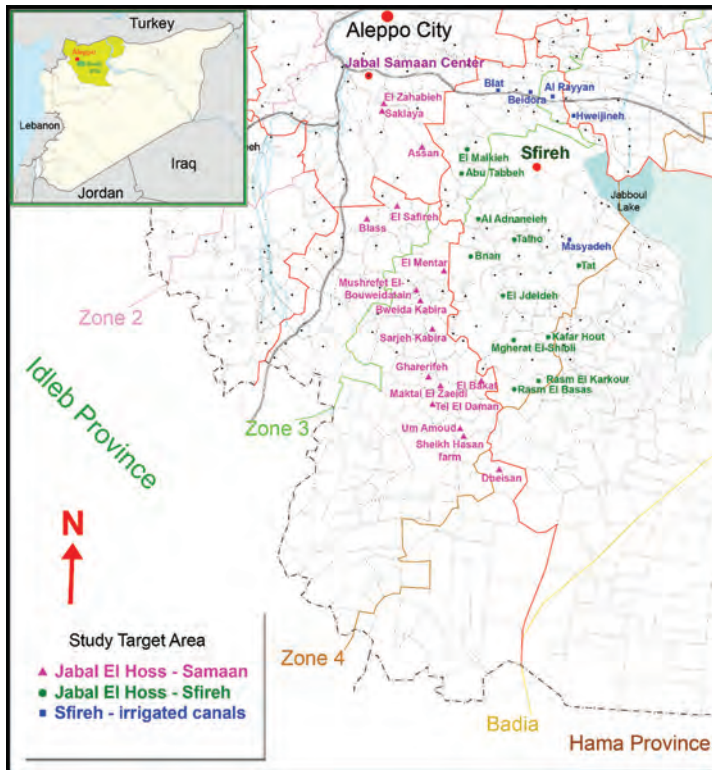
Zone 2 is characterized by an annual rainfall ranging between 250 and 350 mm, with not less than 250 mm during two-thirds of the years. The main crops grown in this zone are barley, wheat, legumes and summer crops. The total area falling under this zone is 24,770,000 ha, which represents 13.3% of the total area of the country.

Zone 3 has an average annual rainfall of 250 mm, with not less than 250 mm in half of the years, i.e. it should be possible to get one to two harvests out of every three years. The main crop grown is barley, and legumes can be planted. The total area under this zone equals 1,306,000 ha, which constitutes 7.1 % of the total area of the country.

Zone 4: 'The marginal lands' has an annual rainfall ranging between 200 and 250 mm with not less than 200 mm during half of the years. This area is only suitable for barley or for permanent grazing. The area falling under this zone equals 1,833,000 ha, which represents 9.9 % of the total area of the country.

Zone 5 encompasses the Syrian Desert and steppe. It consists of land receiving less than 200 mm of rain, and cannot sustain rain-fed crops. It covers 10,208,000 ha, which represents 55.1 % of the total area of the country. In summary, the largest area is not suitable for crop production. The favorable areas (Zones 1 and 2) equal 27% of the area, and the less-favorable areas (Zones 3 and 4) equal 17%, where agriculture is characterized by high risk and low productivity.

Figure 1. Map of study area



Livelihood strategies

The majority of Syrians work in rain-fed agriculture and animal husbandry, in addition to off-farm agricultural and non-agricultural activities. Due to water shortages, and the resulting low potential of agricultural production, more than half of rural dwellers leave their homes to seek work elsewhere. They go to irrigated areas for agricultural work and to urban areas to work in different types of non-agricultural activities. There are few services in rural areas and education and health support services are very poor.

Poverty in Syria is a rural phenomenon and is more prevalent in dry areas. One report (EL-Laithy and Abu Ismail, 2005) indicates that as many as 2 million individuals (11.4% of the population) were unable to meet their basic food and non-food needs, although the incidence of poverty in Syria decreased from 14.3% in 1996-1997 to 11.3% in 2003-2004. Poverty was more prevalent in rural areas and income inequality worsened in 2003-2004, resulting in increased poverty levels. Poverty in rural Syria is caused mainly by small and fragmented landholdings, drought and water scarcity, lack of access to credit and markets, and lack of appropriate technology and larger structural problems.

The country produces a variety of agricultural, livestock and agro-biodiversity products, but the pressure on natural resources is steadily increasing. More and more land is becoming degraded because of over-utilization of land and resources, triggered by a growing population, inequality and vague land property rights. Smallholder families typically manage farms of often less than 0.5 ha at subsistence levels, while landless farm workers can only gain access to natural resources through common property resources or employment on larger farms. As a result, most men are forced to migrate to look for off-farm opportunities, which changes the structure of the labor force in agriculture, and creates greater demand for women's labor (La Rovere and Aw-Hassan, 2005; Abdelali-Martini, 2003b).

Natural resource use and dynamics

Rural livelihoods (and poverty levels) are intrinsically linked with natural resources. Sheep production is the principal economic activity in the dry areas, contributing 57%–89% of the income of small-scale producers. Sheep farmers face serious problems of poverty and food insecurity as they depend on degraded rangelands and unreliable rainfall. In Syria, the flocks are composed mainly of multipurpose (milk-, meat- and wool-producing) Awassi sheep, a hardy fat-tailed breed that is well adapted to local climatic conditions (Shomo, et al. 2010). According to Shomo et al. (2010), sheep production could become more efficient by encouraging producers to examine the farming system they are using, and depending on location, shift to more intensive systems in some areas.

Migration dynamics

Since 1960, Syria has experienced continuous waves of out-migration to Africa, Australia, Europe and the USA, and waves of temporary labor migration to the GCC (Gulf Cooperation Council) countries. During the last three decades (1980s to 2000s), the emigration of men from Syria has increased considerably, and has contributed to the division and reallocation of labor in agriculture. It is thought that there are large numbers of Syrians working in Jordan (and even more in Lebanon), although only 3,700 are documented in Jordan. Despite some general perceptions that more women are migrating, especially as temporary labor migrants, there is a real deficit of information on the phenomenon (Baldwin-Edwards, 2005). Most available information is on the migration of women to the Gulf States. However, migrants from rural areas, especially those who are characterized as being temporary residents in neighboring countries, are not captured in the available statistics.

Opportunities for full-time employment or occasional labor for Syrian workers vary throughout the country and are affected by seasonal factors. In many parts of Syria, such

as the Hama countryside, labor shortages occur during harvest periods, with relative labor abundance at other times of the year (Forni, 2003). Workers often compare local daily wages with those prevailing in neighboring countries such as Lebanon, Jordan and the Gulf States. Wages are about five or six times higher for the same work in Lebanon, Syria's closest neighbor. Although women migrate to perform agricultural work elsewhere, they still constitute the bulk of the agricultural labor force in Syria (mainly for weeding and harvesting) managed by labor gangs (Abdelali-Martini, et al. 2003b).

In a collaborative study by the Syrian Central Bureau of Statistics and the University of Damascus, involving information from 20,000 households across the country, Khawaja (2002) showed that internal population movements in Syria are largely influenced by economic factors and education, with housing and the availability of services of declining importance. The study also underlined the low level of internal migration found in Syria relative to other countries in the region and internationally, probably because the study used the official statistics, which do not capture either rural-urban migration or uncontrolled migration to neighboring countries.

Context and Drivers

Economic dynamics

Syria's predominantly state-controlled economy has been stable up to recent times, but political instability in the wider region is causing instability in Syria, the effects of which are as yet unknown. Agriculture is a leading sector in the country and greatly influences the Syrian economy. Foreign trade depends largely on primary commodities, making the country's economy vulnerable to international price variations as well as domestic variations and climate change (FAO, 2003). Livestock constitutes an important part of Syria's economic growth, and the country has been self-sufficient in most livestock products and a net exporter (with 131,850 thousand tons of livestock products exported in 2009), and is also a net exporter of live animals (with 30,236 thousand tons of animals exported in 2009—MAAR 2009). Sheep production increased from 6 million head in 1970 to 22 million in 2008 (FAOSTAT, 2009). Barley is the major feedstuff and is produced locally, except in dry years when Syria imports barley. Net import of cereals in Syria was 153,655 thousand tons in 2009.

Environmental issues in Syria are soil conservation, protection of groundwater, salinization of soils and degradation of the grazing resource base. Other issues include water use, biodiversity protection, forest management and use of agricultural chemicals (Edwards-Jones, 2003). Syria currently faces a number of constraints in terms of its natural resources. It depends heavily on the Euphrates River, whose distribution remains contested across

several countries. Water is a precious commodity in the area, and the water supply is undergoing great stress with increasing local demands as populations grow. These factors, combined with high population growth, could be some of the drivers of migration.

Environmental dynamics

Climate change and drought events

UNDP (2010) indicates that Syria's main challenge for eradicating extreme poverty is sustainable environmental management. While many different factors define the incidence of poverty in the country, climatic changes resulting in natural resource degradation and desertification have had one of the strongest influences on poverty dynamics. Water resources in Syria are limited, which leads to serious social and economic consequences, as agriculture largely produces commodities for the Middle East and the Gulf States region, with the sale of fruits, livestock, olive oil, vegetables and wheat contributing almost 20% to GDP. Successive droughts and land deterioration have reduced water availability, negatively affecting agricultural productivity and income levels. In 2008, for the first time in 20 years, Syria imported wheat, as it was the driest year in the past 40 years. As many as 59,000 small-scale farmers lost most of their herds, while some 47,000 farmers with larger holdings lost 50%–60% of their livestock.

Land suffering from desertification has risen to 4% of the total land area of Syria, representing a quarter of the land used to feed livestock in the country. As rural populations depend on natural resources for their livelihoods, this worsening situation has triggered internal migration shifts, contributing to the “urbanization of poverty,” with many of the poor in urban areas often living in very poor conditions in the suburbs of large cities. Poverty is widespread across the country, but Jabal El-Hoss remains the poorest and least developed area. Poverty reduction and achieving environmental targets are a priority here. In general, Syria needs to develop pro-poor rural development policies that empower the poor to participate in the economic sphere, and involve the least developed regions in the broader economic activities of the country.

Institutional framework

The Syrian economy is highly centralized under full public sector control, although this situation is now dynamic. In the past, foreign trade was restricted to public sector enterprises and foreign investments were limited, with most production geared towards satisfying local demand (El-Laithy and Abu-Ismaïl, 2005). The future of Syrian agriculture depends on its response to the many challenges it now faces, such as population growth, greater urbanization, new eating habits, and more opening up to outside economies.

Syrian farmers must improve the quantity and quality of their produce, while coping with emerging shortages of water and declining quality of soils and grazing lands (FAO, 2003).

Agricultural inputs and credits are highly subsidized by the government. Fertilizers are either produced or imported by large public companies. Private companies are also active in this area but only at the retail level, under a system that controls access to, and credit for, fertilizers. Seeds are produced by the General Organization for Seed Multiplication, mainly for strategic crops such as wheat, potato and sugar beet. The private sector provides other types of seeds and supplies areas not covered by the country's five-year annual plan, such as dry areas, which do not benefit from subsidies and credits. The provision of subsidies to certain farmers in wet areas exacerbates the inequalities between dry and wet areas. This is one major driving force for migration of people from dry areas to urban areas in search of alternative sources of income.

Agrarian reform and property rights regimes

Land tenure in Syria

FAO 2003: The current land tenure system in Syria was influenced by the mass peasant uprisings of 1889-1890, during Ottoman rule, when the peasants wanted the reduction of the sheikhs' share to land to one-eighth, the parceling out of the rest of the land to the peasants as well as the elimination of the right of the sheikhs to evict peasants. This system has influenced the current pattern of land tenure in Syria to some extent. *Mushaa'* (communal) lands existed until they became the property of a few important Syrian families, such as the Sultan Abdulhamid family (Lewis, 1987). Private ownership began to flourish among a number of powerful owners (e.g., tribal chiefs, tribe members and their sharecroppers). However, in reality, this type of land is still used as common land, and still exists in rural areas today. It is called state land, and is used by pastoralists for grazing under customary rights. After the Second World War and the Union between Syria and Egypt, the Agrarian Reform and Agricultural Relations laws were born. This allowed farmers to benefit from land redistribution, and to get decent shares in sharecropping under the Agricultural Relations law.

Gender and land reform

Legally, Syrian women are equal to men, but many social relations are regulated by customary law, known as *urf*, where related conditions are defined by traditions (Abdelali-Martini, 1999 and Forni, 2003). In land inheritance, women often renounce their share of land title in favor of their brothers under social pressure, and also because they acknowledge that their brothers are their protectors after their parents die. In this society, individual or collective rights are valid only under social consensus.

Other key contextual elements

Syria is a conservative society, where most decisions are taken by men, although there is a lot of consultation between women and men within households. Although women perform most of the crop and livestock activities (especially manual ones), they are not recognized for such efforts, especially in rural settings. Marketing of products is mainly carried out by men and the gains from sales are under men's control. Women are mostly illiterate, which locks them into the family environment, before and after their marriage. There is a big gap between rural and urban areas in terms of services and education levels and means of communication, for both men and women.

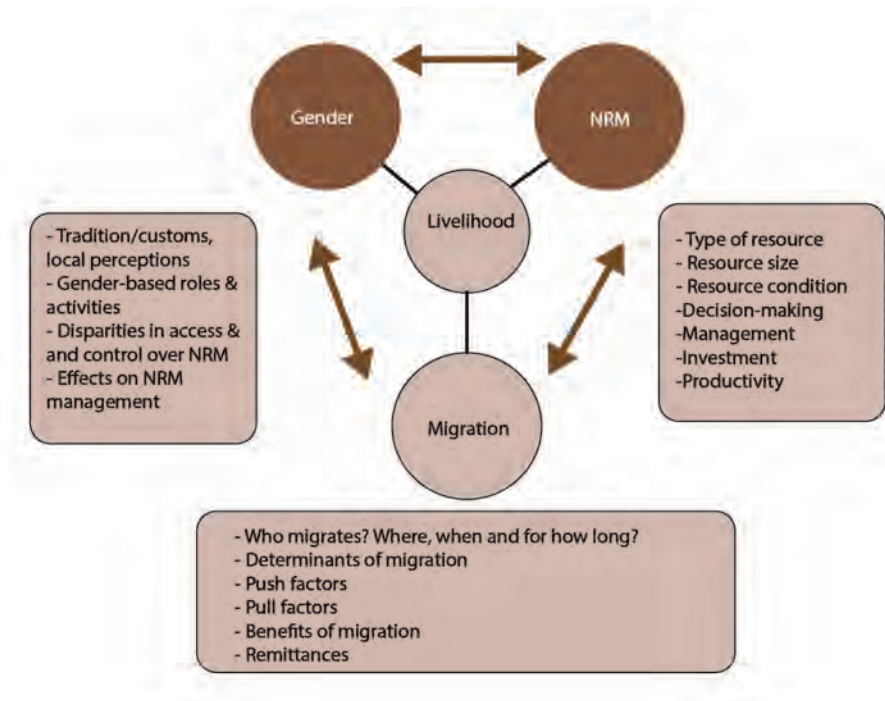
Analytical Background

Conceptual Framework Guiding the Analysis

Male household members migrate to seek employment in agriculture and to get off-farm jobs in cities and abroad. The economic and social impact of migration usually depends on the social and cultural context, the strength of the social connection between migrants and their families of origin, and the institutional and policy framework that supports savings and investments. Migration provides income from remittances, which has a positive impact on rural economies; however, this may not have a lasting development impact due to the allocation of remittances for subsistence, weak local investment opportunities in communities of origin, and the lack of supportive savings and investment policies. Therefore, it is critical to understand the institutional environments and social networks that affect these financial flows, and how they could be directed to agricultural and rural development.

The conceptual framework (Figure 2) used in this study links gender to migration and natural resource management, focusing on rural livelihood impacts. On the one hand, migration is driven by 'push' factors, such as unemployment, lack of ownership of assets (land, livestock), population pressure, land fragmentation, low income from agriculture (particularly in rain-fed areas), insufficient income to meet basic household needs, lack of capital to repay debts, risk of drought (causing crop failure and its associated debt and loss of income) and poor prospects for improving living standards. On the other hand, migration is also driven by 'pull' factors, such as better prospects for paid employment, better wages and better chances of achieving higher living standards. Internal migration, both rural-urban migration and rural-rural migration, were considered in this study, as well as external migration to neighboring countries (Lebanon and Jordan) and others, such as Cyprus, Greece, Libya and Saudi Arabia.

Figure 2. Conceptual framework used in the research



NRM: natural resource management

Research Questions and Hypotheses

We hypothesize that migration is likely to broaden people's (both women's and men's) access to resources, and that remittances may help to reduce poverty, but may also increase inequality, especially for those women who do not migrate and who fall within the poorest segments of the population. In addition, the degree or extent of the involvement of women in agriculture, and therefore the implications for agricultural and natural resource management, will be partly determined by the extent (duration and distance) of male migration.

Effective natural resource management requires a genuinely participatory approach that emphasizes the different activities of household members to ensure that different uses of (and impacts on) natural resources are recognized and accounted for (van Wijk et al. 1996). Given the high population growth rates and the limited number of agricultural options, we hypothesize that cereal productivity will remain the same and labor out-migration will not affect the family labor supply, but may increase women's farm responsibilities in addition to their reproductive roles. The analysis presented here attempts to answer a

series of questions, based on the empirical testing of the hypotheses using a participatory rural appraisal (PRA), focus group discussions and a formal survey.

The main questions addressed by the research are as follows:

What are the major determinants of the decision to migrate?

How does migration influence on-farm investments?

What are the major determinants of livelihood patterns and how does migration influence livelihood strategies?

What are the implications of migration on NRM?

What is the impact of migrants' characteristics on their migration destination, and the impact of their destination on remittances sent to the households left behind?

Methodology

Participatory rural appraisal

A participatory rural appraisal (PRA) was conducted in ten villages using a checklist of 113 questions covering patterns and causes of migration, types of migrants, impacts of migration, remittances, livelihoods, work, non-farm rural activities, agricultural technologies, community activities and natural resource management. As part of this, the following were considered: land, water, rangelands, biodiversity, livestock and development projects in the area, as well as the impact of these projects. The information collected during the PRA was used to develop a questionnaire to quantify specific aspects using a formal survey.

Formal survey

The researchers decided in advance that the survey would target at least 25% of villages in the Jabal El-Hoss and Sfireh areas located in Aleppo Governorate. Consequently, a sample of 32 villages was randomly selected from a total of 120 villages. The lists of farmers were provided by the Directorate of Extension in Aleppo through extension agents in the research areas. Rural and farming households were included in the sampling process because many migrants came from rural households with few natural resources. The total number of households in all locations in the study area is shown in Table 1.

Table 1. Total number of households in the study area

| Location | Jabal El-Hoss Samaan | Jabal El Hoss Sfireh | Sfireh irrigated from canals | Total |
|------------------|----------------------|----------------------|------------------------------|--------|
| Rain-fed Zone 2 | 2,960 | 235 | --- | 3,195 |
| Rain-fed Zone 3 | 3,146 | 4,271 | --- | 7,417 |
| Irrigated Zone 2 | --- | --- | 2,152 | 2,152 |
| Irrigated Zone 3 | --- | --- | 2,388 | 2,388 |
| Total | 6,106 | 4,506 | 4,540 | 15,152 |

The proportion of households in each sub-location was then estimated, using the data in Table 1. We estimated the sample size of households to interview as 577 households, from the total above (15,152), based on a 95% confidence level and 4% confidence interval.

The sample of 577 households was divided among the 32 villages previously selected, weighted by assigning a 50-50 weighting to the population of the village and the number of households in each village. The required number of households from each village was selected randomly. The sample represents 25% of the population under study, and specific questions were addressed to women and men in the same household. The number of households was adjusted to five when the estimated sample of households was smaller than five; this increased the sample size to 600 households. Eight additional households were interviewed (Table 2) to make a total sample size of 608.

Table 2. Sample households selected from the research sites

| Zone / Rain-fed or Irrigated | Administrative Divisions | | | Total |
|------------------------------|--------------------------|----------------------|------------------------------|-------|
| | Jabal El-Hoss Samaan | Jabal El-Hoss Sfireh | Sfireh irrigated from canals | |
| Rain-fed Zone 2 | 114 | 13 | --- | 127 |
| Rain-fed Zone 3 | 133 | 170 | --- | 303 |
| Irrigated (canals) Zone 2 | --- | --- | 84 | 84 |
| Irrigated (canals) Zone 3 | --- | --- | 94 | 94 |
| Total | 247 | 183 | 178 | 608 |

Results and Discussion

Migrants in our sample (349 migrants) comprised 300 men (86%) and 49 women (14%). All women and most men were from rain-fed areas and a very few men (2.3%) originated from irrigated areas. Most were from poor households, and their migration came with risks and social costs. The education level of rural household members was low. High levels of illiteracy among household members, especially women, constitute a barrier to their development and to better management and improvement of the available resources. Literacy is key to overall development and should receive due attention from the government and development agencies.

Incidence and Patterns of Migration

Our main hypothesis is that people in rain-fed villages are more likely to migrate to other areas due to several 'push' factors, such as drought-induced risks in crop production, limited cropping potential, high population growth that the current agricultural system cannot sustain, unemployment resulting from low agricultural potential, and poor infrastructure and facilities. This results in increased women's responsibilities in farm and resource management. Qualitative and quantitative surveys conducted in this study show that migrants are mainly adult males and a few adult females, whereas the fathers remain on farms.

Our results indicate that migration patterns from rural areas depend largely on job availability at the migrants' destinations. An important proportion of migrants rely on social networks from their villages to secure a job, even before leaving the area, a phenomenon widely seen in migration studies throughout the world. The main migration flows are from rural to urban areas, especially for non-agricultural jobs. Migration from rural to rural areas in the country is uncommon. International migration from rural areas is limited to neighboring countries where migrants can maintain strong ties with the families they left behind and can come back several times during the year to respond to their farm and family needs. In this sense, the permeability of regional borders has made this kind of circular migration possible.

Migration Improves the Livelihoods of People Living in Rain-fed Areas

Determinants of remittance income

A regression model was constructed with total income from remittances as a dependent variable. The explanatory variables used in the model were age, sex, education, number of females per household aged 15–59 years, number of males per household aged 15–

59 years, total male migrants, total female migrants, total irrigated area, total number of livestock, total tree area, and number of income sources. The analysis showed that the main determinants of remittances received at the migrants' place of origin were the target area dummy variable, total number of migrants from households, total tree area (significant at 1%), number of females per household aged 15–59 years, and total number of male migrants from households (Table 3). People from rain-fed areas were more likely than those from irrigated areas to migrate and earn income from work in local cities and abroad. There is a clear relationship between income from remittances and investment in trees, and there is a probability of tree expansion as a result of investments from remittances. Fifty-four percent (54%) of the variation in income is due to the factors included in the equation (Table 3).

Table 3. Determinants of remittance income

| Variable | Parameter estimate |
|--|----------------------------|
| Target area | 17962.169*** (5172.359) |
| Sex of household head | 7948.611 (22459.226) |
| Age of household head | 451.785 (297.792) |
| Education level of household head | -1672.719 (3221.573) |
| Household female population aged 15–59 years | 6579.718** (2774.501) |
| Household male population aged 15–59 years | -1545.628 (2600.064) |
| Total male migrants | 58994.331*** (4608.127) |
| Total female migrants | -6479.276 (8860.026) |
| Total irrigated area | -399.240 (208.126) |
| Total number of livestock | 16.738 (42.260) |
| Total tree area | 1863.799*** (455.021) |
| Number of income sources | -3846.441 (4144.177) |

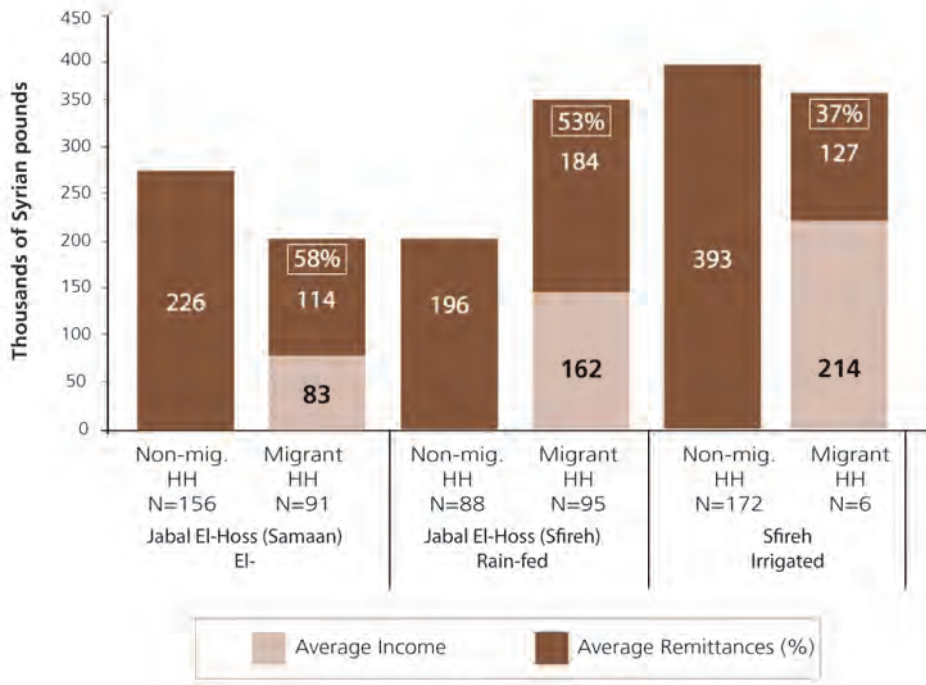
R Square: 0.536; ***Significant at 1%; **Significant at 5%; *Significant at 10%.

Contribution of remittances to household incomes

Remittances represented 15% of total income for the whole sample in the research area, but were much more important in rain-fed than in irrigated areas (27% and 1% of income, respectively). Most migrants came from large households with limited assets in rain-fed areas. In households with migrants, remittances contributed 50% on average to total income, constituting 56% in rain-fed areas and 37% in irrigated areas.

One additional migrant per household generated an increase of per capita income of 859 Syrian Pounds (US\$19) per year. Other factors that increased household income were a higher level of education of the household head, irrigated area, area of tree crops, and sheep or goat flock size. Households that diversify their income sources (more income) increased their per capita income by 2,900 Syrian Pounds (US\$63) per year (Figure 3).

Figure 3. Average income and remittances for migrant and non-migrant households (HH), in thousands of Syrian Pounds



Factors that increased the likelihood of migrants sending more remittances were identified. From households that owned land, migrants were likely to invest more in expanding and improving agricultural assets such as land and livestock. Migrants from rain-fed areas, where crop production potential and agricultural returns are low, sent more remittances,

and were likely to invest in livestock as a source of livelihood, especially due to its high production potential. Although few female-headed households were found in the sample, results showed that the amount of remittances received by these households rose when the head was a female. In addition, the lower the education level of migrants, the greater the value of remittances sent.

Most poorly educated migrants migrated to Syrian cities and neighboring countries, where they performed unskilled (loading) and semi-skilled (construction, paving and bricklaying) activities that did not require formal education. Unskilled workers are paid less than semi-skilled workers. Male migrants worked mainly in construction, loading grain bags at governmental stores, cleaning, or car washing, etc. These jobs are usually carried out by migrants only, as local workers will not do these jobs. Women migrants mainly worked in seasonal agricultural activities, accompanied by their brothers or husbands. Male migrants to Lebanon and Jordan are mainly found in the construction sector, or they work as street hawkers or traders. Sometimes they work alongside their wives in agriculture, or as sharecroppers in Lebanon. Male migrants in Cyprus and Saudi Arabia worked in building construction (paving and bricklaying; Table 4).

Table 4. Type of work performed by migrants and daily commuters

| Type of movement/migration | Men | Women |
|-------------------------------------|---|---|
| Commuting/daily movement | Loading, construction, sewing | Weeding, harvesting |
| Internal migration | | |
| Damascus, Aleppo, other cities | Loading/portering, construction/building, working as a mechanic, electrician, carpenter or trader (hawker), lifting grain bags at governmental stores | Weeding, harvesting, vegetable collection, straw collection |
| External migration | | |
| Lebanon, Jordan | Most in services and construction: construction/building; working as a hawker, driver or trader; daubing (painter)*; car washing; portering | Sharecropping, weeding, harvesting |
| Saudi-Arabia, Cyprus, Libya, Greece | Construction loading, cleaning, car washing, apple picking | |

Remittances increase the productivity and efficiency of natural resource use

Based on a production efficiency model, the results of an analysis showed that, on average, 67% of households with migrants are operating at high levels of efficiency in cereal production (using land, water and inputs effectively), compared with only 58% for households without migrants (Table 5). In general, migrant households use 10% more farm inputs (fertilizer, manure and seeds) than do non-migrant households. This is due to the role of remittances in reducing financial constraints. The result is a higher cereal yield (up to 20%) for migrant households, compared to non-migrant households. The number of migrants per household is directly proportional to the efficiency and productivity of natural resources through supply of additional inputs and management practices.

Other factors that improve the efficient use of natural resources for producing cereals are the education level of the head of household and the use of improved irrigation techniques. A factor that reduces production efficiency is the type of land; for example, sloping land limits farmers in the type of crops they can grow. Replacing cereals with trees on sloping lands might well result in an improvement in the overall efficiency of natural resource use (Table 5).

The relationship between migration and farm productivity can be ambiguous. Rozelle et al. (1999) found that remittances loosen constraints on crop production – consistent with the New Economics of Labor Migration (NELM) predictions (Taylor, et al. 2003), and with our results – and improve productivity. However, when analyzing the factors that motivate migrants to remit, and how this affects agricultural productivity, we found that remittances inversely affect yield: agricultural yield falls sharply as each member of the family leaves the farm, indicating the costs of the loss of labor. Therefore, in the short term, migration generates statistically significant lost-labor effects that depress yield, a result that is consistent with NELM predictions.

Taylor et al. (2003) found that, in China, the loss of labor to migration did not affect crop yield but had a negative effect on household cropping income in source areas – crop income falls significantly when migrants leave the household. Their argument is that when an active member leaves the household, its labor force is reduced and income decreased, as the household is forced to cut back on labor – perhaps shifting from higher return and labor-intensive cash crops to lower return and less labor-intensive grains, or spending cash on labor-saving inputs.

In the Syrian case, the loss of labor has not significantly affected the household's cropping income, mainly because agriculture is limited to cereals and legumes and most migrants

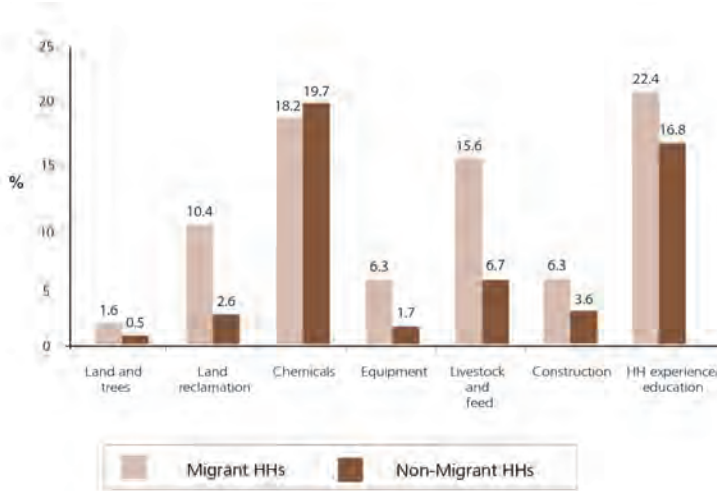
return during periods of heavy labor demand. Women are more involved in livestock production than men are (80% versus 20%). Rural households' investments clearly show that remittances have played an important role in influencing resource management and the livelihoods of rural families (Figure 4). However, circular migration offsets labor loss, and the high proportion of female labor in livestock management makes up for the periodic loss of male labor, while remittances help overcome some income constraints for investments in rural resources of various kinds from animals to irrigation and land recovery.

Table 5. Maximum likelihood estimates for parameters of the stochastic frontier production function and inefficiency, and factors affecting farmers' technical efficiency

| | Parameter | Coefficient estimate (SE) | | Parameter | Coefficient estimate (SE) |
|----------------------|-------------|---------------------------|---------------------------|--------------------------|---------------------------|
| β_0 | | 5.5372*** (0.0468) | δ_0 | | 2.1690*** (0.3482) |
| β_{n33} | Nitrogen 33 | 0.0696** (0.0431) | $\delta_{ir\text{tech}}$ | Irrigación (dummy) | -0.5069*** (0.0435) |
| β_{n46} | Urea 46 | 0.0360** (0.0208) | $\delta_{reclamation}$ | Land reclamation (dummy) | -0.4070* (0.2525) |
| β_p | Phosphate | 0.0133 (0.0490) | $\delta_{hh\text{-size}}$ | HH size | 0.0007 (0.0080) |
| β_k | Potassium | 0.2153*** (0.0382) | δ_{age} | Age of HH head | -0.0111*** (0.0031) |
| β_{manure} | Manure | 0.0581 (0.0517) | $\delta_{educate}$ | Education of HH head | -0.1289 (0.7071) |
| $\beta_{seed\ rate}$ | Seed rate | 0.0753*** (0.0057) | $\delta_{migrants}$ | Migration (dummy) | -0.3637*** (0.0232) |
| β_{land} | Land size | -0.0684** (0.0311) | δ_{plots} | Number of plots | -0.1289 (0.7071) |
| | | | δ_{slope} | Land slope | 0.6091*** (0.1189) |
| σ^2 | | 0.4420*** (0.0306) | | | |
| γ | | 0.9997*** (0.00001) | | | |
| $\ln\theta$ | | -303.23 | | | |

Dependent variable:
cereal yield (kg/dunum),
1 ha = 10 dunums; SE: standard error;
***Significant at 1%;
**Significant at 5%;
*Significant at 10%; HH: Household.

Figure 4. Investments of credits in natural resource management and livelihoods by migrant and non-migrant households (HHs).



Remittances have contributed to expansion of rain-fed areas

Our results indicate that migration and remittances have played a major role in land reclamation and have contributed to expansion of rain-fed areas. It is likely that the tree area previously planted through government support on de-stoned lands has encouraged farmers to reclaim more land and plant more trees. However, farmers are concerned about the long period of time it takes to realize returns from trees. In addition, the high costs of irrigating trees with purchased water (reported by 60% of farmers interviewed) constitute an important constraint and a heavy burden for poor households. The expansion of cultivable lands from 2000 to 2009 amounted to 10% in migrant households and 15% in non-migrant households. The proportion is higher in non-migrant households because they were initially better off than migrant households. The increase in land area in migrant households is due to increased income. Although the government of Syria provides farmers with certain food items during the non-productive period of tree establishment, more needs to be done, and most farmers expressed a need for more support during this period. Our results are consistent to some extent with the findings of Vargas-Lundius et al. (2008), who reported that remittances are the most substantial contribution of migrants to the development of their areas of origin. Despite the harsh environment in rain-fed areas, migrants still invest most of their revenues in the improvement of their resource base (i.e., through land reclamation and soil improvement).

Land reclamation improves the livelihoods of people in rain-fed areas

Reclaiming land by de-stoning increases the cultivable area available to farmers. This makes the use of inputs more profitable and hence increases the use of chemical inputs and machinery, leading to higher incomes from field crops and trees. Table 6 shows that farmers' participation in land reclamation increased per capita income by 7,170 Syrian Pounds (US\$156) per year. Participation in land reclamation was positively associated with migration. The higher the number of male migrants within a household, the more likely it was that the household had benefited from land reclamation.

Table 6. Factors affecting annual per capita income (OLS model 2)

| Independent variables | Coef. (SE) | [95% Conf. Interval] | |
|---|----------------------------|----------------------|----------|
| Dependency ratio | -2323.371*** (600.4606) | -3502.64 | -1144.1 |
| Total number of migrants | 858.7732 (618.6002) | -356.124 | 2073.67 |
| No. of years of schooling of household head | 640.486*** (193.8256) | 259.8231 | 1021.149 |
| Age of household head | 133.4055** (55.2235) | 24.94957 | 241.8615 |
| Total irrigated area | 128.6405*** (34.22234) | 61.42964 | 195.8513 |
| Total rain-fed area | -11.72683 (13.24713) | -37.7435 | 14.28982 |
| Total trees area | 171.9032* (93.89232) | -12.4962 | 356.3026 |
| Total number of sheep and goats | 12.22594 (7.517283) | -2.5376 | 26.98947 |
| Participation in land reclamation (Dummy) | 7172.383*** (1455.011) | 4314.821 | 10029.95 |
| Number of income sources | 2977.225*** (633.2289) | 1733.598 | 4220.852 |
| _cons | 5462.825 (3448.681) | -1310.2 | 12235.85 |

R-squared = 0.2038, ***Significant at 1%, **Significant at 5%, *Significant at 10%.

However, the main constraint farmers have to benefiting from land reclamation is their lack of formal land titles for their landholdings, because some land holdings are still defined by customary property rights. Development projects and the Syrian agricultural bank require property titles if farmers are to qualify for land reclamation loans, and to access other formal credits. The barrier from a lack of formal land title is partly relieved through provision by the village mayor (mukhtar) of a certificate attesting to land

ownership, but this is a temporary solution that needs official recognition. Despite all limitations and barriers, however, farmers continue to invest in land reclamation.

Male migration does not increase women's workloads

Contrary to expectations, male migration has not contributed to an increase in women's workloads in rain-fed agriculture. The main reasons are that (i) in rain-fed areas, where the bulk of migrants originate, there is already a surplus of male labor, and (ii) migrants return to their villages during periods of peak labor demand, especially when they work in Syrian cities and in neighboring Lebanon and Jordan. Most migrants are from poor households located mainly in rain-fed areas. Crop production is limited to cereals and legumes, and cereal production is mostly mechanized, which concentrates women's work in the limited legume areas; this frees up time for work outside the household's own farm in areas of high demand for agricultural labor, especially where intensified irrigated agriculture is expanding.

Livestock production is very important in rain-fed areas, and women already perform up to 80% of related activities, with men doing 20% of the work: mainly providing feed, and marketing dairy products, live animals and other related products. In households with multiple sources of income, women are more likely to have additional work and responsibilities, both within the household and as wage labor on other farms. Results indicate that women's work is likely to increase in irrigated areas, due to intensive cropping patterns, not because of male migration.

In addition, the absence of men from poor and/or landless households or in rain-fed areas does not appear to lead to greater autonomy for women, as might be expected. Decision-making within the household is also not affected, as migrants are located relatively close to their home farms, and women are confined to working around the household boundaries and do not have access to markets and official institutions to gain credits or other inputs. Our results differ considerably from those of Paris et al. (2009) who found that in the Philippines, Thailand and Vietnam, male migration leads to an increase in women's empowerment, as women take on greater management and decision-making responsibilities in the absence of their husbands. However, we anticipate that this will change in the near future, when the education levels and capacity building of women in rural areas improve so that they can access income-generating activities and markets.

The absence of men in this area has not reduced the agricultural labor force, so the presence of women can be viewed as adding value to the existing resources. Remittances facilitate on-farm investment and allow farmers to access inputs. However, we are not

sure if remittances provide enough support to existing livelihoods, including education opportunities for women and children. This is an important policy issue to consider. There are still important knowledge gaps in relation to the effects of migration on gender relationships. Facilitating education will have tremendous effects on this. Paris et al. (2009) found that in the Philippines and Thailand, the absence of principal males and sons did not increase women's workload because female household members used remittances to hire labor for land preparation, spraying of chemicals and other heavy tasks. It may have been a similar situation if our study had been conducted in more intensified systems where agricultural labor is required throughout the year. In dry areas, household members hire themselves out during periods of peak labor demand.

Male migration has a negative impact on children's education

Interviews indicate that the absence of males from rural households resulted in a drop in the number of children attending schools. Women explained that owing to the absence of the father (role model), they find it difficult to manage their sons and they are concerned with poor school attendance and performance. This means that although migration and remittances provide additional income to rural households, and improve their economic status, migration could have a serious long-term negative impact on –and be a threat to– the educational levels of future generations in rural areas.

Characteristics of migrants and households affect remittance levels

A logit model was used to analyze the role of migrants' characteristics in (i) their choice of destination and (ii) sector of work (Tables 7 and 8, respectively). The dependent factor in each analysis was either destination or employment sector. The independent variables investigated were stability zone, poverty status, total number of household members, size of land holding and livestock number, as well as migrant's age, education, sex and whether he or she was the household head. Results indicated that migrants from the drier areas (Zone 3) were more likely to migrate inside Syria and migrants from Zone 2 (wetter area) were 1.27 times more likely to migrate abroad. In addition, less-poor people tended to migrate within Syrian boundaries, whereas the poorer migrated abroad. Age has a negative impact on international migration; this means that younger migrants tended to go abroad, whereas older migrants worked inside Syria (Table 7).

Table 7. Factors affecting migrants' choice of destination, logit regression

| Variable | Coefficient (Standard Error) |
|-----------------------------------|---------------------------------|
| Community characteristics | |
| Stability zone | -1.27 (0.46)*** |
| Household characteristics | |
| Poverty status | -0.46 (0.25)* |
| Total household members | -0.05 (0.025)** |
| Land area (ha) | 0.004 (0.002)* |
| Livestock | -0.01 (0.006)* |
| Number of other migrants | 0.049 (0.086) |
| Individual characteristics | |
| Age | -0.11 (0.06)* |
| Age squared | 0.002 (0.001)** |
| Education | 0.021 (0.04) |
| Sex | 1.6 (0.46)*** |
| Household head | -0.49 (0.43) |

Sample size = 349; Likelihood Ratio χ^2 (11) = 66.51; ***Significant at 1%; **Significant at 5%; *Significant at 10%.

A logit model was used to analyze the role of migrants' characteristics in (i) their choice of destination and (ii) sector of work (Tables 7 and 8, respectively).

An ordinary least squares (OLS) regression was used to identify the factors that affect the value of remittances sent back home. Only two migrants out of 349 did not send remittances to their families; the amounts of remittances sent by the others varied considerably among migrants. Results indicate that this amount increased when households are large and poor. However, the amount of remittances decreased according to the size of holding and number of livestock. These two indicators are inversely proportional to the remittances sent (Table 8).

Table 8. Factors affecting migrants' choice of sector of employment, logit regression

| Variable | Coefficient (Standard Error) |
|-----------------------------------|---------------------------------|
| Community characteristics | |
| Stability zone | 2.29 (1.15)** |
| Household characteristics | |
| Poverty status | 0.77 (0.411)* |
| Total household members | -0.06 (0.045) |
| Land area (ha) | 0.002 (0.003) |
| Livestock | 0.005 (0.007) |
| Number of other migrants | 0.47 (0.13)*** |
| Individual characteristics | |
| Age | -0.16 (0.082)** |
| Age squared | 0.002 (0.001)** |
| Education | -0.016 (0.065) |
| Sex | 4.33 (0.6)*** |
| Household head | 0.85 (0.7) |

Sample size = 349; Likelihood

Ratio χ^2 (11) = 162.88;

***Significant at 1%;

**Significant at 5%;

*Significant at 10%.

The main findings of the research are:

1. Migration improves the livelihoods of people living in rain-fed areas.
2. Remittances increase the productivity and efficiency of natural resource use.
3. Remittances have contributed to the expansion of rain-fed areas.
4. Land reclamation improves the livelihoods of people in rain-fed areas.
5. Male migration does not increase women's workload in rain-fed areas.
6. Male migration, particularly that of married men and heads of households, negatively affects the education of children, especially boys.
7. The characteristics of migrants and households affect the value of remittances sent back home.

Key issues and lessons learned about the relationship among migration, rural livelihoods and natural resource management

Successes, Conflicts and Disputes, Power Relations, Changes in Practices, Barriers and Opportunities

- Our conceptual frameworks linking migration, livelihoods and natural resource management offer a platform for future research.
- Migration and remittances are essential in dry marginal areas and have a positive impact on natural resource management and livelihoods.
- The potential of remittances in agricultural and rural development as a partner to government development programs is tremendous. This requires new institutions and policies to encourage the saving and investment of remittances for developing productive assets.
- Power relations: The absence of males from rural households resulted in a drop in the number of children attending school. Women found it difficult to manage boys and follow up on their school attendance and performance. This could be a long-term negative impact of migration.
- Barriers and opportunities: Farmers without land property titles could not benefit from development initiatives such as land reclamation, so they migrated and used remittances to de-stone their land. These farmer-led initiatives may represent an opportunity for the government and development projects to link with migrants and create investment opportunities for them.

Future Scenarios – Key Issues for Future Development Trajectories

- Development programs should link with research at the initial planning stages in order to learn about the difficulties faced by the poorest in gaining benefits from their initiatives.
- Planners should find ways to overcome these difficulties during project implementation through closer interaction with, and supervision of, beneficiaries.

Future Actions – Rethinking Paradigms and Policies

1. Evidence shows that lack of land property titles prevents full access to government land reclamation programs and formal loans. The following actions are necessary:

- Facilitation of land titles to encourage the use of remittances in investments to improve land. This will contribute to increased incomes and better household food security.
- Insurance adapted to dry environments should be provided by policymakers to farmers in marginal areas who face a high risk of drought.

2. There is clear evidence that small ruminant (sheep and goat) production and dairy processing represent a potential area of investment for remittances. There is also evidence that the landless, who are the poorest, rely mainly on small ruminants and have in-depth knowledge about their management and the processing of their products. Furthermore, small ruminants are of high value and there is an increasing market demand for their products.

- Investment in small ruminants should be encouraged by a program where investment of remittances is matched by government financial support. This will direct financial flows from remittances to the poorest sectors of society.
- Technologies for processing and adding value, such as cheese- and yogurt-making, should be introduced. This will enhance household food security, increase incomes and reduce poverty.
- Women in marginal areas should receive training in a number of income-generating activities from development projects.
- Policies should be put in place to facilitate easier access to markets by women for their products to improve rural livelihoods further and contribute to women's autonomy.
- Appropriate arrangements should be put in place to connect remittances to micro-finance, either through existing value chains or through a program that could be initiated specifically for this purpose.

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Chapter IV

Return Migration, Gender and Community-Based Water Management Politics: A Case from Southwestern China^{*}

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Southwestern China has suffered from serious water shortages in the past five years that have undermine livelihood security for the rural poor. In response, governmental and nongovernmental collaborations have emerged to build community-based water management programs in rural villages. Concurrently, the relaxation of the country's mobility restrictions has led to a dramatic increase of migration from rural villages to neighboring towns, cities and other villages in search of work, so much so that according to national statistics from 2008, 62.3% of the farmer worker population is employed outside of their townships. This case study analyzes migrants' influence on a water tank construction project in the village of Litaο in the Province of Guizhou, and more specifically women returnees' engagement with local politics and power relations in collective action: a critical issue for natural resource management. The study employs a feminist ethnographic and political ecology lens to document how return migrant women negotiate their entitlements and involvement in the water tank project. The study's results reveal that return migrants' social remittances and social capital do not easily convert into new leadership for collective action since return migrants remain firmly embedded and reproduced within strong gender, class and kinship alliances that constitute their communities' sense of collectivity. The existing gender, class and kinship relations remain the basis of the social fabric that pervades social life and natural resource management in the site under study. This challenges earlier assumptions that return migration can directly influence their original villages through the introduction of new ideas and attitudes.

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Introduction

In southwestern China, people have been experiencing extremely serious water shortages over the last five years, exacerbated by restricted access to groundwater sources and diminishing supplies of surface water brought about by rising levels of consumption and a higher incidence of dry spells. One response to this has been collaboration between the Chinese government and nongovernmental organizations to build community-based water management programs in rural villages in order to address water scarcity and to enhance livelihood security for the rural poor. Alongside programs to mitigate growing water scarcity, lives and livelihoods in this region are being transformed by increased levels of migration of people from rural villages to neighboring towns, cities and other villages in search of work. As the country's mobility restrictions have relaxed since the late 1980s, rural people have been able to respond to expanding labor markets and employment opportunities beyond their localities, with migration increasingly seen as a means to diversify income sources, increase productivity and alleviate poverty in parts of rural China (Cai, 2001: 329; CASS, 2003: 54). To illustrate the extent of this phenomenon, recent data from the National Bureau of Statistics (2008) show that the total number of farmer workers (who combine farm and non-farm work in their livelihoods) is 225.42 million, of whom 140.41 million were employed outside of their townships, accounting for 62.3% of the farmer worker population.¹ Scholars focusing on return migration in China have examined migrants' influence on the economic development of their origin communities, as well as the role of return entrepreneurs in promoting the permanent transfer of labor out of agriculture (Zhao, 2002; Ma, 2002; Murphy, 1999; 2002; Hare, 1999).

Past studies on migration broadly share the view that return migrants have the potential to transform rural life through social remittances—norms, skills, ideas, practices—that alter the social, economic and political institutions of sending areas (Murphy, 2002: 11; Fan, 2007). Studies of this kind have focused on the livelihood impacts of migration in terms of poverty and inequality, and changes in agricultural production and labor allocation (Murphy, 2002), and on social impacts associated with the gender division of labor within marriage (Fan, 2007). At the same time, research has illuminated the constraints preventing return migrant women from acting on their broadened perspectives and from exercising their agency (Murphy, 2002), and the limited effects of migration on women migrants' wellbeing and sense of independence (Fan, 2007; Murphy, 2004). Beyond a concern with domestic gender relations and livelihood issues, there has been little attention paid to women returnees' engagement with local politics—a key theme

¹ The National Bureau of Statistics of China defines "farmer workers" as the economically active population who work in agriculture in their villages for six months or more of any one year. The category includes long-distance migrants who stay outside their own townships for six months and more, and local farmer workers who engage in non-farm activities for six months and more within their townships in any one year (National Bureau of Statistics 2008).

within the context of natural resource management initiatives in western China. This chapter builds on and expands research on return migration impacts by examining the effects of return migration (and accompanying social remittances) on leadership in livelihood projects, including collective action initiatives associated with water tank construction and management. Specifically, attention is directed towards the ways in which the repositioning of return migrants in village politics potentially disrupts or reinforces gendered authority and traditional kin-based practices of power. From this, a key question in this study concerns the ways in which migration, and more specifically, the practices of return migrants, affects the dynamics of collective action around water management. We aim to employ a feminist political ecology lens that emphasizes issues of power in collective action – or the ‘political’ – in leadership, networks and relations. As Rocheleau (2007: 434) states: “we need to come to terms with a whole range of more entangled and embedded relationships including power alongside, power from beneath and power in spite of in social networks involved in natural resource management.” In employing a feminist political ecology approach, we see leadership and collective action for water management to be differentiated and negotiated, power-imbued and gender-mediated: everyday practices associated with return migration and reincorporation into village life have the effect of re-citing gender and kinship norms and hierarchies (Nightingale, 2006).

Through the empirical material presented, the authors suggest that return migrants’ social remittances and social capital do not easily convert into new leadership for collective action, since return migrants remain firmly embedded within strong gender, class and kinship alliances that constitute their communities’ sense of collectivity. Our study challenges earlier assumptions that return migration can straightforwardly “bring migrants with entrepreneurial, political and leadership skills back into communities. These leaders may be able to mobilize preexisting networks in the community, co-opting members for new purposes, and they may be able to enlist external allies who are willing to share their resources” (Brown, 2002: 17). This may be the case for some men, but far less so for women. Our findings also contrast with Davin’s (2005) study on China, which contends that circular migrants can influence their original villages through their new ideas and attitudes (see also Murphy, 2002).

Study site and history of migration, clan formations and resource use

Investigation on the reentry of return migrants and its effects on the dynamics of community water management was conducted in the village of Litao, located at Xintun Township in Wangmo County, Guizhou Province.

Map of project site



The village of Litao is located in Wangmo County, Guizhou Province, a karst mountainous area in southwestern China with marked rural poverty, and where water shortages are an inherent factor undermining the sustainability of agrarian livelihoods. Villagers primarily use water for daily consumption and irrigation; average total daily water consumption need is about 36m^3 . A seasonal water shortage lasts around 90 days from February to May, though recently such shortages have increased; for example, increasing to 98 days in 2003. Since decollectivization in the 1970s, the provision of water (for irrigation and household use) and water management had increasingly fallen under the purview of local government, with costs met from local government sources. Despite the existence of a few water tanks built in the past, most villagers fetched water from distant sources, since the old water tanks had leaks, were poorly maintained and only supplied small volumes of water. Women and girls usually took about three hours per day to collect water. Moreover, over the course of the 1990s, a shortfall in public revenue for infrastructure development meant that the collective actions of farmers became increasingly important, complemented by inputs from businesses and nonprofit organizations.

In 2003, Partnership Community Development (PCD), a Hong Kong nongovernmental organization, sponsored an integrated participatory community development project in Wangmo County to address poverty and improve local livelihoods through sustainable use of natural resources. Litao village was selected as the project site and a participatory needs assessment identified the construction of water tanks as a priority for villagers. By 2007, a total of nine collectively-built water tanks had been completed. As a result, the water shortage has been reduced to only 14 days from the earlier average of 90

days, with an additional volume of 368m³. Rather than investigate project outcomes, e.g., access issues and water pricing mechanisms that are the conventional terrain for political ecologists, it is the course of project implementation that is of interest here, and in particular, the social context in which the water tank construction is embedded. As later sections of the chapter suggest, it is the interplay between the practices of project *implementation* and local clan, kinship and return migration dynamics in Litao that were key for understanding the ways in which gendered subjectivities and hierarchies are being reiterated and reproduced.

The clan system in Litao has been a resurgent influence since decollectivization, both in resource governance and in village-level politics. Litao is made up of five village groups or clans: Boshu, Qianshao, Liujia, Lijia and Zhoujia. These are patrilineal and patrilocal groups of related people with a common surname sharing a common ancestor and, in many cases, an ancestral home. The clan system plays an important part in defining villagers' relationships with each other, and in this sense, is regarded by them as a basic mutual help network. It is largely supported by regulations commonly defined by villagers as local customary law. Moreover, the clan system is held together through collective rituals every year, through operating a "*clan office*" to deal with clans' affairs through their customary rules and regulations rather than resorting to the village committee. Clans themselves are hierarchical, in terms of gender (with men being dominant), generation and birth order. At the same time, membership in a clan offers a form of 'guanxi'—mutual assistance ties and other forms of social capital—through family descent and also through marriage. People sitting at the top of the clan-based guanxi hierarchy, usually senior men, dominate in deciding clan affairs, and shape the direction of collective action (e.g., in the water tank project). For example, the first water tank to be built was in the Lijia village group (in 2003), identified by Litao villagers as the most dominant of the clans. This accords with research on the role of clans in village-level formal politics: although clans no longer possess public economic resources, kinship relations and therefore established 'clan face' (*zongzu mianzi*) affects the voting behavior of villagers and village-level governance more generally (Thurston, 1998; Luo & Xiao, 2001; Tang, 2001).

A key element in the management of water tank construction was the facilitation group, comprising representatives from the township government offices, the Integrated Rural Development Center at Guizhou Academy of Agricultural Sciences, the village committee and the villagers, and monthly meetings were held with the NGO donor. Clan or kinship-based guanxi was at work in the facilitation group, village representation in which tended to be dominated by senior clan members, reflecting their dominance in village political life. Moreover, the ability to command collective labor for the water tank construction was also largely made possible through clan-based guanxi. Before starting to

build the water tanks, the facilitation group assisted the villagers to discuss and set up the construction times and places, and instructions for labor arrangements. Each household provided labor, with women and men jointly engaged in digging the holes and carrying construction materials, and men involved in wall building and polishing. In this way, the villagers' closed *guanxi* (based on common kinship) was an important element in fostering and shaping collective action for water tank construction.

People in this village largely define themselves as farmers, cultivating rice, maize, wheat and several types of beans. Relatively local forms of temporary migration have been long-established, garnering links between Litao and urban areas of the relatively accessible Baice County nearby. More recently, migration includes long-distance sojourns to Beijing city, Yiwu city in Zhejiang Province and Xiamen city in Fujian Province. The focus of this study is on those who have returned to the village and have reengaged in village events, specifically around the activities of a project designed to strengthen agricultural livelihoods and reduce poverty in the village.

Pressures on land resources accompanied by water shortages have meant few households in Litao are able to live by agriculture alone. In the last decade or so, livelihoods have been augmented by income from temporary migration, initially involving relatively short distance circular migration to neighboring towns and villages, but since the 1990s, involving longer term migration over greater distances to industrializing coastal cities. Migration patterns in Litao resonate with migration patterns in China more generally and relate closely to recent policy changes. In China, due to its 'hukou' system (residence system), the majority of out-migrants are referred to as a 'floating population' since their residences are not their hukou locations (Fan, 2007). At present, the hukou system is still in place serving to constrain the rural population's entry into cities as urban citizens. Rural-urban migrants do not have access to welfare and social security packages that are provided to urban citizens. Thus, even relatively long-term migrants eventually end up returning to their rural homes. However, insecure farm livelihoods in Litao mean that return is also rarely permanent. After some years, returnees often make another sojourn in search of work. There are roughly two generations of Litao migrants. An older group of out-migrants includes those villagers who began making short-distance moves to surrounding counties and villages shortly after decollectivization in the mid-1980s. Most of these returnees now permanently reside in the village as farmers, while occasionally migrating briefly for work opportunities. A younger migrant group began departing in the late 1990s as roads improved and employment opportunities became accessible to them in electronics assembly plants and shoe factories and in construction teams in China's coastal cities. Some of these migrants have made temporary returns to Litao. As subsequent sections of the chapter suggest, it is in this latter group that the tensions over individualization of livelihoods has become most apparent. Importantly, these two types

of migrants have rather different engagements with the water tank building project that provides the focus for this study.

The connections between return migration and collective action for water tank construction are many. First, Litao was selected as the project site because of its earlier history of villagers' self-organization and collective action for road construction from 1995 to 1997, made possible by interventions from the earlier generation of male return migrants, who not only had good connections with officials in nearby towns, but also had learned vital organizational skills during their sojourns. Second, return migrants from both generations played an important role in the facilitation group for water tank construction. Most of these returnees were men, the exception being one woman from the younger return migrant generation. In the case of the older migrant generation, their influence and involvement in the facilitation group (and the project more generally) owed much to the *guanxi* (often related to clan also) they had developed through connections with officials in nearby towns; the gender dynamics of this is explored in a later section of the chapter. For the younger migrant generation, a rather different dynamic was at play, associated with tensions around their status in the eyes of many villagers, who were resentful about their increasingly individualized livelihoods borne out of long periods of absence and remittances that had enabled them to sidestep various community and clan-based obligations. At the same time, younger migrant returnees' social remittances, engendered through long-distance migration and long spells living in cities, made it easier for them to connect with water tank project staff, particularly during the initial planning and facilitation stage. It is the interplay and tension between clan-based *guanxi* and the social remittances associated with return migration – two rather different kinds of social capital that emerge as important in collective action for water tank construction – that play out in a later section of this chapter, where the reiteration of gender subjectivities and hierarchies is revealed.

Approach

As cases for analysis, the chapter will study episodes that involve return migrants taking leadership positions and mobilizing villagers for collective water tank construction, as part of the project of Partnership for Community Development (PCD). One of the authors, from the Integrated Rural Development Center at Guizhou Academy of Agricultural Sciences (one of the four key stakeholders), was part of the project team between 2003 and 2005, with the responsibility of facilitating participatory practice in the project, including the needs assessment, design and management of tank construction, and monitoring and evaluation. While considerations of gender, return migration and social remittances were not part of the overall project terms of reference, their significance became apparent in

meetings facilitated by the author, and in everyday encounters with village men and women, which revealed the ways in which gender identities and norms were challenged and reiterated as people negotiated roles as facilitators, group members, clan elders and wives. An emerging theme in these encounters was the effect that a background of having been involved in the project, augmented by migration experience, had on the campaign for political leadership, whether directly, or, more intriguingly, indirectly through women's backstage negotiations. The workings of power relations evident in the project, and among its beneficiaries, became the focus for a subsequent research project specifically focusing on gender, migration and social remittances, and collective action.

Field data for the research was collected from August 2007 to June 2008 and was substantially linked with earlier recollections from the project experience. The study employed semi-structured individual interviews for oral histories, organized key-informant interviews, focus group discussions, a household survey and participant observation alongside secondary data collection. Specific data on gender and kinship ties were culled from the semi-structured individual interviews, field notes and project records, triangulated by participant observation and discussions with key informants at the study site. The chapter here draws specifically on semi-structured interviews and field notes from the project experience.

Results: Return migration, clan politics and leadership in livelihood projects

In making sense of the ways in which return migration influences the dynamics of collective action in water tank construction in Litao, we focus on two cases involving return migrant women, who adopted different strategies for asserting their household interests within the project, yet who both drew on the cultural and symbolic resources of clan and kinship connections to make their cases. In this first section, we highlight the different experiences of two women from the older migrant returnee generation, whose husbands competed for political office, a process closely linked to the unfolding of the water tank construction project. In the second section, discussion focuses on a woman from the younger return migrant generation, whose strategy invoked both the social resources acquired through her city experience and her more local clan *guanxi*.

Village leadership and the water tank project: return migrant women behind the scenes

After heavily contested elections for Litao's village directorship, Li Binquan was elected as village director in 2004. Villagers remarked that the victory of Li Binquan maintained the

traditional dominance of the Lijia group (i.e., the Lijia clan) in Litao village politics, where former directors also came from. Support for Li Binquan by Lijia group villagers, who constitute the biggest population in Litao, also built on kinship ties, since Li Binquan was a member of the clan, whereas his opponent Luo Kaiwen was only affiliated by marriage to the Lijia village group.

The gendered power dynamics inherent in leadership contests are revealed more clearly in the efforts of village leaders' wives who ventured to protect their husbands' positions through backstage maneuverings. Appointed village party branch secretary Zhou Yejun organized the elections and assisted Li Binquan in assuming his new position. Publicly, Zhou expressed worry about Li Binquan's inability to care for the official seal of the Litao village committee. The seal is used to sign official documents and is an important and key symbol of political office. Thus, even after five months of Li Binquan's confirmation as the new director, Zhou had not transferred the seal to Li Binquan. At first, Li Binquan thought that it was careless behavior that caused Zhou's delay. Wen Shaomei, Li Binquan's wife who had been a labor migrant three times, employed as a factory worker in one of the coastal cities, decided to act on his behalf, and met with Zhou's wife, Yang Yuqing, in Zhou's rice field, where she pretended to walk by. Wen Shaomei requested her to kindly remind Zhou Yejun to transfer the seal to Li Binquan.

Wen Shaomei's strategy, however, did not work. Zhou Yejun learned of the encounter between his wife and Wen Shaomei. He said that village affairs are men's domain, where women should not interfere. While Wen Shaomei attempted to employ backstage influence through her informal conversations with other women to help her legitimize her husband's ascendancy as village director, this strategy failed. Zhou branded her actions as "messier," a "product of poor education," and, "poor decision-making." The assertiveness earned through her migrant experience that enabled her to involve herself, albeit in a behind-the-scenes way, was read as 'gauche' since she did not draw on any traditional institutional support (e.g., clan or kinship *guanxi*) that would enable her to operate her social remittance more strategically within village governance structures. Despite a strategy 'from the rear', Wen Shaomei was perceived to tread on exclusively male political terrain, for which she was severely reprimanded. While she adopted 'from the rear' tactics to safeguard the established order of 'private woman and public man' in line with existing norms and hierarchies concerning the gendering of public and political space in village society to save her husband from embarrassment, this was insufficient for securing her husband's position. The significance of this for understanding the gender politics of collective action in the context of return migration is drawn when her experience is compared with Li Binzhen, wife of Luo Kaiwen, the other return migrant who competed with Li Binquan for the village director position.

After the township government accepted Li Binquan's resignation letter, Luo Kaiwen was appointed as the acting village director by the township government in 2006. Li Binzhen, wife of Luo Kaiwen, gained knowledge, ideas, experience and social capital by accompanying her husband on his frequent travels and from meeting his business friends and the government officials who frequently visited their home. She also witnessed her husband's gains and losses from running a commercial timber enterprise for many years. From her conversations with urban-based government officials, she learned more about agricultural and forestry policies, strategies for running a business successfully, as well as good marketing opportunities. With this newly acquired knowledge gained through her experiences as a migrant, Li Binzhen set out to mobilize village households for collective water tank construction as the first collective village activity under her husband's administration. She worked to convince her brothers-in-law and their families to participate in this activity. She arranged for them to visit the water tank building site and was able to convince them to inform other villagers that their labor input would secure exclusive access to the water tank; but if not, they would have to pay to buy water. Like Wen Shaomei before her, Li Binzhen operated largely in the background, enabling her clan's male members to conduct most of the visible mobilization and information drive, maintaining the gendering of public and political space in the village. As a result, all village group households contributed work on water tank construction. Li Binzhen said that one key idea she had learned from government officials who visited her home was the importance of infrastructure. The water tank construction was the first project under her husband's leadership. If the project failed, she was aware that he would lose face.

Both these women's stories suggest that within prevailing environmental and social conditions in the village, gender norms materialized around the idea of women as 'rear actors', reiterating socially acceptable gender roles and identities. Moreover, women also employed their gendered social position as a strategy to 'get things done', one successfully and one unsuccessfully (Mahoney & Yngvesson 1992; Cleaver 2007; Zwarteveen & Neupane 1996; Brunt 1992; Villareal 1994). However, while these efforts led to livelihood gains, they did not alter or challenge their social positions. To safeguard her husband's leadership, Li Binzhen's practice of her new ideas was still confined to the socially acceptable space for women, from which she could not break away as it constitutes a resilient gender fabric woven from the support and solidarity of male kin. This demonstrates that gender subjectivities may be contingent on other types of subjectivities such as kinship, and that social remittances – e.g., new ideas for development – translate into collective action depending on how they are mediated by gendered and kin-based alliances. In both these cases, gender norms and hierarchies were reiterated by the actions of women who necessarily acted within prevailing norms of appropriate political behavior for women. The migrant skills and knowledge – social remittances – of Li Binzhen were insufficient

to challenge these hierarchies: instead, her actions served to reiterate and extend gender norms.

Return migrant women negotiate their involvement in the water tank project

Some younger migrants have returned to the village, resumed their work in agricultural production and their political life. While the older return migrants continued to play essential roles in village politics, for these returnees, ascendancy to public office was largely mediated by their families' social status within their own clans, as well as their families' relationship with village leaders. The following narrative concerns a young female return migrant's struggle for influence within the water tank project, to ensure future access for her household.

Wu Tingzhen, a woman who married into the Zhoujia village group (clan), recently returned to Litao village. Earlier, she and her husband worked on her uncle's orchard for more than five years in another province. In 2003, NGO and government personnel came to Litao to select a project site and stayed in Wu Tingzhen's house since it was the only brick-built house at that time. The visitors also observed that Wu Tingzhen and her husband were receptive to new development interventions since "they see much more." Culturally, her experience as a migrant brought her closer to the urban-based NGO and government personnel. She also served as their village guide, cooked their meals, responded to their questions about the village and recommended other households for their interviews.

When Wu Tingzhen accompanied the project team in their interviews with villagers to explore possible livelihood improvement activities, they usually could not offer new ideas. In order to stimulate discussions, Wu Tingzhen discussed her ideas and experiences as a worker in her uncle's orchard, where they applied new cultivation methods learned from other villagers. The social remittances gained as a migrant served to align her with the NGO and its work in the village, thus acting as an interlocutor between the NGO and less receptive villagers. Most villagers could not understand why the NGO conducted a needs assessment since they were accustomed to receiving direct project funding from the government without any preliminary discussion. Wu Tingzhen explained that in her uncle's orchard, she was also not familiar with the ecological conditions: "Therefore I had to discuss and learn from others who knew best about which trees were the right ones to plant. Otherwise, the trees I plant may die." This, she said, was why the NGO was interviewing them about which activity was most suitable for them to improve their livelihoods to prevent its failure. She also bridged relations between other village informants and the project team by explaining project goals and eventually enabling trust

between them. Her assistance paved the way for the selection of Litao to become the project site for water tank construction.

Yet in later years, Wu Tingzhen was excluded from subsequent meetings. In one instance, she was excluded from a field visit because a village group leader objected to her presence – he was an elder from her husband’s clan and frowned upon her household’s out-migration, apparently individualized livelihoods and their withdrawal from village life over the past five years. Later, Wu Tingzhen joined another meeting intended for deliberating on the most suitable and accessible location for the water tank for the Zhoujia village group. Part of the agreement with the NGO was that the village group would have to donate the land for the proposed water tank. The question of accessibility to the water tank then became a subject of debate. Wu Tingzhen’s house was located at the intersection between Zhoujia and Lijia residential areas. In the meeting, Wu Tingzhen expressed concern that the planned site was a bit lower than her household’s location.

Immediately, someone suggested that her household should instead share the water tank with the Lijia group, implying her family’s close relationships with the Lijia group, the dominant clan in Litao village. After she heard of this suggestion, she complained about the exclusion of her household from some governmental projects that were designed to freely benefit all Litao villagers, such as the biogas tank building and a microcredit program for pig feed, but which the Zhoujia village group did not enable them to join. Her complaints sparked the rage of the clan elder Zhou Yesheng who expressed displeasure with her and her husband’s behavior since they returned to the village from their migration. For example, he frowned upon their frequent gatherings with Lijia youths who liked to gamble and their weak participation in clan activities. Moreover, Wu Tingzhen’s loud complaints in front of so many clan elders were seen as rowdy and disrespectful, and Zhou Yesheng reprimanded her: “I have never seen any daughter-in-law of Zhoujia as outrageous as you. We are not excluding your household’s participation. You should give us a chance to resolve the problem. I do not know where you picked up the kind of words that you speak. This is not the place for you to speak in that manner. Ask your parents-in-law to come and talk with me.”

Agitated by the clan elder’s words yet maintaining a smile, Wu Tingzhen replied: “My husband is the head of our household in the registry book.² He could not join this meeting since he is not at home right now. He asked me to join. Why can I not speak?” To which Zhou Yesheng snapped back: “And you also want to drink our water?” By this remark,

² Here, the registration book refers to the “hukou registration book.” The hukou registration book records who belongs to the household and their hukou types (Fan, 2007:41). Hukou is a form of population registration formally required and legalized since the National People’s Congress (NPC) promulgated the People’s Republic of China Regulations on Household Registration (*Zhongguo renmin gongheguo hukou dengji tiaoli*) on January 9, 1958 (ibid.: 40). Under the regulations, every Chinese citizen must be registered and the registration must be under one unit and one unit only (in one place and one place only) (ibid: 40-41).

Zhou Yesheng was hinting at the independent acts of the couple in the past, when they set up their own satellite receiver and shared the water tank with the primary school since they could afford to pay the costs. He then demanded why, despite their earnings, they still wished to join the water tank initiative with the rest of the Zhoujia group. Wu Tingzhen replied: “I am the daughter-in-law of Zhoujia. Since I married Zhou Xuewen, I am doomed to drink Zhoujia’s water forever. Why then do you question that? Is it not the fact that I am drinking Zhoujia’s water? If you say no, I will immediately leave.”

People present were appalled by her words and knew how seriously damaging Zhou Yesheng’s reaction could be. They however also questioned the clan elder’s reaction. They recognized that she was a legitimate daughter-in-law of Zhoujia, with three children carrying the Zhou family name, two of whom are sons in a community where son preference is strongly shared. Meanwhile, her husband’s status in his clan as the eldest son of his generation, who would succeed his father’s generation as clan leader of the Zhoujia group, promised her potential as the first lady of her husband’s clan, which no one, even the other clan elders, could challenge. Zhou Yesheng, for his part, kept silent like everyone else and it seemed that the meeting could not go on any longer. Doing the unimaginable, Wu Tingzhen stood up from her seat and left the meeting, finally announcing that her household would not participate in the water tank building. Asked why she chose to leave the meeting, Wu Tingzhen replied: “Before I left the meeting, I already felt quite satisfied that I was able to challenge Zhou Yesheng and that I would have the last word. He is quite domineering. In that meeting, I defeated him. Whether or not our household will join the water tank building does not really matter for us. We could build one ourselves. My aim in joining that meeting was to inform the clan elders that our household should not be easily dismissed. I am aware that our different ideas and viewpoints may bring about conflicts and quarrels. I do not like it. I do not like other people to say that I am not a controllable daughter-in-law like our cattle”.

Wu Tingzhen’s case reveals how the figure of the ‘controllable daughter-in-law’ is being challenged by a woman who strategically invoked cultural politics by “drinking Zhoujia’s water” to legitimize her position in village kin-based society, and with which she sought to challenge the elders’ authority. “To drink one’s household’s water” is locally used as a folk phrase that implies one’s rightful membership in a household. Therefore, “drinking one’s household’s water” was used by Wu Tingzhen to assert her legal identity as a daughter-in-law in the Zhoujia group. Yet simultaneously, she also drew strength from her accumulated migrant resources to assert her rightful place in the clan meeting. While she challenged her subject position as a subordinate woman within existing gender and kinship hierarchies by asserting the social skills she had acquired as a migrant, this challenge was also couched within the language of clan membership and the moral claims that she was able to make as a daughter-in-law, with the rights to which that entitled

her. The ambiguity of this strategy has the effect again of discursively (and through practice) reiterating traditional gender and kinship norms, even when the social capital she possessed as a migrant allowed her to speak out against the men whom she regarded as her clan's source of power and authority.

Implications

As each of the cases in this chapter has shown, the wider historical changes in the Chinese system of power in the countryside, together with re-emergent gender and kinship influences, shape the outcomes of power in village society. In rural China, the acquisition of power was traditionally based on social identities bestowed through social ranking, and kin seniority in gender and age, but which was somewhat disrupted during the collectivization period in the 1960s. Thereafter, following decollectivization in the 1970s, a patriarchal kinship system more openly reemerged in village political life. Migrant returnees specifically reemployed kinship ties to compete for the new power sources brought about by the new village governance regime based on individual household production. On these terms, men competed to gain a position within the new village governance regime. Through a feminist political ecology lens, we showed how the actions of return migrant women explored in this study engaged with political struggles, particularly over leadership and participation in collective action for water management. These struggles illustrate the ways in which migrant returnees make use of, and therefore reinforce, gender hierarchies through behind-the-scene efforts to influence the course of politics, and through open confrontation, demonstrating the unintentional ways in which gendered political spaces are reiterated and reinforced.

As shown in this chapter, leadership for collective action is a site for negotiating cultural and political practices and meanings enacted through both stabilizing and disquieting encounters between return migrants and their home communities. Upon returning to their home communities from their circular migratory sojourns, return migrants in this study brought with them a mixed, somewhat contradictory bag of social skills enabling them to lead and promote collective water tank construction: new management skills and ideas for development, a sense of water rights and social capital in the form of *guanxi*, and more confidence to assume leadership positions in the village. However, these social remittances and new social capital investments did not translate unproblematically into public manifestations of democratic collective action supportive of local livelihoods, but instead unfurled a traditional social fabric made more resilient by the marking of social difference, particularly around gender and kinship, by both the return migrants and their local communities.

The resilience of this social fabric was manifested first, by the tacit tolerance of women's 'from the rear' strategies in mobilizing kin for collective action to protect and save the face and prestige of male leadership; second, by the repudiation of women who are seen to employ overt or covert maneuvering that transgress the divide that marks men's and women's spaces; and third, the leadership and social remittances of male migrant returnees that firmly built on their kinship positions. In turn, women were able to subvert traditional male authority by invoking the vocabularies of traditional and rightful kin-based entitlements and ties, simultaneously repositioning themselves as subordinate within kin-based gender hierarchies.

Women in this study realized that they could not dismantle the social fabric with views about women's entitlements other than those that were already firmly and repeatedly established as gender and kin-based. To do otherwise would have spelled ostracism, defeat and censure. Some return migrants opted out of collective action, such as Wu Tingzhen, who had accumulated enough wealth from migrant earnings to release her household from dependence on the water tank initiative. Yet even in so doing, she challenged male elders' authority by articulating her legitimacy within the traditional kinship line.

Through an intersectional view of gender and kinship, the study shows that return migrants in this particular context remain embedded within a strong fabric of gender, class and kinship that constitutes their communities' sense of collectivity in the first place. This sustains the strength of the social fabric that pervades social life and natural resource management in the site under study, where returning migrants who bear gifts of new resources and ideas for collective action realize that in order to coalesce with their home communities, they must stitch and weave themselves firmly into this very same fabric. This extends the findings of other studies of return migrant women's impacts on their original native villages, where in spite of the many contributions made by women migrants to their families and villages, their agency and their ability to contribute to the village and promote social change are limited by deep-rooted traditions and institutional constraints (Fan 2007). Such traditions and constraints may, inadvertently, be reiterated and reinforced in women's own backstage and sometimes front-stage practices.

The discussions and findings in this chapter resonate with feminist political ecologies that view environmental change as a product of political processes at different scales, and that equally recognize that resource politics and gender asymmetries of power are shaped in often unpredictable ways by migration and migrant practices, as women and men move between and connect multiple spaces.

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Chapter V

Migration Dynamics, Rural Livelihoods and Challenges for Territorial Management: Lessons from El Salvador

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El Salvador is arguably the country most centered on migration in the world, making this study of four rural municipalities particularly pertinent for understanding the interplay among migration, remittances and natural resource management. Nearly a quarter of the population lives outside of the country, remittances are the largest single source of foreign exchange for the country, traditional rural livelihoods have collapsed and land use patterns have radically transformed. Furthermore, given that the country is also one of the most vulnerable in the world to ongoing extreme climate events, the need for good environmental management practices is crucial to its future development. The study revealed promising processes of regeneration and recovery, contradicting longstanding assumptions that densely populated landscapes will lead to increasing natural resource degradation and depredation, and underlining the important role rural communities can play in natural resource management. However, the studies also highlight the increase in disparities in rural areas and new forms of differentiation caused by migration that complicate and adversely affect the construction of landscape-level agreements for sustainable territorial management practices and institutions. Of particular concern is the finding that the poorest of the rural poor tend to be those outside of the migration circuits, yet they depend more on natural resources for food security and have less access to land. The combined findings point to the urgent need for new approaches to ensuring sustainable and equitable rural development.

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Introduction

In the last few decades, El Salvador has undergone profound transformations. Migration and remittances play a key role in these transformations, both as a consequence and fundamental pillar of the restructuring of the economy. This in turn has contributed to emergence of new dynamics in the distinct territories of the country. In fact, those rural territories most affected by the collapse of traditional rural livelihoods in the northern and eastern provinces of the country, are the same territories with the highest incidence of households with migrants and with remittances.

This change reflects the manner in which rural livelihood strategies are modified, with clear implications for the rationale driving natural resource use and management, as well as strong social and territorial repercussions. Indeed, migrations and remittances in rural areas have translated into new sources of social differentiation between families with migrants and families without migrants. Families without migrants, for the most part, are unable to diversify their livelihoods, access non-farming employment or migrate. This has contributed to new environmental trajectories in El Salvador, such as densification of tree cover, and thus reveals important changes in deforestation and regeneration dynamics in distinct territories of the country. Similarly, migration is driving new territorial dynamics in complex contexts that reframed the challenges for strengthening livelihoods, natural resource management and territorial planning.

This chapter briefly discusses the relevance and importance of migration and remittances in rural livelihood strategies in El Salvador. It also presents a brief summary of the principal findings of diverse case studies carried out by PRISMA in distinct rural territories in the north and east of the country. The case studies contrast territories where migration has taken off more recently with territories in which the migration dates back further. Similarly, the territories selected are rural areas that are heavily influenced by the national and regional contexts that are reshaping the challenges associated with strengthening rural livelihoods, territorial management and governance.

Since migration has both direct and differentiated repercussions on natural resources, as well as on social cohesion in ever more complex contexts, there is a clear need for a better understanding of these processes. This is critical, not only for informing policymaking, programs and investments, but also for informing the strategies of territorial actors, who are increasingly influenced by the rise of illicit activities, which has significant implications for territorial governance in the distinct rural territories of the country.

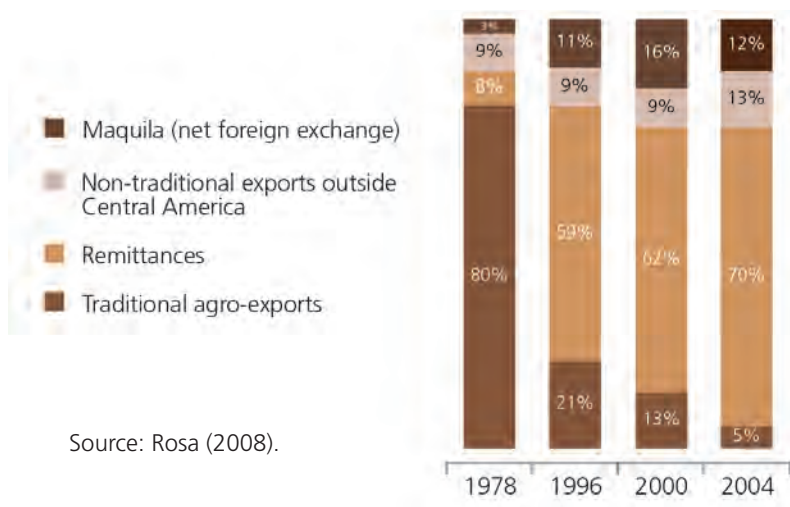
Migration, remittances and territorial dynamics

From an agroexport economy to an economy based on migration and remittances

El Salvador has substantially transformed. These transformations are redefining rural territories. In less than three decades, traditional agricultural exports ceased to be the principal source of foreign exchange and rural livelihoods collapsed, urban-based economic activities expanded, the population grew more concentrated, and mass migration to the United States transformed remittances into the principal source of foreign exchange in the country. The growing importance of remittances and economic activities unrelated to agriculture has brought about increased urbanization of rural areas. In the country's northern and western provinces, where traditional rural livelihoods are more prevalent, the percentages of households receiving remittances are even higher. To the extent that migration is increasingly penetrating daily life in El Salvador, social differentiation in rural communities is more apparent and widespread. Indeed, El Salvador has undergone dramatic changes.

Given that its economy is both small and open, it relies heavily on the generation of foreign exchange for its functioning. A look at the country's principal sources of foreign exchange reveals the profound transformations it has undergone in its production structure, with clear implications on forms of social organization and the uses of territories. In just over three decades, the economy of El Salvador has transformed from being predominantly an agro-export based economy to an economy based on remittances that depends heavily on migration (Figure 1) (Rosa 2008).

Figure 1. El Salvador: Relative importance of sectors for foreign exchange 1978-2004

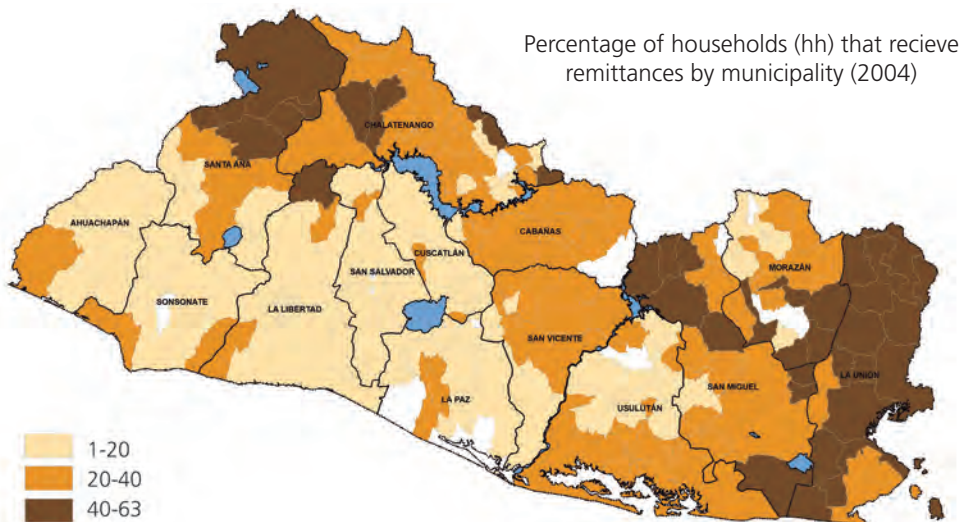


Territorial expression of migration and remittances

Given that remittances play such a key role in the Salvadoran economy, it is not surprising that migration is a phenomenon that affects every corner of El Salvador, and indeed, is a defining feature of Salvadoran society. While statistics vary on the topic, it is estimated that approximately 22% of the population has migrated out of the country (UNDP, 2005). However, this aggregated national average hides important differences and complexities associated with the territorial expression of migration, such as the tendency towards deepening migration patterns in traditionally rural provinces that are also more distant from the Metropolitan Area of San Salvador.

Map 1 shows the percentage of households receiving remittances by municipality and illustrates territorial differences in migration patterns within the country. In the eastern province of La Unión, for example, almost half of households receive remittances, while those municipalities with less than 20% of households receiving remittances are concentrated in the Metropolitan Area of San Salvador as well as the southwestern part of the country (UNDP, 2005). The municipalities with the greatest percentage of households receiving remittances are located in the northern and eastern provinces of El Salvador, provinces with important traditional and historic ties to subsistence farming, basic grains production and cattle ranching.

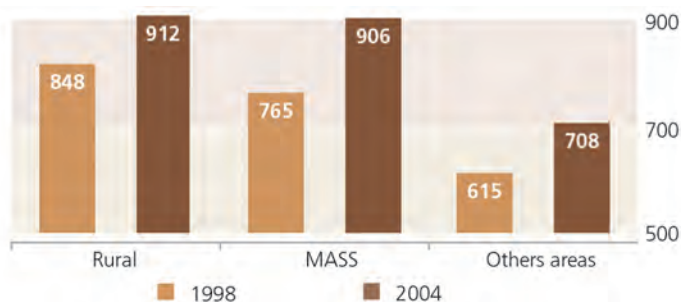
Map 1. Territorial expression of migration and remittances



Source: Prepared by PRISMA, based on UNDP (2005).

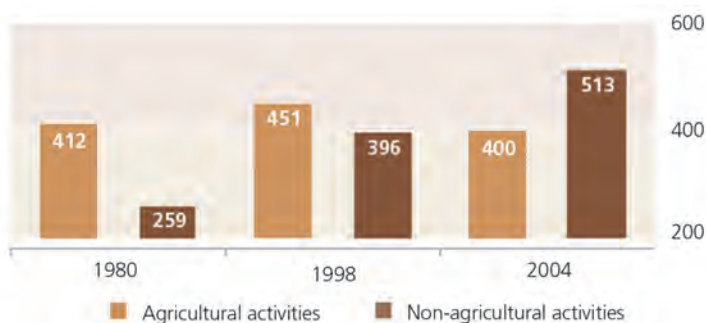
With the collapse of traditional rural livelihood strategies, migration has become a principal characteristic of a new rural reality, and plays a key role in the livelihood strategies of many rural households and communities. The collapse of the traditional rural economy has also meant significant changes in rural employment. Indeed, rural employment grew less than urban employment, and the Metropolitan Area of San Salvador (MASS) employs almost as many people as all rural areas put together (Figure 2).

Figure 2. Changes in employment: rural, urban and MASS, 1998 and 2004 (thousands employed)



Source: PRISMA data based on DIGESTYC.

Figure 3. Employed in rural zones, 1980, 1998 and 2004 (thousands employed)



Source: PRISMA data based on MIPLAN and DIGESTYC.

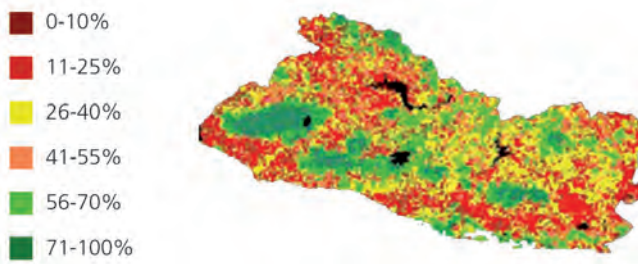
Furthermore, rural areas now have more non-farming-related employment than farming employment (Figure 3). This reflects the simultaneous crisis in the rural economy along with the expansion of an array of new non-farming-related activities in rural areas, such as industry, commerce and services that are strongly tied to migration and remittances.

Deforestation, regeneration and tree densification

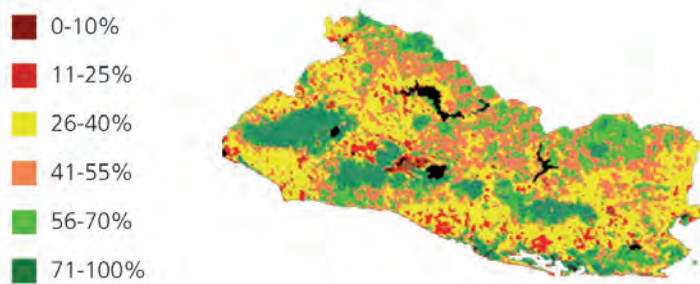
Economic change, migration and the collapse of rural livelihoods over the last three decades have also brought about significant changes in land use patterns and tree cover within the country. However, as in the case of migration, land use patterns are not uniform but represent a textured mosaic of distinct processes taking place in rural landscapes throughout the country. In some territories, the new land use patterns have exacerbated ongoing processes of ecosystem degradation while in other instances they have actually spurred processes of regeneration and tree densification. These dynamics have also been analyzed by Hecht and Sattchi (2007), based on analysis of satellite images from 1992-1993 (Advanced Very High Resolution Radiometer –AVHRR), and from 2000-2001 (Moderate Resolution Imaging Spectroradiometer– MODIS).

Map 2 and Map 3 show tree coverage density at two distinct moments in El Salvador's recent history (1992-1993 and 2000-2001, respectively). The maroon coloring represents areas with little tree coverage density while dark green marks indicates areas with relatively dense tree coverage. Map 4 shows the change in tree density between the two periods (black is used to designate those areas without any perceptible change, including bodies of water; red represents areas where tree density has decreased; and the other colors indicate areas where tree density has increased).

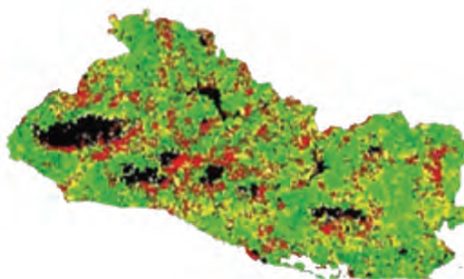
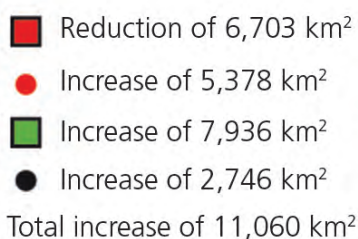
Map 2. Tree coverage density, 1992-1993. El Salvador



Map 3. Tree coverage density, 2000-2001. El Salvador



Map 4. Change in tree density between 1992-1993 and 2000-2001



What is particularly interesting in these findings is that the net balance is positive: Overall there has been more recovery (approximately 11,000 km²) in comparison to the deforestation that covers approximately 6,700 km². These results are controversial, as they contradict many long-standing narratives – as well as forestry inventories – that portray El Salvador as a highly deforested country. These discourses attribute high rates of deforestation to El Salvador’s relatively high rates of population density emphasizing that El Salvador is one of the most densely populated countries in Latin America.¹ This “conventional wisdom” that inhabited landscapes are a primary source of deforestation has profoundly shaped conservation policies, strategies and discourses, not only in El Salvador, but throughout the world. However, these findings demonstrate that regeneration and recovery can, and is, occurring in densely populated landscapes. These findings, therefore, require that the assumptions that have been guiding natural resource management over the last several decades be revisited, reexamined and reconceptualized.

In order to have a more thorough understanding of exactly what causes and explains these unexpected results of regeneration, it is critical to have a closer look at the array of underlying factors and the logics behind processes of both regeneration as well as deforestation in specific localities. The map demonstrates that the most prominent processes of deforestation are occurring in the areas associated with urban, industrial and commercial expansion (the Metropolitan Area of San Salvador, Zapotitán Valley and other urban centers). In contrast, in rural areas, particularly in the east and north of the country, processes of regeneration and increased tree densification are taking place. These are areas with the highest rates of deepening migration patterns. Given this background, it is particularly relevant to better understand the relationship among migration, natural resource dynamics and rural livelihood strategies.

¹ According to the World Bank (2005), El Salvador has a population density of more than 340 people per km².

Migration, natural resources and rural livelihood strategies

Four rural municipalities with characteristics mirroring those observed nationally –high rates of out-migration and the collapse of traditional livelihood strategies– were selected for getting a closer look at the relationship among migration, rural livelihood strategies and natural resource management. The municipalities are located in the eastern and northern provinces of the country and are: Las Vueltas, Chalatenango; Yucuaiquín, La Unión; Nueva Concepción, Chalatenango; and Santa Rosa de Lima, La Unión (Map 5). While the selected municipalities share common characteristics, the focus of each differs with regards to the variables, as well as methodology used to study them.²

Map 5. Location of study projects on migration



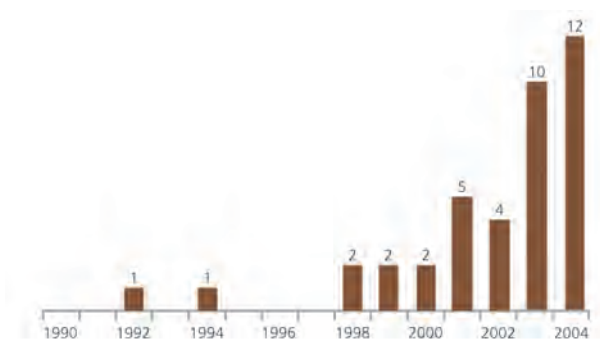
Source: Prepared by PRISMA, based on Mesoamérica / CCAD-BM GIS database; Longitudinal del Norte highway and Interoceanic Canal, based on CND, PNOTD and MOP; and UNDP.

² The findings are based on distinct case studies that PRISMA conducted over the last few years in these rural communities. While these studies did not share the same focus or methodologies, they were selected because their similar overall characteristics as well as the depth of each study allow for important comparative analysis about the relationship among migration, rural livelihood strategies and natural resource management. For further details on the case studies, please refer to *Dinámica Migratoria, Estrategias de Vida Rurales y Manejo de Recursos Naturales*, by Herman Rosa, Susan Kandel and Nelson Cuéllar; *Megaproyectos, dinámicas migratorias y gestión territorial: El caso de Nueva Concepción*, by Susan Kandel, Xenia Ortiz and Oscar Díaz; and *Las expresiones territoriales de las dinámicas migratorias: Entre la superación y el rezago en Santa Rosa de Lima*, by Xenia Ortiz.

Las Vueltas and Yucuaiquín

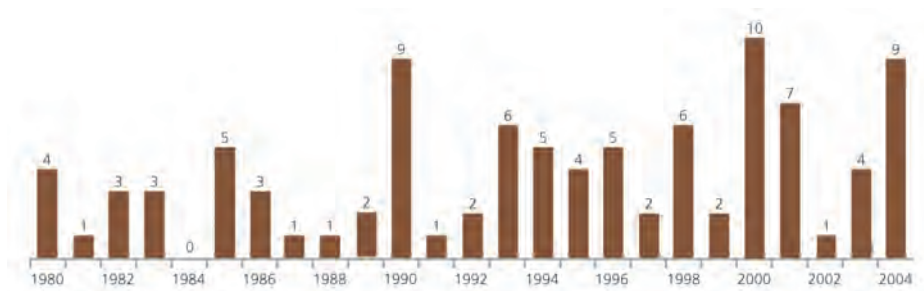
The municipalities of Las Vueltas in Chalatenango and Yucuaiquín in La Unión depict the differentiated impacts migration has, both in time and space. In Las Vueltas, 30.9% of households surveyed report having at least one relative who migrated abroad; nevertheless the bulk of this emigration is relatively recent (during the first decade of the new millennium) in comparison to Yucuaiquín (Figure 4). This timing probably reflects the deepening agricultural crisis and a significant decline in foreign aid to ex-conflictive zones during this period. In contrast, out-migration in Yucuaiquín is more accentuated, with 45.1% of households surveyed reporting at least one relative who migrated abroad, and much earlier dates—beginning in the 1970s, accelerating in the 1980s and deepening in the 1990s (Figure 5).

Figure 4. Las Vueltas: Migrants per year



Source: PRISMA.

Figure 5. Yucuaiquín: Migrants per year



Source: PRISMA.

In order to understand the impact migration has on the livelihood strategies of households, data from surveys in the communities were analyzed based on comparisons between

households with migrants versus households without migrants. The findings revealed substantial differences within the same municipality for incidence of migration (see Table 1). The significant territorial differences, even within the same zone, of the incidence of migration, point to increasing territorial differentiation within rural areas. In Yucuaiquín, for example, where an average of 45% of households have migrants, in the village of Candelaria, 62% of households reported migrants, while in the neighboring village of La Cañada, only 17% of households have migrants.

Table 1. Households with migrants in villages in the municipalities of Las Vueltas and Yucuaiquín

| Las Vueltas, Chalatenango | | Yucuaiquín, La Unión | |
|------------------------------|--------------|-----------------------------|--------------|
| Households with migrants | | Households with migrants | |
| San José de la Montaña | 42.8% | Candelaria | 62.1% |
| La Ceiba | 34.5% | Las Cruces | 55.2% |
| Los Naranjos | 31.3% | Las Cabañas y Las Hojas | 46.4% |
| El Sicahuite | 29.2% | Yucuaiquín (municipal seat) | 44.8% |
| Las Vueltas (municipal seat) | 20.5% | La Cañada | 17.2% |
| Average | 30.9% | Average | 45.1% |

Source: PRISMA.

It is evident that the importance of migration in livelihood strategies of rural communities differs significantly among households. In Las Vueltas, agriculture is still, by far, the dominant livelihood strategy, although its importance differs among communities. At the municipal scale, agricultural activities are almost completely dedicated to subsistence farming of basic grains for ensuring food security. According to a household survey conducted in 2002 in Las Vueltas, 89.1% of households grew corn and 77.3% cultivated corn and beans (Barry Shelley 2004, as cited in Rosa, Kandel and Cuéllar, 2006). In another survey carried out in 2005,³ results showed that nearly two-thirds of households without migrants depended on subsistence farming as their primary source of sustenance (Rosa, Kandel and Cuéllar, 2006). Moreover, even in households with migrants, over 50% of households still depended on agriculture (subsistence and commercial farming), while remittances constituted the second source of sustenance for 23% of the families (Rosa, Kandel and Cuéllar, 2006). One of the few forms of agricultural diversification in Las Vueltas is the purchase of animals (cows, chickens and other barnyard animals).

³ As part of the research carried out in 2005, a random sample survey was conducted in all the villages of the municipality of Las Vueltas and selected villages of Yucuaiquín.

Noteworthy differences exist within Las Vueltas. In El Sicahuite and Los Naranjos, families depend fundamentally on subsistence farming and do not receive remittances. In contrast, in San José de La Montaña, the village with the greatest number of households with migrants (42.8%), some 58% report depending on remittances as their primary source of sustenance. For those households without migrants in San José de La Montaña, the large majority rely almost exclusively on subsistence farming for their sustenance (81%).

In Yucuaiquín, 34% of households without migrants reported that non-agricultural related activities – such as sewing, carpentry and handyman work – are their principal source of sustenance, while 66% depended primarily on agriculture. In contrast, remittances represent the principal source of sustenance for 62% of households with migrants and 22% report that agriculture is their principal source of sustenance. Nevertheless, the contrast between communities is dramatic: in La Cañada, the majority of families depend on subsistence farming, while in Las Cruces, Las Cabañas and Candelaria the principal source of sustenance for households with migrants is remittances (75%, 69% and 67%, respectively). In both municipalities, the majority of households without migrants are subsistence farmers.

The differentiated impacts of migration not only reflect deepening levels of social differentiation, but also have significant repercussions on the ties families have to the land and the natural resource base. Las Vueltas is a fundamentally agricultural municipality, despite significant variations in the importance of remittances among the different villages comprising it (as exemplified by San José de La Montaña, where more than 40% of households report migrants). Accordingly, there are more ties to the land in Las Vueltas, where 46% of the households own land, than in Yucuaiquín, where only 28% of households own land.

In Las Vueltas, the average size of the land owned by families with migrants is larger than families without migrants (2.4 manzanas and 1.4 manzanas, respectively).⁴ Moreover, very small landholdings (of no more than ¼ manzana) are concentrated among families without migrants. In Yucuaiquín, where renting land is predominant, this form of accessing land is relatively more common for the families without migrants among all the villages analyzed.

The diverse strategies that rural families adopt suppose different levels of dependency on the natural resource base as well as differentiated impacts. In the case of rural families with migrants, there are fewer ties to the land as their livelihoods are more linked to urban activities, depending less on agriculture and more on remittances for their subsistence.

⁴ One manzana is equivalent to 0.7 hectare.

Similarly, this has generated changes in consumption patterns, provoking in Yucuaiquín, for example, increasing amounts of trash and greater demand for water.

However, the persistent dependence on subsistence farming for a significant proportion of rural households is striking. The data show that many rural households depend on subsistence farming as their principal source of sustenance, more so in Las Vueltas than in Yucuaiquín. This dependency is particularly evident among households without migrants, as much so in Yucuaiquín as in Las Vueltas. Ironically, the poorest depend more on agriculture for subsistence farming, but have less land, consequently they form a nucleus of hardcore, entrenched poor who cannot emigrate nor diversify their livelihood options. This is leading to increased social and economic disparities in rural areas as well as the formation of an ever more hardcore group of rural poor.

Nueva Concepción

Nueva Concepcion is one of many rural municipalities in the northern part of the country that is located along the projected Longitudinal del Norte Highway (known as the CLN for its Spanish initials). This highway forms part of a larger megaproject that seeks to build a Central American Logistical Corridor and transform the region and El Salvador into an international logistical hub for commerce. This plan requires massive amounts of public funds for building modern highways that can serve as a “dry canal” for interoceanic commerce between the Pacific and Atlantic oceans (see Map 6). The study in Nueva Concepción draws attention to how megaprojects influence local dynamics, looks at the relationship among megaprojects, migration and livelihood strategies and thus, informs sustainable rural development initiatives, programs and policies.⁵

⁵ The research in Nueva Concepcion was carried out as part of a larger study conducted by FLACSO-Costa Rica and PRISMA entitled *Megaproyectos regionales y mercados de laborales de los trabajadores migrantes en América Central*, (to be published) which explores the relationship between the development of megaprojects in Central America subordinated to processes of transnational accumulation and their effects on the formation of regional migrant labor flows, social differentiation and territorial dynamics.

Map 6. Longitudinal del Norte highway with interoceanic canals connections



Source: Prepared by PRISMA, based on Mesoamérica / CCAD-BM 2002 GIS database; Longitudinal del Norte highway and Interoceanic Canal, based on CND (2000), PNOTD (2004) and MOP (2007).

Despite efforts dating back to the 1950s to construct a highway across the northern frontier, this initiative only got off the ground in 2007 as a result of funding acquired by the Salvadoran government from the United States Millennium Challenge Corporation (MCC) as part of a five year program whose objective is to “reduce poverty in the Northern Zone through economic growth,” commonly known as the “Northern Zone Project” (“Proyecto Zona Norte” in Spanish).

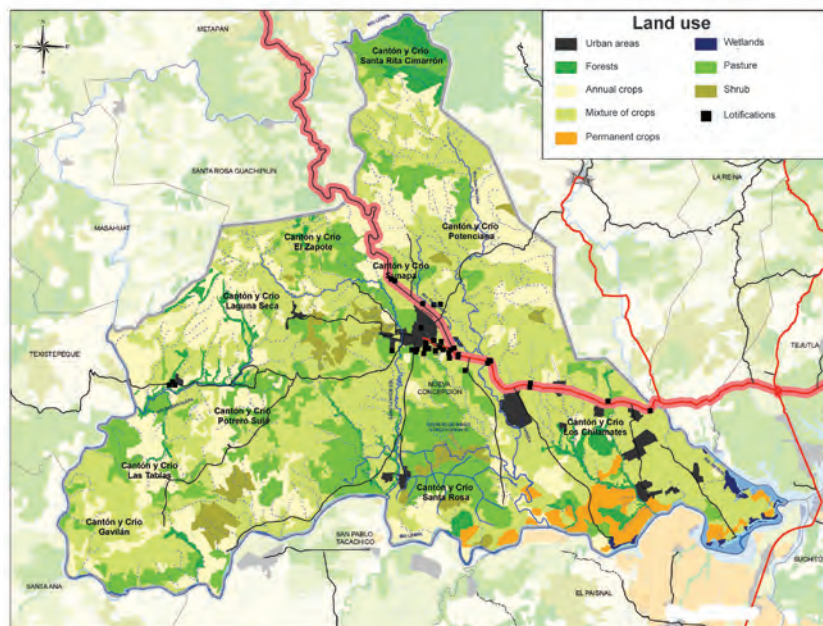
The Northern Zone Project includes three components: (1) human development, (2) productive development, and (3) transportation. The distribution of the funds demonstrates a clear preference towards the construction of the highway (of a total of \$460.94 million, \$233.56 million is designated to the transportation component, \$95.07 million to human development and \$87.47 million to productive development; the remainder of the funds cover administrative, monitoring and evaluation costs). According to the promoters of the Northern Zone Project, *“the Transportation project addresses the issue of the Northern Zone’s physical isolation. Road infrastructure improvements are expected to lead to new economic opportunities for rural households, lower transportation costs, and*

decreased travel times to markets and social service delivery points.” This is consistent with traditional development paradigms that link poverty reduction solely to economic growth – in this case through enhancing commerce and services through logistical connectivity. Locally, in contrast, the generalized opinion of Nueva Concepción residents is one of skepticism, given that the bulk of the funds are used for constructing the highway. Indeed, some community members consider the highway a threat, stating that increased connectivity could lead to augmenting the already existing problems in the area with crime and contraband. However, given that Nueva Concepción is endowed with extensive flatlands and irrigation infrastructure that favor both cattle ranching and agricultural production, significant expectations remain for stimulating the depressed local economy as a result of the productive development component of the project.

In Nueva Concepción, as in other municipalities throughout the country, remittances play a key role in facilitating upward socio-economic mobility, or at a minimum, serving as a safety net against poverty. However, as illustrated in the previous cases, remittances are not distributed equally among the population, and accordingly can augment existing conditions of exclusion and differentiation. This appears to be the case in Nueva Concepción, where overall poverty levels diminished but inequity levels increased. According to a study by Damianovic (2009), poverty levels fell from 68.23% in 1992 to 51.28% in 2007; however, during the same period the Gini index on inequality increased from 0.4 to 0.46. Given that productive activities in the zone were depressed during this same period, and previous to this there was a wave of out-migration, remittances contributed to this seemingly contradictory situation of lowered levels of poverty with increased levels of inequality. Indeed, analysis of census data for Nueva Concepción (MINEC, 2009) indicate that persons receiving remittances have more access to land and housing, as well as to basic services such as potable water, electricity and telephones.

Over the past several years, as a result of the crisis in the agricultural sector, grazing lands have been converting into informal housing development lots (known as *lotificaciones* in Spanish), particularly in areas close to the center of the town and alongside the Longitudinal del Norte highway. The proliferation of these semi-urbanizations is directly related to migration, as Salvadorans abroad or families that receive remittances invest their money in buying real estate. This dynamic, in turn, is driving the land market. One local real estate agent stated that 80% of her clients are migrants or recipients of remittances from abroad. The real estate market has also been spurred by speculation that occurs around the projected capital gains associated with the construction of the highway. Given the agricultural crisis, it is considered by many to be more profitable to sell one's land and get out of financial debt than to carry out agricultural activities. As a result, a new process of 'gentrification' is emerging that is obliging households without migrants to live farther away from basic services, given the continual rise in land markets and housing.

Map 7. Land use in Nueva Concepción



Source: Prepared by PRISMA, based on CORINE LAND COVER and MARN (2002).

The local government has been trying to counteract this unplanned growth of *lotifcaciones* with little success. The speed of the land use changes outweighs the local institutional capacity to control the disorderly growth of urbanizations. The introduction of the Northern Zone Project has not only been unable to counteract this tendency, but has accelerated processes of exclusion.⁶ Given the prevalence of migration coupled with decades of neglect to the agricultural sector, the construction of the highway is transforming the region into a “transit route” – increasing competition from neighboring countries and facilitating the legal and illegal commerce of goods and people (Cartagena 2010). Moreover, design problems in the productive component of the project further deepen processes of exclusion. The productive component targets producers with a minimum level of accumulation that are able to reinvest in their business; this, however limits the inclusion of subsistence farmers– in other words the poorest of the poor.

This situation highlights the limitations of development strategies that focus solely on stimulating economic growth without addressing issues of distribution and social exclusion. To the extent that no other large investments or programs exist to promote economic activities based on a more endogenous and inclusive role for the territory’s

⁶ The exact distribution of the funds has changed over the course of the implementation of the Project; however, the changes have led to more funds going towards the transportation component (MCC 2010).

resources, the conversion of the zone into a transit route will probably increase disparities and may even crowd out alternative models of local development.

Despite this adverse context, an innovative effort is underway to build social cohesion through integrating migrants in processes of participatory territorial planning. Recently, with political shifts at the national and local level, an initiative supported by the Ministry of Foreign Relations and the mayor's office is underway, to link together migrants with local actors in processes of local territorial development. Central to this effort was the formation of the Nueva Concepción Migration and Development Steering Committee (known as COMIDEN for its Spanish initials). COMIDEN is comprised of local institutions and citizens and focuses on strengthening territorial identity and social cohesion through the participation and links between the Nueva Concepción diaspora and local actors of their municipality. This effort is particularly promising given the focus on strengthening territorial identity and social cohesion as key components of local development. However, the challenges are immense, and it is yet to be seen whether this effort can mobilize and put forth alternative development strategies quickly enough to address and turn around the speed of changes that are occurring in Nueva Concepción.

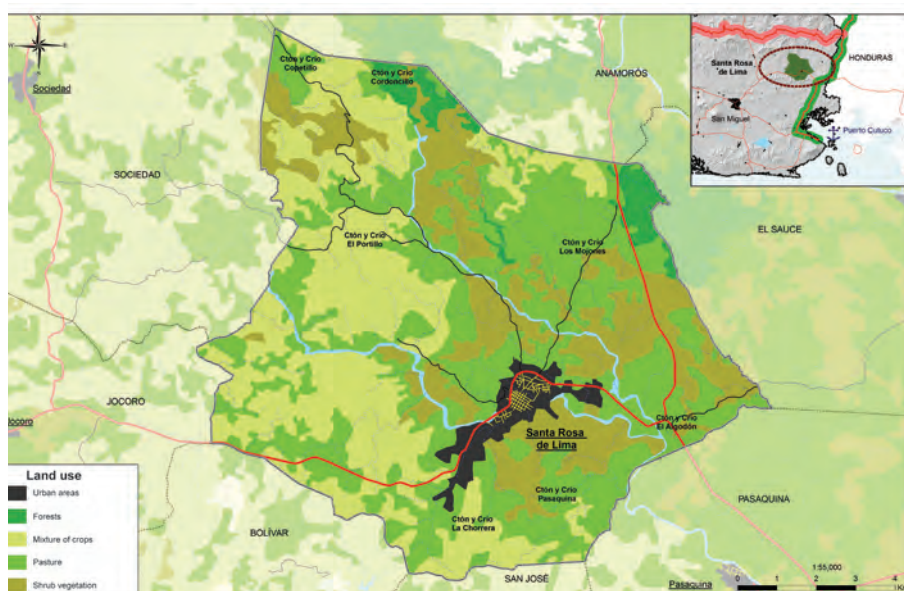
Santa Rosa de Lima⁷

Santa Rosa de Lima is located a mere 15 km from the border with Honduras; its proximity to the border stimulates the mobility of goods and people in the zone. Indeed, migration is a central part of daily life in the municipality where diverse migratory flows coexist. A significant part of the population has immigrated abroad, primarily to the United States. Additionally, there is long history of internal and cross-border migration tied to commerce and seasonal harvesting of crops, such as sugarcane and coffee. More recently, Santa Rosa de Lima has also become the site of significant immigration of Nicaraguans and Hondurans in search of dollars⁸ who fill the need for labor left behind as Salvadorans migrate out. The Nicaraguan and Honduran immigrants generally insert into unqualified poorly remunerated jobs, and earn wages that oscillate between \$5 and \$7 dollars a day. In some cases, this includes precarious lodging and meals. However, these conditions are better than those of their home countries, where the daily wage is approximately \$3 dollars without lodging or meals.

⁷ The research in Santa Rosa de Lima was carried out as part of a larger study conducted by FLACSO-Costa Rica and PRISMA entitled *Cohesión Regional y Movilidad Humana Intra regional: Los nuevos órdenes de la territorialidad social en Centroamérica*, which explores the territorial reconfiguration taking place in Central America as a result of migration and social mobility dynamics.

⁸ The Salvadoran economy was dollarized in 2001 and with the exception of Panama, is the only dollarized country in Central America.

Map 8. Land use in Santa Rosa de Lima



Source: Prepared by PRISMA, based on CORINE Land Cover and MARN (2002).

Santa Rosa de Lima is known as a dynamic center for commerce. Aside from commerce, the traditional economic activities include agriculture, cattle ranching, commerce and mining, but with the loss of profitability in agriculture and cattle ranching, agricultural production is principally subsistence. Dairy producers complain that this sector is no longer profitable, due to the free trade agreement among the Central American countries with the United States (CAFTA), but also as a result of unfair competition from the smuggling of dairy products from Nicaragua and Honduras. Contraband has enormous consequences for the competitiveness of national producers, given that in El Salvador input and labor costs are higher than in neighboring countries.

In this context, it is not surprising that remittances are an important part of the livelihood strategies of a significant portion of the population. According to UNDP (2005), 46% of households in Santa Rosa de Lima receive remittances from migrants abroad. Remittances are allowing some families to purchase land and ranch animals; however, most of the remittances are spent on basic household consumption and are not invested in developing businesses. When investments are made they are usually directed to improving housing – either through home improvements or the purchase of new homes – and acquiring potable water, electricity, cisterns for storing water, covered floors, more space, etc. Remittances are

also commonly spent on health care and education. Given that there are few high schools in the countryside of the municipality, most of the rural youth able to attend high school come from households that receive remittances, as they are able to afford the daily costs of moving back and forth to town.



Urbanization processes have accelerated as remittance receivers invest in housing closer to the urban center of the municipality. Additionally, the nearby construction of two infrastructure megaprojects (Longitudinal del Norte Highway and the Port of Cutuco) has further spurred some investments. Linked to these trends is a rapid increase in the conversion of vast expanses of land into semi-formal housing developments (known as *lotificaciones*), the proliferation of gated communities, real estate growth and land market speculation. This, in turn, is increasing the demand and pressure on key resources and services.

The challenges faced as a result of these dynamics are exemplified well when considering the situation of water resources in Santa Rosa de Lima, where problems with water quality and shortages are widespread. Santa Rosa de Lima faces increasing demands for water given the processes of housing subdivisions, commerce and services, as well as an increased incidence of droughts due to climate change. At the same time, these urbanization processes are contaminating water sources and producing all types of waste (liquid and solid). Residents are resolving their water needs through individual solutions, such as the installation of cisterns, the purchase of bottled water, etc. Nevertheless, those that do not have the financial resources to pay for these options –immigrants and the original inhabitants who are not tied to migratory or illicit circuits– are condemned to

collect water from river banks and brooks, which tend to be highly contaminated, not only with waste, but also from contaminants that remain from past mining in the area.

These dynamics are spurring new expressions of differentiation (with regards to labor insertion, housing conditions, resource access, citizen rights, etc.) as well as eroding social cohesion. A perverse situation is emerging whereby migration and illicit activities (such as contraband but also the trafficking of drugs and persons) emerge as the most immediate and reliable mechanism for ensuring social and economic mobility. As a consequence, a new socioeconomic hierarchy exists, in which mobility of goods and people serve as a springboard allowing some people to accumulate capital, while others are excluded from any form of mobility.

Owners of transnational companies – in particular financial services – are the biggest beneficiaries of remittance transactions as well as the movement of money associated with illicit activities. The presence of this sector in Santa Rosa de Lima is evident, although their proprietors do not reside there. Also high in the new socioeconomic hierarchy are persons involved in illicit activities. Their location differs according to the size and type of their operations. Historically, the region is known as a key entry point for the smuggling of dairy products; however, there is growing evidence of the smuggling of narcotics as well as people (the latter is popularly known as “coyotaje” and refers to the transportation and smuggling of persons into the United States).

The next strata in this hierarchy is composed of households with migrants, who are experiencing visible improvements in housing, education and the acquisition of various other types of goods and services. This group also includes owners of small businesses who, despite having limited earnings, are able to generate some profits for acquiring various comforts and/or savings. Immigrants from Nicaragua and Honduras are further down on the social ladder as they do not have work documentation, and so are obliged to work in low paying jobs under precarious conditions. However, they are often able to save sufficient money to allow them to purchase some goods in their country of origin (ranch animals, land, etc.). At the bottom of the rung are households without migrants, which are struggling between poverty and extreme poverty. These families do not have remittances nor do they have the social contacts needed for emigrating.

The scenario in Santa Rosa de Lima is particularly critical given the prevalence of illicit activities, increasing social differentiation and weakened local authority for addressing the challenges the locality faces for ensuring sustainable management and development of the territory's resources. Moreover, these dynamics are degrading the existing natural resource base as well as the territory's social and institutional fabric, putting at risk the long term governance of the territory.

Conclusions

These case studies confirm that despite migration and increased non-agricultural employment, large numbers of rural households depend on subsistence farming for food security. More importantly, the study reveals that the poorest depend more heavily on subsistence farming, yet have less access to land. Consequently, this group is turning into a nucleus of hardcore poor – who are unable to migrate nor diversify their livelihood strategies.

Related to this finding is the evidence that there are increasing disparities in rural territories and new forms of differentiation caused by migration. In fact, there are clear differences between families with migrants and families without migrants (e.g., a proliferation of closed communities, and increasingly evident differences in labor insertion, access to resources, etc). This, in turn, undermines social cohesion, a critical condition for facilitating agreements among actors for ensuring sustainable management of natural resources and territories. A lack of social cohesion increases pressures and competition for the use and control of the natural resource base and breeds conflicts. These dynamics erode the social and institutional fabric of territories, ultimately posing a serious threat to territorial governance.

The case studies also point to the existence of processes of regeneration and recuperation, thus contradicting long-standing assumptions that associate populated landscapes with natural resource degradation. They also draw attention to the critical roles food security and access to natural resources play in rural livelihoods. This, in turn, reflects the need for reevaluating the relevance of traditional paradigms for the understanding of and the relationship between natural resource management and livelihood strategies. Clearly, traditional thinking is insufficient for capturing and understanding this complex relationship, and even less up to the task of shedding light on and promoting synergies that combat rural poverty as well as sustainably manage the natural resource base of rural landscapes.

Grappling with complexity implies taking into account the specific contexts, territorial dynamics and livelihood strategies. The findings demonstrate the limitations of simplistic approaches focused solely on economic growth without taking into account the vital role social cohesion plays in achieving sustainable and equitable development. Most importantly, the findings underscore the potential of a new approach, one that starts with the recognition of the key role rural actors and communities can play in ensuring sustainable and equitable development. Furthermore, the complexity of rural livelihood strategies provides resiliency against rapid drivers of land use change. Adopting this

perspective brings into focus the need for developing policies and programs that are based on revaluing and strengthening rural livelihoods. Given that there is no one-size-fits-all model of what needs to be done to strengthen rural livelihoods, future analysis that examines the continuum of rural livelihood strategies as well as the continuum of pressures or conflicts that exist over territorial resources, is fundamental to adequately understanding this relationship.

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Chapter VI

Migration, Remittances and Natural Resource Management in Olancho, Honduras

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Honduras is a highly rural country that has experienced heavy rates of international migration in the past two decades. An estimated 11.3% of households have at least one migrant. This study analyzes the causes and effects of migration in rural communities where livelihoods are based on the use of natural resources, such as water, soil, forest and biodiversity. Small-scale producers were hard hit by the drop in international coffee prices and disappearance of agricultural jobs. Socio-environmental disasters have increased the country's vulnerability to hurricanes, which are increasing in severity with climate change. In this scenario, expansion of pasturelands is feeding the steep rise in the country's vulnerability to climate risks. In this context, Olancho is one of the three departments in the country with the highest rates of emigration, primarily to the United States. The majority of migrants are male and young; however, one-third are women. Large tracts of forest combined with large areas devoted to cattle ranching dominate land use in the department. Because of migration, households with greater access to land have a family member outside the country and receive income in the form of family remittances; their primary investment is in the purchase of land and cattle, although much of the land is unused. The dearth of workers is an obstacle to maintaining agriculture. Households involved in soil management for erosion control and fertility improvement have less of a relationship with migration, and therefore, less remittance income, and are more dependent on livelihoods related to natural resources, subsistence agriculture and the use of firewood for cooking. Even though male migration contributes to the feminization of agriculture, decision-making in the home continues to be male dominated, even when the men are living abroad.

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Introduction

In Honduras, as in the rest of the countries of Latin America, few things have a greater socioeconomic impact than migration processes. At least this is very clear in the region, given that our economies are, to a great extent, dependent on the remittances that migrants send back to their home countries. Consequently, in recent years, governments, international cooperation, and of course the beneficiaries of migrants, have shown a great deal of interest in studying the impact of migration on the country. These efforts focus primarily on economics. Nevertheless, migration needs to be looked at and analyzed beyond that income. Its impact goes further than family economics and national macroeconomic indicators to include cultural, social and environmental aspects, with implications at the family, community, municipal, national, and even international levels.

Analyzing the impact of migration is quite complex; in fact, most studies that attempt to weigh its effect have concentrated on remittances as a driving force of national economies. This valid – yet simplistic – approach tends to slant any assessment of the impact of migration solely toward positive scenarios. However, migration as a phenomenon involves much more than sending money back, and as such requires a multidimensional analysis that scrutinizes not only remittances, but the people, communities, region and countries involved. That is, a dynamic retrospective and prospective analysis is needed, taking into consideration economic, social, ecological, cultural and even psychological factors, in both migrants and the population that stays behind.

A large body of literature now exists on studies that contain separate analyses of the social, cultural or economic implications of the exodus of these people from their hometowns. Studies can be found that discuss sociocultural, economic and even political impact in great detail (Garcia et al. 2007).

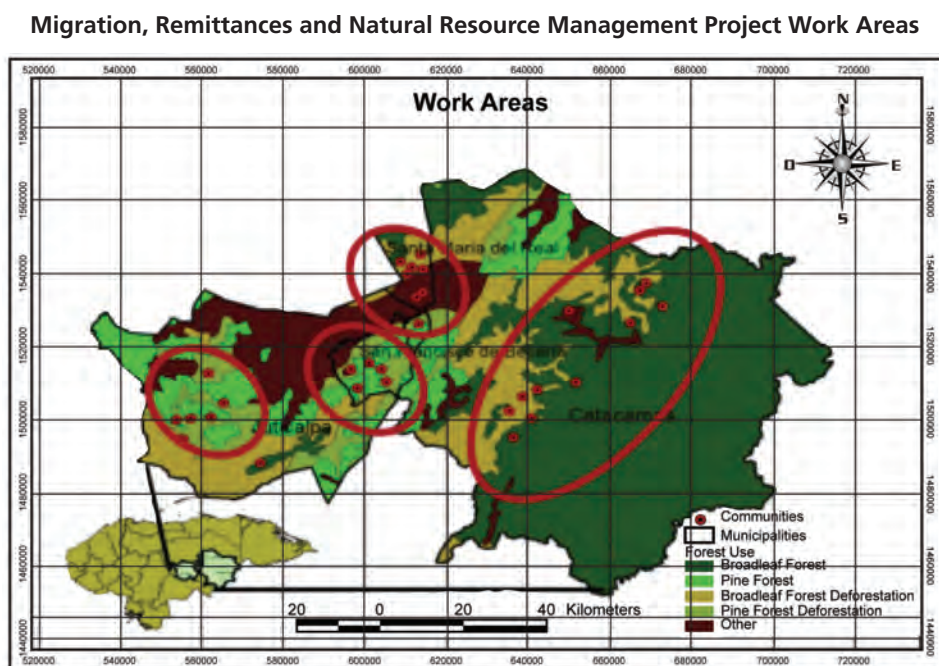
In the case of Honduras, specifically in Olancho, rural communities – many experiencing heavy migration – base their survival on the use of natural resources – mainly water, the soil, forests and biodiversity – and the services they provide. Therefore, the shortage of policies to support these marginalized sectors has led to the adoption of unsustainable livelihoods that produce ecological degradation and, as a result, greater poverty.

To date, there are few initiatives and little concrete evidence that would make it possible to assess the impact of migration on natural resource management; accordingly, it is logical to assume that this knowledge gap makes it more difficult to understand the issues and, consequently, to take action. In this regard, we now need specific research studies that will lead to a better understanding of this new dynamic; improve the capacity of

local actors for response, mitigation and empowerment; and guide actions, along with policies to be followed to insure migration processes that empower development, but on a sustainable foundation.

This study aims to close this gap in knowledge, to contribute to an improved understanding of the relationship between migration and natural resource management. The central hypothesis is that livelihoods adopted by a family, community or region may vary substantially as a result of migration processes, as a product of the relationship and interaction among people and natural resources, and the management of natural resources changes vis-à-vis this new reality. That is, the loss of human resources, the increase in capital, or simply a new family situation that is the product of emigration, could have an impact on natural resources. This study looks more closely at and contributes to this understanding.

Figure 1. Geographical location of the area of study



Context

The area of research includes the municipalities of Santa María del Real, Catacamas, Juticalpa and San Francisco de Becerra, all located in the eastern Honduran department of Olancho (Figure 1). According to the National Statistics Institute of Honduras (INE, 2008), the four municipalities in the study have an estimated population of 232,057 inhabitants, which is 47.3% of the department's total population (97% ladino; 3% other ethnic groups). The territory covered by these municipalities is 11,119.7 km², or 45% of the department, with an estimated population density of 20 inhabitants per km².

According to the Comprehensive Development Plan for the Department of Olancho (2005), 62% of the department's GDP is generated in these municipalities, and they possess natural areas of local, national and international importance. Such is the case of El Boquerón Monument and Natural Reserve, Patuca National Park, Tawahka Asangni Reserve, Plátano River Biosphere, and Sierra de Agalta National Reserve.

Local Livelihood Strategies

In the municipality of Santa María del Real, the priority communities are inside Sierra de Agalta National Park. This area is crucial to the water supply for the local population and also for the lowland communities that include the urban center. Farm size in the area ranges from 1 to 6 hectares (ha). The principal productive activity is coffee growing. Those with more land grow basic grains, mainly corn and beans. Agriculture uses traditional practices such as elimination of the forest, agricultural field burning, and unconstrained use of chemical products.

Communities studied in the municipality of Juticalpa are located in micro-watersheds strategic for water production. Despite the fact that farm size¹ is relatively larger² than in other areas, productive efforts focus primarily on maintaining small plots for growing corn, beans, cassava and rice. Mountainous regions are home to small-scale livestock and coffee growing operations.

Communities in the municipality of San Francisco de Becerra enjoy much better living conditions than the previous ones. This municipality has significant vegetation cover. The principal productive activities are beef cattle operations, along with small-scale dairy production, agriculture and coffee growing. Farm size ranges from approximately 3.5 to 84 ha (average: 4.6 ha). The main income is derived from farm production and remittances.

¹ Only 12% possess title deeds to their land.

² From 1.4 to 7 ha.

In the municipality of Catacamas, work was done in communities located in the southern part of Patuca National Park, which are characterized by their migratory origins. Most families came from other Honduran departments. As this is a relatively isolated area, parcel size is the largest in the region. The principal activities are agriculture and livestock. This area has large cattle ranches covering 140 to 350 ha, whose owners have relatives abroad.

Natural Resources: Dynamics and trends

Spanning 11,249,200 ha, Honduran territory is largely suitable for forestry (78%) due to its irregular topography. Forests (2000) cover around 5,700,000 ha, or 50.7% of the territory. However, annual deforestation – estimated at 80,000 to 120,000 ha – is reducing this percentage at an alarming rate.

The country possesses a great variety of ecological zones that are home to a broad diversity of plants and animals – 10,000 to 15,000 plant species, over 400 broadleaf forest species, 7 pine species, and over 1,000 tree species including non-timber shrubs. Additionally, there are at least 700 species of birds, 112 mammals, and 196 reptiles. The country is a crucial corridor for the movement of species between North and South America (SERNA,³ 2005b). A large part of this natural wealth is in the department of Olancho. It is estimated that close to 50% of the country's forest cover is located in this department, and in the department of Gracias a Dios, along with an unquantified amount of biodiversity. Paradoxically, most of the deforestation in the country is occurring in this department (ICF, 2008). Additionally, production in this area is very important for meeting the country's demand for agricultural and livestock products.

Notwithstanding the foregoing, the advancement of the agricultural frontier, deforestation, soil degradation, vulnerability to disaster, loss of biodiversity, significant reduction in the amount and quality of the water, along with poverty, all seriously jeopardize its conservation.

Migration: Dynamics and trends

According to World Bank data (2005), in 1970 there were 82 million international migrants in the world; in 2000, there were an estimated 175 million, and in 2005, there were 200 million. These rising numbers show clearly that this phenomenon is growing and will continue to do so in the future. Present-day migration, unlike that which took place during the period of armed conflicts in the region, is fundamentally work-related in nature. It is driven by the inequality and asymmetry, also growing, between countries in

³ Secretariat of Natural Resources and the Environment.

the North (developed) and in the South (underdeveloped). Nevertheless, another recent cause of migration is the frequent occurrence of “natural” disasters and environmental degradation in people’s home countries, principally in Central America.

In the case of Honduras, based on direct and indirect estimates, it has been calculated that in the early 1980s, there were 50,000 to 125,000 Hondurans abroad. The United States census in 2000 reported 217,569 people of Honduran origin; whereas, by 2006, the Multipurpose Household Survey in Honduras found 179,051 households with emigrants, which represent approximately 11.3% of the country’s households. Of these, some 53% are urban and 47% are rural. The principal emigration destination was the United States (91.4%), followed by Mexico (2.2%), Spain (2.1%) and other Central American countries (1.9%) (Flores, 2008). Olancho is the department with the third highest migration; in the municipalities in the study, 28% of households had someone currently living abroad. The estimated number of migrants is 22,824 people, almost one-tenth of the total population of the department (RDS-HN 2006⁴).

Methodology

This study included qualitative and quantitative information. The former was primarily obtained through the instruments suggested by the Social Analysis System.⁵ The latter was acquired through (quantitative-qualitative) surveys and the use of Geographic Information Systems. Qualitative data made it possible to explore and interpret local understanding of migration, remittances, and natural resources. Additionally, retrospective analysis was done, which showed whether or not these variables interacted over time (cause-effect relationship), as well as gender dynamics. The quantitative information made it possible to estimate the impact both migration and remittances have had on natural resources in the municipality, using the household as the sampling unit.

The following methodological design and sequence were used: a) Preparation of a conceptual framework for the project for discussion with different actors; b) Analysis of the practical application of the research questions, as well as the implementation sequence; c) Design of information gathering methods and instruments; d) Definition of fieldwork strategies and implementation; e) Definition of criteria and ways to organize and analyze the information gathered; f) summary of each stage implemented; g) Analysis, discussion and feedback on results.

⁴ Part of the project “Impact of Migration and Remittances on the Local Economy in Olancho.”

⁵ www.sas2.net

Results

Characteristics of emigration in Olancho

Who are the migrants from Olancho?

About 52% of migrants are between the ages of 20 and 30 years; 26% are under 20 and the remaining 32% were over 30 (Table 1). The data coincide with that reported by the EMYRELO survey (RDS, 2006), where average migrant age is reported to be 25.4 for the entire department of Olancho. Likewise, national data (INE, 2006) indicate that the majority of migrants are largely youth, with 60% aged 20 to 34 years.

Table 1. Profile of migrants from study locations

| Age (years) | % | Sex | % | Relationship | % |
|-------------|----|--------|----|--------------|----|
| < 20 | 26 | Male | 65 | Children | 53 |
| 20 - 30 | 52 | Female | 35 | Spouse | 41 |
| > 30 | 32 | | | Other | 6 |

Source: Author.

The migrant population is composed of 65% men and 35% women, primarily (53%) children of the current head of household. The proportion of migrant men and women differs from that reported at the national level (73% men), which indicates a strong trend toward feminization of the migration process in the area. The number of migrants per family varies from one to four, with one being the most frequent (71%). In households that receive remittances, 56% are headed by men and 44% by women. The amount received ranges from USD\$50-200, with an average of USD\$114.00 per month.

Average income in households with migrants is L5,515 almost double that of households with no migrants, which have an average monthly income of L2,865.00. In both cases, income is just equal or well under the official cost of living (not necessarily the real cost of living) for a family, which is L5,500.00.

The greatest flow of migrants in the area took place in 2000 and 2001, accounting for 65%. About 28% emigrated prior to 1999, and the remaining 7% did so after the year 2000. The years with the highest migration coincide with periods of great crisis following the impact of Hurricane Mitch, including the fall in international coffee prices in 2001.

Lack of jobs (84%) and crop loss (5%) were the main reasons for migration. About 85% of migrants worked at some agricultural activity prior to migrating. The emigration destination was 100% to the United States of America. Sale of land or farms, or loans from either relatives or third parties were the main sources of funds to pay for the trip, with 35%, 48% and 17%, respectively.

According to figures from the EMYRELO survey (RDS 2006), the U.S. states preferred by Olancho migrants are Florida (31.3%), New York (17.5%), Massachusetts and Missouri. They primarily reside in the cities of Miami, New York, Boston and Saint Louis. The most frequently used way to travel is through the services of a guide or “coyote” (Table 2). The cost of the trip depends on the client, the route of the trip, the level of “comfort,” “efficiency of the guide,” time frame, etc., and varies from US\$2,000 to US\$10,000.

Table 2. Migrants by sex and means of travel (%)

| Means of Travel | Men | Women | Total |
|-------------------|---------------|---------------|---------------|
| Visa | 3.50 | 6.00 | 4.30 |
| Guide or “coyote” | 68.00 | 85.60 | 73.80 |
| On their own | 28.50 | 8.40 | 21.80 |
| Total | 100.00 | 100.00 | 100.00 |

Source: Author.

Why did they leave? Root causes and natural resources

The degradation of natural resources is understood to be the condition by which the resource’s productive capacity has been lost, or there is otherwise an incapacity to produce goods and services in the quantity and quality required by human beings. According to the International Organization for Migration (IOM):

“Environmental migrants are persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes, or choose to do so, either temporarily or permanently, and who move either within their country or abroad” (OIM, 2008).

As mentioned above, lack of employment (84%) and crop loss (5%) are the principal reasons for migrating. In this regard, based on the household survey, it was determined that 85% of people that migrate (men or women) were linked (as employees or producers)

to agricultural activities. Consequently, it can be supposed that the 89% mentioned migrated due to a reduction in levels of production (reduction of agricultural land), either due to natural phenomena or cumulative soil degradation. This reasoning makes sense and becomes clear when comparing this data with rural unemployment trends over the last 13 years. It is also due to the fact that real agricultural wages have remained the same for the last 15 years, which means there is little or no chance of escaping poverty (Table 3).

Table 3. Rural unemployment rates (in thousands of people) and agricultural wages

| YEAR | Rural EAP* | Men | Women | Unemployment | Agricultural EAP | Real Wage (Lempiras) |
|------|------------|----------|--------|--------------|------------------|----------------------|
| 1997 | 981.02 | 812.04 | 168.97 | 15.60 | | 36.59 |
| 1998 | 1,002.02 | 824.85 | 177.17 | 16.70 | | 37.48 |
| 1999 | 1,023.48 | 837.87 | 185.61 | 17.80 | | 39.30 |
| 2000 | 1,045.39 | 851.08 | 194.31 | | | 37.51 |
| 2001 | 1,072.38 | 867.09 | 205.29 | 28.70 | | 36.36 |
| 2002 | 1,100.07 | 883.41 | 216.66 | 22.00 | | 38.42 |
| 2003 | 1,128.47 | 900.03 | 228.45 | 36.30 | | 38.90 |
| 2004 | 1,157.61 | 916.96 | 240.65 | 49.90 | | 39.68 |
| 2005 | 1,187.50 | 934.21 | 253.29 | 28.90 | 680 | 40.20 |
| 2006 | 1,218.26 | 952.09 | 266.17 | 24.00 | 684 | 41.99 |
| 2007 | 1,249.81 | 970.31 | 279.51 | 31.40 | 675 | 43.01 |
| 2008 | 1,282.19 | 988.87 | 293.31 | | | |
| 2009 | 1,315.40 | 1,007.80 | 307.60 | | | |
| 2010 | 1,349.47 | 1,027.08 | 322.39 | | | |

Source: Author, using ECLAC and FAO data from several years.

* EAP: Economically Active Population.

Using participatory analysis (workshops), it was determined that 61% (causal values 1, 2 and 3 from Table 4, over the total of 159) of local migration is rooted in conditions that are related to degradation and a lack of access to natural resources. This phenomenon increased significantly following Hurricane Mitch (in October 1998), as this tropical storm had an enormous effect on the means of production and natural resources.

Table 4. Causal dynamics analysis applied to migration processes

| | Crop loss | Lack of employment | Property purchase | Improve children's education | Lack of technical assistance in production | Migration | Total |
|--|-----------|--------------------|-------------------|------------------------------|--|-----------|-------|
| *1Crop loss | | 10 | 10 | 9 | 10 | 10 | 49 |
| Lack of employment | 10 | | 10 | 10 | 10 | 10 | 50 |
| *2Property purchase | 0 | 0 | | 10 | 10 | 0 | 20 |
| Improve children's education | 0 | 0 | 10 | | 0 | 2 | 12 |
| *3Lack of technical assistance in production | 10 | 3 | 0 | 6 | | 9 | 28 |
| Total | 20 | 13 | 30 | 35 | 30 | 31 | 159 |

*1, *2 and *3 Causes related to degradation of natural resources.

According to the assessment made by the actors, both in the household survey and the municipal workshops, and taking as a reference the period prior to migration (2000) and the present, there is agreement that forest area has decreased and continues to decrease rapidly. The amount and quality of water has decreased considerably, and soils have lost much of their productive capacity. The actors identified deforestation, illegal logging, pesticide contamination of water, coffee processing, lack of law enforcement, reduced soil fertility, and nonexistent or inconsistent technical assistance as the principal causes of degradation both before the wave of emigration and at present.

Remittances Used for Investment: Constraints and implications for natural resources

Based on the household survey, 12% of households make some kind of investment in their farms with money from remittances. The main type of investment has basically consisted of fencing off pastures and fields, and improvements on already existing small-scale infrastructure. Of families surveyed, 42% had purchased land with remittance money. At the time of acquisition, this land was forest or overgrown fallow land (42%), being used for coffee (51%), or dedicated to other uses (grains and others) (7%).

Following purchase (that is, current use), 35% of such land is used for extensive livestock farming, and the other 65% for coffee growing. Purchasing land that is currently used for extensive livestock farming is unattractive for several reasons: 1) few people are interested in selling; 2) the cost can be up to 260% higher than fallow land; 3) fallow land is more appropriate; after burning, natural pastures grow in that are heartier and of better quality.

In response to the survey question regarding the circumstances and/or reasons that determine how remittances are invested in aspects of agricultural production, the correlation analysis (chi-square test) indicated that 75% of the income is invested in livestock production and coffee growing under the following circumstances:

1. Families receive money that has been sent for that specific use (the migrant decides, advised by relatives in the country).
2. The activities (coffee growing and livestock production) are seen as fundamental for accumulating wealth.
3. Lack of manpower is a factor conducive to the adoption of livestock production.
4. Technical assistance, prices, and legalization of lands are constraints on coffee.

Many of the properties are located in protected areas. Under current legislation, the only way to legalize land (obtain title) in protected areas is to exclusively grow coffee; therefore, this option is seen as a land-tenure strategy (acquiring land deeds) for the land.

This means that 75% of the decision people make is based on the previous criteria; the other 25% is due to other criteria that were not evident in the analysis.

Migration and natural resources

Livestock farming, forests and migration

According to Sunderlin and Rodríguez (1996), Honduran broadleaf forests were the most extensive in Central America; however, they were – and continue to be – the object of rapid deforestation. Over the last few decades, one of the principal factors in this process has been the rise of livestock farming, given its need for large expanses. This is corroborated by Reyes and Villa (2008), who assert that livestock farming is becoming an activity in direct competition with forests, adding that the increase in ranching is explained (coincides) to a large extent by the receipt of remittances (Table 5).

Reyes and Villa (2008) found that in Olancho, investment in livestock farming is fostered by the lack of local manpower, which limits involvement in more labor-intensive activities. For instance, growing cotton requires six times the manpower, sugarcane seven times more, and coffee production requires 13 times that of livestock production (Williams, 1986), whereas, on average, extensive livestock farming requires a mere 6.3 days of work/ha/year (Stonich, 1993). Furthermore, considering this dynamic and that the poorest people in these areas subsist principally on income from the sale of their labor, it is logical to think that this situation becomes a driver of migration (less manpower leads to an increase in livestock farming; this increase in livestock farming means fewer opportunities and more migration). The same situation explains the growth trend that coffee production exhibits.

Table 5. Grazing, forest and coffee lands and number of migrants

| Year | Grazing lands ^a (1000s of ha) | Forest lands ^a (1000s of ha) | Rural-urban migration ^b (national and international) | Coffee lands ^a |
|------|---|--|---|---------------------------|
| 1990 | | 7,385 | | |
| 1995 | 1,530 | | | |
| 2000 | 1,508 | 5,430 | | 210,769 |
| 2001 | | | 454,364 | 216,562 |
| 2003 | | | 584,672 | 228,438 |
| 2004 | | | 654,940 | 236,376 |
| 2005 | | 4,648 | | 238,455 |
| 2006 | | | 820,053 ^c | 240,000 |
| 2007 | 1,700 | | | 250,000 |

Source: Author, using the following sources:

a) FAOSTAT. b) INE 2006 (EPH) and 2008; c) 30% are international migrants.

Growth of livestock activity and of migration

According to data from the National Agricultural Census over several years, the number of head of cattle in the country rose from 1,146,801 in 1952 to 2,077,459 in 1993, an 81.2% increase. The number of hectares of grazing land increased from 822,562 in 1952 to 1,532,957 in 1993, an 86.4% increase. However, the departments that reported the greatest increases are: Olancho +715.6%, Colón +625.9%, Atlántida +260.4%, Yoro +151.8% and El Paraíso +126.9%.

All the departments exhibiting the fastest growth rates in livestock and pastures also tend to be the areas with the highest rates of deforestation of broadleaf forest. From 1962 to 1990, forest loss was 72.6% in the Atlantic region (Atlántida, Colón and Yoro) and 45.4% in the Central region (the location of two-thirds of Olancho, Santa Barbara, Yoro, Comayagua, Francisco Morazán and El Paraíso). This same agricultural survey reported a change in head of cattle from 2,423,520 in 1983 to 2,077,460 in 1993. Following this period, the number of animals and pasturelands have been increasing, with the exception of the period right after Hurricane Mitch, when there was a significant decrease. The same behavior is observed with regard to the amount of remittances received in the country (Table 6).

Table 6. Dynamics of livestock farming, rural-urban migration and remittances

| Year | Ranches | Heads ^a | Pastureland ^b | Rural-urban migration: ^a (national and international) | Remittances ^d (US\$ millions) |
|------|---------|--------------------|--------------------------|---|---|
| 1993 | 99,912 | 2,077,460 | | | 60.0 |
| 1995 | | | 1,530 | | 94.0 |
| 1997 | 101,275 | 2,060,786 | | | 128.4 |
| 1999 | 96,813 | 1,715,386 | | | 160.0 |
| 2000 | | | 1,508 | | 409.6 |
| 2001 | 86,829 | 1,859,737 | | 454,364 | 533.7 |
| 2003 | 104,211 | 2,403,243 | | 584,672 | 860.4 |
| 2004 | | | | 654,940 | 1,143.7 |
| 2006 | | | | 820,053 ^c | 2,359.0 |
| 2007 | | | 1,700 | | 2,600.0 |
| 2008 | 96,622 | 2,544,888 | | | |

Source: Author, based on data from:

a) INE 2006 (EPH) and INE 2008.

b) FAOSTAT, in thousands of hectares.

c) 30% are international migrants.

d) Central Bank of Honduras 2007.

Table 6 also shows that the dynamics of migration exhibit trends similar to livestock farming growth and dynamics, which are related to a lack of employment opportunities (increase in livestock farming, less demand for manpower) and a reduction of agricultural areas. On the one hand, livestock farming promotes migration by creating few job opportunities, and on the other, it is highly attractive for investing remittances. Following this argument, there is no doubt that livestock farming is an important sector to be addressed as part of this study.

The importance of this discussion is not the growth of livestock farming as such; rather, it is the homogeneity of production practices and systems, which are traditionally based on extensive ranching. The impact of ranching in this way is very negative, in that the first step involves eliminating practically the entire forest cover. Furthermore, as a result of overstocking, soil compaction is a problem, requiring large amounts of inputs to maintain good quality pasture with acceptable yields. Under these conditions, and considering natural resource degradation as a cause for migration, the risk exists that this dynamic of migration, income and natural resources may become cyclical; that is, arresting migration in the short term and increasing it in the medium to long term as a result of resource degradation from the pressure of extractivist and extensive activities.

In this context, if we consider (1) the livestock potential and culture in Olancho department; (2) that the average new area (according to the household survey) used for livestock (using remittances) by receptor families was 1.7 ha/family; and (3) the EMYRELO survey (RDS-HN, 2006) showing that 12,000 Olancho households have migrants, this would imply a 20,400 ha increase in the livestock area attributable to migration in the period 2002-2009. Taking into account that, on average, the remittance money used for this specific purpose was received three years after the migration took place, this increase could be real (effective) for the 2004-2009 period, which means an increase of a little over 4,000 ha/year.

Implications of the increase in livestock farming for protected areas in Olancho

Olancho is considered the most important department in terms of forest resources and protected areas. According to FAO data (2005), Honduran forest vegetation cover in 1990 was 48.1% (5.383 million ha) and by 2005 it had shrunk to 41.5% (to 4.648 million ha), with variations of -3% in 1990-2000 and 3.1% in 2000-2005, which is one of the highest rates of change worldwide. The country possesses some 95 protected areas (including non-priority areas), which cover approximately 30% of the country's territory. Some 16 of these are located in the departments of Olancho and Gracias a Dios (Table 7); additionally, these constitute over 50% of the nation's protected land (ICF, 2008).

Table 7. Protected areas in Olancho and Gracias a Dios

| Protected Area | Area in Hectares |
|------------------------------|------------------|
| Agalta | 73,924 |
| Boquerón | 4,372 |
| La Muralla | 24,627 |
| Patuca | 376,447 |
| Río Plátano | 833,616 |
| Rus-Rus | 116,349 |
| Tawaka | 252,058 |
| Talgua | 105 |
| El Armado | 3,572 |
| El Carbón | 35,513 |
| Total | 1,825,478 |
| % of Nationwide Total | 54.9% |

Source: ICF, 2008.

It is estimated that close to 70% of Olancho is still covered in forest (34% broadleaf forest; 31% conifers), explained to a great extent by its six important protected areas with a total of 650,000 ha. Complementing these existing protected areas is a network of

146 micro-watersheds legally constituted as such by the Honduran Forest Conservation Institute (ICF in Spanish), which cover 83,321.58 ha.

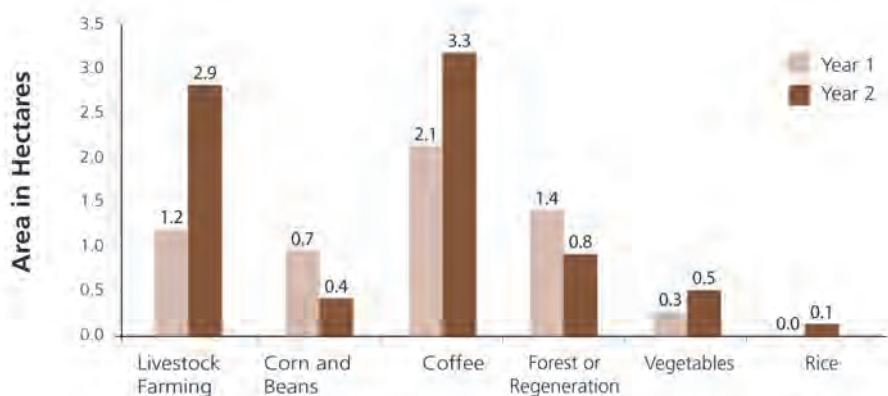
The data documenting the increase in livestock farming, driven largely by the investment of remittances, should draw the attention of the Forest Conservation Institute, the Bureau of Science and Agricultural Technology, and municipal governments to promote coordinating efforts along with addressing conservation from an integrated approach: Protected Areas Management–Sustainable Livestock Production–Investment of Remittances.

Livelihood dynamics in families with migrants vs. families without migrants

This study found that the current average size of farms/parcels of families with migrants is 8 hectares, and that of families without migrants is 5.4 hectares. Comparing this data with pre-migration farm sizes (reference year: 2001), size increased 40% in families with migrants (Figure 2) and shrunk 22% in households without migrants. Crossing this data with that for land purchased with remittance money, it is evident that this difference can be attributed to migration.

As shown in Figure 2, and in line with what has been noted so far, purchasing land as a result of receiving remittances is undeniable, it is a reality. This situation is clearly reflected in the increase in livestock farming and coffee growing areas. Note also that forested areas and land used for basic grain crops have decreased. This is logical when considering that it is precisely the forestlands that are frequently taken over for both livestock farming and coffee growing.

Figure 2. Dynamics of land-use in households with migrants (average farm sizes)



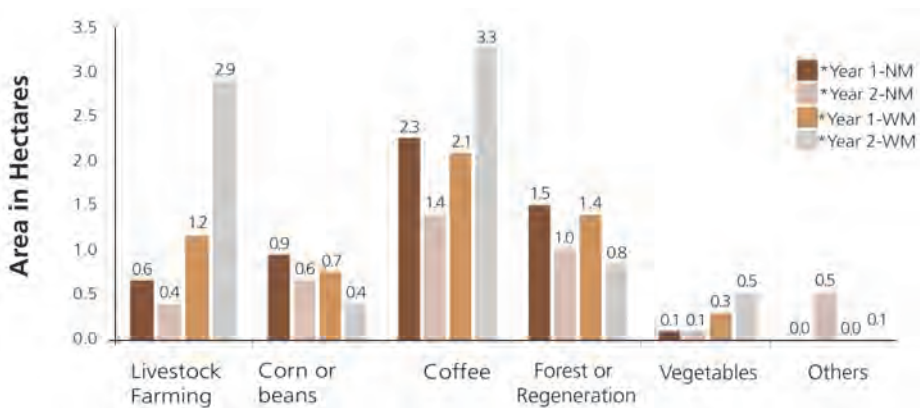
Notes: Year 1 = Year prior to migration, using 2001 as the reference year.

Year 2 = 2009.

Running the same comparison for households without migrants turns up no important differences in land use. There is greater diversification and a slight reduction in the sizes of average farms. Basic activities are corn, bean and coffee crops and small livestock areas.

As can be seen in Figure 3, the initial situation (and livelihoods) was practically the same (except farm size) for both types of households, which is why the reference year (2001) was used as the basis. This situation changed considerably as a result of migration and, of course, the resulting remittances. With this as a given, in all probability, if conditions change in a household that currently has no migrants, the expected changes would be practically the same.

Figure 3. Average land use and livelihoods by migration situation: 2001 and 2009



Notes: Year 1-NM = Situation prior to reference year, households with No Migrants.
 Year 1-WM = Situation prior to reference year, households With Migrants.
 Year 2-NM = Current situation, households with no migrants.
 Year 2-WM = Current situation, households with migrants.

Another important finding is related to firewood consumption. Data from the national forestry statistical yearbook (2009), firewood consumption is one of the important causes of deforestation nationwide, given that 75% of the population consumes this resource for household use. According to the FHIA (2009), firewood consumption in 2008 was estimated at 11 million m³.

Average firewood consumption in the area is half a bundle⁶ per week by families without migrants and 0.30 bundle in households with migrants. The difference is probably because some own an electric or gas stove. The household survey included a question regarding the main source of energy used in cooking: 76% of households without migrants and

⁶ One bundle equals 100 logs and 3.22 bundles equals one cubic meter.

52% of households with migrants use firewood as their main source. Other sources of energy were gas or electricity for stoves. Again, this behavior resembles that of the rest of the population of Olancho, and taking the data that in the area there are about 12,000 households with migrants and about 31,600 households without migrants (RDS-HN, 2006), the impact of migration is considerable.

In the case of households with migrants, total annual consumption is 187,200 bundles (0.3 x 52 x 12,000), equal to 468 ha of forest (30 to 40 trees per family). The same number of households without migrants would consume some 780 hectares, that is, 40% more. This same data, projected to the 179,000 households with migrants at the national level (INE, 2006), would mean a reduction in the rate of deforestation for firewood of about 5,000 hectares per year. Certainly, this data leaves out differences in timber consumption for other uses such as construction, sale, etc., which was not available from this study. Finally, these calculations do not consider other determining factors such as the exclusive use of branches, the use of energy banks, and so on.

Finally, 8% of remittance-receiving households abandoned agricultural activity entirely and let their lands lie fallow. Of these, 6% have women heads of household.

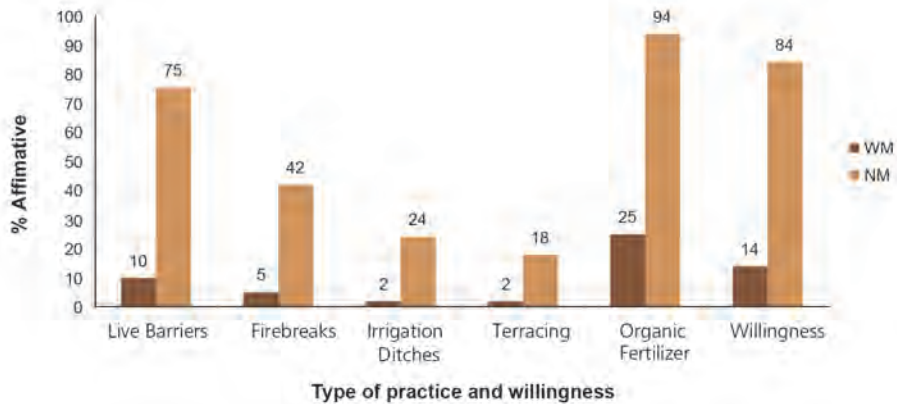
Implications of human resource loss on natural resource management

Noting that 90% of migrants were between the ages of 18 and 32 years, it is evident that those who leave the country are precisely the ones at the most productive stage of life. This has important repercussions in terms of development and intergenerational knowledge transfer. Regardless of migration situation, 88% of respondents said that the availability of manpower in the community was significantly less compared to the reference year. Likewise, the same respondents indicated that, on average, the cost of labor per day had risen 200%, from L50.00 in 2001 to L150.00 at present. On the other hand, this is a general percentage that does not at all reflect variations in inflation and the cost of living. However, the shortage of goods or services results in price speculation, which may be what is occurring with the sale of local manpower. In spite of this, in households with migrants, remittances are an asset that compensates for the loss of local manpower, as it enables them to improve their options to hire, and even bring in workers from other places, particularly during coffee harvest season.

Another element to weigh in this regard is income dependence. Certainly, when money is received from abroad, selling labor is not considered a necessity and is only offered in exceptional cases, for instance, for good pay. Another aspect, which is certainly positive, is the fact that families with money coming in have more opportunities to study; therefore, many young people move to the city or devote themselves solely to studying.

Sixty percent of migrants are young people (men and women) who had been active in local organizations; that is, these organizations lose six individuals for every ten who decide to emigrate. Additionally, 70% of the remaining population (heads of households) indicated that they had participated in some community organization (council, water board, and so on), and that due to time constraints after their relative had emigrated, had withdrawn. This therefore represents a weighted net loss for these organizations of 13 individuals for each 10 families affected by migration.

Figure 4. Willingness to practice conservation by migration situation



Notes: WM = Households with migrants.

NM = Households with no migrants.

The household survey asked about natural resource conservation or preservation practices. It is clear that the intent and actual practice of natural resource management is much greater in households that do not receive remittances (Figure 4). Thus, 65% of households without migrants carried out some type of natural resource conservation and management, considerably more than the 15% of households with migrants. This probably has to do with dependence on productive activities and the type of activities as such. Consequently, as there is greater dependence in households where there is no migration, the concern for maintaining and protecting their only means of support affects their willingness to carry out tasks that allow for regular production over time. Furthermore, under normal conditions, that is, without migration, households have subsistence production systems, which is why they attempt to make use of as many local resources as possible to produce.

Women's access, use and control of natural resources before and after spouse's migration

No significant evidence was found regarding the issue of whether women's roles in terms of access, use and control of natural resources changed significantly after the spouse

migrated, at least not in any definitive way. Some initial changes were observed, which had more to do with women completing pending activities, not really assuming new roles. On the contrary, the final outcome in households with migrants and young children is the total or partial abandonment of agricultural activities.

In household decisions, the man's opinion rules, regardless of whether he is abroad. Nevertheless, there are exceptional cases. The money from regular remittances is used entirely to provide for food, health, education and other household equipment. Women have control over the proportion used for each thing; however, in cases where additional income is received, this goes to a specific use that is decided by the spouse abroad, for instance, purchasing cattle, coffee planting, and so on.

Implications, outlook and future actions

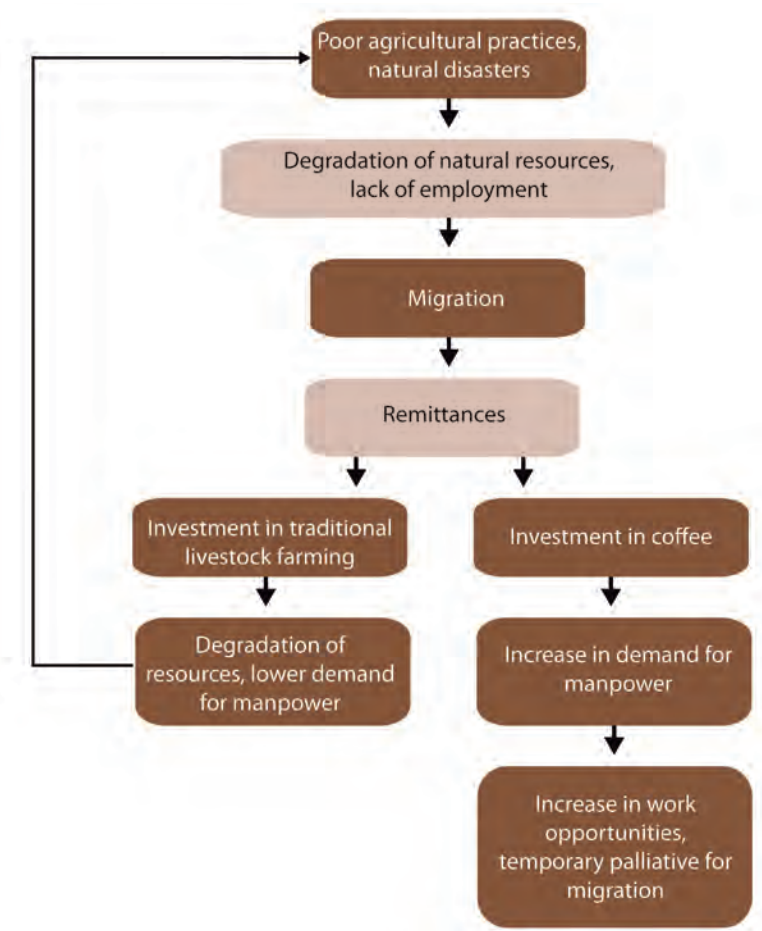
It is clear from the discussion that the impact of migration and remittances on natural resources are mixed; that is, they are beneficial in the case of regeneration (abandonment of farming), reduced firewood use, etc., and negative with regard to extensive livestock farming, disincentives for practicing natural resource conservation, and the loss of human resources, to name a few. Despite all this, one cannot generalize, and different behaviors can be observed in each family in each migration situation. Of course, this has to do with the fact that the impact depends fundamentally on what kind of relationship people establish with natural resources, which is evident in the type of productive system they use, and certainly so in the livelihood adopted.

Migration processes and the resulting income from remittances considerably modify livelihoods in populations and production trends in regions, from greater to lesser diversification, where livestock farming and coffee growing appear to be the most attractive activities. Along the same lines, with the characteristics of traditional livestock farming systems that are highly damaging to the environment, and added to this, the degradation of natural resources as another cause for migration, there is a risk that this dynamic of migration, remittances and natural resources can become cyclical. That is, it could stem migration in the short run (in the case of beneficiary households), and increase it in the medium term as a result of the degradation of resources due to pressure, extraction and extensive activities, or because it generates fewer employment opportunities. Diagram 1 presents the dynamic found in the area studied.

These patterns constitute a threat to the conservation of the natural ecosystems of national and global importance that exist in the department. This situation could intensify the historical environmental conflicts in the area, and migration itself.

No doubt a fundamental strategy is to capitalize on remittances for natural resource conservation projects. At the national level in Honduras, there are initiatives that could be innovative and applicable in the region, such as Dams with Remittances in Olancho and Sustainable Tourism in Francisco Morazán. Research programs validating these options can make an important contribution to this end.

Diagram 1. Dynamics of migration, remittances and natural resources in Olancho



Municipal and national governments and international cooperation agencies could lend important support to the issue being discussed, if work is done in the following areas:

- Establish municipal information systems around the issue of migration (migration, remittances, organization) and link the information to local development strategies.

- Promote youth organization at the rural municipal level and ensure their representation at different levels such as town hall meetings, and know what expectations they have regarding municipal government performance, and job creation.
- Facilitate the creation of a coordinating body among communities, universities, municipal governments, NGOs, the Forest Conservation Institute, Protected Areas and Wildlife, the Bureau for Agricultural Science and Technology, and the Honduran Coffee Institute, to coordinate actions for integrated ecosystem management. That is, address the management of protected areas using an ecosystem approach, where individual efforts are organized around a holistic approach. This will no doubt be a good starting point to insure the provision of and healthy and sustainable status of natural resources, keeping the relationship mentioned from becoming cyclical.
- Rely on the different relevant regulations in the country: Forest Act, Payment for Environmental Services, Land Management, Reforestation Incentives Act, Organic Agriculture Law, and so on; to condition support (projects, extension programs, legalization of land holdings) and the investment of remittances to the use of a sustainable development framework.
- Facilitate the creation of municipal information systems regarding the status of natural resources, drought, labor supply and demand, and yields, making it possible to produce indicators for warnings and to prioritize actions.

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Chapter VII

Migration and Governance: Use and Management of Communal Lands in Southern Mexico

*Leticia Merino*¹

Oaxaca is in a region rich in biodiversity that has a wide plurality of indigenous and peasant communities. This study focuses on communities in both mountainous and coastal areas that have a strong sense of ethnic, cultural and territorial identity. Community systems are characterized by highly developed regimes for land tenure and natural resource management, particularly for community management of forests and of water services. Oaxaca has traditionally been a sending area for large flows of both internal and international migration, caused in part by economic instability, related in recent years to contraction of the coffee market and job loss in the oil industry. Men and young people are the groups most likely to migrate. This study focuses primarily on an analysis of the impact of this migration on the institutions for rights, systems for collective action and for common property, as well as on the vulnerability and quality of rural livelihoods. The results found that individual rights had grown stronger, while communal regimes had weakened, along with the collective capacity for regulation of the management of common areas and natural resources threatened by a greater presence of external actors. A lack of workers is seen concurrently with a forest transition and recovery of the canopy in wooded areas inhabited by indigenous and peasant communities that obtain their means of subsistence from these areas. However, the abandonment of farming is a factor that is threatening family food security. Additionally, migration is also influencing the decrease in human resources, both for community work and for territorial management activities, at a time when climate change and external pressures on forests are threatening community livelihoods.

¹ This paper would not have been possible without the participation of Ana Eugenia Martínez, Marco Antonio González, Ayari Pasquier, Alicia García, Leticia Sánchez, Elizabeth Rodríguez, Miguel Ramírez, Javier Cosme, Mauricio Cervantes and Gabriela Estrada, colleagues at different points during the project's fieldwork and analysis.

“Natural resources cannot be protected by remote control.” Sierra Juárez comunero, Oaxaca

Introduction

Throughout its history, Mesoamerica has undergone constant migration-driven transformations. Over the past two decades, these migration processes have become increasingly intense in many of the region’s rural areas, with profound effects on communities and families. In response, Mesoamerican migration has become one of the most-studied topics in social science research and publication in Central America, Mexico and even North America.

In the regions and communities examined by this project, migration is a multi-causal process controlled by factors such as limited job opportunities and limited access to community services and, accordingly, the search for alternatives. These include jobs, income and personal development, along with the prestige that often comes with the migrant experience – particularly among young people – as well as community networks that link home and destination communities and that promote and, at times, facilitate migration.

Migration produces changes, which in some cases are experienced and interpreted as problems and in others as benefits. This study focuses on dimensions that have been infrequently addressed up until now, such as the impact of migration on home communities, emphasizing the types of community governance in these areas, as well as natural resources, a vital component of community assets. Although the migration experience is interpreted as a fundamentally individual and family process, its impact is felt not only in the individual sphere or in the family, but also in community life.² Notwithstanding, it seems the “private” character of the experience hinders reflection on community dimensions and actions.

The relevance in understanding the facts about migration in the areas of community governance and land use and management is related to the nature of the territory as a “common resource” or shared resource,³ in addition to the assets it contains. The use and protection of these resources, based on a long-range perspective, require intense collective community action (Ostrom 1991; Ostrom, 2001; Adato & Meinzen-Dick, 2007). Collective action in the framework of community governance relies on relationships

² To a great extent in governance and communal lands.

³ We are referring to resources used by different users, even beyond the presence of formal property rights over the resources; this is the case of territory seen from perspectives that go further than the limits of the agricultural parcels, water, agro-biodiversity, bodies of water and forest areas.

based on trust and reciprocity (social capital) linked to decision-making processes, along with perception, such as social understanding of the territory and resources, social construction of agreements, standards, rules, monitoring compliance with agreements, sanctions for noncompliance, as well as distribution of rights and responsibilities in managing collective assets (Ostrom & Ahn 2003; Bray & Merino 2004; Merino Pérez 2004). Maintaining and developing territorial management in community governance poses important “transactional costs”; that is, it demands constant efforts by those who participate and heavy investments of personal initiative, time, knowledge and work, which are generally not remunerated either in the short term or with economic resources that rural families increasingly require.

In the area of social life, the spheres of local governance, family livelihoods, communal assets, culture and identity are all interdependent spaces that are closely and functionally linked. Family livelihoods are based on farming, cattle production, day labor, and collecting forest assets. These have traditionally had their foundation in the resources societies possess and use in common, and include tangible and intangible assets—the territory, soil quality, bodies of water and the local water supply system, roads, pastures, forest areas, native seeds, public spaces in towns, schools, clinics and churches, social peace, cooperation, and more recently, communal businesses and access to alternative markets.⁴ Governance in a community refers to management of the communal assets that are used; they are protected, maintained and developed based on communal rules, agreements and standards that are designed and implemented collectively. Family dependence on communal assets confers meaning, patrimonial value, and justification; likewise, it requires investment in the governance of the community and its patrimony. Participation of community members in their identity and the cultural practices⁵ that renew their identity, contribute to the sense of belonging, sustains community governance and the use and management of communal assets. The territory is the privileged space, both cultural and natural, that sustains and contains these processes. Over generations, the territory has been the foundation for survival, object of practices, negotiations, agreements and conflicts; overall, the reference point for shared identity.

The changes wrought by migration in community life are in addition to – and at times linked to and enhanced by – other important processes of a different nature and scale. Among these are the integration of communities and the rural population into national and international markets, the effects of different public policies, the impact of the process of global climate change, and the growing violence in many regions. The weight of social change factors is expressed in different spheres of community life. The influence

⁴ We are referring to markets for products that are certified sustainable (coffee and timber) or have their own brand (coffee and honey).

⁵ Elements in the realm of community identity and culture are local knowledge, language, food, community celebrations, rituals and local sports activities.

on the livelihoods and makeup of families that are increasingly dependent on external resources has repercussions on both territorial management and people's appreciation of its worth. Thus it determines the capacities, interests and incentives of families and individuals for participating in community governance for the use and protection of different common community assets. That is, in the space of a few years, the spaces and practices of governance have had to constantly adjust to new conditions.

Territory is considered a dimension, a variable that is a hub for the relationships among the different spheres of community life. It is proposed that the changes in the relationships between community members—particularly migrants—and communal territory may be considered an expression of the synthesis of change processes. In this sense, it follows that processes of change, and particularly migration, will bring about the “de-territorialization” of different spheres of community life; e.g., strategies for family survival depend to a lesser degree on the territory, and the local institutional framework (understood as systems for the development and implementation of regulations), and practices for territorial use and management, tend to weaken. In the area of rights, individual rights over parcels and urban lots gradually acquire prominence over participation in collective rights over communal territories. This redefinition, in turn, affects community governance and the management of resources from a territorial perspective.

Finally, whether family and individual homes are located in the home community, outside it, in Oaxaca, in the country, or in the United States, anchors the community identity in a local and “trans-border” space at the same time (Stephen 2007⁶). From our perspective, communities that continue to maintain the territorial dimension as a collective point of reference, increasingly acquire a “trans-territorial” character, in which other factors and practices come together in the definition of community belonging. This change represents a major transformation in the actual social and institutional construction, constituting a fundamental shift from the traditional way that identities have been constructed in Mesoamerican community governance systems, over the course of the past two thousand years.

Furthermore, pressures arising in recent years from national and international situations have involved:

- a) Fewer options for formal employment and income in Mexico and the United States, and increasing costs and risks of international migration, putting increased strain on relationships between migrants and their home communities.

⁶ Lin Stephen suggests that migrant communities have not only crossed the international border between Mexico and the United States, but also borders of ethnicity, class and gender.

b) New environmental pressures on the territories and on family livelihoods resulting from global climate change that involve changes in water patterns, such as extended periods of drought that affect crops, pests, and forest fires, and a high concentration of rainfall in short periods with torrential rain, crop loss, flooding and landslides.

c) A trend toward hardening the conservationist line in federal forestry and environmental public policy, with a greater concern for the country's participation in international agendas to reduce greenhouse gas emissions⁷ than for reducing climate vulnerability.⁸ These policies serve as deterrents to local production activities and entail the risk of losing communal rights over the land and forest resources. (The Rights and Resources Initiative 2010; Ostrom 2009).

This study seeks to develop findings and proposals with the participation of local actors who are experiencing the processes of community change, to produce elements to foster discussion around their own future in light of the changes, challenges and opportunities that migration processes generate. Consequently, the research regions and communities were not selected at random. Instead, we searched for interlocutors organized at the regionwide level: communities involved in processes to develop alternative means of production, land management and quality of life; communities involved in regional organizations committed to projects for the future; and communities and regions claiming their ethnic identities and histories that are now unfolding in a framework of migration and trans-territoriality (Stephen 2007). This initiative is meant as an effort under construction and as an open discussion about social dynamics that are in process.

Regional Contexts

A prime element in the framework of this study is a recognition of the diversity of regional and community contexts and of migratory processes themselves. Conditions such as the destination, intensity, composition, timeframe, and longevity of migration have distinct impacts on families and communities. The type of migration relates to regional and community history, and at times has a decisive influence on it. However, the objectives of the study do not include a thorough mapping of the relationships among migration, governance and communal lands in Mesoamerica; it was decided to work in three contrasting regions whose conditions are relevant to understanding this process in the Mesoamerican context. The three regions in our study are located in the Mexican state

⁷ Known as "mitigation" strategies in climate change programs and policies.

⁸ "Adaptation" strategies.

of Oaxaca, which possesses great biological diversity⁹ and is home to a large number of ethnic groups, making it the state with the highest proportion of indigenous population.¹⁰

Oaxaca is also the state with the greatest amount of land owned by indigenous communities, due to the fact that one third of the municipalities are governed by the traditional “uses and customs” system.¹¹ The state has three regions: the Southern Sierra (SS),¹² Coast of Oaxaca (CO),¹³ and Juárez or Northern Sierra (JS).¹⁴ Work was done in 16 communities: six in the SS, five in the CO, and five in the JS. The relationship between the communities and the project team did not begin with this study, as some of the team members have longstanding collaborative relationships with regional organizations that operate in these regions. Such is the case with the Southern Sierra and Coast of Oaxaca communities, which belong to the Community Biodiversity System (SICOB in Spanish). The Autonomous Environmental Research Group (GAIA in Spanish)—member of the project’s steering committee—has worked with them regularly since the 1990s.

⁹ Oaxaca has 26 types of vegetation, including forest, rain forest, xerophytic scrub and aquatic vegetation, to name a few; 4 of the world’s 6 conifer families, including 26 species and 3 endemic varieties; 702 species of angiosperms; the 4 mangrove families in the world; 627 fern species, at least 38 of which are endemic; 43% of the country’s leguminous plant species; 82 *Crassulaceae* species of the 100 recorded in Mexico, 47.5% endemic; 58 agave species, the greatest variety nationwide, with 13 endemic species; 692 species of orchids, 9% endemic; and the greatest number of endemic *Cactaceae*. Fauna includes: 50% of the country’s land vertebrates, 83% of the mammal families of Mexico, with 95 endemic species; 736 bird species, 67% living in or migrating temporarily to Mexico; 57% of the butterfly species in the country; 6 of the world’s 12 marine turtle species; 245 species of lizards, snakes and crocodiles; 378 species of amphibians, including frogs, toads and salamanders; and one third of the nation’s freshwater fish, with 39 endemic species (NIZA, 2011).

¹⁰ At present, 18 of Mexico’s 65 ethnic groups live in Oaxaca, with a population of over one million inhabitants, accounting for 32% of the state’s population, and distributed among 2,563 localities. Of the 570 municipalities in Oaxaca, 418 (almost three-fourths) are governed by the uses and customs system (National Commission for the Development of Indigenous Peoples).

¹¹ The local system of government known as “uses and customs” (*usos y costumbres*) is recognized by the State Law on the Rights of Indian Peoples. Uses and customs refers to different practices, including recognition of the peoples’ assemblies as the communities’ highest authority, the election of local authorities by assemblies and not by means of the political party system that operates in the rest of the country, and the *cargo* system (civic and ceremonial obligations) and *tequio* (communal labor) referred to in the text.

¹² In the South Sierra of Oaxaca, work is done in the Zapotec communities of San Juan Ozolotepec, Santa Catarina Xanaguá, Santa María Madani, La Merced Potrero, San Felipe Lachillo, San Francisco Ozolotepec, and San José Ozolotepec. Oaxacan municipalities are generally quite small. They comprise one, two or three communities. The municipalities where the communities in this region are located are San Juan Ozolotepec, San Miguel del Puerto, Santiago Xanica and San Francisco Ozolotepec. Given the small size of Oaxaca’s municipalities, they form districts that cover some administrative functions and government offices that correspond to municipalities in the rest of the country. All these communities belong to the Miahuatlán administrative district. These communities are on the northern slopes of the southern Sierra Madre of Oaxaca.

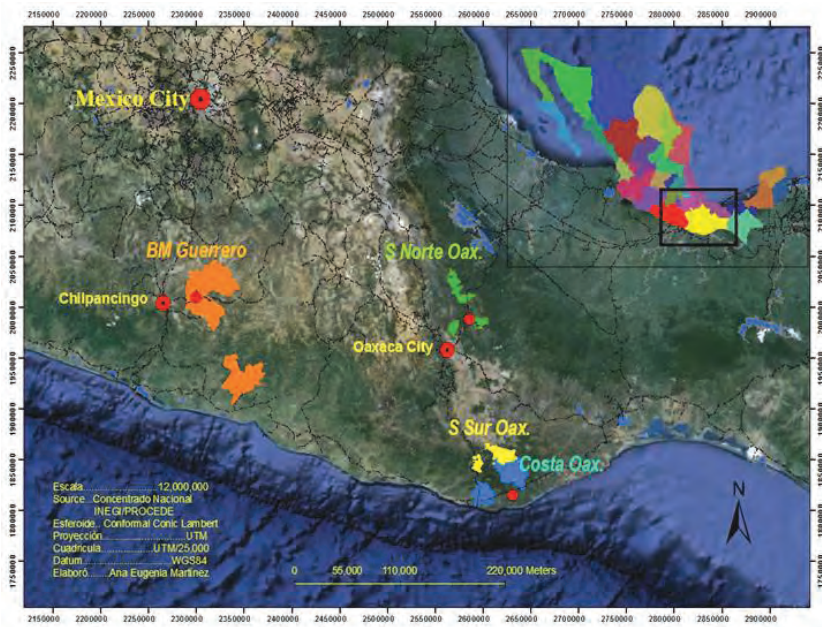
¹³ On the Coast of Oaxaca, work was done in the communities of La Merced del Potrero, San Miguel del Puerto, Santa María Xadani, San Felipe Lachilló and Benito Juárez, located in the municipalities of San Miguel del Puerto, Santa María Madani, Santiago Xanica and San Pedro Pochutla in the district of Pochutla, on the Pacific coast, on the southern range of South Sierra Madre.

¹⁴ In Juárez Sierra, work was carried out in the Zapotec communities of Capulalpam, Nuevo Zoquiapam, Xiuacui, and Macuiltianguis, and in the Chinantec community of Maninaltepec, located in the municipalities of Capulalpam, Nuevo Zoquiapam, Quiotepec and Macuiltianguis, in the district of Ixtlán, on the northeastern slopes of the southern tip of the eastern Sierra Madre.

The communities of the Northern Sierra of Oaxaca participate in the Juárez Sierra Natural Resource Committee and in the Zapotec Chinantec Union (UZACHI), with which the project coordinators have also collaborated at different times. Prior knowledge gave rise to the concerns and questions that guide this study. Research involved 515 interviews with authorities, heads of household, youth, women and men with migration experience; five focus group workshops also yielded information for this study.

The three regions are quite mountainous, with communal landscapes fragmented by steep slopes, some over 1,000 m.

Map 1. Location in Mexico of the regions studied



Source: Concentrado Nacional INEGI/PROCEDE.

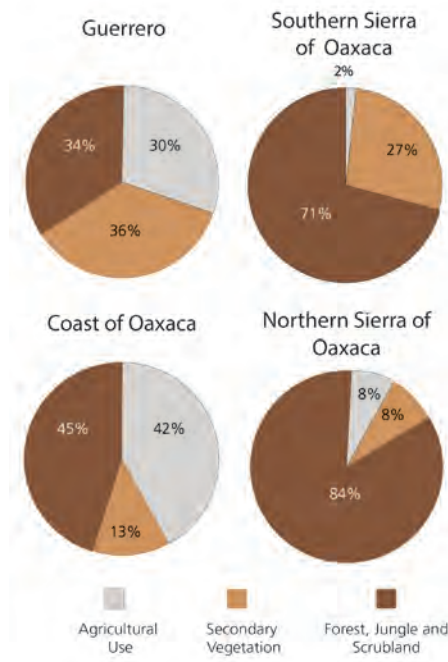
Forest landscapes dominate the three regions, home to great biodiversity including pine and pine/oak systems, cloud forest, lowland deciduous forest, and highland forest. Two of the regions contain areas that the National Commission for Knowledge and Use of Biodiversity (CONABIO) considers highly important for conservation, including the Juárez Sierra cloud forests, an area with many paleoendemic species.¹⁵ The lowland rain forest on the Coast of Oaxaca is one of the most important bird migration corridors between South and North America. Many communities in these regions, including all the study communities,

¹⁵ These cloud forests, along with others in Costa Rica and the Peruvian Amazon, are remnants of Paleolithic forest systems.

have established communal reserves to protect water systems and the biological diversity in their territories. The Juárez Sierra cloud forests are the largest and best-preserved areas of Mexico, and this has been achieved through community initiatives and institutions, as none of these are any type of officially protected natural areas.

Most of the communal territories in SS and in JS, as well as a little less than half of those in CO, are covered with forest and rain forest. The presence of “secondary vegetation” in both SS and JS has to do with traditional slash and burn agriculture, such that secondary vegetation areas coincide with “acahuales” (fallow lands). In SS and CO, forested areas with secondary vegetation are acahuales and coffee plantations. Agricultural areas represent 8% of the community land in JS, 2% in SS, and 13% in CO.

Figure 1. Distribution of vegetation on communal lands



Source: National Commission for the Development of Indigenous Peoples.

In JS, a marked process of vegetation regrowth is occurring, transitioning from agricultural areas to secondary vegetation and from secondary forest vegetation to forests. The burden of agricultural use on the land in JS has diminished as a result of communities losing access to a great deal of their lands during the period of concessions (1954-1982), and from long-lasting and onerous migration. As opposed to SS and CO, food production in

JS is at a deficit. Population density in these three regions is quite low: 45 persons/km² on the Coast, 23 persons/km² in the Southern Sierra, and 11 persons/km² in the Juárez Sierra. Pressure on natural resources – in terms of deforestation and illegal extraction of forest resources – are also very low.

Almost all the communities have an important amount of parceled land (tierras parceladas) available to them that is dedicated to agriculture, although it is different in each region. All the communities have collective property that is formally recognized by the Mexican government under the figure of agrarian community, which differs from ejidos (communal farming groups) in that they have greater autonomy to define who their members are and incorporate their youth as comuneros (communal farmers, entitled to work the common land). Ownership of the agrarian communities is based on the Mexican government's recognition of traditional rights produced by historical occupation of communal lands. There are also lands (generally the forested areas) recognized and used as common resources, which are directly governed by community assemblies. All these regions have traditional local participatory governance structures and practices, closely related to communal land ownership (The Rights and Resources Initiative, Ostrom 2010).

Zapotec and mestizo communities inhabit the SS. Communal lands in this region range from 8,185 to 1,300 hectares (ha) in size. Access is characteristically difficult in this region; the communities visited are located at an average distance of four hours travel¹⁶ from the paved road that runs from the city of Miahuatlán, the district seat, to the city of Oaxaca.¹⁷ Although communities in this region have forest areas with timber with commercial potential, only one of the communities that were visited, San Juan Ozolotepec, has recently embarked on a community forest extraction initiative and industrialization of this production. Domestic agriculture is of great importance for the families, as is the land, which they see as their patrimony and livelihood. Coffee growing, introduced in the region in the 1970s, has been for generations the region's most important commercial product and the pivotal source of economic resources for the majority of the families. The communities of this region have strong ties to the land, important community organizations, and participatory governance practices based on the "system of uses and customs." Community identity is very strong and is maintained even among young migrants. International migration is moderate and recent. Its origin is the 1990s coffee crisis when prices plummeted. Because of the aforementioned conditions in the international context, migrants from this region seek to remain – at least for long periods – in the United States.

¹⁶ In vehicle over dirt roads, access becomes more difficult during the rainy season.

¹⁷ Miahuatlán is 150 km by paved road to Oaxaca, the state capital.

The JS is populated by Zapotec, Chinantec and Mixe who have been there for centuries. Many of the regions are relatively well linked, located along or in the vicinity of the Oaxaca–Tuxtepec road, which has served as the regional connector since the 1950s. Many of these communities possess great expanses of land and forest. Among the communities in the study, territories range in size from 13,700 to 1,370 ha. Most of the land is designated for “common use”; subsistence agriculture has been losing ground since the 1960s. This change, to a great extent, has to do with the migration that started with the “Bracero Plan” signed by the governments of Mexico and the United States to provide the U.S. with inexpensive labor during times of economic growth. Additionally, the federal government’s imposed granting of forest concessions to external companies from 1950 to 1989 deprived many of these communities¹⁸ of access to their lands and forests. Agriculture and land have lost economic importance for many of the region’s families, and as a result, the amount of cropland has decreased considerably, causing considerable expansion of forest areas. These societies have a strong tradition of community governance and communal land management.

National and international migration have become well-established processes, to the extent that some comuneros have permanent residence in the United States. Over the past 25 years, since forest concessions ended, different communities have developed forest businesses dedicated to commercial extraction of timber, the principal income-earning and jobs-creating activity, along with resin extraction, spring-water bottling plants, harvesting of edible mushrooms, and ecotourism. For decades, the region has had strong push factors. The most frequent migrant destinations have been the city of Oaxaca, the Valley of Mexico, as well as the U.S. states of California, Oregon and New Jersey. Migration tends to be permanent or for long periods of time. Migrants from Oaxaca generally maintain ties to the communities and visit them frequently. Migration to the United States used to be temporary for many who made the trip. In recent years, the increase in the risks and costs of crossing the border have led many to delay or cancel plans to return. The relationships between migrants and their communities have likewise been affected by this increased difficulty.

Agrarian communities in the CO are among the most recently founded in Oaxaca. These territories were established in the 1970s with immigrants from the same state. Since then, agrarian conflicts and violence have been frequent. These regions are also easily accessible and they range in size from 7,500 to 3,500 ha. The development of the “Huatulco Bay” tourist enclave has had a major influence over the region. When it began, it took a large part of the land from two of the regions. Furthermore, it created a center for seasonal migration to the region. Over the decades, this temporary migration became integrated

¹⁸ Among these are the five communities included in this study.

into families' livelihood strategies to complement farming. This has been a coffee growing and fruit orchard region for decades. In recent years, there has been a rapid increase in the flow of international migration to the United States, where migrants seek to remain for long periods. Despite the fact that land is still available in the region, this is not the basis for many young families' livelihoods. The importance of the communal land assets in family life is limited. The level of organization is less than in the other regions of Oaxaca considered in the study. The inhabitants of the communities do not identify themselves as indigenous.

Approach

Based on the foregoing, the study and subsequent discussion sought to develop responses to the following issues:

- a) How have local community populations been transformed? What role has the migration process had in this? Additionally, what are the scenarios for future transformations? How have these changes influenced communities' capacities?
- b) How has access to property rights over communal lands been transformed in the context of migration and the trans-territorialization of the communities? What are the possible scenarios for future ownership in the communities?
- c) How have family livelihoods been transformed? What "assets" do families and communities possess? How have migration processes transformed them? What strategies for strengthening family and community assets are feasible?
- d) How has the view of communal land assets been transformed and what role has migration played in these changes?
- e) How have community governance capacities been transformed, particularly those related to "governing" the territory and other common assets? What role has migration played in this?
- f) What are the most important pressures and challenges facing families, communities and common assets? What opportunities and capacities do families and communities have for responding to them?

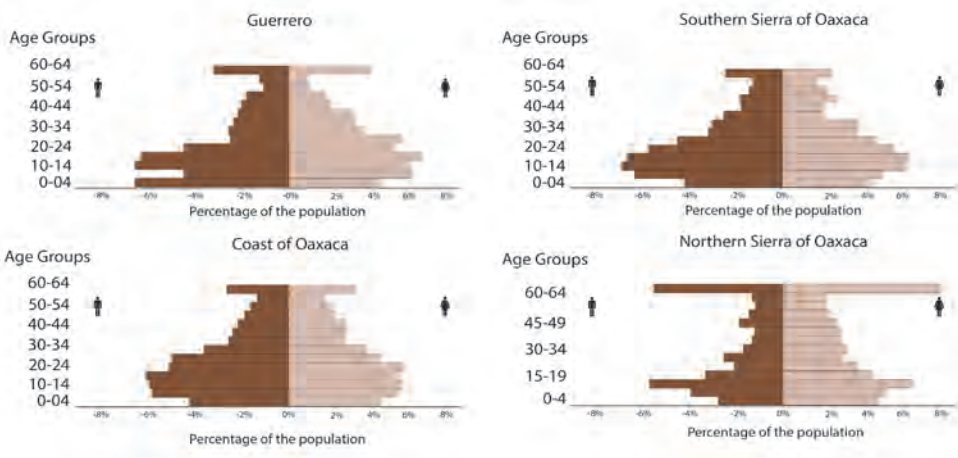
Conditions and Trends

Transformations in local community populations, local capacities, and scenarios for future changes

Over the last four decades the population has transformed dramatically, and the migration process has been a central factor. An additional factor has been the drop in the fertility rate, which is the number of children per family, promoted by public population policy. This has been accompanied by the changing status of young women, who now have higher levels of education and often fulfill – even in rural societies – the role of family breadwinner.

One of the areas where the impact of migration is the most strongly felt is the aging of the population. In Juárez Sierra, where migration is the most long-standing, the aging index¹⁹ is 11.7, above the national index (8.25). On the Coast and in the Southern Sierra, young people make up the majority of the population in the communities. Notwithstanding this, the number of children is on the decline in the three regions. In two of the communities that were visited in JS, the number of children aged <15 years is lower than that required for population “replacement,” and the population is decreasing or will decrease in the short term if these trends persist. These conditions result not only from the migration of adult men and women; entire families have also left, making their return to the communities much less likely.

Figure 2. Impact on the demographic structure of local communities



Source: Data from community health clinics.

¹⁹ The proportion of individuals aged >60 years in the population as a whole.

In the three regions, there is an absence of men of working age, leading to more women than men in the population. This absence is felt in different areas of family and community life. It is greater in CO, although the male index²⁰ of the population in the three regions is higher than the national average.²¹ There is a considerable proportion of female heads of household in these regions: 24.6% in CO, 23.3% in JS, and 18.2% in SS. The dependency index in these regions –considerably higher than the national figure – also shows the lack of economically active community members. The proportion of dependents to income-earning household members is extremely high in CO (0.92) and in SS (0.88). These numbers show the degree of dependence on remittance money and the decrease in productive activity by families.

The absence of men, or the migration of fathers, has put greater pressure on female heads of household, and on seniors who are in charge of grandchildren. Many young people are growing up in the absence of their parents, who migrate before they come of age. In some cases, their return and the ensuing celebrations are associated with greater violence. Speakers of native languages are the minority in the population of these regions: only 10% in the Southern Sierra, 6.5% in CO, and 39.6% in JS. However, all these communities maintain strong traditional indigenous practices of governance and social coexistence, such as the cargo system, cooperative practices, reciprocity among comuneros, and between comuneros and communities.

In recent years, migrants (national and international) have begun to return to the communities after being away for many years. The process of reintegration poses new challenges for the community such as health needs, diminished work skills, and differences of perspectives (about the territory and the community) from those who remained.

Access to property rights

In the framework of collective ownership²² there are different types of rights over property. Among these are the rights of use and access; rights of control, which refer to rights of exclusion, decision or management, and alienation; and inheritance rights. These property rights are distributed among community members, who do not always have access to all of them. External actors, especially the federal government, hold important control rights over the forests.²³

²⁰ Number of men per 100 women.

²¹ The national male index is 97; in CO, SS, and JS it is 93, 95, and 96 respectively.

²² Or individual.

²³ According to Article 27 of the Mexican Constitution, ownership of lands is vested in the Nation, although it recognizes land ownership among the resources of ejidos and agrarian communities. Underground resources are government property, according to the Constitution. The Forest Law establishes the right of the government to regulate the uses of forest resources.

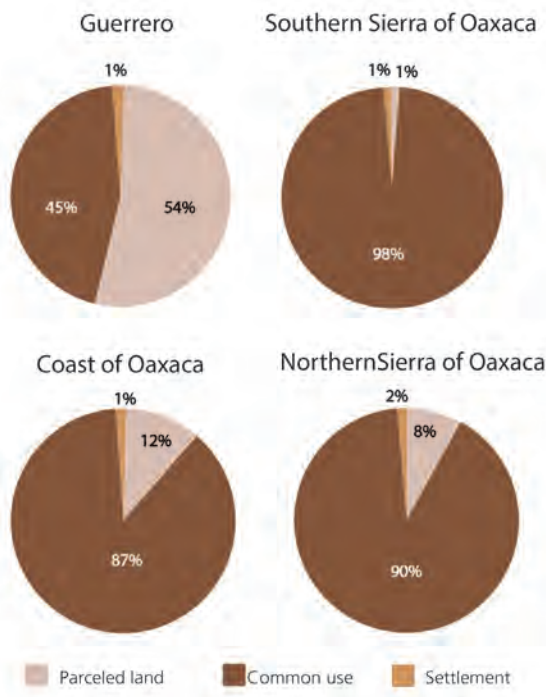
Although the ejido is the most frequent type of collective property in Mexico, in Oaxaca the agrarian community is the predominant type. Throughout the 20th century, ejidos were created from land the Mexican government allotted to groups that had requested it. On the other hand, agrarian communities arise from government recognition of historical rights to the land, which is why originally the members of these communities were indigenous people. However, in recent decades, many communities have lost their native language and ceased to identify themselves as such. Furthermore, in many cases, indigenous communities opted for requesting status as ejidos, rather than recognition of traditional rights, because the latter involved greater difficulty in procedures and more time. That is why in many existing ejidos the population is indigenous. The most significant contemporary differences between the two types of ownership is the greater level of autonomy of agrarian communities for accepting new members, and the possibility ejidos have of officially recognizing individual ownership of parcels, urban lots, and of alienating ejido property.²⁴

In the communities where the work was carried out, most families have property rights, that is, the assemblies recognize them as comuneros. In communal lands, the assemblies establish two general sorts of areas: those that are subject to individual property rights, which are agricultural parcels and urban lots; and, those that are subject to collective rights, defined as areas for communal use. Communal use zones account for the vast majority of the lands belonging to the communities in the Oaxacan regions considered in the study: 90% in JS, 87% in CO, and 98% in SS.

Although agricultural parcels are used by families – and not by the communities – the comuneros recognize collective ownership. In other words, the community grants the families rights of use and certain individual rights of control, but the territories maintain important rights of control over the land overall. That is, individual rights over land and natural resources are “nested” in the ownership framework.

²⁴ Community Assemblies must first decide on becoming ejidos, a step prior to the sale of their lands.

Figure 3. Contrast between parceled land and communal use



Source: PRICERE, interviews with authorities.

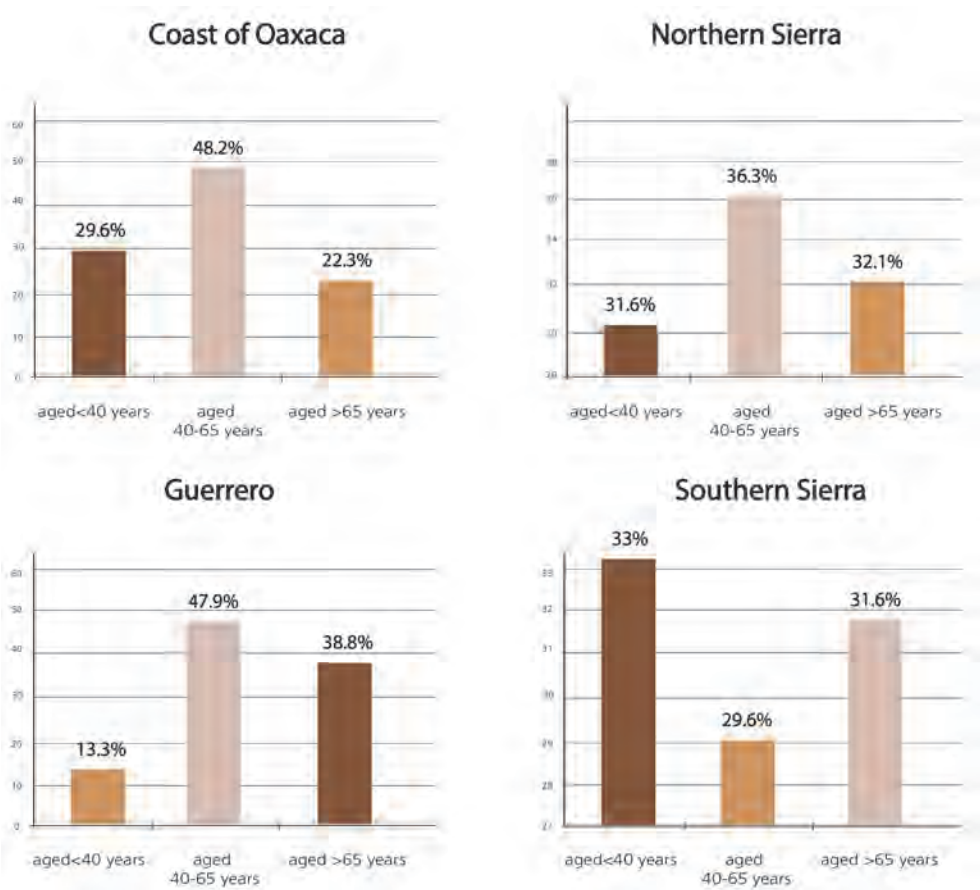
The community as a whole uses the forest areas and pastures and they exercise rights of control over them. Agrarian entities lack rights of alienation, although some of their assemblies grant their members the right to transfer parcels to each other, often by way of commercial transactions.

As mentioned, a considerable proportion of households in the three study regions are headed by women. They generally have less access to property rights, and when they do have them, are less able to exercise them. These households often lack the workforce necessary to utilize the resources of the territory, and have less capacity²⁵ to participate in assemblies and structures for community governance where rights to control land are exercised. There are difficulties for participating in structures and tasks related to governance, not just with regards to fulfilling duties or participating regularly in assemblies, but also because it often generates tension between the assemblies, where there is a majority of men, and female headed households. Access to rights over the land for women is more limited in JS.

²⁵ In terms of time and social recognition.

Furthermore, holders of property rights are aging, and in some communities in JS this has reached critical levels. Paradoxically, the aging of the comuneros of Oaxaca is not so much due to a lack of access to rights for young people; rather young people are less interested in maintaining ties and responsibilities with communities and rights over the territories. In these regions as a whole, the majority of comuneros are over 40 years of age; whereas in JS, 31.6% of the comuneros are under 40, and 32.1% are over 65. In SS, the proportions of these groups are 33% and 31% respectively. In CO, 29.6% and 22.3% have migration experience. Access to agrarian rights has not deterred migration. However, in SS and JS communities, it has contributed to migrants maintaining commitments to local communities as a condition to maintaining their rights.

Figure 4. Age distribution of migrants (percentage)



Source: PRICERE, interviews with authorities.

It is important to mention that in these regions the majority of migrant comuneros tend to purchase urban lots. In dealing with their own absence, they opt for strengthening individual rights of use and control, which in some cases go against the collective rights that community assemblies claim. Migration tends to strengthen individual rights of use, as well as individual exclusion rights on parceled out lands; but it weakens the capacity for exclusion and regulation of communal areas, which can turn out to be risky when there are external interests in the communal lands.

In CO, a region with a growing tourism industry, the Pacific coast community of Santa María Madani faces problems containing attempts at external appropriation of beachfront land. The community of Maninaltepec in JS receives offers, along with pressure, to stop logging its forests and register forested areas in payment for environmental services programs financed by private Mexican companies. The trend toward strengthening individual rights to the detriment of collective rights has been facilitated by the Program for Certification of Ejido Rights (PROCEDE), which was rejected by the majority of JS communities; thus, real estate markets and actors from outside the communities have not made headway so far.

Changes in perspective on the land and communities

Being a *comunero* is highly demanding and offers uncertain benefits to young people, particularly where there is no distribution of earnings from community enterprises, nor payment for performance of community duties. Many young people feel that they have no viable future in the communities.

As families give up on farming, the opportunities and mechanisms for passing down knowledge about the land are also dying out. Young people have no knowledge of the land, the structure of the community government, rules, or community agreements. Neither do the young people participate in spaces for information and decision-making regarding relevant matters in the communities and its territories.

As men leave, it makes it impossible for families to comply with the demands of community authorities, creating tension between the authorities and female heads of households. Participation in social structures – under these conditions – is seen and experienced as more of a burden than as a right to be exercised. The participation of women in different decision-making areas and cargos puts demands on them and their families that are hard to carry out. When women do participate, they tend to play a passive role.

Migrants tend to look on the forest as dissociated from agricultural land. It is seen as an asset to be conserved, ideally cut off from any productive activity. In different JS

communities, there are groups that strenuously oppose community forest extraction activities and they have been successful in deterring the activities for a time or in reducing the volume of exploitation activities. The community conservation movement expresses concern about the impact of extraction on bodies of water, or its sustainability. This attitude of conservationism is more prevalent among migrants.

Territorial “assets” and family livelihood strategies

The territory and its resources represent the principal assets of communities and families, despite the fact that different processes undermine their importance. The principal activities for producing income and consumer goods for families still depend on the land, although the patterns are different in each region.

In the JS forest communities that were visited, forestry activities are considered to have the most important economic activity; followed by subsistence agriculture, trade, employment in the community or region, and resources from “Oportunidades.” Remittance money came in sixth in importance. This is relevant when considering that this is the region where migration has been going on the longest and is greatest. Possibly this can be explained by the fact that in many cases migrants have traveled along with the members of their nuclear family and have established themselves in their new home, explaining why they cease sending back remittances to their hometowns. In the JS and SS regions, productive activities linked to use of the land have a relevant role in family economics.

In SS, a region that also has extensive forest areas,²⁶ only one of the communities visited engaged in extraction of wood, due to the fact that the forests are fundamentally used as a source of firewood, whereas 67% of the communities have defined conservation areas in this type of ecosystem. This region has no lowland rain forest areas.

In SS, subsistence farming is based on growing corn, which is considered the most important activity for maintaining a family. The second source of income comes from the resources that families receive from the “Oportunidades” social program.²⁷ These are followed, in order of importance, by coffee farming (third), remittances migrants send to their families, and local employment (fifth).²⁸ This pattern reveals that families are highly dependent on external resources over which they have little control. SS and CO are very sensitive as regions to the cyclical drop in international coffee prices. Migration to the United States began in the 1980s in response to the abrupt decline in coffee prices during that period.

²⁶ SS had no forest concessions and had greater problems with access to their forest areas than JS.

²⁷ The social program with the greatest federal funding, which provides consumption subsidies and access to services in poor regions.

²⁸ As day laborers, bricklayers, drivers, and so on.

The principal economic activity in CO is commercial agriculture—coffee growing and fruit orchards. The second largest source of income are activities carried out in the region. Remittances are the third largest source of income for families, and the fourth and fifth are temporary jobs and subsistence agriculture. This occupational and income structure shows a relatively lower level of dependence on territorial resources. CO communities exhibit a forest use pattern that is very similar to that of SS, with firewood collection and conservation areas in the framework of the Payment for Environmental Services program. Lowland rain forests are used as grazing lands and to collect firewood. One community in this region has established a conservation zone in its dry rain forest areas.

In the three regions, there are women who have been left in charge of families and agricultural land. They have limited capacity to cultivate them, due to the fact that they lack enough farmhands at home, because where migration is high, the cost of day laborers has increased.

The most significant family assets are farmlands; however, in some JS communities²⁹ the importance of farmland has decreased dramatically. In all three regions, communal lands are used for farming. The communities are still in charge of regulation and there are greater incentives (and pressure) for families to collaborate in community management. The most important assets are the forest areas, used by the regions (as such) and by the families.

In all three regions, the forest areas are the most important community assets. Different activities are carried out in “communal use” areas. Some are organized individually or by families (for instance, harvesting non-timber forest products–NTFP), while for others – such as logging – the community is in charge of organization and implementation. The latter produces jobs, income and investment in public services from tapping commercial forest products. In recent years, different JS and CO communities have undertaken initiatives to provide tourist services in these areas; in addition, there are community-based spring water bottling businesses in JS.

Earnings from the community-based businesses and resources from government programs have been sources of financing for the development of new assets; but, in general, productive reinvestment in the development of family- and community-held land assets is limited and there are practically no cases of investing remittances in this type of venture.

Located in JS, Nuevo Zoquiapam is the only one of the communities visited where there were experiences with investing remittances in the development of territorial-based assets

²⁹ For instance, the communities of Capulapam and Xacui in JS.

(greenhouses for agricultural production). However, the group behind this venture is opposed to community forest activity, as they consider it a threat to the water supply from the community springs. Coffee growing and beekeeping in SS and CO communities are also based on community forest assets. These activities are related to a new “inter-community asset” under the collective brand “Pueblos y Selvas” (Peoples and Forests), which supports marketing SICOBI community products and is seeking recognition for sustainable community production processes.

The impact of the migration experience on the occupational profile of those who return also shows a trend toward de-territorializing livelihood strategies, and, in some cases, a loss of productive capacity. Migration affects farming in all three regions. In SS, people stop farming, whereas, in CO, approximately 10% of those who farmed cease to do so following migration. On the other hand, in JS, 52% of migrants abandoned agriculture upon returning to their communities. In exchange, migrants tend to work in the tertiary sector, generally as a result of having opened small family businesses. The percentage of migrants who end up involved in the tertiary sector is 52% in JS and 24% in CO. In CO, 14% of returned migrants remain unemployed.

In general, migration has limited the general sense of ownership over community assets. During the 1980s, support for developing forestry in JS was seen as a contribution toward restraining migration; but this process, which had begun years earlier, had already taken on a life of its own. On the other hand, the link between forest production and family economy – whose precariousness has been a central factor in the exodus of migrants – has been limited and in some cases the relationship has been contradictory. Forest areas and businesses strive to be important community assets; however, in many cases they have lost their social value, and their development has stagnated. Migration, furthermore, has clearly limited the incentives and capacities for the development of forest assets.

In communities where there is more education and successful migration, forest activity is not seen as an attractive occupation. *Comuneros* with rights who live outside the community display a rentier, and even wasteful, attitude toward the profits of forest businesses.

Quality of life and vulnerability

Migration is an individual experience, with high costs to the migrants and their families. Thus it is difficult to capitalize on the resources (or other benefits) that migration produces for communities. Its impact on the living conditions of families and communities is uneven. In many cases, the impact on family members and family cohesion depends on the migrants’ destination, how long they have been gone, and how successful the migration experience was.

Most frequently, remittance money is used for family consumption. In many cases, the family ceases to produce food and increases its consumption of industrial food. Another frequent investment made by migrants with relatively successful migration experiences is the purchase of lots or building houses, which are often used only temporarily, or remain unoccupied.

There is a major distance between educational programs and the information that students have regarding regional conditions and issues on governance, history, culture and territory. In fact, the school experience is another push factor. Length of schooling is on the rise, particularly in communities that are more developed. Remittance money has enabled a higher level of education for some young people. In more isolated communities, with a declining number of children in the population, educational options are becoming more limited, including school closures and a reduction in the number of classrooms. No direct impact was found between migration and access or improvement in health services. In some cases, the need to pay for health care for family members with health problems leads to migration.

Migration increases the pressures on and vulnerability of families, including family members who remain in the communities, especially women, children, youth and seniors, due to the fact that the capacity to provide for the family's needs becomes increasingly uncertain to the degree that the capacity for production is lost (in the family and the community) and resources are received irregularly (occasional in the case of seniors). Actual or potential abandonment increases for families and their members. Young people, women and seniors tell of experiencing loneliness. Some families experience an increase in violence related to the temporary return of migrants and their lack of employment.

Impact on community and territorial governance

The capacity for community governance is a pivotal issue for the sustainable management of communal resources such as community land, forests and businesses, which are based on mutual trust, commitment among peers, collaboration networks and legitimate rules for use. Governance is dynamic, as are the practices that uphold it. The development of new community assets (e.g., community businesses) requires community governance, while at the same time it transforms it.

Community governance is essential to the development of the capacity to respond to many of the challenges faced in communities and community territories. The "traditional" structures, governance practices and community participation in the study communities are the communal/*ejido* assembly, the *cargo* system, and unpaid community work (*tequio*).

As mentioned previously, the operation and continuance of community governance has a high cost (major investment in labor and transaction costs); as for assuming them, at present, the rights over common communal assets do not always produce sufficient incentives. The greater the communal assets, the greater the demands on community governance and the needs for “social investment” to manage them. This gives rise to the difficulty of maintaining these assets when there is considerable migration.

Migration has had direct and indirect impact on a number of community capacities that affect governance. This impact falls into three main areas: the structures and practices for making agreements; the cargo or voluntary leadership system, which uphold the exercise of authority and representation; and the tequio, the practice of voluntary collective labor for the community.

First, the capacity to make informed decisions regarding local conditions has weakened, which hampers the community’s capacity to reach consensus. With a reduction in peaceful coexistence, joint action and collective participation in local governance there is a reduction in community social capital, which is necessary for the management of community forest resources and the development of community businesses.

In different cases, there has also been a weakening in the capacity of assemblies and authorities to exercise control for enforcing agreements and the rules for use of the land and governance of the community, given that migrants who have not participated in the agreements or are unaware of them are not always willing to abide by them. Thus, in some cases, the collective capacity to restrain abusive use of communal resources has been limited. Many rules lose legitimacy when the consensus is weakened as a result of absence and of differences of opinion between those who are absent and the locals.

The pressure involved in upholding the cargo system has increased greatly for both migrants who maintain community rights and for comuneros who remain. Until a decade ago, many international migrants returned to their communities to perform the duties they had been assigned. This possibility has been eliminated for all practical purposes now that the cost and risks of international migration are greater. Many communities have responded to this change in conditions by reducing the period of duties and substituting elected migrants with residents, whom the migrants pay for exercising their duties. Even so, results are not the best; in general, the execution of duties tends to be done more poorly, due to the fact that time for learning is insufficient. It was also often mentioned that the substitutes are not as responsible nor do they command the respect that the elected authorities do, which weakens accountability in practice.

On occasion, comuneros are appointed to authority after prolonged absences. In these cases, it is frequent for the new authorities to be lacking information and a sense of identity with the community. In some communities, even outsiders have been included in the cargo system. In others, there are processes to formally make them comuneros. In different cases, cargos for monitoring and protecting forests have disappeared. Under these conditions, communities were found where migrant participation in the cargo system has decreased, and there have been cases in which the system itself has become a push factor. However, in general, in high migration contexts, the community's capacity for agency/leadership for embarking on and sustaining initiatives to manage community land assets has become limited.

In different cases, migrants, particularly those who have spent long periods out of the community, have new ideas on community governance, territorial management and resource use. On occasion, this new type of difference has provoked contradictions. Other times, it has contributed to revitalizing local governance.

Tequio (unpaid community work), as a practice that contributes to the construction and maintenance of the community's resources, engenders a sense of reciprocity between the community and its members, and strengthens the sense of belonging. Migration has also weakened the tequio tradition in different ways. On the one hand, the number of tequios has dwindled, some of importance; e.g., the disappearance of the annual walking of community boundaries. The most frequent way migrants fulfill their tequio obligation is by paying substitutes; however, this causes the tequios to lose their quality and social value of belonging. On the other hand, the burden on migrants of fulfilling tequios and cargos has led to the terms for the obligations being reduced in length and the number of tequios being decreased.

The weakening of the tequios undermines community capacity to protect forest lands that are facing different forms of pressure (fire, pests, illegal cutting). Many inhabitants, even the comuneros themselves, have no knowledge of the conditions of the forest resources, and of what is going on in forest areas. As a result, volunteer work decreases, one of the most important assets they possessed, the source for developing infrastructure, natural capital and social capital.

In general, it was found that when the obligations migrants have in their communities are regulated, the costs of maintaining ties often rise. Obligations to the community are considered (and performed) more in terms of activities that strengthen prestige than as participation in the management and protection of the territory.

Conclusions

Migration is an increasingly visible and strongly felt dimension in many aspects in the lives of home communities and immigrant-receiving societies. The implications of the process of migration on the regions from which migrants depart and the relationships between them and their home communities are issues that have gotten relatively little attention, despite the fact that a great number of communities and extensive territories in Mesoamerica have experienced far-reaching transformations.

The poverty related to the lack of opportunities for employment, health, education, leisure activities and prestige have driven and continue to drive hundreds of thousands of young people and adults to seek broader horizons far from their communities. Paradoxically, migration, in many cases, deepens the structural conditions of poverty, to the extent that it deprives communities of their most valuable asset: young human resources with greater capacity for agency. In this regard, it is important to clarify that we are not blaming migrants for the conditions that they themselves face and endure, nor to say that they must not migrate. Based on the analysis herein, it is more necessary to change the perspective of migration policies, to add the development dimension (Garcia Zamora, 2000; Garcia Zamora et al., 2006), to make migration an option and a right, and not a requirement when faced with no future. We also propose that the continuing existence of many communities, and the collective action and governance this requires, involves broadening community participation as well as the definition of community, beyond the limits of the communal territory and even national borders. This opens the possibility for all members formally joining the community, regardless of where they live, and maintaining their rights and responsibilities based on the individual's willingness to participate in the agreements and rules each community defines.

In recent years, the rise in violence in Mexico, the economic crisis, xenophobia in some sectors and the tightening of immigration policies in the United States have all made migration an increasingly constricted, costly and risky option. These new conditions have had a profound impact; for instance, trips that were initially expected to be temporary are now prolonged and the return is postponed, which encumbers the relationships between migrants and their home communities. This accentuates the difficulties for family members who stay behind. Additionally, those who were not able to find success on the other side of the Mexican border are now returning.

Overall, as a consequence of the absence and the loss of local productive capacities, families and communities have become more vulnerable. They must face new and old pressures in contexts where there is an absence of "human resources" to maintain

community governance, family and social productive activities, forest management and protection, and development projects.

Another characteristic of contemporary rural communities is the widening gap with regards to visions and perspectives on community and its resources, particularly the value and use of territory. The perspectives of the comuneros who remain and those of the migrants, in general of adults and youth, are more distant and are becoming contradictory, particularly in the absence of experiences and opportunities for developing a shared vision and understanding. This absence also weakens local institutions, reducing the possibility of maintaining local government systems. The viability of the local community as a space for “governing” the territory and its resources is also weakening.

To date, public policies have not identified the problem of the deterioration in productive capacities in the indigenous and forest societies of southern Mexico as an issue to address. While sizeable production subsidies are channeled to strengthening the (already strong) agro-industrial businesses in northeastern and northwestern Mexico, in the south the rule is to provide handouts to subsidize consumption in impoverished households. Environmental policy aims to sustain and restore ecosystem services based on schemes that restrict or proscribe productive activities. This contributes to imposing even more limitations on development opportunities for those who remain in rural communities or return to them. The role of territorial and environmental stewardship of rural communities has not been taken into account, nor the need for viable local societies and economies for environmental-territorial governance. In contrast, efforts are still aiming toward external control – by the government or the market – of territories that are ideally “devoid” of rights, as a panacea to achieving environmental sustainability.

From the perspective of this study, the social, economic and environmental reconstruction of the regions together with rural communities is necessary to national security and sustainability. Their development requires new directions in policy and civil strategy that tie these different dimensions together, considering the implications of migration and the roles migrants can play in these processes.

The need for investment in development also includes the need for investment in bringing dignity to rural living, as well as the development of educational opportunities from a perspective of regional coordination and development, and investment in opportunities for alternative culture focused on retaining young people, thereby strengthening the processes of building identity and a sense of belonging.

Finally, the re-construction of governance in the communities requires recognition of their “trans-territorial” character. In this context, the construction or strengthening of

bodies for participation and coordination and bringing perspectives closer among the members of the trans-territorial communities is a condition for the continuance and re-creation of many contemporary communities. This construction of trans-territorial communalism and citizenship requires efforts to promote information for developing shared perspectives and making informed decisions, adapting community regulations to the changes in socio-environmental conditions and ties of knowledge, understanding and trust among the members of these new communities.

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Chapter VIII

Migration, Natural Resource Management, and Women's Empowerment in the Rural Communities of Central Veracruz

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Veracruz is located in a zone of high climate vulnerability, highly dependent on the oil industry. Rates of internal and external migration are elevated, in particular because of the drop in international coffee prices and the loss of jobs in the oil sector. Similar to the other states of southern Mexico, a high percentage of indigenous and peasant population need rural livelihoods. Land management and resource use are established by traditional and hybrid regimes. This study explains the impact of migration on rural livelihoods and gender relations. Among its principal findings are that remittances are used to purchase land and agricultural inputs, but that most of the money is spent on other, non-agricultural, uses. Although a large proportion of women receive remittances, decisions about their use continue to be governed by traditional patriarchal custom. This situation is exemplified by the case of the “women with a hoe,” who, from the time they are children, learn to farm, as family labor. An analysis of maps in three communities found that not only have coffee plantations been preserved, but have even expanded in size. A large proportion of households are involved in activities related to natural resource management.

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Migration from Mexico to the United States

Our research has taken place in a regional scenario of swift transformations, similar to other areas of Mexico whose populations are linked to international migration routes. In the so-called “emerging” regions in Mexico, Veracruz is noted for the rapid and massive movement of its inhabitants (Binford, 2003). It has been calculated that over the course of approximately five years 10% of the population has left for border states and the United States (Salas, 2004). This movement is happening at such a dizzying rate that Veracruz went from 27th place in 1997 among Mexico’s states in the number of migrants it sends to the United States to fourth place in 2002 (Pérez, 2003), and then to second place in 2009 (ENADID, 2009). International migration has become an attractive option, and in some cases the only possibility for large segments of the population that find no place in the weakened regional job markets, and cross the border in search of the “American Dream.” The literature is still sketchy and there are numerous aspects that need to be studied in depth, particularly when considering that Veracruz is such a large and diverse state.

The triggers that have launched the population of Veracruz into the international migration circuit are closely tied to the crises in agriculture and the extractive industry. As a producer of raw materials, Veracruz fits the schema noted by Escobar et al. (1999), which characterizes the regions feeding into the new migratory streams at the end of the millennium as having significant percentages of indigenous and rural population, acute income inequality, and highly impoverished municipalities whose economies revolve around plantation agriculture and trade, linked to global raw-materials markets, as well as oil production (Córdova et al. 2007). The reorganization of the industrial sector cost the region almost 20,000 jobs (Rodríguez 2003). Therefore, migration to the north has become a viable alternative for the working-age population, which has in turn brought on rapid changes in the structures and dynamics of the rural areas of the state.

International migration began against this backdrop of a declining demand for labor and contraction of domestic markets. Although for some years, locals had been crossing the border and settling on U.S. soil, these were isolated cases that were insufficient to form a spearhead for mass migration. Several factors came together to accelerate migration in the state, with migratory peaks corresponding to drastic downturns in international agricultural prices. For instance, following the serious coffee crisis of 1989, a trickle began that went on growing until 1995, rising sharply after the next crisis in the coffee sector in 1997, and reaching its zenith in 2000 and 2001. Following the 9/11 attacks, migration decreased noticeably, only to rebound some two years later.

With little or no tradition of international migration, Veracruz migration to the U.S. traversed the first phases of the process rapidly but insecurely. Broadly speaking, this migration has the following characteristics:

1. This is relatively recent migration on the national scene, taking place only over the last 10 to 15 years.
2. The newness has meant that it has been financed through high-rate loans, principally backed with property. The quickly consolidating social networks have only just begun to support it in the last five years.
3. Most migrants are young married men at the height of their productive capacity: 80% are men, predominantly 20 to 39 years old, and 60% are married.
4. These migrants are mostly undocumented, which means living in extremely precarious conditions in the receiving country.
5. Return migration has not reached a saturation point to make it cyclical and regular. Instead, people tend to stay for protracted periods, lasting from one to eight or nine years, due to the increasing difficulty of crossing the border, the high costs and dangers of crossing, the extent to which migrants have met their goals, and others.
6. The migration of women began late and has risen gradually, given the considerably more grievous dangers women face during the crossing, the need to leave children in the care of others, and their overall greater social vulnerability because of their sex. These factors have led to women accounting for an average of 20% of migrants.
7. Although at the onset, migration was predominantly rural, it has expanded to cities and different social classes (Córdova and Fontecilla, 2010).

These characteristics lead to the deduction that a significant number of the people who watch their relatives leave as migrants are young women in the early stages of marital life, with young children or adolescents in their care. It is crucial to take this fact into account when analyzing the impact of migration on home communities, considering the patterns of family relationships in rural Veracruz. Overall, the patterns of marriage, conjugal life, residence and inheritance correspond to those defined as the “Mesoamerican family” (Robichaux, 1997), a model that will be analyzed further on.

It is important to note that the present day context of violence and insecurity around the country makes it difficult to interact smoothly with the subjects of research in the study of migration. In addition to the ordinary mishaps of travel, migrants are highly vulnerable to robbery and fraud along the way; they can also become victims of abduction, which turns into extortion of their relatives. Robberies at homes that have migrant family members have increased because it is known that their assets have increased. All this means that it is dangerous for the family if information about the migrant's destination, employment and remittances becomes known.

This chapter analyzes the effects of international migration on the traditional division of labor and the distribution of benefits related to natural resource management in the coffee-growing communities of central Veracruz, Mexico. This raised the need to consider the relative complexity in the analysis of the relationship between the two and the need for an interdisciplinary approach. It also led to recognizing that the multiple factors involved in this relationship interact in ways that cannot be isolated, or be described and explained through partial approaches by different specialists.¹

As a result, it was necessary to identify changes in natural resource management practices; analyze patterns in the traditional division of labor related to this management; and identify forms of control, access to and management of natural resources by the different members of the domestic group (DG), taking gender and generation into consideration, along with the distribution of derived benefits. Likewise, it was necessary to examine negotiation processes within the DGs regarding differential access to natural resources and the benefits derived from their management, as well as the insights gained by the individuals involved.

The way down this path led to the design of a staged approach. At the outset, a survey was done from December 2007 to February 2008 of 372 homes, distributed across three communities (Texín, San Isidro and Las Lomas). The interviews covered the following themes: socioeconomic data, paid and unpaid activities of household members, international migratory status, land ownership, agricultural practices, and natural resource management (preliminary “inventories”). This data was stored in thematically arranged databases, by household and by individual, by farm and by useful plants.

A new selection was made from the households in the original sample to form a smaller sample of “case” households. The following criteria were used in this selection: ownership or non-ownership of land, and household with or without migrant family member. Several special cases were included because they had participated in the payment for environmental services program for shade coffee plantations. Thematic questionnaires were developed to gather information on the new sample, which was done from April to August 2008. The following themes were addressed: work history of male and female heads-of-household, purchase of assets, use of wild and semi-cultivated plants, house-yard resources, use and management of firewood, and coffee farm management. Interviews were also done with women in this sample who were “in charge of farms” due to male migration, focused on analyzing their processes of empowerment. These thematic questionnaires were filled out for a proportionate number of households in the three

¹An element that arose during the study was the challenge of using a participatory approach to the research. For a more detailed description of this, see the complete research paper in *Revista Sociedades Rurales, Producción y Medio Ambiente*: http://srpma.xoc.uam.mx/tabla_contenido.php?id=499

communities: 12 in San Isidro, 16 in Texín, and 24 in Las Lomas. Each questionnaire was filled out with the “person in charge” of each aspect, according to the members of the household. This information yielded six theses for biology majors, two for sociology majors and one for an economics major.

Additionally, an analysis of maps showing changes in land use and vegetation between 1995 and 2004 in the three study communities yielded significant information. As the labor force shrunk due to migration, the land area used for coffee plantations remained the same, and in some cases even increased (San Isidro). This points to possible positive synergies among processes of proletarianization, migration and farming alternatives.

From the cases identified and analyzed in the first two phases, we chose nine households with migrants where a woman was left in charge of the farm (three per community). In these cases, in-depth interviews were done with the women to explore their processes of empowerment in the absence of the men. These interviews showed that acquisition of new responsibilities does not necessarily mean they have greater autonomy.

Diversification of income and productive activities in the “new rurality”

The economic crisis of the 1980s led to significant changes in rural Mexico. Opening up of markets and the removal of government subsidies on production had severe effects on household subsistence, producing unemployment and insecurity. These “innovations” in the rural landscape led to the development of the concept of a “new rurality,” which encompasses a number of transformations that some authors consider merely the intensification of long-entrenched processes, whereas for others, these changes need to be observed from a different perspective. Notwithstanding this disagreement, there does appear to be consensus that this new rurality “involves the existence of important changes in the rural area that appear to mark a new stage in its relationship with the city and with society in general, both at the economic level and in social, cultural and political terms” (de Grammont, 2004, p. 289). Although this concept has “captured the imagination of many of those concerned with rural issues ... the term has not been entirely defined” (Kay, 2008). The agreement on this concept includes a number of features that are common to contemporary scenarios across Latin America, which can be summed up as follows:

- Increased contribution from non-agricultural activities to total income in rural households.
- Flexibilization and feminization of rural labor.
- Blurring of the boundaries between rural and urban spaces.
- Increasing migratory flows with increasingly distant destinations and longer stays.

A historical perspective of the territory this study is set in reveals that the expropriation of large estates during the land reform of the 1940s led to the creation of hundreds of ejidos. Distribution of the land led to the proliferation of small farms in the area, which prospered due to the high coffee prices during the postwar period (Bartra, 1999). State intervention in the coffee sector was consolidated in 1958 with the creation of the Mexican Coffee Institute (INMECAFE), which was responsible for representing small and large producers abroad, providing technical and financial advice, and acting as intermediary in the sale of the harvest (Hoffman, 1992).

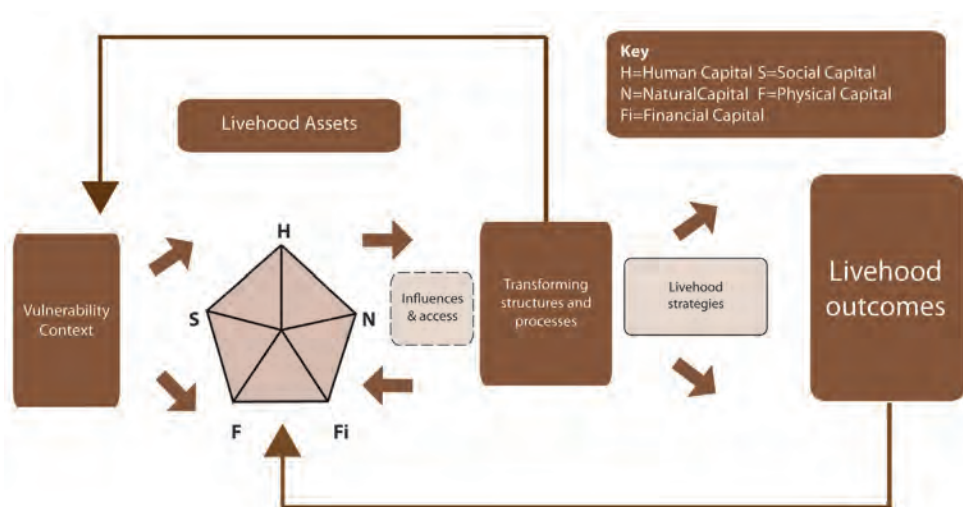
The boom that coffee growing brought to these communities was due largely to the creation of the International Coffee Organization (ICO) in 1962, which imposed strict limits on exporting nations and controlled prices for nearly three decades (Fritsch, 2002). Under such promising auspices, INMECAFE increased its presence and changed the coffee landscape in the country, resulting in the “peasantization” of coffee growing (Bartra, 1999). With the breakdown of these agreements and the privatization of the international coffee trade, the government agencies that had been created to regulate production and trade became unnecessary (Aguirre, 2003). In Mexico, the dissolution of INMECAFE in 1989 left producers without support programs and at the mercy of the middlemen (Aguirre, 2003). The collapse of prices resulted in a drastic reduction in investment in coffee plantations and in the abandonment of farms, which affected national average yields (Paz Paredes, 1995). The old cyclical pattern of granting farming credit, cancelling the debt and approving new credits from the official agricultural bank (Myhre, 1997) suddenly stopped working, increasing the number of nonperforming loans. New programs were too little and too late or ineffective and funding opportunities for small and medium sized producers dried up. This dramatic situation was aggravated by climatic and phytosanitary conditions that arose subsequently.

The suspension of ICO opened the way for transnational corporations to seize control of the market and set coffee prices. Arguing that Mexican coffee was lower quality than others, the New York Stock Exchange began applying a variable discount to the overall market price of shares, which directly affected producers’ income. The coffee crisis remains so serious that it has been noted that the map of rural poverty coincides with coffee producing areas and with the sites of the most intense peasant protests in the country.

To examine these processes from the perspective of natural resource management, subsistence, and a gender perspective, in our work we further assume that the traditional division of labor – and the distribution of resources and the benefits derived from various activities – occurs in the context of specific strategies used by DGs to ensure their livelihood. Thus, we use a livelihood approach (Scoones, 1998), aimed at the analysis

of family strategies, resources and sources of income, and the way that these are shaped by social institutions that operate at different levels (Ellis, 2000, p. 10), channeling the available life choices to certain social actors, domestic groups and individuals (Scoones, 1998) (see Figure 1).

Figure 1. Framework for sustainable livelihoods

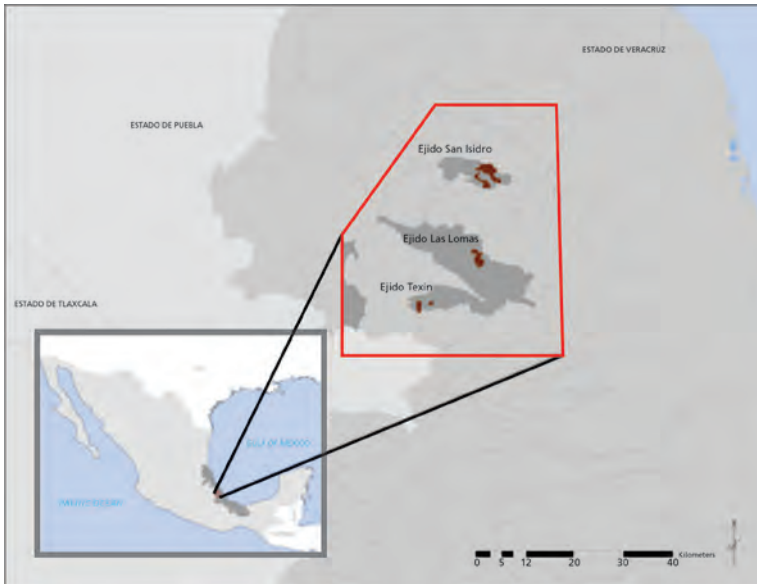


Source: Carney, 1998.

In this case, the focus is on domestic groups (DG) as the frontline where common social goals and individual interests are negotiated to ensure sustenance and maintain relationships with larger economic units (Preston, 1994). In this context, livelihood strategies denote the range and variety of activities and options that allow DGs to earn their sustenance. A growing number of studies show that rural livelihoods in many areas in developing countries are diversifying their range of activities and sources of income beyond agriculture (Ellis, 2000; Preston, 1989; Hussein and Nelson, 1998), giving DGs the capacity to mitigate risks and reduce vulnerability. This in turn allows them to cope with the uncertainty and insecurity associated with the current shifts in labor markets and the powerlessness of public policies to ensure their sustenance (Ellis, 2000). Diversification of the means of subsistence is attributable to necessity when it is a response to external factors (Ellis, 2000, p. 55). However, diversification is considered an actual livelihood strategy when activities and income are organized as the result of the group's internal deliberations aimed at strengthening subsistence systems (Niehof, 2004, p. 14). However, this distinction leads us to consider the rationality of the subjects and the negotiation processes going on within households. If we also take into account that the motivations and options that favor diversification differ between domestic groups that are less well off and those that are better off, a more

comprehensive explanation for diversification of livelihoods calls for taking a look at the interactions between macroeconomic trends and local-level responses.

Map 1. Area of research



Source: Prepared by author based on www.inegi.gob.mx.

Our findings

According to the results of the survey done from October 2007 to March 2008 on a sample of 370 domestic groups distributed across the three study communities, most own land, and a considerable percentage have family members who have migrated to the United States (see Table 1).

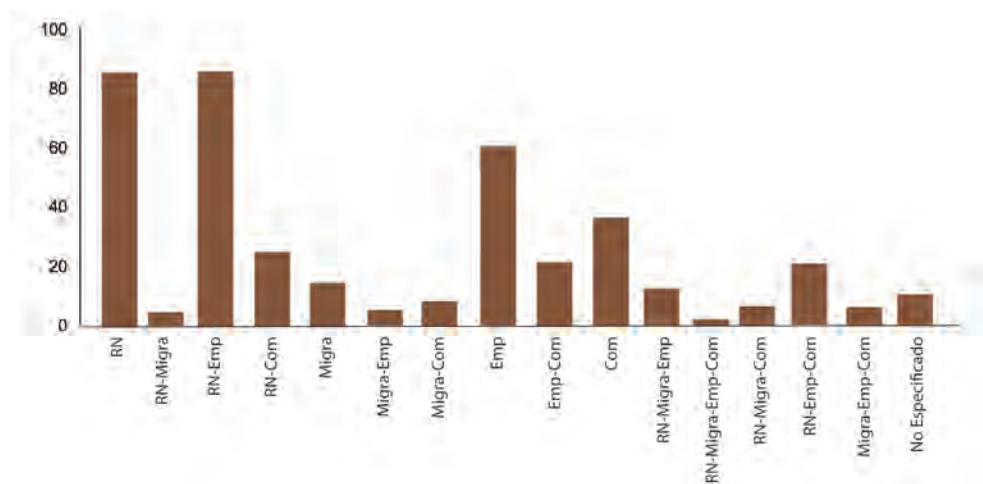
Table 1. Distribution of domestic groups (number/percentage) by land ownership and migrants in family

| With Migration/With Land | | No Migration/With Land | |
|--------------------------|--------|------------------------|--------|
| 69 | 18.55% | 165 | 44.35% |
| With Migration/No Land | | No Migration/No Land | |
| 37 | 9.95% | 99 | 26.61% |

Source: Household survey (October 2007-March 2008).

However, upon examining the possible combinations of activities by the members of each domestic group, it can be seen that there is a broad range of strategies designed to ensure survival (see Graph 1). It should be noted here that the diversity of activities includes a range of tasks that are not directly linked to natural resource management, whereas remittances are often linked to other sources of income that enable the DG to face critical periods when remittances run low.

Graph 1. Household livelihood strategies in the three research communities (Las Lomas, San Isidro and Texin)

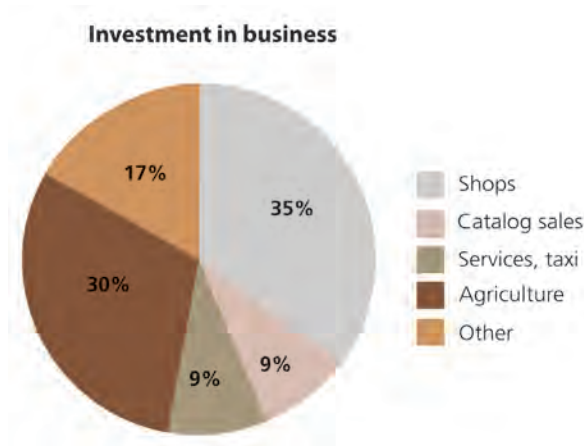


Vertical axis: number of households;
 RN: activities based on natural resource management;
 Migra: international migration;
 Emp: urban employment;
 Com: own business.

Source: Domestic group survey (October 2007-March 2008).

It is likewise important to note the peasant component in this set of strategies, a feature that shows up in the rise in the amount of land dedicated to coffee growing over the past decade in the research communities (Salas-Canela et al., 2008), which is contrary to what would be expected as a result of the decline in the availability of agricultural laborers. This trend is associated with positive exchanges between migration and agriculture, such as remittances being used to purchase land or pay for materials and wages, and the use of land as collateral for loans to pay for crossing the border. The significance of the first of these forms of investment is compared with the other options in Graph 2.

Graph 2. Use of remittances in households in the three study communities (Las Lomas, San Isidro and Texín), in percentages



Source: Domestic group survey (October 2007- March 2008).

In support of the idea of the endurance of peasant strategies, people continue to use a large number of plant resources in these communities (Aguilera, 2009; Álvarez, 2009; Chávez, 2009 and Ruiz, 2009), most of which are native to the region. They support the survival of DGs and are a lifeline at critical moments. On this point, it is important to note that there is a gender based division in the management of these resources. In many cases, their maintenance is under the care of women, whereas the distribution of the efforts and benefits does not necessarily favor them (Aguilera, 2009).

Natural resource management: challenges in the context of migration

As discussed earlier in this paper, it needs to be noted that migration flows and other current livelihood strategies of DGs are becoming more intense as a result of the government's neglect of rural development, a situation that has been discouraging activities involving resource management. Nevertheless, some domestic groups have chosen to keep up farming and natural resource management as an option, modifying their practices and cutting down on the intensity of the activities. Likewise, this diversification of strategies, as well as the changes in natural resource management, have gone hand in hand with changes in gender roles within the DGs, mediated by constant negotiation, as can be seen in the cases described below.

The first case that illustrates the investment of remittances in productive ventures is that of a domestic group in San Isidro, comprised of a married couple ages 39 and 40 who have a nine-year-old son and an eighteen-year-old daughter, who is in turn married and has a two-year-old daughter. In this case, the head of the group migrated, living in South Carolina from 2000 to 2004, and Georgia in 2005 and 2006. Currently, Alberto is a return migrant. During his stay in the United States he worked in fruit packing companies, which – in his own words – inspired him to work on agricultural activities upon returning. He built his house with remittance money and purchased five parcels where he is experimenting with different combinations of crops. Alberto does not rule out the idea of migrating again.

Alberto planted new coffee groves, interspersed with other commercial crops whose produce is sold on nearby local markets and is also used for household consumption. The first parcel has a mosaic of different crops, including peanuts, beans and papaya, among the coffee saplings. One of the parcels had sugarcane growing on it before Alberto bought it. However he considers this crop to be less attractive than coffee because it can only be sold through the local mill, and because – unlike coffee – it does not create jobs or contribute to the distribution of wealth. Therefore, he replace sugarcane with new coffee plants, and while they mature, he is growing corn and green beans. This family's income is mainly from the head-of-household's crops and the son-in-law's wage labor.

When Alberto migrated, his wife Isela was left in charge of the children and she managed the remittance money, distributing it to take care of the daily expenses, the construction of the house, and buying and farming the land. These tasks were, in her own words, "very stressful." When asked what she thought of the possibility of her husband migrating again, she answered "he'd better not leave, he has his land to keep him entertained."

In another case, in Las Lomas, remittance money has been used to expand agricultural activities. This is the domestic group comprised of an elderly couple. Don Alfonso is 62 and Doña Maria is 60. They are the parents of Rafael, a 40 year-old return migrant, and his younger sister. The migrant's father, Don Alfonso, has several parcels planted in coffee. Additionally, during his son's absence, he worked the parcel his son bought with remittance money. Currently, the return migrant drives a cab, while his father continues managing the farm.

Rafael migrated to Minnesota four years after getting married and lived there from 2004 to 2005. He returned to work as a taxi driver. After migrating, his wife left her parents-in-law's home and took her two sons with her. While he was in the United States, Rafael sent his father money to start construction of a house, and to buy him land and turn it

into a lemon grove. Now, Rafael has returned to be closer to the children. He takes them to his father's house on the weekends; he drives his cab and his father takes care of the new plantation. This group illustrates the case where the absence of the migrant leads to the separation of the couple.

Currently, this family's main income is Don Alfonso's wages, the slim earnings from the coffee crop, and Doña Maria's hair stylist services offered in her own home. On one of the parcels that Don Alfonso owns they have planted beans, sometimes combined with corn. The other parcel is grass for fodder, for the time being. The corn and bean harvest is for household consumption, and small-scale sales. They receive no farm subsidies.

These new arrangements are necessary when the tasks commonly assigned to men and women are modified in the DGs as a result of predominantly male migration. This involves processes of negotiation, which uncover different perspectives and expectations in those who still regard the rural area as a space for productive opportunities, particularly in agriculture, and who have found a more stable situation with a margin of safety, by integrating into the processes of proletarianization, finding employment in service activities or commerce in nearby urban areas.

In these processes, the women who stay behind in the hometown communities continue to be at a disadvantage, as will be discussed in the following section. The differences in perspectives and expectations, and the negotiation processes that take place in the domestic groups can be seen in Paty's words. She is the wife of a migrant from San Isidro. In addition to working as a maid in Xalapa, she sells shoes and jewelry. She also manages the remittances that have been invested in building their house, as well as the management and reorganization of the production on a coffee farm: "... I have a lot of work, and I earn my money. I say he should come and see his farm, because it takes a lot of time, and makes almost no [profit]."

“Women with a hoe” and female empowerment following male migration

In terms of the resources available to DGs in these communities, analysis from a gender perspective shows the difficulties women face in conquering areas socially designated as the domain of men. The case of land ownership illustrates these inequalities. In the three research sites, the data show that in the best of cases, such as the case of Las Lomas, out of a total of 77 ejido members (ejidatarios), 24 are women (31.16%). In Texín, of 41 ejido members, only 6 are women (14.63%). Circumstances are even less favorable in San Isidro, where out of 107 members of the La Concepción ejido, only two are women,

both originally from San Isidro (1.92%). All of these women are now over 60. This data shows that the strength of local customs still work against women's access to land in these communities (Vásquez, 2005).

However, it is important to go beyond land ownership and explore the opportunities that women have in these communities to expand their capacity for decision-making with regard to the fruits of the land. Doing so requires recognizing that the Mesoamerican family system prevails in the area where this study was conducted. Robichaux (1997) describes the patrivirilocal patterns of residence, and the preference for the youngest son or *xocoyotl* to inherit the father's house and house lot. These conditions limit women's access to land ownership, as they are considered residual heirs. These patterns also form the basis for the dichotomous perception that defines productive activities as the domain of men, and those linked to reproduction of domestic groups as the domain of women. In this regard, Robichaux proposes that the traits defining this family system have endured despite the processes of *mestizaje* and subsequent proletarianization of rural Mexican communities. Notwithstanding, the same author has recently suggested that growing levels of intensity in flows of migration may be altering the unequivocal endurance of these arrangements (Robichaux, 2007).

In this regard, other studies have shown how international migration from rural communities in central Veracruz has had an impact on the way gender relations have changed in the domestic groups. *Matrifocality* – that is, a type of family organization in which men are weaker authority figures, attributed to the Caribbean family model (Córdova, 2003, 2005) – might be emerging in the region in association with increasingly extended male absences (Otterbein, 1965). In this scenario, an aspect that has been little explored is the interaction between international migration flows and activities that are either agricultural or that involve natural resource management, particularly with regard to the investment of remittances and changes in patterns of the gender division of labor.

Based on in-depth interviews with 35 women who are in charge of farms, we explored this dimension of the analysis by attempting to identify some of the circumstances in which women, without necessarily claiming ownership of the land, were able to achieve a certain level of autonomy in managing coffee plantations when these are left in their charge “in name” only. Data summarizing these conditions are in Table 2.

Table 2. Data on women “in charge of farms”
in the three research communities

| | Texin | Las Lomas | San Isidro |
|--|---|---|---|
| Number of women “in charge of farms” | 7 | 6 | 2 |
| Reasons they are “in charge” of the farm | <ul style="list-style-type: none"> • 2 widows • 1 “woman with a hoe” with migrant sons • 2 with migrant husbands (1 of them is a “woman with a hoe”) • 1 with an alcoholic husband • 1 mother of a migrant | <ul style="list-style-type: none"> • 3 by inheritance • 1 single mother who inherited land • 1 widow • 1 with a migrant husband | <ul style="list-style-type: none"> • 2 with migrant husbands |

Source: Alcántara and Contreras, 2009.

The table shows data on 15 of the 35 women in charge of farms who were interviewed regarding their management practices and motivation. They all enjoy the usufruct of the land, but have no control over it. That is, they cannot sell it without permission from their partner or children. As can be seen, the migration of the children or husband are factors that leave women in charge of aspects that were formerly men’s responsibilities, and this is more common among the so-called “women with a hoe,” as if such a task appealed to their greater knowledge of agricultural practices. The case of Las Lomas is unique in that the agrarian reform struggles in this town enabled a greater number of women to become registered ejido members, although in practice they were not the ones who took charge of managing their parcels. An additional note in this regard is that most of the “women in charge of farms” who were interviewed frequently said they “leaned on” or “asked for help from” a man in their family or from an in-law to make decisions on certain tasks, or to deal with the farm workers. Atypical are the “women with a hoe,” which is the term they use to refer to themselves, and which is a reference to the fact that for a long time, since an early age, they learned how to farm on a daily basis, paid or otherwise, initially participating as family labor. Nowadays, these women are generally over the age of 50.

Thus, the potential synergies created by the investment of remittances in primary activities related to natural resource management, as well as the differences in the way women assume new roles and responsibilities to then reap differential benefits from predominantly male migration, are determined by the internal structure and arrangements of each domestic group, and the position of each woman in the hierarchical structure, which involves the gender division of labor for the groups and for the direction of their own personal work. The data presented in this paper show the fragility of the gains from migration in terms of extending the scope of autonomy for women who remain in their places of origin. Actually,

their statements show ambivalence when they reflect on the meaning of assuming new responsibilities following the migration of the men they lived with. This can be seen in the following interview (see Box 1).

Box 1. Interview excerpt

| | |
|--------------------|--|
| Interviewer | Didn't you have to do, for instance, the accounting? Or pay the farm workers (once your husband had migrated)? |
| Doña Blanca | No. He did it (her brother). He was in charge; he already knew how many farmhands, how much to pay them and how many of them it took to clear it. |
| Interviewer | Didn't you ever go there? |
| Doña Blanca | Yes, when the coffee was ripe, when we went to pick it. We helped in the picking, but he took care of finding the pack animals, finding who would fertilize, who would clear the ground; not me. |
| Interviewer | I thought that was the way it was. |
| Doña Blanca | No, not me. |
| Interviewer | And, in your family, why didn't you manage it? Why did your brother take over and not yourself? |
| Doña Blanca | The thing is, my husband was working abroad. |
| Interviewer | Yes, I knew that, but didn't he tell you, for instance, "you take care of this, and I'll send you the money?" |
| Doña Blanca | Yes, that is so. He said: "you take care of the farm, you find someone." And since they have farms, that is, my brother lent me a hand, my brother is the one who did everything. |

The previous exchange shows how the authorization and instructions seem to imply the need for a man to "support" the women, who is in charge "in name," generally arguing that they have more experience or capacity for this type of work.

As for the participatory process, there was a preliminary attempt at generating services for local interests. The project was able to place its specialized assessment at the center of a debate – induced by us – between the population and the public policy-makers. However, we found that the project proposal pipeline was saturated by initiatives promoted by ejido representatives, coffee grower organizations, savings groups and other private special interests. In many cases the negotiations were the basis for political arrangements that the population and public officials had no interest in dislodging, and attempting to do so might even have been dangerous. Consequently, we limited our activities to producing information and transmitting it to other sectors of the population, delivering it to local authorities and presenting it at forums that were as open as possible; that is, in the ejido assemblies.

The case was different in San Isidro, because while our work was proceeding, an issue emerged that unified various sectors of the population, had clear demands and was feasible to win. The community reacted to the construction of a highway in its territory that was affecting natural springs and destabilizing the land. The movement has not totally coalesced; rather it activated when threats were apparent and faded when the construction company distributed favors among those among protesters who are less certain of the need to demand their rights.

In this case, and in Las Lomas, our relationship is incipient. Mutual regard has been deepening, taking the form of initiatives from both our part and the community's. The authorities in Las Lomas and San Isidro have invited us to participate in new organization, management and protest activities; and the academic entities that are responsible for the project have directed our new research processes in these communities toward studying water management, remittance investment, return migration, and the links among migration, vulnerability and disaster.

Final Considerations

The proletarianization of the inhabitants of these communities and recent international migration has contributed to gradually shifting their way of life and lifetime patterns. Nevertheless, the data presented here provide evidence of the prevalence of general strategies that can be understood as the resilience of the value systems that sustain rural culture. In this context, natural resource management activities are part of the many diverse arrangements for activities that DGs design and combine to secure their daily life. These arrangements are a foundation that provides anchorage for possible shifts. Therefore, the project results presented here show that as women acquire new responsibilities not originally considered to be feminine, the symbolic boundaries that define the spheres of male and female dominion restrict the possibility for the scope of women's autonomy and choice to extend to those areas.

In this paper, we have noted the importance of taking into account the cultural context that regulates the ways of being and doing things that are of value to the people in the particular context. In the case of the communities we have dealt with, this specifically refers to the cultural patterns deriving from the model of the Mesoamerican family as described by Robichaux. In this arrangement, women are designated as residual heirs of the land and there is a traditional division of labor. This makes women responsible for reproduction of domestic groups, whereas "productive" activities are considered part of the male domain.

Although our results require more detailed examination of the characteristics of domestic groups, which are themselves varied, it could be suggested that the changes in the traditional division of labor driven by the processes of proletarianization – and intensified by international migration – have generated conditions of greater vulnerability and limited empowerment for women who remain in the communities of origin. Reversing this trend will require deep reflection in support of women's internal processes, to enable them to overcome the inertia of the symbolic boundaries that still limit their expectations and self worth. This will enable them to face the contradictions that they currently experience regarding what they “should be” and their possibilities for “being” and “making” a fuller life, which means greater autonomy for them.

In the current Mexican context, we believe that there is no point in further raising the dilemma of whether to conduct extractive or transformative research. Given that 60% of the population, primarily rural, lives in poverty, the social unrest that this leads to and the rise in violence require injecting a political character into scientific work– particularly studies of society. This is not only due to the ethical dimension that it is involved, but also because these circumstances are putting limits on any incursion by external agents who do not offer benefits that can be clearly recognized by the local population. Therefore, any attempt in this regard deserves our effort and reflection.

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Conclusions

The Natures of Migrations: Central Divergences, Common Threads

Susanna Hecht,¹ Susan Kandel,² Nelson Cuéllar³ and Abelardo Morales⁴

Introduction: The agrarian question revisited

Rural livelihoods and the persistence of small rural producers

Small producers comprise half the world's population and they persist in rural livelihoods in the face of macro policies and actions designed to undermine them, whether these policies derive from modernization theory, import substitution policies, neoliberal development regimes, conservation politics or simple appropriation through violence, malign neglect or benign indifference. Peasantries were ideologically and politically important as actors in modern nation building (Wolf 1978), decolonization and the cold war. Small farmers now are increasingly seen as less of a constituency than a constraint to many kinds of rural plans, and hence the array of debates about peasant “viability” (Akram-Lodhi & Kay 2010). This is due to a pervasive urban bias in development practice, profound globalization of food crops through international trade, markets, intense infrastructure expansion and conservation enclosures. Recent research also highlights a new kind of valorization of agrarian landscapes in new waves of corporate “land grabs” (Borras et al. 2012), and as a consequence of infrastructure development. A rise in international migration and remittances, as well as conditional household supplements such as “Oportunidades”⁵ or production offsets such as “ProCampo” have changed the functions and economic roles of rural areas. This new “rurality” has been attended by diversification in sources of income, complex reallocations of labor and land uses, and increasingly multi-sited households. The bucolic “peasant” or small farm community that inhabits much of the imagination about rural areas needs to be

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⁵ Oportunidades is a program that provides supplements for households that send their children to school.

reconceptualized within a context of increasing volatility of pressures on local livelihoods and where strategies, the institutions that mediate natural resources, and the roles that resources play, are rapidly changing. The “nature” of natures is also being altered through global changes in climate, biogeography and the dynamics of resilience in ecosystems. The co-produced socio-natures of peasant landscapes are shifting as labor becomes less available for natural resource management, and small-scale commercial grain prices collapse. Many analysts of the “environmental driver” theories of migration, whether these are rooted in Malthusian or climatic models, overlook the policy and historical underpinnings that have destabilized farming communities as well as the modern versatility of rural income formation that seeks to buffer this volatility.

Migration, as our case studies show, is a livelihood, investment and resilience strategy. It is conditioned by dynamics across multiple sectors and varying scales and is affected by macro policy, transnational networks, regional conditions, local demands and household options. Migration patterns today are: a) increasingly circular; b) engage both rural and urban forms of livelihoods; c) involve multi-sited households; and d) manage a variety of labor and commodity markets, many of them globalized. Like land itself, migration has become an investment. As rural economies are increasingly precarious and vulnerable to economic winds and climate change, migration is a buffer. As far flung (and fragmented) as these strategies may be, keeping one foot in the rural is also a security strategy, the “launching pad” for the bricolage that has become the foundation of rural lives, and a refuge when things do not work out. Local societies and households are increasingly dependent on external resources (remittances, subsidies, transfers), while household members are less interested in investing their manpower in poorly remunerated agricultural activities, and often cannot even afford to do so given the low returns and opportunity costs of labor. Engagement in the sector continues for subsistence and household safety net reasons, as well as the meanings of farming and land for local people (Bellon & Hellin 2011; Brush & Perales 2007; Herrera-Cabrera et al. 2004; Isakson 2011). For many households, proletarianization increasingly involves international migration, and the navigating of international labor markets. Despite and perhaps because of the effects of globalization and transnational processes, the “survival of the peasantry” remains rooted in identity and place, in many cases through access to a complex of “landscape” and biodiversity goods (Escobar 2008; Hale 2002; Healey 2009), and these face strong environmental pressures as well in terms of climate change and conservation politics.

Migration is not uniquely about households—although that has often been the locus of analysis. It affects communities and existing institutions, as we discuss further on. Migration has been accompanied by emerging institutions, whether these are national and/or international, as means of securing social and environmental capitals within the new frameworks of change. There are clear imbalances and tensions as these new institutionalities

unfold, especially in transnational ones, like Via Campesina (Borras, Edelman & Kay 2008; Edelman 2011; Edelman 2008), forest resources rights movements (Ellis & Porter-Bolland 2008; Escobar 2001; Bray et al. 2008; Larson, Barry & Dahal 2010; Pacheco et al. 2012) and transnational “hometown associations” (Beard & Sarmiento 2010; Cohen 2010; Gabbarot & Clarke 2010; Grieshop 2006).

Internal migration: politics, displacement, violence

This chapter reviews our general findings on migration and natural resources, initiating with the dynamics of internal migration from the single case studies, done in areas that are culturally and historically very different: Zimbabwe, China, Syria and Cambodia. We then explore in greater detail the four Mesoamerican sites with multiple case studies that illustrate the complexities of international migration and its effects on rural lives, labor availability and land use. First, and most critically, there are substantive differences between national and international migration. This may seem like an obvious point, but this distinction is frequently overlooked in the literature on migration and natural resources (e.g., Black et al. 2011; Deshingkar 2012). National migration is far less costly, permits greater circular migration and access to home resources, and facilitates flows of goods, information and money through several different kinds of local networks. The internal migrations described in our studies from Cambodia, Zimbabwe, Syria and China are quite different but have some commonalities. These are all authoritarian states whose approach to the rural has involved both violent appropriation by elites, sporadic agrarian reform programs, violence and spontaneous migration both to frontiers and urban areas. Syrian and Cambodian migration also involved some regional international migration. Cambodia and Zimbabwe involved settler frontiers, while the China and Syrian cases involve more circular migration and emphasize gendered outcomes.

Settler frontiers, violence and natural resources

In “settler frontier” migrations, such as the agrarian reform case of Zimbabwe and the Cambodia case (and more widely in parts of Honduras, and more generally in the Amazonia, Colombia and Guatemala’s Petén), land is often claimed through clearing, generating significant local deforestation “hot spots” and a potential decline in the quality of natural resources, at least initially. The deforestation and degradation of forests was dramatic in both these cases, but the processes changed over time and differed in the degrees of militarization in forest landscapes. Another question that emerges from the Cambodia case is the effect of such widespread deforestation on ecosystem services such as erosion and flood control for the reservoir and the irrigation system that depends on it. Siltation of tropical dams, not to mention conflict around water uses, is a widespread regional problem (Doll, Fiedler & Zhang 2009; Klopper 2008; Pomeranz 2009).

The Zimbabwean and Cambodian studies mentioned that forest management institutions were negatively affected by in-migration, and this was especially the case when valuable resources could be pirated by national forest management bureaucracies, or local militia who overwhelmed or ignored local community management councils. Tropical frontiers are notorious for the rapid depletion of more valuable resources (with collateral damage on wildlife and other habitat features) by more powerful business, military and other groups who can profit from the one-time accumulation through appropriation of community assets. The array of other forest products for subsistence could also be destabilized by in-migration that did not recognize or was not included in the institutions that controlled access to and management of forest resources. Thus, various assaults on land management institutions in conditions of dynamism or violence remain a problematic feature and undermine participation in these institutions by those who formerly abided by them. Internal migration associated with conversion of communal forests and/or the overriding of existing forest institutional structures by in-migrants and/or military or paramilitary groups has large-scale impacts on the regional resources profile. These issues still require further ethnobotanical work to detail the biotic and livelihood impacts. This pattern has been documented in many situations and is what gives frontiers such a violent cast (Coppel 2006; Peluso 2012; Peluso & Watts 2001; Hecht & Cockburn 1989; Brittain 2005; Simmons et al. 2007; Gould, Carter & Shrestha 2006; Lopez-Carr et al. 2012).

Because poorer households use forest resources to a great degree—a kind of subsidy from nature, for their livelihoods—extraction and destabilization is likely to have a stronger impoverishing impact on them (Hecht & Anderson 1988) and this is clearly seen in the Cambodian case. The impact of this out-migration on land management in the sending regions in Zimbabwe remains undocumented. However, intensification of resource management in the sending homelands was probably occurring before the Zimbabwean reform, since East Africa has a well-developed suite of labor-intensive resource management repertoires (see Cousins & Scoones 2010; Haglund et al. 2011; Mueller 2011; Ribot 1999; Scheffran et al. 2012; Sedano et al. 2005; Sendzimir et al. 2011; Timmons et al. 1994). Agrarian reform areas relied on forest resources for wood, artisanal inputs, medicines, bush meat and fodder as supplements to consumption and income, as our case study shows. Migration was stimulated by a national political project and compensated for severe problems of economic marginalization and a worsening political context. Although often reviled for the uncontrolled and questionable dynamics that were associated with the “fast track” reform, recent research does show rebounding agricultural productivity (Bernstein 2012).

The Cambodian case of spontaneous migration, forced resettlement and continuing conflict between ex-combatant factions over land allocations is not uncommon, and can be seen as a kind of “ceasefire capitalism” associated with diverse migration processes in

conflict zones where military, paramilitary and business elites collude over control of land, often marginalizing and expropriating from earlier inhabitants and mediating or monopolizing access to land, producing highly semi-proletarianized, or even landless, populations in the process. This Cambodian dynamic has current analogs in Burma (Woods 2011), Colombia (Armenteras et al. 2011; Cuesta Zapata & Trujillo Montalvo 1999) and Guatemala (Ybarra 2012; Ybarra 2011), and often has triggered urban and international migration, as occurred in El Salvador during the 1980s. The impacts of internal rural to rural migration have received far less attention than rural to urban movements, but the dynamics of rural displacement and rural resettlement are likely to continue, given the sharp processes of rural restructuring under current neoliberal land politics (Bernstein 2012; Borrás et al. 2012; Peluso & Lund 2011; Brannstrom 2009; Castree 2008; Getz 2008; Kay 2008; Pinkerton et al. 2008).

Circular migration and intensification

Where the motivation for migration is linked to agrarian reform (formal and otherwise) as a political project and as a response to land constraints, permanent occupation within national boundaries is the goal, ostensibly for economic reasons but also as agendas of poverty alleviation, to diffuse political unrest, and often to marginalize regional political actors of different ethnicities, histories and politics (Boyer 2010; Pacheco 2009; Wittman 2010; Simmons et al. 2010; Cousins 2006; Moyo 2011). More generally, the literature concerning internal migration commonly shows intensification in production as remittances are invested in farming and other land uses (Deshingkar 2006). Our Syrian case illustrates this dynamic, and even though some migrants periodically go to the Gulf States, they return for religious festivals and labor peaks and still maintain commanding status as heads of households. Returning urban migrants also bring skills, knowledge and access—social remittances—to state institutions, which can also increase the available resources for the sending communities, as our Chinese and Syrian cases suggested. The overall condition of resources remains in question largely because the research techniques tended to focus on land use description (agriculture) or agricultural intensifications (more fertilizer, more water tanks) and less on agroecologies and local vegetation mosaics. Accordingly, the effect of migration on ancillary uses of land resources or complex agricultural resources in internal migrations remains an open question, not just in our case studies but in the literature more generally (however, see Aguilar-Stoen et al. 2009; Altieri 2009; Coulibaly-Lingani et al. 2009; Duchelle et al. 2011; Fitting 2006; Garcia-Fernandez et al. 2008; Garibay-Orijel et al. 2009; Gonzalez-Insuasti et al. 2008; Grieshop 2006; Guariguata et al. 2010; Lewis 2008; Wezel et al. 2009). These impacts of migration can be better grasped through shifting to analytic techniques that take into account landscape, agroecological evaluations, ecological services and ecological economics. These help clarify the dynamics of intensifications or labor withdrawal from a wider

array of productive resources such as tree crops, small animal production, horticulture, collection of non-timber forest products (NTFP), etc., as well as substitutions in resource use triggered by migration.

Multi-sitedness of internal migration

Migrants in the Zimbabwean fast track agrarian case remained connected to their communal homelands—however densely populated—for food supply as they cleared land and relocated, and both homeland and “frontier” reinforced each other as safety nets (Moyo 2011). This pattern also exists in Andean migration to Amazonian lowlands and regional migration in Brazil (Brondizio et al. 2011; Padoch et al. 2011). The “pull” factor of access and private title to lands was compelling enough to attract urban dwellers, and this reversal of historical urban to rural flows remains largely unstudied, but speaks to the current precarious and informal nature of urban livelihoods, and the role of the rural as a safety net and asset in the face of economic unpredictability. In the Chinese and Syrian cases, migration was routinely circular with deep family and clan ties defining the possibilities and investment opportunities, and the social roles of both migrants and sending communities. Where periodic out-migration occurs in settled landscapes, return migration links can be strong and seasonal, so migrants continue to provide labor during demand peaks in their homelands. This multi-sitedness in internal migration and the fluidity in livelihood strategies and connections between national migration and rural households is powerful and widespread (Barbieri & Carr 2005; Bilsborrow & DeLargy 1990; Brondizio et al. 2011; Browder et al. 2008; Carr 2009; Davis & Lopez-Carr 2010; Deshingkar 2006; Moura et al. 1975; Padoch et al. 2008; Perz et al. 2010). In the Cambodian case, migrants to the Northwest continued circular migration, mostly into nearby international circuits associated with agroindustry and manufacturing in Thailand, but continued to supply labor to their frontier holdings and families.

Internal migration and gender dynamics

Migration—whether internal or international—plays a central role in the livelihood strategies of rural households. Based on the cases that were explored in these studies, the effect of internal migration on gendered power relations appears to be minimal. As the Chinese case study makes abundantly clear, despite women’s acquisition of new skills, attitudes and social capital as a result of their internal migration experience, women returnees did not gain any increased empowerment in local political and community decisions. Similarly, the Syrian case study, which looked at the impact of migration and remittances on natural resource management and the livelihoods of women left behind, found that male migration neither contributed to an increase in women’s workloads in rain-fed agriculture nor greater autonomy for women. The return of male migrants during periods of high labor demand offset labor loss, and the traditional role of women

in tending to sheep and goats was complemented by migration and remittances. These studies reaffirm the entrenched nature of gender relations that are shaped and reproduced within a larger context of societal norms and practices, and in many ways are echoed in the studies that examined gender relations in international migration.

International migration

Mesoamerican rural areas almost without exception are profoundly affected by international migration in direct and indirect ways because 10%-50% of households (and more than 60% of households in some communities in our case studies and in other regional research) are part of migrant circuits with significant proportions of national populations residing outside the country (20% for El Salvador, 10% for Mexico and about 10% for Honduras). Communities where over 45% of households have migrants are not uncommon throughout Central America and Mexico.

National dynamics: macro policies, social transfers for poverty alleviation

Commodity prices

In recent years, the economic foundations of Mesoamerican peasantries—corn and coffee—have undergone extraordinary reductions in political and economic support. The small farm maize sector was roiled by free trade policies like the North American Free Trade Agreement (NAFTA) that favored cheap food imports and drastically undercut the price of corn, reducing its value in real terms to levels below that of thirty years ago. After decades, the suspension of the regional coffee cartel, which placed a “floor” on prices, created increased vulnerability to volatilities as coffee was hammered by a competitive and highly uneven global market largely based on low-grade tropical lowland robusta coffee without adequate market differentiation for high-end Bourbon arabica coffee, the coffee most widely grown in Central America and Southern Mexico. Although certification, organic production and fair trade produced some gains, the sector as a whole has remained highly unstable (Bacon 2010; Watson & Achinelli 2008; Avalos-Sartorio & Blackman 2010; Eakin, Tucker & Castellanos 2006; Renard 2010). The macro-policy goals of the cheap “C’s” (cheap corn, cheap coffee, cheap cattle—subsidized through credit or remittances—and cheap carbon) come at a local social and environmental cost when communities must support significant out-migration.

State transfers

State conditional cash transfer programs such as ProCampo have evolved in Mexico (as in many Latin American countries) in part to compensate for the decline in corn prices

as a consequence of NAFTA. Other cash transfers focused more on human capital investment. Faced with declining rural incomes, the Brazilian model of the “Bolsa Familiar” was transplanted to Mexico as “Oportunidades,” a governmental program that pays women, children and elders a stipend to ensure their children study (and thus basically removes them from the agricultural labor force). This was the second most important source of income in one Veracruz case and common income sources in Oaxaca, further exacerbating family labor shortages for some of the year. Oportunidades has become one of the main income sources for poor rural households and the largest subsidy in poor areas of southern Mexico where credit for agricultural, or forest productive activities, became practically nonexistent (see the Veracruz and Oaxaca case studies; and Garcia-Salazar 2011; Skaggs & Crawford 2011; Klepeis & Vance 2003; Winters & Davis 2009).

Effects of international migration on rural landscapes and communities

The current dynamics of migration recast the natures of rural economies in three fundamental ways—what we might call the three “D’s”: demographics, differentiation and diversification. Understanding how these shape the intersections of households and land use helps clarify how this congruence frames the general land use enfolded in the new rural contexts, especially in light of their articulation to other macro processes, i.e., the contraction of support to the rural sector and cheap food policies that have drastically undermined agricultural returns.

Demographics: labor, knowledge and institutions

International migration is highly gendered in favor of males, and in places like Honduras, over 90% of migrants are in the 18-30 demographic. While female migration does occur (and is still considerable in the case of Mexico), the gendered pattern reflects the higher potential wages men command compared with female migrants in the economic sectors in which they participate. The now substantial costs (US\$5,000-\$10,000), risks, general criminality, war zones and drug violence, coupled with increased anti-immigration policies and the international economic downturn, make migration much more expensive, increasing vulnerability, hardship and indebtedness of sending households. Therefore, it makes sense to bet on a differential return for male wages.

The demographic profile of communities changes a great deal with these types of out-migration, shifting from the “normal” pyramid shape into an “hourglass” pattern where communities are generally characterized by older members and young children; more women, and older women and men, are left in situ and as heads of households. Not surprisingly, given the absence of men and the assessment of prospects, birth rates have often dropped or leveled off.

The high degree of male and youthful migration creates labor bottlenecks that have several effects at different levels from the household through communal obligations, and even for the availability of local wage labor. The impact of labor loss on households is significant, and also affects a range of other forms of landscape protection and management that can shape regional biodiversity patterns (maintaining pastures, burning, forest collection, etc.) and the capacity of communities to adapt to emerging environmental pressures (e.g., forest pests, intense weather events and fires that require community-level responses) as well as collective projects that require coordination or shared management activities such as field development, burning or water projects and larger-scale community decision roles about land uses at larger scales beyond household decisions.

In contexts of communal or reciprocal labor exchanges, obligations within communities can be undermined by absences and reduce a household's access to reciprocal labor arrangements. Moreover, long-term migration erodes integration into social norms and regulations of broader institutional practices and access regimes. Institutional "lags" in responding to loss of labor result in unfulfilled community, ritual, decision and solidarity functions, changing the processes of cultural reproduction (Robson et al. 2009; Perreault 2003; Aguilar-Stoen 2011; Angelsen & Moe 2011a; Balée & Erickson 2006; Brush & Perales 2007; Chowdhury 2007; Davis & Lopez-Carr 2010; Diemont & Martin 2009; Bray, Perez & Barry 2005). It can also restructure household relations to agricultural production. Thus, for example, the long periods of out-migration that typifies the Oaxacan cases also produced retraction in agriculture and other resource management by return migrants. In the Sierra Juarez, 52% of return migrant households ceased agricultural work. At a regional scale in Oaxaca, the decline in agriculture and other land-based activities in communities undermined biodiversity (Robson & Berkes 2011) by reducing successional diversity, edge effects and complexity of matrices. In the Honduran case, 65% of non-migrant households employed some conservation agricultural practices versus 15% of migrant households. While using remittances to offset some of the cargos (community obligations) can keep some forms of social capital intact, it can undermine social performance in resource-related activities, since participation is required for maintaining social capital.

Migration can also destabilize the conditions of reproduction and continuing development of knowledge systems and institutional conditions necessary for resources and land use management at larger scales (Aguilar-Stoen et al. 2011b; Cuéllar & Kandel 2007; Fitting 2006; Garibay-Orijel et al. 2009; Gonzalez-Insuasti, Martorell & Caballero 2008; Mathews 2003; Robson & Berkes 2011). Because local knowledge of tropical landscapes is inscribed in places and practices, the limited transmission of these kinds of practices and cultural knowledge systems can become a constraint on long-term natural resources management at several different scales and over time (Gomez-Baggethun et al.

2010; Mathews 2008; Odora Hoppers 2002; Shepherd 2010). This is a problem also seen in payment for environmental services (PES) systems that restrict use of natural ecosystems (Ibarra et al. 2011). It may be that the mechanisms for the reproduction of knowledge systems for landscape-scale management are being eroded fairly rapidly in this current generation through out-migration, loss of collective labor practices through which knowledge is transmitted and through certain kinds of environmental restrictions that hamper resource use (2001; Gomez-Baggethun et al. 2010; Laurie, Andolina & Radcliffe 2005; Odora Hoppers 2002; Schmidt & Peterson 2009). The erosion of the knowledge base and practice repertoires diminishes adaptive capacity, necessary for the management of crop biodiversity and confronting the emerging conditions of climate change (Martinez et al. 2009; Nadal & Rano 2011). While new forms of community governance may evolve, especially through transnational forums, these typically have produced ambiguous outcomes.

Differentiation: Land, speculation and “Dutch” disease

There are increasing disparities in rural landscapes along with new forms of differentiation (households with remittances and households without remittances, citizens and undocumented migrants, gated communities, etc.). As exemplified in the Salvadoran case study, the poorest of the rural poor tend to be those who are outside the migration circuits and depend more heavily on the natural resource base for their livelihoods, yet have less access to land. Consequently, this group is converting into a nucleus of hardcore poor, who are unable to either migrate or diversify their livelihood strategies. This is not a trivial point, given that migration is central to the new model of wealth accumulation in rural areas, generating a significant amount of capital entering rural areas and surpassing direct foreign investment, state transfers and aid revenues. This impoverished population is particularly vulnerable to recruitment into the clandestine economies of drugs and contraband for lack of other options.

Migrants invest in consumption and home improvements, in education for their children and in petty commerce, but also in land. Once demand for consumption, housing and schooling needs are met, about 22%, on average, of international remittances in our case studies are deployed into land purchases. In the case of a country like El Salvador, this infused over 700 million dollars into land markets and investments. Migration is now the central avenue for expanding ownership of private lands, and in areas that received collective title, migration may undermine the mechanisms through which households assure access to communal resources. Not surprisingly, migrant holdings were 70% larger in El Salvador than those of non-migrants and 30% greater in Honduras. In Veracruz and Oaxaca, the picture is more complicated and diversified because of the structure of the agrarian communities and the ejido nature of the holdings that prohibits land

privatization; land buying was deflected into peri-urban and urban holdings. In case studies here and in every other study of this topic in the Central American region, migrants hold more land and their households have more income—about double in El Salvador and quadruple in Veracruz (Figuroa et al. 2009; Garcia-Barrios et al. 2009; Carr 2008a; Davis & Lopez-Carr 2010; Taylor, Moran-Taylor & Ruiz 2006; Busch & Vance 2011; Isendahl 2006; Radel et al. 2010a; Turner 2010). This has important implications. A great deal of attention has been focused on the international dynamics of land “grabs”; see for example the special issues of the *Journal of Peasant Studies* (Volume 39, numbers 3-4), which focused largely on corporate capture of significant area for agribusiness, tourism and resource extraction. The rise of migration monies, retirement enclaves and drug funds suggests a more complete globalization of land markets at all scales. Thus, access to land becomes a market rather than a political or distributional issue, even as land remains highly unevenly distributed.

Even as migrants hold more land, migration can contribute to agricultural retraction as households rely less on cultivation. Migration capabilities underpin rural household wealth in ways that can unlink those households from land as a production input while valorizing it as an asset, collateral, platform and a refuge. Land value as an agricultural input may be eclipsed by its “lot” value in a kind of pattern of “rurbanization” where investment in housing drives up land prices and precludes access to production lands even as these are held with often empty homes in places with good infrastructure, as reported in our cases for Oaxaca and El Salvador. The shift from corn or cattle to houses in some regions underpins an emerging speculative economy along development corridors. This differentiation has another impact, the development of “Dutch disease,” where significant inequality in local communities inflates the costs of some goods dramatically, and the capacity to purchase these goods increasingly accrues only to those more capitalized members of the community, usually migration households.

Differentiation and gender

The gender impact of migration is prominent throughout the international development literature. Depending on regional cultures in Latin America, male out-migration can positively impact women’s empowerment as women navigate agricultural production and management of rural properties in response to new opportunities and renegotiate the relations of gender within the household and within communities, or so the story goes—a kind of neo-tropical version of “Rosie the Riveter.” Latin American structural economic changes associated with neoliberal globalization did lead to the feminization of agriculture in the global food supply chain, especially at lower wage levels in the agro-export sector for flowers, fresh vegetables and berries (Appendini 1999; Carr 2008b; Sachs & Alston 2010), and in some cases within the small farm sector (Bever 2002;

Casolo 2009; Cohen, Rodriguez & Fox 2008). While the standard narrative of women acting as a reserve labor army might be expected to apply in campesino communities, all of our Mesoamerican case studies, as well as other regional research, revealed a rather different outcome.

As with the internal migration case studies, the outcomes for women's improved household and community status were minor at best, with limited increase in voice or power in community decisions. Women's land rights were not especially enhanced by migration, but rather inhered to their positions as family members. Small farm sectors are male-dominated farming systems and retain norms opposed to women's field labor for a number of reasons, including the difficulty of the work in many areas and the "moral laxity" of unsupervised women who labor outside the compound or other supervised spaces without family members. Women's participation in agriculture historically focused on peak activity or harvest time as ancillary labor rather than the main source of agricultural muscle (Deere & Leon 2001; Hecht 2007; Radel 2011).

Women did not replace men's labor in subsistence agriculture, and the role of women did not substantively change, as reported in the cases in Honduras, El Salvador and southern Mexico. In Veracruz, small sums and regular labor were applied to maintaining coffee systems as part of other kinds of activities (firewood collection, etc.), and virtually no remittances were applied to the non-agricultural natural resources sector. Women were managing farms with input from male family members and long-distance discussions with spouses over allocation of investments. Bever (2002) found that women from migratory households in the Yucatan participated less in agriculture than non-migratory households because their fields had been abandoned. Radel et al.'s (2010a) study of 155 households "showed no significant difference in the rates of women's participation in field work whether or not their husbands were transnational migrants. With men's migration, hiring local male wage labor by the day (*jornaleros*) has emerged as an important alternative household strategy for meeting agricultural needs." However, the main shift the women themselves identified with regard to agricultural production came in the form of their increased management of hired male labor, and not agricultural tasks.

The exception to this tendency has been in conditions of agrarian reform, which can enhance land rights, and therefore Salvadoran women did reasonably well during the agrarian reform periods. One of the rare cases where Mexico's Article 27 benefited women *ejidatarios* (holders of communal land rights) was when the land titling program PROCEDE was brought to a community and some 20% of the women received title, simply because no men were there to sign the documents.

The intersection of gender and migration created pressure for certain kinds of land uses that could function with the labor declines. There are a few central trends that involve a)

the retraction of annual cropping, with land uses shifting into: b) secondary succession or c) conversion of cleared land to low-labor cattle, which can assure occupation of the holdings. In addition, d) mixed forest coffee holdings have continued to expand in spite of the volatility of the sector in part because their daily labor demand is low and can be combined with household benefits from coffee forest gardens and because credits still exist in this sector for small farmers (Avalos-Sartorio & Blackman 2010; Ellis et al. 2010; Soto-Pinto et al. 2010). Recent studies have shown that 64% of the gathered plants in one part of Oaxaca derive from coffee gardens, so the credits for complex coffee systems support a range of useful biodiversity (Aguilar-Stoen et al. 2011b).

The view of women's role in agriculture as marginal may simply have overlooked one of the most invisible spaces of gendered intensification: the home garden or home compound. Data from studies of "Oportunidades" in southern Mexico point to increases in fruit, animal and vegetable consumption from home provisioning (Todd, Winters & Hertz 2010; Behrman, Parker & Todd 2011; Winters & Davis 2009). Other studies noted that the Oportunidades program also tended to support land plots planted and managed by women (Bellon & Hellin 2011; Keleman, Hellin & Bellon 2009) with small animals, orchard crops and vegetables. Our case studies show this is an area where there has been some intensifications in investment in small animals, at least in El Salvador, and noted by other researchers in Oaxaca (Aguilar-Stoen, Moe & Camargo-Ricalde 2009). The home compound as an area of agricultural resource management still remains largely unseen, and very under-researched (Aguilar-Stoen et al. 2009; Flores-Delgadillo et al. 2011; Perrault-Archambault & Coomes 2008).

Within the context of the new rurality, these home compounds can serve as important sites of agro-biodiversity conservation, enhanced specialty production, food security, ritual foods and household nutrition—all critical ways of enhancing household resiliency in the face of high uncertainty (Gutierrez Mulas et al. 2004; Lamont, Eshbaugh & Greenberg 1999; Ross & Rangel 2011; Thomas & Van Damme 2010).

Diversification and resilient livelihood strategies

Peasant persistence depends on an enormous capacity for adaptation to support their livelihoods, through an expansion and diversification of their livelihood portfolios, to include new crops and/or niche markets such as biodiversity-friendly coffee, cacao or açai. Livelihood diversification and increased integration in monetized economies makes the purchasing of at least part of household sustenance possible. Varying strategies supplement rather than supplant other subsistence, natural resource, wage and commercial strategies, and thus over time patterns of increasing livelihood portfolio diversification can be documented through all our case studies, a pattern that is corroborated in other regional analyses (Aguilar-Stoen et al. 2011a; Aguilar-Stoen et al. 2011b; Eakin et al. 2006;

Millard 2011; Tucker, Eakin & Castellanos 2010; Radel et al. 2010a; Radel, Schmook & McCandless 2010b; Barbieri & Carr 2005; Figueroa et al. 2009; Fitting 2006; Garcia-Barrios et al. 2009; Mendez et al. 2010b; Phillips 2009). The complex engagements in agricultural, waged, commercial and biodiversity dependent activities by households are used to buffer the unpredictability in the returns to each of these as they integrate into regional and global markets.

Livelihood diversification as the hallmark of new small farmer societies increasingly includes “environmental” rents, such as payment for environmental services (see our Oaxaca cases; also, 1958; Avalos-Sartorio & Blackman 2010; Bebbington & Batterbury 2001; Chan & Daily 2008; Chomitz et al. 2006; Daily et al. 2003; Daniels et al. 2010; de Araujo, Silva & de Campos 2009; Del Angel-Perez & Villagomez-Cortes 2011; Engel, Pagiola & Wunder 2008; Hecht 2010; Soto-Pinto et al. 2010; Rosa et al. 2005). The entrance into new globalized NTFP (non-timber forest products) circuits, such as mushrooms, proposals for ecotourism and certification for coffee and cooperatives, also reflects the search for steadiness in diversified sources of income in many communities under an environmental mantle (Garibay-Orijel et al. 2009).

Our Mexican and Honduran cases occur in coffee economies, where the area in coffee has expanded, usually in the form of diverse coffee gardens that produce an array of ancillaries: firewood, animal fodder, fruit from shade trees, medicinal products, etc. A range of alternative tree crops and development of markets has evolved for non-timber forest products such as allspice, xate (a florist frond palm), resin, honey, mushrooms and other products whose revenues are minor, but periodically significant, such as mazutake mushroom exports (Garibay-Orijel et al. 2009; Montoya et al. 2008). However, if the policy and incentive context does not work to support these positive outcomes, the environmental outcomes may be negative, as found with the expansion of extensive cattle grazing in Honduras and the rapid growth of “rurban” lots in El Salvador.

Diversification and forest transitions

At a landscape level, migration, with its constraining effects on labor for local land use and its enabling of purchased foods (and the reduction in the need to sell crops), is closely linked to three dominant landscape dynamics: low labor, extensive cattle, low management multi-strata coffee with ancillary household goods from associated trees and extensive secondary vegetation. In addition, in Mesoamerica, the “forest transition” can be at least partially explained by the effects of male out-migration and its effects on direct and indirect labor provisioning, as demonstrated in Table 1. More generally, the case studies reveal that the vegetation of forest transitions are complex, anthropogenic and successional landscapes in which rural communities play a key role in ensuring biodiversity

and the provision of a variety of ecosystem services. Accordingly, the definition of forest and land use classifications need to be substantively redefined to capture the nuances of forest in inhabited landscapes, given that these can make important contributions to both conservation and rural livelihoods.

Table 1. Trends in land use

| Agricultural retraction: annual cropping systems | |
|---|---|
| Veracruz (MX) | 90% retraction in migrant households, and significant retraction in households engaged in wage labor or urban commerce (high levels of Oportunidades as well as remittances) |
| Sierra Juárez (MX) | 52% annual crop retraction |
| Coastal Oaxaca (MX) | 10% annual crop retraction |
| Sierra Sur (MX) | 10% annual crop retraction |
| Olancho (HO) | 43% decline in cultivated areas in migrant households 8% complete retraction |
| Las Vueltas (ES) | 45% of households |
| Nueva Concepción (ES) | Cattle to houses |
| El Salvador | 50% of migrants still cultivated some land, as opposed to 88% of non-migrant households |
| Coffee/ tree crop expansion | |
| Veracruz (MX) | Coffee |
| Coastal Oaxaca (MX) | Commercial coffee, fruit trees |
| Sierra Juárez (MX) | Commercial timber |
| Olancho (HO) | 35% increase in coffee area (65% of land purchased goes to coffee). Coffee can claim land in conservation areas, hence its expansion at the frontier. Also, Honduras has a national policy of coffee promotion. |
| El Salvador | Coffee expansion |
| Pasture | |
| Olancho (HO) | 24,000 ha conversion during 2004-2009 in households with migrants (household area in pasture increased 60%). Non-migrant households had less than 14% of area of migrants in cattle |
| Nueva Concepción (ES) | Extension of cattle frontier |
| Veracruz (MX) | Long history of cattle |

| Secondary vegetation expansion | |
|--------------------------------------|--|
| Olancho (HO) | |
| El Salvador | |
| Veracruz (MX) | |
| Sierra Juárez (MX) | |
| New conservation areas | |
| Olancho (HO) | |
| Coastal Oaxaca (MX) | Payment for environmental services (PES) |
| Sierra Sur (MX) | |
| National programs affecting land use | |
| Olancho (HO) | Land claiming through coffee allowed in conservation areas: livestock credits |
| Oportunidades | Schooling for children second source of household income in Sierra Sur; Veracruz |
| Credit lines | Cattle: Olancho, southern Mexico. Coffee: El Salvador, Honduras, Mexico. |

Final remarks

Understanding rural dynamics in light of migration

Extensive migration and associated remittances are having profound effects on rural landscapes through their impact on the deployment of all types of labor—men, women and children—for resource management, on rural income inequality and access to land, and on the reproduction of knowledge and cultural systems that are needed for long-term regional landscape management. The studies show the contradictory outcomes of the impacts of remittances in both promoting clearing and in enhancing forest recovery.

Subsidies other than remittances also have significant effects on land use trends in southern Mexico where the participation in the income subsidy “Oportunidades” has removed children from agricultural tasks, and, as some authors note, prepares them for a non-agricultural future (Gertler, Martinez & Rubio-Codina 2012; Molyneux 2008). This combination of male and community labor scarcity, limited engagement of women in field agriculture and the reduction of child labor in agricultural tasks has placed annual cropping systems under severe labor constraints and produced rural livelihood strategies more closely integrated into low-intensity coffee cultivation or more extensive, low-labor livestock production. The result has been landscapes of migration: some produce the “forest transition” with agricultural retraction and expanding secondary vegetation,

complex coffee gardens that are less intensively managed but produce additional ancillary goods, and low-labor livestock systems. Olancho is in many ways a remittance-financed forest frontier expressed through the use of both cattle and coffee to claim land.

It is important to disentangle and understand the multi-causal relations of these mixed results on natural resource management and rural livelihoods in order to design rural policies that provide alternatives to destructive development and set aside conservation models that marginalize rural populations. This compilation attempts to contribute to this effort, while recognizing that substantial analytic work is still needed to understand how migration is transforming the social and political ecologies of rural livelihoods and landscapes.

Rethinking rural policies in light of migration

Rural questions are gaining visibility and salience, in part due to the rise of social movements and civil society in shaping regional development politics, and also as a result of growing interest and markets that are being created in rural territories linked to environmental markets for commodities and payment for environmental services (PES) and reduction of emissions from deforestation and degradation (REDD). Tropical deforestation is responsible for between 13%-20% of global carbon emissions, about equal to that of all forms of transportation, and globally, approximately one billion people are considered forest-dependent. Effective declines in clearing, woodland recovery in deforested lands and augmented forest cover in production landscapes are of seminal global importance.

The degree of diversification in rural areas makes rural policy targeted at specific sectors—agricultural, environmental or social—difficult to implement and often unsuitable for addressing rural development dynamics, since households use a complex calculus across sectors to evaluate their deployment of resources of all types. Therefore, there is an urgent need for new approaches to rural policy which overcome false dichotomies (between agriculture and conservation, urban and rural areas, etc.) and outdated assumptions about the origins of landscape trends (such as poor rural communities are environmental predators, economic growth necessarily empties out rural areas, rural livelihoods are centrally agrarian) and other intellectual holdovers from an earlier time.

Integral policies should seek to strengthen rural community capacity for management of landscapes; this is particularly important given the climate crisis. As these studies and the literature demonstrate, rural communities manage complex and diversified livelihood strategies that can enhance biodiversity and the functions of ecosystems

at larger scales. Diversified holdings in Latin America provide complex matrices that provide ecological services for urban areas, buffer the effects of agroindustrial production, are themselves producers of agricultural goods of many kinds—including tree crops like coffee—and support conservation landscapes as well as agrodiversity (Mendez et al. 2010a; Almekinders, Fresco & Struik 1995; Liang et al. 2001; Chappell et al. 2009; Perfecto et al. 2007; Perfecto, Vandermeer & Wright 2009). The nexus of the impact of global change—whether environmental, cultural or economic—is integrated today in the dynamics of rural areas, and the future may well pivot on how the “New Rurality” unfolds in the tropics.

The research described in this volume shows how even small investments in rural areas and rural income supplements, even when small, can have significant impacts on land use and natural resource management over relatively short periods of time. This is useful evidence about the impact of payments, such as social transfers and PES, on land cover, but these need to be more closely integrated into analyses of the kinds of natural resources that are being produced in these ecological communities, and how some kinds of integral management might enhance both the conservation and ecological value of these returning forests, or of coffee forests. This may include providing capital to organizational processes, spatial planning and collective action, expansion of land rights, technical assistance, capturing elements of knowledge systems through concerted exploration of ethnobotany and providing access to market infrastructure and basic services. These types of investments—that take into account both endogenous and globalized processes and characteristics of place—are central for achieving multiple benefits. The key element here, however, is that these systems are now operating under labor constraints, not the “surplus” labor that has figured so long in the annals of development theory. Ideological work also needs to be done that recognizes and extols the enormous contributions of small farmers as stewards and producers of ecological complexity, economic value and even new models of development, particularly in light of the processes of agroindustrial simplification that may increasingly define the new tropics (Dauvergne & Neville 2010).

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