

GOVERNANCE IN COMMUNITY-BASED FOREST MANAGEMENT: THE  
CASE OF MADAGASCAR

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

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August 2008

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# GOVERNANCE IN COMMUNITY-BASED FOREST MANAGEMENT: THE CASE OF MADAGASCAR

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Cornell University 2008

Decentralization of forest management aims to empower local communities. Intentions notwithstanding, decentralization is a historically-contingent process that does not necessarily result in synergistic state–community relationships. Decentralizing governance structures implies changes in power relationships, but an understanding of power and its dynamics in forest management situations is lacking. In addition, governance outcomes of decentralized forest management in a state–community institutional configuration are unclear. Understanding how instances of decentralized community-based forest management (CBFM) operate and how participants perceive the governance outcomes of this system is needed to improve governance structures and processes. The case of CBFM in Madagascar is used to explore the power dynamics of decentralized governance of forests. In Madagascar, the government has adopted a policy known as Contractual Forest Management to achieve community-based forest management. Data collection took place in two phases. To understand forest-related interests, I conducted semi-structured, open-ended interviews of community members in eight villages in the Menabe region, state forest agents at the local and national level, and participating NGO staff from two NGOs at the local and national level in Menabe and Antananarivo, Madagascar (n=55). I also conducted participant-observation and document review. The second phase involved a quantitative survey of participants in 12 CBFM contracts in Madagascar (n=621). Findings suggest that all three categories of actors (i.e.,

community members, forest agency staff, and NGO employees) are generally satisfied with governance outcomes of CBFM, with forest agency staff the least satisfied.

Overall, decentralization of forest management in Madagascar has had a more tangible effect on institutional-level relationships than on individual-level capacity to act. It has not “empowered” local communities. Rather, it begins to open a space in which individuals, located in various social positions, can act to transform pre-existing power relations.

## BIOGRAPHICAL SKETCH

Daniela Beth Raik was born in Berwyn, Illinois to Howard and Tania Raik in 1976. She grew up in the Chicago suburb of Oak Park. At the age of sixteen she moved to New York City where she pursued her undergraduate degree. She received a B.A. in Biology from New York University in 1997. Throughout her undergraduate education, Daniela actively sought out opportunities to travel domestically and abroad to learn about issues related to environmental and cultural sustainability.

In 1998, Daniela joined the U.S. Peace Corps and served as an environment volunteer in Madagascar for three years. Her work there included addressing issues of environmental and cultural sustainability through primary school education, teacher training, and community-based income-generating projects. Daniela's involvement in community-based conservation efforts led her to undertake research in this area at Cornell University.

In 2001 Daniela pursued research and studies as a member of the Human Dimensions Research Unit in the Department of Natural Resources at Cornell University. She received an M.S. in natural resources from Cornell University in 2004. That experience spurred Daniela to continue work with the Human Dimensions Research Unit and pursue her doctoral degree.

In January 2005, Daniela took a job as the Natural Resources Management Specialist with the United States Agency for International Development in Madagascar. Upon completion of her two-year contract, she accepted the position of Natural Resources Management Advisor with Conservation International in Madagascar, all the while continuing to make progress on her doctoral degree. This dissertation is the culmination of her effort.

## ACKNOWLEDGMENTS

First and foremost, I would like to thank the people living and working in the humid, dry, and Tapia forests of Madagascar who participated in this effort. Funding for this study was provided by the National Science Foundation, the Mario Einaudi Center for International Studies, the Cornell University Center for Environmental Research, and the Human Dimensions Research Unit of Cornell University.

I am truly grateful to my committee chair, Dr. Daniel J. Decker, for his unwavering support, encouragement, guidance, enthusiasm, and critical analysis, without which this research would not have been possible. I also wish to thank my minor committee members, Dr. Arthur L. Wilson and Dr. Max J. Pfeffer for their understanding, honest and constructive comments, and philosophical contributions to this work.

My friends and colleagues at the Human Dimensions Research Unit at Cornell University empathized when I hit a wall, encouraged me to keep going, and celebrated with me as I achieved milestones. I thank them for their friendship.

I would like to thank my parents, Howard and Tania Raik, and my sister, Eliana Callan. I share this accomplishment with my parents, who always placed an emphasis on the value of education and have supported me in all my choices. I also share this with my loving sister who is always on hand to give level-headed advice.

And finally, I owe my greatest thanks to my husband, Mohamad Sy-ar, for his enduring love and support. Without his positive outlook and infinite patience, this study could not have been completed.

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## CHAPTER ONE

### INTRODUCTION

This dissertation describes research conducted to explore the relationship among government, non-governmental organizations (NGOs), and communities in forest management in Madagascar. Specifically, I used an iterative process of inquiry that evolved as insights were gained to investigate social dimensions of decentralized forest governance. This process of learning centered on two main aspects of state-community relationships: the structural/institutional and the sociopolitical/individual. In addition, the line of inquiry responded to a real-world problem related to decentralized forest governance.

This chapter describes the research problem, which is grounded in both the theoretical and the practical. From a theoretical perspective, I have conducted inquiry to understand the workings of governance and decentralization. Moves toward decentralized forms of governance necessarily imply changes in power dynamics, and therefore I began by developing an understanding of the workings of power in a natural resources management context. Theoretical and empirical work, as well as my own experience working and living in Madagascar contributed to my reflection and learning about power and its role in state-community hybrid institutional arrangements. An in-depth review of literature and application of understandings of power to natural resources management cases provided a basis from which to understand the results of my research and draw appropriate conclusions.

From a practical perspective, I have addressed the real issue of decentralized forest management, a phenomenon that is pervasive throughout the developing world. Decentralizing forest management responsibilities from the central state to locally-based community groups involves developing policy, changing institutional

relationships, defining roles, and creating management systems. It is a lengthy and costly process, and questions remain regarding its effectiveness in terms of its governance outcomes. Thus, this research attempts to shed light on what decentralization means in terms of governance, both at the institutional and individual levels. I have used a variety of methods to understand the outcomes of decentralization of forest management in Madagascar.

### **Theoretical Background**

#### Governance of Common-Pool Resources

Governance, like most powerful concepts, is extremely difficult to define. One definition states that governance refers to the combination of “people, political institutions, regimes, and non-governmental organizations (NGOs) at all levels of public and private policy making that are collectively responsible for managing world affairs” (Hempel 1996:5). In this context, institutions are “complexes of norms and behaviors that persist over time by serving collectively valued purposes” (Uphoff 1986:9). Others have defined governance as “the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say” (Graham, Amos, and Plumptree 2003). Thus, governance refers to the set of rules, structures, interactions, and processes that exist to shape how decisions are made.

Traditionally, political science has addressed questions of governance related to public policy, economics has focused on private exchange governance via markets, and sociology has concentrated on governance by norms, social values, and community (Wolf 2004). Natural resources cross these public/private/community divisions and are therefore the object of various forms of governance. For instance,

national parks are often governed by the state, private forests are often governed by individuals or firms, and communal pastures are often governed by the community.

In 1968, Garrett Hardin's "Tragedy of the Commons" painted a bleak picture of the future of the world's common-pool resources. The commons, he argued, were being over-exploited at an alarming rate and drastic action was needed to conserve the commons for future generations. This argument has prompted decades of discussion and scholarship about management of common-pool resources.

Common-pool resources (CPRs) are defined as resources for which "(1) it is costly to exclude individuals from using the good either through physical barriers or legal instruments and (2) the benefits consumed by one individual subtract from the benefits available to others" (Ostrom 2000:337). This definition applies regardless of the property rights involved. CPRs are composed of resource systems and the resource units that flow from those systems. Examples of resource systems include forests, lakes, and grazing areas. The resource units that flow from those systems include timber, fish, and cattle feed (Ostrom 2000). CPRs are generally subject to one of four property-rights regimes: open access, individual property, government property, and common property (Ostrom et al. 1999; Steins and Edwards 1999). Under an open access form of governance, individuals are not restricted from using the resource. The "rational" individual, Hardin (1968) argued, uses a resource until the expected benefits of his or her actions equal the expected costs. Each individual ignores costs imposed on others. Such individual behavior cumulates and inevitably leads to a tragic over-use of open-access commons. An individual resource user has no incentive to self-impose restrictions on resource use or make improvements to the resource because of the fear that others may take advantage of his or her good will (i.e., free ride). As a result, Hardin (1968) recommended that CPRs be governed either as government property or as private property. Other scholars have since

illustrated the success of a third governance option, that of common property. I briefly describe each of the three governance arrangements below.

### *State-based approaches*

In an attempt to avoid the tragedy of open-access commons, Hardin (1968) recommended either state-based policy enforcement or privatization of CPRs. *State-based* resource conservation schemes involve ownership by a federal, regional, or local public agency that can forbid or allow use of a resource by individuals. Protected areas are a typical example of state-driven conservation and management of CPRs. In Northern countries, areas were set aside for particular scenic beauty or uniqueness (Pretty and Pimbert 1995). This model of conservation, known as the “fences and fines” approach, based on the U.S. national park model, was largely implemented during the colonial era in developing countries, and additional parks of this type were established in various parts of the world more recently in the 1980s and 1990s. Under the fences and fines approach, local people were sometimes forced to move from the areas designated for protection, with no compensation or consideration for their economic and cultural well-being (Furze, De Lacy, and Birckhead 1996; Kiss 1990). Naturally, local people came to view the existence of parks with disdain and chose not to cooperate with park authorities (Kiss 1990). Although effective in terms of biodiversity conservation, the success of parks and strict nature reserves vis-à-vis local resource-dependent people’s ability to pursue their livelihoods came into question in the 1990s. Fortwangler (2003) describes negative social impacts of protected areas, including removals, fear and torture, and restricted access to resources. For instance, in 1997, over 1,000 San were relocated from the Central Kalahari Game Reserve in Botswana to settlements on non-reserve land (Hitchcock 2002). In another example, local people who tried to resist forceful relocation from Rajive Gandhi National Park in India were beaten by armed officers (WRM 2000). Finally, the Ts’Exa of

Botswana were blocked access to seasonal migrations of wildlife when Chobe National Park was created (Taylor 2002). As a response, there has been a call for more participatory and decentralized forms of natural resources management and conservation that involve local people.

Although state-based approaches may result in compliance with strict legislation regarding natural resource governance, they can lead to the marginalization and disenfranchisement of certain groups and provide little incentive for individuals to act as stewards of resources they do not own. In addition, hierarchical and bureaucratic state-based arrangements are often rigid, resistant to innovation, and inefficient (Brechin, Wilshusen, and Benjamin 2003).

#### *Market-based approaches*

Hardin's (1968) second recommendation was the privatization of CPRs. Under a private-property regime, owners have full rights to the resource. Individuals have the power to buy or sell a share of the resource (i.e., their private property). They are able to enter the physical area of the resource, withdraw resource units, make improvements to the resource, determine who will have access and use rights, and sell or lease access and use rights to others (Ostrom 2000). Such arrangements usually rely on market forces for driving individuals' decisions regarding resource management. For instance, a *market-based* approach to governance might provide incentives for resource owners to invest in improvements to the resource because owners are able to see a direct relationship between their investments and benefits they accrue. The fear of free riders is minimized because resource owners have the rights of exclusion and alienation (Ostrom 2000). Many economists consider private property to be the optimal property regime for economic development in part because it rests on the assumption that rational individuals will act in their own self-interest (Hardin 1968).

Private property, however, poses a problem as far as conservation of CPRs is concerned. The most economically beneficial use of a resource may not result in ecologically-sound management practices. In addition, assigning property rights can be difficult and impractical. If forests' hydrological functions are damaged, the public suffers a loss. Identifying the perpetrator and assigning a cost suffered by the public at large can be virtually impossible.

Although privatization may result in maximized benefits and efficiency of resource use as a result of increased participation and horizontal social structure for interaction, it can have negative consequences as well. For instance, market-based approaches often undermine conservation efforts of resources of ecological importance (e.g., threatened and endangered species), and concentrate control of the resource in the hands of elites (Streek and Schmitter 1985; Langholz 2003).

### *Rules-based approaches*

Under common-property, or *rules-based* approaches, individuals are subject to the rules established by a group. "Some form of collective action between the individuals constituting the user community is essential, since a collective effort is required to manage access to the CPR and the allocation of the benefits it produces" (Steins and Edwards 1999:540). The prediction that resource users are destined to destroy CPRs in an open-access arrangement is based on the assumption that all users are "selfish, norm-free, and maximizers of short-run results" (Ostrom et al. 1999:279). However, empirical evidence does not support predictions based on this assumption (e.g., Ostrom 1998). In most cases where individuals face a CPR problem, are able to communicate, and can make and enforce rules, reciprocity is used to overcome the problem (Ostrom et al. 1999). Thus, this evidence leads to the conclusion that common-property regimes are a governance option for natural resources.

Each of the above property regimes has its strengths and weaknesses (i.e., government property, private property, and common property). Government property, or state-based conservation, is a centralized approach that relies upon expert knowledge to make decisions. As such, it allows for broad changes to occur. However, this approach is often plagued by inefficiency and corruption, and does not account for contextual specificities. Private property is a decentralized governance regime that allows individuals and groups to make decisions about the resources they own. For public resources, property rights can be difficult to assign. Finally, common property privileges local knowledge and encourages social interaction. However, consensus building can be time-consuming, local people may not have access to information needed to make sound conservation decisions, and power asymmetries may exclude certain groups from participating.

In an attempt to maximize the benefits of each of the governance regimes and minimize their weaknesses, scholars and practitioners have called for synergistic relationships among hybrid institutional forms (Uphoff 1993; Agrawal and Gibson 1999; Ostrom 2002; Evans 1996). To achieve a blend of institutions for natural resource governance, governments and international conservation and development groups have solicited the participation of local people by decentralizing decision-making processes and structures of authority (e.g., Nemarundwe 2004; Pandit and Thapa 2004). State–civil society linkages have been sought to decentralize management from the central government (minimizing negative effects such as inefficiency) and involve local communities (maximizing effects of local contextual knowledge). Although theoretically compelling, state–civil society hybrids are difficult to design and implement given real-world institutional complexities. Efforts to decentralize natural resource governance in developing countries have often

involved not only the state and local communities, but third-party NGOs as well (Mohan 2002).

### Institutional Synergy

State–society “institutional synergy” has been described as a catalyst for development, where institutional synergy describes the set of mutually-reinforcing relationships between the state and civil society (Evans 1996). It rests on the idea that “the existence of the state and the rules it establishes and enforces can strengthen and increase the efficiency of [local organizations and institutions, which in turn] give rise to collective action increasing the power of the state” (Nugent 1993:629). The idea of state–society synergy emerged from the realization that the development paradigm being adopted by multilateral donors and banks relied almost exclusively on the market as the mechanism for development (Evans 1996). However, renewed interest in the role of state bureaucracies, and social norms and networks<sup>1</sup> has resulted in recent analysis related to how these two institutional forms come together in a positive-sum relationship. Thus, the “idea of ‘synergy’ implies that civic engagement strengthens state institutions and effective state institutions create an environment in which civic engagement is more likely to thrive” (Evans 1996:1034).

The question related to synergy in development contexts has been what forms of state–society relations lend themselves to synergy? Two conceptualizations help frame the debate: complementarity (Lam 1996; Heller 1996) and embeddedness (Ostrom 1996; Fox 1996). Complementarity suggests a division of labor between government and civil society based on their respective strengths (e.g., governments

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<sup>1</sup> Evans (1996) describes civil society in terms of Putnam’s (1993) social capital (the norms, trust, and social networks that characterize social interaction), but other authors have refrained from using this terminology regarding the characteristics or assets that define the non-state actors in synergistic relationships (e.g., Ostrom 1996; Lam 1996).

provide enforcement authority and civil society provides locale-specific knowledge). “Putting the two kinds of inputs together results in greater output than either public or private sectors could deliver on their own” (Evans 1996:1120). Embeddedness refers not to the structural division of labor between government and communities, but rather to individual-level ties that span the public–private divide. Embeddedness is the degree to which informal networks exist among public servants and local residents (Evans 1996). Thus, the state and civil society are inseparably linked and need not be conceived as oppositional. “The power of civil society and the capacity of state institutions can increase together, in a positive-sum interaction, or they may also decline together, in a negative-sum way, as when the state’s policymaking and administrative capacities stagnate along with civil society’s capacity for independent self-determined activity” (Keane 1988:61).

A partnership between the state and civil society may provide benefits beyond state-based or rules-based governance alone, but confounding factors exist that may complicate the state–civil society linkage. Agrawal and Gibson caution scholars and practitioners alike not to lose sight of the real-world contextual complexities: “We must recognize that state officials and community representatives are located within asymmetric organizational structures. They enjoy access to very different levels of resources and power” (1999:639). Similarly, Ribot asserts that it is not enough to join the state to community or to transfer power from the state to the community. The mechanisms by which transfer of power occurs, and the institutional forms that are created for such purposes are of importance: “Transferring power without accountable representation is dangerous. Establishing accountable representation without powers is empty” (2002:2). Striking a balance between the state and civil society can be difficult precisely because of these issues of inequality, representation, and accountability.

Although the notion of institutional synergy emerged in the context of development, it can be applied to the case of CPR management as well. As governments have moved to decentralize natural resource management, they have often entered into partnerships with civil society regarding responsibility for and authority over resource-related decisions. Moves to decentralize governance of natural resources necessarily imply rearranging institutional structures, redefining rules, reformulating relationships, and redistributing power. In a development context, this process is highly complex as it involves actors acting at various geographic scales and the stakes are high. This is especially true when decentralizing natural resources-related decision making and management, as actors have strong ties to the land and deeply-vested interests in the control and use of resources (e.g., Peluso 1995; McDaniel 2003).

For the case of CPRs, decentralization and possibilities for institutional synergy are complicated by an unclear understanding of the social categories of civil society and community.

### Civil Society and Community

The precise meaning and boundaries of civil society as a social construct are difficult to define. Generally, civil society is understood as the social space between the state and the individual or family (Mohan 2002; Bratton 1994). However, even within this broad understanding, many questions remain. Mohan (2002) describes four schools of thought related to the nature of civil society. The “associational school” sees “associational life keeping the state in check through scrutinizing its operations and inculcating in the citizenry a sense of political participation and tolerance” (Mohan 2002:127). Thus understood, civil society is a space of self-governing associations that protect citizens from an overbearing state. The “regime

school” does not see associational life as automatically leading to better governance.

Civil society

“does not necessarily or straightforwardly democratize so [proponents of this school of thought] are more prescriptive in seeing a need for state reform and, therefore, examine the rules by which state-society relations might be altered to foster democracy” (Mohan 2002:127).

The “neoliberal school” sees civil society as involving private economic interests – it is the space of private property rights. Thus, good governance “initiatives are aimed at creating market-friendly political institutions” (Mohan 2002:127). And finally, the “post-Marxist school” argues that the state simply reflects the needs of the bourgeoisie insofar as the state is captured by social elite. Thus understood, the conceptual division between the state and civil society disappears and civil society is segmented along class lines. Political life is a reflection of economic structures, but state reforms will only strengthen the position of the dominant. Thus, the road to democracy is through some form of social movement (Mohan 2002).

Still others define civil society not in terms of what it is, but in terms of what it does. Uphoff and Krishna argue that the institutions and organizations that perform civil society functions allow citizens to: “articulate their interests and make demands; defend their rights vis-à-vis the state and others; and meet their needs directly, without depending on state agencies” (2004:359).

These differences in understanding of the nature and function of civil society are amplified for the case of CPR governance. Recent trends toward decentralization in developing countries have included decentralization of the forest and fisheries sectors, and implementation of state–society partnerships for CPR management and conservation. Whether labeled joint management, community-based management, or co-management, these governance arrangements pair the state to a non-state entity

(often a user group or local association) for management of the natural resource in question (e.g., Prasad and Kant 2003; Gauld 2000; Antona et al. 2004; Carlsson and Berkes 2005). However, the various manifestations of civil society (e.g., local resource users, local NGOs, international NGOs, churches, universities, etc.) are often neither deliberately and systematically considered nor called into question. A local group (however constituted) is tied to the state by a contract or other partnership mechanism through which roles and responsibilities are divvied up (Li 2002; Wily 1999). The default position in CPR management contexts is to define civil society as “the community.” However, this precision is still problematic in that the meaning of community remains an enigma. The dialogue among community sociologists on the meaning of community illustrates some of the complexity of the concept.

Community sociologists’ interpretations of what community is and how it functions sheds light on the difficulty of treating this social category as a static and homogenous entity. Community sociologists are not unified in their understanding of community (e.g., Bell and Newby 1971). The sociological traditions of human ecology, political economy, symbolism, and interactional sociology have each distinctly contributed to the understanding of community. Macro, or structural, understandings such as those of human ecology and political economy take the population as the unit of analysis, view communities as whole systems, and focus largely on social, political, and economic institutions for explaining social organization and change. Alternatively, symbolism and interactional sociology are micro perspectives that focus on the individual as the unit of analysis, rely on social-psychological understandings, and emphasize the importance of culture and history in shaping social phenomena.

### *Macro perspectives – human ecology*

Human ecology is concerned with “the study of social organization,” primarily through examination of social structures (Stephan 1970:220). It views the community as interconnected groups of individuals that rely on one another through division of labor and other forms of differentiation. This “organic,” or highly-differentiated form of social organization was described by Emile Durkheim as a more evolved social form than “mechanical” organization, which is relatively homogenous and undifferentiated (As described in Schnore 1958). Human ecology thus perceives society as having an identifiable morphology that evolves from more primitive to more sophisticated forms over time. Social differentiation, such as division of labor, results in a social structure that is identifiable. Communities consist of families, churches, civic organizations, and firms that exist in dynamic equilibrium with one another (Warren 1978). Although sub-groups within community may change, the overall structure of community remains stable as other sub-groups adapt to these changes. Communities function to integrate society, and social change occurs as sub-groups or sub-systems adapt to internal or external pressures. Thus, coalitions of individuals constantly shift and adapt to maintain equilibrium in the community (Young 1999).

### *Macro perspectives – political economy*

Political economy, like human ecology, is a structural approach to understanding social organization. Although political economy is similar to human ecology insofar as it views community as interconnected groups that are linked through differentiation, it differs in some fundamental ways. Political economy stresses the role of capital flow and market forces in shaping community (both social and political structures). According to Bratton (1994), Karl Marx and Friedrich

Engels describe community as rooted in the material conditions of life. In *The German Ideology* (1932), Marx and Engels conceived community as “a set of commodity production and exchange institutions that tilted contractual relations in favor of capitalist entrepreneurs. Its laws amounted to a sort of ‘unwritten constitution’ for managing the common affairs of the bourgeoisie” (Bratton 1994:54). Additionally, political economy interprets social change “in terms of the way societal processes and structures produce advantages for some groups and disadvantages for others” (Smith 1995:433). Social inequalities persist because power elites form a permanent coalition to advance their interests and control activities in the community (e.g., Molotch 1976). This permanent coalition, because of its position of power, is able to exercise ideological domination (Cohen 1999). It “promotes ethical values among the populace through the exercise of ideological and cultural hegemony” (Bratton 1994:55). Thus understood, the community reflects the interests and values of power elites. Change occurs through political contestation as social movements emerge to combat the ideological hegemony deployed by the power elite.

Both the human ecology and political economy perspectives view society as a whole, but then compartmentalize it into visible and analyzable categories. Political economy, however, emphasizes the causes and outcomes of social inequalities, and human ecology largely ignores these dynamics. Ecologists focus their attention on the mechanisms of adaptation that allow communities to hold together despite internal and external pressures and unanticipated changes.

#### *Micro perspectives – symbolism*

Symbolism is a theoretical tradition that views the community as a set of shared mental constructs (Cohen 1985) or mental maps (Hummon 1990) that bind individuals together. Members of a community share certain meanings and

interpretations with one another, but more importantly, these meanings and interpretations are distinguishable from those of members of other communities. Thus, the idea of community is closely related to its boundary from other communities (Cohen 1985).

Symbols are representations of things that both express their own meaning and allow individuals to create meaning from them (Cohen 1985). Individuals who share similar (not necessarily the same) interpretations of symbols, make up community. This community, then, is bounded by some threshold for variance in interpretation of symbols held by the collectivity. Community boundaries are therefore more interpretive than they are physical. Community character – elements unique to a given community – is created through a process of “lash-up” that results when material and ideational elements converge through human agency (Molotch, Freudenberg, and Paulsen 2000). The persistence of character over time is what Molotch et al. (2000) term *tradition*. The interpretive and social nature of how character and tradition are formed point to boundaries that are symbolic, meaning-dependent, individual, and interpretive (Cohen 1985). Thus, the idea of community from a symbolic perspective explicitly accounts for historical forces. Individuals’ interpretations of symbols will be constrained and enabled by previous experiences they have with symbols, as well as their observation of others’ interpretations of symbols. “‘Tradition’ stands in for how...character moves across time – how a mode of conjuncture at one point constrains or enables a particular mode of conjuncture at the next” (Molotch, Freudenberg, and Paulsen 2000:793).

Thus understood, the function of community is to create culture and tradition as shared meanings of symbols that persist over time, and to define boundaries. Change occurs when disagreement over the meaning of symbols develops, the

threshold for variance in meaning is surpassed, and new boundaries emerge that result in new communities.

*Micro perspectives – interactional sociology*

Community as defined by an interactional perspective is dynamic and emergent. An *emergent* field refers to the notion that “its character is not governed entirely by the collective properties of its parts, but is the outcome of the interaction of the parts and thus is novel” (Wilkinson 1970:314). Communities consist of many networks of interaction, or fields, which emerge and retreat as time passes and the importance of issues ebbs and flows. The *community field*, however, persists because it crosses the boundaries of specific interest-based fields that emerge in communities, draws on shared histories, norms, and kin, and ties them to the specific locality in question (Kaufman 1959; Wilkinson 1970). Thus, the community field serves to regulate the self-seeking behavior of any particular interest field.

The micro perspectives of symbolism and interactional sociology highlight some nuanced differences in understandings of community. With a focus on the individual as the unit of analysis, symbolism provides insight into the cognitive aspects of how people are bound to one another, and interactional sociology highlights individual social interaction as the mechanism of establishing community. Symbolism, with its focus on individual-level interpretations of collectively-held symbols, suggests a mechanism for how culture is created and sustained over time (e.g., Swidler 1986). This approach accounts for the historical and contextual specificity of community.

Macro and micro understandings of community reflect competing views of group structure, function, and capacity for collective action. Whereas the macro understandings focus on collectivities and social structures, the micro perspective

highlights the individual and his/her ability to act to affect change. In an effort to reflect both the collective and individual aspects of community, I adopt the broad definition of community as a social aggregate characterized by communal relationships that serve general purposes. Community differs from organizations that are characterized by relationships that serve specific purposes and are interest-driven (Selznick 1992; Bell and Newby 1971). Social interaction creates and results in social structures, which constrain and enable possibilities for social interaction (Giddens 1984). Community, the result of bringing people together in an on-going process of interaction, also facilitates collective action (e.g., Baiocchi 2003; Parisi et al. 2002).

The concepts of governance, institutional synergy, and community inform my exploration of governance outcomes when the state, communities, and NGOs are brought together in decentralized forest management. I use the case of community-based forest management (CBFM) in Madagascar as the setting for inquiry.

### **Research Justification**

This research is justified on both practical and theoretical grounds. From a practical perspective, increased understanding of the process and outcomes of decentralization of natural resources is needed given the mixed results of such initiatives. Over 20 years of effort to decentralize natural resource governance has not provided a clear basis from which to design or implement decentralized governance arrangements. Empirical studies have demonstrated that achieving success is difficult, and conditions for effective or successful decentralized systems have been theorized (e.g., Pagdee, Kim, and Daugherty 2006). Given the real-world effort to decentralize governance, it is important to understand this process in terms of its institutional and sociopolitical results and impacts. A greater understanding may inform new or

improved approaches to achieving effective governance structures that cross state—community lines.

From a theoretical perspective, this study is justified because it contributes to the age-old debate related to social structures and individual agency. As decentralization occurs, institutions may be created, dissolved, or transformed. The structural-level relationships among institutions, classes, or other groups are affected. Governance outcomes of decentralization may be impacted by the structures that are established. Yet, changes in structure necessarily imply changes in individuals' relationships with one another. Social categories are not mutually exclusive. People operate within many social spheres and are members of social networks that are dynamic, socially and historically contingent, and that are socially constructed. This study therefore attempts to contribute to an understanding of how social structures and individuals within them operate and adapt in a decentralized milieu.

### **Research Problem**

The purpose of decentralization is to distribute decision-making and implementation powers more broadly throughout the state and civil society. Redistribution of power is meant to enhance the ability of both parties to act as agents that affect substantive outcomes. The rationale of decentralization is that it will minimize negative consequences and maximize benefits of strict state-based and rules-based common-pool resource governance regimes. However, decentralization is a historically-contingent process that does not necessarily result in synergistic state–society relationships. Decentralizing governance structures implies changes in power relationships, but an understanding of power and its dynamics in these situations is lacking. In addition, governance outcomes of decentralized forest management in a given state–society institutional configuration are unclear. Understanding how

instances of decentralized community-based forest management (CBFM) operate, and how participants perceive the governance outcomes of this system may shed light on how to improve governance structures and processes. The thesis addressed is: *State—civil society relationships are infused with power. Processes of decentralizing forest governance that create new institutional arrangements have an effect on (1) the capacity of government, NGO, and community actors to act, and (2) the governance outcomes of the new institutional arrangements.*

### **Operating Assumptions and Positions**

Several assumptions underlie the research presented in the following chapters. These assumptions influenced the methods and outcomes of the research, so I articulate them here.

*Researcher position:* As a researcher, I played a specific role in developing this study. My background, education, experience, and personal convictions influence the way I understand the issue of decentralized forest management in Madagascar, the manner in which the inquiry was designed, the questions I asked, the methods I chose, and the conclusions I drew. It is important that what is presented in this dissertation be understood as a product of my position as a researcher, which is historically, socially, culturally, and politically contingent (Schwandt 2000).

*Epistemology:* This research was conducted under the assumption that inquiry and analysis provide useful insights for future practice, but do not reveal *the* truth behind community-based forest governance in Madagascar. Rather, analysis and inquiry allow for interpretation of events and experiences that can inform the improvement of future practice. Inquiry and reflection also allow for increased understanding of concepts, categories, and ideas of which our reality is constructed.

Due to the iterative and grounded nature of this study, I assumed that information I gathered, my interpretation of that information, and the conclusions I drew reflected a reality that is knowable. However, I also believe that ideas and understandings are politically conditional. This is applicable to social concepts and constructions, but also to the material. For instance, not only should the actual state of forests be understood materially as the outcome of political processes, but the way nature itself is understood is also political. Ideas about nature are formed, shared, and applied in ways that are inherently political (Escobar 1999).

Through this research process I have not fully reconciled my beliefs in both the “knowable reality” and the “socially- and politically-constructed reality.” Rather, I have chosen methods of observation, reflection, and analysis that allow me to consider various aspects of how I can understand reality and the knowledge those various methods confer.

*Role of research:* The purpose of this research process was twofold. First, I assume that the results of this inquiry can inform the practice of CBFM in Madagascar, and perhaps elsewhere as well. The results presented here are a contribution to a body of knowledge and insight that existed before this study was undertaken and will continue to grow thereafter.

Second, this study served in my own intellectual development. Aside from the research results, the research process also contributed to my understanding of how I know the world and how my position influences my understanding of reality. Although not stated as an objective of this inquiry, this outcome is of great value and will inform my future endeavors.

## **Overview of Methods**

A variety of methods and an iterative process of moving between inductive and deductive reasoning were used to collect data. Inductive reasoning allowed me to formulate questions and identify categories for analysis based on direct observation and open-ended inquiry. Deductive reasoning involved evaluation of previously-identified categories and their relationship to one another. A combination of qualitative and quantitative methods was used. The use of qualitative inquiry provided a nuanced understanding that informed the development of a quantitative survey instrument. Understanding the nuanced research context facilitates the interpretation of quantitative research results (Tashakkori and Teddlie 1998). In seeking to understand the practice of community-based forest management, and due to time and resource limitations, I deliberately selected regions in Madagascar to examine. Thus, care should be taken in assessing contextual similarities and differences when applying the results of this study to other cases. In addition, this inquiry focuses on the institutional and socio-political aspects of decentralized forest governance, and does not attempt to draw conclusions regarding biological or ecological parameters related to forests.

This research relied upon a variety of methods in two phases, one focused on gathering information regarding forest-related interests held by government, NGO, and community respondents, and the other focused on assessing governance outcomes of the community-based forest management contract mechanism implemented in Madagascar. To understand forest-related interests held by government employees, NGO staff, and community members, I conducted semi-structured, open-ended interviews (LeCompte and Preissle 1993; Seidman 1998) of community members in eight villages in the Menabe region, state forest agents at the local and national level, and participating NGO staff from two NGOs at the local and national level in Menabe

and Antananarivo, Madagascar (Appendix D). Semi-structured interviews are appropriate in predetermined, formal field settings when the purpose is phenomenological (Denzin and Lincoln 2000). Individuals were sampled using a snowball sampling methodology (LeCompte and Preissle 1993; Miles and Huberman 1994) to ensure subjects with knowledge and experience in the CBFM process were included in the study. The sample reached saturation when redundancy occurred in individuals identified.

Interviews lasted between 45 and 90 minutes, and were conducted in-person in the local language. No translator was used because I am proficient in the local language and wanted to avoid any misunderstandings with additional layers of data manipulation. In addition, I conducted participant-observation (Miles and Huberman 1994; LeCompte and Preissle 1993) by attending workshops, participating in CBFM-related discussions and field trips, and accompanying forest users to collect forest products. I also conducted document review to triangulate results among the three data collection methods (Miles and Huberman 1994). Data collection occurred over the three-month period from June to August 2004. Interview questions focused on experiences to date with CBFM, expectations for CBFM, interests related to CBFM, perceived problems regarding CBFM implementation, and future expectations.

This exploratory phase identified forest-related interests held by community members, forest agency staff, and NGOs. These interests were coded and categorized, and governance emerged as an area needing further study (see Chapter 5). This finding is important given that CBFM is itself an institutional structure designed to improve governance through decentralization. Thus, the second phase of inquiry (see Chapter 6), employed a quantitative survey to focus on governance outcomes of CBFM in Madagascar (Appendices E, F, G).

For the quantitative survey, the population of CBFM contracts in Madagascar (n≈350) was divided into sampling strata (Trochim 2001) to ensure variability in CBFM contract types represented in the sample, and also to facilitate data collection at the field level. Strata were identified based on two criteria: (1) objective of the CBFM contract and (2) forest type. In general, CBFM contracts in Madagascar have one of two objectives: conservation or sustainable use. Conservation-oriented contracts are often facilitated by conservation organizations and are put into place as a mechanism of decentralized forest governance whereby local communities have the primary responsibility for ensuring long-term conservation of the forests they manage. Conversely, development-oriented CBFM contracts are set up to encourage sustainable use of forest resources (both timber and non-timber). Additionally, CBFM contracts occur throughout Madagascar, in a variety of forest ecosystems. For the purposes of this study, three broad categories of forests have been identified: natural humid forests, natural dry forests, and Tapia forest<sup>2</sup>. The CBFM mechanism is a standardized tool that was designed for application throughout Madagascar in a variety of forest types, and therefore differences among forest types is not expected. Yet, including various forest types and comparing results across them is important for assessing its universal applicability. To ensure diversity in the types of CBFM contracts included in the study, sample contracts were selected to reflect combinations of the two strata identified. Two CBFM contracts were selected for each of the six combinations of the two strata. Table 6.2 illustrates the strata and sampling frame for the CBFM contracts.

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<sup>2</sup> Tapia forest – An endemic forest of Madagascar dominated by the Tapia tree (*Uapaca bojeri*). These woodlands or wooded savannas grow in several zones scattered across the western highlands, and have long been seen as remnants of previously grander and more diverse forests, degraded into their current shape by frequent burning (Kull 2000).

For each of the 12 contracts sampled, three categories of actors exist: community members, government employees, and NGO staff. A systematic sample (Trochim 2001) of community members was taken for each contract. However, given the disproportionately small number of government employees and NGO staff involved in each contract, a census of these groups was taken. For NGO staff, individuals both at the national and local levels from the NGOs involved in CBFM at the selected sites were included. For government employees, no national-level staff were included because no one at the Ministry of Environment, Water, and Forests self-identified as having primary responsibility for CBFM contracts. At the local level, relevant employees of the mayor's offices and regional offices of the Ministry of Environment, Water and Forests were included.

Permission to conduct research in Madagascar was granted by the Department of Water and Forests in the Ministry of Environment, Water, and Forests in Antananarivo, Madagascar (Appendix A). In addition, the methods and instrument used in this research were approved by the appropriate institutional human subjects' committees for the duration of the research project (Appendix B). My protocol included communicating risks to participants and maintaining confidentiality.

Although the results of this research are not generalizable to all cases, understandings from this inquiry may be transferable to other contexts. "Transferring knowledge from one context to another relies on understanding the contextual factors in the situation where the inquiry took place, judging the new context where the knowledge is supposed to be applied, and making a critical assessment of whether the two contexts have sufficient processes in common to make it worthwhile to link them" (Greenwood and Levin 1998:79). To facilitate this assessment, I have attempted to provide sufficient description of the CBFM context and process as applied in Madagascar. Results of this inquiry are trustworthy insofar as a variety of methods

were used that provide a reasonable basis for interpretation and conclusions. Three types of qualitative methods were used to allow for triangulation (Miles and Huberman 1994) as well as a quantitative survey method. The totality of this methodology is a robust approach to collecting data and providing trustworthy results.

### **Organization of Dissertation**

This dissertation is organized into seven chapters, beginning with this introductory chapter. Chapters Two through Six, which make up the body of the dissertation, are written as independent manuscripts suitable to be submitted for publication in peer-reviewed journals; thus, minor redundancy occurs between chapters. The final chapter includes some synthesis of the previous five chapters and concluding thoughts.

Chapter One, this introduction, presents justification for the research and outlines the research purpose. It describes operating assumptions of the inquiry, gives an overview of methods used, and discusses the trustworthiness of research results.

Chapter Two is in the form of a theoretical research paper titled “Power in Natural Resources Management: An Application of Theory.” It explores various understandings of power as developed in the disciplines of critical theory, adult education, and development sociology, and then illustrates these conceptions of power with examples from the field of natural resources. This chapter, although not data-based, contributes new understanding to the field of natural resources and informs conclusions drawn in Chapter Seven.

Chapter Three, “Possibilities for Institutional Synergy for Good Governance of Natural Resources,” is an analysis of literature on governance of natural resources. It synthesizes theoretical and empirical work on governance, and specifically identifies eleven key elements of good governance. This chapter is an original contribution in

the way these elements have been combined and presented to represent good governance of natural resources.

Chapter Four, which situates the research, is titled “Forest Management in Madagascar: An Historical Overview.” It outlines the chronology of forest management in Madagascar explains how decentralized forest management came to be. The history of forest management in Madagascar is critically examined with respect to the assumptions about the role of government and the governed, as well as the dominant narrative that drove policy.

Chapter Five, “A Multi-Sector Framework for Assessing Community-based Forest Management: Lessons from Madagascar,” assesses the responsiveness of CBFM to stakeholder needs, and proposes an analytical framework for conducting such an assessment. Specifically, this chapter relates the results of qualitative data analysis related to the following research objectives: (1) identify interests related to forest management held by the state, the community, and NGO representatives, (2) apply the *People, Nature, Wealth, and Power* framework as a lens for classifying these interests, and (3) conduct an initial assessment of the extent to which the CBFM mechanism responds to various interests held by multiple actors. This assessment indicated that governance is a key aspect of CBFM in Madagascar that requires additional inquiry.

Based on the findings in Chapter Five, Chapter Six is a research paper that further explores governance in CBFM in Madagascar. Titled “Governance Outcomes of Community-based Forest Management in Madagascar,” this chapter uses quantitative data to answer the following research questions: (1) What are the governance outcomes of CBFM? (2) What are the relationships among eleven governance principles in the context of CBFM? And (3) To what extent do the eleven governance principles explain or account for good governance?

Chapter Seven synthesizes and summarizes the results of this inquiry, as well as draws conclusions from the dissertation as a whole. It identifies additional areas of research needed to assess the efficacy of designing intervention strategies based on the results of this research. Chapter Seven also describes the significance of the research and its contributions and implications for methods, theory, practice, and policy.

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CHAPTER TWO  
POWER IN NATURAL RESOURCES MANAGEMENT: AN APPLICATION OF  
THEORY

**Abstract**

Processes of decentralization characterize much of the developing world's natural resource sectors (e.g., forestry, fisheries). Efforts to decentralize rest on the assumption that bureaucratic efficiency, procedural equity among administrative levels of government, increased service provision, citizen participation and democratization, and maintenance of national cohesion and political stability will result. At the heart of decentralization processes lies the question of power, given that most decentralization efforts involve some transfer of authority from a central agency to downwardly-accountable, decentralized groups, or claim to "empower" local-level actors. These processes also often involve organizations such as the state, NGOs, and local communities, who may have divergent or conflicting interests. The question thus arises, how is power reflected in various approaches to natural resources conservation and management? In this paper, I trace some theoretical understandings of the concept of power from disciplines such as critical theory, adult education, and development sociology. I then illustrate these conceptions of power with various examples from the field of natural resources. My purpose is to shed light on how power can be understood with the aim informing more deliberate, and perhaps more democratic professional practice.

**Introduction**

Moves to decentralize governance of natural resources necessarily imply rearranging institutional structures, redefining rules, reformulating relationships, and

redistributing power. In a development context, this process is complex as it involves actors at various geographic scales. Typically, the stakes are high when decentralizing decision making and management of natural resources, as actors have strong ties to the land and deeply-vested interests in the control and use of resources (e.g., Peluso 1995; McDaniel 2003).

As academics and practitioners in the field of conservation have noted, natural resource management is inherently political (Dryzek 1997; Brechin et al. 2003; Botchway 2001; Bryant 1998). The field is suffused with issues of access, control, rights, ownership, and use – issues of power. As Harvey (1993:25) observes:

...all ecological projects (and arguments) are simultaneously political-economic projects (and arguments) and vice versa. Ecological arguments are never socially neutral any more than socio-political arguments are ecologically neutral. Looking more closely at the way ecology and politics interrelate then becomes imperative if we are to get a better handle on how to approach environmental/ecological questions.

Politics – the practices of individuals as they negotiate power relations – and power itself are sociological constructs. “Questions of access to, exercise of, and limits on power are quintessentially the subject of political contestation” (Winter 1996:729).

The concept of power emerges as important for understanding the processes and structures associated with decentralization of natural resource governance. However, despite some recognition at an abstract level of the centrality of power for the practice of natural resources conservation and management, little theoretical or empirical attention has been paid to exploring the workings of power in the field. Previous studies have focused on decentralization of natural resources management at the structural level, using states, municipalities, and communities as the units of analysis (e.g., Ribot 2002; Bratton 1990; McConnell and Sweeney 2005). These

studies do not explore the power-related assumptions that underlie the analyses. Decentralization implies changing power structures yet much of scholarly and practical work accepts the idea of power as inherently understandable, needing no explanation, discussion, or reflection. For instance, the practice of planning natural resources management programs or decentralizing natural resources management is often presented as comprising a series of discrete steps that are to be implemented procedurally (e.g., Crowe 1983; Gutierrez et al. 2005; Lane 1990; Eaux et Forêts et al. 2002). These prescriptions are expected to work for any context unproblematically as if natural resources management occurs in a social vacuum (Raik and Wilson 2006). In the real world, natural resources management and especially decentralization of such management, is problematic because it occurs within complex and dynamic social, historical, cultural and political conditions. A need exists for research, scholarship, and practical reflection on how power is exercised during the practice of natural resources management and what this implies for professional practice.

The field of natural resources management and conservation is dominated by a highly technocratic outlook, which is not surprising given the biological and ecological nature of much of the work. Manipulating fish stocks, establishing silvicultural rotations, and monitoring populations of endangered species are all technical activities that require a high level of expertise. However, these activities fall within the broader set of practices that make up natural resources management: negotiation, discussion, persuasion, communication, and decision making, to name a few (Brecht et al. 2003; Wondolleck and Yaffee 2000). While much technical knowledge of natural systems is applied to practice in supposedly neutral, disinterested ways, much professional practice operates – sometimes intentionally, sometimes unintentionally – to exclude, dominate, marginalize, or otherwise disadvantage some groups (Raik and Wilson 2006).

The construct of power is the subject of decades of theoretical social debate, and does not lend itself to simplistic definitions (Clegg 1989; Wartenberg 1990; Winter 1996). In this paper, I explore how power works in the field of natural resources. I agree with Brookfield (1995:9) who reminds us that “when we become aware of the pervasiveness of power, we start to notice the oppressive dimensions to practices that we had thought were neutral or even benevolent.” Specifically, I ask three main questions: How is power understood? How are various understandings of power reflected in natural resources conservation and management? What can these examples teach us about how to improve natural resource management practice? Given the breadth and depth of scholarly thought on the concept of power, I do not presume to provide a comprehensive treatment in this paper. Instead, I provide a brief summary of four understandings of the concept of power and illustrate these with cases of natural resources conservation and management from the literature (Table 2.1).

**Table 2.1.** Summary of various understandings of power and examples of how these understandings are reflected in natural resources conservation and management.

Understanding of power	Examples from natural resources	Implications for natural resource managers
<b>Agent-centered view</b>	<p><b>Power as coercion</b> (A has power over B to the extent that he can get B to do something that B would not otherwise do)</p>	<p>Resource managers often have the authority to make decisions regarding resource use by local people. These decisions may result in conflicts if disagreements exist over what resource use levels are most appropriate in a given area.</p>
<b>Structural view</b>	<p><b>Power as constraint</b> (Power is exercised to constrain the actions or possible actions of B)</p> <p><b>Power as consent production</b> (A exercises power over B when A affects B in a manner contrary to B's interests)</p>	<p>Resource managers are often considered experts in their field and may use discourse or knowledge to limit scope of resource-related dialogue and negotiation.</p> <p>Resource managers may use persuasive speech or communication materials to sway others' opinions. Such strategies for coming to agreement on a decision may have positive or negative consequences for the various individuals involved.</p>
<b>Realist view</b>	<p><b>Power as real</b> (Human agents exercise power within preconditioned, structured social relations)</p>	<p>Resource managers may act deliberately to transform or reproduce pre-existing power relations.</p>

## **Agent-Centered View**

### Power as Coercion

Most discussions of power in the field of natural resources are limited to a simplistic understanding of power as something that some have and others do not. This view focuses on coercion and is often limited to descriptions of one person's power over another. Power as *coercion* is often referred to as the "first dimension," or face, of power (Lukes 2005). In simple terms, it can be understood as: "A has power over B to the extent that he can get B to do something that B would not otherwise do" (Dahl 1957:88). Power is that force whereby social agents alter the behavior of other social agents. Thus, one concept of power is an empirical relation of cause and effect that can be observed and measured empirically (Isaac 1987). Such an understanding of power is rooted in behaviorism, having as a central tenet to "treat social explanation as no different in principle from the explanation of non-social phenomena" (Clegg 1989:10). The exercise and effects of power are therefore observable, and studying power involves examining social agents in decision-making.

Many discussions of power in natural resources are limited to this understanding of power as coercion, mainly because of negative consequences related to the creation of protected areas. Protected areas are a typical example of state-based conservation insofar as they are often created and managed by governments. In Northern countries, areas were set aside for particular scenic beauty or uniqueness (Pretty and Pimbert 1995). This model of conservation, known as the "fences and fines" approach, based on the U.S. national park model, was largely implemented during the colonial era in developing countries, and additional parks of this type were established in various parts of the world more recently in the 1980s and 1990s. Under the fences and fines approach, local people were sometimes forced to move from the areas designated for protection, with no compensation or consideration for their

economic and cultural well-being (Furze, De Lacy, and Birckhead 1996; Kiss 1990). Naturally, local people came to view the existence of parks with disdain and chose not to cooperate with park authorities (Kiss 1990). Although effective in terms of biodiversity conservation, the success of parks and strict nature reserves vis-à-vis local resource-dependent people's ability to pursue their livelihoods came into question in the 1990s. Fortwangler (2003) describes negative social impacts of protected areas, including forced removals, fear and torture, and restricted access to resources. For instance, in 1997, over 1,000 San were forced to relocate from the Central Kalahari Game Reserve in Botswana to settlements on non-reserve land (Hitchcock 2002). In another example, local people who tried to resist forceful relocation from Rajiv Gandhi National Park in India were beaten by armed officers (WRM 2000). These examples of natural resources conservation reflect an idea of power as coercion that sometimes resulted in negative social impacts as people were forced to behave in a manner contrary to their wishes.

#### Power as Constraint

Bachrach and Baratz (1970) introduced the "second dimension" of power. In addition to the "first face" of power that is manifested through coercion and influence of behavior, a "second face" exists when power is exercised by A to constrain the actions or possible actions of B:

Power is also exercised when A devotes his energies to creating or reinforcing social and political values and institutional practices that limit the scope of the political process to public consideration of only those issues which are comparatively innocuous to A. To the extent that A succeeds in doing this, B is prevented, for all practical purposes, from bringing to the fore any issues that

might in their resolution be seriously detrimental to A's set of preferences (Bachrach and Baratz 1970:7).

The argument that A can act to constrain the actions of B rests on idea of "mobilization of bias:"

All forms of political organization have a bias in favour of the exploitation of some kinds of conflict and the suppression of others, because *organization is the mobilization of bias*. Some issues are organized into politics while others are organized out (Schattschneider 1960:71).

Power is not merely a matter of control over active decision making, but is also exercised to ensure inaction on issues. Bias can be organized by those in power to exclude issues from the agenda. Analysis of power therefore requires examining both decision making and *nondecision making*, where a *nondecision* is "a decision that results in suppression or thwarting of a latent or manifest challenge to the values or interests of the decision-maker" (Bachrach and Baratz 1970:44). This view recognizes that some institutional procedures systematically organize bias to skew the process to benefit the interests of one group over another.

The idea of power as constraint is also reflected in certain instances of natural resources management. One example is that of the discourse around suburban deer management in the eastern United States. Suburban deer often cause conflicts among local people as some enjoy viewing deer and feeding deer, while others suffer negative consequences from deer such as deer-vehicle accidents and plant or crop damage (Raik, Decker, and Siemer 2003; Raik, Siemer, and Decker 2005). Wildlife agency staff are often asked to make recommendations to local governments and community associations about how to address negative deer-related impacts. Raik and Wilson (2006) describe a case in which the realm of possible deer management actions was limited by the interests and position of the deer manager. They argue that "the deer

manager's explicit interest in reducing the deer population drove the position he took in negotiating the terms of the deer management plan. The deer manager organized attention around the issue of deer population reduction, and steered it away from deer-vehicle accident reduction" (Raik and Wilson 2006:331). This example illustrates power as constraint in action. The deer manager effectively constrained the possible actions of the local government regarding deer management.

Both agent-centered views (i.e., power as coercion and power as constraint) are too limiting to be useful for understanding the dynamic and pervasive nature of power. They view the individual as possessor of power and say nothing about the social conditions in which individuals exist. In one instance, an individual or group holds the power to manipulate others' behavior. In the other instance, an individual or group holds the power to exclude items from the agenda deliberately. Questions arise such as how are government agents able to exert power over local residents? Does their social position affect their practices or their exercise of power (e.g., authority)? The agent-centered view is not only unable to answer these questions, it does not ask them. It focuses solely on the agent and ignores the effects of structured social relations on power dynamics.

## **Structural View**

### Power as Consent Production

A "third dimension" of power arises from the critique that the first and second faces do not adequately account for social-structural processes that shape human relations and interests. The structural view understands power as forces above and external to the individual (e.g., race, gender, class) that operate unacknowledged to influence people and their behavior. Power no longer resides within individuals, it emanates from structural forces (Clegg 1989). This understanding asserts that "A

exercises power over B when A affects B in a manner contrary to B's interests" (Lukes 2005:37). Individuals exercise power over others because of their position in social structure. The distinguishing trait of this definition – and of the third dimension of power – is the distinction between preferences (i.e., subjective interests that can be articulated by agents) and interests (i.e., objective interests that are not articulated) (Winter 1996).

Indeed, is not the supreme exercise of power to get another or others to have the desires you want them to have – that is, to secure their compliance by controlling their thoughts and desires? (Lukes 2005:27).

The notion of interests is central to the third dimension of power.

Lukes (2005) agrees that power is a causal concept for understanding behavioral regularities (e.g., A always gets what A wants despite B's preferences). He also agrees that A has power over B when A's behavior causes B to do something B would not otherwise do: "any attribution of the exercise of power...always implies a relevant counterfactual" (Lukes 2005:43-44). This line of logic begs the question, what would B otherwise do? What would B have done had it not been for A's power? This question is addressed by the concept of objective interests: "true" interests that may go unarticulated and unrecognized by the individual, but are shaped through social-structural processes (Lukes 2005).

The third dimension of power is therefore the social-structural production of consent and norms. The status quo is maintained not through the actions of individuals but through the practices and rituals of groups and institutions. Societal forces shape individual preferences and this shaping process works to justify and maintain current systems of power. Societal control is exerted as individuals "only strive for those things that the 'defenders of status quo' want them to strive for, thus there is no conflict or rebellion" (Braynion 2004:455). The idea that people come to

agree with the interests of dominating groups without questioning them or even recognizing an alternative has spurred work on notions of hegemony and conscientization (Freire 1970).

The third dimension of power goes beyond the observable essences of power as coercion and constraint in that it accounts for social structural practices, which shape how interests themselves are defined. Conflict is not necessarily a correlate to the exercise of power but the threat of coercive power always lies behind the production of consent. As Lukes (2005:27) notes, "...the most effective and insidious use of power is to prevent...conflict from arising in the first place."

The structural interpretation of power is present in the practice of natural resources management. Much of the justification for encouraging local participation in management of natural resources stems from the idea that local people are disadvantaged based on their social position. Social stratifications are such that government officials and NGO staff are more "powerful" than local, resource-dependent people. However, studies have shown that attempts to implement participatory approaches to natural resources management can reproduce, and even aggravate pre-existing social hierarchies both within a community and between local people and external actors (Cooke and Kothari 2001; Agrawal and Gibson 1999). For example, in decentralizing forest management many donors, governments, and NGOs support the transfer of management from the forest agency to a local forest-user association created for this purpose (e.g., Eaux et Forêts et al. 2002; Randrianasolo 2000). Externally-motivated social structures may result in institutionalizing power asymmetries.

For instance, a study conducted by Schafer and Bell (2002) on human-wildlife conflicts in Mozambique reveals that despite not having official authority with which to make decisions and implement actions related to their resource needs, certain

factions of the local community were able to manipulate the situation to advance their interests. Conflict between the state and the local community regarding crop damage by wild elephants revealed that neither the state nor the community represented a homogenous set of interests or desires related to management. Within the state natural resource agency, some individuals were willing to respond to community requests to kill the elephants, while others were not. Within the community, the traditional authority sided with conservationists and donors because he viewed the affected farmers as squatters on his traditional land (Schafer and Bell 2002). Thus, in this case, power structures were reproduced as individuals and groups maneuvered to take control of resource management. The contested nature of resource-governing rules enabled different groups to jockey for a position of power and challenge pre-existing structured power relations.

Structural views of power that focus solely on social structures and ignore individually exercised power are limited in their ability to account for agency. They assume that the social system creates a “false consciousness” among the dominated whereby they believe and behave contrary to their “true” interests. One shortcoming of this view is that this false consciousness is not equally applied to all individuals. For instance, Lukes (2005:38) asserts that “...people’s wants may themselves be a product of a system which works against their interests...” Thus, people undergo a process of social construction whereby they (the subordinated) not only act in ways contrary to their interests, but they do not even perceive their objective interests. The subordinated are blinded into accepting “their role in the existing order of things” (Lukes 2005:28). Yet, the dominant have somehow escaped these very processes of social construction and have achieved a degree of autonomy such that they are able to identify their objective interests and act accordingly (Isaac 1987).

## **Realist View**

The realist view is based on identifying enduring structural preconditions that shape contingent human interaction. This view provides a relationship between individual agency and social structure from which to understand the workings of power and conduct analyses. Although the agency-structure relationship is fundamental to understanding power, this relationship is not necessarily a reified dualism between agency and structure (Giddens 1984). Social structures both constrain and enable human agency, and they are produced by human agency simultaneously. The exercise of power is contingent upon social structures but not determined by them because social structures are enduring but not immutable (Isaac 1987). That is, “actors are involved in the continuous reproduction of structural properties through systematic practices. In turn, structural properties influence individual behavior and are beyond the direct influence or cognition of individual actors” (Fogarty and Ravenscroft 2000:417). Power structures enable and constrain human agency (Haugaard 2002; Digeser 2002) just as the exercise of power by agents produces and reproduces power structures (Winter 1996; Isaac 1987). Power is thus the capacity to act within preconditioned, structured social relations.

Little evidence of the realist view exists in scholarship related to natural resources management practice. A brief analysis suggests that this view may be useful for understanding how practitioners act within the social structures and relations to which they belong: The natural resources manager, for instance, accomplishes tasks by way of his/her participation in manager-donor, manager-forest user, and collegial relationships. These relationships are structured, but the manager has the capacity to act within them. As the manager interacts with the donor, s/he responds to agendas and objectives that have been identified and reports on activities that respond to these objectives. The manager is constrained by the donor’s position of authority, but can

act authoritatively on technical matters. As the manager interacts with the forest user, s/he orients discussion and decision making, implements activities, and monitors progress according to given objectives. The manager is constrained by his position of authority linked to his technical knowledge, but can act to democratize processes in which forest users participate. The manager's possible range of actions is limited by thresholds set by his/her position and authority in structured social relations.

The realist view makes the exercise of power visible by highlighting the importance of social relationships for structuring interaction. "Rather than A getting B to do something B would not otherwise do, social relations of power typically involve both A and B doing what they *ordinarily* do" (Isaac 1987:96). For instance, a manager may behave in a variety of ways within the confines of the structured manager-forest user relationship to which s/he belongs. Managers typically apply specialized knowledge to make decisions regarding natural resource conservation and management in collaboration with a variety of stakeholders. However, social structure does not pre-determine the manager's actions. S/he can exercise power to shape projects and programs so that they are more or less inclusive, diverse, or democratic. It is this ability to maneuver and make choices within structured social relations that differentiates the realist view from other views of power. By understanding social structures as pre-existing the agent, the realist view enables us to imagine how the manager might transform these structures, either for positive or negative outcomes.

## **Conclusion**

Decentralization of natural resource management and conservation involves transfer of responsibilities and authority from a central body to more decentralized structures (Ribot 2002, 2003). This transfer can take many forms and may include transfers of specific authorities such as law enforcement, rule creation, management,

and monitoring. In the hopes of resulting in some increased level of social equity, empowerment, and democratization, mechanisms for implementing decentralization of natural resources management often include some form of popular participation. These efforts to neutralize power among actors are pervasive in the field, and have been the subject of much scholarly and practical reflection. However, little rigorous, analytical thought has been given to the meaning of power in these contexts and its implication for how natural resources management practice occurs.

In this paper, I contend that the realist view of power as the socially-structured capacity to act may be useful for understanding and improving the practice of natural resources management and conservation, especially in cases of decentralization. Natural resources practitioners operate within established social structures such as universities, governments, organizations, and cultures. Their actions, however, are not pre-determined by their participation in particular social practices and relatively enduring social relations. As they interact and participate in social relations, they are constantly negotiating intricate webs of power, and either transforming or reproducing them. Beginning to see and understand power and its role in natural resources management may lead to insights as to how natural resource practitioners can be strategic about how they act and consciously take steps to democratize and equalize asymmetrical power relations.

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CHAPTER THREE  
POSSIBILITIES FOR INSTITUTIONAL SYNERGY FOR GOOD GOVERNANCE  
OF NATURAL RESOURCES

**Abstract**

This paper reviews literature relevant to governance of natural resources. It argues that in view of the emphasis placed on issues such as access, control, and use of renewable natural resources by donor, NGO, and government-sponsored programs, understanding modes of governance, and better or worse forms of governance, is of importance for the field of natural resources conservation and management. I describe four modes of governance – state-based, market-based, rules-based, and hybrid. I also identify elements of *good* governance specific to hybrid governance arrangements. The lessons compiled in this review serve as a starting point for how institutional arrangements might be designed a priori to maximize the possibility of good governance outcomes for conservation and management of natural resources.

**Introduction**

Conservation of natural resources is at the heart of many donor, government, and NGO-sponsored programs in developing countries. In addition to the physical manipulation of resources, these programs often address critical issues of governance including resource access, control, and use. The issues become extremely complex when many actors are involved and when the state agency moves to decentralize decision making (Baland and Platteau 1996).

Governance plays an important role in natural resource programs. Increasingly, the form of governance has been recognized as having significant influence over effectiveness of management and success in conservation of natural

resources. At international, national, and local levels, the idea of governance has become central to natural resources policy and programming, as attested to by policy documents, briefing notes, and working papers published by organizations such as the United Nations, The World Conservation Union (IUCN), and The World Bank (e.g., UNDP 1997; Graham, Amos, and Plumptree 2003; IUCN 2004). The increased attention to governance has spawned numerous publications defining governance, describing forms of governance, and calling for good governance. This paper synthesizes this literature with the purpose of shedding light on current thought regarding the construction of innovative institutional regimes that result in *good* governance. After reviewing four modes of governance – state-based, market-based, rules-based, and hybrid – the discussion focuses on elements of good governance for hybrid institutional arrangements.

### **Governance of natural resources**

Governance is extremely difficult to define. One definition states that governance refers to the combination of “people, political institutions, regimes, and nongovernmental organizations (NGOs) at all levels of public and private policy making that are collectively responsible for managing world affairs” (Hempel 1996:5). Others have defined governance as “the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say” (Graham, Amos, and Plumptree 2003). Thus, governance refers to the set of rules, structures, interactions, and processes that exist to shape how decisions are made.

Traditionally, political science has addressed questions of governance related to public policy, economics has focused on private exchange governance via markets, and sociology has concentrated on governance by norms, social values, and

community. Natural resources cross these public/private/community divisions and are therefore the object of multiple forms of governance. For instance, national parks are often governed by the state, private forests are often governed by individuals, and communal pastures are often governed by the community.

In 1968, Garrett Hardin's "Tragedy of the Commons" painted a bleak picture of the future of the world's common-pool resources. The commons, he argued, were being over-exploited at an alarming rate and drastic action was needed to conserve the commons for future generations. The "rational" individual, Hardin (1968) argued, uses a resource until the expected benefits of his or her actions equal the expected costs. Each individual ignores costs imposed on others. Such behavior cumulates and inevitably leads to a tragic over-use of open-access commons. An individual resource user has no incentive to self-impose restrictions on resource use or make improvements to the resource because of the fear of free riders. As a result, Hardin (1968) recommended that common-pool resources be governed either as government property or as private property. Other scholars have since illustrated the success of two other governance options, that of rules-based and hybrid approaches (Lemos and Agrawal 2006; Baland and Platteau 1996) (Table 3.1).

**Table 3.1.** Summary of state-based, market-based, rules-based, and hybrid governance arrangements for natural resources.

	<b>State-based regime</b>	<b>Market-based regime</b>	<b>Rules-based regime</b>	<b>Hybrid</b>
<b>Actors</b>	The State Self-interested individuals or groups that need to be regulated	Economic agents Self-interested individuals or groups who will act only in response to market incentives	Groups	The State Non-state actors
<b>Mechanism</b>	Enforcement of legislation Behavioral sanctions	The market Market incentives	Reciprocity Trust Communication	Decentralization Co-management Partnership
<b>Pros</b>	Allows for broad changes to occur through policy The State is a legitimate enforcer, therefore compliance is generally high	Allows for contextual specificity Efficient	Incorporates local knowledge Allows for contextual specificity	May be efficient Allows for contextual specificity
<b>Cons</b>	Inefficient Can lead to marginalization of some groups	Subject to market failure Can lead to marginalization of some groups	Inefficient Can lead to marginalization of some groups Small scale	May be inefficient Potential for inequitable distribution of costs and benefits

## State-based Approaches

State-based resource conservation schemes involve ownership by a federal, regional, or local public agency that can forbid or allow use of a resource by individuals. Protected areas are a typical example of state-driven conservation and management of natural resources. In developing countries, the “fences and fines” approach, based largely on the U.S. national park model, was implemented during the colonial era, and additional parks of this type were established in various parts of the world more recently in the 1980s and 1990s. Under the fences and fines approach, local people were sometimes forced to move from the areas designated for protection, with no compensation or consideration for their economic and cultural well-being (Furze, De Lacy, and Birkhead 1996; Kiss 1990). Naturally, local people came to view the existence of parks with disdain and chose not to cooperate with park authorities (Kiss 1990). Although effective in terms of biodiversity conservation, the success of parks and strict nature reserves vis-à-vis local resource-dependent people’s ability to pursue their livelihoods came into question in the 1990s. Fortwangler (2003) describes negative social impacts of some protected areas, including removals, fear and torture, and restricted access to resources. For instance, in 1997, over 1,000 San were relocated from the Central Kalahari Game Reserve in Botswana to settlements on non-reserve land (Hitchcock 2002). In another example, local people who tried to resist forceful relocation from Rajive Gandhi National Park in India were beaten by armed officers (WRM 2000). Finally, the Ts’Exa of Botswana were blocked access to seasonal migrations of wildlife when Chobe National Park was created (Taylor 2002). As a response, there has been a call for more participatory and decentralized forms of natural resources management and conservation that involve local people.

Although state-based approaches may result in compliance with strict legislation regarding natural resource governance, they can lead to the marginalization and

disenfranchisement of certain groups and provide little incentive for individuals to act as stewards of resources they do not own. In addition, hierarchical and bureaucratic state-based arrangements are often rigid, resistant to innovation, and inefficient (Brechin, Wilshusen, and Benjamin 2003).

### Market-based Approaches

Hardin's (1968) second recommendation was the privatization of resources. Under a private property market-based regime, owners have full rights to the resource. They are able to withdraw resource units, make improvements to the resource, determine who will have access and use rights, and sell or lease access and use rights to others (Ostrom 2000). Such arrangements usually rely on market forces for driving individuals' decisions regarding resource management. For instance, a market-based approach to governance might provide incentives for resource owners to invest in improvements to the resource because owners are able to see a direct relationship between their investments and benefits they accrue. The fear of free riders is minimized because resource owners have the rights of exclusion and alienation (Ostrom 2000). Many economists consider private property to be the optimal property regime for economic development in part because it rests on the assumption that rational individuals will act in their own self-interest (Baland and Platteau 1996; Hardin 1968).

Private property, however, poses a problem as far as conservation of common-pool resources is concerned. The most economically beneficial use of a resource may not result in ecologically-sound management practices. While individual property owners benefit in the short-term from new agricultural lands, the public as a whole suffers in the long-term as hydrological cycles are disturbed and negative downstream impacts ensue. In addition, assigning property rights can be difficult and impractical in situations where land tenure is unclear or contested.

Although privatization may result in maximized benefits and efficiency of resource use as a result of increased participation and interaction, it can have negative consequences as well. For instance, market-based approaches may undermine conservation efforts for resources of ecological importance (e.g., threatened and endangered species), and concentrate control of the resource in the hands of elites (Streek and Schmitter 1985; Langholz 2003).

### Rules-based Approaches

Under rules-based approaches, individuals are subject to the rules established by a group. “Some form of collective action between the individuals constituting the user community is essential, since a collective effort is required to manage access to the [resource] and the allocation of the benefits it produces” (Steins and Edwards 1999:540). The prediction that resource users are destined to destroy resources in an open-access arrangement is based on the assumption that all users are “selfish, norm-free, and maximizers of short-run results” (Ostrom et al. 1999:279). However, empirical evidence does not support predictions based on this assumption (e.g., Ostrom 1998). In most cases where individuals face a resource problem, are able to communicate, and can make and enforce rules, reciprocity is used to overcome the problem (Ostrom et al. 1999). Thus, this evidence leads to the conclusion that rules-based regimes are a governance option for natural resources.

### Hybrid Approaches

Each of the above governance regimes has its strengths and weaknesses (i.e., state-based, market-based, and rules-based). State-based conservation is a centralized approach that relies upon expert knowledge to make decisions. As such, it allows for broad changes to occur. However, this approach is often plagued by inefficiency and corruption, and does not account for contextual specifics. Market-based arrangements

are a decentralized governance regime that allows individuals and groups to make decisions about the resources they own. However, for public resources, property rights can be difficult to assign. Finally, rules-based regimes privilege local knowledge and encourage social interaction. However, consensus building can be time-consuming, local people may not have access to information needed to make sound conservation decisions, and power asymmetries may exclude certain groups from participating.

In an attempt to maximize the benefits of each of the governance regimes and minimize their weaknesses, scholars and practitioners articulated hybrid governance forms that cut across the conventional state/market/community boundaries (Uphoff 1993; Agrawal and Gibson 1999; Ostrom 2002; Evans 1996; Lemos and Agrawal 2006). Indeed, scholars and practitioners alike have called for governance structures that result in (1) sustainable use of natural resources, (2) equitable distribution of resource benefits, and (3) institutional forms that reflect the complexity and diversity of the natural systems being governed (Barrett, Lee, and McPeak 2005; Ostrom et al. 1999; Dietz, Ostrom, and Stern 2003). Moves toward innovative hybrid institutional designs have also reflected recent trends to decentralize governance to resource users (e.g., Ribot 2002), to ensure social justice related to resource access and control (e.g., Brechin et al. 2003), and to empower local people (e.g., Agrawal and Gupta 2005). To achieve a blend of institutions for natural resource governance, governments and international conservation and development groups have solicited the participation of local people by decentralizing decision-making processes and structures of authority (e.g., Nemarundwe 2004; Pandit and Thapa 2004). State–civil society linkages have been sought to decentralize management from the central government (minimizing negative effects such as inefficiency) and involve local communities (maximizing effects of local contextual knowledge). Public–private partnerships have also been cultivated to maximize efficiency while upholding legitimacy.

Although theoretically compelling, hybrid governance arrangements are difficult to design and implement given real-world institutional complexities. Efforts to decentralize natural resource governance in developing countries have often involved not only the state and local communities, but third-party NGOs as well (Mohan 2002).

### **Elements of Good Governance in Hybrid Approaches**

Given the relative novelty of hybrid approaches to environmental governance, most cases of institutional hybrids have been described in theoretical terms. When empirical evidence does exist, it is often documented retrospectively. Although the emergence of successful hybrids is certainly encouraging, the true challenge lies in designing and implementing hybrid institutional forms that will result in good governance outcomes with respect to both effective, just processes and substantive conservation achievements. A review of both theoretical and empirical work suggests certain elements that may be necessary for the emergence (and construction) of successful hybrids. To select reference documents, I searched peer-reviewed journal article databases for key words “governance, natural resources, conservation, and decentralization.” I also solicited recommendations from scholars and practitioners working in natural resource governance. The identified elements for synergistic hybrids that result in good governance include: clear resource governance goal, coherent institutional structure, clear rules, participation, accountability, transparency, monitoring, enforcement, equity, responsiveness, and transfer of authority (Table 3.2). Below is a description of each of these eleven principles of good governance in hybrid arrangements.

**Table 3.2** Good governance principles as identified through literature review.

Good Governance Element	Definition	Observations	References
Goal	State, market, and community actors share a common goal and have complementary interests related to achieving that goal.	Goals and interests should be articulated by all parties to hybrid arrangements.	Evans (1996a), Lam (1996), Antona et al. (2004).
Structures	A coherent and dependable set of institutions exists; state institutions may be in the form of highly hierarchical bureaucracies; fairly homogeneous and representative community groups facilitate hybrids.	Empirical evidence suggests that social capital is rarely the limiting factor for successful hybrids.	Evans (1996a), Heller (1996), Lam (1996), Ostrom (2000).
Rules	Existence and application of predictable and systematic rules to regulate behaviors; Knowledge of and access to means of adjudicating disputes and filing complaints.	All parties in the hybrid are equally subject to the rule of law.	Ostrom (1990), UNDP (1997), Johnson and Nelson (2004), Menzies (2004).
Participation	Active participation by individuals and groups whose lives are affected by decisions of the hybrid group.	Superficial or inadequate mechanisms for participation may result in the institutionalization of existing power asymmetries.	UNDP (1997), Baiocchi (2003), Graham et al. (2003), Johnson and Nelson (2004).
Accountability	Decision makers are accountable to their constituencies.	Weak institutions open the door for corruption and rent-seeking.	UNDP (1997), Ostrom (2000), Nygren (2005).
Transparency	Information flows freely.	Weak institutions open the door for corruption and rent-seeking.	Guttrnan (1976), UNDP (1997), Ostrom (2000), Andersson and Hoskins (2004).

**Table 3.2** Continued.

<b>Good Governance Element</b>	<b>Definition</b>	<b>Observations</b>	<b>References</b>
Monitoring	Monitoring activities are in place and are carried out by participants in the hybrid arrangement.	The authority for monitoring is a crucial point for establishing successful hybrids.	Ostrom (1990), Johnson and Nelson (2004), Barrett et al. (2005).
Enforcement	Enforcement activities are in place and are carried out by participants in the hybrid arrangement.	The authority for enforcement is a crucial point for establishing successful hybrids.	Ostrom (1990), Johnson and Nelson (2004), Barrett et al. (2005).
Equity	Equitable systems and procedure for resource access and use are in place.	Equity and democracy are not necessarily synonymous. Equity may be culturally defined.	Ostrom (1990), Menzies (2004), Agrawal and Gupta (2005).
Responsiveness	The nature of participation and engagement should be responsive to changing circumstances.	Designing responsible, flexible, and adaptable institutional forms may be the most challenging aspect of constructing hybrids.	Schafer and Bell (2002), Barrett et al. (2005).
Transfer of Authority	Subsidiarity - attributing management authority to institutions closest to the resources at stake.	Although many hybrid arrangements transfer management responsibility (implementation of activities), they do not often transfer authority (the ability to make decisions, change rules, etc.).	Wily (1999), Schafer and Bell (2002), Kumar and Vashisht (2005).

1. *Goal:* At the most basic level, the state and society (market or non-market actors) share the same goals related to resource governance for hybrid institutional arrangements to succeed. Without a “common set of goals” (Evans 1996:1121) institutional complementarity is reduced to parallel sets of activities implemented by the state and society working oppositionally for separate objectives. In addition, a congruence of interests related to the achievement of those goals facilitates complementarity insofar as the means for achieving the goals are easily agreed upon (Lam 1996; Antona et al. 2004).
2. *Structures:* Certain state and societal structural forms have been observed to facilitate resource governance and the emergence of institutional hybrids (Evans 1996). With regard to the state, a coherent and dependable set of public institutions is necessary. However, the specific form these public institutions take may vary without jeopardizing the possibilities for hybridism. For instance, successful hybrids may result from collaboration with a highly hierarchical and bureaucratic state (Heller 1996; Lam 1996). However, others have observed negative consequences as a result of highly bureaucratic states that demand simplistic application of inflexible rules. Regarding the community, evidence suggests that institutional hybrids are more likely when the state’s partner is a tightly-knit group that shares norms of reciprocity and whose members trust one another (Johnson and Nelson 2004; Ostrom 2000).
3. *Rules:* The state is responsible for establishing fair legal frameworks and enforcing them impartially (UNDP 1997). These frameworks need to be predictable, dependable, and systematic. Rules about appropriation of the natural resource must be agreed upon by all parties to the hybrid, and must be well-suited to the local context (Johnson and Nelson 2004; Ostrom 1990). In addition, partners

should have a clear legal status with commensurate responsibilities and authority (Menzies 2004).

4. *Participation*: Individuals should have a voice in decision making, either directly or through legitimate representation (UNDP 1997; Graham, Amos, and Plumptree 2003). This collective choice arrangement may not be completely egalitarian, but it must be perceived as fair and legitimate by all participants (Johnson and Nelson 2004). The state has a responsibility to provide the public sphere in which civil society can participate, and civil society has the responsibility to demand and take advantage of this sphere (Baiocchi 2003). Although genuine participation is necessary for institutional hybrids in resource governance, participation alone cannot guarantee sustainability in a situation plagued by corruption and deception (Nygren 2005).
5. *Accountability*: Decision makers, whether public or private actors, are accountable to their stakeholders and the public. State actors need to be held accountable for their actions. Decentralization without appropriate checks and balances can “easily privilege local governments and traditional authorities as ‘authentic’ sources of authority, with little consideration for whether these actors are accountable to the local populations” (Nygren 2005:646).
6. *Transparency*: Transparency includes free flow of information that is accessible to those concerned (UNDP 1997; Ostrom 2000; Guttman 1976; Andersson and Hoskins 2004). Transparency facilitates accountability insofar as individuals and groups have access to information they need to assess the validity, legitimacy, and appropriateness of decisions that are made.
7. *Monitoring*: Monitoring responsibilities are extremely important to the success of hybrid governance regimes. Ideally, “monitoring of resource use and the imposition of sanctions for violations should be carried out by either the members

of the managing communal entity or by persons accountable to the members” (Johnson and Nelson 2004:721). Otherwise, the ability of resource users to regulate behavior among themselves and outsiders during the absence of state authorities may be weakened to the point that no effective management of resource use is possible.

8. *Enforcement*: Although the state usually retains law enforcement authority, in a hybrid arrangement, state enforcement may undermine or complicate non-state attempts to set rules and sanction behavior (Johnson and Nelson 2004; Ostrom 1990). “It matters less *which* rules a community or country adopts than *how well* they monitor and enforce the rules they set” (Barrett, Lee, and McPeak 2005:195)<sup>1</sup>.
9. *Equity*: Actors in hybrid arrangements have a responsibility for ensuring that institutions are created and emerge to support equitable distribution of resource benefits (Ostrom 1990). What is deemed equitable to some, however, may not be equitable to others. Care must be taken to understand the legitimacy of local social structures and the culturally-specific definitions of equity (Agrawal and Gupta 2005). Just as institutions can reify inequitable social structures, loose institutional structures are easily dominated by elites (Menzies 2004).
10. *Responsiveness*: Flexibility and adaptability in design and implementation can be critical to establishing hybrid institutional arrangements for resource governance (Barrett, Lee, and McPeak 2005). This implies that the construction of hybrids is a process of constant negotiation, re-positioning, improvement, and evaluation. One crucial element to designing adaptable institutional arrangements is being keenly aware of the social and ecological environment to ensure rules are appropriate to the context (Schafer and Bell 2002).

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<sup>1</sup> Original italics.

11. *Transfer of Authority*: Transfer of *Authority*, in addition to responsibility, may be a necessary element for good governance in hybrid arrangements (Wily 1999; Schafer and Bell 2002; Kumar and Vashisht 2005). The distinction is made between authority – the ability to make decisions, create rules, and change rules – and responsibility – the task of implementing activities. Specifically, hybrids require “strong political commitment to the devolution of power on the part of the bureaucracy” (Kumar and Vashisht 2005:37).

These eleven conditions have been identified through theoretical and empirical work to be essential for the emergence (and construction) of hybrid institutional forms for good governance of natural resources.

## **Conclusion**

Designing hybrid institutional forms for governance of natural resources is a complex task involving many actors with multiple interests, motivations, and agendas. These actors come to resource governance with historically and culturally shaped circumstances that constrain and enable their interactions with one another. These circumstances also shape how power is exercised and produced through social interactions.

Given the complexity of goals of sustainable resource management and equitable distribution of resource benefits, institutional hybrids may be a mechanism through which the state and resource stakeholders alike can design institutional forms and relationships for their mutual benefit. However, several principles related to governance structures and functions may be necessary conditions for successful hybrids. The eleven elements identified in this review serve as starting point for how hybrid institutional arrangements might be designed a priori to maximize the possibility of good governance outcomes.

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## CHAPTER FOUR

### FOREST MANAGEMENT IN MADAGASCAR: AN HISTORICAL OVERVIEW

#### **Abstract**

Madagascar is regarded as one of the most important areas for biodiversity on Earth, and this biodiversity is found mainly in Madagascar's forests. Rural Malagasy people struggle to meet their daily food needs and often turn to the forest for new agricultural land. Efforts to curb deforestation and conserve threatened and endangered species undertaken by the Malagasy government and by international conservation and development organizations have been shaped by the history of forest management in the country. This paper traces the evolution of forest management in Madagascar from pre-colonial times to the present in an effort to contextualize current efforts to create new protected areas and transfer forest management responsibilities from the central government to local communities. In addition, the history of forest management is critically examined with respect to the assumptions about the role of government and the governed, as well as the general theme that drove policy, providing context for understanding the approach currently underway in Madagascar.

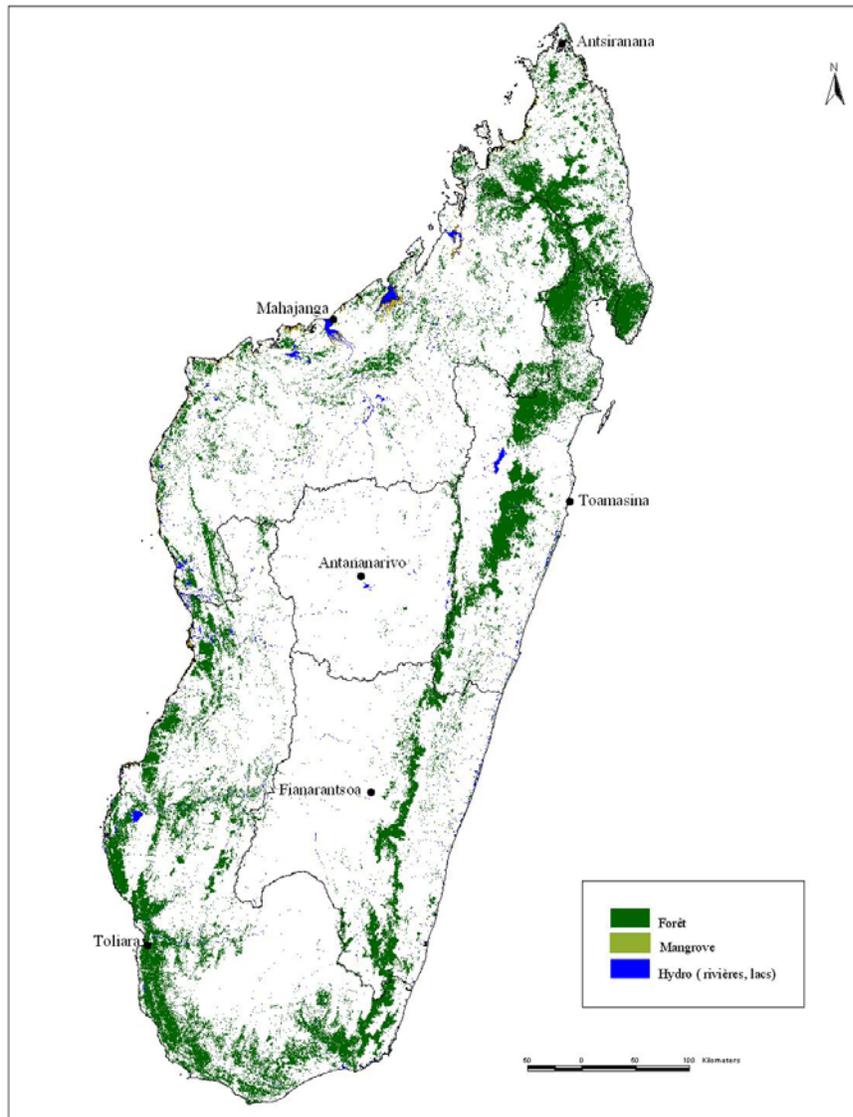
#### **Introduction**

Madagascar is regarded as one of the most biologically rich areas on Earth. The island is a global priority for conservation with 11 endemic families and 310 endemic genera of plants, five endemic families and 14 endemic genera of primates, and five endemic families and 35 endemic genera of birds (Lourenco 1996; Goodman and Benstead 2003; Myers et al. 2000).

Madagascar is also one of the world's hotspots for conservation attention because its biodiversity faces a wide variety of threats, including habitat loss and fragmentation, and overexploitation of commercially valuable species of plants and animals. As recently summarized by the Critical Ecosystem Partnership Fund (Critical Ecosystem Partnership Fund 2007):

These threats, coupled with insufficient local technical capacity, limited biodiversity information, inadequate government presence to manage and protect natural resources, and ambiguous policies, present a complex set of challenges that need to be addressed if biodiversity conservation and sustainable livelihoods for the people of Madagascar are to be achieved.

Changes in human activity on the island have resulted in an alarming rate of deforestation in Madagascar (Figure 4.1) (Nelson and Horning 1993; Green and Sussman 1990), putting both biodiversity and local livelihoods at risk (Donohoe 2003; UNDP et al. 2000; McLean and Straede 2003). Global deforestation has been linked to a variety of direct and indirect factors, including population growth (UNDP et al. 2000; Green and Sussman 1990), the introduction of coffee cash cropping (Jarosz 1993), timber export (UNDP et al. 2000), and local, national, and global political and economic factors (Lambin et al. 2001; Kull 2000; Moser 2006). In addition to such global factors, major domestic threats to forests in Madagascar include clearing for subsistence agriculture (*tavy*), charcoal, and timber (Ganzhorn et al. 1997). However, other factors such as political resistance to restrictive policies have also been identified as contributing to current rates of deforestation (Klein 2002; Jarosz 1993).



**Figure 4.1** Forest Cover Map of Madagascar.

Studies in many countries (e.g., Tanzania, Philippines, Burma, Ecuador, Madagascar) indicate that deforestation such as that characteristic of Madagascar can result in extirpation or extinction of species (Brooks et al. 2002). Deforestation can also put people at risk. As forests decline, people are forced to move to distant forested areas where vital resources are available, thus modifying their traditional ties

to the land and perhaps threatening aspects of their cultural identity. Scarce forests may also result in conflict among peoples for control over resources (Donohoe 2003).

Madagascar is among the poorest countries in the world with per capita GDP at \$290 in 2005, an infant mortality rate of 76/1000 births, and only 45% primary school completion rate (The World Bank 2007). The country is stricken by frequent natural disasters such as cyclones, flooding, and drought. Food security is an issue as only 0.1% of the national surface area is under agricultural cultivation (estimate in 2000) and people struggle to meet their daily food needs (The World Bank 2007). Thus, forest clearing is an understandable consequence of a population under pressure to eke out food production from the land.

Efforts to curb deforestation and conserve threatened and endangered species undertaken by the Malagasy government and by international conservation and development organizations have been shaped by the history of forest management in the country. This paper traces the evolution of forest management in Madagascar from pre-colonial times to the present. Understanding this history will help to contextualize current efforts to create new protected areas and transfer forest management responsibilities from the central government to local communities. In addition, the history of forest management is critically examined with respect to the assumptions about the role of government and the governed, as well as the general belief that drove policy, providing context for understanding the approach currently underway in Madagascar.

### **Madagascar Biogeography**

Madagascar is located off the southeast coast of Africa, in the western Indian Ocean. It is the fourth largest island on Earth with a surface area of 587,040 square kilometers. The island is made up of distinct biogeographic zones with varying

regional climates. Generally speaking, four broad vegetative zones exist: humid and degraded humid forest, grassland/wooded grassland mosaic, dry forest, and spiny forest (Figure 4.1, Table 4.1). These areas are habitat for an incredible diversity of plant and animal life, serve as watersheds for Madagascar's rivers and streams, and provide the majority of rural people with resources needed for subsistence.

**Table 4.1** Summary of Madagascar's four main vegetation types (Moat and Smith 2007).

<b>Forest Type</b>	<b>Location</b>	<b>Altitudinal Range</b>	<b>Temperature</b>	<b>Rainfall</b>
Primary and degraded humid forest	Eastern and central plateau of Madagascar along a narrow ridge from Vohemar to Tolagnaro	0 – 2750m	12 – 30° C	700 – 3400mm
Grassland/wooded grassland mosaic	Western and central plateau of Madagascar	350 – 2700m	0 – 30° C	300 – 3300mm
Western dry forest	Along the west coast from the northern-most tip (Cap d'Ambre) to the Mangoky River	0 – 800m	18 – 30° C	600 – 1500mm
Spiny forest/thicket	Limestone basement/sandstone ridges inland from the south and west coasts	0 – 1600m	18 – 30° C	540mm

### **Madagascar Cultural History**

Madagascar is not only diverse ecologically, it is also extremely diverse culturally. Its cultural diversity is due to its long line of settlers including: Indonesians, Swahilis, Africans, Arabs, Portuguese, Dutch, English, French, Indo-Pakistanis, and Chinese (Verin 1986; Allen 1995). Recent research suggests the island was uninhabited until Malay seafarers arrived approximately 1,500 to 2,000 years ago. Subsequent

migrations from the Pacific islands and Africa further added to this original mixture, and 18 separate tribal groups emerged. Malay features are most predominant in the central highlands people, the Merina and the Betsileo; the remaining 16 tribal groupings are coastal people of predominantly East African origins with Malay, Arab, European, Indian, and Chinese mixtures. Malagasy society has long been somewhat polarized between the politically and economically advantaged highlanders of the central plateau and the coastal groups. However, strong themes that tie all ethnic groups together include rice cultivation, cattle herding, and spiritual ties to land and the ancestors (Tyson 2000).

Approximately half the country's population practices traditional religions, which tend to emphasize links between the living and the dead. They believe the dead join their ancestors as divine spirits and that these ancestors are intensely concerned with the fate of their living descendants. About 45% of Malagasy are Christian, divided almost evenly between Catholics and Protestants. Many incorporate their traditional form of worshipping the dead with their religious beliefs and bless their dead at church before proceeding with traditional burial rites. Islam in Madagascar constitutes approximately 7% of the population. Muslim traders who first brought Islam to Madagascar had a lasting impact on the people and many Malagasy converted to Islam. Muslims also were the first to transcribe the Malagasy language into an alphabet based on Arabic (Tyson 2000).

Malagasy generally have strong ties to the land, which has traditionally included clearing forested land for agriculture (primarily rice cultivation). In some cases, slash-and-burn agricultural practices (i.e., *tavy*) are associated with a long-term shifting cultivation system, and in other cases cleared fields are abandoned after only a few agricultural cycles because of unproductive soils (Tyson 2000).

## **Pre-Colonial Forest Policies and Practices**

Forest conservation and management in Madagascar has a long history that dates back to pre-colonial times (Table 4.2). James Sibree, a British missionary who spent 50 years on the island attributed deforestation to shifting agriculture and timber concessions:

This large extent of wooded country is, however, being diminished every year by the wholesale destruction of the forest in burning it for rice-planting, and it is grievous to see how recklessly it is cut down and destroyed for this and other more trivial reasons. The large concessions of forest land to European companies for timber-cutting and plantations also tend in the same direction, and unless some plan of forest conservation is soon effected, the beautiful woods, with most of their flora and fauna, will eventually disappear (Sibree 1896:363) .

In response to Sibree's and others' observations regarding forest destruction due mainly to deliberately-set forest fires, traditional forest conservation in Madagascar took the form of top-down and repressive policy enforcement. Records dating as far back as the early nineteenth century document this approach to forest management. At that time, King Andrianampoinimerina (1745-1810) of Madagascar banned the cutting of live firewood and declared all forests in his kingdom as royal property. It is reported that he declared, "...it is forbidden for people to come to forge clandestinely arms in the forest because they can prepare a rebellion" (Ratovoson 1979:22). At the same time, Prime Minister Rainilaiarivony declared that anyone caught cutting pristine forest would be chained in irons (Sibree 1881).

**Table 4.2** Summary of the evolution of forest policy in Madagascar

<b>Period</b>	<b>General Theme</b>	<b>Policy</b>	<b>Role of Government</b>	<b>Role of Governed</b>
Pre-Colonial (through 1896)	Madagascar was once fully forested	Cutting live firewood forbidden	Create and enforce repressive forest policy (through banning deforestation)	Abide by centrally-created laws
	Deforestation resulted from human activity	Burning and settling in forests forbidden	Ensure forests (i.e., royal property) are preserved for the use of royals	
		Clearing the land for agriculture forbidden		
Colonial (1896-1961)	Madagascar's forest resources are for French use and to enrich France	Reforestation of fast-growing species	Create and enforce repressive forest policy (through establishing conservation areas or banning deforestation)	Abide by centrally-created laws
	Malagasy are unable to manage forests	Hunting lemurs forbidden	Manage forests unilaterally	Resist centrally-created laws by continuing <i>tsavy</i> as a cultural practice
	Reforestation is needed for human consumption and development	Forest fires and deforestation forbidden		
		Logging concessions established		

**Table 4.2** Continued.

<b>Period</b>	<b>General Theme</b>	<b>Policy</b>	<b>Role of Government</b>	<b>Role of Governed</b>
Post-Colonial (1962-Present)	Early Independence (1962-1991) The State is the only legitimate manager of forest resources	Deforestation forbidden	Create and enforce repressive forest policy	Abide by centrally-created laws
	Deforestation resulted from human activity	Hunting of several species forbidden	Manage forests unilaterally	Resist centrally-created laws by continuing <i>tsavy</i> and burning as cultural practices
		Reforestation mandatory		
NEAP Era (1992-Present)	Conservation is needed to save Malagasy biodiversity	Integrated Conservation and Development Projects	Create protected areas	Stop destructive forest practices
	Standardized models are appropriate	Fences and fines	Enforce laws	Use economic development activities as an alternative to resource extraction
			Provide economic development opportunities	
Community-based Forest Management	Local people can manage and conserve forests	Decentralization of forest management	Transfer management rights and responsibilities to local people	Conserve and manage forests for long-term sustainability
	The state is ill-equipped to manage forests effectively	Empowerment of local forest users to make decisions regarding forests	Monitor and oversee local-level management decisions	Adhere to principles established by the government or third-party NGOs

Two definitive pieces of legislation appeared in the mid-nineteenth century: The Code of 101 Articles in 1868 and the Code of 305 Articles in 1881 (Henkels 2001). Both concerned civil law, criminal law, and procedure (Ratovoson 1979). Article numbers 101-106 forbade burning of forests and settling of people in the forest. Article 105 forbade the practice of *tavy*: “One may not clear the forest by fire with the goal of cultivating rice fields, corn or other crops. One who clears by fire a new terrain or expands those which exist already, that person will be put in irons” (Ratovoson 1979 as translated by Henkels 2001-2002:2). Early legislation such as this fueled the argument that Madagascar was once completely covered by forest and human activity alone had resulted in dramatic forest cover loss (Sibree 1896). Recently, concerns over deforestation have also linked to debates surrounding global climate change and its impact on Malagasy biodiversity (Ascribe Newswire 2007; Ingram and Dawson 2005).

### **Colonial Forest Practices**

Top-down approaches to conservation continued during the colonial period (1896 – 1961). Soon after the French took control in 1896 they established the Water and Forests Service and declared all forests to be under government control or in the public domain. The French also began an intense reforestation program on the central plateau and eastern escarpment of the island by establishing plantations of fast-growing, nonnative species such as eucalyptus and pine. They banned the killing of lemurs, and in 1927 established the first protected-areas system (Tyson 2000). In 1930, the French-led government passed Article 36, which prohibited all forest fires and other forms of deforestation (Montagne 2004). At this time, no distinction was made between forest fires started for the purposes of creating agricultural fields, and those associated with cattle pastures (Maldidier 2000). Despite policies aimed at native Malagasy practices, the French contributed to deforestation in Madagascar.

They planted much of the eastern lowlands with coffee, displacing many Malagasy farmers (Tyson 2000). In fact, the beginning of massive deforestation is thought to be the direct result of coffee cash cropping (Jarosz 1993). Since local people no longer had access to lowlands, they began cultivating less fertile, higher slopes for *tavy*. French officials responded by prohibiting the clearing of forests for *tavy*.

The *tavy* ban backfired, leading to popular unrest and more deforestation. The Malagasy circumvented the prohibition where they could and resented the French for banning a practice that had been, and still is, representative of what Malagasy perceive as an ideal means of subsistence inherited from the ancestors. The ban had the effect of elevating the *tavy* way of life to a ritual that symbolized resistance to colonial rule. As Jarosz (1993:374) notes,

Resistance to the ban was more than pitting the right to subsistence over forest conservation; it embraced issues of power, labor control, and Malagasy identity. Not surprisingly, the French failed to eradicate the practice; likewise, the postcolonial state is beset with the same difficulties.

The French also directly contributed to deforestation in Madagascar by opening the state's forests to logging concessions (Jarosz 1993). In their search for precious woods such as ebony, rosewood, and palisander, concession owners clearcut lands beyond the boundaries of their concessions. The Water and Forests Service was unable to enforce regulations due to a lack of labor, capital, and political will. Forest Service agents often allowed infractions to slip by because of their personal relationships with concession owners.

The colonial period is thus characterized by a palpable tension between the government and the governed. This tension focused on the practice of shifting cultivation as colonists and local people struggled to advance their interests and impose their will on land use. Whereas for the Malagasy peasants, shifting cultivation

was a cultural practice that affirmed their identity, linked them to the ancestors, and allowed them a means of resistance to state authority, the colonial authority saw shifting cultivation as a destructive practice that resulted in degraded grassland and hindered state-led forest extraction, labor control, and tax collection (Jasosz, 1993).

### **Post-Colonial Forest Policies and Practices**

Madagascar gained its independence from France in 1961, but this had little effect on its conservation policy until very recently. In addition to the 1930 forest law that banned forest fires, other conservation laws continued to be passed, including one that prohibited the hunting of several endangered species. In 1962, President Philibert Tsiranana declared that all men had to plant 100 seedlings a year or suffer a tax (Tyson 2000). This string of legislation reinforced the state as the only legitimate manager of forest resources in Madagascar, and contributed to a relationship characterized by forest service policies that repressed local people (Montagne 2004).

Nonetheless, despite decades of conservation laws, the decrease in Madagascar's forests throughout most of the twentieth century has been attributed to corruption among forest service employees, lack of motivation to adhere to forest policies among poor rural people, and the government's inability to monitor the forest and enforce policies because of a lack of resources, bad roads, and difficult terrain (Ganzhorn et al. 1997). Forest practices in Madagascar since 1930 can be characterized as open access, where individuals and groups exploiting forest resources were both uncontrolled and uncontrollable by the government. The result was a paradoxical conflict between illegal local-level forest exploitation regarded as legitimate by local people, and the legally-sanctioned forestry policies regarded as illegitimate by local people (Bertrand and Razafindrabe 1997; Montagne 2004). This pattern of behavior and interaction between the government and the governed continued through the 1960s and 1970s.

## The NEAP Era

In the mid-1980s, Madagascar's political climate began to change as it moved from an insular, quasi-communist political system closely tied to the Soviet Union, to a socialist democracy open to foreigners and foreign ideas. Due to this change, international biologists and ecologists began coming to Madagascar and discovered a wealth of biodiversity previously unknown to science. Madagascar's reputation as a refuge for unique biodiversity was well known from its biogeography and from early Portuguese, British, and French records, but with modern methods and techniques, scientists were able to identify and classify many new organisms.

The move toward more open policy and increased interaction with foreigners also impacted Madagascar's development agenda. The early 1990s met with a flurry of conservation and development activity. Bi-lateral and multi-lateral donor agencies such as the United States Agency for International Development (USAID) and the World Bank increased their involvement, as well as their funding levels. Policies and programs were developed, including Africa's first National Environmental Action Plan (NEAP). This plan was designed to include three five-year phases. Phase I (1992-1997) responded to the increasing consensus about the importance of Madagascar's unique biodiversity. This phase focused on the creation of protected areas and the institutional and organizational structures necessary for their management. This initial period was characterized by Integrated Conservation and Development Projects (ICDPs) in peripheral zones of protected areas, which were meant to compensate local people with micro-development projects as mitigation of restrictions on access to resources imposed by new protected areas. This model of conservation, known as the "fences and fines" approach, based on the U.S. national park model, focused on the establishment of protected areas to the exclusion of people (Barrett and Arcese 1995; Kiss 1990).

Despite millions of dollars of investment, Phase I had mixed results (e.g., Barrett and Arcese, 1995; Peters, 1998). The policy of standardized projects made up of four main components (i.e., protected areas, buffer zones, compensation, and economic development), grew out of a deep-seated development discourse. This discourse views development as a linear trajectory from less developed to developed that should be followed by all nations regardless of culture, resource availability, or history. Similarly, the discourse advocates standardized approaches to achieving development from site to site (Peet and Hartwick 1999). Results of management practices informed by this discourse and policy were that protected areas were disjointed from the economic development activities in peripheral zones meant to serve as alternatives to destructive environmental practices. Providing health centers or schools did not dissuade local people from practicing *tavy*, and the link between conservation and development was not made. Thus, the government, along with conservation and development donors and implementing organizations, imposed a model of development ill-suited to the local context in many ways, and local people struggled to navigate the new webs of relationships and institutions created by ICDPs.

Evaluations of Phase I activities indicated that the creation of a few dozen protected areas was not a viable approach to long-term sustainable management of Madagascar's natural resources (Montagne 2004). In addition, the ICDP model was deemed too centralized and standardized across sites to respond to local-level specificities. As a result, the Malagasy government and other actors interested in sustainable forest management began to look for new legal structures and institutional arrangements for forest governance. This trend reflects a global move toward more bottom-up, democratic, and participatory methods for designing and implementing natural resource-related policies and programs in developing countries (Durbin and Ralambo 1994; Peters 1998; Brechin et al. 1991; Chambers 1997).

## Community-based Forest Management

In the 1990s, faced with high rates of deforestation and inefficient forestry practices, the Malagasy government, with support from international conservation and development organizations, pushed for a new community-based natural resources management policy (Bertrand 1994; Rajaonson et al. 1995; Kull 2002). This policy, known as GELOSE, is applicable to forests, pastures, wildlife, and water. It grew out of a larger, continent-wide movement to decentralize government functions, including natural resources management. GELOSE aims to promote better resource management through local-level management, rule-setting, and enforcement, leading to better environmental stewardship. GELOSE was signed into law on September 10, 1996 (law No. 96-025), and in 1997, the law was incorporated into the new national forestry policy (Law 97-107 and Decree 97-1200).

The GELOSE law allows for the creation of tripartite negotiated contracts among the state (represented by the forest service), the municipality (i.e., mayor's office), and a voluntary association of community residents created for the purpose of this contract (i.e., *Communauté de Base* or COBA). The law does not stipulate how this association should be constituted – it may be constituted through some form of representation or include all village residents. Under GELOSE contracts, communities regulate resource use through *dina*, a locally-developed social contract whose form pre-dated state-sanctioned rules (Henkels 2001; Marcus 2000). Contract negotiations are coordinated by an “environmental mediator” and the process for establishing a GELOSE contract, which is described in legislation, includes 22 steps (Kull 2002).

Only in 2000 did the GELOSE law receive the first two installments of its enabling legislation (*décrets d'application*). Because implementation of GELOSE was viewed as complex and cumbersome, a piece of enabling legislation specific for forests was defined under order No. 2001-122. This policy, Contractual Forest

Management (*Gestion Contractualisée des Forêts* or GCF), simplifies the process for transferring forest management rights to communities by eliminating the need for an environmental mediator and reducing the contract signatories to two: the state (represented by the regional office of the Ministry of Environment, Water, and Forests), and the COBA (Kull 2002; Antona et al. 2004).

The move toward community-based natural resources management gained momentum during the second of three five-year phases of the NEAP. Phase II (1998-2003) activities emphasized a landscape approach to natural resources management outside protected areas and included participatory approaches to conservation and development (Montagne 2004). GELOSE and GCF contracts were a major component of Phase II activities, and currently over 400 GELOSE and GCF contracts exist throughout Madagascar.

Law 96-025 allowed for local populations to take part in decision making and actions related to local natural resource management, but it did not specify the institutional mechanisms by which this should occur. GELOSE and GCF were an experiment to transfer the management of local forest resources for subsistence use as well as conservation (Randrianasolo 2000; Andriambelo 2004). Subsistence use in this case included exploitation of timber products for domestic consumption such as home construction and firewood.

Phase III of the NEAP (2004-2008) aims to mainstream the environmental agenda and also includes a major initiative to expand the protected area network. In 2003, the President of Madagascar, Marc Ravalomanana, declared his “Durban Vision” to expand the surface area of protected areas from 1.7 million hectares to 6 million hectares by 2012. This will put Madagascar within IUCN’s recommended standard of having 10% of the country’s land area under some form of protection. The protected area network, which will include both pre-existing and new protected areas, is now known as the System of Protected Areas of Madagascar (*Système des Aires*

*Protégées de Madagascar*, or SAPM). Under SAPM, the majority of new protected areas will be co-managed, and one vision for this co-management is that local communities will partner with government through COBA structures set up through GELOSE and GCF contracts.

GELOSE and GCF arrangements, whether or not associated with protected areas, have a strong conservation component. Despite rhetoric of local empowerment to make decisions about forest management, these governance arrangements are fairly controlled. COBA are given management responsibilities for an initial period of three years, renewable for ten years. They are not granted land tenure. In addition, third parties such as conservation and development NGOs play a strong role in orienting management plans and zoning of these areas. Their field agents often initiate community-level discussions regarding resource management and their organizations' values, goals and missions are often reflected in the management plans or zoning systems developed for community-managed areas (e.g., Antona et al. 2004). Thus, the effort to decentralize forest management in Madagascar has transferred some powers to local people while maintaining a certain level of centralized control, and has provided opportunity for outside intervention by conservation and development organizations.

## **Conclusion**

Forest management in Madagascar has evolved over the last century from top-down, centralized legislation that restricted access to forest resources to more decentralized governance forms that put local people at the center of decision making. Although by tracing legislation this trend is clearly apparent, implementing truly decentralized governance is a complex process that involves institutional structure and power dynamics that are difficult to modify. In Madagascar, decentralized governance arrangements are changing the web of interactions among actors such as government,

international agencies, and local communities in an attempt to shape power dynamics. Nevertheless, it is still unclear the extent to which local communities are able to capture the opportunity these changes represent and ensure their interests are represented. Understanding how these dynamics are evolving is a crucial step for monitoring the implementation of these policies and improving upon them over time. Additional research is needed to assess how these institutional changes are affecting principles of good governance such as participation, accountability, and transparency in decision making.

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CHAPTER FIVE  
A MULTI-SECTOR FRAMEWORK FOR ASSESSING COMMUNITY-BASED  
FOREST MANAGEMENT:  
LESSONS FROM MADAGASCAR

**Abstract**

Community-based forest management has proliferated throughout Africa as national governments have decentralized the administration of public forestry. Community-based forestry has taken multiple forms, depending on the assortment of land-tenure systems, forest-use norms, wood demand, and social organization in a particular locality. In this paper, I propose an analytical framework for assessing the responsiveness of community-based forest management programs to local needs. Assessment of the degree to which such programs achieve decentralization or forest conservation goals can inform policy development and program implementation. *Nature, Wealth, and Power* is an analytical framework that has been developed from experiences in natural resource management in Africa. I amend the framework to People, Nature, Wealth, and Power (PNWP), and propose it as an analytical lens for community-based forest management initiatives. I use the PNWP framework to assess responsiveness of contractual forest management in the Menabe region of Madagascar to interests of communities, the state forest agency, and conservation non-governmental organizations (NGOs). For the purposes of this paper, I define interests as those norms and values that are implicit and inherent in the practice of social life. My assessment is based on interviews conducted with local forest users, forest agency staff, and NGO employees in 2004. More research is needed, but this inquiry indicates the PNWP framework holds promise for designing, implementing, and evaluating community-based forest management initiatives.

## **Introduction**

Throughout Africa, national governments are decentralizing authority related to health service provision, education systems, public works, and forestry (Ribot 2002; Agrawal and Ribot 1999). Decentralization has taken many forms, including democratic decentralization, or devolution, which is an act by the central government to relinquish power to local entities that are accountable to local people (e.g., local community) (Bergh 2004). This kind of action is part of a broader trend toward more participatory, populist approaches to the practice of development intervention. Populist approaches to development are evident in the plethora of participatory appraisal techniques developed over the last 20 years, and the tendency to direct interventions at the local level (e.g., Hildyard et al. 2001; Kiss 1990). The rationale behind decentralization efforts and participatory interventions rests in part on the idea of subsidiarity; i.e., decisions should be made at the lowest administrative level possible (Uphoff 1986). Outcomes attributed to decentralization include bureaucratic efficiency, procedural equity among administrative levels of government, increased service provision, citizen participation and democratization, and maintenance of national cohesion and political stability (Ribot 2002).

Decentralization of government functions and authorities has extended to the forestry sector in many African nations (e.g., Oyono 2004; Wiggins, Marfo, and Anchirinah 2004). The movement toward community-based forest management regimes is a manifestation of this trend (e.g., Edmonds 2002; Brown and Schreckenberg 2001; Vabi et al. 2000). However, despite strong and long-lasting rhetoric and discourse around decentralized, community-based management, efforts to decentralize forest governance to local entities have had mixed results at best (Blaikie 2006). Various studies have assessed the performance of decentralized arrangements on ecological, social, and economic indicators (Platteau 2004; Gauld 2000; Blaikie

2006; Larson and Ribot 2004; Pagdee, Kim, and Daugherty 2006). For instance, efforts to increase citizen participation, devolve power and authority, and create more efficient and equitable structures for managing resources have been unsuccessful when decision-making powers have remained centralized or have been captured by elites unaccountable to local people (e.g., Platteau 2004; Gauld 2000; Blaikie 2006). Efforts to increase conservation areas through community-based forests have often been unsuccessful as communities continue to use timber resources for daily needs or strike deals with commercial timber harvesters. And finally, community-based forest management for the purpose of stimulating economic development has frequently failed when transparency and accountability in local communities and local governments are lacking (Larson and Ribot 2004).

Previous studies have identified conditions under which decentralized, community-based forest management is most likely to succeed or fail (Ostrom 1990; Adams and Hulme 2001; Pagdee, Kim, and Daugherty 2006). These studies have focused primarily on understanding what worked and what did not work retrospectively. Although insightful, these studies fail to address a larger issue, which is the way in which community forest management arrangements are designed in the first place. In this paper, I argue that efforts to decentralize authority in the forest sector are not meeting their potential in part because of the narrow, sector-specific manner in which decentralized forest-related structures and activities are conceived and put into place. The forests in question often have high economic and/or biodiversity value. However, the people who live in these forests, depend on them for their livelihoods, and are the entity to which management authority is transferred, often are among the poorest and most marginalized populations (Brechin et al. 2003; Borrini-Feyerabend et al. 2004). These people do not live sector-specific lives in terms of forests alone, they live their lives as *whole* people (see Selznick 1992). They

concern themselves with issues in many sectors (e.g., health, education, business) and across sectors (e.g., social cohesion, culture, family) simultaneously and in an integrated and interactive fashion. They hold multiple interests that may converge or diverge over time (Pfeffer 2001). I define interests as those norms and values that are implicit and inherent in the practice of social life. They are embedded within social roles and guide action. This type of interest differs from objective interests, which are the “purposes to which [people] *should* ascribe,” because they are the purpose and motivation that are actually exercised (Cervero and Wilson 1994:125). Interests are always reproduced or transformed in the exercise of power. Thus, interests are constructed, and therefore can be reconstructed (Cervero and Wilson 1994).

Thus, I propose that efforts to decentralize forest-related powers and activities in the form of community-based forest management may be more responsive to local realities if the process (i.e., design of institutional structures, interventions, and activities) reflects the multi-sector nature of people’s lives. Given the financial and social hardships that many forest communities face, addressing realities beyond the forestry sector may be the only way to ensure that remaining tropical forests provide the resources people need while they are managed sustainably for future generations.

### **People, Nature, Wealth, and Power**

After decades of designing, implementing, and evaluating natural resource management initiatives in Africa, a consortium of institutions working in development reflected on their experiences and developed a framework that describes those efforts that seemed to have had positive results. This framework, *Nature, Wealth, and Power* (NWP), was offered as a lens through which analysis can be conducted, discussions can be structured, and current and future natural resources management initiatives can be designed (USAID et al. 2002). The framework was developed to both describe the

components of effective or successful natural resources management initiatives, as well as to prescribe elements that may be needed to ensure success of future efforts. The framework recognizes the complexities of natural resources management and describes linkages among various sectors related to natural resources. Specifically, the framework draws on cases where natural resources management led to increased resource productivity, increased conservation, and increased access to resource use. The framework is made up of three components:

- *Nature* – Natural resources of all types (e.g., land, water, forests, wildlife) that are “dynamic, socially embedded, economic and political” (USAID et al. 2002: 4). It describes the gamut of natural resources that have economic, cultural, existence, aesthetic, biodiversity, or other value.
- *Wealth* – Natural capital, which is the basis of rural production and economic development systems across Africa. This component represents the economic concerns of natural resources management.
- *Power* – Governance, which refers to the interactions among structures, processes, rules, and traditions that determine how authority is exercised, how responsibilities are distributed, how decisions are made, and how various actors are implicated (Hempel 1996).

The NWP framework is built on specific cases of programs implemented in Namibia, Botswana, Madagascar, and Mali. It highlights that natural resources management extends beyond biological and physical manipulation of resources. Given that natural resources are embedded in the social and political fabric of society and government, issues of economic value, production, markets, laws, norms, access, and rights come into play when decisions are made about how to manage resources

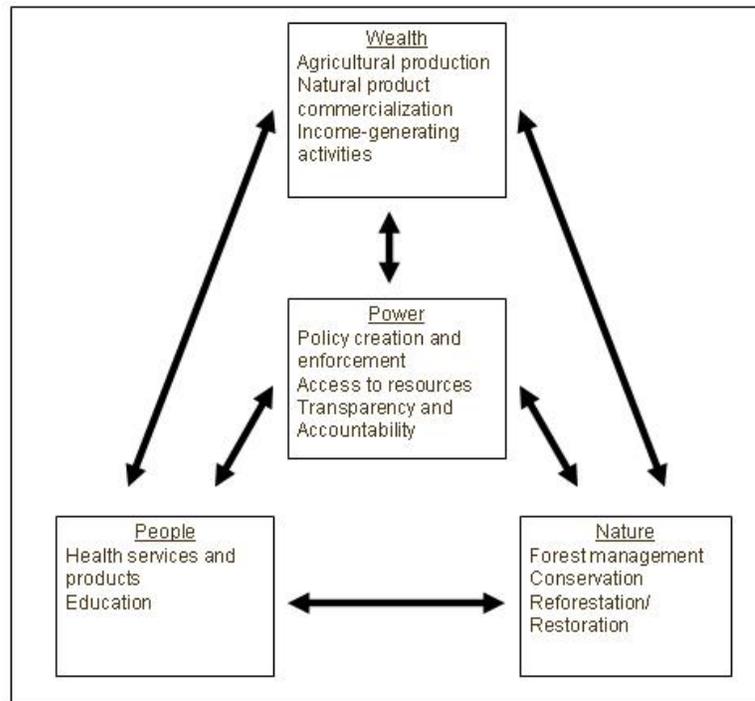
(e.g., Brechin et al. 2003; Peluso 1993; Menzies 2004). Thus, the *Nature, Wealth, and Power* framework is an articulation of how programs that integrate across environment, economic, and governance sectors result in positive impacts (USAID et al. 2002).

Although this framework articulates links among sectors and recognizes the multi- and inter-sector nature of natural resources management, it does not sufficiently emphasize several additional linkages that can be clustered under the broad category, *People*. The links between natural resources and health, education, and communication are missing from the *Nature, Wealth, and Power* framework (e.g., Chivian 2001; Chivian and Bernstein 2004). These linkages are important insofar as conservation activities are tied to development interventions in developing countries. Although one could argue that health and education are forms of *Wealth*, I believe that a distinction between these categories allows for more nuanced analysis. For instance, undertaking forest management activities requires that local people (i.e., forest users) are in good health. Without sufficient nutrition and potable water, forest management activities can not be completed. Biodiversity can contribute to human health by keeping disease-causing organisms in check, providing medicinal plants, contributing to clean water and air, as well as mitigating effects of climate change (European Union 2005; Chivian and Bernstein 2004). Pressure on the forest from local populations is related to population growth, among other factors. As the number of households per settlement increases, the need to clear additional land for dwellings or agriculture also increases. Family planning activities therefore have a direct link with forest management. These links are so apparent that the President of Madagascar was spurred to write a letter to *WorldView* magazine entitled, “Madagascar Naturellement: Birth Control is My Environmental Priority” (Ravalomanana 2006). The links between natural resources and education and communication are equally important.

Environmental education and communication convey information to people that may influence attitudes and behaviors regarding natural resources practices. In addition, basic education, especially for girls, reduces family size thereby alleviating pressures on forest resources.

Thus, I have adapted the original framework to reflect a more populist perspective and to include a broader range of interests (Figure 5.1). For the purposes of this paper, I define interests as those subjective, identifiable, identified and articulated (e.g., preferences) (Winter 1996). This adaptation, which I refer to as *People, Nature, Wealth, and Power* (PNWP), illustrates links that exist among environmental management, economic growth, governance, and health and education activities for the goal of natural resources management in rural areas populated by people living primarily in a subsistence economy. The linkages are depicted in a hierarchy consistent with current thinking in Madagascar and elsewhere on national priorities. *Wealth* is at the top, reflecting the overall goal of sustainable economic development or poverty reduction, as stated in many national policies of African nations (e.g., Government of Madagascar 2004; Government of Burkina Faso 2004) and donor strategy statements (e.g., USAID/Madagascar 2002; Klugman 2002). *People* and *Nature* are at the bottom as they represent basic elements of rural society in many developing countries. *Power* represents governance, which is cross-cutting and an integral part of the other three elements. Thus *Power* is at the center. The two-way arrows among elements illustrate the interdependent and interactive nature of policies and interventions in each sector. This hierarchical conceptualization of the multi-sector linkages was identified as valid for the case of Madagascar during a brainstorming workshop held by USAID/Madagascar in July 2005. This workshop, attended by USAID staff, implementing partners, and Government of Madagascar representatives, was held to establish consensus on USAID/Madagascar's strategy for

implementing an integrated program aimed and achieving development goals in areas of high biodiversity. This framework is therefore embedded within USAID’s interests of providing development assistance that addresses rural Malagasy needs while supporting the conservation of Madagascar’s unique biodiversity.

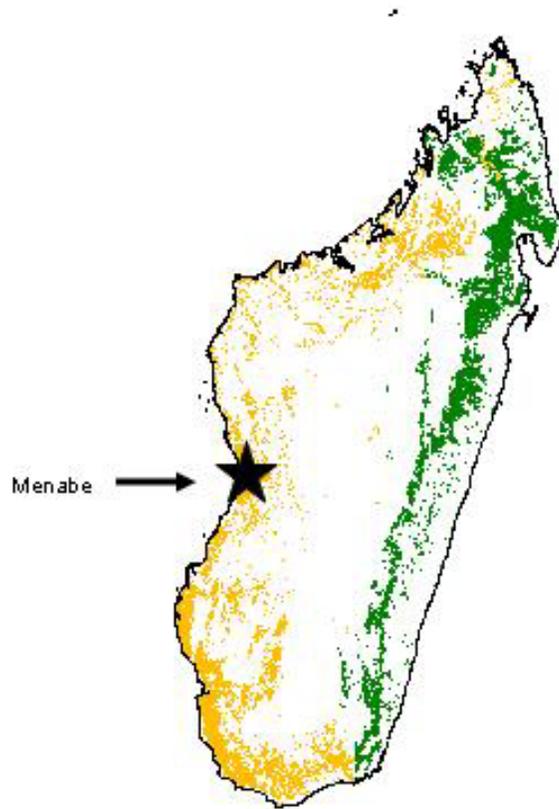


**Figure 5.1.** *People, Nature, Wealth, and Power* – A conceptual framework to guide assessment of responsiveness of community-based forest management efforts to local needs.

### **Contractual Forest Management in Madagascar – A Case for PNWP**

Madagascar is regarded as one of the most biologically rich areas on Earth with nearly 80% of its flora and fauna endemic to the island (Lourenco 1996; Goodman and Benstead 2003). Madagascar is also home to a unique dry forest ecosystem located in the Menabe region (Figure 5.2). Primary forest cover in the

western dry forests of Madagascar declined from 12.5% in 1950 to 2.8% in 1990 (Smith, Horning, and Moore 1997). Western Madagascar is also among the most economically depressed regions of the country because of its short growing season and poor soils (Sorg, Ganzhorn, and Kappeler 2003). Efforts to curb deforestation and conserve threatened and endangered species have been undertaken by the Malagasy government and by international conservation and development organizations. These efforts have coincided with a government-wide decentralization movement that includes transferring management rights and responsibilities from the state forest agency to local communities.



**Figure 5.2.** Map of Madagascar indicating location of Menabe region.

National forestry policy #2001-122 establishes the legal framework for contractual forest management, or *Gestion Contractualisée des Forêts* (GCF) (Eaux et Forêts 2002). Under the GCF arrangement, local communities enter into a contractual agreement with the regional-level office of the Malagasy forest service, DGEF (*Direction Generale des Eaux et Forêts*), regarding the use and management of local forested lands. In most cases, the contracting process is facilitated by a third party – either a conservation or development organization (Randrianasolo 2000; Montagne 2004).

GCF contracts are signed between DGEF and a community-level forest association that is formed for this purpose (COBA). The DGEF's mission is to act as a steward of all Malagasy forest resources. Specific activities include zoning for conservation, production, and reforestation, and overseeing the implementation of management plans for each of these zones. The COBA is made up of local forest users – local residents who use forests for firewood, timber, medicinal plants, food, and cultural practices. To be granted a contract, a COBA must have official standing as an association and be sanctioned by the Mayor's office. The intended relationship between the DGEF and the COBA under the GCF arrangement is that both the forest agency and the community association will benefit. The forest agency serves as technical advisor to the community to ensure sound forest management practices are implemented, and the COBA implements, monitors, and evaluates management. The GCF arrangement consists of four documents:

1. The contract itself
2. A management plan (which sets goals for management and articulates activities to be completed)

3. A *dina* (rules and regulations for sanctions associated with disobeying the terms of the contract or the management plan based on traditional sanctions used by communities before the existence of GCF)
4. A book of responsibilities (articulates who will be responsible for what aspects of management and defines roles of both DGEF and the COBA)

Initial GCF contracts are granted for three years. If all parties involved agree that the GCF is being properly managed at the end of this initial period, the contract can be renewed for ten years. Areas of forest that are under GCF contract are zoned into three parts: a conservation zone (no extraction of any resources), a sustainable use zone (for daily-use resource extraction), and a commercial zone (Eaux et Forêts et al. 2002). Currently, approximately 300 GCF contracts exist in Madagascar, eight of which are in Menabe (RESOLVE Conseil et al. 2005).

The Menabe region of Madagascar was selected for this study because it was a pilot region for community-based forest management even before the official GCF legislation was finalized. With the support of international donors and NGOs, the forest agency began the process of transferring forest management to local communities in Menabe in the early 1990s. The additional years of experience of GCFs in Menabe, as opposed to other regions of Madagascar, offer insight into a process that has developed over time.

The success of GCF contracts in Madagascar and community-based forest management initiatives elsewhere will depend in part on their ability to respond to the interests of the various parties involved. PNWP is a framework for analyzing the multi-sector interests held by various actors, thus facilitating assessment of the responsiveness of decentralized, community-based forest management. The objectives of the exploratory research conducted in this study were to: (1) identify interests related to forest management held by the state, the community, and the NGO

representatives; (2) apply the PNWP framework as a lens for classifying these interests; and (3) conduct an initial assessment of the extent to which the GCF mechanism responds to various interests held by the multiple actors.

## **Methods**

I conducted a total of 55 semi-structured, open-ended interviews (LeCompte and Preissle 1993; Seidman 1998) of community members in eight villages in the Menabe region (n=31), state forest agents at the local and national level (n=11), and participating NGO staff from two NGOs at the local and national level in Menabe and Antananarivo, Madagascar (n=13) (Appendix D). In the case of Menabe, the NGOs in question have a biodiversity conservation mandate. Individuals were sampled using a snowball sampling methodology (LeCompte and Preissle 1993; Miles and Huberman 1994) to ensure subjects with knowledge and experience in the GCF process were included in the study. The sample reached saturation when redundancy occurred in individuals identified.

Interviews lasted between 45 and 90 minutes, and were conducted in-person in the local language. No translator was used because I am proficient in the local language and wanted to avoid any misunderstandings with additional layers of data manipulation. In addition, I conducted participant-observation (Miles and Huberman 1994; LeCompte and Preissle 1993) by attending workshops, participating in GCF-related discussions and field trips, and accompanying forest users to collect forest products. I also conducted document review to triangulate data collected via the three methods (Miles and Huberman 1994). Data collection occurred over the three-month period from June to August 2004. Interview questions focused on experiences to date with GCF, expectations for GCF, interests related to GCF, perceived problems regarding GCF implementation, and future expectations.

Permission to conduct research in Madagascar was granted by the Department of Water and Forests in the Ministry of Environment, Water, and Forests in Antananarivo, Madagascar (Appendix A). In addition, the methods and instrument used in this research were approved by the appropriate institutional human subjects' committees for the duration of the research project. My protocol included communicating risks to participants and maintaining confidentiality (Appendices B and C).

Qualitative, inductive inquiry facilitated an initial understanding of the social dynamics that characterize community-based forest contracts. Given the exploratory nature of this portion of the study, I felt this approach was more appropriate for my purposes than a deductive, quantitative survey. An iterative approach guided data analysis. Notes were taken during interviews, and those notes were then written up in narrative form. I refrained from tape-recording and transcribing interviews as this practice is culturally inappropriate in the rural setting of Menabe. Interview notes were coded using the PNWP framework for each of the categories of actors (i.e., community, forest agency, NGO). The coded data were then grouped into the PNWP categories in tabular form (Miles and Huberman 1994).

In seeking to understand the practice of community-based forest contracts, and the multi-sector interests that combine to shape the agendas advanced by various actors, I deliberately sampled forest users, forest agency personnel, and participating NGO staff. Care should be taken in assessing contextual similarities and differences when considering the implications of this study for other cases. In addition, my inductive approach does not allow for reproduction or prediction, but sheds light on a complex governance structure that involves various institutional actors. Future research addressing the broader implications of a multi-sector approach to decentralized forest management would be of value.

## Results

Individual interviews revealed interests related to the *People, Nature, Wealth, and Power* categories held by community forest users, the state forest agency, and NGO staff (Table 5.1). Results from participant-observation affirm the interview results. Italicized cells in Table 5.1 indicate interests that are not being met under the current GCF management arrangements in Menabe. Despite many similarities among the three classes of actors (e.g., state, community, and NGO), interests held by each of the three groups differ somewhat for several of the four analytical categories, as described below.

### Community Forest Users

Forest users in the Menabe region reported that GCF contracts contributed to their ability to continue to access the forest for purposes of collecting construction materials, medicinal plants, food, and fuel wood. They linked this ability to use forest resources to the overall health and functioning of their communities. Forest users stressed the linkages between forest health and community health, and indicated great satisfaction from having state-approved access to forests for medicinal plants. They also indicated the GCF contracts contributed to their ability to ensure that forest resources would be accessible for use by future generations.

Forest users did not feel GCF contracts met their needs with respect to the Wealth and Power elements of forestry. Specifically, some people were of the opinion that the GCF arrangements did not ensure financial benefit to the community from forest products. Reasons for this included lack of markets for non-timber forest products from the dry forest and lack of surveillance of illegal timber harvesters. The Menabe dry forest has extremely low productivity, which makes sustainable timber harvest extremely difficult (Covi 1992; Randrianasolo 2000). Further, non-timber

forest products are not profitable in the region, leaving no options for commercialization of forest products (Rakotomanana 2004). In addition, forest users reported that the state forest agency is unable to keep logging companies and migrant groups from extracting forest resources illegally. Forest users felt they did not hold the legal authority or the means to stop illegal cutting, even within community-managed areas.

**Table 5.1.** Interests held by GCF actors related to People, Nature, Wealth, and Power.

*Italics indicate interests that are not met by the current GCF contracts in Menabe.*

<b>Analytical Framework</b>	<b>COBA/Community</b>	<b>State Forest Agency</b>	<b>Conservation-oriented NGOs</b>
<b>People</b>	<ul style="list-style-type: none"> <li>▪ Use forest products for medicinal plants, construction, firewood, etc.</li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Educate local people about rules and policies regarding legal forest use</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ Ensure people continue to value the forest and support its conservation</li> </ul>
<b>Nature</b>	<ul style="list-style-type: none"> <li>▪ Conserve forest-use and cultural values for future generations</li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Conserve forest-use value for renewable use by future generations</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ Conserve forest biodiversity value for future generations</li> </ul>
<b>Wealth</b>	<ul style="list-style-type: none"> <li>▪ <i>Receive financial benefits from the forest</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Exploit forest resources for economic gain of local people (e.g., timber sales) and the agency (e.g., timber permits)</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Ensure local people have resources necessary and reduce pressure on forests</i></li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>▪ <i>Forest agents enforce laws and keep illegal loggers out of community forest</i></li> <li>▪ <i>Keep migrants from using local forest resources</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Ensure communities are adhering to the conditions set forth in the GCF contract</i></li> <li>▪ <i>Ensure more efficient use of agency staff with respect to forest patrols and monitoring</i></li> </ul>	<ul style="list-style-type: none"> <li>▪ <i>Ensure that state forest agency prosecutes illegal forest users</i></li> </ul>

## State Forest Agency

State forest agency personnel at the local level in Menabe and at the national level in Antananarivo indicated that the current GCF arrangement is falling short of meeting the agency's goals. Both in the Menabe region and beyond, forest agency personnel reported that GCF contracts are not functioning as they should with respect to their interests in the People, Nature, Wealth, and Power categories.

Agency staff indicated that they would like GCF to serve as a mechanism for reducing, if not eliminating, illegal logging in community-managed forests. They noted that a lack of understanding of the rules of GCF contributes to the continuation of illegal activities. Under GCF, communities are encouraged to enforce forest rules (i.e., the legislation affords them this right), but staff noted community members do not exercise this authority for fear of retribution. Despite their legal ability to enforce rules, the historically-shaped social relationships among community members, illegal forest users and forest agency staff inhibit community members from acting in this capacity. After considering the possible outcomes of enforcing rules, agency staff reported that community members decide not to confront illegal forest users. Thus, the legal authority exists on paper, but agency staff believe community members do not take the responsibility for this activity due to the social-structural conditions in which they operate. In addition, agency staff recognize that community members may lack some of the technical skills and capacity to implement enforcement effectively. Mentoring by forest agency staff is needed.

Agency staff also reported that GCFs are not contributing to economic gain by communities or the agency. Communities are losing as timber continues to be extracted illegally. In addition, the GCF mechanism itself excludes the agency from benefiting from permit sales because this responsibility is transferred to the

community under this decentralized management arrangement. Therefore, Wealth-related interests held by the agency are not being met under the GCF contracts.

Finally, agency staff reported their interest in the conservation of forest resources for renewable use by future generations, and in the efficient functioning of the state forest agency in general. Lack of transparency and accountability, and a high rate of corruption are blocking the GCF mechanism from functioning as intended. Illegal timber harvest is reducing the amount of forest available for future generations, and unclear monitoring and evaluation methods, together with a lack of incentives for adherence to rules, are contributing to delinquency on the part of community forest users and agency staff. Thus, the state forest agency is dissatisfied with the current GCF arrangement.

#### Conservation-Oriented NGOs

NGO staff reported that the current GCF arrangement is meeting their People- and Nature-related interests. The conservation and subsistence use zones within community forests are contributing to an environmental ethic among people by engaging them in the active management and monitoring of the resources they use. In addition, conservation zones are ensuring that the forest will be available for future generations.

NGO staff also indicated that the ecological specificity of the dry forest makes it virtually impossible for communities to extract financial benefits from forest products. Although they would like communities to benefit financially, NGO staff noted that extractive benefits are an unlikely possibility, so they are working to develop non-extractive benefits such as tourism.

Finally, NGO staff both locally and nationally indicated that the current GCF arrangement is not resulting in prosecution of illegal timber harvesters as originally

intended. They cite corruption, lack of formal authority on the part of community members, and lack of motivation on the part of forest agency staff as reasons for continued illegal harvest.

## **Discussion**

Results from this exploratory analysis of the multi-sector interests held by three participating actors in community-based, contractual forest management in the Menabe region of Madagascar indicate that actors hold some similar, and some differing interests. Specifically, interests held by the three groups seem to converge around the Nature and Wealth categories, and diverge around the People and Power categories. This finding confirms the importance of including the People category in the PNWP framework insofar as it encourages divergent, yet extremely relevant interests to surface. These interests can then be addressed deliberately before intractable conflicts emerge. In addition, results indicate that the state agency is the least satisfied with the current management arrangement, and that interests related to Wealth and Power aspects of forest management are not accounted for under the current management mechanism. These results have implications for how the GCF structure could be modified and for improvements that could be made under the current structure.

Interests identified by members of the three research groups (i.e., community forest users, forest agency staff, and NGO personnel) reflected the goals of each group. For instance, forest users, who rely on the forest for daily needs, identified interests that reflect their livelihood priorities. Thus, the addition of the People category to the NWP framework is justified for the case of community forest users. Of note is that the current GCF structure meets the People- and Nature-related interests of community forest users, but not the Wealth- and Power-related interests.

According to the PNWP framework, People and Nature represent fundamental building-blocks of rural life in Madagascar. I submit three possible explanations for these preliminary results: (1) GCFs are still evolving; (2) the GCF model is not designed to respond to community interests in all four categories, or (3) the GCFs of Menabe are an anomaly with regard to their responsiveness to community-held interests. Additional research is needed to allow us to draw definitive conclusions regarding these three possibilities.

The state forest agency – the entity charged with managing forests, enforcing laws, and generating revenue for the state – identified interests that reflect its mandate. Worthy of note is that the state forest agency is the least satisfied with the current GCF structure and/or function (Table 5.1). None of the interests identified by state agency staff are currently being met in a satisfactory manner. In some cases, this is due to the structure of GCF itself. For instance, among the purposes of decentralizing forest management is reducing the agency’s workload and empowering local communities. The intended result is communities that have the authority to issue permits to individuals or groups who wish to extract timber from community forests, consequently reducing revenue to the forest agency from forest permits. In other cases, the forest agency is unsatisfied because of the implementation of the GCF contracts. Lack of good governance (i.e., corruption, lack of accountability, lack of transparency, lack of enforcement of rules) keeps the GCF mechanism from functioning as intended, resulting in negative impacts on the agency. The emergence of the state as a point of contestation and tension in community-based forest management is affirmed by other, similar studies world-wide (e.g., Wily 1999; Schafer and Bell 2002; Kumar and Vashisht 2005).

NGO staff identified interests that reflect their commitment to biodiversity conservation. Interestingly, People- and Nature-related interests are currently being

met, while Wealth- and Power-related interests are not. This mirrors the case for community interests. Reasons for this are difficult to identify without additional research, but I propose several possibilities: (1) As conservation organizations, the NGOs' first priority is biodiversity conservation. However, because the forests are populated, NGOs are obliged to work hand-in-hand with local people to ensure conservation is achieved. Thus, NGOs may devote the bulk of their efforts to meeting its People- and Nature- related interests. (2) As conservation organizations, NGOs have neither the expertise nor the budget to invest in income-generating activities for local populations. Although NGOs would like local people to benefit from conservation, they are unable to ensure that this occurs. (3) Although the NGOs would like to ensure transparency and accountability in how the forest is managed, as a third-party to the GCF arrangement, they have no real standing from which to improve governance. Thus, NGO Power-related interests are beyond their control. Again, these possibilities can only be confirmed with additional research.

Finally, the results suggest the Wealth and Power interests held by all groups are the least accounted for under the GCF mechanism. Economic gain by the local community is limited by the peculiarities of the dry forest ecosystem. Although this is not a result of GCFs per se, the fact that sustainable commercialization of forest products in this region is not currently occurring raises questions about the appropriateness of community forest management in such ecosystems. If one of the goals of GCF is economic benefit to the community (as suggested by the commercial use zone mandated by the GCF), and if all parties involved are interested in seeing the community benefit economically from forest management, then perhaps the GCF arrangement in a zone of low forest productivity should be modified to account for these needs. One recommendation may be to explore non-extractive means for generating economic benefits from dry forests such as tourism, direct payments for

conservation, or carbon sequestration projects. I feel the Wealth-related interests do not pose an absolute obstacle to community forest management in Menabe. Rather, the GCF mechanism needs to be adapted to the local ecosystem production potential.

That Power-related interests are not being met under the current GCF structure suggests an inconsistency between one of the main purposes of implementing GCF contracts and their outcome. As a mechanism for decentralizing rule-making and management implementation, GCF is an attempt to change and improve governance. Yet, the results indicate that governance-related interests held by participating groups are not being met. This finding suggests that despite rhetoric of good governance that justifies GCFs, the practice of implementing GCFs may neglect key governance issues. This finding is corroborated by other studies that have demonstrated that efforts to decentralize development often pay little attention to how local governance arrangements reflect culturally-charged struggles for power (e.g., Bebbington et al. 2004). To rectify this situation, additional analysis regarding the GCF mechanism and its implementation is needed. It may be that GCF is not an appropriate governance mechanism in all cases. It may also be that additional attention should be paid to key elements of good governance such as participation, clear rules, transparency, accountability, and monitoring and enforcement (Graham, Amos, and Plumtree 2003; IUCN 2004; UNDP 1997).

Results of this study indicate that groups differ with respect to certain interests vis-à-vis PNWP. This result is not surprising, but is a useful reminder that forest management engages actors in many sectors who often have divergent stakes in the outcomes of management decisions and activities (Brechin et al. 2003). For the case of GCF in Menabe, these divergent interests compete with one another and result in tensions among groups of actors. For instance, a tension exists between the forest agency and communities regarding rules enforcement, especially as concerns illegal

and migrant loggers. Illegal logging occurs in a vacuum of rule enforcement and where market incentives are great. This group was not targeted in this study, so speculation regarding their specific interests and motivations is difficult. However, illegal logging may threaten the integrity of GCFs and the long-term viability of community management in Menabe. Additional research that explores the overall dynamic and how decentralization is contested on conceptual and practical levels is needed.

Results also indicate that the PNWP framework complements existing knowledge regarding decentralization of forest management. Previous studies have identified conditions necessary for success. This study takes a step back and examines the design of decentralization arrangements. In a development context, we argue that forest management activities can not occur in a vacuum focusing solely on forests. Parties to community forest management hold multiple, and often divergent interests that touch many sectors. The PNWP framework provides a lens through which decentralized governance arrangements may be designed to account for these multi-sector interests.

## **Conclusion**

Decentralization of forest management is intended, in part, to respond more directly to local needs than centralized decision making. The logic behind decentralization of the forest sector is that local people who live close to the forest and rely on its resources are fit to manage because they have context-specific knowledge and experience. In addition, decentralized government structures are intended to interact with forest users and are therefore more familiar with local particulars than centralized actors.

Results of this study indicate that decentralized forest management (at least in the case of GCFs) does not go far enough in responding to local interests. Forest management touches multiple sectors and therefore decisions or activities that focus solely on forest manipulation are not adequate for addressing local realities. For instance, forest management involves issues related to livelihoods, health, and education (i.e., People), forest management per se such as silviculture (i.e., Nature), income generation and economic growth (i.e., Wealth), and governance and rule-making (i.e., Power). In addition, forest users live their lives as *whole* people with interests and activities that are multi-sector or trans-sector (Selznick 1992).

Although the GCF mechanism has resulted in changes in policy and structural-level relationships, this form of decentralization has not yet resulted in individual-level capacity to act. Decentralization of law enforcement, for instance, has only reproduced pre-decentralization structured power relations. The necessary capacity and social space for community members to exercise their enforcement mandate are still lacking.

The *People, Nature, Wealth, and Power* framework for assessing community-based forest management initiatives provides a structure for identifying interests related to non-forest sectors that are implicated in community-based forest management, and for identifying interests held by different participating groups. This study suggests that PNWP could be a useful assessment tool. However, the challenge is to design community-based forest management structures and processes that start from a PNWP lens. That is, deliberate attempts to design decentralized forest management with a PNWP approach may result in interventions that are more responsive to the gamut of interests held, and therefore more sustainable.

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CHAPTER SIX  
GOVERNANCE OUTCOMES OF COMMUNITY-BASED FOREST  
MANAGEMENT IN MADAGASCAR

**Abstract**

The purpose of decentralization is to distribute decision-making and implementation powers more broadly throughout the state and civil society. The rationale of decentralization of natural resources governance is that it will minimize negative consequences and maximize benefits of strict state-based and rules-based resource governance regimes, effectively resulting in good governance. Previous research has identified eleven principles of good governance: Goal, Structures, Rules, Participation, Accountability, Transparency, Monitoring, Enforcement, Equity, Responsiveness, and Transfer of Authority. I explore community-based forest management (CBFM) as implemented in Madagascar to assess the extent to which it produces perceived good governance outcomes. I used a face-to-face interview methodology to collect data on the good governance principles from 621 respondents from June to November 2006. Results indicate that CBFM produces perceptions of good governance outcomes in Madagascar generally, but that specific aspects of good governance such as Goal, Participation, Equity, and Monitoring may require specific attention. In addition, results suggest that the forest type in which CBFM is implemented may influence good governance outcomes.

**Introduction**

The purpose of decentralization is to distribute decision-making and implementation powers more broadly throughout the state and civil society. Re-distribution of power is meant to enhance the ability of both parties to act as agents

that affect substantive outcomes. The rationale of decentralization of natural resources is that it will minimize negative consequences and maximize benefits of strict state-based and rules-based resource governance regimes. Yet, decentralization is a historically-contingent process that does not necessarily result in synergistic state–society relationships. In addition, governance outcomes of decentralized forest management in a given state–society institutional configuration are unclear. The question remains if decentralized state–society partnerships for forest management result in good governance. Good governance has been defined in the literature as governance that performs well with respect to eleven elements: Goal, Structures, Rules, Participation, Accountability, Transparency, Monitoring, Enforcement, Equity, Responsiveness, and Transfer of Authority. Understanding how instances of community-based forest management (CBFM) perform with respect to these eleven principles of good governance given variations in contextual variables may shed light on how to improve structures and processes to improve governance outcomes.

### **Theoretical Background**

Governance has been defined as the combination of “people, political institutions, regimes, and nongovernmental organizations (NGOs) at all levels of public and private policy making that are collectively responsible for managing world affairs” (Hempel 1996:5) and “the interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say” (Graham, Amos, and Plumptre 2003). Thus, governance can refer to the set of rules, structures, interactions, and processes that exist to shape how decisions are made.

Typically, political science addresses questions of governance related to public policy, economics focuses on private exchange governance via markets, and sociology

concentrates on governance by norms, social values, and community. Natural resources cross these public/private/community divisions and are therefore the object of multiple forms of governance. For instance, national parks are often governed by the state, private forests are often governed by individuals or corporations, and communal pastures are often governed by the community.

Each of the above governance regimes has its strengths and weaknesses (i.e., state-based, market-based, and rules-based). State-based conservation is a centralized approach that relies upon expert knowledge to make decisions; it allows for broad changes to occur. This approach is often plagued by inefficiency and corruption, and does not account for contextual specifics (Brechin, Wilshusen, and Benjamin 2003). Market-based arrangements allow individuals and groups to make decisions about the resources they own. For public resources, property rights can be difficult to assign (Ostrom 2000; Streek and Schmitter 1985). Finally, rules-based regimes privilege local knowledge and encourage social interaction. This approach has challenges too: consensus building can be time-consuming, local people may not have access to information needed to make sound conservation decisions, and power asymmetries may exclude certain groups from participating (Ostrom 1999).

In an attempt to maximize the benefits of each of the governance regimes and minimize their weaknesses, scholars and practitioners articulated hybrid governance forms that cut across the conventional state/market/community boundaries (Uphoff 1993; Ostrom 2002; Agrawal and Gibson 1999; Evans 1996; Lemos and Agrawal 2006). Indeed, scholars and practitioners alike have called for governance structures that result in (1) sustainable use of natural resources, (2) equitable distribution of resource benefits, and (3) institutional forms that reflect the complexity and diversity of the natural systems being governed (Ostrom et al. 1999; Barrett, Lee, and McPeak 2005; Dietz, Ostrom, and Stern 2003). Moves toward innovative hybrid institutional

designs have also reflected recent trends to decentralize governance to resource users (e.g., Ribot 2002), to ensure social justice related to resource access and control (e.g., Brechin et al. 2003), and to empower local people (e.g., Agrawal and Gupta 2005). To achieve a blend of institutions for natural resource governance, governments and international conservation and development groups have solicited the participation of local people by decentralizing decision-making processes and structures of authority (e.g., Nemarundwe 2004; Pandit and Thapa 2004). State–civil society linkages have been sought to decentralize management from the central government (minimizing negative effects such as inefficiency) and involve local communities (maximizing effects of local contextual knowledge). Public-private partnerships have also been cultivated to maximize efficiency while upholding legitimacy.

Although theoretically compelling, hybrid governance arrangements are difficult to design and implement given real-world institutional complexities. Efforts to decentralize natural resource governance in developing countries have often involved not only the state and local communities, but third-party NGOs as well (Mohan 2002). Where empirical evidence does exist, it is often documented retrospectively. Although the emergence of hybrids is occurring, designing and implementing hybrid institutional forms that will result in good governance outcomes with respect to both effective, just processes and substantive conservation achievements is difficult.

Given the relative novelty of hybrid approaches to environmental governance, most cases of institutional hybrids have been described in theoretical terms. A review of both theoretical and empirical work suggests certain elements that may be necessary for the emergence (and construction) of successful hybrids that result in good governance. The identified elements include: clear resource governance goal, coherent institutional structure, clear rules, participation, accountability, transparency,

monitoring, enforcement, equity, responsiveness, and transfer of authority from the state to those closest to the resource (Table 6.1). Below is a description of each of these eleven principles of good governance in hybrid arrangements.

1. *Goal:* At the most basic level, the state and society (market or non-market actors) share the same goals related to resource governance for hybrid institutional arrangements to succeed. Without a “common set of goals” (Evans 1996:1121) institutional complementarity is reduced to parallel sets of activities implemented by the state and society working oppositionally for separate objectives. In addition, a congruence of interests related to the achievement of those goals facilitates complementarity insofar as the means for achieving the goals are easily agreed upon (Lam 1996; Antona et al. 2004).
2. *Structures:* Certain state and societal structural forms have been observed to facilitate resource governance and the emergence of institutional hybrids (Evans 1996). With regard to the state, a coherent and dependable set of public institutions is necessary. However, the specific form these public institutions take may vary without jeopardizing the possibilities for hybridism. For instance, successful hybrids may result from collaboration with a highly hierarchical and bureaucratic state (Lam 1996; Heller 1996). However, others have observed negative consequences as a result of highly bureaucratic states that demand simplistic application of inflexible rules. Regarding the community, evidence suggests that institutional hybrids are more likely when the state’s partner is a tightly-knit group that shares norms of reciprocity and whose members trust one another (Johnson and Nelson 2004; Ostrom 2000).

**Table 6.1** Good governance principles as identified through literature review.

Good Governance Element	Definition	Observations	References
Goal	State, market, and community actors share a common goal and have complementary interests related to achieving that goal.	Goals and interests should be articulated by all parties to hybrid arrangements.	Evans (1996a), Lam (1996), Antona et al. (2004).
Structures	A coherent and dependable set of institutions exists; state institutions may be in the form of highly hierarchical bureaucracies; fairly homogeneous and representative community groups facilitate hybrids.	Empirical evidence suggests that social capital is rarely the limiting factor for successful hybrids.	Evans (1996a), Heller (1996), Lam (1996), Ostrom (2000).
Rules	Existence and application of predictable and systematic rules to regulate behaviors; Knowledge of and access to means of adjudicating disputes and filing complaints.	All parties in the hybrid are equally subject to the rule of law.	Ostrom (1990), UNDP (1997), Johnson and Nelson (2004), Menzies (2004).
Participation	Active participation by individuals and groups whose lives are affected by decisions of the hybrid group.	Superficial or inadequate mechanisms for participation may result in the institutionalization of existing power asymmetries.	UNDP (1997), Baiocchi (2003), Graham et al. (2003), Johnson and Nelson (2004).
Accountability	Decision makers are accountable to their constituencies.	Weak institutions open the door for corruption and rent-seeking.	UNDP (1997), Ostrom (2000), Nygren (2005).
Transparency	Information flows freely.	Weak institutions open the door for corruption and rent-seeking.	Guttman (1976), UNDP (1997), Ostrom (2000), Andersson and Hoskins (2004).

Table 6.1 Continued.

Good Governance Element	Definition	Observations	References
Monitoring	Monitoring activities are in place and are carried out by participants in the hybrid arrangement.	The authority for monitoring is a crucial point for establishing successful hybrids.	Ostrom (1990), Johnson and Nelson (2004), Barrett et al. (2005).
Enforcement	Enforcement activities are in place and are carried out by participants in the hybrid arrangement.	The authority for enforcement is a crucial point for establishing successful hybrids.	Ostrom (1990), Johnson and Nelson (2004), Barrett et al. (2005).
Equity	Equitable systems and procedure for resource access and use are in place.	Equity and democracy are not necessarily synonymous. Equity may be culturally defined.	Ostrom (1990), Menzies (2004), Agrawal and Gupta (2005).
Responsiveness	The nature of participation and engagement should be responsive to changing circumstances.	Designing responsible, flexible, and adaptable institutional forms may be the most challenging aspect of constructing hybrids.	Schafer and Bell (2002), Barrett et al. (2005).
Transfer of Authority	Subsidiarity - attributing management authority to institutions closest to the resources at stake.	Although many hybrid arrangements transfer management responsibility (implementation of activities), they do not often transfer authority (the ability to make decisions, change rules, etc.).	Wily (1999), Schafer and Bell (2002), Kumar and Vashisht (2005).

3. *Rules:* The state is responsible for establishing fair legal frameworks and enforcing them impartially (UNDP 1997). These frameworks need to be predictable, dependable, and systematic. Rules about appropriation of the natural resource must be agreed upon by all parties to the hybrid, and must be well-suited to the local context (Johnson and Nelson 2004; Ostrom 1990). In addition, partners should have a clear legal status with commensurate responsibilities and authority (Menzies 2004).
4. *Participation:* Individuals should have a voice in decision making, either directly or through legitimate representation (UNDP 1997; Graham, Amos, and Plumptree 2003). This collective choice arrangement may not be completely egalitarian, but it must be perceived as fair and legitimate by all participants (Johnson and Nelson 2004). The state has a responsibility to provide the public sphere in which civil society can participate, and civil society has the responsibility to demand and take advantage of this sphere (Baiocchi 2003). Although genuine participation is necessary for institutional hybrids in resource governance, participation alone cannot guarantee sustainability in a situation plagued by corruption and deception (Nygren 2005).
5. *Accountability:* Decision makers, whether public or private actors, are accountable to their stakeholders and the public. State actors need to be held accountable for their actions. Decentralization without appropriate checks and balances can “easily privilege local governments and traditional authorities as ‘authentic’ sources of authority, with little consideration for whether these actors are accountable to the local populations” (Nygren 2005:646).
6. *Transparency:* Transparency includes free flow of information that is accessible to those concerned (UNDP 1997; Ostrom 2000; Guttman 1976; Andersson and Hoskins 2004). Transparency facilitates accountability insofar as individuals and

groups have access to information they need to assess the validity, legitimacy, and appropriateness of decisions that are made.

7. *Monitoring*: Monitoring responsibilities are extremely important to the success of hybrid governance regimes. Ideally, “monitoring of resource use and the imposition of sanctions for violations should be carried out by either the members of the managing communal entity or by persons accountable to the members” (Johnson and Nelson 2004:721). Otherwise, the ability of resource users to regulate behavior among themselves and outsiders during the absence of state authorities may be weakened to the point that no effective management of resource use is possible.
8. *Enforcement*: Although the state usually retains law enforcement authority, in a hybrid arrangement, state enforcement may undermine or complicate non-state attempts to set rules and sanction behavior (Johnson and Nelson 2004; Ostrom 1990). “It matters less *which* rules a community or country adopts than *how well* they monitor and enforce the rules they set” (Barrett, Lee, and McPeak 2005:195)<sup>1</sup>.
9. *Equity*: Actors in hybrid arrangements have a responsibility for ensuring that institutions are created and emerge to support equitable distribution of resource benefits (Ostrom 1990). What is deemed equitable to some, however, may not be equitable to others. Care must be taken to understand the legitimacy of local social structures and the culturally-specific definitions of equity (Agrawal and Gupta 2005). Just as institutions can reify inequitable social structures, loose institutional structures are easily dominated by elites (Menzies 2004).
10. *Responsiveness*: Flexibility and adaptability in design and implementation can be critical to establishing hybrid institutional arrangements for resource governance (Barrett, Lee, and McPeak 2005). This implies that the construction of hybrids is a

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<sup>1</sup> Original italics.

process of constant negotiation, re-positioning, improvement, and evaluation. One crucial element to designing adaptable institutional arrangements is being keenly aware of the social and ecological environment to ensure rules are appropriate to the context (Schafer and Bell 2002).

11. *Transfer of Authority*: Transfer of *Authority*, in addition to responsibility, may be a necessary element for good governance in hybrid arrangements (Wily 1999; Schafer and Bell 2002; Kumar and Vashisht 2005). The distinction is made between authority – the ability to make decisions, create rules, and change rules – and responsibility – the task of implementing activities. Specifically, hybrids require “strong political commitment to the devolution of power on the part of the bureaucracy” (Kumar and Vashisht 2005:37).

These eleven conditions have been identified through theoretical and empirical work to be essential for the emergence (and construction) of hybrid institutional forms for good governance of natural resources.

### **Research Questions**

This research attempts to answer the general question: To what extent does decentralized community-based forest management result in perceived good governance? Specifically, I use a variety of research methods to answer the questions:

1. What are the governance outcomes of community-based forest management (CBFM)?
2. What are the relationships among the eleven governance principles in the context of CBFM?
3. To what extent do the eleven governance principles explain or account for good governance?

To answer these questions, I rely on the case of contractual forest management in Madagascar.

## Research Context

Madagascar is regarded as one of the most biologically rich areas on Earth with nearly 80% of its flora and fauna endemic to the island (Lourenco 1996; Goodman and Benstead 2003). Most famous for its tropical forest biodiversity, Madagascar is home to several ecosystem types: evergreen dense forests, sclerophyllous forests, deciduous dry forests, spiny thickets, mangroves, offshore marine ecosystems, and intertidal and shallow marine ecosystems (Dufils 2003; Cooke, Lutjeharms, and Vasseur 2003).

Decentralization of forest management was formalized by the Malagasy government on September 30, 1996 through law #96-025 that allows for local management of renewable natural resources. This law was then put into practice through several enabling decrees; including #2000-27 and #2001-122 that empower local communities to manage renewable resources and allow for contractual forest management. Under these CBFM arrangements, local forest committees enter into a contractual agreement with the Malagasy forest service, MEEF (*Ministère de l'Environnement et des Eaux et Forêts*), regarding the use and management of local forested lands. In most cases, the contracting process is facilitated by a third party – either a conservation or development organization.

CBFM contracts are signed between the MEEF and a community-level forest association, *Communauté de Base* (COBA). To be granted a contract, a COBA must have official standing as an association and be sanctioned by the Mayor's office. Initial CBFM contracts are granted for three years. If all parties involved agree that the forest is being properly managed at the end of this initial period, the contract can be renewed for ten years. At no point, however, does the community gain title to the land in question. Areas of forest that are under CBFM contracts are zoned into three parts: a conservation zone (no extraction of any resources), a sustainable use zone (for

daily-use resource extraction), and a commercial zone. Currently, approximately 350 CBFM contracts exist in Madagascar.

The case of CBFM in Madagascar is an opportunity to explore governance outcomes of decentralized forest management that involves several classes of actors (e.g., the state, communities, and NGOs).

## **Methods**

A variety of methods and an iterative process of moving between inductive and deductive reasoning were used to collect data. Inductive reasoning allowed me to formulate questions and identify categories for analysis based on direct observation and open-ended inquiry. Deductive reasoning involved evaluation of previously-identified categories and their relationship to one another. Both qualitative and quantitative methods were used. Qualitative methods provided insight into the study context and informed development of the quantitative survey instrument.

Understanding the nuanced research context facilitates the interpretation of quantitative research results (Tashakkori and Teddlie 1998). Quantitative inquiry allowed me to examine relationships among the eleven governance principles as well as assess the degree to which these principles explain variation in good governance itself.

Exploratory research was conducted in the summer of 2004 to identify specific research questions related to community-based forest management in Madagascar. This exploratory phase identified forest-related interests held by community members, forest agency staff, and NGOs. These interests were coded and categorized, and governance emerged as an area needing further study (see Chapter 5). This finding is important given that CBFM is itself an institutional structure designed to improve governance through decentralization. Thus, the second phase of inquiry, reported here, employed a quantitative survey to focus on perceptions of governance outcomes

of CBFM in Madagascar. I focused on identifying perceptions of good governance outcomes because CBFM is a social process that involves navigating power relations. As such, it is subject to social construction by social agents. An analysis of perceived governance outcomes contributes to an understanding of CBFM's performance as interpreted by participating stakeholders.

### Sampling

The study included a sample of CBFM contracts in Madagascar. The population of CBFM contracts in Madagascar ( $n \approx 350$ ) was divided into sampling strata (Trochim 2001) to ensure variability in CBFM contract types represented in the sample, and also to facilitate data collection at the field level. Strata were identified based on two criteria: (1) objective of the CBFM contract and (2) forest type. In general, CBFM contracts in Madagascar have one of two objectives: conservation or sustainable use. Conservation-oriented contracts are often facilitated by conservation organizations and are put into place as a mechanism of decentralized forest governance whereby local communities have the primary responsibility for ensuring long-term conservation of the forests they manage. Conversely, development-oriented CBFM contracts are set up to encourage sustainable use of forest resources (both timber and non-timber). All contracts include the three forest zones (e.g., conservation zone, sustainable use zone, and commercial zone), and therefore include both conservation and sustainable use. Additionally, CBFM contracts occur throughout Madagascar, in a variety of forest ecosystems. For the purposes of this study, three broad categories of forests have been identified: natural humid forests, natural dry forests, and Tapia forest<sup>2</sup>. The CBFM mechanism is a standardized tool

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<sup>2</sup> Tapia forest – An endemic forest of Madagascar dominated by the Tapia tree (*Uapaca bojeri*). These woodlands or wooded savannas grow in several zones scattered across the western highlands, and have long been seen as remnants of previously grander and more diverse forests, degraded into their current shape by frequent burning (Kull 2002).

that was designed for application throughout Madagascar in a variety of forest types, and therefore differences among forest types is not expected. Yet, including various forest types and comparing results across them is important for assessing the tool’s universal applicability. In addition, the forest types act as a proxy for other contextual differences that exist across regions of Madagascar. To ensure diversity in the types of CBFM contracts included in the study, sample contracts were selected to reflect combinations of the two strata identified. Two CBFM contracts were selected for each of the six combinations of the two strata. Table 6.2 illustrates the strata and sampling frame for the CBFM contracts.

**Table 6.2** Sample strata and sampling frame for CBFM contracts in Madagascar.

	<b>CBFM Objective</b>			
<b>Forest Type</b>	<b>Conservation</b>		<b>Economic Valuation</b>	
<b>Natural Humid forest</b>	Contract A	Contract B	Contract C	Contract D
<b>Natural Dry forest</b>	Contract E	Contract F	Contract G	Contract H
<b>Tapia forest</b>	Contract I	Contract J	Contract K	Contract L

For each of the 12 contracts, three categories of actors exist: community members, government employees, and NGO staff. A systematic sample with a random start (Trochim 2001) of community members was taken for each contract. However, given the disproportionately small number of government employees and NGO staff involved in each contract, a census of these groups was taken. For NGO staff, individuals both at the national and local levels from the NGOs involved in CBFM at the selected sites were included. For government employees, no national-level staff were included because no one at the Ministry of Environment, Water, and Forests self-identified as having primary responsibility for CBFM contracts. At the

local level, relevant employees of the mayor's offices and regional offices of the Ministry of Environment, Water and Forests were included.

### Reliability Analysis

A survey instrument was developed to measure respondents' perception of the performance of CBFM with respect to good governance (Appendices E, F, G). The survey instrument included at least three items for each governance-related variable being measured, plus items on demographic characteristics of respondents and general questions regarding respondents' knowledge of the CBFM mechanism (Table 6.3). The governance variables were measured using a standard 5-point Likert scale, where 1 corresponds to "strongly agree" and 5 corresponds to "strongly disagree." I used a concept-question matrix to link survey questions to variables of interest (Appendix H). Two local enumerators were hired to implement the face-to-face survey. The enumerators were trained and the survey instrument was pre-tested from May 20-26, 2006. Fifty (50) individuals were surveyed during the pretest in a village in the Arivonimamo commune that was not included in the final survey. After the pretest was completed, SPSS was used to analyze the data to check for inter-rater reliability and inter-item reliability.

For inter-rater reliability, an independent samples t-test for equality of means between the two enumerators was conducted to detect significant differences between the responses collected by each of the two enumerators. This test detected significant differences for 10 items. These items were revised.

Subsequent to the inter-rater reliability test, an inter-item reliability test was conducted to check for internal consistency among items measuring a single variable. Chronbach's alpha was used to measure inter-item reliability. Seven of the variables had alpha values less than 0.6 (Hair et al. 1998), and therefore the items used to measure those variables were revised.

**Table 6.3** Variables were measured by at least three survey items.

Variable	Question
	<b>People have different experiences with community-based forest management. To what extent do <u>you</u> agree or disagree with the following statements about community-based forest management.</b> (Please circle one response for each statement.)
Good Governance	Community-based forest management is a mechanism for good governance of forests
	When communities have contracts with the government to manage forests, the result is not good governance
	Good governance of forests occurs when communities collaborate with the government to manage forests
Goal	All participants in community-based forest management in my area share a common set of goals.
	I do not have the same goals for community-based forest management as others who participate.
	The overall goals of community-based forest management are the same for me as they are for others in my area.
Structures	The government institutional structures are clear when it comes to community-based forest management.
	The community institutional structures are clear when it comes to community-based forest management.
	The government institutional structures for community-based forest management are dependable.
	The community institutional structures for community-based forest management are dependable.
Rules	Fair rules for community-based forest management do not exist.
	Both the government and the community have agreed to a set of fair and clear rules for community-based forest management.
	Rules for community-based forest management are clear about the government and the community's responsibilities.
Participation	Meetings for decision making about community-based management are open to all those who wish to participate.
	I do not feel I was excluded from decision making about community-based forest management.
	I was given an opportunity to participate in decision making for community-based forest management.
Accountability	Stakeholders trust decision makers when it comes to community-based forest management.
	Decision makers are accountable to stakeholders in community-based forest management.
	Participants in community-based forest management are able to hold decision makers accountable for their decisions.

**Table 6.3 (Continued)**

<b>Variable</b>	<b>Question</b>
Transparency	I have access to information I need about community-based forest management.
	Information about community-based forest management is communicated to those who need it.
	Information about community-based forest management is available.
Monitoring	Use of forest resources is monitored.
	People's behavior in the forest is not monitored.
	There are people who go out an monitor forest use.
Enforcement	Rules are impartially enforced.
	People who break the rules associated with community-based forest management are pursued.
	When people break the rules about forest use, they pay a price.
Equity	I feel the costs associated with community-based forest management are distributed equitably.
	I feel the benefits associated with community-based forest management are distributed equitably.
	The distribution of costs and benefits associated with community-based forest management is as it should be.
Responsive-ness	Services regarding forest use are available.
	Services regarding forest use are timely.
	Services regarding forest use are adequate.
Transfer of Authority	In community-based forest management, the community has the authority to create rules.
	Decision-making authority is transferred from the government to the community in community-based forest management.
	The government has passed decision-making power to the community in community-based forest management.

After these reliability tests were conducted, problem items were revised and the enumerators were re-trained with the revised survey instrument. A second instrument test was then conducted with a total of 20 respondents. Inter-rater and inter-item reliability tests were conducted for a second time. The second pretest showed no significant inter-rater differences, nor did it show any significant

differences regarding inter-item reliability (all items has alpha values greater than 0.6 (Hair et al. 1998)).

### Survey Implementation

The final survey was implemented from June – November 2006. A total of 621 individuals were surveyed by the two enumerators. This sample was purposeful with regard to the sites chosen for each sample stratum, and systematic with regard to the individuals chosen within each site (Salant and Dillman 1994) (Tables 6.4 and 6.5).

**Tables 6.4** Sample for the study broken down by respondents.

	<b>National Level</b>	<b>Local Level</b>	<b>Total Sample</b>
Community members	NA	600	600 <sup>3</sup>
Government employees	0	11	11 <sup>4</sup>
NGO staff	2	8	10 <sup>5</sup>
<b>TOTAL</b>	2	619	621

**Table 6.5** Sample for the study broken down by forest type.

	<b>Frequency</b>	<b>Percent</b>
Natural humid forest	209	33.7
Natural dry forest	210	33.8
Tapia forest	202	32.5
<b>TOTAL</b>	621	100

### Analysis

Frequencies were generated for the demographic variables to understand the details of the sample respondents. Chronbach’s alpha was calculated to ensure internal consistency among survey items measuring each construct (Hair et al. 1998).

<sup>3</sup> 50 individuals x 12 communities = 600

<sup>4</sup> At the local level, 9 individuals from the Ministry and 2 individuals who work for the Mayor’s office.

<sup>5</sup> At the national level, 2 NGO staff directly responsible for CBFM in the sample communities. At the local level, 8 NGO staff total.

I then created scored variables using means of the three survey items to create a single composite variable for each construct.

*Research Question 1. What are the governance outcomes of community-based forest management?* I generated mean responses for each construct to understand the governance outcomes of CBFM. These scores enabled me to assess respondents' ratings for an overall good governance variable, as well as for each of the principles of good governance. Initially, I considered responses from community members separate from those of government employees and NGO staff from all forest types combined. This allowed me to compare responses from community members to those of government employees and NGO staff. Despite the small number of government and NGO responses, this comparison is appropriate because a census of government and NGO personnel for the study sites was taken. Subsequently, I generated means for each construct from community respondents by forest type to understand differences that might exist.

For both analyses I used ANOVA tests with Bonferroni's post hoc multiple comparison to compare means and detect differences among groups. Bonferroni's comparison uses t tests to perform pairwise comparisons between group means, but controls overall error rate by setting the error rate for each test to the experimentwise error rate divided by the total number of tests. Hence, the observed significance level is adjusted for the fact that multiple comparisons are being made.

*Research Question 2. What are the relationships among the eleven governance principles in the context of CBFM?* To explore the relationships among governance constructs, I used principal components analysis (Hatcher and Stepanski 1994) to determine if constructs could be simplified into component groups. The procedure is appropriate when a researcher wishes to reduce measures on a number of constructs into fewer, artificial variables that may then be used as criterion variables in subsequent investigations (Hatcher and Stepanski 1994).

To determine sampling adequacy based on correlation and partial correlation, as well as to assess if data factored well, I used the Kaiser-Meyer-Olkin (KMO) statistic. I used the Kaiser criterion (Kaiser 1960) and dropped all factor groups with eigenvalues  $<1$ , and conducted a scree test (Cattell 1966) to verify dropping factor groups. I employed the varimax rotation method to maximize variance, but then relied on normalized values to ease interpretability. Constructs were assigned to a factor group based on the group in which they loaded highest, provided they loaded over 0.4 (Hatcher and Stepanski 1994).

*Research Question 3. To what extent do the eleven governance principles explain or account for good governance?* To understand the relationship between the governance constructs and respondents' perception of governance, I conducted regression analysis. I regressed the overall good governance indicator on the 11 governance principles and used a backward linear regression procedure to develop the good governance model. The backward procedure is a variable selection process in which all variables are entered into the equation and then sequentially removed. The variable with the smallest partial correlation with the good governance variable was removed first. The variable remaining in the equation with the smallest partial correlation is removed next. The procedure stops when all variables are significant.

## **Results**

Of the 621 individuals sampled, 73.8% were male and 26.2% were female. 94.5% had not completed primary school, and 97.4% stated that the main objective of the CBFM contract they were associated with was conservation (as opposed to sustainable use). A total of 76.3 % of respondents included “conserving forests for future generations” and “deriving economic benefits from forest use” as benefits they currently feel they are receiving from CBFM contracts. Yet, 65.6% of respondents

indicated that conducting forest patrols and suffering restrictions on forest use are the costs they bear in association with CBFM contracts.

A total of five knowledge-related items were included in the survey. These items measured respondents' general knowledge of the CBFM mechanism in Madagascar. Of note is that 67% of community respondents wrongly believe that the community gains title to the land under CBFM (Table 6.6).

*Research Question 1. What are the governance outcomes of community-based forest management?*

Overall, respondents felt that CBFM contracts perform well in terms of governance, as indicated by the mean values of 1.11, 1.64, and 1.20 from community members, government employees, and NGO staff, respectively (Table 6.7). ANOVA test for differences indicates that government employees may be less satisfied with the overall governance outcome of CBFM contracts in the study sites than community members and NGO staff.

On eight of the eleven governance principles (i.e., Goal, Structures, Accountability, Transparency, Monitoring, Enforcement, Equity, and Transfer of Authority), government employee and NGO staff responses were not different and were significantly higher than community members' responses. This suggests that government employees and NGO staff are less satisfied with the performance of CBFM contracts in the study sites on these eight principles of good governance.

**Table 6.6** Responses to items related to general knowledge of community-based forest management contracts in Madagascar.

Knowledge item	CBFM is a contract between the government and the community (TRUE)	The Mayor's office has a role to play in CBFM (TRUE)	Initial contracts last for 3 years (TRUE)	If contracts are renewed, they are renewed for 10 years (TRUE)	Under CBFM, the community becomes owner of the land (FALSE)
TRUE	Count 572 95.3%	Count 535 89.2%	Count 448 74.7%	Count 186 31.0%	Count 402 67.0%
FALSE	Count 1 0.2%	Count 3 0.5%			Count 82 13.7%
Don't Know	Count 27 4.5%	Count 62 10.3%	Count 152 25.3%	Count 414 69.0%	Count 116 19.3%
Total	Count <b>600</b> Percent <b>100.0%</b>	Count <b>600</b> Percent <b>100.0%</b>	Count <b>600</b> Percent <b>100.0%</b>	Count <b>600</b> Percent <b>100.0%</b>	Count <b>600</b> Percent <b>100.0%</b>
TRUE	Count 11 100.0%	Count 11 100.0%	Count 11 100.0%	Count 8 72.7%	Count 11 100.0%
FALSE	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%
Don't Know	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%
Total	Count <b>11</b> Percent <b>100.0%</b>	Count <b>11</b> Percent <b>100.0%</b>	Count <b>11</b> Percent <b>100.0%</b>	Count <b>11</b> Percent <b>100.0%</b>	Count <b>11</b> Percent <b>100.0%</b>
TRUE	Count 10 100.0%	Count 10 100.0%	Count 10 100.0%	Count 9 90.0%	Count 2 20.0%
FALSE	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 8 80.0%
Don't Know	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%	Count 0 0.0%
Total	Count <b>10</b> Percent <b>100.0%</b>	Count <b>10</b> Percent <b>100.0%</b>	Count <b>10</b> Percent <b>100.0%</b>	Count <b>10</b> Percent <b>100.0%</b>	Count <b>10</b> Percent <b>100.0%</b>

Community members (n=600)

Government employees (n=11)

NGO staff (n=10)

**Table 6.7** ANOVA test for differences among respondents on governance variables.

Variables <sup>a</sup>	Respondents			Test Statistics
	Community members (n=600)	Government employees (n=11)	NGO staff (n=10)	
<b>Good Governance</b>				
Mean <sup>b</sup>	1.11a	1.64b	1.20a	F=13.087
Std. Error	0.013	0.310	0.133	p<.001
<b>Goal</b>				
Mean	1.17a	2.91b	2.60b	F=10.258
Std. Error	0.043	0.251	0.371	p<.001
<b>Structures</b>				
Mean	1.14a	1.82b	1.80b	F=33.000
Std. Error	0.014	0.226	0.291	p<.001
<b>Rules</b>				
Mean	1.19a	1.73bc	1.30ac	F=6.455
Std. Error	0.020	0.237	0.213	p<.01
<b>Participation</b>				
Mean	1.51a	2.36bc	1.70ac	F=3.286
Std. Error	0.046	0.338	0.335	p<.05
<b>Accountability</b>				
Mean	1.31a	2.45b	2.10b	F=20.576
Std. Error	0.028	0.247	0.277	p<.001
<b>Transparency</b>				
Mean	1.10a	1.91b	2.10b	F=62.649
Std. Error	0.013	0.285	0.407	p<.001
<b>Monitoring</b>				
Mean	1.35a	2.73b	2.10b	F=28.873
Std. Error	0.026	0.384	0.348	p<.001
<b>Enforcement</b>				
Mean	1.16a	2.00b	2.10b	F=39.311
Std. Error	0.017	0.330	0.348	p<.001
<b>Equity</b>				
Mean	1.50a	2.73b	2.70b	F=19.197
Std. Error	0.036	0.407	0.260	p<.001
<b>Responsiveness</b>				
Mean	1.15a	3.00b	2.50c	F=133.462
Std. Error	0.016	0.405	0.401	p<.001
<b>Transfer of Authority</b>				
Mean	1.25a	2.73b	2.60b	F=58.351
Std. Error	0.023	0.333	0.400	p<.001

<sup>a</sup> Scale: 1-5, where 1= “strongly agree”, 2= “slightly agree”, 3= “neutral/don’t know”, 4= “slightly disagree”, 5= “strongly disagree.”

<sup>b</sup> Means with the same letters are not different, Bonferroni’s post-hoc comparison (p<.05)

Government employees seem to be least satisfied with CBFM contracts in the study sites, as indicated by the high scores they gave to nine of the eleven principles of good governance (Goal=2.91, Structures=1.82, Rules=1.73, Participation=2.36, Accountability=2.45, Monitoring=2.73, Equity=2.73, Responsiveness=3.00, Transfer of Authority=2.73) and the overall good governance measure (mean=1.64). The variances around these means were quite high (low std. error=0.226, high std. error=0.407), suggesting that respondents are not necessarily in agreement on these points.

In general, community member respondents were fairly satisfied with the governance outcomes of the CBFM contracts across forest types (low score=1.01, high score=2.49). Respondents in the natural humid forest were less satisfied with the performance of CBFM (mean good governance=1.28) than in the other two forest types (mean good governance natural dry forest=1.04, mean good governance Tapia forest=1.01) (Table 6.8). Mean scores for every governance variable were significantly higher ( $p < .001$ ), indicating less satisfaction. Responses from community members in the natural dry forest and the Tapia forest were neither different on the overall Good Governance variable, nor on ten of the eleven principles of good governance variables.

**Table 6.8** ANOVA test for differences among community responses by forest type.

Variables <sup>a</sup>	Forest Type			Test Statistics
	Natural humid forest (n=201)	Natural dry forest (n=200)	Tapia forest (n=100)	
<b>Good Governance</b>				
Mean <sup>b</sup>	1.28a	1.04b	1.01b	F=53.336
Std. Error	0.032	0.014	0.007	p<.001
<b>Goal</b>				
Mean	2.29a	1.25b	1.57c	F=60.828
Std. Error	0.082	0.038	0.077	p<.001
<b>Structures</b>				
Mean	1.37a	1.02b	1.02b	F=90.280
Std. Error	0.035	0.010	0.009	p<.001
<b>Rules</b>				
Mean	1.56a	1.01b	1.00b	F=124.576
Std. Error	0.049	0.007	0.000	p<.001
<b>Participation</b>				
Mean	2.49a	1.00b	1.02b	F=190.799
Std. Error	0.106	0.000	0.015	p<.001
<b>Accountability</b>				
Mean	1.90a	1.01b	1.02b	F=169.315
Std. Error	0.065	0.007	0.016	p<.001
<b>Transparency</b>				
Mean	1.30a	1.01b	1.01b	F=74.586
Std. Error	0.033	0.005	0.005	p<.001
<b>Monitoring</b>				
Mean	1.57a	1.20b	1.28b	F=19.801
Std. Error	0.050	0.045	0.036	p<.001
<b>Enforcement</b>				
Mean	1.45a	1.01b	1.01b	F=98.298
Std. Error	0.043	0.005	0.007	p<.001
<b>Equity</b>				
Mean	2.02a	1.31b	1.15b	F=69.487
Std. Error	0.070	0.061	0.028	p<.001
<b>Responsiveness</b>				
Mean	1.35a	1.04b	1.05b	F=45.418
Std. Error	0.039	0.016	0.016	p<.001
<b>Transfer of Authority</b>				
Mean	1.65a	1.07b	1.03b	F=103.149
Std. Error	0.050	0.029	0.014	p<.001

<sup>a</sup> Scale: 1-5, where 1= “strongly agree”, 2= “slightly agree”, 3= “neutral/don’t know”, 4= “slightly disagree”, 5= “strongly disagree.”

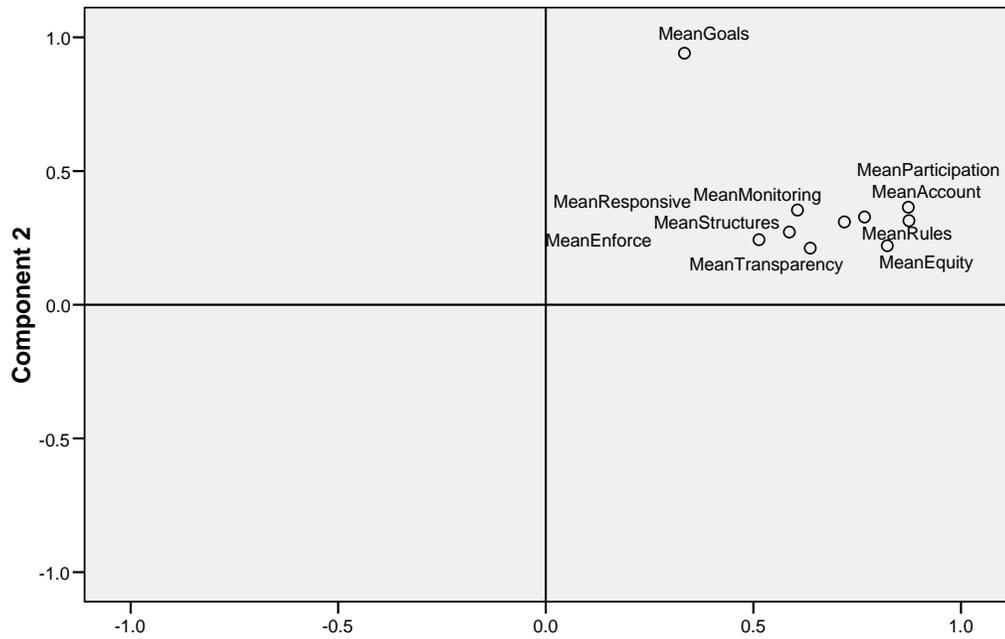
<sup>b</sup> Means with the same letters are not different, Bonferroni’s post-hoc comparison (p<.05)

CBFM contracts in the natural humid forest performed best (i.e., had the lowest score indicating respondents satisfaction) on Transparency (mean=1.30) and worst (highest score indicating respondents dissatisfaction) on Participation (mean=2.49). Contracts in the natural dry forest performed best on Participation (mean=1.00) and worst on Equity (mean=1.31), and contracts in the Tapia forest performed best on Rules (mean=1.00) and worst on Goal (mean=1.57). Across forest types, CBFM contracts were least well performing with regards to having a clear goal and ensuring equitable distribution of costs and benefits. There was less agreement on the issue of participation; those in the natural humid forest indicated that CBFM does not perform well with regard to the participation variable whereas those in the dry and Tapia forests were less satisfied with regard to the forest monitoring aspects.

*Research Question 2. What are the relationships among the eleven governance principles in the context of CBFM?*

Principal components analysis (PCA) resulted in two components (Figure 6.1). Component 1, explained 49.79% of the variance while Component 2 explained 25.87% of the variance. Constructs were assigned to a component based on the group in which they loaded highest, provided they loaded over 0.4 (Dunteman 1989). The first component was composed of all the governance principles except Goal, and the second component included only Goal. The fact that all but one variable loaded on to a single component suggests that PCA may not be appropriate in this case. A Pearson correlation matrix indicates that all eleven principles of good governance variables have a moderately strong positive relationship to one another (Table 6.9). These outcomes imply that all good governance variables are somewhat related to one another, but that they do not group into meaningful groupings.

**Component Plot in Rotated Space**



**Figure 6.1** Two principal components associated with principles of good governance of decentralized hybrid institutional arrangement for forest management. The first component is made up of ten constructs while the second component only includes Goal.

**Table 6.9** Pearson correlation coefficients among principles of good governance

	Goal	Structures	Rules	Partici- pation	Account- ability	Transpar- ency	Monitoring	Enforce- ment	Equity	Responsive- ness	Transfer of Authority
Goal	1.000										
Structures	0.537	1.000									
Rules	0.579	0.664	1.000								
Participation	0.640	0.770	0.842	1.000							
Accountability	0.590	0.752	0.823	0.927	1.000						
Transparency	0.411	0.533	0.601	0.669	0.637	1.000					
Monitoring	0.509	0.479	0.518	0.538	0.533	0.404	1.000				
Enforcement	0.362	0.393	0.454	0.516	0.498	0.366	0.232	1.000			
Equity	0.506	0.597	0.628	0.711	0.685	0.499	0.594	0.359	1.000		
Responsive- ness	0.450	0.461	0.534	0.601	0.574	0.504	0.396	0.308	0.456	1.000	
Transfer of Authority	0.460	0.617	0.631	0.719	0.684	0.512	0.393	0.452	0.566	0.429	1.000

*Research Question 3. To what extent do the eleven governance principles explain or account for good governance?*

To understand the relationship between the principles of good governance and good governance itself, I conducted regression analysis. The analytical objective in conducting this regression was to test the theory that good governance is made up of the eleven governance principles. That is, to test the extent to which the eleven governance principles explain good governance. Given the results of the PCA, I conducted the regression using the original eleven good governance principles rather than using the two components.

**Tables 6.10a and 6.10b** Results of regression analysis (Predictors: Goal, Structures, Rules, Participation, Accountability, Transparency, Monitoring, Enforcement, Equity, Responsiveness, and Transfer of Authority)

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Regression</b>	29.152	11	2.650	51.317	p<.001
<b>Residual</b>	30.366	588	0.052		
<b>Total</b>	59.518	599			

<b>Predictor</b>	<b>t</b>	<b>Sig.</b>
(Constant)	6.899	.000
Goal	0.503	.615
Structures	1.009	.313
Rules	0.219	.827
Participation	0.135	.892
Accountability	<b>2.654</b>	.008
Transparency	<b>4.024</b>	.000
Monitoring	<b>2.750</b>	.006
Enforcement	1.886	.060
Equity	<b>2.399</b>	.017
Responsiveness	<b>2.683</b>	.008
Transfer of Authority	1.026	.305

Regressing all principles of good governance variables on Good Governance was significant and explained 48.0% (Adjusted R<sup>2</sup>) of the variance in Good Governance (Tables 6.10a and 6.10b). Only five of the eleven principles of good governance had significant coefficients at the 0.05 level (i.e., Accountability (t=2.654), Transparency (t=4.024), Monitoring (t=2.750), Equity (2.399), and Responsiveness (t=2.683)).

Using a backward linear regression procedure that removed variables one-by-one, a good governance model was developed after six iterations of regression. The good governance model explains 48.2% (Adjusted R<sup>2</sup>) of the variance in Good Governance and includes predictors Accountability, Transparency, Monitoring, Enforcement, Equity, and Responsiveness. All parameter estimates were positive, indicating that each of these indicators has a significant independent correlation with perceptions of good governance (Tables 6.11a and 6.11b).

**Tables 6.11a and 6.11b** Results of regression analysis (Predictors: Accountability, Transparency, Monitoring, Enforcement, Equity, and Responsiveness)

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
<b>Regression</b>	28.969	6	4.828	93.723	p<.001
<b>Residual</b>	30.549	593	0.052		
<b>Total</b>	59.518	599			

<b>Predictor</b>	<b>t</b>	<b>Sig.</b>
(Constant)	10.308	0.000
Accountability	5.709	0.000
Transparency	4.399	0.000
Monitoring	3.068	0.002
Enforcement	2.243	0.025
Equity	2.881	0.004
Responsiveness	2.887	0.004

## **Discussion**

The results presented here support the idea that decentralized hybrid institutional arrangements that bring the state and communities together to manage forest resources may result in good governance. The majority of respondents agreed that the CBFM contracts with which they are associated are well governed in general. The aggregate of community members rated CBFM contracts as better governed than did government employees and NGO staff. Although these results can not be extrapolated to all CBFM contracts in Madagascar, they are representative of the study sites because a census of government employees and NGO staff involved in these CBFM contracts was taken. That community members consistently rated CBFM contracts as more satisfactory than government employees and NGO staff in terms of governance performance may be an indication that their expectations are lower. This may also be an artifact of the research methodology itself, which may not be completely appropriate for traditional Malagasy culture and may therefore not elucidate accurate responses from community members, who are generally more deeply rooted in traditional practices and ways of knowing than government employees and NGO staff. Anthropologists who study Malagasy culture have noted that Malagasy tend to avoid conflict (Dahl 1999), which may suggest that community members responded “strongly agree” or “slightly agree” because they thought these were the “correct” responses (social desirability bias). Moreover, Malagasy tend to have a high degree of respect for authority (Dahl 1999), which may have influenced community members’ willingness or ability to suggest that a government-sponsored program such as CBFM is not performing well. These results are consistent with those presented in Chapter 5 insofar as government employees expressed the least satisfaction regarding the performance of the CBFM contracts.

Analysis of community members’ responses in each forest type shows a significant difference between responses from humid forest dwellers and others on

eleven parameters (Good Governance and all governance principles except Goal).

This suggests that those in the humid forest are less satisfied with CBFM than those in the other two forests types, perhaps indicating that the social desirability bias may not be a factor. That community members in the humid forest indicated a lower level of satisfaction implies their comfort and ability in expressing a somewhat negative perspective. The extent of the social desirability bias in the results presented here could be explored further with a comparison of responses by all three types of actors in each of the three forest types. The small sample of government employees and NGO staff, and subsequent amount of data, do not permit this analysis.

Humid forest dwellers' responses differ from those in the dry and Tapia forest, indicating that the ecological, social, historical, and political context affects how people perceive the governance outcome of this CBFM mechanism. For instance, the contracts located in the humid forest were supported by a USAID-funded NGO from 1999 to 2003, when the USAID funding ended and the project stopped. USAID funding resumed in 2004, after a hiatus of approximately one year. This gap in NGO support for the implementation of CBFM may have affected community perceptions of governance outcomes. In addition, the humid forest is of particular interest for biodiversity conservation due to the high density of unique and threatened species that occur in that environment. Community members may associate the interest in conservation of these species with restrictions on forest resource access and use. This may also contribute to their perceptions of CBFM governance outcomes. The contextual specifics are of importance for interpreting and understanding survey results.

Of interest is that the mean scores for Good Governance and each of the governance principles for each of the three types of actors were all below 3.00. This indicates that, on average, no group responded "slightly disagree" or "strongly disagree" to the statements put to them. Respondents indicated they agreed to some

extent, did not know, or were neutral. These affirmative responses may indicate if the social desirability bias exists it applies equally to all three types of respondents, validating the results of this study.

Of the eleven principles of good governance included in this study, Goal, Participation, Equity, and to some extent Monitoring stand out. According to community respondents, CBFM contracts do not perform as well on these items as they do on the other six. This result is interesting because of the 19 references consulted that identify principles of good governance, 11 identify these four principles as important for governance (Evans 1996; Lam 1996; Antona et al. 2004; UNDP 1997; Baiocchi 2003; Graham, Amos, and Plumptree 2003; Johnson and Nelson 2004; Ostrom 1990; Barrett, Lee, and McPeak 2005; Menzies 2004; Agrawal and Gupta 2005). The results here do not necessarily imply that the theory is flawed. Regression results confirm that Accountability, Transparency, Monitoring, Enforcement, Equity, and Responsiveness account for the variation in Good Governance. Rather, designing and implementing CBFM contracts that have a clear goal, promote participation, ensure equitable distribution of costs and benefits, and are well monitored is very difficult to do. Implementing these components is challenging and requires specific attention to be successful.

The eleven principles of good governance explored did not group into meaningful components. The items are all correlated, however, suggesting that they are not completely discrete. Implementing hybrid CBFM arrangements with an eye toward good governance may not be a matter of setting up systems or process for each one of the good governance principles independently in a checklist fashion. Rather, it may better be viewed as a dynamic social process that is constantly in flux and that may evolve over time as the actors and/or context change.

Findings indicated that only some of the good governance principles account for much of the variation in good governance in general. Although statistically

significant, the meaning of this finding is difficult to ascertain. For instance, participation is seemingly an important aspect of good governance, especially in a decentralized context. Yet, the good governance model does not include participation as a predictor of good governance. Further research is needed to understand why this may be, but perhaps some of the other elements of good governance included in the model are capturing the essence of participation and of the other good governance elements that dropped out.

Responses to the five knowledge items provide additional insight into how results might be interpreted. The vast majority, if not all, government employee and NGO staff respondents responded to the knowledge items correctly, signifying that they understand the CBFM mechanism as it is implemented in Madagascar. Community responses were more varied. For all knowledge items, community respondents opted to answer “true” or “don’t know” rather than answer “false.” Of particular note is the fact that the majority of community respondents indicated that communities become owners of the land under CBFM, which is not true. This implies that communities are simply misinformed of the outcome of CBFM regarding land tenure and that additional communication and information efforts are needed.

## **Conclusion**

Although the results presented here are by no means definitive, they do provide a basis from which to draw certain conclusions, define orientations for future research, and provide recommendations to managers and policymakers, assuming that results reflect respondents’ real perceptions related to governance. If, as some anthropological research suggests, the method used to collect data was inappropriate for the context and therefore did not garner accurate information, then the results should not be used to inform policy or practice. Further research that focuses on the relevance of Likert scales to contexts such as rural Madagascar is needed.

I submit that the results presented here are trustworthy for the context in which the data were collected because of the robust and deliberate way in which the inquiry was undertaken. Findings suggest that CBFM is performing well in Madagascar. Government employees are least satisfied with CBFM governance outcomes, which is consistent with qualitative findings described in Chapter 5. Humid forest dwellers are least satisfied with CBFM governance outcomes, which is accounted for by the contextual, as well as physical, aspects of the CBFM contracts at those sites. Yet, these results are strictly limited to the institutional aspects of governance and have offered no insight related to forest-level outcomes the CBFM provides. Questions regarding the sustainability of management regimes under CBFM remain.

A deeper exploration of the principles of good governance and their relationship to the overall governance regime is needed to inform specific strategies for CBFM design and implementation. That CBFM seems to perform better with respect to some principles than others is of interest, but further inquiry is needed regarding the causes of these differences and their relationships to the design and/or implementation of CBFM in various contexts.

Policymakers and CBFM managers alike may find utility in these results insofar as they provide insight into the technical specifics of developing institutional hybrids. Although results are preliminary, these findings suggest that policymakers may need to develop flexible mechanisms that can be adapted to various natural contexts, and that managers need to be innovative in their application of the policy on the ground.

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## CHAPTER SEVEN

### CONCLUSION

Institutional synergy combats the divide between the state and civil society, where the state refers to government and civil society refers to the “public sphere of collective action between the family and the state...” (Bratton 1994:75). The concept of synergy rests on the idea that “the existence of the state and the rules it establishes and enforces can strengthen and increase the efficiency of [local organizations and institutions, which in turn] give rise to collective action increasing the power of the state” (Nugent 1993:629). Properties of civil society and government mutually reinforce one another resulting in a new, emergent form.

Institutional synergy is a mechanism by which decentralization of power can occur. Decentralization has been defined in various ways depending on the type of powers being decentralized and the recipient of those powers. However, decentralization in its broadest sense refers to “the transfer of power from the central government to actors and institutions at lower levels in a political-administrative and territorial hierarchy” (Larson and Ribot 2004:3). Two common forms of decentralization are *deconcentration* and *democratic decentralization*. Deconcentration occurs when the central state redistributes authority to its own representatives at lower levels of government (Oyono 2004). Democratic decentralization is a stronger form of decentralization than deconcentration insofar as it involves local people in decision making by creating and empowering representative local entities. Democratic decentralization aims to transfer power to local entities that are representative of and accountable to local populations (Oyono 2004; Larson and Ribot 2004).

In natural resource conservation, democratic decentralization has often meant some form of power transfer from the state to the local resource user community (e.g., Xu and Ribot 2004; Edmonds 2002; Oyono 2004; Wiggins, Marfo, and Anchirinah 2004). However, power transfer is not absolute, resulting in shared responsibility between the state and the community. Although specific rules for who will be responsible for what change with each situation depending on the resource in question, the degree of decentralization, and user needs, the state–civil society link is an important component of democratic decentralization.

A partnership between the state and civil society may provide benefits beyond state-based or rules-based governance alone, but confounding factors exist that may complicate the state–civil society linkage. Agrawal and Gibson caution scholars and practitioners alike not to lose sight of the real-world contextual complexities: “We must recognize that state officials and community representatives are located within asymmetric organizational structures. They enjoy access to very different levels of resources and power” (1999:639). Similarly, Ribot asserts that it is not enough to join the state to community or to transfer power from the state to the community. The mechanisms by which transfer of power occurs, and the institutional forms that are created for such purposes are of importance: “Transferring power without accountable representation is dangerous. Establishing accountable representation without powers is empty” (2002:2). Striking a balance between the state and civil society can be difficult precisely because of these issues of inequality, representation, and accountability.

In addition, the conceptual category of “civil society” is not homogenous in real-world situations. Depending on the place, time, and sector, civil society could be represented by any number of groups, including non-governmental organizations (NGOs) or community groups (Uphoff 1993). In the case of natural resource

management and conservation, international organizations often act as initiators or interventionists to bridge the state and civil society (Hockley and Andriamarivololona 2007). These conservation NGOs fill a void left by a defunct state and often engage in service provision much as the state would (Mohan 2002). They may provide technical expertise regarding natural resource conservation, and they also may be better able to engage local communities than a centralized or bureaucratic state (Bratton 1990). However, NGOs do not necessarily represent the interests of either the state or the community. They are accountable to the state insofar as their activities are state-sanctioned, but they are also accountable to their funding sources. Several studies have shown that donors tend to have great influence over the policies of the NGOs they support (e.g., Fowler 1998; Nyamugasira 1998). Thus understood NGOs often function as the state in terms of service provision, but they represent and advance their own (and donors') interests when advocating and implementing policies.

Local community groups also fall into the conceptual category of civil society. However, they differ from NGOs in their inability to maneuver across vast social, political, and geographic spaces. Whereas NGOs often have access to resources, people, and political power at various scales due to their ties to multi-lateral donors, central governments, local governments, and local elites, community groups are often bound more narrowly. Community groups can be understood as “constituted by economic, social, cultural, and political relations and flows of commodities, information and people that extend far beyond a given locality” (Mohan 2002:134). However, those relations and flows are often subject to more restrictive social boundaries than those of many NGOs.

The research presented in this dissertation explored the implementation of a democratic decentralization policy of forest management responsibilities in Madagascar that involves state, NGO, and community actors.

## **Review of Research**

Building on criticisms about the lack of a coherent understanding of how power operates in the context of community-based forest management (CBFM), a realist view of power was proposed as a useful framework through which to understand decentralized power in Chapter 2. This view contends that power is the socially-structured capacity to act, and understanding it as such may provide insights as to how to democratize practice. Although not a prescription for how to act, the realist view suggests that by understanding how structure and agency exist in a state of constant dynamism, practitioners may be able to maneuver within structured power relations to positively affect power asymmetries.

Decentralization of forest management is not only about how individuals act within structured power relations, but it is also about transforming institutional relationships. Linkages among the state, NGOs, and community groups are created, adapted, and modified to adhere to new policies. Governing within these new institutional structures and relationships is a challenge, and may result in increased marginalization of some groups. In Chapter 3, I defined good governance in these contexts as being comprised of 11 elements: clear resource governance goal, coherent institutional structure, clear rules, participation, accountability, transparency, monitoring, enforcement, equity, responsiveness, and transfer of authority. To ensure that CBFM is effective in terms of its social equity mandate (Pagdee, Kim, and Daugherty 2006), it must perform well with regards to these good governance elements, as perceived by those who participate in it.

To gather empirical evidence related to decentralized governance of forests, I chose the case of community-based forest management in Madagascar. Chapter 4 describes the history of forest management in Madagascar, which provides a context in which to interpret results. The evolution of forest policy in Madagascar is

consistent in terms of external or central decision-making. Throughout recent history, Malagasy forests have been managed, used, or conserved on the basis of decisions and policies that were created either at the central level (e.g., during pre-colonial times and during early independence), or by external actors (e.g., during colonial times by the French and more recently by donor agencies). Interestingly, even the move toward local “empowerment” for forest management was initiated by external/central actors, rather than emerging from a local or grassroots demand.

An initial step in assessing the relationship among state employees, NGO staff and community members in CBFM in Madagascar involved understanding each actor’s interests vis-à-vis the forest and this forest management mechanism. To do so, I used a framework that divided interests into four categories, those having to do with *People* (health services and products, and education), *Nature* (the forest itself, and its overall state), *Wealth* (commercialization or income-generating activities), and *Power* (governance-related aspects). This framework, although imperfect because of its technocratic tendency toward reifying the *People*, *Nature*, *Wealth*, and *Power* categories, provided a means for comparing among groups. The results of this exploratory inquiry were that all three groups of actors converged on their dissatisfaction with the *Wealth* (economic aspects) and *Power* (governance aspects) performance of CBFM, as described in Chapter 5. Results also indicated that of the three classes of actors, government employees were least satisfied with the responsiveness of CBFM to their interests.

This study did not focus specifically on the economics of CBFM in Madagascar. Yet, the results presented in Chapter 5, as well as those presented in Chapter 6 related to communities’ expectation for deriving economic benefits from forest use, confirm other work that has identified the problems with the economic incentives of CBFM (Hockley and Andriamarivololona 2007). As noted by Hockley

and Andriamarovololona (2007:v), “By providing insufficient support to [communities], and pretending indifference to the wider benefits of their management, external stakeholders have tried to extract a ‘free lunch’ from communities; securing forest conservation at minimum cost.” How the lack of tangible economic incentives for community participation in CBFM affects perceptions of governance outcomes or relationships among community members and government employees or NGO staff remains unclear. Additional work is needed to understand the complex interconnectedness among the economic incentive structure of CBFM, its governance structure, and the power dynamics that are produced and reproduced within these structures.

Chapter 6 relates the results of further exploration of governance outcomes of CBFM. These results were generated through a quantitative survey of participants in CBFM in three different forest areas: natural humid forest, natural dry forest, and Tapia forest. A quantitative method was chosen for two purposes. First, quantitative methods can generate results from information gathered from many respondents. They allowed me to obtain a broad picture of many participants’ experiences with CBFM. Second, quantitative methods and results hold a privileged place in our society, including within the academic and professional worlds. I made a deliberate choice to include these methods so that I would have the experience of using them, but also so that I would be able to communicate some portion of my results with people who may be more interested by quantitative than by qualitative results. This was a politically-motivated decision, as well as an academically-driven one.

When taken together, the results presented in Chapters 5 and 6 offer some interesting insights that go beyond what is described in each chapter individually. In individual conversations and small group discussions, all three groups of respondents to qualitative questions regarding CBFM indicated their dissatisfaction with its

governance outcomes. When rating standardized statements regarding governance using a Likert scale, respondents in all three groups indicated that they are fairly satisfied with governance outcomes of CBFM. That is, they strongly agreed or agreed that CBFM was providing good governance outcomes at their sites. Interpreted literally, this finding suggests an inconsistency with the results presented in Chapter 5, which indicated that all three respondent groups feel CBFM is not meeting their governance-related interests. Comparing responses among classes of actors gives a different view of these results. In both rounds of data collection (qualitative and quantitative) government employees were the least satisfied with governance outcomes of CBFM. Reasons for this may be that government employees understand most fully what the ideal governance outcomes of CBFM would be and are thus using a different point of reference than are NGO staff or community members.

Chapters 2 through 6, the core of this dissertation, raise questions regarding how to conduct simultaneously research that provides meaningful insights regarding individual-level action and behavior within socially-structured power relations, and structural-level relationships among classes of actors such as government, NGO, and community. The results of this work provide valuable understanding of the workings of CBFM in Madagascar, but they also increase the awareness of the complexity of social research. To understand the relationships among actors and the workings of decentralized forest management requires exploring various aspects over a long period of time in a given context. A full grasp of the inner workings of CBFM in Madagascar would require more work and more time.

A higher level of abstraction of the research findings as a whole suggests that decentralization of forest management in Madagascar has had a more tangible effect on structural-level relationships than on individual-level capacity to act. Communities are now actively implicated in decision-making processes regarding forest

management, and there is an effort on the part of government and NGOs to share information, responsibilities, and benefits more broadly. Legally, officially, and institutionally, there is an earnest attempt to equalize the historical asymmetry of authority between the government and communities regarding forest management. Whether the exercise of power by individuals in CBFM arrangements has been proportionately affected is less clear. In some instances individual community members seem to have exercised power (e.g., humid forest communities expressing some dissatisfaction), yet in other cases community members seem to reproduce pre-decentralization structured power relations (e.g., defaulting to the affirmative or positive response). Additional research that applies the realist view of power to structured power relations among classes of actors in forest management in Madagascar would offer more insight into the individual-level effect of institutional-level decentralization.

The process of decentralizing community-based forest management is premised on empowerment of local communities. The state's policy in Madagascar is meant to provide new opportunities for local communities to participate in decision-making and implementation regarding forest management. Intentions notwithstanding, my conclusion regarding the current situation in Madagascar is that the decentralization process is actually providing the state with greater potential to control than it previously had. Due to insufficient resources, the state lacks capacity to manage forests throughout the country. Decentralization, the state's strategy to compensate for this, has begun to make clear that which was previously obscure (i.e., local-level forest practices including extractive use). Local forest practices largely continue as they did previously, but now the local actors are organized into community associations and the rules regarding new standards for forest use are articulated. Rather than resulting in community empowerment, decentralization to

date allows the state to know, evaluate, and have the potential to control how forests are being used.

### **Contributions**

The methodological approach used in this inquiry combined interviewing and participant observation with a conventional quantitative survey. This approach was meant to extract the benefits of both qualitative methods, which provide in-depth and nuanced understanding, and quantitative methods, which allow for large numbers of respondents and provide a broad, general picture. On the surface, qualitative and quantitative results were inconsistent (i.e., respondents expressed dissatisfaction in qualitative interviews but expressed satisfaction when responding to the survey). A closer look reveals that results from both methods indicate that government employees are least satisfied with CBFM governance outcomes. This has important methodological implications for how to interpret Likert scale results. When interpreted literally, all respondents (including government employees) indicated they strongly agreed or agreed that CBFM was producing positive governance outcomes. When analyzed by stakeholder group, however, government employees indicated less satisfaction than the other two groups. Thus, the interpretation of Likert scale results was informed by the qualitative findings. The Likert ratings of 1 to 5 are not absolute values, they are relative scores.

In addition, use of both qualitative and quantitative results in this study reflects my personal struggle with how I know reality and how I construct knowledge. Both methods assume a social construction of reality, but the quantitative methods suggest a single knowable reality that is observable and measurable. After having completed this research endeavor I still believe that reality is socially constructed, but I also

believe that it is knowable. I continue to have confidence in the research tools that allow us to observe, investigate, interpret, and conclude.

From a theoretical perspective, this inquiry has explored blending concepts of power and governance to shed light on the dynamics between social structure and individual agency. I adopted a realist view of power that suggests the reified dualism between structure and agency is a false dichotomy. Actions occur within structured social relations and power is exercised within socially-structured power relations. Understanding how institutional-level changes (which may include legislation, policy, and organizational-level partnerships) affect and are affected by individual-level action is difficult. This study represents an attempt to marry the concepts of governance and power to overcome this difficulty. Future research could go much further by observing organizational and individual-level changes over time and analyzing them within the framework of the realist view.

The research findings also contributed to a new understanding of power in the context of forest management. Whereas previous studies have been limited to the examination of the exercise of power in natural resources conflict situations (e.g., social movements resulting from conflicts over resource access), this inquiry provides a theoretical foundation for conducting more nuanced analyses of the workings of power in these contexts. The realist view of power not only represents a theoretical underpinning for future research on power in natural resource management and conservation, it potentially offers a contribution to practice as it sheds light on ways in which practitioners might change their behavior to democratize professional practice.

Through this research process I have gained insight into the workings of power in everyday actions. Power is exercised continuously by individuals who exist within social structures. This insight has given me the ability to see how power is exercised, consciously or unconsciously, and what the effects of this are in a professional setting.

In many cases, social inequalities are reproduced. Yet, the ability to see the workings of power does not necessarily lead to a prescription for acting to democratize practice. My practice has not yet been substantively affected by the insight I gained from this research, but I now understand my practice differently. Results of this inquiry may impact others' professional practice insofar as it may provide them with similar insight into the workings of power.

Finally, the results of this research suggest that policy or procedural changes may be necessary to enable the state, NGOs and communities to collaborate effectively in decentralized forest management in Madagascar. For instance, results indicate that although decentralization has influenced legislation and the institutional-level partnerships between the state and local communities, it has yet to affect individual-level action proportionately. A long time horizon is needed to ensure that the historical legacy of top-down, authoritative forest policy is overcome. This centralized forest management history resulted in specific social-structural relations between state actors and forest users that persist today.

Individuals are not inherently powerful or powerless. They exercise power in a dynamic and relative manner within historically-contingent social structures. Thus, I conclude that decentralization of forest management in Madagascar does not “empower” local communities. Rather, it begins to open a space in which individuals, located in various social positions, can act to transform pre-existing power relations.

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APPENDIX A

RESEARCH PERMIT FROM MALAGASY MINISTRY OF ENVIRONMENT,  
WATER, AND FORESTS

REPUBLIKAN'I MADAGASIKARA  
*Tanindrazana-Ifahafahana-Fandrosoana*

MINISTÈRE DE L'ENVIRONNEMENT, DES EAUX ET FORÊTS  
B.P 243 - Nanisana - ANTANANARIVO - 101-  
Tel: (261 20) 22 411 55/22 411 49 - Fax: (261 20) 22 304 88  
E-mail: [minenv@dts.mg](mailto:minenv@dts.mg) / [dgforets@wanadoo.mg](mailto:dgforets@wanadoo.mg)

Le Directeur Général des Eaux et Forêts

Antananarivo, le

26 OCT. 2004

à

Madame Daniela B. Raik  
Graduate Research Assistant  
Cornell University  
Ithaca, NY 14850 USA  
[dbr23@cornell.edu](mailto:dbr23@cornell.edu)

N° 1217/MINENV.EF/SG/DGEF/DPB/SCBLF

**OBJET:** Demande de conduite d'une recherche

**REFERENCE:** Votre lettre du 1<sup>er</sup> Octobre 2004

Madame,

J'ai l'honneur d'accuser réception de votre lettre sus réferenciée et de vous faire connaître que toutes les recherches effectuées doivent être cadrées dans un protocole d'accord nécessitant une demande émanant du département ou de l'institut national signataire dudit protocole dont les principaux points sont:

- la prise en charge des nationaux tels que: chercheurs et/ou étudiants agent représentant le CAFE/CORE pour formation, contrôle et suivi.
- le respect des réglementations en vigueur régissant l'étude sur terrain à Madagascar.
- la remise d'un rapport préliminaire après six mois et d'un rapport final à la fin de l'étude.

Etant donné que votre recherche se focalise sur les aspects sociaux du G.C.F (Gestion Contractuelle des Forêts) et le transfert de gestion, la Direction Générale des Eaux et Forêts est prête à travailler avec vous, dans la mesure où vous accepteriez les clauses énumérées ci-dessus.

Vous devez présenter le programme détaillé de votre recherche suivant le modèle ci-joint

Je vous prie d'agréer, Madame, l'expression de ma considération distinguée.

**P.F.** Modèle proposition de recherche



## APPENDIX B

### HUMAN SUBJECTS' CONSENT SCRIPT

English

#### **Introduction**

Hello, my name is Daniela Raik and I am a student from Cornell University in the United States. I am doing a research project for my PhD program on contractual forest management (GCF) here in the Menabe region. I lived in Marofandilia for 2 years as a Peace Corps volunteer back in 1998.

#### **Study Purpose and Methods**

The purpose of the study is to find out how the GCF approach influences conservation and people's well-being. I want to know how people have participated in the creation of the GCF contracts. I'm also interested in what has happened to the forest and to people's way of life since the GCF's have been implemented. To gather this information, I am interviewing different people such as:

- ◆ Ministry personnel at the national, regional, and local levels
- ◆ NGO personnel at the national, regional, and local levels
- ◆ Forest users, landowners, and residents of the region

I would like to record the interviews and take notes. Recordings and notes will be in my possession only. No one else will have access to the recordings or the notes. In addition, your name will not be associated with the information you give me. I promise you confidentiality.

This is the first phase of my research. After I have completed these initial interviews, I will return to the United States. I plan to come back to the Menabe region in 2005 to complete data collection.

I hope that the results of this study will be used to improve the way that forest management and conservation is planned and implemented in this region. After the study is completed, I will present the results to you.

#### **Risks and Benefits**

If you decide to participate in this study, there are some risks and benefits that you should be aware of. By participating, you may encounter the following risks:

- ◆ Spending your time to participate and not reaping any tangible benefits of the study.
- ◆ Inadvertantly being asked culturally inappropriate questions related to practices or beliefs regarding the forest.
- ◆ Being asked potentially uncomfortable questions regarding forest policies, regulations, and enforcement practices.

By participating in this study, you may also experience the following benefits:

- ◆ You will contribute to a study that will lead to recommendations for improvement in policy and practice of forest conservation in the Menabe region.
- ◆ You will be provided a vehicle by which to voice your opinions and concerns regarding forest management policies and practices.

- ◆ You will have the opportunity to learn about research practices and methodologies through conversations with me.

### **Informed Consent**

Participation in this study is completely voluntary. If you do not want to participate for any reason, you may exclude yourself. If you decide to participate, but do not want to answer some of the questions, you are free to refrain from answering. Also, you are free to abort the interview at any time.

As I mentioned earlier, this interview is completely confidential. I will not associate your name with the information you provide. Only I will have access to your name.

Do you understand what I have told you?

Do you have any questions?

Do you agree to participate in this study?

Do you agree to be recorded?

## HUMAN SUBJECTS' CONSENT SCRIPT Malagasy

### **Teny fampidirana**

Miarahaba anao. Daniela no anarako ary mpianatra avy any amin'ny oniversitean'ny Cornell any Etazonia aho. Manao fikarohana manokana ho an'ny diplaoma-ko izay tsy inona fa Doctorat momba ny fitantanana ala eto amin'ny faritry Menabe aho. Efa nipetraka tany Marofandilia nandritry ny roa taona aho tamin'ny taona 1998.

### **Ny anton'ny fikarohana sy ny fomba hanatanterahana an'izany**

Ny anton'ny fikarohana izay ho ataoko moa dia ny hamantatra ny hoe: ahoana ny fiantraikan'ny fomba fiasan'ny GCF amin'ny fitantanana ny ala sy ny fiananan'ny mponina andavan'andro. Tiako ho jerena ihany koa ny hoe: tamin'ny fomba ahoana no nahafahan'ny mponina nandray anjara tamin'ny famoronana ny fifanarahana momba ny GCF. Tiako ihany koa ny ahafantatra ny amin'ny hoe inona daholo no efa zava-bita na zava-nitranga teo amin'ny ala na koa ny fianan'ny mponina mampiasa na manodidina azy hatramin'izay niasan'ny GCF izay. Mba ahafahako mahazo an'ireo information ireo dia tsy maintsy hiresadresaka amin'ireto sokanin'olona manaraka ireto aho:

- Mpiasan'ny ministera eny amin'ny ambaratonga ambony nationaly io, ambaratongam-paritra na rezionaly, ary koa ny eny antoerana.
- Ny mpiasan'ny ONG eny amin'ny ambaratonga nationaly, ambaratongam-paritra, ary ny eny antoerana.
- Ny mpampiasa ny ala, ny tompon'ny ala, ary ny mponina monina eny amin'ny faritra manodidina ny ala.

Raha tsy mampaninona dia tiako raha raisina an-tsoratra sy amin'ny alalan'ny vata fandraisam-peo ny resaka izay ho atao. Ny raki-tsoratra sy ny raki-peo dia ho tazoniko ho ahy irery fa tsy misy olona hafa afaka ny ahita, ihaino na koa mamaky azy. Ho fanampin'izany, ny anaranao dia tsy ho voatonotonona na aseho miaraka amin'ny valin-teny izay homena ahy. Afaky ny mampanantena anao aho ny amin'izany.

Toy izao no mety ho fandehanan'ny fikarohana. Rehefa avy mahavita an'ity fanadihadihana ity aho dia tsy maintsy miverina any Etazonia. Mikendy ny hiverina aty amin'ny faritry Menabe indray aho amin'ny taona 2005 hamarana ny fanangonana ny données izay tsy maintsy hataoko.

Antenaiko fa ny vokatr'ity fikarohana ataoko ity dia hanasoa sy hanatsara ny fomba fanajariana sy fitantanana ny ala izay efa tanterahina aty amin'ny faritra moa amin'izao. Rehefa vita ny fikarohana dia ho asehoko anareo ny vokatra.

### **Ny tomboatoa sy ny mety ho olana**

Raha manaiky ny handray anjara amin'ity fanadihadihana ity ianao dia tsara ny mampahafantatra anao mialoha fa misy tombotsoa sy ny olana kely mety ho hitanao:

- Ny fahalanian'ny fotoananao mandray anjara nefa mety tsy dia hisy setriny ho azonao firy avy amin'ny vokatry ny fikarohana.

- Mety ho hisedra fanontaniana mikasika ny fomba amam-panao na koa finoana momba ny ala.
- Mety iangaviana koa ny hiresaka mikasika ny lalana mifehy ny ala, ny fandaminana misy, ary koa ny fanarahan-dalana.

Eo ampandraisana anjara amin'ity fikarohana ity, dia mety ahita an'ireto tombotsoa manaraka ireto koa anefa ianao:

- Ny fandraisanao anjara dia ho raisina ho isan'ny soso-kevitra izay hoentina hanatsarana mivantana fomba fintantana sy fiarovanana ny ala ary koa ny fanatanterahana an'izany ety amin'ny faritr'i Menabe.
- Ity no isan'ny fotoana ahafanao manome ny soso-kevitrao momba ny politika ankapobeny mikasika ny fitantanana ny ala ary koa ny fomba fanatanterahana an'izany.
- Ho isan'ireo ahazo fampianarana mikasika ny fomba entina manao fikarohana ary koa ny metodolojia hanaovana an'izany ianao eo ampiresahina miaraka amiko.

### **Fifanekena ambava**

Fandraisana anjara amin'ity fikarohana ity dia tsy an-tery. Raha ohatra ka tsy te-handray anjara ianao noho ny antony samihafa dia afaky ny manda tsotra izao. Raha ohatra ka vonona kosa ianao ny handray anjara nefa tsy te-hamaly ny fanontaniana sasan-tsasany, malalaka tsara ianao ny manao an'izay. Azonao tanteraka ihany koa ny manapitra na manapaka avy hatrany ny fanadihadihana.

Araky ny nambara tetsy aloha, ity fanadihadihana ity dia tsiambara telo. Tsy ho voatonotonona mihitsy ny anaranao ary koa tsy ho apetaka miaraka amin'ireo valim-panontanianao. Izaho ihany no mety mahafantatra ny anaranao.

Azonao tsara ve ireo voalazako etsy ambony ireo?

Manana fanontaniana ve ianao?

Manaiky ve ianao ny handray anjara amin'ity fikarohana ity?

Manaiky ve ianao raha ohatra ka ho raisim-peo?

APPENDIX C

HUMAN SUBJECTS' APPROVALS



Cornell University Telephone: 607 255-5128  
129 Dry Hall Fax: 607 255-5078  
Ithaca, NY 14853-2801

University Committee on Human Subjects

NOTIFICATION OF EXPEDITED APPROVAL

Protocol ID# 0402010

To: Daniela B. Raik  
From: Elaine Wethington, UCHS Chair *Elaine Wethington*  
Date of approval: April 19, 2004  
Project(s): *Implications of Participatory Forest Management for Achieving Conservation and Social Justice Goals*

As Chairperson of the University Committee on Human Subjects, I have reviewed and given an expedited approval to the above referenced project as far as the use of human subjects is concerned. This approval shall remain in effect for a period of one year.

The terms of Cornell University's Federalwide Assurance (FWA) with the federal government mandate the following important conditions for investigators:

1. All consent forms, records of study participation, and other consent materials must be held by the investigator for three years after the close of the study.
2. Investigators must submit to UCHS any proposed amendment to the study protocol, consent forms, interviews, recruiting strategies, and other materials. Investigators may not use these materials with human subjects until UCHS has reviewed them. For information about study amendment procedures and access to the Amendment's application form, please refer to the UCHS website: [http://www.osp.cornell.edu/Compliance/UCHS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCHS/Approval_Requests.htm)
3. Investigators must promptly report to UCHS any adverse events involving human subjects. The definition of prompt reporting depends upon the seriousness of the adverse event. For guidance on recognizing, defining, and reporting adverse events to UCHS, please refer to the UCHS website: <http://www.osp.cornell.edu/Compliance/UCHS/Adverse.htm>.

If the use of human subjects is to continue beyond the assigned approval period, federal requirements mandate that the protocol be re-reviewed and receive an updated approval. You may not continue to use human subjects beyond the stated approval period without an updated approval. Please note that the terms of our FWA with the federal government do not allow for an extension of this period without review. Continuing without an updated approval constitutes a violation of University policy and federal regulations. Research funds administered by the Office of Sponsored Programs will not be released to any project that does not have a current UCHS approval.

Two months before the expiration of your approval, you will be sent a notification of pending expiration, and an explanation of the renewal process. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the UCHS to conduct its review before the current approval expires. Please allow at least two weeks for the review.

**\*\*If you do not plan to renew your protocol approval at the end of the year, you must provide the UCHS with a Project Closure form. A link to the Project Closure form can be found at [http://www.osp.cornell.edu/Compliance/UCHS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCHS/Approval_Requests.htm).**

cc: Daniel Decker



Cornell University  
115 Day Hall  
Ithaca, NY 14853-2501

Telephone: 607 255-5138  
Fax: 607 255-5678

University Committee on Human Subjects

**NOTIFICATION OF EXPEDITED APPROVAL**

Protocol ID# 04-02-018

To: Daniela B. Reik  
From: Elaine Withington, UCHS Chair *Elaine Withington/s*  
Date of approval: April 4, 2005  
Project(s): *Implications of Participatory Forest Management for Achieving Conservation and Social Justice Goals*

As Chairperson of the University Committee on Human Subjects, I have reviewed and given an expedited approval to the above referenced project as far as the use of human subjects is concerned. This approval shall remain in effect for a period of one year.

The terms of Cornell University's Federalwide Assurance (FWA) with the federal government mandate the following important conditions for investigators:

1. All consent forms, records of study participation, and other consent materials must be held by the investigator for three years after the close of the study.
2. Investigators must submit to UCHS any proposed amendment to the study protocol, consent forms, interviews, recruiting strategies, and other materials. Investigators may not use these materials with human subjects until UCHS has reviewed them. For information about study amendment procedures and access to the Amendments application form, please refer to the UCHS website: [http://www.osp.cornell.edu/Compliance/UCHS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCHS/Approval_Requests.htm)
3. Investigators must promptly report to UCHS any adverse events involving human subjects. The definition of prompt reporting depends upon the seriousness of the adverse event. For guidance on recognizing, defining, and reporting adverse events to UCHS, please refer to the UCHS website: <http://www.osp.cornell.edu/Compliance/UCHS/Adverse.htm>.

If the use of human subjects is to continue beyond the assigned approval period, federal requirements mandate that the protocol be re-reviewed and receive an updated approval. You may not continue to use human subjects beyond the stated approval period without an updated approval. Please note that the terms of our FWA with the federal government do not allow for an extension of this period without review. Continuing without an updated approval constitutes a violation of University policy and federal regulations. Research funds administered by the Office of Sponsored Programs will not be released to any project that does not have a current UCHS approval.

Two months before the expiration of your approval, you will be sent a notification of pending expiration, and an explanation of the renewal process. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the UCHS to conduct its review before the current approval expires. Please allow at least two weeks for the review.

**\*\*If you do not plan to renew your protocol approval at the end of the year, you must provide the UCHS with a Project Closure form. A link to the Project Closure form can be found at [http://www.osp.cornell.edu/Compliance/UCHS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCHS/Approval_Requests.htm).**

cc: Daniel Decker (djd0)



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University Committee on  
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**NOTIFICATION OF EXPEDITED APPROVAL**

Protocol ID# **04-C4-01B**

To: Daniela B. Raik  
From: Elaine Worthington, UCHS Chair *Elaine Worthington Es*  
Date of approval: March 20, 2008 (If you are using a consent form, write this date at the bottom of it, next.)  
Project(s): *Implications of Participatory Forest Management for Addressing Conservation and Social Justice Goals*

As Chairperson of the University Committee on Human Subjects, I have reviewed and given an expedited approval to the above referenced project as far as the use of human subjects is concerned. **This approval shall remain in effect for a period of one year.**

The terms of Cornell University's Federalwide Assurance (FWA) with the federal government mandate the following important conditions for investigators:

1. All consent forms, records of study participation, and other consent materials **must** be held by the investigator for **three years** after the close of the study.
2. Investigators must submit to UCHS any **proposed amendment** to the study protocol, consent forms, interviews, recruiting strategies, and other materials. Investigators may not use these materials with human subjects until UCHS has reviewed them. For information about study amendment procedures and access to the Amendments application form, please refer to the UCHS website: [http://www.osp.cornell.edu/Compliance/UCHS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCHS/Approval_Requests.htm)
3. Investigators must promptly report to UCHS any **adverse events** involving human subjects. The definition of prompt reporting depends upon the seriousness of the adverse event. For guidance on recognizing, defining, and reporting adverse events to UCHS, please refer to the UCHS website: <http://www.osp.cornell.edu/Compliance/UCHS/Adverse.htm>.

If the use of human subjects is to continue beyond the assigned approval period, federal requirements mandate that the protocol be re-reviewed and receive an updated approval. **You may not continue to use human subjects beyond the stated approval period without an updated approval.** Please note that the terms of our FWA with the federal government do not allow for an extension of this period without review. Continuing without an updated approval constitutes a violation of University policy and federal regulations. Research funds administered by the Office of Sponsored Programs will not be released to any project that does not have a current UCHS approval.

Two months before the expiration of your approval, you will be sent a notification of pending expiration, and an explanation of the renewal process. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the UCHS to conduct its review before the current approval expires. Please allow at least two weeks for the review.

**\*\*If you do not plan to renew your protocol approval at the end of the year, you must provide the UCHS with a Project Closure form. A link to the Project Closure form can be found at [http://www.osp.cornell.edu/Compliance/UCHS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCHS/Approval_Requests.htm).**

c: Daniel Decker (djd6)



Cornell University  
Office of Research Integrity  
and Assurance

Institutional Review Board  
for Human Participants  
25 Greenwood Drive, Suite 500  
Ithaca, New York 14850-1285  
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F 607 255.0756  
ucis@cornell.edu  
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**NOTIFICATION OF EXPEDITED APPROVAL**

Protocol ID# **04 04 018**

Termination Date: 2/28/2008

To: Daniela B. Rask  
From: Sarah L. Danno, UCIS Coordinator *Sarah L. Danno*  
Date of approval: March 1, 2007 (If you are using a consent form, enter this date at the bottom of the form.)  
Project(s): *Implications of Participatory Forest Management for Achieving Conservation and Social Justice Goals*

A member of the UCIS has reviewed and given an expedited approval to the above referenced project as far as the use of human subjects is concerned. This approval shall remain in effect for a period of one year.

The terms of Cornell University's Federalwide Assurance (FWA) with the federal government mandate the following important conditions for investigators:

1. All consent forms, records of study participation, and other consent materials must be held by the investigator for three years after the close of the study.
2. Investigators must submit to UCIS any proposed amendment to the study protocol, consent forms, interviews, recruiting strategies, and other materials. Investigators may not use these materials with human subjects until UCIS has reviewed them. For information about study amendment procedures and access to the Amendments application form, please refer to the UCIS website at [http://www.osp.cornell.edu/Compliance/UCIS/Approval\\_Requests.htm](http://www.osp.cornell.edu/Compliance/UCIS/Approval_Requests.htm)
3. Investigators must promptly report to UCIS any adverse events involving human subjects. The definition of prompt reporting depends upon the seriousness of the adverse event. For guidance on recognizing, defining, and reporting adverse events to UCIS, please refer to the UCIS website at <http://www.osp.cornell.edu/Compliance/UCIS/Adverse.htm>.

If the use of human subjects is to continue beyond the assigned approval period, federal requirements mandate that the protocol be re-reviewed and receive an updated approval. You may not continue to use human subjects beyond the stated approval period without an updated approval. Please note that the terms of our FWA with the federal government do not allow for an extension of this period without review. Continuing, without an updated approval constitutes a violation of University policy and federal regulations. Research funds administered by the Office of Sponsored Programs will not be released to any project that does not have a current UCIS approval.

Two months before the expiration of your approval, you will be sent a notification of pending expiration, and an explanation of the renewal process. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the UCIS to conduct its review before the current approval expires. Please allow at least two weeks for the review.

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cc: David Dacker (ddj16)

## APPENDIX D

### GUIDING QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS English

1. Have you been involved in the GCF process? In what ways?
2. Why did you/did you not become involved in GCF?
3. Can you tell me the story of how the GCF evolved?
4. Who has been involved? Who are the actors?
5. How do these people relate to one another? What are their relationships?
6. How did you use the forest before GCF? (for what?)
7. How do you use the forest now? (for what?)
8. Why is the forest important to you?
9. Who owns the forest?
10. Who has rights to the forest? What rights to they have?
11. Has GCF given you more or less access to forest resources?
12. Has the GCF been a positive or negative development for the community?  
Why?
13. What are the goals of GCF?
14. Do you own land? Agricultural/forested land?
15. How old are you?
16. Are you married?
17. Do you have children? How many?

GUIDING QUESTIONS FOR SEMI-STRUCTURED INTERVIEWS  
Malagasy

1. Moa ve ainao isan'ny mpandray anjara amin'ny fandehanan'ny GCF? Amin'ny fomba ahoana?
2. Raha tsia dia inona no antony tsy nandraisanao anjara?
3. Mba afaka tantarainao ahy kely ve ny momba ny fananganana ny GCF sy ny fandehananany?
4. Iza avy no voakasika mivantana na koa efa nandray anjara? Ary olona tahaky ny ahoana ireo mpiasa na mpikambana ao aminy?
5. Inona no fifandraisana na koa fiaraha-miasa misy eo amin'ireo olona voalaza etsy ambony ireo? Misy fifandraisana mivantana ve izy ireo?
6. Ahoana no fomba fampiasanareo na koa fitrandrahanareo ny ala talohan'ny nahatongavan'ny GCF? Ho amin'ny inona?
7. Ahoana no fomba fampiasanareo na koa ny fitrandrahanareo ny ala amin'izao?
8. Inona no maha sarobidy ny ala hoy ianao? Nahoana no ilaina ny ala?
9. Iza no tompon'ny ala? Na koa miandraikitra mivantana ny fitantanana ny ala?
10. Iza no manana zo sy fahefana amin'ny fampiasana ny ala? Zo ohatry ny ahoana no ananan'ilay olona na koa anan'izy ireo?
11. Ohatry ny ahoana ny fahefana na zo omen'ny GCF anareo amin'ny fampiasana ny ala? Malalaka sa kely dia kely?
12. Mba mitondra vokatsoa eo amin'ny fampandrosoana ny mponina ve ny fisian'ny GCF? Sa ny mifanohitra amin'izany?
13. Inona avy ireo tanjon'ny GSF?
14. Manana tany ve ianao? Tanimboly sa tanin-kala?
15. Raha tsy mahadiso, firy taona ianao?
16. Manambady ve ianao?
17. Efa manan-janaka?

APPENDIX E

PRETEST 1 SURVEY INSTRUMENT  
English

Date \_\_\_\_\_ Enumerator \_\_\_\_\_ Survey No. \_\_\_\_\_

Governance Outcomes of Community-based Forest Management in Madagascar:

A SURVEY

Human Dimensions Research Unit  
Department of Natural Resources  
Cornell University

Sponsored by:  
The National Science Foundation

*You were selected for this survey because you have first-hand knowledge of community-based forest management (GELOSE/GCF) in Madagascar.*

1. Commune \_\_\_\_\_
2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Please tell us about your participation in community-based forest management:*

3. Are you directly involved in community-based forest management? YES NO
- a. If yes, how are you involved in community-based forest management?
1. Forest user
  2. COBA Member
  3. Local state forest agent
  4. National state forest agent
  5. Mayor's office
  6. Local NGO staff
  7. National NGO staff
  8. Other \_\_\_\_\_
4. How often do you participate in meetings about community-based forest management?
1. Never
  2. Once a year
  3. 2-3 times a year
  4. Every 2 months
  5. Monthly
  6. Twice a month
  7. Weekly
5. What is the main purpose of the community-based forest management contract you participate in?
1. Conservation
  2. Sustainable Use
  3. Other \_\_\_\_\_
6. What type of forest do you manage in the community-based forest management contract you participate in?
1. Natural humid forest
  2. Natural dry forest
  3. Tupa
  4. Other \_\_\_\_\_

7. Did rules regarding forest use exist prior to the community-based forest management contract?

YES NO Don't Know

a. If yes, please describe these rules.

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8. Have you benefited from community-based forest management? YES NO

a. If yes, what benefits do you receive from community-based forest management?

1. Conserve the forest for future generations
2. Protection from migrants
3. Source of employment
4. Economic benefits from forest use
5. Secure access to the forest for me and my family
6. More control over management of the forest
7. Other \_\_\_\_\_

9. Have you incurred costs from community-based forest management? YES NO

a. If yes, what costs have you incurred from community-based forest management?

1. Time in meetings
2. Restrictions on forest use
3. Forest patrol and monitoring
4. Other \_\_\_\_\_

*People have different experiences with community-based forest management. To what extent do you agree or disagree with the following statements about community-based forest management?*

	<u>Strongly</u> <u>Agree</u>	<u>Slightly</u> <u>Agree</u>	<u>Neutral/</u> <u>Don't know</u>	<u>Slightly</u> <u>Disagree</u>	<u>Strongly</u> <u>Disagree</u>
10. Community-based forest management is a mechanism for good governance of forests.	1	2	3	4	5
11. Fair rules for community-based forest management exist.	1	2	3	4	5
12. Meetings for decision making about community-based forest management are open to all those who wish to participate.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
13. Decision makers are accountable to stakeholders in community-based forest management.	1	2	3	4	5
14. Information about community-based forest management is communicated to those who need it.	1	2	3	4	5
15. I feel I have the same goals for community-based forest management as others who participate.	1	2	3	4	5
16. Rules about forest access and use are monitored.	1	2	3	4	5
17. I feel the costs associated with community-based forest management are distributed equitably.	1	2	3	4	5
18. Community-based forest management is responsive to participants' forest-related interests.	1	2	3	4	5
19. The spatial borders of the forest are clear.	1	2	3	4	5
20. In community-based forest management, the community has the authority to create rules.	1	2	3	4	5
21. The government institutional structures are clear when it comes to community-based forest management.	1	2	3	4	5
22. Both the community and the government have agreed to a set of fair and clear rules for community-based forest management.	1	2	3	4	5
23. Participants in community-based forest management are able to hold decision makers accountable for their decisions.	1	2	3	4	5
24. When communities have contracts with the government to manage forests, the result is good governance.	1	2	3	4	5
25. All participants in community-based forest management in my area share a common set of goals.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
26. I have access to information I need about community-based forest management.	1	2	3	4	5
27. People who break rules associated with community-based forest management are pursued and held accountable.	1	2	3	4	5
28. Services regarding forest use are timely.	1	2	3	4	5
29. Decision-making authority is transferred from the government to the community in community-based forest management.	1	2	3	4	5
30. The distribution of costs and benefits associated with community-based forest management is as it should be.	1	2	3	4	5
31. Services regarding forest use are available.	1	2	3	4	5
32. I feel the forest area managed is clearly defined.	1	2	3	4	5
33. The overall goals of community-based forest management are the same for me as they are for others in my area.	1	2	3	4	5
34. The community institutional structures are clear when it comes to community-based forest management.	1	2	3	4	5
35. I do not feel I was excluded from decision making about community-based forest management.	1	2	3	4	5
36. Stakeholders trust decision makers when it comes to community-based forest management.	1	2	3	4	5
37. Information about community-based forest management is available.	1	2	3	4	5
38. Rules are impartially enforced.	1	2	3	4	5
39. I know who is involved in community-based forest management.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
40. I feel the benefits associated with community-based forest management are distributed equitably.	1	2	3	4	5
41. Services regarding forest use are adequate.	1	2	3	4	5
42. Under community-based forest management, the community enforces rules.	1	2	3	4	5
43. Good governance of forests occurs when communities collaborate with the government to manage forests.	1	2	3	4	5
44. Community institutional structures for community-based forest management are dependable.	1	2	3	4	5
45. I was given an opportunity to participate in decision making for community-based forest management.	1	2	3	4	5
46. Rules for community-based forest management are clear about the government and the community's responsibilities.	1	2	3	4	5
47. Government institutional structures for community-based forest management are dependable.	1	2	3	4	5

*Please answer the following true or false questions about community-based forest management.*

48. Community-based forest management is a contract between the government and the community.	TRUE	FALSE	DON'T KNOW
49. The Mayor's office has a role to play in community-based forest management.	TRUE	FALSE	DON'T KNOW
50. Initial contracts last for 3 years.	TRUE	FALSE	DON'T KNOW
51. If contracts are renewed, they are renewed for 10 years.	TRUE	FALSE	DON'T KNOW
52. Under community-based forest management, the community becomes the owner of the land.	TRUE	FALSE	DON'T KNOW

*Please tell us about your background. Please remember that all responses are confidential.*

53. What year were you born? 19\_\_\_\_\_

54. What is your highest level of education? (Circle only one number)

1. Less than primary school degree (CEPE)
2. Primary school degree (CEPE)
3. Less than middle school degree (BEPC)
4. Middle school degree (BEPC)
5. Less than high school degree (BAC)
6. High school degree (BAC)
7. 2 years of college (DEUG)
8. 3 years of college (Licence)
9. 5 years of college (Maitrise)
10. More than 5 years of college

55. MALE          FEMALE

PRETEST 1 SURVEY INSTRUMENT  
Malagasy

Daty \_\_\_\_\_ Enqueteur \_\_\_\_\_ Questionnaire No. \_\_\_\_\_

Vokatry ny fitantanana ny GCF/GELOSE eto Madagasikara

FANADIHADIANA notontosain'ny:  
Sampana Fikarohana momba ny maha olona  
Departemanta misahana ny harena-javaboahary  
Oniversiten'i Cornell

Mpanohana: National Science Foundation

*Voafidy handray anjara amin'ity fanadihadiana ity ianao noho ny fahalalana manokana anananao mikasika ny GCF/GELOSE eto Madagasikara.*

1. Commune \_\_\_\_\_

2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Lazalazao ny fandraisanao anjara amin'ny GCF/GELOSE.*

3. Mandray anjara mivantana amin'ny GCF/GELOSE ve ianao? ENY TSIA

a. Raha eny, amin'ny maha inona anao no andraisanao anjara?

1. Mpitrandraka ala (mpampiasa vokatry ny ala)
2. Mpikambana VOI
3. Mpiasan'ny Rano sy Ala eo an-toerana
4. Mpiasan'ny Rano sy Ala eo amin'ny sehatra nasionaly
5. Mpiasan'ny Kaominina
6. Mpiasan'ny ONG eo an-toerana
7. Mpiasan'ny ONG eo amin'ny sehatra nasionaly
8. Hafa \_\_\_\_\_

4. Impiry ianao no manatrika fivoriana amin'ny GCF/GELOSE?

1. Tsy manatrika mihitsy
2. Indray mandeha isan-taona
3. Indroa na telo isan-taona
4. Esaka ny roa volana
5. Isan-bolana
6. Isa-tapa-bolana
7. Isan-kerinandro

5. Inona no tanjona kine ndrin'ny fifanekena GCF/GELOSE andraisanao anjara?

1. Fikajiana ny ala
2. Fitrandrahana maharitra
3. Hafa \_\_\_\_\_

6. Karazana ala toy inona no tantananao ao amin'ny fifanekena GCF/GELOSE andraisanao anjara?

1. Ala vanjanahary amin'ny faritra be orana
2. Ala vanjanahary amin'ny faritra maina
3. Tapis
4. Hafa \_\_\_\_\_

7. Efa nisy lalina mifehy ny fitrandrahana ny ala ve talohan'ny fifanekena GCF/GELOSE?

ENY TSIA TSY FANTATRO

a. Raha eny, hazalazao ny momba izany lalina izany

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8. Nahitanao vokatsoa ve ny GCF/GELOSE? ENY TSIA

a. Raha eny, inona no karazana vokatsoa azonao avy amin'ny GCF/GELOSE?

1. Fikajiana ny ala ho an'ny tararaka amam-para
2. Fiarovana azy amin'ny mpifindra monina
3. Ahitana asa
4. Tombontsoa ara-toe karena avy amin'ny fitrandrahana ny ala
5. Ahazoanay sy ny fianakaviano miditra any anaty ala
6. Fitantanana tsaratsara kokoa ny ala
7. Hafa \_\_\_\_\_

9. Nisy tambiny notakiana taminao ve tamin'ny GCF/GELOSE? ENY TSIA

a. Raha eny, inona no karazana tambiny notakiana?

1. Fotoana hanatrehana fivoriana
2. Famerana ny fitrandrahana ny ala
3. Fisafoana sy fanaraha-maso ny ala
4. Hafa \_\_\_\_\_

*Samy hafa ny ir akefan'ny tirairay amin'ny GCF/GELOSE sy ny fahitany azy. Iza amin'ireto valintany mikasika ny GCF/GELOSE ireto no mijanaraka amin'ny foto-kevitrao?*

	Tena <u>gloko</u>	Ekoko <u>ihany</u>	Tsy <u>Fantanatra</u>	Tsy dia <u>gloko kontra</u>	Tena tsy <u>gloko</u>
10. Fizotra mankany amin'ny fitantanana mahomby ny ala ny GCF/GELOSE	1	2	3	4	5
11. Mety ny lalina mipe-traka mikasika ny GCF/GELOSE	1	2	3	4	5
12. Misokatra amin'ny rehetra izay manampaniriana hanatrika izany ny fivoriana andraisana fanapahan-kevitra mikasika ny GCF/GELOSE	1	2	3	4	5

	<u>Tena</u> <u>sheko</u>	<u>Ekoko</u> <u>ihany</u>	<u>Tsy</u> <u>Fantanaitra</u>	<u>Tsy dia</u> <u>sheko loatra</u>	<u>Tena tsy</u> <u>sheko</u>
13. Tompon'andraikitra eo anatrehan'ny mpiray antoka amin'ny GCF/GELOSE ny mpanapa-kevitra.	1	2	3	4	5
14. Misokatra ho an'ny rehetra ny fahazoambaovao/oro hevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
15. Heve rinao fa mitovy fijery sy tanjona aminao ny mpandray anjara hafa ao amin'ny GCF/GELOSE.	1	2	3	4	5
16. Misy fanaraha-maso ny lalàna mifehy ny fidirana ao an'ala sy ny fitrandrahana azy.	1	2	3	4	5
17. Heve rinao fa voatsinjara ara-drariny ny tambiny amin'ny GCF/GELOSE.	1	2	3	4	5
18. Mamaly ny betahetan'ny mpandray anjara ny GCF/GELOSE.	1	2	3	4	5
19. Voafaritra mazava ny fetran'ny ala.	1	2	3	4	5
20. Manam-pahafana hanefy lalàna ny vondron'olona ao amin'ny GCF/GELOSE.	1	2	3	4	5
21. Mazava eo anivon'ny GCF/GELOSE ny rafitry ny governemanta.	1	2	3	4	5
22. Nifanaiky ny governemanta sy ny vondron'olona fa hametraka lalàna ara-drariny sy mazava ho an'ny GCF/GELOSE.	1	2	3	4	5
23. Afaka mitana ny mpanapa-kevitra ho tompon'andraikitra amin'ny fanapaha-keviny ny mpandray anjara ao amin'ny GCF/GELOSE.	1	2	3	4	5
24. Fitantanana mahomby no vokatry ny fisian'ny fifanekena eo amin'ny vondron'olona sy ny fanjakana.	1	2	3	4	5
25. Mitovy tanjona daholo ny mpandray anjara amin'ny GCF/GELOSE ao amin'ny faritra misy anay.	1	2	3	4	5

	<u>Tena ekeko</u>	<u>Ekoko ihany</u>	<u>Tsy fantanitra</u>	<u>Tsy dia ekeko koa</u>	<u>Tena tsy ekeko</u>
26. Azonao avokoa ny vaovao/oro hevitra rehetra izay ilaiko momba ny GCF/GELOSE.	1	2	3	4	5
27. Henje hina sy tanana ho tompo'andraikitra ireo rehetra izay tsy manaja ny lalana momba ny GCF/GELOSE.	1	2	3	4	5
28. Mandeha tsara ara-potoana ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
29. Voafindra any amin'ny vondron'olona ny fahefama-panjakana manapa-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
30. Mandeha tsara amin'ny tokony ho izy ny fitsinjarama ny tambiny sy ny volatsoa aza avy amin'ny GCF/GELOSE.	1	2	3	4	5
31. Mandeha an-tsakany sy andovany ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
32. Hewarinao fa mazava tsara ny veloran'ny ala tantanana.	1	2	3	4	5
33. Mitovy fijery amin'ny olon-kafa eto antoerana ianao raha ny momba ny tanjona ankapoben'ny GCF/GELOSE no resahana.	1	2	3	4	5
34. Mazava eo anivon'ny GCF/GELOSE ny rafitry ny vondron'olona.	1	2	3	4	5
35. Tsy mahatsiaro tena natao zanak'ikalahafa ianao eo amin'ny fanapahan-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
36. Matoky ny mpanapa-kevitra ny mpiray antoka eo anivon'ny GCF/GELOSE.	1	2	3	4	5
37. Malalaka ny fahazoam-baovao mikasika ny GCF/GELOSE.	1	2	3	4	5
38. Ara-drarin'ny fampiharana ny lalana.	1	2	3	4	5
39. Fantatrao ireo manana andraikitra ao amin'ny GCF/GELOSE.	1	2	3	4	5

	<u>Tena ekeko</u>	<u>Ekeko ihany</u>	<u>Tsy fantanitra</u>	<u>Tsy dia ekeko kontra</u>	<u>Tena tsy ekeko</u>
40. Heve rinao fa voatsinjara ara-drariny ny vokatsoa azo avy amin'ny GCF/GELOSE.	1	2	3	4	5
41. Ampy tsara ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permit</i> ).	1	2	3	4	5
42. Araka ny GCF/GELOSE dia ny vondron'olona no mampihatra ny lalina.	1	2	3	4	5
43. Tsara tantana ny ala rehefa miara-miasa ny vondron'olona sy ny fanjakana.	1	2	3	4	5
44. Mahafatoky ny rafitry ny vondron'olona eo anivon'ny GCF/GELOSE.	1	2	3	4	5
45. Nisy fotoana nandraisanao anjara tamin'ny fanapahan-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
46. Voafaritra mazava ao amin'ny lalina mikasika ny GCF/GELOSE ny andraikitra ny fanjakana sy ny vondron'olona.	1	2	3	4	5
47. Mahafatoky ny rafitry ny fanjakana eo anivon'ny GCF/GELOSE.	1	2	3	4	5

*Ir eto misy fanontaniana visivizy mikasika ny GCF/GELOSE ka mba valia araky ny fahafantaranao azy na marina na diso na tsy fantara*

48. Ny GCF/GELOSE dia fifanekena eo amin'ny fanjakana sy ny vondron'olona.	MARINA	DISO	TSY FANTATRO
49. Manana anjara toerana eo amin'ny GCF/GELOSE ny Ben'ny tanàna.	MARINA	DISO	TSY FANTATRO
50. Maharitra 3 taona ny fifanekena eo ampiandohany.	MARINA	DISO	TSY FANTATRO
51. Raha avozina ny fifanekena dia 10 taona ny faharetany.	MARINA	DISO	TSY FANTATRO
52. Araka ny GCF/GELOSE dia ny vondron'olona no lasa tompo'ny tany.	MARINA	DISO	TSY FANTATRO

*Mba afaka lazainao anay ve ny mombamomba anao?*

53. Taona inona ianao no teraka? 19 \_\_\_\_\_

54. Hatraiza ny fianarana vitanao? (valinteny iray ihany omena)

1. Tsy nihoatra ny fanabeazana fototra (CEPE)
2. Nahazo ny mari-pahaizana fanabeazana fototra (CEPE)
3. Tsy nihoatra ny ambaratonga faharoa dingana voalohany (BEPC)
4. Nahazo ny mari-pahaizana ambaratonga faharoa dingana voalohany (BEPC)
5. Tsy nihoatra ny ambaratonga faharoa dingana faharoa (BAC)
6. Nahazo ny mari-pahaizana ambaratonga faharoa dingana faharoa (BAC)
7. Nahavita 2 taona tany amin'ny anjerimanontolo (DEUG)
8. Nahavita 3 taona tany amin'ny anjerimanontolo (Licence)
9. Nahavita 5 taona tany amin'ny anjerimanontolo (Maîtrise)
10. Nahavita nihoatra ny 5 taona tany amin'ny anjerimanontolo

55. LAHY VAVY

APPENDIX F

PRETEST 2 SURVEY INSTRUMENT  
English

Date \_\_\_\_\_ Enumerator \_\_\_\_\_ Survey No. \_\_\_\_\_

Governance Outcomes of Community-based Forest Management in Madagascar:  
13 June 2006  
A SURVEY

Human Dimensions Research Unit  
Department of Natural Resources  
Cornell University

Sponsored by:  
The National Science Foundation

*You were selected for this survey because you have first-hand knowledge of community-based forest management (GELOSE/GCF) in Madagascar.*

1. Commune \_\_\_\_\_
2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Please tell us about your participation in community-based forest management:*

3. Are you directly involved in community-based forest management? YES NO
- a. If yes, how are you involved in community-based forest management?
- |                                |   |   |
|--------------------------------|---|---|
| 1. Forest resource user        | 1 | 0 |
| 2. COBA Member                 | 1 | 0 |
| 3. Local state forest agent    | 1 | 0 |
| 4. National state forest agent | 1 | 0 |
| 5. Mayor's office              | 1 | 0 |
| 6. Local NGO staff             | 1 | 0 |
| 7. National NGO staff          | 1 | 0 |
| 8. Other _____                 | 1 | 0 |
4. How often do you participate in meetings about community-based forest management?
1. Never
  2. Once a year
  3. 2-3 times a year
  4. Every 3 months
  5. Every 2 months
  6. Monthly
  7. Twice a month
  8. Weekly
5. What is the main purpose of the community-based forest management contract you participate in?
- |                    |   |   |
|--------------------|---|---|
| 1. Conservation    | 1 | 0 |
| 2. Sustainable Use | 1 | 0 |
| 3. Other _____     | 1 | 0 |
6. What type of forest do you manage in the community-based forest management contract you participate in?
- |                         |                |
|-------------------------|----------------|
| 1. Natural humid forest | 3. Tapia       |
| 2. Natural dry forest   | 4. Other _____ |

7. Did rules regarding forest use exist prior to the community-based forest management contract?

YES NO Don't Know

a. If yes, please describe these rules.

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8. Have you benefited from community-based forest management? YES NO

a. If yes, what benefits do you receive from community-based forest management?

1. Conserve the forest for future generations	1	0
2. Protection from migrants	1	0
3. Source of employment	1	0
4. Economic benefits from forest use	1	0
5. Secure access to the forest for me and my family	1	0
6. More control over management of the forest	1	0
7. Other _____	1	0

9. Have you incurred costs from community-based forest management? YES NO

a. If yes, what costs have you incurred from community-based forest management?

1. Time in meetings	1	0
2. Restrictions on forest use	1	0
3. Forest patrol and monitoring	1	0
4. Membership fees	1	0
5. Other _____	1	0

People have different experiences with community-based forest management. To what extent do you agree or disagree with the following statements about community-based forest management?

	Strongly Agree	Slightly Agree	Neutral/ Don't know	Slightly Disagree	Strongly Disagree
10. Community-based forest management is a mechanism for good governance of forests.	1	2	3	4	5
11. Fair rules for community-based forest management do not exist.	5	4	3	2	1
12. Meetings for decision making about community-based forest management are open to all those who wish to participate.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
13. Decision makers are accountable to stakeholders in community-based forest management.	1	2	3	4	5
14. Information about community-based forest management is communicated to those who need it.	1	2	3	4	5
15. I do not have the same goals for community-based forest management as others who participate.	5	4	3	2	1
16. Use of forest resources is monitored.	1	2	3	4	5
17. I feel the costs associated with community-based forest management are distributed equitably.	1	2	3	4	5
18. Community-based forest management is responsive to participants' forest-related interests.	1	2	3	4	5
19. The spatial borders of the forest are clear.	1	2	3	4	5
20. In community-based forest management, the community has the authority to create rules.	1	2	3	4	5
21. The government institutional structures are clear when it comes to community-based forest management.	1	2	3	4	5
22. Both the community and the government have agreed to a set of fair and clear rules for community-based forest management.	1	2	3	4	5
23. Participants in community-based forest management are able to hold decision makers accountable for their decisions.	1	2	3	4	5
24. When communities have contracts with the government to manage forests, the result is not good governance.	5	4	3	2	1
25. All participants in community-based forest management in my area share a common set of goals.	1	2	3	4	5
26. The objectives of community-based management are not being met.	5	4	3	2	1

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
27. I have access to information I need about community-based forest management.	1	2	3	4	5
28. People who break rules associated with community-based forest management are pursued.	1	2	3	4	5
29. Services regarding forest use are timely.	1	2	3	4	5
30. Decision-making authority is transferred from the government to the community in c-b forest management.	1	2	3	4	5
31. The distribution of costs and benefits associated with community-based forest management is as it should be.	1	2	3	4	5
32. Services regarding forest use are available.	1	2	3	4	5
33. I feel the forest area managed is clearly defined.	1	2	3	4	5
34. The overall goals of community-based forest management are the same for me as they are for others in my area.	1	2	3	4	5
35. The community institutional structures are clear when it comes to community-based forest management.	1	2	3	4	5
36. I do not feel I was excluded from decision making about community-based forest management.	1	2	3	4	5
37. Stakeholders trust decision makers when it comes to community-based forest management.	1	2	3	4	5
38. Information about community-based forest management is available.	1	2	3	4	5
39. Rules are impartially enforced.	1	2	3	4	5
40. We are meeting our objectives for community-based forest management.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
41. People's behavior in the forest is not monitored.	5	4	3	2	1
42. I feel the benefits associated with community-based forest management are distributed equitably.	1	2	3	4	5
43. Services regarding forest use are adequate.	1	2	3	4	5
44. Under community-based forest management, the community enforces rules.	1	2	3	4	5
45. Good governance of forests occurs when communities collaborate with the government to manage forests.	1	2	3	4	5
46. Community institutional structures for community-based forest management are dependable.	1	2	3	4	5
47. I was given an opportunity to participate in decision making for community-based forest management.	1	2	3	4	5
48. Rules for community-based forest management are clear about the government and the community's responsibilities.	1	2	3	4	5
49. Government institutional structures for community-based forest management are dependable.	1	2	3	4	5
50. There are people who go out and monitor forest use.	1	2	3	4	5
51. When people break the rules about forest management, they pay a price.	1	2	3	4	5
52. The community-based forest management contract(s) in which I participate is achieving its objectives.	1	2	3	4	5
53. Under community-based management, enforcement of rules is the responsibility of the community.	1	2	3	4	5

*Please answer the following true or false questions about community-based forest management.*

- |                                                                                               |      |       |            |
|-----------------------------------------------------------------------------------------------|------|-------|------------|
| 54. Community-based forest management is a contract between the government and the community. | TRUE | FALSE | DON'T KNOW |
| 55. The Mayor's office has a role to play in community-based forest management.               | TRUE | FALSE | DON'T KNOW |
| 56. Initial contracts last for 3 years.                                                       | TRUE | FALSE | DON'T KNOW |
| 57. If contracts are renewed, they are renewed for 10 years.                                  | TRUE | FALSE | DON'T KNOW |
| 58. Under community-based forest management, the community becomes the owner of the land.     | TRUE | FALSE | DON'T KNOW |

*Please tell us about your background. Please remember that all responses are confidential.*

59. What year were you born? 19\_\_\_\_\_

60. What is your highest level of education? (Circle only one number)

1. Less than primary school degree (CEPE)
2. Primary school degree (CEPE)
3. Less than middle school degree (BEPC)
4. Middle school degree (BEPC)
5. Less than high school degree (BAC)
6. High school degree (BAC)
7. 2 years of college (DEUG)
8. 3 years of college (Licence)
9. 5 years of college (Maitrise)
10. More than 5 years of college

61. MALE                  FEMALE

PRETEST 2 SURVEY INSTRUMENT  
Malagasy

Daty \_\_\_\_\_ Enqueteur \_\_\_\_\_ Questionnaire No. \_\_\_\_\_

Vokatry ny fitantanana ny GCF/GELOSE eto Madagasikara

June 13, 2006

FANADIHADIANA notontosain'ny:

Sampana Fikarohana momba ny maha olona

Departemanta misahana ny harena-javaboahary

Oniversiten'i Cornell

Mpanohana: National Science Foundation

*Voafidy handray anjara amin'ity fanadihadiana ity ianao noho ny fakalalana manokana anatanao mikasika ny GCF/GELOSE eto Madagasikara.*

1. Commune \_\_\_\_\_

2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Lazalazao ny fandraisanao anjara amin'ny GCF/GELOSE.*

3. Mandray anjara mivantana amin'ny GCF/GELOSE ve ianao? ENY TSIA

a. Raha eny, amin'ny maha inona anao no andraisanao anjara?

1. Mpampiasa ala (na vokatry ny ala na manao fomba antay ala)	1	0
2. Mpikambana VOI	1	0
3. Mpiasan'ny Rano sy Ala eo an-toerana	1	0
4. Mpiasan'ny Rano sy Ala eo amin'ny sehatra nasionaly	1	0
5. Mpiasan'ny Kaominina	1	0
6. Mpiasan'ny ONG eo an-toerana	1	0
7. Mpiasan'ny ONG eo amin'ny sehatra nasionaly	1	0
8. Hafa _____	1	0

4. Impiry ianao no manatrika fivoriana ny GCF/GELOSE?

1. Tsy manatrika nihitsy
2. Indray mandeha isan-taona
3. Indroa na telo isan-taona
4. Isaka ny telo volana
5. Isaka ny roa volana
6. Isam-bolana
7. Isa-tapa-bolana
8. Isan-kerinandro

5. Inona no tanjona kine ndrin'ny fifanekena GCF/GELOSE andraisanao anjara?

1. Fikajiana ny ala	1	0
2. Fampiasahana vokatran'ny ala amin'ny fomba maharitra	1	0
3. Hafa _____	1	0

6. Karazana ala toy inona no tantananareo ao amin'ny fifanekena GCF/GELOSE andraisanao anjara?

1. Ala vanjanahary amin'ny faritra be orana
2. Ala vanjanahary amin'ny faritra maina
3. Tapis
4. Hafa \_\_\_\_\_

7. Efa nisy lalàna mifehy ny fitrandrahana ny ala ve talohan'ny fifanekena GCF/GELOSE?

ENY TSIA TSY FANTATRO

a. Raha eny, hazalazao ny momba izany lalàna izany

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8. Nahitanao vokatsoa ve ny GCF/GELOSE?

ENY TSIA

a. Raha eny, inona no karazana vokatsoa azonao avy amin'ny GCF/GELOSE?

1. Fikajiana ny ala ho an'ny tararaka anam-para	1	0
2. Fiarovana azy amin'ny mpifindra monina	1	0
3. Ahitana asa	1	0
4. Tombontsoa ara-toe karena avy amin'ny fitrandrahana ny ala	1	0
5. Ahazoanay sy ny fianakaviano miditra any anaty ala	1	0
6. Fitantanana tsaratsara kokoa ny ala	1	0
7. Hafa _____	1	0

9. Nisy andraikitra notakiana taminao ve tamin'ny GCF/GELOSE?

ENY

TSIA

a. Raha eny, inona no karazana andraikitra notakiana?

1. Fotoana hanatre hana fivoriana	1	0
2. Famerana ny fitrandrahana ny ala	1	0
3. Fisafoana sy famaraha-maso ny ala	1	0
4. Latsakemboka	1	0
5. Hafa _____	1	0

*Samy hafa ny ir akefan'ny tsirairay amin'ny GCF/GELOSE sy ny fahitany azy. Iza amin'ireto valintany mikasika ny GCF/GELOSE ir eto no mifanaraka amin'ny foto-kevitrao?*

	Tena <u>gleko</u>	Ekoko <u>lham</u>	Tsy <u>Fantantro</u>	Tsy dia <u>gleko koira</u>	Tena tsy <u>gleko</u>
10. Fioatra mankany amin'ny fitantanana mahomby ny ala ny GCF/GELOSE	1	2	3	4	5
11. Tsy mety ny lalàna mipetraka mikasika ny GCF/GELOSE	5	4	3	2	1
12. Misokatra amin'ny rehetra izay manam-paniriana hanatrika izany ny fivoriana andraisana fanapahan-kevitra mikasika ny GCF/GELOSE	1	2	3	4	5

	<u>Tena</u> <u>olo</u>	<u>Ek</u> <u>olo</u>	<u>Ty</u> <u>Fantanatra</u>	<u>Ty</u> <u>dia</u> <u>olo</u>	<u>Tena</u> <u>ty</u> <u>olo</u>
13. Mamaly ny zavatra andrasan'ny mpiray antoka ny mpanapa-kevitra.	1	2	3	4	5
14. Misokatra ho an'ny rehetra ny fahazoambaovao/oro hevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
15. Heve rinao fa tsy mitovy fijery sy tanjona aminao ny mpandray anjara hafa (na VOF na hafa) ao amin'ny GCF/GELOSE.	5	4	3	2	1
16. Voa ara-maso ny fampiasana ny vokatry ny ala.	1	2	3	4	5
17. Heve rinao fa voatsinjara ara-drariny ny andraikitra (q. 9) amin'ny GCF/GELOSE.	1	2	3	4	5
18. Mamaly ny hetahetan'ny mpandray anjara ny GCF/GELOSE.	1	2	3	4	5
19. Voafaritry mazava ny fetran'ny ala.	1	2	3	4	5
20. Manam-pahafana hanefy lalana ny vondron'olona ao amin'ny GCF/GELOSE.	1	2	3	4	5
21. Mazava eo anivon'ny GCF/GELOSE ny rafitry ny fanjakana.	1	2	3	4	5
22. Nifanaiky ny fanjakana sy ny vondron'olona fa hametraka lalana ara-drariny sy mazava ho an'ny GCF/GELOSE.	1	2	3	4	5
23. Afaka mitana ny mpanapa-kevitra ho tompon'andraikitra amin'ny fanapahaleviny ny mpandray anjara ao amin'ny GCF/GELOSE.	1	2	3	4	5
24. Tsy mahomby ny fitantanana rehefa misy fifankena eo amin'ny vondron'olona sy ny fanjakana.	5	4	3	2	1
25. Mitovy tanjona ny mpandray anjara amin'ny GCF/GELOSE (na VOF na hafa) ao amin'ny faritra misy anarea.	1	2	3	4	5
26. Tsy tratra ny tanjon'ny GCF/GELOSE (q. 5).	5	4	3	2	1

	<u>Tena ekeko</u>	<u>Ekoko ihant</u>	<u>Tsy fantanitra</u>	<u>Tsy dia ekeko koatra</u>	<u>Tena tsy ekeko</u>
27. Azonao avokoa ny vaovao/oro hevitra rehetra izay ilainao momba ny GCF/GELOSE.	1	2	3	4	5
28. Henjehina ireo rehetra izay tsy manaja ny lalana momba ny GCF/GELOSE.	1	2	3	4	5
29. Mandeha tsara ara-potoana ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
30. Voafindra any amin'ny vondron'olona ny fahafam-panjakana manapa-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
31. Mandeha tsara amin'ny tokony ho izy ny fitsinjarana ny andraikitra sy ny volatsoa azo avy amin'ny GCF/GELOSE.	1	2	3	4	5
32. Mandeha an-tsakany sy andavan'ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
33. Heve rinao fa mazava tsara ny velaran'ny ala tantanana.	1	2	3	4	5
34. Mitovy fijery amin'ny olon-kafa ( <i>na VOI na hafa</i> ) ianao raha ny momba ny tanjona ankapoben'ny GCF/GELOSE no resahana.	1	2	3	4	5
35. Mazava eo anivon'ny GCF/GELOSE ny rafitry ny vondron'olona.	1	2	3	4	5
36. Tsy mahatsiaro tena natao zanak'ikalahafo ianao eo amin'ny fanapahan-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
37. Matoky ny mpanapa-kevitra ny mpiray antoka eo anivon'ny GCF/GELOSE.	1	2	3	4	5
38. Malalaka ny fahazoam-baovao mikasika ny GCF/GELOSE.	1	2	3	4	5
39. Ara-drariny ny fampiharana ny lalana.	1	2	3	4	5
40. Tratanareo ny tanjona amin'ny GCF/GELOSE (q. 5).	1	2	3	4	5

	<u>Tena ekeko</u>	<u>Ekeko ihany</u>	<u>Tsy fantanitra</u>	<u>Tsy dia ekeko koa</u>	<u>Tena tsy ekeko</u>
41. Tsy vao-ara maso ny fihetsikan'olona ao anaty ny ala.	5	4	3	2	1
42. Heve rinao fa voatsinjara ara-drariny ny vokatsoa azo avy amin'ny GCF/GELOSE.	1	2	3	4	5
43. Arny tsara ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
44. Araka ny GCF/GELOSE dia ny vondron'olona no mampihatra ny lalina.	1	2	3	4	5
45. Tsara tantana ny ala rehefa miara-miasa ny vondron'olona sy ny fanjakana.	1	2	3	4	5
46. Azo antoka ny rafitry ny vondron'olona eo anivon'ny GCF/GELOSE.	1	2	3	4	5
47. Nisokatra ho ahy ny fundraisana anjara amin'ny fanapahan-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
48. Voafaritry mazava ao amin'ny lalina mikasika ny GCF/GELOSE ny andraikitry ny fanjakana sy ny vondron'olona.	1	2	3	4	5
49. Azo antoka ny rafitry ny fanjakana eo anivon'ny GCF/GELOSE.	1	2	3	4	5
50. Misy olona manara-maso ny fampiasana ny vokatra ny ala.	1	2	3	4	5
51. Rehefa mandika lalanany ny GCF/GELOSE ny olona, dia van soazy.	1	2	3	4	5
52. Ny GCF/GELOSE izay anraisanareo anjara dia mahatratra ny tanjony.	1	2	3	4	5
53. Amin'ny GCF/GELOSE, ny VOI dia mampihatra lalina.	1	2	3	4	5

*Ir eto misy fanontaniana vitsivitsy mikasika ny GCF/GELOSE ka mba valia araky ny fahafantaranao azy na marina na diso na tsy fantatra*

54. Ny GCF/GELOSE dia fifankelena eo amin'ny fanjakana sy ny vondron'olona.	MARINA	DISO	TSY FANTATRO
55. Manana anjara toerana eo amin'ny GCF/GELOSE ny Ben'ny tanàna.	MARINA	DISO	TSY FANTATRO
56. Maharitra 3 taona ny fifankelena eo ampiandohany.	MARINA	DISO	TSY FANTATRO
57. Raha avoazina ny fifankelena dia 10 taona ny faharetany.	MARINA	DISO	TSY FANTATRO
58. Araka ny GCF/GELOSE dia ny vondron'olona no lasa tompon'ny tany.	MARINA	DISO	TSY FANTATRO

*Mba afaka lazainao anay ve ny mombamomba anao?*

59. Taona inona ianao no teraka? 19 \_\_\_\_\_

60. Hatraiza ny fianarana vitanao? (valinte ny iray ihany omena)

1. Tsy nihoatra ny fanabeazana fototra (CEPE)
2. Nahazo ny mari-pahaizana fanabeazana fototra (CEPE)
3. Tsy nihoatra ny ambaratonga faharoa dingana voalohany (BEPC)
4. Nahazo ny mari-pahaizana ambaratonga faharoa dingana voalohany (BEPC)
5. Tsy nihoatra ny ambaratonga faharoa dingana faharoa (BAC)
6. Nahazo ny mari-pahaizana ambaratonga faharoa dingana faharoa (BAC)
7. Nahavita 2 taona tany amin'ny anjerimanontolo (DEUG)
8. Nahavita 3 taona tany amin'ny anjerimanontolo (Licence)
9. Nahavita 5 taona tany amin'ny anjerimanontolo (Maîtrise)
10. Nahavita nihoatra ny 5 taona tany amin'ny anjerimanontolo

61. LAHY VAVY

APPENDIX G

FINAL SURVEY INSTRUMENT  
English

Date \_\_\_\_\_ Enumerator \_\_\_\_\_ Survey No. \_\_\_\_\_

Governance Outcomes of Community-based Forest Management in Madagascar:  
FINAL  
A SURVEY

Human Dimensions Research Unit  
Department of Natural Resources  
Cornell University

Sponsored by:  
The National Science Foundation

*You were selected for this survey because you have first-hand knowledge of community-based forest management (GELOSE/GCF) in Madagascar.*

1. Commune \_\_\_\_\_
2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Please tell us about your participation in community-based forest management.*

3. Are you directly involved in community-based forest management? YES (1) NO (0)

a. If yes, how are you involved in community-based forest management?

- |                                |   |   |
|--------------------------------|---|---|
| 1. Forest resource user        | 1 | 0 |
| 2. COBA Member                 | 1 | 0 |
| 3. Local state forest agent    | 1 | 0 |
| 4. National state forest agent | 1 | 0 |
| 5. Mayor's office              | 1 | 0 |
| 6. Local NGO staff             | 1 | 0 |
| 7. National NGO staff          | 1 | 0 |
| 8. Other _____                 | 1 | 0 |

4. How often do you participate in meetings about community-based forest management?

1. Never
2. Once a year
3. 2-3 times a year
4. Every 3 months
5. Every 2 months
6. Monthly
7. Twice a month
8. Weekly

5. What is the main purpose of the community-based forest management contract you participate in?

- |                    |   |   |
|--------------------|---|---|
| 1. Conservation    | 1 | 0 |
| 2. Sustainable Use | 1 | 0 |
| 3. Other _____     | 1 | 0 |

6. What type of forest do you manage in the community-based forest management contract you participate in?

- |                         |                |
|-------------------------|----------------|
| 1. Natural humid forest | 3. Tapia       |
| 2. Natural dry forest   | 4. Other _____ |

7. Did rules regarding forest use exist prior to the community-based forest management contract?

YES (1)                      NO (0)                      Don't Know (-1)

a. If yes, please describe these rules.

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8. Have you benefited from community-based forest management?                      YES(1)                      NO(0)

a. If yes, what benefits do you receive from community-based forest management?

1. Conserve the forest for future generations	1	0
2. Protection from migrants	1	0
3. Source of employment	1	0
4. Economic benefits from forest use	1	0
5. Secure access to the forest for me and my family	1	0
6. More control over management of the forest	1	0
7. Other _____	1	0

9. Have you incurred costs from community-based forest management?                      YES(1)                      NO(0)

a. If yes, what costs have you incurred from community-based forest management?

1. Time in meetings	1	0
2. Restrictions on forest use	1	0
3. Forest patrol and monitoring	1	0
4. Membership fees	1	0
5. Other _____	1	0

*People have different experiences with community-based forest management. To what extent do you agree or disagree with the following statements about community-based forest management?*

	Strongly Agree	Slightly Agree	Neutral/ Don't know	Slightly Disagree	Strongly Disagree
10. Community-based forest management is a mechanism for good governance of forests.	1	2	3	4	5
11. Fair rules for community-based forest management do not exist	5	4	3	2	1
12. Meetings for decision making about community-based forest management are open to all those who wish to participate.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
13. Decision makers are accountable to stakeholders in community-based forest management.	1	2	3	4	5
14. Information about community-based forest management is communicated to those who need it.	1	2	3	4	5
15. I do not have the same goals for community-based forest management as others who participate.	5	4	3	2	1
16. Use of forest resources is monitored.	1	2	3	4	5
17. I feel the costs associated with community-based forest management are distributed equitably.	1	2	3	4	5
18. Community-based forest management is responsive to participants' forest-related interests.	1	2	3	4	5
19. The spatial borders of the forest are clear.	1	2	3	4	5
20. In community-based forest management, the community has the authority to create rules.	1	2	3	4	5
21. The government institutional structures are clear when it comes to community-based forest management.	1	2	3	4	5
22. Both the community and the government have agreed to a set of fair and clear rules for community-based forest management.	1	2	3	4	5
23. Participants in community-based forest management are able to hold decision makers accountable for their decisions.	1	2	3	4	5
24. When communities have contracts with the government to manage forests, the result is not good governance.	5	4	3	2	1
25. All participants in community-based forest management in my area share a common set of goals.	1	2	3	4	5
26. The objectives of community-based management are not being met.	5	4	3	2	1

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
27. I have access to information I need about community-based forest management.	1	2	3	4	5
28. People who break rules associated with community-based forest management are pursued.	1	2	3	4	5
29. Services regarding forest use are timely.	1	2	3	4	5
30. Decision-making authority is transferred from the government to the community in c-b forest management.	1	2	3	4	5
31. The distribution of costs and benefits associated with community-based forest management is as it should be.	1	2	3	4	5
32. Services regarding forest use are available.	1	2	3	4	5
33. I feel the forest area managed is clearly defined.	1	2	3	4	5
34. The overall goals of community-based forest management are the same for me as they are for others in my area.	1	2	3	4	5
35. The community institutional structures are clear when it comes to community-based forest management.	1	2	3	4	5
36. I do not feel I was excluded from decision making about community-based forest management.	1	2	3	4	5
37. Stakeholders trust decision makers when it comes to community-based forest management.	1	2	3	4	5
38. Information about community-based forest management is available.	1	2	3	4	5
39. Rules are impartially enforced.	1	2	3	4	5
40. We are meeting our objectives for community-based forest management.	1	2	3	4	5

	<u>Strongly Agree</u>	<u>Slightly Agree</u>	<u>Neutral/ Don't know</u>	<u>Slightly Disagree</u>	<u>Strongly Disagree</u>
41. People's behavior in the forest is not monitored.	5	4	3	2	1
42. I feel the benefits associated with community-based forest management are distributed equitably.	1	2	3	4	5
43. Services regarding forest use are adequate.	1	2	3	4	5
44. Under community-based forest management, the community enforces rules.	1	2	3	4	5
45. Good governance of forests occurs when communities collaborate with the government to manage forests.	1	2	3	4	5
46. Community institutional structures for community-based forest management are dependable.	1	2	3	4	5
47. I was given an opportunity to participate in decision making for community-based forest management.	1	2	3	4	5
48. Rules for community-based forest management are clear about the government and the community's responsibilities.	1	2	3	4	5
49. Government institutional structures for community-based forest management are dependable.	1	2	3	4	5
50. There are people who go out and monitor forest use.	1	2	3	4	5
51. When people break the rules about forest management, they pay a price.	1	2	3	4	5
52. The community-based forest management contract(s) in which I participate is achieving its objectives.	1	2	3	4	5
53. Under community-based management, enforcement of rules is the responsibility of the community.	1	2	3	4	5

*Please answer the following true or false questions about community-based forest management.*

- |                                                                                               |                  |                 |
|-----------------------------------------------------------------------------------------------|------------------|-----------------|
| 54. Community-based forest management is a contract between the government and the community. | TRUE(1) FALSE(0) | DON'T KNOW (-1) |
| 55. The Mayor's office has a role to play in community-based forest management.               | TRUE(1) FALSE(0) | DON'T KNOW (-1) |
| 56. Initial contracts last for 3 years.                                                       | TRUE(1) FALSE(0) | DON'T KNOW (-1) |
| 57. If contracts are renewed, they are renewed for 10 years.                                  | TRUE(1) FALSE(0) | DON'T KNOW (-1) |
| 58. Under community-based forest management, the community becomes the owner of the land.     | TRUE(1) FALSE(0) | DON'T KNOW (-1) |

*Please tell us about your background. Please remember that all responses are confidential.*

59. What year were you born? 19\_\_\_\_\_

60. What is your highest level of education? (Circle only one number)

1. Less than primary school degree (CEPE)
2. Primary school degree (CEPE)
3. Less than middle school degree (BEPC)
4. Middle school degree (BEPC)
5. Less than high school degree (BAC)
6. High school degree (BAC)
7. 2 years of college (DEUG)
8. 3 years of college (Licence)
9. 5 years of college (Maitrise)
10. More than 5 years of college

61. MALE (1) FEMALE (0)

FINAL SURVEY INSTRUMENT  
French

Date \_\_\_\_\_ Enquêteur \_\_\_\_\_ No. \_\_\_\_\_

Résultat de la Gouvernance dans la Gestion Forestière à base communautaire à Madagascar

ENQUETE FINALE

Unité de Recherche sur les Dimensions Humaines  
Département des Ressources Naturelles  
Cornell University

Parrainé par :  
The National Science Foundation

*Vous avez été choisi(e) pour cette enquête du fait de vos connaissances de première main en matière de gestion forestière à base communautaire (GELOSE/GCF) à Madagascar.*

1. Commune \_\_\_\_\_

2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Parlez de votre participation à la gestion forestière à base communautaire*

3. Etes-vous directement impliqué(e) dans la GELOSE/GCF ? OUI (1) NON (0)

a. Si oui, de quelle manière?

1. Utilisateur des forêts	1	0
2. Membre d'une COBA	1	0
3. Agent forestier au niveau local	1	0
4. Agent forestier au niveau national	1	0
5. Municipalité	1	0
6. Personnel d'une ONG locale	1	0
7. Personnel d'une ONG nationale	1	0
8. Autre	1	0

4. Combien de fois prenez-vous part aux réunions de la GELOSE/GCF ?

1. Jamais
2. Une fois l'an
3. 2 à 3 fois l'an
4. Tous les 3 mois
5. Tous les 2 mois
6. Tous les mois
7. Deux fois dans le mois
8. Toutes les semaines

5. Quel est l'objectif principal du contrat GELOSE/GCF auquel vous prenez part ?

1. Conservation	1	0
2. Utilisation durable	1	0
3. Autre _____	1	0

6. Quel type de forêt gérez-vous au titre du contrat GELOSE/GCF auquel vous prenez part ?

1. Forêt naturelle humide	3. Tapia
2. Forêt naturelle sèche	4. Autre _____

7. Y avait-il des règles concernant l'utilisation de la forêt avant le contrat GELOSE/GCF ?

OUI (1)                      NON (0)                      Je ne sais pas (-1)

a. Si oui, donnez une description de ces règles

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8. Avez-vous bénéficié de la GELOSE/GCF ?                      OUI (1)                      NON (0)

a. Si oui, quels avantages en tirez-vous ?

1. Conserver la forêt pour la génération future	1	0
2. Protéger des migrants	1	0
3. Source d'emploi	1	0
4. Avantages économiques à partir de l'utilisation de la forêt	1	0
5. Accès assuré dans la forêt pour moi et ma famille	1	0
6. Plus de contrôle sur la gestion de la forêt	1	0
7. Autre _____	1	0

9. A-t-on exigé quelque chose de vous pour la GELOSE/GCF ?                      OUI (1)                      NON (0)

a. Si oui, quel genre de choses a-t-on exigé de vous ?

1. Du temps dans des réunions	1	0
2. Des restrictions sur l'utilisation de la forêt	1	0
3. La patrouille et surveillance de la forêt	1	0
4. Payer une cotisation	1	0
5. Autre _____	1	0

*Les gens ont une expérience différente de la gestion forestière à base communautaire. Dans quelle mesure êtes-vous d'accord ou en désaccord avec les affirmations ci-après ?*

	<u>Tout à fait d'accord</u>	<u>Un peu d'accord</u>	<u>Neutre/je ne sais pas</u>	<u>Pas très d'accord</u>	<u>Pas du tout d'accord</u>
10. La GELOSE/GCF est un mécanisme pour une bonne gouvernance des forêts.	1	2	3	4	5
11. Des règles équitables pour la GELOSE/GCF n'existent pas.	5	4	3	2	1
12. Les réunions consacrées à la prise de décisions sur la GELOSE/GCF sont ouvertes à la participation de tout le monde qui le souhaite.	1	2	3	4	5

	<u>Tout à fait d'accord</u>	<u>Un peu d'accord</u>	<u>Neutre/je ne sais pas</u>	<u>Pas très d'accord</u>	<u>Pas du tout d'accord</u>
13. Les décideurs sont responsables devant les acteurs en GELOSE/GCF.	1	2	3	4	5
14. Les informations sur la GELOSE/GCF sont communiquées à ceux qui en ont besoin.	1	2	3	4	5
15. Mes objectifs pour la GELOSE/GCF diffèrent de ceux des autres qui y prennent part.	5	4	3	2	1
16. L'utilisation des ressources forestières est suivie.	1	2	3	4	5
17. Je crois que les coûts associés à la GELOSE/GCF sont répartis équitablement.	1	2	3	4	5
18. La GELOSE/GCF répond aux intérêts des participants en ce qui concerne la forêt.	1	2	3	4	5
19. Les frontières spatiales de la forêt sont bien délimitées.	1	2	3	4	5
20. En GELOSE/GCF, la communauté possède l'autorité de créer des règles.	1	2	3	4	5
21. Les structures institutionnelles du gouvernement sont claires au niveau de la GELOSE/GCF.	1	2	3	4	5
22. La communauté et le gouvernement sont convenus d'un ensemble de règles équitables et claires pour la GELOSE/GCF.	1	2	3	4	5
23. Les participants à la GELOSE/GCF sont en mesure de tenir les décideurs pour responsables de leurs décisions.	1	2	3	4	5
24. Quand les communautés ont un contrat de gestion forestière avec le gouvernement, le résultat n'est pas une bonne gouvernance.	5	4	3	2	1
25. Tous les participants à la GELOSE/GCF de ma région partagent les mêmes objectifs.	1	2	3	4	5
26. Les objectifs de la GELOSE/GCF ne sont pas atteints.	5	4	3	2	1

	<u>Tout à fait d'accord</u>	<u>Un peu d'accord</u>	<u>Neutre/je ne sais pas</u>	<u>Pas très d'accord</u>	<u>Pas du tout d'accord</u>
27. J'ai accès aux informations dont j'ai besoin concernant la GELOSE/GCF.	1	2	3	4	5
28. Les contrevenants au règlement de la GELOSE/GCF sont poursuivis.	1	2	3	4	5
29. Les services relatifs à l'utilisation de la forêt sont assurés à temps.	1	2	3	4	5
30. L'autorité de prendre des décisions est transférée du gouvernement à la communauté dans le cadre de la GELOSE/GCF.	1	2	3	4	5
31. La répartition des coûts et bénéfices associés à la GELOSE/GCF est ce qu'elle doit être.	1	2	3	4	5
32. Les services relatifs à l'utilisation de la forêt sont disponibles.	1	2	3	4	5
33. Je crois que la zone forestière gérée est clairement définie.	1	2	3	4	5
34. Les objectifs d'ensemble de la GELOSE/GCF sont les mêmes pour moi que pour les autres dans ma région.	1	2	3	4	5
35. Les structures institutionnelles de la communauté sont claires au niveau de la GELOSE/GCF.	1	2	3	4	5
36. Je ne crois pas avoir été exclu(e) de la prise de décisions concernant la GELOSE/GCF.	1	2	3	4	5
37. Les parties prenantes font confiance aux décideurs à propos de la GELOSE/GCF.	1	2	3	4	5
38. Les informations sur la GELOSE/GCF sont disponibles.	1	2	3	4	5
39. Le règlement est appliqué de façon impartiale.	1	2	3	4	5
40. Nous remplissons nos objectifs dans le cadre de la GELOSE/GCF.	1	2	3	4	5

	<u>Tout à fait d'accord</u>	<u>Un peu d'accord</u>	<u>Neutre/je ne sais pas</u>	<u>Pas très d'accord</u>	<u>Pas du tout d'accord</u>
41. Le comportement des gens dans la forêt ne fait pas l'objet d'un contrôle.	5	4	3	2	1
42. Je crois que les bénéfices associés à la GELOSE/GCF sont répartis équitablement.	1	2	3	4	5
43. Les services relatifs à l'utilisation de la forêt sont adéquats.	1	2	3	4	5
44. La communauté applique le règlement dans le cadre de la GELOSE/GCF.	1	2	3	4	5
45. Il y a une bonne gouvernance forestière lorsque les communautés collaborent avec le gouvernement dans la gestion de la forêt.	1	2	3	4	5
46. Les structures institutionnelles de la communauté pour la GELOSE/GCF sont fiables.	1	2	3	4	5
47. On m'a donné(e) l'occasion de prendre part à la prise de décision sur la GELOSE/GCF.	1	2	3	4	5
48. Les règles de la GELOSE/GCF sont claires en ce qui concerne les responsabilités du gouvernement et de la communauté.	1	2	3	4	5
49. Les structures institutionnelles du gouvernement pour la GELOSE/GCF sont fiables.	1	2	3	4	5
50. Il y a des gens qui vont aller contrôler l'utilisation de la forêt.	1	2	3	4	5
51. Les contrevenants aux règles de la gestion forestière en paient le prix.	1	2	3	4	5
52. La GELOSE/GCF à laquelle je prends part atteint ses objectifs.	1	2	3	4	5
53. Dans le cadre de la GELOSE/GCF, l'application de la loi relève de la communauté.	1	2	3	4	5

Répondez VRAI ou FAUX aux questions suivantes sur la GELOSE/GCF.

54. La GELOSE/GCF est un contrat entre le gouvernement et la communauté. VRAI(1) FAUX(0) JE NE SAIS PAS(-1)
55. La Municipalité a un rôle à jouer dans la GELOSE/GCF. VRAI(1) FAUX(0) JE NE SAIS PAS(-1)
56. Les premiers contrats durent 3 ans. VRAI(1) FAUX(0) JE NE SAIS PAS(-1)
57. Si les contrats sont renouvelés, ils le sont pour 10 ans. VRAI(1) FAUX(0) JE NE SAIS PAS(-1)
58. Dans le cadre de la GELOSE/GCF, la communauté devient le propriétaire de la terre. VRAI(1) FAUX(0) JE NE SAIS PAS(-1)

Parlez un peu de vous. Rappelez-vous que toutes vos réponses restent confidentielles.

59. En quelle année êtes-vous né(e) ? 19\_\_\_\_\_

60. Quel niveau d'instruction avez-vous atteint ? (N'entourez qu'un seul chiffre)

1. Pas atteint CEPE
2. Certificat d'études primaires élémentaires (CEPE)
3. Pas atteint BEPC
4. Brevet d'études du premier cycle (BEPC)
5. Pas atteint Bacc
6. Diplôme du Baccalauréat
7. Deux ans d'études universitaires (DEUG)
8. Trois ans d'études universitaires (Licence)
9. Cinq ans d'études universitaires (Maîtrise)
10. Plus de cinq ans d'études universitaires

61. HOMME (1) FEMME (0)

FINAL SURVEY INSTRUMENT  
Malagasy

Daty \_\_\_\_\_ Enqueteur \_\_\_\_\_ Questionnaire No. \_\_\_\_\_

Vokatry ny fitantanana ny GCF/GELOSE eto Madagasikara  
FINAL  
FANADIHADIANA notontosain'ny:  
Sampana Fikarohana momba ny maha olona  
Departemanta misahana ny harena-javaboahary  
Oniversiten'i Cornell

Mpanohana: National Science Foundation

*Voafidy handray anjara amin'ity fanadihadiana ity ianao noho ny fakalalana manokana anaranao mikasika ny GCF/GELOSE eto Madagasikara.*

1. Commune \_\_\_\_\_

2. Fokontany \_\_\_\_\_ 2a. COBA \_\_\_\_\_

*Lazalazao ny fandraisanao anjara amin'ny GCF/GELOSE.*

3. Mandray anjara mivantana amin'ny GCF/GELOSE ve ianao? ENY (1) TSIA (0)

a. Raha eny, amin'ny maha inona anao no andraisanao anjara?

1. Mpampiasa ala (na vokatry ny ala na manao fomba antay ala)	1	0
2. Mpikambana VOI	1	0
3. Mpiasan'ny Rano sy Ala eo an-toerana	1	0
4. Mpiasan'ny Rano sy Ala eo amin'ny sehatra nasionaly	1	0
5. Mpiasan'ny Kaominina	1	0
6. Mpiasan'ny ONG eo an-toerana	1	0
7. Mpiasan'ny ONG eo amin'ny sehatra nasionaly	1	0
8. Hafa _____	1	0

4. Impiry ianao no manatrika fivoriana ny GCF/GELOSE?

1. Tsy manatrika nihitsy
2. Indray mandeha isan-taona
3. Indroa na telo isan-taona
4. Isaka ny telo volana
5. Isaka ny roa volana
6. Isam-bolana
7. Isa-tapa-bolana
8. Isan-kerinandro

5. Inona no tanjona kine ndrin'ny fifanekena GCF/GELOSE andraisanao anjara?

1. Fikajiana ny ala	1	0
2. Fampiasahana vokatra ny ala amin'ny fomba maharitra	1	0
3. Hafa _____	1	0

6. Karazana ala toy inona no tantananao ao amin'ny fifanekena GCF/GELOSE andraisanao anjara?

1. Ala vanjanahary amin'ny faritra be orana
2. Ala vanjanahary amin'ny faritra maina
3. Tapis
4. Hafa \_\_\_\_\_

7. Efa nisy lalàna mifehy ny fitrandrahana ny ala ve talohan'ny fifanekena GCF/GELOSE?

ENY (1) TSIA (0) TSY FANTATRO (-1)

a. Raha eny, lazalazao ny momba izany lalàna izany

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8. Nahitanao vokatsoa ve ny GCF/GELOSE? ENY (1) TSIA (0)

a. Raha eny, inona no karazana vokatsoa azoana avy amin'ny GCF/GELOSE?

1. Fikajiana ny ala ho an'ny taranaka amam-para	1	0
2. Fiarovana azy amin'ny mpifindra monina	1	0
3. Ahitana asa	1	0
4. Tombontsoa ara-toe kare na avy amin'ny fitrandrahana ny ala	1	0
5. Ahazonanay sy ny fianakaviako miditra any anaty ala	1	0
6. Fitantanana tsaratsara kokoa ny ala	1	0
7. Hafa	1	0

9. Nisy andraikitra notakiana taminao ve tamin'ny GCF/GELOSE? ENY (1) TSIA (0)

a. Raha eny, inona no karazana andraikitra notakiana?

1. Fotoana hanatrehana fivoriana	1	0
2. Famerana ny fitrandrahana ny ala	1	0
3. Fisafoana sy fanaraha-maso ny ala	1	0
4. Latsakemboka	1	0
5. Hafa	1	0

*Samy hafa ny iraka fan'ny tsirairay amin'ny GCF/GELOSE sy ny fahitany azy. Iza amin'ireto valinteny mikasika ny GCF/GELOSE ir'eto no mijanaraka amin'ny foto-kevitrao?*

	Tena <u>eleko</u>	Ekeko <u>ihany</u>	Tsy <u>Fantatra</u>	Tsy dia <u>eleko koa</u>	Tena tsy <u>eleko</u>
10. Fioatra mankany amin'ny fitantanana mahomby ny ala ny GCF/GELOSE	1	2	3	4	5
11. Tsy mety ny lalàna mipetraka mikasika ny GCF/GELOSE	5	4	3	2	1
12. Misokatra amin'ny rehetra izay manampaniriana hanatrika izany ny fivoriana andraisana fanapahan-kevitra mikasika ny GCF/GELOSE	1	2	3	4	5

	<u>Tena</u> <u>eleko</u>	<u>Ekoko</u> <u>lham</u>	<u>Ty</u> <u>Fantanatra</u>	<u>Tsy dia</u> <u>eleko kontra</u>	<u>Tena tsy</u> <u>eleko</u>
13. Mamaly ny zavatra andrasan'ny mpiray antoka ny mpanapa-kevitra.	1	2	3	4	5
14. Misokatra ho an'ny rehetra ny fihazao- baovao/oro hevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
15. Heve rinao fa tsy mitovy fijery sy tanjona aminao ny mpandray anjara hafa (na VOF na hafa) ao amin'ny GCF/GELOSE.	5	4	3	2	1
16. Voa ara-maso ny fampiasana ny vokatry ny ala.	1	2	3	4	5
17. Heve rinao fa voatsinjara ara-drariny ny andraikitra (g. 9) amin'ny GCF/GELOSE.	1	2	3	4	5
18. Mamaly ny hetabetan'ny mpandray anjara ny GCF/GELOSE.	1	2	3	4	5
19. Voafaritra mazava ny fetran'ny ala.	1	2	3	4	5
20. Manam-pahafana hanefy lalana ny vondron'olona ao amin'ny GCF/GELOSE.	1	2	3	4	5
21. Mazava eo anivon'ny GCF/GELOSE ny rafitry ny fanjakana.	1	2	3	4	5
22. Nifanaiky ny fanjakana sy ny vondron'olona fa hametraka lalana ara- drariny sy mazava ho an'ny GCF/GELOSE.	1	2	3	4	5
23. Afaka mitana ny mpanapa-kevitra ho tompon'andraikitra amin'ny fanapaha- keviny ny mpandray anjara ao amin'ny GCF/GELOSE.	1	2	3	4	5
24. Tsy mahoroby ny fitantanana rehefa misy fifanekena eo amin'ny vondron'olona sy ny fanjakana.	5	4	3	2	1
25. Mitovy tanjona ny mpandray anjara amin'ny GCF/GELOSE (na VOF na hafa) ao amin'ny faritra misy anarea.	1	2	3	4	5
26. Tsy tratra ny tanjon'ny GCF/GELOSE (g. 5).	5	4	3	2	1

	<u>Tena ekeko</u>	<u>Ekoko ihany</u>	<u>Ty fantanitra</u>	<u>Tsy dia ekeko kontra</u>	<u>Tena tsy ekeko</u>
27. Azonao avokoa ny vaovao/oro hevitra rehetra izay ilainao momba ny GCF/GELOSE.	1	2	3	4	5
28. Herje hina ireo rehetra izay tsy manaja ny lalana momba ny GCF/GELOSE.	1	2	3	4	5
29. Mandeha tsara ara-potoana ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
30. Voafindra any amin'ny vondron'olona ny fahafam-panjakana manapa-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
31. Mandeha tsara amin'ny tokony ho izy ny fitsinjarama ny andraikitra sy ny volakatsa azo avy amin'ny GCF/GELOSE.	1	2	3	4	5
32. Mandeha an-tsakany sy andriany ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
33. Haverinao fa mazava tsara ny velaran'ny ala tantanana.	1	2	3	4	5
34. Mitovy fijery amin'ny olon-kafa ( <i>na VOI na hafo</i> ) ianao raha ny momba ny tanjona ankapobeny ny GCF/GELOSE no resahana.	1	2	3	4	5
35. Mazava eo anivon'ny GCF/GELOSE ny rafitry ny vondron'olona.	1	2	3	4	5
36. Tsy mahatsiaro tena natao zanak'ikalahafo ianao eo amin'ny fanapahan-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
37. Matoky ny mpanapa-kevitra ny mpiray antoka eo anivon'ny GCF/GELOSE.	1	2	3	4	5
38. Malalaka ny fahazoam-baovao mikasika ny GCF/GELOSE.	1	2	3	4	5
39. Ara-drainy ny fampiharana ny lalana.	1	2	3	4	5
40. Tratanareo ny tanjona amin'ny GCF/GELOSE (q. 5).	1	2	3	4	5

	<u>Tena</u> <u>eleko</u>	<u>Ekoko</u> <u>lhanr</u>	<u>Ty</u> <u>Fantanatra</u>	<u>Tsy dia</u> <u>eleko kontra</u>	<u>Tena tsy</u> <u>eleko</u>
41. Tsy vao-ara maso ny fihetsikan'olona ao anaty ny ala.	5	4	3	2	1
42. Heve rinao fa voatsinjara ara-drariny ny vokatsoa azo avy amin'ny GCF/GELOSE.	1	2	3	4	5
43. Arny tsara ny raharaha ( <i>services</i> ) mikasika ny fitrandrahana ala ( <i>ex. permis</i> ).	1	2	3	4	5
44. Araka ny GCF/GELOSE dia ny vondron'olona no mampihatra ny lalana.	1	2	3	4	5
45. Tsara tantana ny ala rehefa miara-miasa ny vondron'olona sy ny fanjakana.	1	2	3	4	5
46. Azo antoka ny rafitry ny vondron'olona eo anivon'ny GCF/GELOSE.	1	2	3	4	5
47. Nisokatra ho ahy ny fundraisana anjara amin'ny fanapahan-kevitra mikasika ny GCF/GELOSE.	1	2	3	4	5
48. Voafaritry mazava ao amin'ny lalana mikasika ny GCF/GELOSE ny andraikitra ny fanjakana sy ny vondron'olona.	1	2	3	4	5
49. Azo antoka ny rafitry ny fanjakana eo anivon'ny GCF/GELOSE.	1	2	3	4	5
50. Misy olona manara-maso ny fampiasana ny vokatra ny ala.	1	2	3	4	5
51. Rehefa mandika lalanar'ny GCF/GELOSE ny olona, dia van soazy.	1	2	3	4	5
52. Ny GCF/GELOSE izay anraisanareo anjara dia mahatratra ny tanjony.	1	2	3	4	5
53. Amin'ny GCF/GELOSE, ny VOI dia mampihatra lalana.	1	2	3	4	5

*Ir eto misy fanontaniana vitsivitsy mikasika ny GCF/GELOSE ka mba valia araky ny fahafantaranao azy na marisa na diso na tsy fantatra*

54. Ny GCF/GELOSE dia fifankera eo amin'ny fanjakana sy ny vondron'olona.	MARINA (1)	DISO (0)	TSY FANTATRO (-1)
55. Manana anjara toerana eo amin'ny GCF/GELOSE ny Ben'ny tanàna.	MARINA (1)	DISO (0)	TSY FANTATRO (-1)
56. Maharitra 3 taona ny fifankera eo ampiandohany.	MARINA (1)	DISO (0)	TSY FANTATRO (-1)
57. Raha avozina ny fifankera dia 10 taona ny faharetany.	MARINA (1)	DISO (0)	TSY FANTATRO (-1)
58. Araka ny GCF/GELOSE dia ny vondron'olona no lasa tompo'ny tany.	MARINA (1)	DISO (0)	TSY FANTATRO (-1)

*Mba afaka lazainao anay ve ny mombamomba anao?*

59. Taona inona ianao no teraka? 19\_\_\_\_\_

60. Hatraiza ny fianarana vitanao? (valinte ny iray ihany omena)

1. Tsy nihoatra ny fanabeazana fototra (CEPE)
2. Nahazo ny mari-pahaizana fanabeazana fototra (CEPE)
3. Tsy nihoatra ny ambaratonga faharoa dingana voalohany (BEP)
4. Nahazo ny mari-pahaizana ambaratonga faharoa dingana voalohany (BEP)
5. Tsy nihoatra ny ambaratonga faharoa dingana faharoa (BAC)
6. Nahazo ny mari-pahaizana ambaratonga faharoa dingana faharoa (BAC)
7. Nahavita 2 taona tany amin'ny anjerimanontolo (DEUG)
8. Nahavita 3 taona tany amin'ny anjerimanontolo (Licence)
9. Nahavita 5 taona tany amin'ny anjerimanontolo (Maîtrise)
10. Nahavita nihoatra ny 5 taona tany amin'ny anjerimanontolo

61. LAHY (1) VAVY (0)

APPENDIX H

QUESTION-CONCEPT MATRIX

Variable code	Definition	Question #	Question	Strongly agree	Slightly agree	Neither agree nor disagree	Slightly disagree	Strongly disagree
	The interactions among structures, processes, and institutions that determine how power and responsibilities are exercised and how decisions are taken, are clear, participatory, accountable, transparent, equitable, and responsive.		People have different experiences with community-based forest management. To what extent do you agree or disagree with the following statements about community-based forest management. (Please circle one response for each statement.)	1	2	3	4	5
goal/pow 1		10	governance of forests	1	2	3	4	5
goal/pow 2		24	When communities have contracts with the government to manage forests, this results in not good governance	5	4	3	2	1
goal/pow 3		45	Good governance of forests occurs when communities collaborate with the government to manage forests	1	2	3	4	5
goal 1	Common set of goals among participating groups	25	All participants in community-based forest management in my area share a common set of goals	1	2	3	4	5
goal 2		15	I do not have the same goals for community-based forest management as others who participate	5	4	3	2	1
goal 3		34	The overall goals of community-based forest management are the same for me as they are for others in my area	1	2	3	4	5
structure 1	A coherent and dependable set of institutions exists (both government and community)	21	The government institutional structures are clear when it comes to community-based forest management	1	2	3	4	5
structure 2		35	The community institutional structures are clear when it comes to community-based forest management	1	2	3	4	5
structure 3		40	The government institutional structures for community-based forest management are dependable	1	2	3	4	5
structure 4		46	The community institutional structures for community-based forest management are dependable	1	2	3	4	5
rule 1	Fair, predictable, dependable, recognizable, and enforceable legal framework exists and is enforced impartially. Use rules are agreed upon.	11	Fair rules for community-based forest management do not exist	5	4	3	2	1
rule 2		22	Both the government and the community have agreed to a set of fair and clear rules for community-based forest management	1	2	3	4	5
rule 3	Individuals have a voice in decision-making, either directly or through legitimate representation. Participation arrangements are legitimate.	48	Rules for community-based forest management are clear about the government and the community's responsibilities	1	2	3	4	5
participation 1		12	Meetings for decision making about community-based forest management are open to all those who wish to participate	1	2	3	4	5
participation 2		36	I do not feel I was excluded from decision making about community-based forest management	1	2	3	4	5
participation 3		47	I was given an opportunity to participate in decision making for community-based forest management	1	2	3	4	5
accountability 1	Decision makers (both state and civil society) answer for their decisions and submit to sanctions when/ necessary.	37	Should others trust decision makers when it comes to community-based forest management	1	2	3	4	5
accountability 2		13	Decision makers are accountable to stakeholders in community-based forest management	1	2	3	4	5
accountability 3		23	Participants in community-based forest management are able to hold decision makers accountable for their decisions	1	2	3	4	5
transparency 1	Information is accessible and factually	27	I have access to information I need about community-based forest management	1	2	3	4	5
transparency 2		14	Information about community-based forest management is communicated to those who need it	1	2	3	4	5
transparency 3	Resource use is monitored	38	Information about community-based forest management is available	1	2	3	4	5
monitoring 1		16	Use of forest resources is monitored	1	2	3	4	5
monitoring 2		41	People's behavior in the forest is not monitored	5	4	3	2	1
monitoring 3		50	There are people who go out as monitor forest users	1	2	3	4	5
equity 1	Equitable distribution of costs and benefits associated with resource management.	17	I feel the costs associated with community-based forest management are distributed equally	1	2	3	4	5
equity 2		42	I feel the benefits associated with community-based forest management are distributed equally	1	2	3	4	5
equity 3		31	The distribution of costs and benefits associated with community-based forest management is as it should be	1	2	3	4	5
responsive 1	Services provision is timely and adequate, interests are	32	Services regarding forest use are available	1	2	3	4	5
responsive 2	met.	33	Community-based forest management is responsive to participants' forest-related interests	1	2	3	4	5

responsive 3	29 Services regarding forest use are timely.	1	2	3	4	5			
responsive 4	43 Services regarding forest use are adequate.	1	2	3	4	5			
boundaries 1	Spatial boundaries of the resource and social boundaries of the managing entity are clear.	1	2	3	4	5			
boundaries 3	Decision-making authority is transferred to resource users (e.g., ability to create and change rules).	1	2	3	4	5			
authority 1	Decision-making authority is transferred to resource users (e.g., ability to create and change rules).	1	2	3	4	5			
authority 2	Decision-making authority is transferred from the government to the community in community-based forest management.	1	2	3	4	5			
transference 1	Enforcement ability is transferred to resource users/managers.	1	2	3	4	5			
transference 2	Enforcement ability is transferred to resource users/managers.	1	2	3	4	5			
enforce 1	Rules are enforced by members of the managing entity or persons accountable to those members.	1	2	3	4	5			
enforce 2	Rules are enforced by members of the managing entity or persons accountable to those members.	1	2	3	4	5			
enforce 3	Rules are enforced by members of the managing entity or persons accountable to those members.	1	2	3	4	5			
obj achieved 1	Stated objectives of the community-based forest management contract are being achieved.	1	2	3	4	5			
obj achieved 2	Stated objectives of the community-based forest management contract are being achieved.	5	4	3	2	1			
obj achieved 3	Stated objectives of the community-based forest management contract are being achieved.	1	2	3	4	5			
knowledge 1	Community-based forest management is a contract between the government and the community.	TRUE (1)	FALSE (6)	Don't know (-1)					
knowledge 2	The Mayor's office has a role to play in community-based forest management.	TRUE (1)	FALSE (6)	Don't know (-1)					
knowledge 3	Initial contracts last for 3 years.	TRUE (1)	FALSE (6)	Don't know (-1)					
knowledge 4	If contracts are renewed, they are renewed for 10 years.	TRUE (1)	FALSE (6)	Don't know (-1)					
knowledge 5	Under community-based forest management, the community becomes the owner of the land.	TRUE (1)	FALSE (6)	Don't know (-1)					
behavior 1	Please tell us about your participation in community-based forest management. Please mention all responses are confidential. (Please circle one response for each statement.)	YES (1)	NO (1)	Local state forest agent (3)	National state forest agent (4)	Mayor's office (5)	Local NGO staff (6)	NGO staff (7)	Other (8)
behavior 2	How often do you participate in meetings about community-based forest management?	Never (1)	Once a year (2)	2-3 times a year (3)	Every 2 months (4)	Monthly (5)	Weekly (6)		
behavior 3	What is the main purpose of the community-based forest management contract you participate in?	Conservation (1)	Sustainable Use (2)	Other (3)					
contract obj	What type of forest do you manage in the community-based forest management contract you participate in?	Natural forest (1)	Natural dry forest (2)	Plantation (3)	Other (4)				
forest type	Did rules regarding forest use exist prior to the community-based forest management contract?	YES (1)	NO (2)	Don't know (-1)					
prior rules	7a If yes, please describe these rules.								
prior rules desc	8 Have you benefited from community-based forest management?	YES (1)	NO (2)						
benefits	9 Have you incurred costs from community-based forest management?	YES (1)	NO (2)						
costs	10 What benefits do you receive from community-based forest management?	Conserved forest for future generations (1)	Protection from migrants (2)	Source of employment (3)	Economic benefits from forest use (4)	Secure access to the forest for me and my family (5)	More control over the forest for management (6)	Other (7)	Other (8)
benefit type	11 What costs have you incurred from community-based forest management?	Time in meetings (1)	Restrictions on forest use (2)	Forest plot and monitoring (3)	Membership fees (4)	Other (5)			
cost type									

beliefs  
gender  
education

Please tell us about your background. Please remember all responses are confidential.

59 What year were you born?

61 Are you female or male?

Please circle your highest completed level of education. (Please circle one number.)

18. _____	Males (1)	Females (0)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		