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## **Cattle, Cockatoos, Chameleons, and Ninja Turtles - Seeking Sustainability in Forest Management and Conservation in Nusa Tenggara, Indonesia**

### **Introduction**

During the past three decades, Indonesia's forest lands have been mapped, classified, and utilized to meet increasing demands for commercial exploitation, watershed protection, recreation, and biodiversity conservation. Throughout the archipelago, previously isolated forest areas have been opened up through rapid development of roads and the extension of government administrative units. Shifting demographic and economic trends have hastened the pace of change and the interest in these forest areas, intensifying resource management conflicts. Rural communities living in and around these protected areas have been gradually marginalized from decision-making processes and disenfranchised from important forest resources.

Recent Ministry of Forestry policies and programs have attempted to reconcile growing conflicts over forest management through a variety of approaches to social and community forestry (Kartasubrata, Sunito, and Suharjito, 1994). These efforts have also been expanded to encompass conservation areas, with emphasis on approaches which can broadly be identified as integrated conservation and development programs (ICDPs) (Wells, Brandon, and Hannah, 1992; Brown and Wyckoff-Baird, 1992). International agencies such as the World Wide Fund for Nature, the World Bank, and the Asian Development Bank have promoted these approaches in a variety of sites in Indonesia and throughout the region with mixed results (Wells, 1997). Assessments of these programs have pointed out the need for an

eco-regional approach, the importance of information gathering and adaptive management strategies, an emphasis on securing economic benefits for local people, and the value of consensus-building and collaboration (Larson, Freudenberger and Wyckoff-Baird, 1997).

This paper draws on the experiences of the Nusa Tenggara Uplands Development Consortium, an inter-agency network which seeks to address key technical, institutional, and policy issues related to poverty alleviation and environmental conservation in the Nusa Tenggara region of eastern Indonesia. In the past three years, the Consortium's Conservation Working Group has catalyzed and monitored the emergence of new collaborative alliances addressing the challenges of forest and conservation management in several priority conservation sites across this unique region. Key interventions developed to facilitate these multi-stakeholder approaches to forest management have included community organizing, coalition building, joint fact-finding and participatory research, training and capacity building, along with a variety of innovative strategies for convening diverse stakeholder groups at both the local and the regional level.

The paper and presentation summarizes the evolution of this network and the lessons learned in mitigating conflicts and building collaborative approaches to forest management. The analysis draws on experience from site-based interventions in eight forest conservation areas in Nusa Tenggara, and seeks to draw on this broader regional approach to offer insights for program and policies related to forest and conservation management.

### **The setting**

The Indonesian islands southeast of Bali and northwest of Australia is known as the Lesser Sundas, or Nusa Tenggara (see map, Figure 1). Administratively, the region is divided into three provinces, Nusa Tenggara Barat (West Nusa Tenggara, or NTB), Nusa Tenggara Timur (East Nusa Tenggara, or NTT), and the former Portuguese colony of East Timor (Timor Timur, or TimTim). The area is of mixed volcanic and limestone geology, with an extremely rugged topography; the semi-arid climatic regime (approximately 1500 mm of rain falls within a 3 to 5 month period, and the diverse ethnic heritage of the area (more than 50 distinct language groups) are further aspects of the region's complex diversity.

The population of the three provinces is 8.12 million, and it is ethnically quite diverse and fragmented. Nusa Tenggara lies at the transition point between the Malayan and Papuan racial groups, and therefore exhibits a very complex ethnic character. More than 50 distinct languages are spoken in the area.

Most assessments have concluded that Nusa Tenggara is one of the poorest and least developed regions in Indonesia, noting the combined impact of physical isolation, inadequate infrastructure, and limited natural resources (Corner, 1989). Local incomes are approximately one-third the national average; infant mortality rates and illiteracy figures are among the highest in Indonesia. Nusa Tenggara also includes the province of East Timor (Timor Timur) which has experienced protracted civil unrest since it achieved independence from Portugal in 1975.

Agriculture is the foundation of the rural economy, and shifting cultivation is still practiced throughout the islands of Nusa Tenggara. While paddy rice is cultivated in selected lowland

areas, less than 2% of the arable land is suitable for irrigation. Farming systems are largely based on maize and cassava as the staple crops; in drier areas, maize is replaced with sorghum and/or millet as the principal grain. Extensive grazing of livestock (cattle, water buffalo, horses, goats, and sheep) is practiced throughout the region. A variety of forestry and horticultural products (tamarind, candlenut, coffee, cacao, etc.) provide important sources of income, particularly during the frequent famine events and crop shortfalls which occur during long periods of drought. Coastal fisheries, small industries (food processing, weaving, leather, etc.), and tourism are increasingly important sectors of the economy.

### **Forest and conservation management in Nusa Tenggara**

Conservation planning in Nusa Tenggara has only recently received attention from the central government and from local and international conservation agencies. Surveys in the early 1980's by the Food and Agriculture Organization (FAO) of the United Nations, in collaboration with the Department of Forestry's Directorate General of Forest Protection and Nature Conservation (PHPA) identified priority areas for conservation action (MacKinnon et al., 1982). More recently, international conservation agencies such as the World Wide Fund for Nature (WWF), Birdlife International, the Wildlife Conservation Society, and the Nature Conservancy have become actively involved in the region, sponsoring field programs in selected sites, as well as biodiversity research, conservation education, and the development of regional biodiversity conservation plans (WWF, 1993; Jepson et al., 1996).

The contrast of this rich biological and cultural diversity to the chronic poverty of the area represents obvious challenges in decision-making over natural resource management. Significant population settlements are found within and surrounding all forest and designated conservation areas in the region, and land use conflicts are a routine challenge to managing these sites. Given the remoteness of several priority conservation areas, the communities are frequently isolated, and retain strong traditional values and practices; these traditions are often strongly linked to the land and forest (and/or coastal) resources, and underlie much of the current conflict over resource exploitation.

### **The Nusa Tenggara Uplands Development Consortium**

Growing attention to the importance of conservation management in regional development strategies emerged through a lengthy process of analysis sponsored by the Nusa Tenggara Uplands Development Consortium (NTUDC). The Consortium is an inter-agency network comprised of representatives from government agencies, NGOs, research institutions, and local communities. It seeks to address key technical, institutional, and policy issues related to poverty and environmental problems in Nusa Tenggara by strengthening successful grass-roots programs, enhancing local organizational capacity, increasing collaborative working relationships, and expanding the impact of successful upland development programs (Khan and Suryanata, 1994; World Neighbors, 1994).

The Consortium's Working Group on Natural Resource Management (hereafter the Conservation Working Group, or CWG), established in 1991, addresses concerns about the management of critical conservation areas as well as the social and economic impacts of forest exploitation and conservation programs. The CWG has outlined a series of individual and

collective activities to address these concerns, and identified eight priority sites in which these activities could be implemented and monitored (see Figure 2). The sites were selected to roughly represent the ecological and socio-economic diversity in the region. While forest and conservation management activities continue in many other sites throughout the region, these eight sites have provided opportunities for more in-depth analysis, and have offered continued reference points throughout the past three years of collective action and comparative analysis. The analysis of these interventions forms the basis for this paper.

### **Analysis of cases**

The eight case studies of forest and conservation management offer an initial sense of the complexity of forest and conservation management in Nusa Tenggara. The diversity of sites and issues is perhaps their most significant feature, and this can be seen in their varied ecologies, agricultural and landuse systems, ethnic populations and settlement histories. It is also important to note the differences in forest classification, conservation and institutional priorities, perceived management threats, and varied interventions.

While diversity is a conspicuous aspect of these protected areas, comparative analysis also highlights themes common to all the sites, and these issues have formed the basis for much of the Consortium's collaborative action to date. Community surveys and interdisciplinary studies in selected program areas have yielded important insights into issues of community participation, access, rights, and jurisdiction over forest resources.

Forest management disputes in Nusa Tenggara generally fall within four broad categories of issues: a) legal, regulatory and procedural aspects, b) jurisdictional disputes and lack of coordination in program implementation, c) economic and livelihood issues, d) social and cultural factors.

a) Legal, regulatory, and procedural issues: There is a dizzying array of rules, procedures, and jurisdictions regarding the management of forest and conservation areas. While the Ministry of Forestry has general authority over planning and management of forest lands, there are numerous overlapping interests from other important national line agencies - Agriculture, Tourism, Public Works, and Rural Development, among others - and there are considerable challenges to integration, both in planning and implementation, through local government units at provincial, regency, and sub-regency levels. The considerable overlap among agencies presents enormous challenges to coordination and effective decision-making. Most prominent of these are problems of boundary setting and classification of forest zones, mechanisms for forest management and conservation, and overall planning and coordination among agencies. All of the sites present disturbing examples of how competing administrative jurisdictions and interests have tended to undermine sound management practice. It is also apparent that local communities, NGO program leaders, and indeed, many public officials are unaware of or confused by the many regulations and procedures which guide management interventions.

b) Policy and program implementation: Centralized policy making and project development has been one of the main constraints in the development of sound local forest management efforts. There are a number of enlightened policies which guide the development of social or community forestry programs, environmental impact assessment, and general rural

development. Nevertheless, the implementation of these projects is often based on plans developed with little knowledge of local conditions or participation of local actors. At the local level, individuals who are most directly involved in forest management and exploitation are often poorly informed and have limited influence in the planning process. Government and NGO programs are also frequently designed with narrow institutional or program objectives, often neglecting the critical elements of integration and coordination. Local government units represent the administrative nexus for this coordination, yet in reality they have mixed authority, limited experience and implementation capacity, and are frequently overwhelmed by numerous projects simultaneously.

c) Economic and livelihood issues: There is widespread exploitation of forest land and forest-based products in all of the program sites. Agricultural encroachment, logging, the gathering of non-timber forest products, and grazing of livestock has continued, and in many cases intensified, despite regulatory policies, education and extension programs, and enforcement efforts. In Riung, Flores, communities which had previously been resettled to coastal areas have returned to open extensive garden areas in the upland forest zone. More than 14,000 cattle are routinely grazed within the Gunung Mutis Nature Reserve. In the Wanggameti Conservation Area, the capture of valuable bird species, such as the yellow-crested cockatoo, is seriously diminishing already threatened or endangered species.

d) Social and cultural factors: In several of the sites (Wanggameti, Riung, and Gunung Mutis) strong cultural traditions continue to guide local community attitudes and practices regarding land use and forest exploitation. In these areas, the division, classification, and the laws and regulations regarding access to forest areas have been a primary concern of local kings (rajahs) and/or tribal councils, often reinforced by clan and kinship alliances. In Gunung Mutis, for example, local forest classification includes: 1) sacred forests (nasi leú), 2) restricted forests (nasi talas, where hunting is prohibited), 3) clan forests (suf ma autuf neu amaf-amaf, for the gathering of forest products), and 4) forests for cultivating gardens (bane) (Mallo, 1996). The designated rajah (or fetor) and clan leaders (amaf), have traditionally controlled access to these lands, both for practical and spiritual purposes, and they have broad authority for decision-making and the imposition of sanctions or punishments. Similarly, in East Sumba, the kabihu or kinship unit exercises strong control over village and forest lands. These indigenous forest management systems, often based on intimate knowledge of local landscape and ecology, and steeped in social and historical forces, are in stark contrast to more recent government efforts to determine forest boundaries and classification (based primarily on technical considerations), and impose national laws and regulations on community access. The implementation of national government policies and programs is thus often viewed as a direct attack on existing traditions, values, institutions, and leaders.

## **Strategies and outcomes**

The diversity of sites, issues, history, and institutional settings has necessitated varied interventions in addressing forest management disputes and seeking more collaborative and sustainable approaches to forest and conservation management. Within the six sites, there has been mixed success over the past three years of program development. However, the collective analysis of success and failure has generated important lessons which have helped to further adapt these programs (see below).

While there is considerable local experience with mediation and conflict resolution, there are as yet few procedures or protocols for effectively managing these complex public policy or environmental disputes. Formal mediation of environmental disputes has been introduced into Indonesia only recently (Santosa and Moore, 1996). While Consortium participants are quick to recognize the problems of competing interests, poor coordination among agencies, and ineffective programs and policies, they are often reluctant to characterize these situations as conflicts, and are less comfortable about intervening in official efforts at mediation, particularly when the issues are beyond their station or jurisdiction. In each of these cases, interventions at resolving conflicts have been subtle, oblique, responsive and multi-faceted. Many of the intervening agencies have used indirect means to convene parties, often seeking to improve the dialogue and relationships among stakeholders as an initial step toward resolving conflicts. Key approaches used in these programs have included community organizing, coalition building, joint fact-finding and collaborative research, training and capacity building, and a range of convening strategies to improve dialogue and working relationships among stakeholders.

## **Lessons learned and confirmed**

Over the past three years there has been continuous monitoring of interventions in these priority sites through the Consortium's Conservation Working Group. Regular meetings have reviewed the case studies, highlighted site-based activities, and sought to draw common lessons from this diverse experience. Cross visits among sites by practitioners, policy makers and community leaders have stimulated important dialogue and comparison of key issues. Research in each of these sites has helped analyze and document local realities and assess emerging strategies for addressing land use and forest management conflicts. The Conservation Working Group has convened annual evaluation reunions to synthesize lessons learned, chart new initiatives at each of the sites, and seek recommendations for activities which enhance regional collaboration. The collective analysis of regional experience in Nusa Tenggara has yielded the following general lessons for forest and conservation management programs:

**Regional, multi-site approach:** Working in several sites simultaneously offers several important strengths: 1) opportunities to compare and learn from different successes and failures across sites, (2) the ability to extrapolate common themes and leverage these to address broad policy and program challenges, 3) the use of the regional forum as a mirror to reinforce the benefits and the tools of collaboration, 4) access to varied technical knowledge, program experience, local insight, and to wider networks of interests, 5) opportunities for "leap-frogging" from local to higher jurisdictions (by involving officials/policy makers in field visits and field level discussions).

**Unit of analysis:** Many research and intervention programs have been undertaken in individual sites within large protected areas or watershed zones. These studies and projects provide important insights into the dynamics of natural resource management at the local level. Nevertheless, single site studies or project initiatives cannot address the wider issues of scale and policy which are critical to effective management of large ecosystems. In the Wanggameti Conservation Area, for example, one member of the recently established Forest Protection Committee complained that their isolated efforts to stop forest theft were like "locking the front door of the house against burglars, while the back door and the windows are left wide open". Effective management of protected areas necessitates a broad systems perspective and analysis - and this must be addressed in both ecological and institutional terms. The resolution of forest and conservation management disputes requires a multi-community, inter-agency and ecosystems based approach in analysis and decision-making.

**Concept of "community":** Engaging and empowering individual local communities which have been ignored or actively marginalized in the decision-making process is an essential, though insufficient step in seeking more inclusive and sustainable approaches to the management of protected areas. In these program sites, communities of place must be augmented by communities of interest which include all active stakeholders - villages adjacent to the protected area, government officials at district, provincial, and regional levels, researchers and scientists, and NGOs actively engaged in conservation and/or community development programs.

**Importance of inter-institutional network:** The NTUDC has provided the organizational setting which has catalyzed the formation of these multi-party collaborations. Through the NTUDC many of the parties (community leaders, public officials, NGO leaders, researchers) have come to know and understand each other's perspectives. Cooperation and initial trust at this regional level has helped build personal relationships which have led to the overcoming of stereotypes and prejudices and the development of new collaborative working relationships. The interaction has helped participants put faces to policies and practices. Important connections have been made between government officials and NGO leaders; the broader network of the Consortium enabled connections to other relevant programs within the region, and in other parts of Indonesia.

**Links upward to policy apparatus:** Many of the forest management conflicts are rooted in policy decisions which are made at great distances the location of activity - at the district, regency, provincial or national level. Local level agreements concerning these disputes are therefore difficult to resolve because the appropriate decision-makers are unaware of the implications of their policies, and/or are unwilling or unable to participate in the process of finding creative solutions. Local level officials often do not have the authority, and are reluctant to officially sanction innovative approaches. The result is often seen in various informal accommodations where local officials actively look the other way, avoid the problem altogether, and in some cases use the opportunity to extort bribes or develop their own private enterprises within forest conservation areas.

**Collaboration, mediation, and advocacy:** Many of the conflict management interventions have been initiated by NGOs (both national and international), which have struggled with determining the most effective strategy for mediating these fractious and often long-standing disputes. Many have found themselves moving from traditional advocacy approaches (on

both community or environmental concerns) to more responsive, dynamic roles of facilitating more inclusive processes. In program discussions, practitioners have often emphasized the distinctions between these approaches, speaking of the occasional necessity of playing the confrontational watchdog (jokingly referred to as "Ninja Turtles", for the heroic cartoon characters which champion truth and justice) in contrast with the more flexible and responsive role of the mediator/facilitator (also referred to as bunglon, or "chameleon" mediators).

**Research as mediation:** In several of the sites (Sesaot, Rempek, Wanggameti, and Mutis) the research process itself has been used to engage widespread participation of stakeholder groups, both in the field studies and subsequent workshops presenting research findings for public discussion. In each of these sites, mid-level government officials, NGO leaders, and village representatives have been actively involved in the studies, and this has encouraged more applied interdisciplinary analysis and inter-agency (as well as inter-personal) sharing. The result has been more comprehensive understanding of forest management dynamics, and more integrative solutions to existing disputes. Since research is often viewed as a "neutral" enterprise, focusing on analysis of research results helps move stakeholders from entrenched, and occasionally poorly informed positions, to new understandings of the complex, integrated nature of these disputes. This approach often mitigates some of the potential uneasiness of direct negotiation, opening the dialogue for more creative solutions. Having objectively validated information from several perspectives has encouraged more rational, systemic, and collaborative thinking on appropriate actions.

**Opportunities for community involvement:** Conventional government planning processes in Nusa Tenggara have been ineffective in actively engaging local communities in planning of forest and conservation management programs. In Rempek, during the height of the forest boundary dispute, the village head commented that he "often felt like a spectator in a volleyball match", watching government agencies compete to implement their separate, often contradictory programs, with no active community engagement in the decision-making process. A major outcome of the site-based research in Nusa Tenggara has been a common understanding that limited local involvement is often the source of many ill-conceived programs. Many CWG members are now seeking new ways to involve local communities in constructive, non-threatening, and often unobtrusive ways. In Nusa Tenggara, this has been achieved through participatory research efforts, public meetings at the community (and multi-community) level, and carefully considered, progressive interactions with public officials. The approaches have also involved extensive shuttle diplomacy and "socialization" between government and local communities, facilitated either by researchers, NGO staff, and/or mixed teams of facilitators.

**Process and continuity:** The above analysis has highlighted the role of the Consortium and the Conservation Working Group in providing both context and continuity for collaborative problem-solving. Nevertheless, with program expansion, a new generation of challenges, and given the complexity and the delicate nature of these disputes, the need for a stronger institutional base has been an increasing concern. Over time, the CWG has worked to form a distinct unit to maintain the momentum of these activities, provide logistical support, and retain the institutional memory and networks of contacts needed to facilitate these initiatives. This unit, the Natural Resources Management Coordination Team (KOPPESDA), provides the technical and logistical support (research methods, process design, facilitation), the initiative and leadership, and the experience across sites to address many of the complex and delicate challenges of addressing more contentious situations.



**The larger context - economic and political realities:** There are both direct and opportunity costs which constrain agency and community participation. This is particularly true for the rural poor, who often must leave farm and community to participate in discussions which may have limited immediate outcomes. At the institutional level, inflexible policies, hierarchical organizational structures, a command-and-rule culture, and limited budgets, must often be addressed higher up within the administrative system. Access to sustained and flexible funding is often a critical factor in gaining agency participation, and in encouraging more dynamic responses at the local level. Finally, recent political and economic upheaval in Indonesia has also had both subtle and direct impacts on these programs in Nusa Tenggara. The national elections of the past year, protracted drought, and serious economic crisis have all conspired to affect the dynamics of forest exploitation, perceptions of NGO participation, and the ability and willingness of various parties to participate in these processes.

## **Conclusions**

The experience in Nusa Tenggara provides insights into the state of forest and conservation management, and offers important lessons on effective intervention strategies. Individually, the cases are unique, diverse examples of cultures and livelihoods under new pressures from inevitable economic and social change. The forest sites currently under review by the NTUDC's Conservation Working Group are under threat from increased exploitation, flawed policies, and weak coordination and implementation. Collectively, they provide a fairly accurate view of the challenges of seeking balance and reconciling local realities with wider conservation and development objectives.

The interventions described above have been subjected to regular and intense scrutiny over the past three years. The approaches have been adapted and refined through collective assessment in each of the sites and through comparative evaluation across the Nusa Tenggara region. The Conservation Working Group has provided a unique structure and forum for this analysis, bringing together community leaders, researchers, government officials, and NGO field staff.

Nevertheless, the program initiatives are still considered to be in rather rudimentary stages of development. They show varied progress and uncertain successes. While there are important lessons here for researchers and practitioners engaged in conservation and sustainable development programs, predictive measures remain tentative and imperfect. The Wanggameti effort has progressed steadily and has achieved significant agreement on a new structure for coordination in managing the WCA; however, implementation of key program recommendations remains questionable. In Rempek, perhaps the most fractious of all the settings, recent overtures from the government provide at least a glimpse of the simplicity of reconciliation; yet there are no guarantees that these initiatives will achieve lasting resolution.

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