INVOLVING COMMUNITIES IN CONSERVATION: INSIGHTS FROM MANUPEU TANADARU NATIONAL PARK, INDONESIA

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ABSTRACT

Developing strategies to meet the needs of both human communities and their environment is a complex and challenging task. This is particularly true in Indonesia, the world's second most biodiverse and fourth most populous country. Because of the heavy dependence of much of Indonesia's population on natural resources, many conservation NGOs have employed "participatory conservation" mechanisms (e.g. village conservation agreements, participatory mapping, and community conservation groups), designed to involve local people in environmental management and conservation. This paper examines the use of participatory conservation mechanisms during the establishment of Manupeu Tanadaru National Park in Indonesia, and considers the experiences of various stakeholders in the participatory conservation process designed by Burung Indonesia (an Indonesian affiliate organization of BirdLife International). This study highlights common challenges experienced by non-profit organizations working to increase the participation of local people in the establishment and management of protected areas. With participatory mechanisms becoming an integral part of many conservation initiatives, this research provides important insights for conservation practitioners and policy makers.

Keywords: participatory conservation, Indonesia, Manupeu Tanadaru National Park, environmental non-governmental organizations

Introduction

Participatory conservation aims to involve local people in environmental planning and conservation. Non-governmental organizations (NGOs), governments, multilateral organizations, and the private sector have experimented with these approaches. Better-known participatory conservation mechanisms include village conservation agreements,

participatory mapping, and community forest or marine conservation groups. Experimentation with these mechanisms has often occurred under circumstances in which a natural area has been designated for protection by the state but is being contested at the local level for fear that it will exclude people from their traditional lands, prohibit their access to sacred sites and hunting grounds, and criminalize their use of natural resources. By involving communities in the conservation planning process, participatory mechanisms can help to integrate local people's needs into park plans and establish increased legitimacy for a protected area and its governance structure amongst neighboring communities and international donors.

This study investigates the participatory conservation process that took place during the establishment of Manupeu Tanadaru National Park. Stakeholders involved in participatory conservation efforts elsewhere in the world will be able to identify with some of the experiences of community members, NGO employees, and government officials at Manupeu Tanadaru. This research identifies three broad challenges faced by organizations initiating and facilitating participatory conservation, and then considers ways in which these challenges can be addressed.

Historical Background

International Shift Towards Local Participation in Conservation

During the 1980s and 1990s, many of the world's developing countries launched decentralization reforms to devolve power (Ribot 2003). This often included the decentralization of natural resource management (Agrawal 2001). These policy changes helped transfer authority over natural resources to local institutions and by doing so, shaped how local people derived benefits from natural resources and how these resources were managed (Ribot 2004).

Simultaneous to decentralization reforms, a critique of neocolonial protectionist strategies in environmental conservation was occurring (Borgerhoff Mulder and Coppolillo 2005). Since the late 19th century, the primary strategy for conserving important habitats and endangered species had been the creation of protected areas (Adams 2004). However, the traditional top-down strategies used for creating these protected areas (sometimes referred to as "fortress conservation" or the "fences and fines" approach) were shown to have substantial negative social and economic impacts on local communities (Agrawal 2001, Brockington 2002, Brockington and Schmidt-Soltau 2004, Brosius 2004, Cernea 1997, Colchester 2002, Fiallo and Jacobson 1995, Ghimire and Pimbert 1997, and Sanderson and Redford 2003). The traditional national park model, though very successful in some locations, was in many places unable to stand up to the threats of illegal logging, fishing, poaching, and encroachment. Furthermore, the world's network of natural areas was still expanding and needed to continue to do so to ensure species conservation. It became evident that in order for significant conservation to occur outside of protected areas, the support of local people and the use of both community-based conservation and natural resource management would be necessary.

The 1990s brought a major shift in thinking about conservation. International financial institutions, the donor community, and many development, environmental, and indigenous rights NGOs adopted the stance that environmental conservation required collaboration with local people for ethical reasons and made good sense for natural resource management purposes (Brosius et al. 1998, Hulme and Murphree 1999). A new set of buzzwords (like "community", "participation", "empowerment", and "sustainable development") and an accompanying set of assumptions quickly arose. Many early community-based conservation projects assumed that people who lived close to a natural resource, and whose livelihoods depended on this resource, had an invested interest in the resource's sustainable management (Li 2002). Another common misconception was that communities were small, well-integrated societies using shared norms and rules to manage resources in an equitable manner (Agrawal and Gibson 1999, Li 2002, Borgerhoff-Mulder and Coppolillo 2005). Programs built upon such simplifications (like the World Bank's Integrated Conservation and Development Projects of the 1990s) went on to experience many obstacles as a result (Wells et al. 1999, Wells and McShane 2004).

Indonesia's Shift Towards Increased Local Involvement in Conservation

Protected areas in Indonesia were designed using strict protectionist principles (Jepson and Whittaker 2002). Beginning in the 1990s, Indonesia's policies regarding protected areas began changing in response to international and internal pressure. From the early 1990s until 2002, the World Bank and World Wide Fund for Nature (WWF) facilitated a series of large-scale Integrated Conservation and Development Projects (ICDPs) in nine of Indonesia's National Parks (Wells et al. 1999, World Bank 1996). Experimentation with participatory conservation increased after President Suharto stepped down. Forest policies were modified in response to pressures from NGOs, various individuals from within the Ministry of Forestry, and the provisions of Indonesia's debt relief agreement with the International Monetary Fund (IMF) (Sunderlin 1999). Simultaneously, national policy went through a massive change from a centralized government to a decentralized one (Law No. 22 and 25/1999; later revised into Law No. 32/2004 and 33/2004). Concurrently with political changes, the power of civil society in Indonesia increased. A large number of local NGOs were established during the 2000s, and the influence of national NGOs steadily grew. With this came new opportunities for improved representation of local people in protected area planning and conservation.

Conservation on The Island of Sumba, Indonesia

Indonesia has the highest number of endemic bird species of any nation in the world (ICBP 1992). When the island of Sumba was classified as one of the world's "endemic bird areas" in 1992, the Regents of East and West Sumba responded by making a decree to protect the island's birds (PHPA/BirdLife IP 1995). The following year Prince Bernhard of the Netherlands visited Sumba to bolster

support for biodiversity conservation (PHPA/BirdLife IP 1995). In 1994 and 1995, the Regents of East and West Sumba wrote declarations of support for the establishment of a network of protected areas on the island. For the first time in Indonesia's history, the district government, rather than the national government, initiated the establishment of a national park. In 1998 the Indonesian Ministry of Forestry declared that Laiwanggi Wanggameti and Manupeu Tanadaru forests would become national parks (MoF 1998).

Establishment of Manupeu Tanadaru National Park

The forested land contained within present-day Manupeu Tanadaru National Park was first protected in 1937, when the Dutch Colonial Government declared the forest a *Boschcomplex-Reserve* (Burung Indonesia 2004). Because local access had been restricted to Manupeu Tanadaru forest for nearly sixty years, the level and likelihood of conflicts between local people and the new national park was relatively low compared to new national parks elsewhere. However, the borders of Manupeu Tanadaru forest had changed a number of times over six decades, and stakeholders had differing perceptions of where the protected area's boundaries were, and what level of access rights local communities should have. A similar issue was that of local access rights to the forest. For many generations the communities bordering Manupeu Tanadaru had depended on the forest's natural resources, including wild vegetables, medicinal plants, wild game, fish, timber, tying material, and fuelwood (Datta 1993, Fripp et al. 2002, PHPA/BirdLife International 1995).

Due to the socio-economic and cultural importance of the forest for local people, and the ethical issues involved in establishing the national park and restricting local people's access to the forest's sacred sites and natural resources, Burung Indonesia[i] initiated a community-based conservation process designed to ease the transition of the forest to national park status, enable local people to be represented in the planning of the new park, and create opportunities for environmental education in the region.

From 2002 to 2007 Burung Indonesia in conjunction with the Natural Resources Conservation Agency (BKSDA Nusa Tenggara 1), the Forest Land Use Agency (BPKH Wilayah VIII) and the local NGO PAKTA (*Pengembangan Aktivitas Kemitraan Terpadu* or "Development of Integrated Partnership Activities"), initiated and facilitated a participatory approach for resolving forest boundary conflicts and establishing local natural resource regulations for Manupeu Tanadaru. The trial approach involved the establishment of a "Community Forest Conservation Group" (*Kelompok Masyarakat Pelestari Hutan*), negotiation of a "Village Nature Conservation Agreement" (*Kesepakatan Pelestarian Alam Desa*), and the planning and implementation of reserve boundaries through a process termed "Participatory Forest Boundary Demarcation" (*Penatabatasan Kawasan Hutan Partisipatif*). At the time of this study (June-August 2005), Burung Indonesia's participatory conservation process had been completed in four pilot villages and was being facilitated in another nine

villages bordering Manupeu Tanadaru forest. Since then, this process has been completed in all of the communities directly bordering Manupeu Tanadaru forest. Manupeu Tanadaru gained official national park status in 2007.

Environment and Communities at Manupeu Tanadaru

Manupeu Tanadaru National Park is composed of the former neighboring state forests of Manupeu and Tanadaru, located on the island of Sumba (Lat 9° 30' S, Long 120° 00' E) in the East Nusa Tenggara Province of southeast Indonesia. Sumba holds a population of over 450,000 people who live primarily in rural areas and are heavily dependent on livestock rearing, farming, and forest products for their livelihoods (Jepson et al. 1996, Dewi et al. 2005). East Nusa Tenggara is one of the Indonesian provinces with the highest incidence of poverty (DAI-Nathan Group 2013, EC-UNDP 2005), and Sumba is one of the nation's poorest islands (Central Statistics Agency 2002).

Sumba has been recognized as a single-island Endemic Bird Area (ICBP 1992) and holds nine endemic species and twenty-one endemic sub-species of birds, as well as seven endemic butterfly species, four endemic reptile taxa, two endemic amphibians, (Jepson et al. 1996), and an endemic bat species (PHPA/BirdLife IP 1995). The majority of Sumba's endemics are restricted to the island's small patches of native forest (O'Brien et al. 1997). Most of Sumba is covered by grasslands, which are believed to be largely of anthropogenic origin (Jepson et al. 1996). As of 1993, only 11% of the island was forested (MacKnight et al. 1993). By 1999 this percentage had decreased to less than 6.5% (Masrden and Fielding 1999). Forest loss is thought to be due to grassland burning, shifting agriculture, and over-utilization of minor forest products such as fuelwood (Sujatnika et al. 1995). The island's two largest forest blocks – Laiwanggi Wanggameti and Manupeu Tanadaru – are shown in Figure 1.

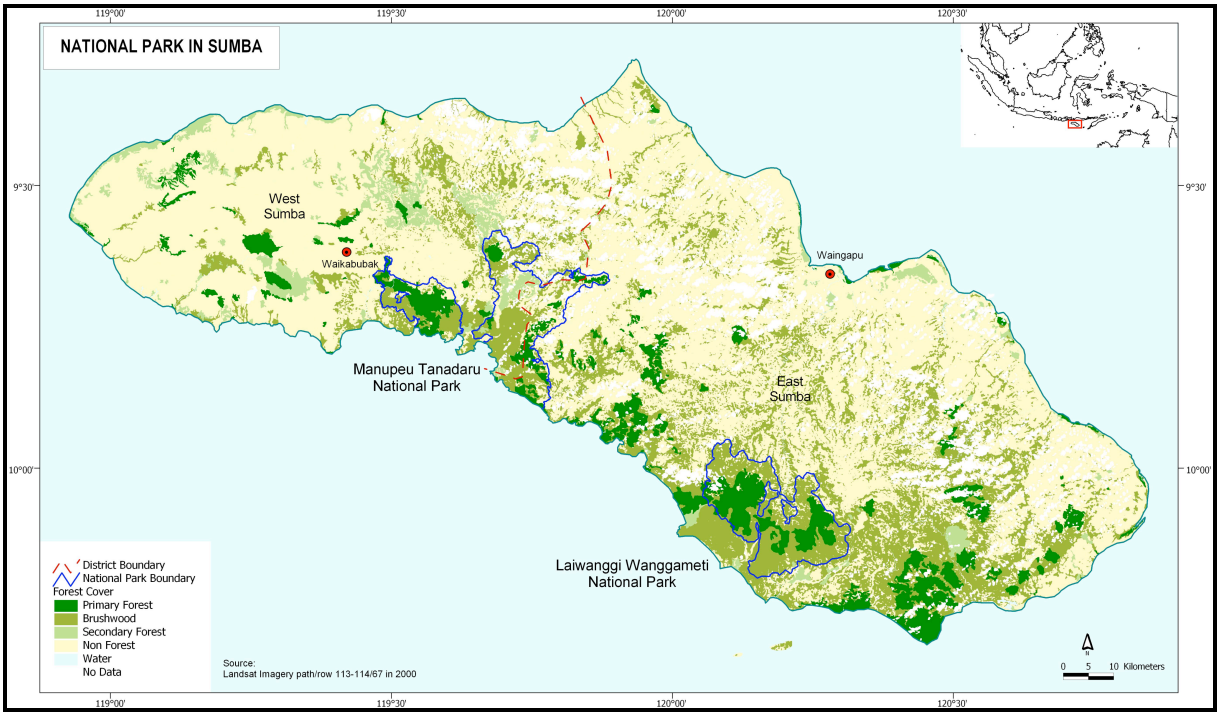

Figure 1. Location of Manupeu Tanadaru National Park, Sumba (map courtesy of Syarif Indra and Burung Indonesia).

Manupeu Tanadaru is in close vicinity to 27 villages, 22 of which directly border the protected area and depend heavily on the forest for natural resources. These twenty-two villages bordering MTNP went through the participatory conservation process facilitated by Burung Indonesia. The focal communities in this study were Manurara, Mbilur Pangadu, Umbulangang, and Kondamaloba. The smallest of these villages was Umbulangang, with a population of approximately 650 people at the time of the participatory conservation process (Umbulangang VNCA 2003) and the largest community was Kondamaloba, with a population of 3,050 people (Kondamaloba VNCA *Draft* 2005).

Research Methods

The methodology of this study was chosen with the goal of determining the strengths and weaknesses, as perceived by stakeholders, of the participatory conservation process that was facilitated during the establishment of Manupeu Tanadaru National Park. The methodology aligns with that of a beneficiary assessment (Amelga 1994, Salmen 2002). This is a qualitative method of investigating the impact of projects on their intended beneficiaries and other stakeholders, but which has a framework that allows for the quantification of data.

Focus group and key-informant interviews were held with stakeholder groups and their representatives on the local, regional, national, and international level. Four focal villages bordering MTNP and involved in the participatory conservation process were selected as case studies. Two of the communities had completed the participatory conservation process while the other two were in the midst of it. Government officials involved in the process and many of the NGO staff facilitating the program were interviewed. In addition, key informants from other environmental NGOs actively involved in community-based conservation elsewhere in Indonesia were interviewed about their experiences facilitating participatory conservation projects.

In total, over 200 people were interviewed either individually or through focus group discussions from June 11 to August 11, 2005. This data was supplemented with information from relevant regulations, reports, socio-economic surveys, village nature conservation agreements (both drafts and finalized agreements), and the park's 20-year draft management plan.

Findings

Burung Indonesia's Participatory Conservation Approach

Burung Indonesia adopted three participatory conservation mechanisms: village conservation agreements, participatory mapping, and conservation groups. The NGO adjusted each of these mechanisms according to the realities within which they were working (e.g. budget, timeframe, and staff resources), and linked the mechanisms so that they would work together as part of a larger process. Each of these three mechanisms, how Burung Indonesia used them, and how they fit into the overall participatory

conservation process Burung Indonesia designed is explained below.

Village Nature Conservation Agreements

A village or community "conservation agreement" is a participatory tool that has often been used to help resolve conflict between protected area management and communities, develop rules concerning natural resource use, or make decisions about land claimed by both protected areas and a community. The most cited example of village conservation agreements in Indonesia were those facilitated by the World Bank and WWF as part of the Integrated Conservation and Development Project at Kerinci Seblat National Park (KFCP) in Sumatra. This ICDP had a budget of over 46 million USD, and each buffer-zone village involved in the project was eligible to receive grants of 50,000 USD over a period of six years (Werner 2001) if they would "develop an acceptable land-use plan and formally agree to stop encroachment and poaching" (Wells et al. 1999). The KFCP village conservation agreements failed to curb large-scale illegal logging, mining, hunting, and trafficking of endangered animals (Werner 2001) – all of which were complex problems linked to supply-and-demand networks that extended well beyond the targeted villages. However, "community-based conservation" as an ideal remains, and continues to be experimented with by conservation NGOs in Indonesia.

Burung Indonesia's Village Nature Conservation Agreements (VNCAs) were originally modeled after those of the World Bank and WWF for Kerinci Seblat National Par [ii] . However, Burung Indonesia's projects were done on a much smaller scale (22 villages instead of 134, and livestock instead of large sums of cash). Burung Indonesia and PAKTA began facilitating the VNCAs in communities surrounding MTNP in 2001. The general VNCA process Burung Indonesia developed is shown in Figure 2. The aims of Burung Indonesia in facilitating village conservation agreements and a broader participatory conservation process were to: (a) enable the community to express their aspirations and concerns about natural resource management, (b) provide a forum to negotiate natural resource management issues between communities and the national park, (c) secure the commitment of all stakeholders through a formal written agreement which is fully understood and implemented by all parties but which is flexible and dynamic enough to be able to evolve and respond to changes as required, (d) through this to resolve conflict between the national park and surrounding communities, and (e) by reducing conflict, to create conditions which enable constructive cooperation on planning, protection and management of the park's resources.[iii]

Burung Indonesia's VNCA process is described as beginning with "socialization" (Burung Indonesia 2004c). The socialization phase involves informal discussions about the national park with the village government and community members. With the agreement of the village's government, rapid biodiversity assessments, socio-economic studies, and participatory mapping are carried out (Burung Indonesia 2004b). During these surveys NGO staff members facilitate discussions with local people about issues

related to the national park[iv]. All of this information is used to assist with the facilitation and development of the VNCA.

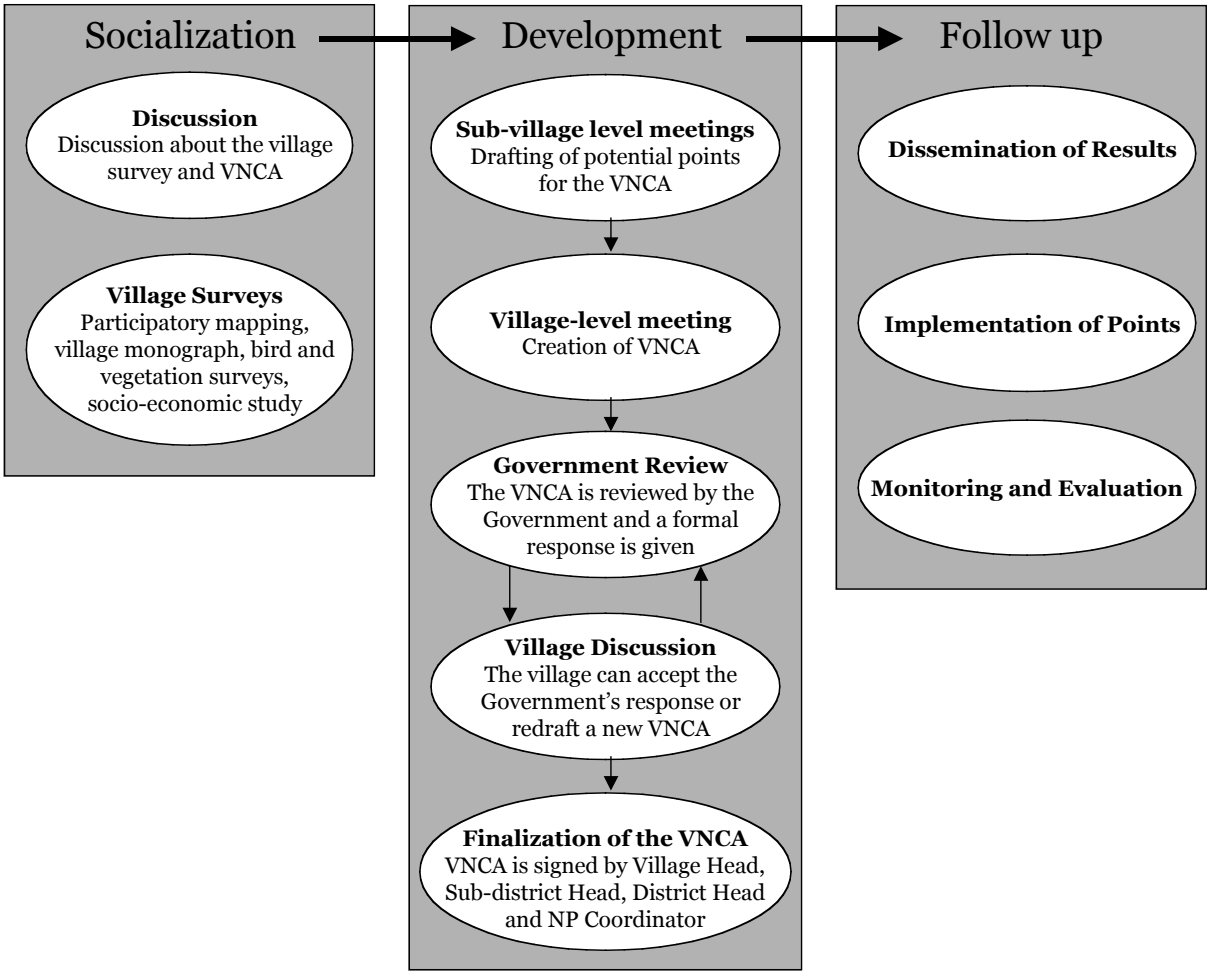

Figure 2. This diagram illustrates the steps leading up to and following the creation of Burung Indonesia's Village Nature Conservation Agreements.

The VNCA process is carried out through a series of sub-village and village-level meetings that are facilitated by staff from the Burung Indonesia and their local partner PAKTA. These meetings each last one to two full days [v], and include not only local government representatives but also *adat* leaders, religious leaders, women representatives, individuals with land and resource claims in/near the park, and interested community members. Attendees at the sub-village level meetings discuss issues important to them related to the Park, and make a list of potential agreements that they would be willing to make with the government. At the village-level meetings the points from all the sub-village meetings are brought together and consolidated, then "agreed upon" by the attendees. The village-level meetings are also publicized in the community and open to the public. The VNCA is transcribed by a staff member from Burung Indonesia or PAKTA on the village's behalf [vi]. There is then a process of consultation during which the government (National Park, Forestry Office, and Regional Development Planning Agency) receives the VNCA and responds to each point proposed by the village (Burung Indonesia

2004c). The government's response to the points listed in the VNCA can either be accepted by the village (for example, if the village requested that they be permitted to collect timber from the Park but the Government said no) or a new draft of the VNCA can be created and sent again to the Government.[vii]

The designed follow-up phase entails dissemination of the rules within the VNCA, implementation of the VNCA's points, and continued monitoring and evaluation. The process design gives the community forest conservation group (described below) responsibility for distributing information on, implementing, monitoring, and enforcing the village conservation agreement.

Participatory Forest Boundary Demarcation

The use of participatory mapping as a community-based conservation mechanism by environmental NGOs and research institutions has become increasingly more common in recent decades. This trend is due in part to the rapid improvement of spatial information technologies and increasing affordability of these innovations. Participatory mapping, which can be broadly defined as the exercise of mapping lands with the involvement of local people, often involves training community members in mapping skills such as reading maps, using a compass, and collecting information with GPS equipment. Initial community maps are often made through exercises that have participants plot out their village's natural resources using a pen and paper or through three-dimensional representations (Lynam et al. 2007). The goal of such mapping has often been to show the government what lands and resources communities claim under customary law (Alcorn 2001, Eghenter 2000, Okamoto 2001, Peluso 1995, Warren 2005, Wollenberg et al. 2002). Participatory mapping in Indonesia has been hailed for its ability to empower local communities (Warren 2005), and simultaneously questioned by others for its potentially disempowering effects (Anau et al. 2002, Fox et al. 2008). Unintended consequences of participatory mapping have included land conflicts within and between communities, increased land privatization, and the misuse of information in community maps by outsiders (Fox et al. 2008).

NGOs in Indonesia have been experimenting with community-based mapping techniques for over two decades (see Deddy 2006 for a review). Participatory mapping projects have been carried out as part of conservation efforts on the islands of Java, Sumatra, Kalimantan, Sulawesi, Papua, Flores, Sumba, Bali, and elsewhere in Indonesia (Pramono 2005, Hardiono et al. 2005, Warren 2005, Anau et al. 2003, Wollenberg et al. 2002). Conservation projects utilizing mapping have been initiated by international research institutes, national NGOs, local organizations, and communities and have involved a diverse array of actors, ranging from universities to government ministries to non-profit as well for-profit organizations.

Based on our analysis of interviews and information collected during this study, we came to the conclusion that Burung Indonesia's participatory forest boundary demarcation process is not representative of participatory mapping as

it is broadly and commonly understood in the literature. The protocol Burung Indonesia used for the boundary demarcation process mirrored the process required by Indonesian law (MoF 2001). Boundary demarcation is one part of the Government's forest gazettement process. It begins with the forest area being stipulated as state forest. Once the perimeter has been fully demarcated (physically marked), a series of meetings occurs (described below). Only after this process is completed is the forest considered gazetted (MoF Decree No. 32/2001, MoF Decree No. 70/2001).

The gazettement of national parks in Indonesia has proven to be quite difficult due to conflicts regarding land rights and the location of boundaries. Consultation with local people regarding the placement of borders has been, for the most part, minimal. This improved with the MoF Decree No. 32/2001, which required that a boundary commission be established to consider the placement of the new boundary, and that two representatives from each community affected be included as members of the commission. The boundary commission is required to have representatives from each of the following groups:

1. Regional Planning and Development Agency (*Badan Perencanaan dan Pembangunan Daerah*)
2. Land Use Agency (Badan Pertanahan Nasional)
3. Head of Sub-District (*Bupati*)
4. Forest Gazettement Agency (Badan Pemantapan Kawasan Hutan)
5. Regional Conservation Agency (Balai Konservasi Sumber Daya Alam)
6. Community representatives (the Village Head and one *adat* leader)
7. Relevant institutions such as the Forestry Office, Agricultural Office, etc.

Burung Indonesia described their participatory forest boundary demarcation process as being split into three phases. The first phase was "socialization", or the introduction of the idea to stakeholders – particularly the community (Burung Indonesia 2004). The level of interaction with the community during this stage was not specified. After socialization was the demarcation process (Burung Indonesia 2004), which was described as follows:

1. *First boundary commission meeting*: The demarcation of the boundary and issues related to land use inside the protected area are discussed among boundary commission members.
2. *Temporary boundary demarcation*: The physical marking of these possible borders helps ensure that people affected by them are made aware of them, and it allows members of the boundary commission to see the situation on the ground.
3. *Second boundary commission meeting*: During this meeting the temporary boundary is discussed and a final boundary is chosen. Community claims of land inside the protected area are discussed during this meeting and the boundary commission addresses these claims.
4. *Boundary demarcation*: After the second and last boundary commission meeting, a definitive boundary is demarcated. Local people are hired to demarcate the border agreed upon by the boundary commission. This step is

described as being a tool for giving socialization about the boundary to the community. The process ends with the follow up phase, during which socialization is suppose to be given to all stakeholders through the distribution of maps showing the new boundary's location (Burung Indonesia 2004).

Burung Indonesia took a very active role in the demarcation of Manupeu Tanadaru National Park's boundaries and became the first NGO in Indonesia to be represented in a boundary commission.

Community Forest Conservation Groups

At the time of this study, "community forest conservation groups" (CFCGs) were less commonly used by environmental NGOs in Indonesia than village conservation agreements and participatory mapping. Burung Indonesia's CFCGs were modeled after a community forest conservation group on Lombok, which was facilitated by the NGO LP3ES in the 1990s (Suryadi *unpublished*). Such groups can be difficult and time consuming to establish (Little 1994), which might be part of the reason they are not as common. More common than "forest conservation" groups are community-based agroforestry groups [viii] (Garrity et al. 2002), local fishermen's groups in marine protected areas (Tulungen et al. 1998, Crawford et al. 2004) and ecotourism groups[ix].

According to Burung Indonesia's participatory conservation approach at Manupeu Tanadaru, the CFCGs are designed to be a liaison between the village and the national park, Burung Indonesia, and the government. The following diagram (Figure 3) shows the intended relationship amongst stakeholders. All physical inputs (agricultural equipment, goats, chicken, cattle, seeds, etc.) and knowledge inputs (training in terracing, managerial skills, and reporting illegal activities) are given to the CFCG. In return the group is expected to serve as an intermediary between the national park and the community, and a watchdog for illegal activities inside the park. Reference is made to the community forest conservation groups in the draft 20-year management plan for Manupeu Tanadaru National Park. According to the plan, the CFCG will assist with the protection of the park, be given access to information about the park, be prepared to participate in future ecotourism, and be compensated for their assistance by the government or other institutions.

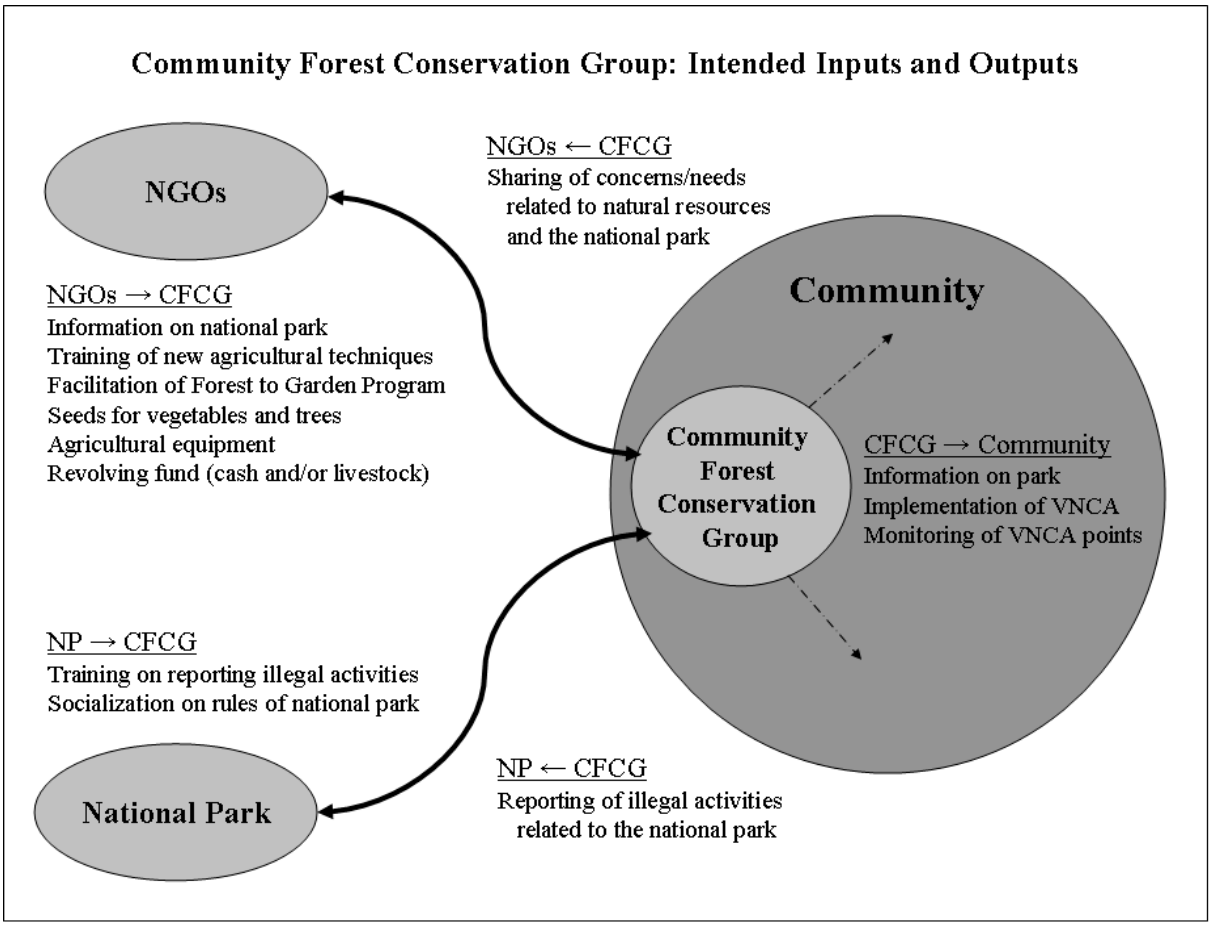

Figure 3. The figure above shows the responsibilities of the CFCG, MTNP, and Burung Indonesia to one another and the community.

The primary activity of the CFCG is the Forest to Garden Program (Burung Indonesia 2004a). Through this program the groups are given seeds for vegetables and trees which members plant in their group's garden as well as their own gardens. This is promoted to donors as way of reducing member's dependence on the forest. But, as one community member noted, "*everyone has gardens like this*" in their village. [x] Interviewees not in the CFCG gave long lists of fruit and timber species that they had planted in their personal gardens. However the non-CFCG members must purchase or find their seeds whereas members are given a supply.

The CFCG was responsible for educating the community on the importance of conserving Manupeu Tanadaru National Park, relaying information to the community on the rules and regulations of the park, and voicing concerns of community members to the national park. The CFCGs were not given specific processes through which to carry out their prescribed duties. This meant the decision of whether or not to conduct community outreach activities was left to the self-initiative of each CFCG. They were given very limited education on forest ecology, ecosystem services, or Sumba's biodiversity – topics they were asked to educate the community on.

One of the expectations of the CFCG was to "*keep eye*" on the forest. [xi] If reports are made of illegal activities, the

group was supposed to check them for accuracy and then pass on the information to the appropriate authorities. At the time of this study, Manupeu Tanadaru was not being formally patrolled. Manurara, Umbulangang, and Kondamaloba's CFCGs all reported illegal logging and encroachment activities soon after their establishment. In July 2005 the MTNP staff received funding from the Danish International Development Agency (DANIDA) to do patrols of the park's boundaries until 2008, and to involve the CFCGs in some of these patrols.

Intention and Implementation

Burung Indonesia designed their participatory conservation process to begin with socialization and the establishment of a community forest conservation group. This was then to be followed by the development of a village nature conservation agreement. The conservation agreements were – in part – intended to be a means through which the communities could communicate their resource and land entitlements to the government, and in this way influence the placement of the national park boundary. The final mechanism in the process was the participatory forest boundary demarcation. Though only the village head and *adat* leader would directly participate in this step, the process was designed so that they were the community's representatives, responsible for relaying to the boundary commission the stance of their village, as determined through the participatory conservation process.

The process Burung Indonesia initially designed was sped up (from over a year to less than 6 months in some villages) and the participatory mechanisms were carried out in different orders than intended, decreasing the process's participatory potential. This occurred for a number of reasons:

1. Responsibilities of and restraints on the NGOs from their funding agencies and the government required them to change the process from its original design to meet deadlines and align with the funding and work cycles of their partnering governmental institutions.
2. The differences *between* communities and the complexities *within* communities also influenced the process, resulting in unique processes and outcomes in each village.
3. The politics at play amongst the partnering government agencies, NGOs, and communities, as well as the micro-politics within these stakeholder groups, further guided the process – at times towards its goals and at times away from these goals.

Discussion

There were a number of challenges identified in the participatory conservation process at Manupeu Tanadaru National Park. Some of these challenges are inherent in any participatory conservation process, while others were the consequence of the design or implementation of the participatory conservation process. For this discussion we have grouped challenges into three themes: (1) Complexity within Communities, (2) Politics of Partnership, and the (3) Responsibilities and Restraints of NGOs.

Complexity within Communities

Issues of Inequality

Inequalities existed within communities surrounding Manupeu Tanadaru that made community participation and representation a challenge. Women have a strongly differentiated role to that of men in Sumbanese society, making it difficult to illicit the input of women in meetings and group processes. Sumbanese society previously had a caste-like system, and the influence of social hierarchy remains influential.

Another dividing factor within communities is access to education and the opportunity to learn Bahasa Indonesia, the national language. Lack of education and language ability served to further marginalize the sub-villages of Konda and Maloba in the participatory conservation process. Residents of these two hamlets had received no formal school education, and could only communicate with PAKTA and Burung Indonesia's staff through the assistance of translators from the hamlet of Dassa Elu. Because many community members from Dassa Elu could speak Bahasa Indonesia, they were better equipped to express their points of view when communicating with NGOs and the government.

Potential for conflict

One partial fallacy about participatory conservation – especially map-making and boundary demarcation – is that it resolves land and resource conflicts. The Participatory Forest Boundary Demarcation process used by Burung Indonesia was not just a process of boundary *demarcation*, but was also a process of boundary *creation*. Establishing legitimacy for previously unmapped boundaries involves negotiation and is often accompanied by conflict. Such conflicts have been previously documented in case studies on mapping and boundary demarcation in Indonesia (Anau et al. 2003, Wollenberg et al. 2002). Mapping alters the way people define their boundaries and view property rights. This, in turn, can increase local conflicts over land tenure, as explained by Fox *et al.* (2008),

> As long as boundaries remain fluid and flexible, defined only in a person's mental image of the landscape, conflicts between competing interests (within villages or between villages) can be minimized. Once boundaries are mapped, however, conflicting images of reality cannot be overlooked any longer and must be addressed. (Fox et al. 2008)

As advised by Wollenberg *et al.* (2002), participatory mapping and demarcation programs should focus more heavily on long-term coordination of different interests, and efforts should be made to address uneven power relations, some of which might not be visible to outsiders. A village might be mistakenly assumed to be homogenous when in reality strong dividing lines run through the community.

A situation demonstrating the potential for participatory mapping projects to create conflict was experienced by Burung Indonesia's field team when they started marking the village of Watumbelar's boundary with the park. What the team did not realize as they were marking the border was that ownership over the area of land near Lai Hau had been in dispute for decades. When men from Lai Hau saw the boundary being demarcated they interpreted this as the village of Watumbelar trying to claim the disputed land. The boundary demarcation team was approached by men from Lai Hau and threatened with machete

(*parang*). If not perceived as legitimate, boundary mapping and demarcation can lead to conflict and possibly escalate into attacks against demarcation teams or violence between villages.

Community Politics

Participatory conservation projects are very political because they involve rights to land and resources. These projects often include beneficial programs and inputs (such as revolving funds, livestock, and seeds) that go to a select number of people from the community, they build the social capital of participants, and they can reinforce the political sway of those considered to be the village representatives in the process.

As previously mentioned, Burung Indonesia's boundary demarcation process is part of a larger community-based conservation approach. Research into this approach showed that when village-level conservation agreements were prepared and forest conservation groups were established *before* the participatory forest boundary demarcation process, there was more awareness that the national park was going to be established and that the conservation agreement meetings were a venue through which the national park border could be negotiated.[xii] Similarly, in the villages that had done more preparatory work before their meetings with the government, there appeared to be greater accountability of the village representatives in the Boundary Commission to their communities. However, because of the rush to move forward with the demarcation process so that Manupeu Tanadaru would gain national park status, villages that were brought into the community-based conservation process later on had their boundaries demarcated before the village agreements and forest conservation groups were established. As a consequence, the process could be more easily co-opted. This is exemplified in the story of Kondamaloba's 'participatory' forest boundary demarcation process.

The Participatory Conservation Process at Kondamaloba

In 2004 the boundary commission made an arrangement with Kondamaloba's village head and *adat* leader that 900 hectares of forest would be exchanged for 50 hectares of grasslands (according to the Gazettement Agency)[xiii] or 600 ha for 100 ha (according to Kondamaloba's village government). [xiv] This forested land had been a key conservation target for the NGOs and National Park, as it was the one corridor of intact habitat connecting the large forested areas of Manupeu and Tanadaru, which give the park its name. The grasslands exchanged by the park to Kondamaloba were good for farming and were conveniently located near Dassa Elu, where the bulk of the community's village government and all of its community forest conservation group members reside. The hamlet of Dassa Elu agreed that this land would be equally divvied amongst the hamlet's residence. The logic for excluding the village's other three hamlets was that they were located too far away from the grassland.

Kondamaloba is the only focal village in which community members had negative views of the Community Forest Conservation Group and said they did not want to join the group. Synonyms of "afraid" were repeatedly spoken by

interviewees when they discussed the new regulations and the conservation group.[xv]

Kondamaloba's CFCG has been very affective in curbing the use of forest products by Dassa Elu residents. Even though the VNCA had not yet been agreed upon by the government at the time of this research, some of the points had already been turned into village laws and the group had locally prosecuted twelve community members for encroaching onto the village's land and turned in another two to the police for illegal logging. When the women's group in Dassa Elu hamlet was asked if they were able to get enough fuelwood with the new regulations, the consensus seemed to be that it was not enough. But it appears that this was not being expressed to the Head of the CFCG: "Everyone is afraid of what he'll say. No one wants to talk when he is present" (quote from woman in Kondamaloba's CFCG).

Kondamaloba's CFCG Head was the community's *adat* leader, a representative on the region's *adat* board, in the village government, and a former village head. His strong personality significantly shaped the participatory conservation process in Kondamaloba. Because of his powerful position in the community, the NGOs could not negotiate with the community over the boundary without building a relationship with him. But the NGOs and government had another reason for depending on the *adat* leader: they needed the corridor between Manupeu and Tanadaru forest for the national park. These factors provide insight into why the community exchanged such a large amount of forested land for a comparatively small amount of agricultural land.

One of the weaknesses of Kondamaloba's CFCG is the exclusion of residents from the sub-villages of Lolukalai, Konda and Maloba. None of the interviewees from outside Dassa Elu hamlet knew what the purpose or activities of the CFCG were.[xvi] For example in Lolukalai, a hamlet established by the Transmigration Office for migrants from elsewhere in Indonesia, interviewees received no socialization about the national park when they moved to the village, yet some of them were allotted land near the park's edge. Studies have shown that Indonesia's Transmigration Program – the largest in the world – resulted in environmental degradation through its continuous shifting of people from densely populated areas to less populated ones (Dewi et al. 2005, Whitten 1987), and thus logically Lolukalai should have been a key community for socialization about the new national park.

Residents of Konda and Maloba depend entirely on the forest, sea, and land that surround them for their food and building materials. When asked if individuals from these two hamlets were invited to join the CFCG, the response was "We have never been asked to be a member, yet we live in the middle of the forest." With the addition of the corridor to Manupeu Tanadaru National Park, Konda and Maloba are now 'locked' into the coast by the forest. If their population increases so will their need to expand their village's land, potentially creating a conflict between these hamlets and the Park in a generation from now.

The case study of Kondamaloba exemplifies how participatory conservation processes will differ between communities, sometimes considerably, due to the

capability and motivations of the local leaders, the relationship of the group with the village government, the social dynamics within the group, the condition of the village, and the physical geography of the protected area. Thus, although the participatory conservation process used in different communities might be similar, the end products can be drastically different.

Politics of Partnership

Differences in partners' worldviews, agendas, and visions of the future became apparent in the analysis of the interviews and data collected for this study. These differences were also detectable in the village nature conservation agreements themselves, as described below under the topics "World Views" and "Agendas".

1. World Views

> "We pray to the birds, for these birds are evil sprits and can kill people"
>
> Adat Leader, Umbulangang Villagexvii

Manurara's village nature conservation agreement stresses the importance of conservation because of the communication that exists between men and birds (Manurara VNCA 2003). The village of Mbilur Panagadu shares a story in the background section of their VNCA about how an animal adhered itself to the navel of an ancestor (Mbilur Pangadu VNCA Draft 2005). Like Burung Indonesia, the communities value birds, but the species they value most and their reasoning for valuing these species differs with the NGOs. By signing the communities' agreements, the NGOs and government appear to, in a sense, accept the worldview of villagers in return for them accepting the view of the government and NGOs. Often times it has been a challenge for government agencies and NGOs when communities' beliefs about the environment don't align with normative scientific knowledge (Goldman 2003). These are *village* nature conservation agreements and thus, villagers' beliefs about the environment are fundamental to them. Acceptance and respect for local people's environmental beliefs is necessary for true collaboration in conservation initiatives (Berkes et al. 1994).

2. Agendas

Analysis of the village nature conservation agreements uncovered inconsistency between the content of the points of agreement presented by the communities and the government's responses to these points. The apparent miscommunication within the agreements reveals the differing agendas of the partners developing these agreements. In a straightforward point of agreement on field fire in Manurara's VNCA, the Government responded with "Non-timber forest product collection may traditionally be collected outside the Nucleus Zone." It was evident that the government was inserting points they wanted into the agreement by including them in their responses to the community's points, even if they were not relevant to what the community was proposing. What was particularly alarming was that the government was not responding to most of the points concerning development of local infrastructure (the need for farming equipment, school facilities, a medical outpost, etc.). The blame for this does not lie solely with the government; the NGOs that facilitated these agreements did so without effectively communicating what

the government agencies agreeing to the VNCAs were capable of doing. The community's motivation for inserting points not related to conservation is understandable considering how rarely they are able to communicate this directly with government agencies. They used the village conservation agreements as an opportunity to voice their needs and concerns with the hope that their requests for a schoolhouse or new road would be heard. It is important that in these circumstances the third party NGOs spend further time facilitating and encouraging discussion on points of agreement that are incoherent or have the potential to be misconstrued. NGOs are in a position of needing to inspire local interest in their initiatives, while not building up false hopes amongst community members, which lead to potential disappointment and distrust. Honest communication and full disclosure helps limit false expectations of what the government is considering or is capable of providing.

3. Visions for the future

> "At the previous time, the Community Forest Conservation Group was a pilot project. We need to move past the pilot stage and apply the principles through a village program so that everyone is a participant." – Manurara resident[xviii]

> "Shortly, no more negotiation will be made with the community… They will still be invited to the process of zonation to make clarification if some of their land is inside the National Park... If the community does not agree with the process of zonation it will go forward. The community has agreed to the VNCA, and they have to take the consequences for the future." Manupeu Tanadaru National Park Coordinator[xix]

Better understanding partners' visions for the future helps us to identify points of potential conflict in the future. The above quote of Manupeu Tanadaru National Park's coordinator brings up a fundamental issue that needs to be further investigated in the literature on participatory conservation: *What role do participatory approaches play in legitimatizing the authority structures needed to govern lands designated as protected areas?* In the case of Manupeu Tanadaru, local involvement was needed by the government to legally legitimate the process of park gazettement carried out by the government, and needed by Burung Indonesia to gain the legitimacy needed to raise funds and support for the national park's creation.

4. Undermining local participation

In Sherry Arnstein's seminal work, "Ladder of Citizen Participation" (Arnstein 1967), she demonstrates how the word "participation" can be (mis)used by governments and organizations to gain legitimacy to their agendas. Her typology of participation helps to illustrate the extent to which citizens have influence over a process and its end product. The participation ladder's bottom two rungs are *manipulation* followed by *therapy*. These are levels of "non-participation", in which the real objective is not to enable people to participate in planning, but rather to "educate" or "cure" them. The next steps up on the ladder are *informing*, *consultation* and *placation*. The objectives of these are, according to Arnstein, "tokenism". Tokenism allows people to speak their mind, but does not ensure that those in power will heed citizens' views. The highest rungs of Arnstein's ladder are *partnering*, *delegated power*, and *citizen control*. This ranges from negotiating power to full managerial power.

Using Arnstein's typology, the hamlets of Konda and Maloba would be

classified in the bottom rung of citizen participation: *manipulation*. However, the village of Manurara appeared to be between the rungs of *placation* and *partnering* and actively working towards *delegated power*. Thus, "participatory conservation" as a process can vary greatly – from manipulating people into abiding by pre-determined government reforms, to delegating them with management powers and potential benefits associated with these conservation reforms.

Responsibilities of and Restraints on NGOs

There are differing levels of power within communities, between communities and government agencies, and between NGOs and other stakeholders. By initiating a participatory conservation process, the NGO in effect is taking on the responsibility of helping redistribute decision-making power amongst different parties – ideally so that local communities have the representation and power to influence the outcomes of the process. This is a much more difficult task than it might first appear.

NGOs are not neutral. Their inherent purpose is expressed in their mission statement, which is intended to be what guides the organization. The NGO's members and donors hold strong sway over the organization, due to the dependency of NGOs on external sources of funds. NGOs and their staff must build one-on-one relationships as well as formal partnerships. With each partnership comes expectations, and in some circumstances an NGO's responsibilities to partners can erode their neutrality in the participatory conservation process.

The primary role NGOs tend to play in the participatory conservation process is that of facilitator. This role is fundamental in processes of negotiation amongst stakeholders of varying levels of power. Insuring adequate representation of weaker stakeholders is one of the most significant challenges in participatory conservation. To communicate how NGOs can facilitate higher quality local participatory in conservation, we have adopted and slightly adjusted the "norms of good practice" outlined by Lowry, Alder, and Milner (1997) for public involvement in group processes, politics, and planning. Similar norms for the facilitation of participatory conservation processes might be as follows:

Norms of Good Practice for Participatory Conservation:

1. Facilitation of participatory conservation requires attention to the distribution of power, and how it is used by stakeholders.
2. Organizing the representation of different stakeholders does not simply mean inviting all of the identified 'players', but it also means enabling stakeholders with less access to information and weaker positioning to acquire needed knowledge and have sufficient time to prepare so that they are in a better position to negotiate with more powerful stakeholders.
3. Facilitators of participatory conservation need to make clear *who* will make important decisions in the process, and *how* these decisions will be made.
4. Stakeholders – particularly community members (and especially those that are

most impacted by conservation initiatives) – need to be communicated with in clear language (both oral and written) about the expectations of each party in the participatory conservation process (both during and after the process).

5. In participatory conservation, getting local involvement shouldn't be only about getting consensus on park boundaries and regulations. The aim is for sustained public participation in and support of conservation.

Burung Indonesia and PAKTA's Establishment of Community Conservation Groups

Burung Indonesia prioritized hiring local staff for their office in Sumba.[xx] This helped the NGO to overcome language and cultural barriers and contributed to their accomplishments in building community participation. Burung Indonesia also gave the local NGO PAKTA a major role in the establishment and facilitation of the CFCGs.

PAKTA used two strategies for establishing community groups. The first was to take pre-existing groups within the community and turn them into their 'new' group. For example, PAKTA co-established community groups with AUSAID to address economic and gender-related issues in Katikuloku and Waimanu villages, and PAKTA then transformed them into 'forest conservation groups' by adding BirdLife's Forest to Garden Program. This eased the process of group establishment, but meant that fewer people in the community received benefits from outside sources. It also meant that the groups' new goal of forest conservation might be in opposition to its initial goal of addressing economic and gender-related challenges.

PATKA's second strategy for establishing a community group was to invite individuals from the higher economic class to become the group's founding members, and by doing so get the attention of the rest of the community. Their reasoning behind this was that if people from the upper social strata are not involved in the group, these people will potentially be able to make the program fail merely by influencing the actions of the group's members. Elaborating, they said that individuals from the lower social and economic strata mimic those from the higher. Thus, when villagers see CFCG members planting trees, they will do the same. Unfortunately, although villagers might wish to imitate CFCG members by planting timber-species, they are not receiving free seeds and are possibly unable to afford them.

PAKTA's strategy for the establishment of community conservation groups highlights one of the contradictions inherent in participatory conservation. Community conservation groups can increase local representation in negotiations with the national park. However, often times it is the more economically well-off and socially well-connected villagers that are better represented and receive the bulk of livelihood improvement inputs. In Kondamaloba, the participatory conservation process arguably resulted in the further marginalization of community members who depended most heavily on the common-pool resources from the forest. Yet, in order to establish groups quickly, ensure that their establishment

was not protested, avoid the growing pains of a newly-established group, and quickly gain sway within the community: PAKTA's strategy was logical. It was even more practical when one takes into consideration PAKTA's three-year contract with Burung Indonesia and their limited budget. This is an example of how time and budget restraints experienced by NGOs, combined with the micro-politics that exist within groups and communities and between partners, result in well-intended processes and programs having unintended outcomes.

Conclusion

Difficulties that have resurfaced again and again in community conservation projects include inadequate representation of disadvantaged groups, governments not supporting local empowerment if it threatens their own authority, and insufficient investments of time, funding, and expertise. Burung Indonesia and many other NGOs are aware of these obstacles and are working to address them. Governments, NGOs, and communities must be committed and patient, as it may take a considerable amount of time for projects to produce tangible results. Donors supporting participatory conservation also need to gain increased awareness of the commitment and long-term time frames that such processes require in order to become self-sustaining.

A greater emphasis needs to be placed on building the capacity of facilitators (e.g. through trainings in participatory rural appraisal, participatory GIS, and group facilitation methods more generally), and on valuing those facilitators that are talented and adept in their work. In the past, the conservation field was almost void of participatory conservation specialists. This is a gap that Burung Indonesia recognized early on, and they invested in building the capacity of promising local staff to facilitate community conservation processes.

Finally, an area in which participatory conservation needs considerable improvement is information sharing amongst NGOs. This includes information on both successes *and* failures. The lack of information sharing about participatory conservation mechanisms is closely connected to NGOs' dependence on donor funding. A struggling project is less likely to have their funding renewed, and this can lead to future projects by an NGO being declined for funding. In this way, NGOs are directly and indirectly penalized for accurately reporting project outcomes. This is slowing down what should be a reiterate, learning-by-doing process. Participatory conservation needs transparency and critical analysis of project failures in order to avoid repeating mistakes. The question is not if participatory conservation should be done, but how. Early experiments in participatory conservation mechanisms – such as the efforts by Burung Indonesia and their partners – provide us with important insights into challenges experienced by participatory conservation as a whole. Continued sharing of experiences about participatory conservation will lead to improved strategies for genuinely involving local people in conservation, hopefully resulting in better outcomes for both society and the environment.

References

Adams, A. 2004 Biodiversity Conservation and the Eradication of Poverty. *Science* 306(5699): 1146-1149.

Agrawal, A. 2001. Common Property Institutions and Sustainable Governance of Resources. *World Development* 29(10): 1648-1672.

Agrawal, A. and C. Gibson. 1999. Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development* 27(4): 629-649.

Alcorn, J.B. 2001. Borders, Rules and Governance: Mapping to catalyse changes in policy and management. London, IIED: 13.

Amelga, M. 1994. *A Review of Beneficiary Assessments*. ENVSP Consultant Report. Washington, D.C. World Bank.

Anau, N., R. Iwan, M. Van Heist, G. Limberg, M. Sudana, and E. Wollenberg. 2002. Negotiating More than Boundaries: Conflict, Power and Agreement Building in the Demarcation of Village Borders in Malinau. In *Technical Report Phase I 1997-2001. ITTO Project PD 12/97 Rev.1 (F): Forest, Science and Sustainability: The Bulungan Model Forest*. CIFOR, Bogor, Indonesia. Pp. 131-156.

Arnstein, S.R. 1967. A Ladder of Citizen Participation. *JAIP*. July 1967: 216-224.

Barton, T., G. Borrini-Feyerabend, A. de Sherbinin, and P. Warren. 1997. *Our People, Our Resources*. IUCN. Gland, Switzerland and Cambridge, UK.

Berkes, F., C. Folke, and M. Gadgil. 1994. Traditional ecological knowledge, biodiversity, resilience, and sustainability. In *Biodiversity Conservation*. C. Perrings, K. Maler, C. Folke, C. Holling, and B. Jansson (Eds.). Kluwer. Pp. 281-299.

Burung Indonesia. 2004. Participatory Boundary Demarcation (Manupeu Tanadaru National Park): Lessons Learned during 2001-03. Burung Indonesia. Bogor, Indonesia.

Burung Indonesia. 2004a. *Conservation of Forest on Sumba. Phase 1 2002 – 2004. Final Report*. DOF, Birdlife Denmark and Burung Indonesia. Bogor, Indonesia.

Burung Indonesia. 2004b (unpublished). Summary of the context and approach of BirdLife Indonesia approach to work on Sumba and shared learning with Sangihe and Sumatra. Burung Indonesia. Bogor, Indonesia.

Burung Indonesia. 2004c (unpublished). Data Gathering for Forest Management Conflict Resolution (Manupeu-Tanadaru National Park): Lessons Learned during 2001-03. Burung Indonesia. Bogor, Indonesia.

Borgerhoff Mulder, M. and P. Coppolillo. 2005. *Conservation: Linking Ecology, Economics, and Culture*. Princeton University Press, New Jersey.

Brockington, D. 2002. Fortress Conservation: The Preservation of the Mkomazi Game Reserve,

Tanzania. Indiana University Press, Indiana.

Brockington, D. and K. Schmidt-Soltau. 2004. The social and environmental impacts of wilderness and development. *Oryx* 38, 140-142.

Brosius, J.P, A. L. Tsing, C. Zerner. 1998. Representing Communities: Histories and Politics of Community-Based Natural Resource Management. *Society & Natural Resources* 11(2): 157-169.

Brosius, J.P. 2004. Indigenous Peoples and Protected Areas at the World Parks Congress. *Conservation Biology* 18(3): 609-612.

Central Statistics Agency. Indonesia. 2002. http://www.bps.go.id/index.shtml

Cernea, M. 1997. The Risks and Reconstruction Model for Resettling Displaced Populations. *World Development,* Vol. 25, No. 10, pp. 1569-1587.

Colchester, M. 2002. Conservation policy and indigenous peoples. *Environmental Science and Policy* 7(3): 145-153.

Crawford, B., A. Siahainenia, C. Rotinsulu, and A. Sukmara. 2004. Compliance and Enforcement of Community-Based Coastal Resource Management Regulations in North Sulawesi, Indonesia." *Coastal Management*. 32: 39-50.

Development Alternatives Incorporated (DAI) and the Nathan Group. 2013. *Provincial Poverty Rates in Indonesia, 2006-2011.* USAID: Support for Economic Analysis Development in Indonesia (SEADI) Program.

Datta, F.U. 1993. *Socio-economic survey of communities adjoining forest areas on Sumba*. Husbandry Faculty, Nusa Cendana University. Kupan, Indonesia.

Deddy, K. 2006. Community Mapping, Tenurial Rights, and Conflict Resolution in Kalimantan. In *State, Communities and Forests in Contemporary Borneo*. Edited by F. Cooke. ANU E Press.

Dewi, S., B. Belcher, A. Puntodewo. 2005. Village Economic Opportunity, Forest Dependence, and Rural Livelihoods in East Kalimantan, Indonesia. *World Development*. Vol. 33, No. 9, pp. 1419-1434.

EC-UNDP. 2005. EC-UNDP SGP PTF – Indonesia 2005-07. Country Guideline Paper. http://www.sgpptf.org/docs/cguideline_ indonesia.pdf

Eghenter, C. 2000. Mapping peoples' forests: The role of mapping in planning community-based management of conservation areas in Indonesia. Washington D.C. Biodiversity Support Program.

Fiallo, E. A. and S. K. Jacobson. 1995. Local Communities and Protected Areas: Attitudes of Rural Residents Towards Conservation and Machalilla National Park, Ecuador. *Environmental Conservation.* 22(3): 241-249.

Fox, J., K. Suryanata, P. Hershock, and A.H. Pramono. 2008. Mapping boundaries, shifting power: The socio-ethical dimensions of

participatory mapping. In *Contentious Geographies: Environment, Meaning, and Scale*, edited by M. Goodman, M. Boykoff, and K. Evered. Aldershot, Hampshire, UK: Ashgate.

Fripp, E., E. Effendi, F. Jihadi. 2002. *Resource Valuation of Manupeu-Tanadaru National Park, Sumba*. FIMP-BPKP Technical Series No. 20.

Garrity, D.P., V.B. Amoroso, S. Koffa, D. Catacutan, G. Buenavista, P. Fay, and W. Dar. 2002. Landcare on the poverty-protection interface in an Asian watershed. *Conservation Ecology* 6(1): 12. [online] URL: ttp://www.consecol.org/vol16/iss1/art12

Ghimire, K.B. and M.P. Pimbert. 1997. Social Change and Conservation: Environmental Politics and Impacts of National Parks and Protected Areas. Earthscan. London, U.K.

Goldman, M. 2003. Partitioned Nature, Privileged Knowledge: Community-based Conservation in Tanzania. *Development and Change* 34(5): 833-862.

Government of Indonesia. 1990. *Undang-undang Republik Indonesia tentang Konservasi Sumber Daya Alam Hayati dan Ekosistemnya.* [Indonesian Act Law about Conservation of Natural Resource and its ecosystem]. No. 5/1990.

Government of Indonesia. 1998. *Kawasan Suaka Alam dan Kawasan Pelestarian Alam*. [Nature Reserve Area and Conservation Area]. Government Regulation No. 68/1998.

Government of Indonesia. 1999. *Undang-undang Republik Indonesia tentang Kehutanan*. [Indonesian Law on Forestry]. No. 41/1999.

Government of Indonesia. 2002. *Tata hutan dan penyusunan rencana pengelolaan hutan, pemanfaatan dan penggunaan kawasan hutan.* [Forest mapping and development of forest management planning, forest utilization and forest land use]. Government Regulation No. 34/2002.

Hardiono, M., H. Radandima, K. Suryanata, and J. Fox. 2005. Building local capacity in using SIT for natural resource management in East Sumba, Indonesia. In *Mapping Communities: Ethics, Values, Practice.* Edited by J. Fox, K. Suryanata, and P. Hershock. Honolulu, HI: The East-West Center, 107-116.

Hulme, D. and M. Murphree. 1999. Communities, wildlife, and the "new conservation" in Africa. *Journal of International Development 11*: 277-285.

International Council for Bird Preservation (ICBP). 1992. *Putting biodiversity on the map: priority areas for global conservation*. Cambridge, U.K.: International Council for Bird Preservation.

Jepson, P. & Whittaker, R.J. 2002. Histories of Protected Areas: Internationalization of Conservationist Values and their

Adoption in the Netherlands Indies (Indonesia). *Environment and History*, 8, 129-72.

Jepson, P. 2005. Governance and accountability of environmental NGOs. *Environmental Science and Policy*, 8: 515-524.

Jepson, P., R. Suparman, A. B. Ora and W. Raharjaningtrah. 1996. Identifikasi Jeringan Kawasan Konservasi untuk Pelestarian Nilai-Nilai Hutan di Pulau Sumba, Nusa Tenggara Timar. [Evaluation of Protected Area Network for the Conservation of Forest Values on Sumba Island, East Nusa Tenggara]. PHPA/BirdLife International, Indonesia Programme, Bogor. Laporan No. 5.

Kondamaloba Village. 2005. *Kesepakatan Pelestarian Alam Desa Kondamaloba*. [Kondamaloba Village Nature Conservation Agreement]. Sumba, Indonesia. Draft

Li, T.M. 2002. Engaging Simplifications: Community-Based Resource Management, Market Processes, and State Agendas in Upland Southeast Asia. *World Development* 30(2): 265-283.

Little, P. 1994. The Link Between Local Participation and Improved Conservation: A Review of the Issues and Experiences. *Natural Connection*. D. Western, R. M. Wright, and S. Strum (Eds.). Island Press. Washington D.C. pp. 347-371

Lowry, K., P. Adler, and N. Milner. 1997. Participating the Public: Group Process, Politics, and Planning. *Journal of Planning Education and Research*, 16: 177-187.

Lynam, T., W. De Jong, D. Sheil, T. Kusumanto, and K. Evans. 2007. A review of tools for incorporating community knowledge, preferences, and values into decision making in natural resources management. Ecology and Society 12(1): 5. [online] URL: http://www.ecologyandsociety.org/vol12/iss1/art5/

MacKnight, A., W. Raharjaningtrah and P. Jepson. 1993. Figures of forest cover on Sumba. BirdLife-Indonesia Programme.

Marsden, S. and A. Fielding. 1999. Habitat associations of parrots on the Wallacean islands of Burn, Seram and Sumba. *Journal of Biogeography*, 26(3): 439-446.

Ministry of Forestry Indonesia. 2001. Kriteria dan Standar Pengukuhan Kawasan Hutan. [Criteria and standard of forest area gazettement]. Ministry of Forestry Decree No. 32/Kpts-II/2001.

Ministry of Forestry Indonesia. 2001a. Penetapan Kawasan Hutan, Perubahan Status dan Fungsi Kawasan Hutan. [Forest area stipulation, changes of status and function of forest area]. Ministry of Forestry Decree No. 70/Kpts-II/2001.

Ministry of Forestry. 1998. Decree No. 576/Kpts-II/1998

O'Brien, T. G., M. F. Kinnaird, P. Jepson, and A. A. Dwiyahreni. 1997. Evaluasi Kualitas Habitat Rangkong Sumba dan Kakatua Cempaka di

Sumba, Nusa Tenggara Timur dengan Rekomendasi untuk Konservasi Habitat Hutan. [Evaluation of Habitat Quality for Sumba Island Wreathed Hornbill and Citron crested Cockatoo on Sumba, East Nusa Tenggara with Recommendation for Conservation of Forest Habitat]. PHPA/Wildlife Conservation Society Indonesia Program and BirdLife International Indonesia. Bogor, Indonesia.

Okamoto, S. 2001. The Movement and Activities of Environmental NGOs in Indonesia. Policy Trend Report 2001: 13-23.

Peluso, N.L. 1995. Whose Woods are These? Counter-Mapping Forest Territories in Kalimantan, Indonesia. *Antipode* 27(4): 383-406.

PHPA/BirdLife International-Indonesia Programme. 1995. BirdLife International-Indonesia Programme Annual Report.

Pramono, AH. 2005. Institutional implications of counter-mapping to Indonesian NGO's. In *Mapping Communities: Ethics, Values, Practice.* Edited by J. Fox, K. Suryanata, and P. Hershock. Honolulu, HI: The East-West Center, 97-106.

Ribot, J.C. 2003. Democratic decentralization of natural resources: institutional choice and discretionary power transfers in Sub-Saharan Africa. *Public Administration and Development* 23(1): 53-65.

Ribot, J.C. 2004. Waiting for Democracy: The Politics of Choice in Natural Resource Decentralization. World Resources Institute, Washington D.C.

Salmen, L.F. 2002. Beneficiary Assessment: An approach described. *Social Development Papers*, Paper No. 10, August 2002. World Bank.

Sanderson, S.E. and K.H. Redford. 2003. Contested relationships between biodiversity conservation and poverty alleviation. *Oryx* 37: 389-390.

Sujatnika, P. Jepson, T. Soehartono, M. Crosby, and A. Mardiastuti. 1995. *Melestarikan Keanekaragaman Hayati Indonesia: Pendekatan Daerah Burung Endemik* [Conserving Indonesian Biodiversity: the Endemic Bird Area approach]. Jakarta: PHPA/BirdLife International-Indonesia Programme.

Sunderlin, W. 1999. The Effects of Economic Crisis and Political Change on Indonesia's Forest Section, 1997-1999. http://www.cgiar.org/cifor/research/projects/effect-crisis.html

Suryadi, S. 2000 (unpublished). Community Forestry Institutionalized: Never or ever: the Community Forestry Program at Sesaot Village in Nusa Tenggara Barat Province of Indonesia. East-West Center: Hawaii.

Tunlungen, J. P. Kussoy, and B. Crawford. 1998. Community Based Coastal Resource Management in Indonesia: North Sulawesi: Early Stages Experiences. Integrated Coastal Management Practitioners in the Philippines Convention. Davao City, Philippines. 10-12 Nov, 1998.

Umbulangang Village. 2003. *Kesepakatan Pelestarian Alam Desa Umbulangang*. [Umbulangang Village Nature Conservation Agreement]. Sumba, Indonesia.

Warren, C. 2005. Mapping Common Futures: Customary Communities, NGOs and the State in Indonesia's Reform Era. Development and Change 36 (1): 49-73.

Wells, M., Guggenheim, S., Khan, A., Wardojo, W. and Jepson, P. 1999. Investing in Biodiversity: A Review of Indonesia's Integrated Conservation and Development Projects. Directions in Development Series. The World Bank. Washington D.C., USA.

Wells, M.P. and T.O. McShane. 2004. Integrating Protected Area Management with Local Needs and Aspirations. Ambio, Vol 33, No. 8.

Werner, S. 2001. Environmental Knowledge and Resource Management: Sumatra's Kerinci-Seblat National Park. Diplom-Geographin. Technischen Universitat Berlin. Germany.

Whitten, A. 1987. Indonesia's Transmigration Program and Its Role in the Loss of Tropical Rain Forests. *Conservation Biology*. Vol. 1, No. 3, pp. 239-246.

Wollenberg, E., N. Anau, R. Iwan, M. van Heist, G. Limberg, and M. Sudana. 2002. Building agreements among stakeholders. *ITTO Tropical Forest Update*, 12/2.

World Bank, The. April 1996. Kerinci Seblat Integrated Conservation and Development Project: Staff Appraisal Report. Report No. 14989-IND. Agriculture Operations Division. Country Department III – East Asia and Pacific Region. Indonesia.

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[i] Burung Indonesia, a well-known national environmental NGO in Indonesia, is part of the BirdLife International Partnership, a federation of individual national organizations founded in 1993 (Jepson 2005).

[ii] Burung Indonesia's Social Development Specialist. June 8, 2005

[iii] **Burung Indonesia's Head of Knowledge. E-mail communication. November 2005**

[iv] BLS2. Burung Indonesia Sumba Awareness Officer. July 12, 2005

[v] PAK1. Pakta (local NGO on Sumba). June 29, 2005

[vi] PAK1. Local NGO PAKTA. Waikabubak, Indonesia. June 29, 2005

[vii] BLI1. Burung Indonesia's Social Development Specialist. June 8, 2005

[viii] ICRAF. Senior Policy Analyst at the World Agroforestry Center. August 9, 2005

[ix] LNP. Park Manager of National Park in Sumatra-Aceh. August 3, 2005

[x] UC22. Community Member Interviewee. Umbulangang. July 7, 2005

[xi] MTNP1. Manupeu Tanadaru National Park Staff. Waingapu. June 21, 2005

[xii] Analysis of community-member questionnaires (MC1-10, UC1-25, PC1-12, KC1-14, KCG1-2). June 17-July 11, 2005.

[xiii] BPKH. July 19, 2005

[xiv] KVG. July 9, 2005

[xv] KC10, KC12, KWG. Kondamaloba. July 9-10, 2005

[xvi] KC1-7, KCG1 and KCG2. Community member interviewees in Lolukalai, Konda and Maloba. July 8-11, 2005

[xvii] UAL. *Adat* Leader of Umbulangang Village. July 5, 2005

[xviii] Informal discussion with Manurara resident. June 18, 2005

[xix] MTNP1. June 21, 2005

[xx] BI1 email. July 10, 2014