Finding Common Ground in Rinjani, Lombok, Indonesia:
Towards Improved Governance, Conflict Resolution, and Institutional Reform

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Abstract

The Rinjani National Park in West Nusa Tenggara, Indonesia, and the protected forests around it represent the single most important watershed ecosystem for the whole island of Lombok. The area is plagued by a myriad of conflicts between local communities and government over illegal logging, land-occupation, and the extraction of various non-timber forest products and fauna. This 125,000-hectare ecosystem harbors more than half a million people who reside in over 80 village communities; more than half of which directly share a border with the national park. The National Park's management unit also faces various jurisdictional conflicts with three district governments that overlap with the park area. In order to raise local revenues, district governments have begun to issue various extraction permits that have led to the exploitation of surrounding forests on a massive scale.

In an effort to manage these conflicts in order to ensure the long-term sustainability of this island-ecosystem, a participatory action research (PAR) and conflict resolution (CR) process was recently initiated. This initiative attempts to involve all stakeholders – communities, agencies of district and provincial governments, the National Park Management Unit, and various NGOs – in the development of lasting agreements for long-range natural resource and ecosystem management. So far, the multistakeholder research and mediation team has conducted participatory field research in about 30 representative villages and has initiated participatory policy analysis with officials from the three districts and the province.

A main objective and challenge of the PAR process is to identify strategic common concerns as a basis for generating agreements among all the various stakeholders for sustainably managing the natural resources of the area. It is anticipated that without a strategic and unifying issue, it will be extremely difficult to forge long-lasting agreements and commitment among all stakeholders.

This paper explores the potential viability of organizing around water management as a strategic common concern for bringing about significant changes in natural resource governance, conflict management, and institutional reform in the context of Rinjani.

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"Anyone who solves the problems of water deserves not one Nobel Prize but two – one for science and the other for peace." (John. F. Kennedy)

Introduction

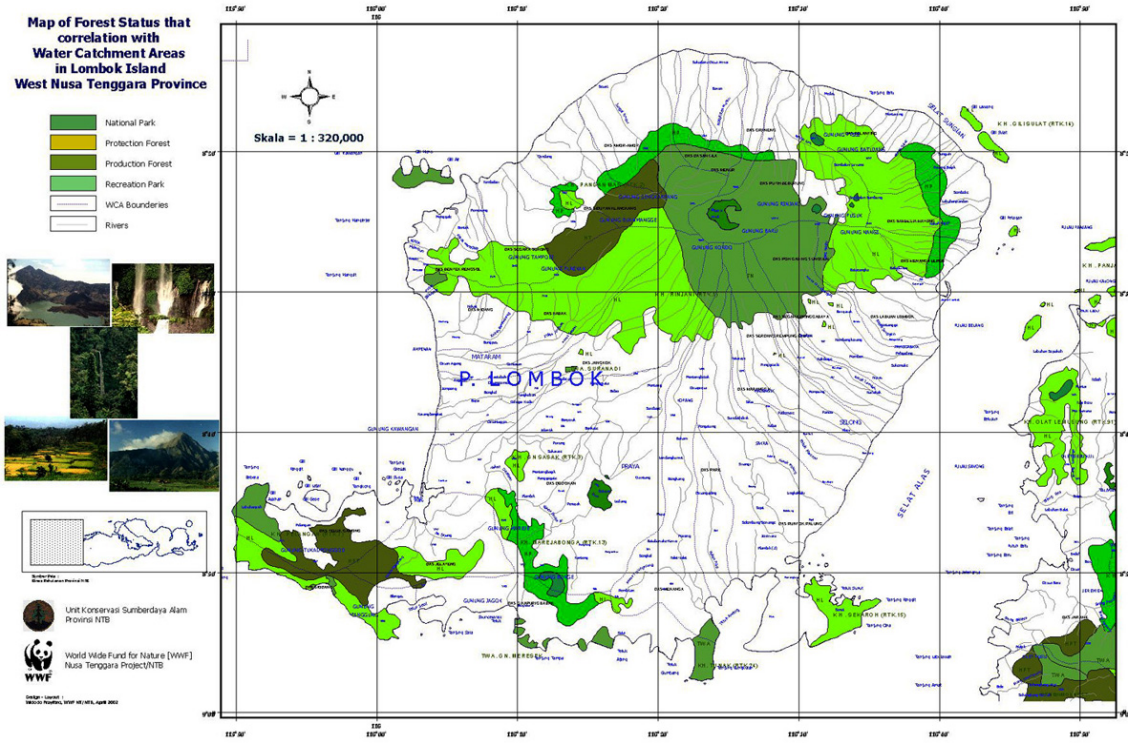
Lombok is one of the two largest islands in the province of West Nusa Tenggara (Nusa Tenggara Barat or NTB), and is considered a small island with a total surface area of 4,739 Km^2. It stretches about 80 km from north to south and more or less 70 km from east to West. The total population on the island is estimated at 2.3 million people.

Wet tropical forests are found on the western flanks of the Rinjani mountain (the highest peak on the island), while semi-deciduous wet tropical forests are found in the lower valleys of Mount Rinjani. Gunung (mount) Rinjani represents one of few areas in Nusa Tenggara that supports a wet tropical forest environment and functions as the main water catchment area for the whole island (Monk, K.A. 1997).

Gunung Rinjani consists of 125.740 ha of forest cover, which represents 26,50% of the surface area of Lombok island, or about 86,11% of the total forest cover of this island better known as the "island of a thousand mosques."

The forests of Gunung Rinjani have been classified into a number of different protection statuses as follows:

1. National Park with 41.330 ha
2. Protection Forest amounting to 48.345 ha
3. Production Forest of 22.975 ha
4. Limited Production Forest with a total of 9.935 ha
5. Botanical Park with an area of 3.155 ha.



These protected forest areas are spread out across three administrative districts as follows:

Table 1. Location of Forest Blocks of the Rinjani National Park

District	Village	Ha
1. West Lombok	Santong, Senaru, Torean.	12.360
2. Central Lombok	Aiberi, Kopang (Wajah geseng, Talun ambon).	6.824
3. East Lombok	Srijate, Kembang kuning – Tetebatu, Aikmel – Gawah akar, Pesugulan – Karang baru, Sembalun, Sajang.	22.146

Table 2. Location of Forest Blocks under Administration of the Forest Service (Protection Forest, Production Forest, Limited Production Forest, Botanical Park)

District	Village	Ha
1. West Lombok	Sesaot/Sedau, Punikan, Tampole, Kedodang, Samberies, Sidutan, Gondang.	26.258,3
2. Central Lombok	Jangkok, Mayung.	8.717,7
3. East Lombok	Batuyang, Sembalun, Asah, Sambalia, Nangi.	18.006,8

More than eighty villages share a direct boundary with these protected areas, which is about 600.000 people living on the margins of the Rinjani Conservation Area and depending on its resources for their survival. The majority of these people are considered subsistence farmers. The high dependency of such a large population places much pressure on limited resources, and represents one of the more complex and dilemmatic problems facing the management of the Rinjani Conservation Area.

Rinjani Conservation Area

1. Biodiversity

According to the FAO **(**1981**)** about 40 % of the forest in the Rinjani National Park was composed of primary forest, while the rest was made up of savannah forest (40 %), and planted forest (10%). Primary forest vegetation is dominated by the following species: Bayur (*Pterospermum javanicum*), Kukun (*Scheluremia ovata*), mountain pine (*Casuarina trifolia*), Gaharu (*Dysoxylum* spp.), Benuang (*Duabanga moluccana ?*), banyan (*Ficus superba*), Suren (*Toona sureni*). A number of endemic species to Nusa Tenggara are also found in Rinjani.

A mix of Asian and Australian species characterizes the flora and fauna in the Rinjani Conservation Area. Animal species include: Deer-Rusa (*Cervus timorensis*); Kijang (*Muntiacus muntjak*); wild boar (*Sus scrofa*), long-tailed Macaque (*Macaca fascicularis*), Lutung (*Presbytis cristata*), and a number of bird species such as: Helmeted friarbird (*Philemon buceroides*);

Rainbown Lorikeet (*Trichoglossus haematodus*); Scaly-crowned Honeyeater (*Lichmera lombokia*).

2. Water Resources

The vegetational cover of the Rinjani Conservation Area is of special significance in ensuring the hydrological cycle of Lombok Island. The Rinjani forest complex represents the main water catchment area of the island, harboring more than 85 water springs, serving 10 major watersheds and 5 sub-watersheds.

Ground water supply in Nusa Tenggara is largely determined by geological formations, and the volcanic structure of Lombok means that ground water is in great supply. Almost every water spring is associated with volcanic activity (Monk, K.A. 1997).

Out of the more than 237 water springs in Rinjani, between 20 and 29 of these have a water debit of more than 100 lt/sec. The Segara-Anak Lake within the caldera of Gunung Rinjani is also another major water catchment area (11 million m^2) with an estimated water volume of 1,375 million m^3 (Mines and Energy-NTB, 2000).

3. Tourism

Besides a rich diversity of flora and fauna, the Rinjani Conservation Area possesses unique landscapes that offer much potential for tourism development. Among others, these include: Segara Anak Lake, Sendang Gile, Jeruk Manis, and Tiuteja waterfalls, as well as a number of hot springs.

Research conducted by the WWF Indonesia, Nusa Tenggara Programme, in 2002 estimated that the Rinjani Conservation Area produces benefits amounting to Rp.5,178.159 trillion as compared to expenses totaling Rp.8,275.159 trillion. This value was estimated from the sale of agriculture produce, bottled mineral water, and tourism (WWF, 1999).

Problems

A number of social, economic, cultural, political, and environmental problems threaten the integrity of the Rinjani Conservation Area. These include: illegal logging, population pressure, abandonment of women and young children, low education, and conflicts over the management of the natural resources. Other problems are more policy oriented such as the top-down nature of government, the piecemeal approach to conservation and development, the lack of coordination among development agencies, a strong sectoral focus, and a short-term orientation to development. These policy orientations often lead to further debates about development objectives, competition among stakeholders, lack of sharing of information, and the lack of overall coordination.

While these problems often seem insurmountable, there exist a number of important opportunities including the existence of committed agencies, the decentralization policy, and initiatives in multistakeholder collaboration. With some creativity, these experiences can help frame efforts to define comprehensive solutions to these problems.

One of the pioneering initiatives to craft a comprehensive solution to the challenge of managing the Rinjani Conservation area for sustainable development has been the design of a participatory action research and mediation process eventually leading to collaborative planning efforts.

Rinjani Participatory Action Research and Mediation (PAR Rinjani)

PAR Rinjani is an initiative involving many stakeholders: local communities, district and provincial government, National Park Office, local NGOs, and local universities. Together they aim to negotiate agreements for the sustainable management of the Rinjani ecosystem. For the purpose of the PAR process, the Rinjani Conservation Area has been sub-divided into 4 zones.

There are at least 18 government agencies, one university, and 33 NGOs (both local and international)actively involved in the PAR efforts. In addition, the PAR Rinjani program has recruited and trained 58 researchers divided into two teams: one for the field research, and one for policy analysis. The aim of this effort is to ensure the sustainable management of the Rinjani Conservation Area as a source of livelihoods for local communities and for the people of Lombok in general.

The PAR Rinjani program also aims to resolve natural resource management conflicts and social cultural disputes in a comprehensive way. At the very least, the research effort is expected to lay the groundwork for building effective mechanisms to managing and resolving natural resources conflicts.

More specifically, the program aims to generate adequate information through deliberative processes in order to resolve natural resource conflicts; to empower stakeholders and level the playing field to enable parties to negotiate constructive agreements as a basis for collaborative planning; and to create opportunities for sustained partnerships among stakeholders in the implementation of plans and agreements.

PAR Stages

In 2001, World Neighbors and several local organizations initiated discussions about using participatory action research as a methodology for better understanding issues of natural resources management in the Rinjani Conservation Area that would eventually lead to the formulation of a comprehensive plan for conservation and development. Based on these discussions, local stakeholders drafted a proposal that eventually received support from the provincial government and financial aid from WN, the NTCDC, Cornell University, and DFID's Multistakeholder Forestry Program (MFP). The stages of this concept include:

1. Socialization of concept

The draft concept was formally socialized with key stakeholders including government agencies, NGOs, local communities, and private sector who have a direct interest in the management of the Rinjani Conservation Area. The provincial Planning Board largely facilitated this process. The socialization phase was also used to identify criteria for the selection of the research team, which would eventually be responsible for the implementation of the PAR.

2. Formation of Core Team

The sheer scale of the Rinjani Conservation Area is one of the main reasons explaining the need to facilitate collaboration among so many stakeholders. In order to ensure the smooth

implementation of PAR, the Governor of NTB Province issued a decree (No. 339/2001, September 5, 2001), which includes the following components:

Steering Committee: several senior officials were selected to head this committee as a core team to guide and supervise the whole process as well as assist the implementation team when necessary. This committee was appointed to be the convener of meetings between stakeholders.

Organizing Committee: The organizing committee was formed to ensure the timely implementation of the PAR activities such as trainings, multistakeholder meetings, workshops, and negotiation sessions.

Research and Mediation Team: Since natural resource conflict management will be an integral part of the PAR process, a special team was set up to fulfill this function. This team has facilitated the field research and several mediation meetings between conflicting parties. The policy research team on the other hand, has been tasked with carrying out policy analysis with key government officials. The members of these two teams have been selected from among different government agencies, local NGOs, and some community organizations. The participation of several agencies in the research and mediation teams, it is expected, will help build trust in the process, and also empower the participating agencies in making better decisions.

3. Orientation of Core Team

An orientation of the core team was deemed necessary to enable its members to better understand their role and to ensure that they understand the issues at hand and support the PAR process. The core team may be considered more as a political support group.

4. Formation of research team facilitators

Facilitators were selected from each of the three districts in order to ensure a balanced geographical representation. The field research team consists of 48 facilitators while the policy research team has 20. The provincial and district planning boards facilitated the recruitment process in the each of the districts.

5. Development of training curriculum

A training curriculum was considered necessary given that the facilitators came from different educational and institutional backgrounds, and that the methodologies of participatory action research are quite different from the conventional methods used by many agencies. The development of the curriculum was carried out with a selected number of facilitators in order to identify needs for analytical, research, and presentation skills. In addition, the trainers wanted to design a curriculum that would help define team roles in the implementation of PAR.

6. Training of Team Facilitators

Several trainings have been necessary to support the implementation of the PAR. There are several reasons for this. First, the PAR Rinjani program places learning as an integral part of the training process among facilitators. As such, in-class training is but one learning process that needs to be complemented with a learning process at the field level with communities. Second, based on the needs assessment carried out with the PAR team, 68% of the trial recruits were identified as having minimal knowledge and experience with participatory methodologies and knowledge of community issues. For this reason, a first training was deemed urgent to not only select facilitators but also ensure that communities would get quality facilitators. Third, because the role of the field teams would not only consist of facilitating a research process, but also likely the mediation of conflicts, it was necessary to ensure that the facilitators possessed sufficient skills to handle conflict situations as well as manage good team work.

The objectives of the trainings were several folds. Basically the trainings wanted to make sure that:

- Facilitators understood the key concepts of community-based natural resource management and its relation to PAR.
- Facilitators were skilled to facilitate a participatory process and capable in using PAR and PRA methods.
- Facilitators were capable of designing PAR processes in each of the four sub-regions.

7. Trial application of methodology

A trial application of the methodology was carried out in four villages (one in each of the sub-regions) for a period of one week in order to test the capacity of facilitators and also in order to ensure that weaknesses would be minimized in future applications of the methodology. This was organized mainly as a learning process.

8. Documentation, reflection, and selection workshop

The trial application was concluded with a workshop to document the field findings, and prepare community representatives for presenting the findings in a seminar that would later involve key stakeholders. The workshop was also used as an opportunity for reflecting on the research process and the effectiveness of the methods. Based on this reflection process the teams made plans for the next round of PAR.

9. Field Research and Policy Research

At this stage, the field teams went back to the villages to collect and analyze information on natural resource management issues in another set of communities. Parallel to this, the policy research team began to collect information on different policy products related to the management of natural resources in the Rinjani Conservation Area. The policy team was tasked to carry out an in-depth and comparative analysis of all these policies in terms of their relations, how consistently they have been implemented, and what conflicts exist between these policies. Finally they were tasked to suggest alternative policy proposals.

10. Sub-Regional plenary meetings

After the completion of the PAR in all of the 42 villages, sub-regional plenary meetings were organized to compare information from the research villages as well as neighboring villages not participating in the PAR. A plenary meeting was organized for each sub-region, which involved community representatives, key government agencies, and the facilitators. This was a first opportunity to synthesize the key issues and engage in dialogue with a broader set of stakeholders.

11. Conservation Area Plenary Meeting

The purpose of this plenary meeting will be to mediate agreements on the key issues faced by all communities represented and prepare communities to negotiate these agreements with government and other stakeholders in a negotiation meeting to be held at a later time.

12. Negotiations

Before the negotiations, a number of seminars and workshops will be organized to present the findings of the PAR at both the field and policy levels in order to ensure that there is agreement on the substance of the findings. During this process, discussions will also be held to reach agreements on the negotiation process and mechanisms for resolving conflicts that will lead to the formulation of mutual agreements. Discussions will be held to reach consensus on a process for integrating the agreements into a planning and implementation program.

13. Collaborative Planning

Each agreement will need to be elaborated into operational action plans, which can be acted upon through the collaboration of several agencies. A planning workshop will be organized specifically for this purpose and will involve all the key stakeholders. The planning mechanism will preferably be integrated into the formal planning processes.

KEY FINDINGS OF PAR

Water Management

Upstream Downstream Conflicts & the Mutilation of Water Sources

Water conflicts often emerge because of misunderstandings between upstream and downstream water users. People living upstream often claim property rights over water sources close to them, including rights to use, store, divert, and dispose. On the other hand, people living further downstream also make equally strong claims to their right to clean drinking water even if their bargaining position would seem to diminish in direct proportion to their distance from the water sources.

The fact is however, that communities living upstream have usually been the losers, while downstream communities have been the main beneficiaries, since they receive free

benefits from the many environmental services provided by upstream communities such as clean water, irrigation, carbon sequestration, etc.

This tension between who has rights over water can be a source of conflict. One of the possible consequences is that upland communities may feel that it is not their responsibility to be good stewards of the environment. Upstream-downstream conflicts such as this could degenerate into violent conflict.[2] Poverty, lack of access to resources, and a culture of violence could become a vicious cycle. Therefore a common commitment is needed to solve this problem. This commitment is needed not only to nurture an awareness that an environmental crisis could have negative impacts on future generations, but also on the present generation in the form of open conflicts.

Out of 42 villages participating in the PAR Rinjani, more than half are experiencing conflicts over water use. The conflicts vary in scale from inter-hamlet disputes to inter-district conflicts. The stakeholders involved are diverse and include community forestry users, irrigation water user groups, fish pond user groups, families consuming drinking water, the Water Utility, the Forest Service, the Watershed Agency, the Agricultural Service, Public Works, Mines and Energy, as well as the private sector.

Part of the complexity of water use conflicts lies with the sectoral fragmentation of water management. Surface water is the responsibility of Public Works; ground water is the responsibility of the Department of Mines and Energy; while water conservation especially in the uplands is the responsibility of the Forest Service. No one agency is responsible for the management of water in its entire hydrological cycle. To make matters more complicated, the conservation of water resources is closely linked to different land uses, which are managed by several different agencies as well. As a result, many sectoral policies conflict with a more comprehensive concept of water management.

Constitutional law No. 11/1974 regarding irrigation, as well as other regulations in the water sector, is no longer satisfactory for dealing with what has become a multidimensional problem. Although the government is responsible for making sure that water is well distributed, it is less and less capable of anticipating water needs for the

[2] Floods in northern Lombok (April 1999) enraged downstream communities against the Angkawijaya forest concession that was later closed down as a result. In 2003, farming communities in East Lombok attacked and nearly destroyed water facilities built by upstream communities (montong Betok) because they were perceived as having reduced the availability of water for irrigation. Upstream communities around Rinjani recently demanded the water utility to pay retribution fees for the use of water springs in their villages.

rising demand of households, industry, and irrigation. There are already conflicts among the different users, and conflicts among the different water sectors are imminent[3].

Gaps in access to clean water

Middle and upper class populations have generally easier access to water provided by the water utility, and usually at a very cheap price. On the other hand marginal communities who are not served by the water utility usually have to buy their clean water at higher prices.[4] Hence, only a small minority of people enjoys the provision of clean water by the government. This gap in access to clean water demonstrates the irony of public water utilities, and the unequal ecological responsibility that has to be borne between different strata of society. While the better-off have the opportunity to live in a clean environment with plenty water, the have-nots are forced to live in unhealthy quarters with lack of clean water and sanitation facilities.

The impact of the failure to conserve natural resources (including soil and water conservation) will be mostly felt by women. The loss of water sources in the uplands of Rinjani[5] has distanced the access of women to water sources for their household needs. Women and children have to walk further and further to fetch water from sources that are further and further away.

Forest Management Problems

Forest management around Rinjani varies significantly according to the players and policies. Some of the management regimes include buffer zone management, village assisted logging concessions, and community forestry, whereas protection forest and traditional forests are often managed on a self-reliant basis. The management regimes aim in general to improve the well being of communities while conserving forest resources. In theory then, community-based natural resource management has become a key principle of forest management.

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[3] The Joben village government and the National Park Bureau for Rinjani recently demanded the district government and the Tourism Office to redraw an agreement regarding the use of a water source located in the National Park and Joben village, which has been managed privately for tourism purposes.

[4] Several villages in Rinjani buy water at a price of Rp. 1000/10 lt and have to fetch it (usually women) as far as 1-3 Km, while the water utility (PDAM) sells water to urban dwellers for Rp. 400/m3 available at the household tap.

[5] Data from the research shows that out of 237 water springs around Rinjani, 77 have dried up in the last 5 years.

A number of vertical and horizontal conflicts regarding forest management have been recorded during the participatory action research process including conflicts over community forestry management, National Park boundaries, protection forest, customary (adat) forest, as well as conflicts over the management of the ex-Angka Wijaya logging concession. These conflicts occur between neighboring communities, between communities and government, and between communities, government, and the private sector. These conflicts can be attributed to the following factors:

Decentralization, jurisdictional conflicts and "legal logging"

Local governments have often used the decentralization policy to sanction exploitative practices in the name of revenue generation, with little concern of other policies regarding the management of forest resources and the environment. Local government policies have been linked to the spread of illegal logging practices such as the issuance of permits to collect forest debris. Such policies have contributed significantly to forest degradation in the upper reaches of the Rinjani Conservation Area. Recent floods and sedimentation in drinking water are apparently linked to the poor management of forests in Rinjani.

The confusion over who has authority over forest management has also created a tug of war between central government and district government, as well as between provincial and district government, and has thus weakened consolidation efforts at the local level.[6]

Recognition of Customary (Adat) Forests

Illegal logging has spread as a result of poverty and the disenfranchisement of forest margin communities who have lost access to their traditional forest rights. As a result several of these communities have rampaged through forests, whether production forests or protection forests. While communities are involved in illegal logging, their involvement is more of a reaction to the unstable political, economic, and cultural situation in Indonesia.

[6] The tug of war over the Botanical Park in Sesaot between the District Forest Service and the Provincial Forest Service has led to a falling out of the two agencies who are part and parcel of the same Ministry.

From a legal point of view, the implementation of constitutional law No.5/1967 about forest management and the role of adat leaders has resulted in the gradual erosion of adat values and adat laws. Since 1975, traditional forest stewards in Lombok have almost disappeared. Along with changes in values and economic demands, the perception of traditional communities toward the forest has also shifted. The ecological and sacred functions of forests are no longer important to people in Lombok. On the contrary, people are more interested in the economic value of forests.

Regulation No.6/1999 concerning forest exploitation and harvesting rights, and constitutional law No. 41/1999 about forestry development also do not give clear recognition to adat community rights in the protection of ecosystems. Clause 27 of regulation No. 6/1999 states that: *"adat communities, as long as they exist and are acknowledged, have the right to harvest forest products to meet their daily needs"*. Clause 67 in constitutional law No. 41/1999 states that as long as adat communities continue to exist and are *recognized by the mayor*, then adat communities have the right to harvest forest products to meet their daily needs. This is somewhat ironic since the recognition of adat communities can only be done by they themselves and not by the State.

On the other hand, the orientation of capital-intensive forestry development to fuel the economy as a source of foreign currency has had a direct impact on forest degradation and the low participation and well-being of communities. Community participation has been largely ignored and thus the emotive ties between people and the forest have been severed over time. This is also linked to the current pattern of forest management, also popularly referred to as the 3 P's of forest management: prohibit, punish, and plant. As a result community awareness to protect the forest has been minimal. In fact, their mobility within the forest has increased as they seek to get benefits from forest resources.

There is also a stark difference between the perception of communities and the perception of government regarding forest laws. Communities perceive the law as an instrument of government that is used to oppress them. In general, communities are still ignorant of the laws regulating the forestry sector. Communities feel they have the right to inhabit and use the forest where they have lived for generations. On the other hand the

forestry department perceives that forest management is under its jurisdiction and therefore its responsibility to control.

Illegal logging

The territorial approach to forest protection has proven inadequate in curbing illegal logging. The political instability and the economic crisis have often been blamed for pushing people to encroach the forest and log it out.

The problem of illegal logging however cannot be understood in a vacuum, but must be seen in light of existing natural resource management policies. Illegal logging in the Rinjani Conservation Area involves many different parties including traders, military personnel, Forest Service staff, and local communities. It has been catalyzed by many different factors including political changes, economic pressure, weak law enforcement, corruption, etc. In order to curb illegal logging, an analysis of forestry policies is needed to understand the System of Law that has been put in place. The system of law is one of the reasons communities have lost confidence in government. A concrete example is that many communities do not trust and are unsympathetic to forest agencies because they see them as having a direct hand in supporting illegal logging activities.[7]

Community Forestry (*Hutan Kemasyarakatan*)

Since the inception of the community forestry program (also known as HKM), the trend in forest encroachment and illegal logging seems to have increased instead of diminishing. This can be explained in part by the distortion of information regarding the community forestry policy.

Based on several policy products regarding the management of Rinjani including constitutional laws No.5/1990 and No.41/1999, ministerial decrees and district regulations, it would appear that the conservation of the Rinjani Area is of utmost importance. However, since the integration of policies is very weak, the implementation of the policies are even less consistent. This lack of clarity has had a profound effect on

[7] A few research villages have indicated that the head of military, the head of security, and forest rangers are all involved in supporting the illegal logging in their area.

the way forests are being managed at the local level. In this regard, the goals of decentralization must be seriously questioned.

With the implementation of decentralization in the forest sector many of the local elites hoped for fewer interventions in decision-making from central government. In fact, many local stakeholders expected to be able to improvise and adapt the implementation of policies to the local situation. A number of problems encountered in the management of community forestry include the following:

1. Political reform in Indonesia in the year 1998 lead to significant changes in forest policy, with the introduction of a new paradigm popularly known as Forests for the People. This was to be implemented through the community forestry program. The weak socialization of the program and the lack of preparation of the Forest bureaucracy itself are partly at fault for the increased encroachment of forest resources in Lombok. Communities understood that Forests for the People meant that they could open up forests anywhere. The forest agencies became very weak in controlling the encroachment given the euphoria of reform and the lack of trust in government. It was clear that the Forest Service was in a weak position and local communities in a position of power, as the former were unable and even afraid of taking actions against illegal encroachment of the forest. The forest became a frontier of open access for anyone desiring a piece of the pie.[8]
2. In several locations, forestry agencies and local NGOs were successful in pioneering community forestry efforts[9] as early as 1993. These sites were already showing signs of success from a conservation and economic standpoint. However, forest farmers were unable to make a good living from these plots because of marketing problems and poor road infrastructure. It appears that the Forest Service and the NGOs were less successful in the marketing of forest products, even though in some cases, community forestry opened up opportunities for local markets.[10]

[8] Forestry officials were helpless in stopping the encroachment in the Pusuk protection Forest. The government brought in special police forces to arrest people, but after they left, people returned to the forest.

[9] The success of the Sesaot community forestry effort was replicated in Santong in 1998, followed by Aik Berik, Karang Sidemen and others.

[10] Hkm di sesaot memunculkan pasar lokal di Bunut ngengkang

River Quarrying

River quarrying has been a relatively smaller activity in the Rinjani Conservation Area, however it is one that has ignited fierce disputes between local communities and quarrying operators. These conflicts have been well covered by the media since some instances have involved the sabotage of heavy equipment.

Sand and soft stone quarrying

Several processing plants have supported mining activities of soft stone around the forest by hiring of local people as day laborers, or by renting people's land to harvest the soft stone. Many communities have protested the operations of these plants complaining about the road damage, dust related diseases, and floods. The local version of the Friends of the Earth organization and several village governments (Tanak Beak, Aik Berik, Lantan, Dasan Grya) have filed lawsuits against some of the plants and the government agencies that issued the permits. Seeing that the companies and the government paid little heed to these lawsuits, some communities decided to hold the company hostage in order to force a response. In the end the processing plants agreed to pay compensation for the damage caused.[11] This "victory" inspired other villages to take similar action against other companies. Although many communities are now winning against private sector companies, the climate for investment is weakening since there are no clear mechanisms for dealing with such conflicts. Weak environmental controls and the lack of response from government to community complaints may actually escalate conflicts in the future.

The need for finding a common ground for managing the Rinjani Conservation Area

Given the complexity of natural resource management issues and the ego-sectoral approach of the government in addressing these, finding common ground will be a decisive factor for improving natural resource governance, resolving conflicts, and reforming key institutions. Each agency relies on its own policies (the Forest Service relies on constitutional

[11] The Tanak village government received 11 million rupiah in compensation for the damages caused by Surya Indah, and now the village is demanding a monthly retribution for maintaining infrastructure.

law No. 41/99, Public Works on constitutional law No. 11/74 for irrigation, local governments have their own policy on regional autonomy, the National Land Bureau with law No. 24/92 on land use, etc. Upon closer look it becomes clear that there is much overlap between these policies thus creating jurisdictional conflicts between local level agencies over the management of natural resources. To make matters worse, national level agencies also confuse the situation. These include the Nature Conservation Bureau, the National Park Management Office, the Watershed Management Bureau, and Mines and Energy.

One issue, holding much promise in bringing together all the agencies together to begin to change the ways in which natural management decisions are made, is the issue of water management. Given the critical downward trends over water quantity and quality, water has already emerged as an issue of importance to most stakeholders. Water can become a ripe issue for igniting conflict, but it can also become an issue for uniting the efforts of all stakeholders. Water can be a unifying issue for the following reasons:

- Every agency has regulations relating to water management, even though with a different focus. Some focus more on conservation aspects (Forest Service, Nature Conservation Office, National Park Office, Watershed management Bureau), while others emphasize its use (Public Works, Mines and Energy, National Land Bureau, Local Government, Water Utility).
- Water affects all societal strata, including farmers, industry, urban households, etc. In other words, resolving the water problem will have widespread impact on the majority of people. Having many stakeholders involved and depending on water also enhances the possibilities for better control of policies and implementation of programs.
- According to the Public Works department, Lombok Island has a negative balance sheet in terms of water demand and water supply (2001). In addition, NTB province is ranked as the fourth most critical province in terms of water supply, after Java, Bali and Sulawesi. Conflicts over water have already become evident. Thus the management of the Rinjani Conservation Area, as the most important water catchment area for the whole island, is of vital importance for the future of the population and sustainability of the island ecosystem. Water management it is hoped will mobilize stakeholder militancy to work together in resolving this urgent need, thus leading to improved governance, conflict resolution, and institutional reforms in overall management of natural resource.

Creating Upstream-Downstream Solutions to Water management

During the past year, members of the PAR Rinjani team initiated discussions among stakeholders in the western part of Lombok Island to create a new mechanism for the management of water resources that would recognize the contributions of upland dwellers in protecting water sources to ensure clean and reliable water supplies for the benefit of downstream communities.

The main stakeholders involved include the Water Utility, the Mataram City Government, the West Lombok District Government, upland communities near the sources of water, the clients of the water utility in the urban area, and the Forest Service. After a survey of urban dwellers, it appears that the latter would be willing to pay an extra fee for water use if that translates into a more steady and cleaner supply of water. Both local governments have also indicated their support for developing a mechanism which would compensate upland communities for services in environmental protection.

The main challenge is currently to develop a mechanism to ensure the transparent management of the fees levied from the water consumers, and any matching funds received from the local government or external sources. The current thinking is to set up a community trust fund made up of an elected governing body of stakeholder representatives, and to set guidelines for the use of funds. Technically, the funds would not necessarily be used to provide payments in cash to specific farmers, but rather to assist communities in financing their development plans (i.e. for infrastructure, education, health, clean water, or other services).

If this mecahnism can be worked out with all the key stakeholders, it could be a pioneering example of payments for environmental services for Indonesia as a whole. It could also become a fine example of how to craft beneficial solutions to a potentially explosive issue.

References

Fisher, L. A., 1999. Beyond the Berugaq: Conflict, Policy and Decision-making in Forest and Conservation Management in Nusa Tenggara, Indonesia, Ph.D. Dissertation, Cornell University, Ithaca, NY.

Monk, K.A., Y. de Fretes, and G. Reksodihardjo-Lilley, 1997. The Ecology of Nusa Tenggara and Maluku. Periplus Editions, Hong Kong.

Pusat Studi Pembangunan (PSP), 2002. "Menuju 'Gumi Paer': Prakarsa Kaji Tindak Partisipatif dan Pengelolaan Sengketa Sumberdaya alam di Kawasan Rinjani, Lombok, Nusa Tenggara Barat," Program Proposal, unpublished.

WWF Nusa Tenggara, 2003. Lokakarya Pengelolaan Jasa Lingkungan Kawasan Gunung Rinjani. Mataram, NTB. Unpublished report.