

IASCP Paper
Collaborative Community-Based Management of the Aesesa Watershed, Indonesia

Abstract

The Aesesa watershed is one of the driest, and most important, watersheds in eastern Indonesia. Despite only three months of rain every year, Aesesa is the main water source and rice production area for Ngada - the health of the watershed is therefore critical for food security, livelihoods and for community and environmental health. Local communities mainly practice smallholder, shifting agriculture, face limited and declining water sources, and land use conflicts are common among different ethnic groups. Land cover is mainly open grassland and issues of deforestation, declining soil quality and erosion are common.

Opposition to government plans to build a dam in Aesesa stimulated local interest in the issue of watershed management. Local stakeholders began addressing the issue in 2003, through the development of a multi-stakeholder, collaborative approach to the management of the Aesesa watershed, involving local government and forestry service officials, community representatives and local NGOs. Agreement was reached to focus initially on the Aemau micro-watershed, one of the driest (and largest) parts of the Aesesa watershed, and home to 5,798 people in 13 villages.

Since the beginning of the multi-stakeholder approach, a number of key activities have been carried out, including participatory community appraisals, participatory analysis of community livelihood assets and government policies. Based on this research, joint management plans were developed through village level community agreements, and between villages and at the district level. Central to this approach was the development of a multi-stakeholder team to drive the process, involvement of community members at all stages, and the development of strong community-based organizations at the village and micro-watershed level. Success has been achieved through the acceptance of the community-based development plans by the local government, and through integration of these plans into the mainstream government planning system.

Development of the multi-stakeholder approach has led to a number of key lessons. Working initially at the level of the micro-watershed was critical in facilitating meaningful community participation, in maintaining a balance between field-based 'concrete' activities such as agro-forestry, with direct felt benefits, and more process oriented activities such as workshops, seminars and meetings, and the development of learning media. Government commitment and support was crucial, as has been the integration of the results of community assessments into the government planning system. Participatory action learning processes at the community and policy level produced much useful information in a democratic manner, and succeeded in developing a new level of critical awareness about the importance of collaboration and integration within the programme.

Despite some successes, many challenges remain. The role and needs of women in watershed management needs to be strengthened. Community organizations remain weak, and some traditional structures are unsupportive of sustainable development. Collaboration between upstream and downstream communities, despite their interdependency, has yet to become a reality. Local government development policies remain focused on natural resource extraction to gather local revenue. Local NGOs and donors have a short-term, project-based approach, despite the fact that the development of collaborative multi-stakeholder processes requires long-term commitment and support.

Collaborative Community-Based Management of the Aesesa Watershed, Indonesia

by

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I. Introduction

This paper is intended to present an experience of the collaborative management that is proven to be an appropriate way of managing the Aesesa watershed in Flores, Indonesia. The collaborative management, led by community needs, is addressed to improve the quality of people's lives and environment. Furthermore, a strong sense of common partnership among stakeholders is an important result for further achievement.

The collaborative management of the Aesesa is an evolving process. It is implemented based on the local context and people's strength, while taking into account the geographical and socio-economic situation, and people's experience from the previous collaborative programme and activities.

Collaboration in this case means that everybody contributes and is involved according to their capability and responsibility, while putting sectoral interests under the common interest. Collaboration here also means that everybody has a sense of belonging. Therefore, the involvement of stakeholders (communities, local government bodies and NGOs) has been in existence since the early stage of the collaboration.

The collaboration uses a holistic approach to understand the community's context. The subject is community, therefore the collaboration is community based and people centred. To get the holistic picture, there was an analysis of livelihoods sources and assets, the community's vulnerability, along with policy research.

The collaborative programme has brought some significant changes in the way the community and local government manage their resources. The local communities can express their needs, while the local government responds and adopts this into their annual and long-term plan. Along with the existing challenges, the successes and the lessons learnt from this collaboration will enrich the reference for community-based natural resource management

II. Background Information & Context

Geography & Location

The Aesesa watershed is located in the district of Ngada on the eastern island of Flores in the province of East Nusa Tenggara (NTT). In 1988 it was declared by the provincial governor as the second priority watershed for the entire province. It covers a land area of 1,347 hectares, comprises five micro-watersheds, and is the biggest river and watershed system on the whole of the island of Flores.

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--Map--

From the five micro-watersheds that comprise Aesesa, micro-watershed Aemau is considered to be the most critical. It is the largest in terms of land cover, is highly vulnerable to erosion, landslides and fires, and has a high level of poverty. The water that emanates from the headwaters of the Aesesa watershed, which is drained by the Aemau river, provides water directly to 5,798 people, living in 13 villages. However, these waters are almost dry, and local people experience increasing difficulties in finding enough water to fulfill their daily needs for drinking, washing and farming.

--Picture--

The Aesesa River

The whole of the Aesesa watershed is a dry area, with only 1,500-2,000mm rainfall a year. The rainy season usually only lasts from December to March, with the most intense rain occurring in January. The area is characterized by a rolling topography, with an average slope of 18 per cent. Tree cover is now only about 30 per cent, with the rolling hills now being mainly open grasslands, and trees mainly being evident only in creeks, river banks and water catchments. Due to a shortage of tree cover, there is localized flooding and water run-off in the rainy season, and water shortages in the dry season.

--Picture--

Condition of the Aesesa Watershed: few trees can be seen

One of the reasons why the government considers Aesesa watershed to be a priority is that it provides the main source of water for rice production within the district of Ngada. There are 6,400 hectares of land devoted to rice production in Ngada. This is rice that is produced and consumed locally, and which plays a large role in ensuring local food security. The level of rice production in the Mbay area is heavily dependant upon the water flow from the Aesesa river, from the Aemau river, and from the other rivers that form the Aesesa watershed. Since rice production largely takes place in lowland areas,

there is a high level of dependency of lowland communities on the upland water sources, and on the environmental services performed by their upland neighbours.

Socio-Economic Situation

Most of the 69 communities that live within the Aesesa watershed are located in rural, remote areas with limited access to basic government services. Physical infrastructure is limited (electricity, communications, roads), as is access to information. Livelihoods are almost exclusively dependant upon natural resources, with the vast majority of the local people working as farmers and small-scale pastoralists. Many of the local farmers still practice shifting, '*slash and burn*' agriculture, and livestock (mainly cattle) are generally allowed to roam and graze freely on roots, shrubs and seedlings. Agriculture is seasonal, with the main crops being rice, corn, sweet potatoes and beans. Due to the short rainy season there is only one crop a year, and there are frequent food shortages throughout the year.

Burning is a common practice in Aesesa. It is not only used to open up new land for production, but is also commonly used to stimulate the growth of grass sprouts and thereby provide food for the animals. This practice is particularly common at the height of the dry season (August to October) when foods supplies are at their most scarce. Burning is also used by the local communities during hunting, either when searching for their animals (for sale, consumption or ceremonial purpose) or in hunting for wild boar, with the undergrowth being burnt to make the hunt easier and to help flush out the prey. Burning is practiced by all the ethnic groups that live within the Aesesa watershed, sometimes with disastrous consequences when the fires get out of control, resulting in widespread destruction of grasslands and farms.

--Picture--

Open Grasslands Prone to Burning (September)

This mixture of widespread '*slash and burn*' shifting agriculture, free grazing of livestock and burning for hunting, combined with the routine wood needs of the local people (construction, cooking) has ultimately resulted in large-scale deforestation within the Aesesa watershed, an almost total loss of tree cover in the uplands, and a threat to bio-diversity. Since most of the shifting cultivation takes place on marginal, sloping land, ranging from 450 to 800 metres above sea level, erosion has steadily increased on the denuded slopes and soil fertility in general has dropped. As tree cover has decreased, the

micro-climate has gradually, but noticeably, changed, with a steady drop in annual rainfall and a gradual drying up of once-reliable water sources.

Poor and declining access to water, together with declining soil quality, has made livestock breeding difficult and unproductive, and resulted in a drop in agricultural productivity. Since it is mainly the job of women and children to fetch water, there has been an increase in the time needed to fetch water, with the women and children frequently having to walk 1-2 km to find water sources, many of which are located on adverse slopes.

The decline in the watershed's health, as seen most visibly through deforestation, soil erosion and water scarcity, is therefore adversely affecting food security, the viability of local livelihoods, and community and environmental health. The health of the soil, water, people and the animals is all becoming increasingly vulnerable, and livelihoods are becoming increasingly unsustainable.

Within people's daily lives in Aesesa, local traditions and customs (*adat*) remain a powerful force, with much importance being placed on the preservation of local customs, often at the expense of family and community finances. For instance, traditional farming practices, although damaging and unsustainable, and now suffering from declining yields, are embedded into local practices, norms and attitudes, and are therefore slow to change. In addition, the giving of livestock is considered of great importance during key ceremonies (marriage, death, etc). Therefore, livestock-raising is more generally viewed as a way of fulfilling cultural requirements, rather than as a livelihoods strategy to improve household income and reduce vulnerability.

Although such strong traditions can be viewed from one perspective as a cause of poverty, it can also be viewed from another perspective as a great strength and as a potential solution to existing problems. The spirit of self-help and working together for the good of the community (*gotong royong*) is still very strong in the communities within the watershed. Volunteerism and solidarity within and between villages remains high, and this has shown to be a tremendous resource in the development of a collaborative approach to the management of the Aesesa watershed.

However, this traditional spirit of solidarity has been undermined in several cases through the problem of increasing water scarcity. Some of the villages located within the watershed (such as *Rendubutowe*, *Renduwawo* and *Tengatiba*), which are situated in the uplands, are experiencing serious problems in accessing water, since the water sources are generally located in areas below the settlements. There are a number of other villages (such as *Gerodhere* and *Dhereisa*) where their water sources are far, resulting in them becoming dependant on other neighbouring villages for their water. Apart from this having a cost implication, water management and use conflicts are now becoming more frequent occurrences between neighbouring villages.

Clearly, farmers living within the watershed face a number of resource management issues. Traditionally, many of the "common" resources (grazing pastures, water sources,

forest products and hunting grounds) were managed by community or tribal councils, which regulated their use. However, these traditional structures have been severely undermined as a result of a gradual shift towards more government control over the management of these resources. The Forestry Department, however, which is largely responsible for the management of these resources, has been poorly endowed at the local level. As a result, it has lacked the facilities and human resources to effectively manage these extensive tracts of protected forests and watersheds. The ineffectiveness of both traditional and government mechanisms in regulating the sustainable management of these common resources has generally resulted in uncontrolled harvesting. This has led to severe resource degradation and protracted conflicts among the many different users and interests.

Local Government

Despite the local government being aware of the importance of the environmental services provided by upland communities, and the importance of upland rehabilitation in watershed protection, there had been very few concrete actions by the government to change the dominant situation. The traditional focus of the local government in Aesesa was in rice production for income generation, with most interventions being focused on the lowlands. Only a very few and sporadic attempts have been made at rehabilitating the degraded uplands.

However, this focus on rice production, and the critical role that the watershed plays in rice production for the island of Flores, has ultimately resulted in the provincial governor's declaration to make Aesesa a watershed priority within East Nusa Tenggara. This declaration has subsequently become the basis for a series of conservation and development interventions within the district of Ngada. Government departments have been actively encouraged to develop programmes to protect and rehabilitate the Aesesa watershed, and to include the interests of the people who live within the watershed in such an approach. The government has been encouraged to provide opportunities for the local communities to improve their socio-economic situation, to learn about the wider impacts of forest and environmental destruction, and to strengthen community-based organisations and village governance structures. Therefore, ultimately the provincial governor's declaration helped to stimulate and support the development of the collaborative, community-based approach to the management of the Aesesa watershed, to try to address the complex and inter-related issues of poverty and natural resource degradation.

III. Development of the collaborative, multi-stakeholder approach

Early Approaches – Agro Forestry

Since 1989, local NGO *Yayasan Mitra Tani Mandiri* (YMTM) has been working to develop agro-forestry with communities in the Aesesa watershed. Their focus has been on improving agricultural productivity through the development of soil and water conservation practices, livestock and vegetable production, the development of longer-term cash crops and 'family forests'. As it is one of the driest and most remote locations within the Aesesa watershed, YMTM initially started work in the village of *Gerodhere*,

gradually expanding into neighbouring villages from year to year. Up to June 2005, YMTM had worked in 18 villages within the Aesesa watershed.

However, the promotion and development of agro-forestry, although effective at the household level, proved to be incapable of responding to the wider and more challenging issue of integrated watershed management. The agro-forestry approach takes as its focus the farm and the farmer's group, and focuses on the spread and adoption of proven agricultural technology. Some of the benefits of agro-forestry can clearly be seen through the eyes of Mr Antonius Pati, a resident of Rendubutowe village, located in the uplands of the Aemau micro-watershed. His story follows:

ANTON'S STORY

Antonius Pati is often referred to as *Bapak* Anton. He is 56-years-old, and lives in his simple house with his wife, Helena Kodo (50-years-old), and his four children. The eldest child is 21, and the youngest is 12. All the children went to school, but the two eldest both dropped out from elementary and junior high school, respectively. The third child is still at junior high school and the youngest is at elementary school.

Bapak Anton first began developing agro-forestry in 1992. He started out on a plot of land of only 0.75 hectares, after being informed of the techniques through a learning visit to the neighbouring island of Sumba.

“When we got home from Sumba, I built a wooden fence around my land to stop livestock from entering and causing damage. Once the fence had been built, the first thing I did was to develop terracing with rows of leguminous crops. I think that terracing is the basis for agro-forestry since it helps to prevent soil erosion and also enhances soil fertility. Along with the terracing, I planted seasonal crops such as rice, corn, sweet potatoes and beans. Within three years I could see a difference. Previously, before I had built the terracing, I had to move the farm to a new piece of land, because once there had been three harvests the soil was no longer fertile. But with the terracing and the use of leaves from the leguminous crops as manure, my harvest kept on increasing.”

From this small start, *Bapak* Anton now has a farm covering seven hectares. Every year he has expanded, ‘opening up’ a new piece of land, building new terraces, planting new crops and finally protecting the new land with a fence.

In addition to the vegetable production, back in 1993, and with support from YMTM, Anton decided to develop a ‘family forest’ by planting trees on the terraced land. He started with mahogany and gamelina trees, but now also has mango and cashew nut trees.

--Picture--

Terracing on Anton's Farm

"It was really difficult. There was no water near the farmland. The nursery was 3km away from the water source and we had to carry water every morning to water the seedlings. We did this every day for about five months, until the rains came. At the same time we marked out the places where we wanted to plant the trees. The rains came in November, and in January we planted about 700 tree seedlings. At the end of the rainy season in April we had to start carrying the water again from the spring. We had to replace a few trees that died, but by the end of 1995 all the trees that we had planted were still alive. I now have seven hectares of mahogany and gamelina trees, and about 7,500 trees of varying ages, most of which are mahogany. I also have cashew and mango trees."

Agro-forestry has produced a real change in the whole family's livelihoods and food-security status. Anton explains:

"Terracing with leguminous plants and the use of the leaves as manure has improved soil fertility and resulted in increased harvests. We still don't produce enough rice and so we still have to buy rice at the market, but we have a surplus of corn. We still have corn stored, and apart from the rice and corn we also have sweet potatoes, beans and peanuts. At the last harvest time, I sold 90kg of peanuts, 150kg of mung beans and 100kg of kidney beans. Every year I can also sell cashew nuts and mangos. We have enough for our needs."

--Picture--

Anton's mahogany trees

When asked about the benefits from his family forest, Anton replied:

“Seedlings and firewood. On average, every year I sell 250kg of gamal seedlings, 25kg of gamelina and 75kg of mahogany. I sell the seeds to YMTM and to other farmers, and I sell the firewood in the market every Thursday. My wife looks after the money that we make from this. She uses it to buy food, clothes and furniture, and to pay for the children's education.”

Through Anton's success as a farmer, many of his neighbours came to visit his farm to learn about agro-forestry. Many received tree seedlings from Anton, and have now gone on to develop their own 'family forests'.

“Since 2002, lots of people have visited, from this village and from other villages, to ask for seedlings. Because they are planning to plant them and not sell them, I give these seeds for free. When I then go and visit their farms, I see that the seeds I have given have indeed been planted. There are also other people who offer things in exchange for my seeds, such as chickens. From this village there are about 30 people who have come to ask for, or to buy, seeds from me. There are also about 15 people who have come from other villages. Through their efforts there are now a lot of people who have developed their own family forests. For an area like Aesesa here, whereas previously you could only see open grassland, you can now see lots of patches of woodland. The weather here has also changed – it feels fresher & cooler these days.”

Pointing to a place just beyond his farm that used to be dry, Anton added: *“In 2002 water appeared over there. Even though the water flow is low, it never dries up. Because we value this water so highly, we try our best to look after it and protect it. We don't have to walk a long way to get water anymore. Now, we only have to go about 200m before we*

can get water. The coffee that you're drinking is made from that water!" he said, laughing.

--Picture--

Bapak Anton (second from left) in his family forest

Bapak Anton was nominated in 2004 and 2005 for the *Kalpataru* award (a national environmental award), and in 2005 he received an award from the provincial governor (certificate) as an environmental pioneer.

Development of the Collaborative Approach

Despite the small-scale successes of farmers such as *Bapak Anton*, and of the others like him who have changed to a more environmentally-friendly and sustainable kind of farming, many still use the more traditional, damaging practices. However, through evaluation and reflection, YMTM became increasingly aware that such an approach - focusing on the level of the farm although providing a solid base from which to build - was not enough to address the myriad of issues and conflicts that exist at the level of the watershed.

Awareness of the need to develop an approach based upon the watershed first began to develop in 1999 following a programmer evaluation with World Neighbors (the collaborative concept and strategy took a little longer to develop). YMTM staff learned more about the watershed concept through a study visit to Java and participating a watershed management course in the Philippines supported by VSO Indonesia, and through participation in the Nusa Tenggara Community Development Consortium. They were exposed to the experiences and learnings of other similar organisations who were striving to develop successful approaches to community-based natural resource management in forest areas. An unsuccessful community-based approach to the

management of the Riung watershed, also in Ngada district, provided another rich source of learning and information for YMTM.

Although the official government approach was based on the watershed, there was no clear strategy or process for an integrated approach, with most watershed management issues being pursued by the local forestry department through small-scale reforestation of upland areas. It took YMTM's approach to develop the links with the forestry department to stimulate the development of the collaborative approach, which ultimately emerged in 2004. The final factor in the equation was the provincial government's plan to build a dam in the Aesesa watershed. This plan provoked widespread community protest, and succeeded in raising the issue of the wider watershed at the community level.

The first concrete step in the development of the collaborative approach at the watershed level in Ngada was a workshop on community-based natural resource management in 2004. This workshop was a joint effort between YMTM, World Neighbors and the Ngada Department of Forestry. It was the first effort to develop the collaboration necessary between the key local stakeholders – mainly community, government and NGOs. At that time it was agreed to focus on the Aemau micro-watershed as a trial area, as the most critical of the five micro-watersheds, to develop collaboration. An initial plan of action was subsequently developed.

The broad objectives of the watershed management programme were established as:

- To improve the watershed's physical condition (e.g. water quality and quantity, sedimentation, flood prevention)
- To improve the quality and productivity of land and forests
- To improve the community's skills, awareness and participation in watershed management
- To develop local organisations' ability to manage the watershed
- To develop a model for sustainable development within the watershed.

Following surveys of the Aemau micro-watershed to assess its physical condition and coverage, a series of internal workshops and meetings were held to further develop strategy and approach. Financial and technical support was provided by VSO to undertake livelihoods and community assets research within nine of the 13 villages (eight in the uplands and one in the lowlands) of the Aemau micro-watershed. To ensure that all key stakeholders were represented in the research team, 16 local researchers were subsequently identified and recruited, comprising representatives from the local government, local NGOs and the community. There followed a series of workshops to determine which participatory research methodologies and activities would be undertaken; provide training and practice for the research teams in the use of the selected PRA techniques; 'level-off' expectations about the participatory action research process; and establish, among all team members, a common understanding of the research objectives.

Therefore, following the initial workshop, the first joint activity was a participatory, community-based research process, with stages at the village level, the inter-village level and the district level.

Specifically, the research objectives were to:

- Define community problems, issues and potential
- Consider the history of previous development initiatives in each village
- Identify partners for the development of collaborative structures
- Formulate approaches and strategies in shared watershed management
- Prepare systematic and site-specific village plans to be adopted and implemented by the community.

The research was done in every hamlet within the nine villages, with analysis of livelihoods sources and assets, welfare ranking, trend analysis, mapping of daily and seasonal activities, social mapping and the village history. Hamlet-level analysis was followed by a larger-scale village meeting in order to clarify, verify and agree common issues that were raised in each hamlet, at the village level. Participants at the village meetings included representatives from each hamlet, from the village government, the local schools, civil society organisations, the church and other community-based organizations in the village.

Some of the issues raised through this participatory process, and for which action plans were developed, included:

- the limited ability of village-level institutions in village development and conflict prevention, and a general lack of coordination between different groups and institutions, both within the villages and with the district level government
- the condition and trend of natural resources – degraded vegetation and forests, declining water flows and limited water availability
- the declining livestock population
- the continued frequency of fires
- limited availability and utilization of health and education services, with many children dropping out of school before the end of elementary school
- low incomes, declining productivity, reduced water for irrigation and unstable market prices

At all stages of the process, **community involvement** and participation was always considered, particularly how to ensure the participation of the poorest and most marginalized groups within the community (e.g. women, poor farmers). The community research process was deliberately designed to be carried out at the hamlet level to try to facilitate easier participation of marginal groups, and hence ensure the representativeness of the information gathered.

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Planning in Hamlet Raja 2

This participatory process was a crucial step in securing community ownership of the information, the plans that were developed, and general 'buy-in' to the process. Participation allowed different members of the community to come together; share ideas and information; analyze together their current situation; develop awareness of the wider processes and influences that shape their lives; and find their own answers and solutions to the problems. Although the process was time consuming for the researchers, and relatively more expensive, the team considered participation to be an essential prerequisite if the process was to succeed in stimulating change. Through this approach there were notable changes in key aspects such as local motivation to take action, an increased level of confidence to express ideas, and a greater willingness to come together and share information.

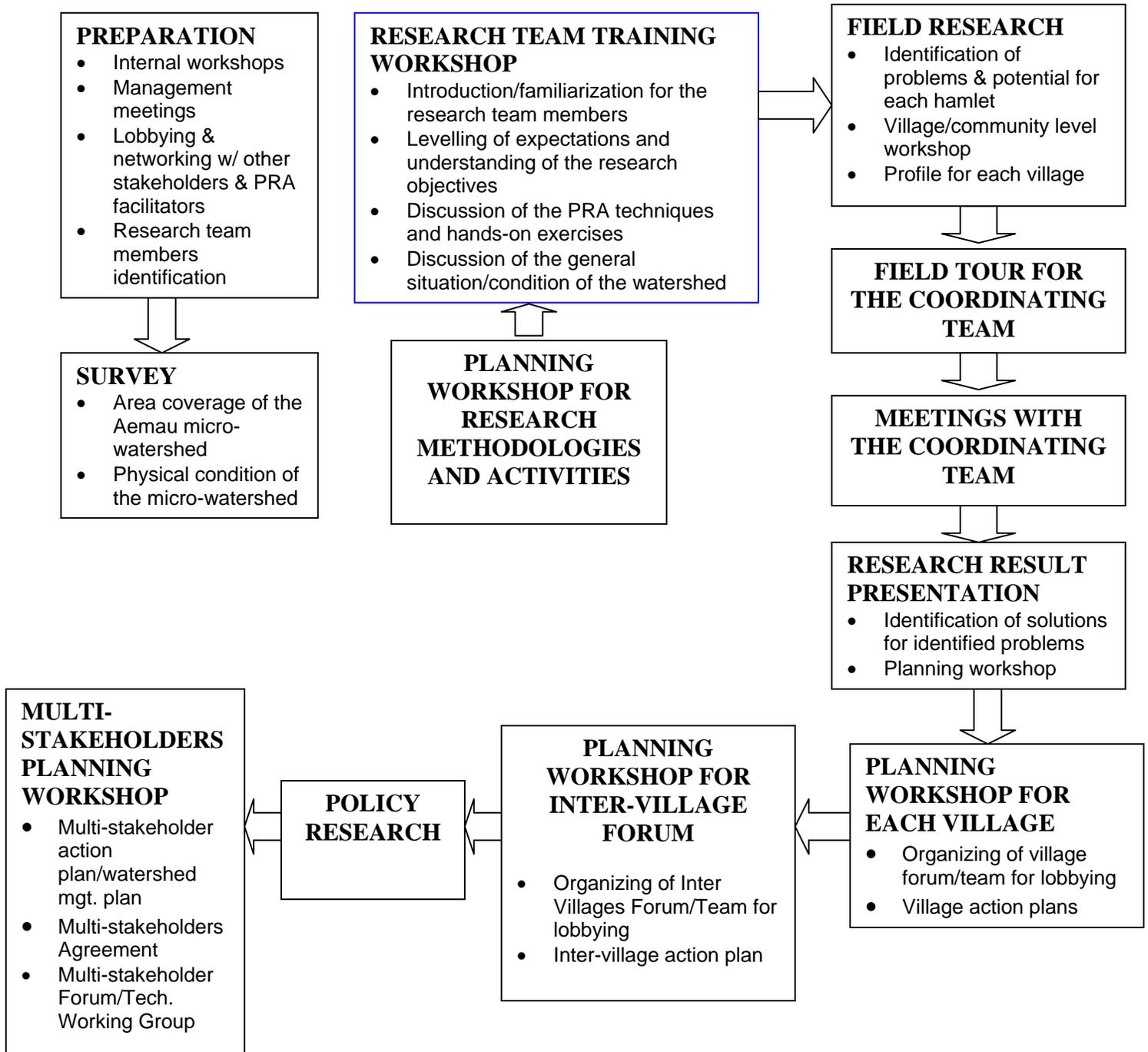
The village research process enabled the development of village-specific plans, based upon the information generated. In addition, however, two additional action plans were developed:

- the **inter-village plan**, and
- the district level, or **multi-stakeholder plan**.

These plans were developed out of recognition that action needed to be taken on a wider scale than simply the village level, and that collaboration needed to be developed between villages, for inter-village solidarity, but also at the policy level, between all key stakeholders at the district level. All plans needed to be linked and based upon the results of the community research process.

Consequently, inter-village and multi-stakeholder plans were developed through a series of workshops. These workshops focused on the design of common activities between and among different villages and different stakeholders to address the common problems and interests that were believed to have a wider impact on the management of the watershed. This helped to maximize the research results by allowing the formulation of collaborative initiatives, and ultimately formed the basis for the local government and NGOs to collaborate with the communities to manage the watershed in an integrated and holistic manner. It also ensured that villagers' participation was not limited to activities within the village only. Community members participated in a series of workshops at all stages where the research results were presented and discussed. They were also active in the later stages of implementation, monitoring and evaluation.

PROCESS OF COLLABORATIVE COMMUNITY-BASED MANAGEMENT OF THE AEMAUE MICRO-WATERSHED



In order to build upon the interest and motivation generated by the participatory research process, and to encourage greater camaraderie between villages, an inter-village forum called *Forum Peduli Lingkungan DAS* (FORPELDAS) was developed – the People’s Watershed Forum. This comprised of three representatives from each of the nine participating villages (village head, village councilor and community representative), and became an umbrella organization for all of the villages in the micro-watershed. As such, FORPELDAS formed a key role in developing inter-village solidarity, in monitoring the implementation of agreed action plans, in providing support for member villages in action plan implementation, and in advocacy and lobbying the local government, particularly in relation to the implementation of the multi-stakeholder plan. Financially, FORPELDAS is now supported by the Ngada Forestry Department, and they meet on a quarterly basis.

In addition to FORPELDAS, an additional team was also developed – the ‘Multi-Stakeholder Coordination Team’ – and this proved to be a crucial step in ensuring support at the district level. This coordinating team comprised local government, local NGOs and the community members of FORPELDAS, and was established following the district level planning meeting. The coordinating team members played an important role in advancing joint decision making, in developing strong working relationships between the different actors, and in facilitating negotiations among different stakeholders in the Aemau micro-watershed. The fact that the coordinating team members included government officials with enough seniority to take decisions and influence policy was very beneficial, and resulted in advocacy and lobbying becoming mainstreamed into the programme at all stages. Bringing the coordinating team to the field proved to be crucial in developing reflection and awareness of the importance of building a collaborative, community-based approach – the team was able to directly witness the socio-economic condition of the communities, the physical condition of the watershed, and observe and learn from the participatory, community-led process.

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Watershed Planning Workshop

In addition, **policy research** was conducted to provide a basis for the development of more sustainable natural resource management and rural development policies within the district of Ngada. The findings of the policy research were shared to all stakeholders to try to influence and inform future decision making among policy makers. The most important aspect to note from the policy research process is the high level of participation from different local government departments and agencies, from the data gathering stage through to the analysis.

IV. Changes

The effort to combine the interests and potential of such a wide range of people into a collaborative, community-based approach to watershed management has been remarkable. Despite this still being a relatively new initiative (having only started in 2004), changes are quite clearly happening. There is a strong camaraderie between the participants; a strong sense of common partnership; a signed agreement as a documented expression of commitment; plans in place at different levels; and a strong common understanding among all the stakeholders about the purpose of the programme. Participation, enthusiasm and motivation among community members were high throughout the research and planning stages, and remain high today through implementation and monitoring.

However, within the context of Indonesia, possibly the most significant change that has taken place is within the local Ngada district government. They have accepted and incorporated all of the village action plans into their annual district development plan and consequent budgetary allocations. Those from the local government who were involved in the community research and planning process recognized the importance and the effectiveness of the information generated, and they were keen to have this information adopted by the government. However, it is quite a significant achievement to actually achieve this change when the community planning process took place outside of the official government planning process.

The local government also took some lessons that were learned through the community-based process. They have subsequently made changes to their official village development planning process (MUSRENBANGDES) to ensure that representatives from all hamlets within the village are now consulted on village development needs, and not just consultation with the village government officials.

A major success was the development and signing of a multi-stakeholder agreement between the various parties involved in the watershed management process. As well as being a clear sign of commitment between the stakeholders to ensure the programme's success, this multi-stakeholder agreement is also notable as being the first such multi-stakeholder agreement made within the district of Ngada.

Multi-stakeholder structures that function as umbrella organizations – the People's Watershed Forum (FORPELDAS), the Multi-Stakeholder Coordination Team, as well as a newer structure, the Technical Working Group (TWG) – have grown and developed

from this collaborative process. These two organizations have been able to synthesize the wide range of community interests and play an important advocacy and communication role, as well as offering technical advice and guidance on watershed management to the village and district governments. Together, these organizations have become responsible for monitoring programme implementation, for coordinating programme planning, for identifying lessons learned, and sharing results among all the different stakeholders.

V. Some Lessons Learned

The development of the multi-stakeholder approach has led to a number of key lessons.

Working initially at the level of the micro-watershed was critical in facilitating meaningful community participation, and in keeping the programme at a manageable level so that stakeholders did not feel overwhelmed by the scale of the watershed approach.

The programme paid attention to ‘balance’, and was careful to address the real, felt needs of rural communities through activities to address community livelihoods, such as agro-forestry. It also had a focus on more ‘process oriented’ activities, such as research, meetings, seminars and workshops. The livelihoods focus of the programme was therefore a crucial factor in success.

The use of a participatory approach for community members and government officials was very important in many aspects. Although time consuming, it is this ‘facilitation’ role by the NGO that has built the roots of sustainability. Community groups were involved from the start in defining their own situation and coming up with their own solutions, thereby generating a strong sense of ownership and commitment. Government staff were supported in developing participatory, community-responsive skills and in developing collaborative working structures. This has resulted in a growth in community volunteerism, as well as a notable change in the attitude and behaviour of some government staff who are now notably more open and responsive towards requests from, and the needs of, the community.

Establishing working relationships and processes for communication, decision making and negotiations with the involvement of all actors is very critical. Clearly the development of agreements and plans at all levels, with specific bodies set up to build upon and monitor these plans, was very important. Bridges have now been built between remote community groups and district level officials, and there is now the real potential for the development of wider partnerships and future collaboration. It is not only the attitude of some government officials that has changed, but it is also evident that many community leaders are now much more prepared to challenge and lobby the government to secure funding to support their village development plans. This process has been further supported by the facilitation of a village strategic development plan in one of the villages within the Aemau micro-watershed, the village of Ulupulu. Here, a written, detailed, strategic plan has been developed, with the full participation of the villagers. This village strategic plan is a key document in negotiation with the district level

government for fund allocation for village development. It also develops self-belief and confidence among the village-level government in negotiation and lobbying with the district government for greater community autonomy in future village development and management.

Changes are also clear in terms of the relationship between the NGOs and the local government. These are changes in a relationship that, up until a few years ago, was more adversarial and built on mutual suspicion, rather than a collaborative relationship built upon mutual trust. Transparency in decision making and in financial management throughout the programme has significantly supported the development of supportive working relations between the local NGOs and the local government. The government has now started to work more closely with some NGOs, noticeable in the implementation of the national land rehabilitation project (GERHAN).

Government commitment and support was crucial, as was the integration of the results of community assessments into the government planning system. This has resulted in finance being committed to support the realization of the watershed management plans.

Participatory action learning processes at the community and policy level produced much useful information in a democratic manner, and succeeded in developing a new level of critical awareness about the importance of collaboration and integration within the programme. This has reduced the tendency to work sectorally on an individual basis, and has encouraged future collaboration, not only between NGOs and the government, or between community groups and the government, but also between various government departments that tend to be sectorally structured.

VI. Weaknesses and Challenges

- Limited women's roles and participation in almost all activities relating to watershed management and rural development. Although there have been some changes in terms of meaningful involvement of some women in the watershed management programme, much work needs to be done, and special attention needs to be paid to the factors that limit women's involvement.
- The capacity of the officers and members of the *People's Watershed Forum* (FORPELDAS) to manage the forum, and to influence other villages within the micro-watershed to participate in the programme, still needs further support and development.
- Due to the limited funding available to the villages to implement their plans independently, the implementation of the village plans is still dependant upon external stakeholders (YMTM, local government, international NGOs). Further funding support is therefore required to support the village development plans.
- There is still no policy or clear long-term strategic plan from the local government that is focused on the Aemau micro-watershed's needs. There have been no notable

changes in rural development policy, with natural resource policies still favouring extraction for income generation over longer-term sustainability.

- The collaboration between upstream and downstream communities is still weak, despite their interdependency in terms of environmental and water concerns. Much more attention is needed to look at the issue of collaboration between upstream and downstream communities.
- There is a lack of support from the Provincial Level Watershed Management Board in Kupang (the capital of East Nusa Tenggara province/NTT), despite Aesesa being the second priority watershed in NTT.
- Local NGOs and donors have a short-term, project-based approach, despite the fact that the development of collaborative multi-stakeholder processes requires long-term commitment and support. The government planning cycle is also annual, with government departments being structured on a sectoral basis. The challenge of working cross-sectorally, or holistically, with a long-term goal and long-term financial support is a serious one.

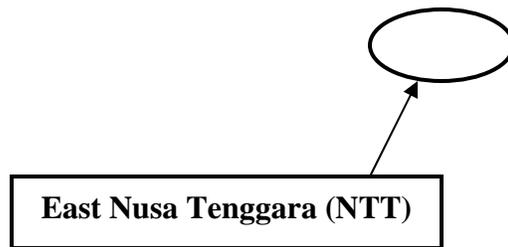
VII. Some Suggestions for the Future

- Strengthening of the village government as the central rural development and watershed management unit (UU no.32, Regional Autonomy). To achieve this, the following support is still needed:
 - Facilitate participative land use mapping and planning with GIS.
 - Facilitate all participating villages to develop comprehensive five-year strategic plans for village development (like in Ulupulu Village) as a follow up to the initial action plan.
 - Develop an agreement and/or local law to clarify the role of each village in watershed management, to strengthen enforcement and to further reduce the possibility of natural resource conflicts.
 - Facilitate and support community groups and village level government to network for fundraising, either from the government or from other funding organizations, to support the implementation of village action plans. Develop the capacity of the village level organization to successfully and transparently manage the funds.
- Increase the numbers and the skills of community organizers (women and men) through the provision of training and ongoing support and mentoring.
- Revitalize traditional values, customs and structures that support conservation and the sustainable use of natural resources. Strategies should be developed at the village level to include traditional leaders (*tokoh adat*) in watershed management structures, to build on the aspects of local tradition that are supportive of

conservation and to influence change in aspects of tradition that are unsupportive (e.g. slash & burn; hunting; inclusion of women etc).

- Strengthen and support existing community groups (farmers groups, savings and credit groups) to become umbrella organizations for the farmers' economic development and sustained livelihoods. One such option could include the development of a village-level credit cooperative to ensure access to affordable credit and to develop joint marketing initiatives.
- Strengthen the *People's Watershed Forum* (FORPELDAS) as an umbrella organization to coordinate between upstream and downstream communities, to facilitate joint activities at the inter-village level, and in carrying out advocacy at the district level.
- To maximize the role of the Multi-Stakeholders Coordination Team in coordination of the watershed management plan between the local government, the provincial government Watershed Management Board, and the local NGOs. The Multi-Stakeholder Forum could play an important role in the monitoring of the watershed, in conflict resolution and in the development of future watershed management strategies and programmes.
- Using the lessons learned from the Aemau approach, and the partnerships developed, scale-up the Aemau approach to the other micro-watersheds within the Aesesa watershed. The development of a management plan for the Aesesa watershed is crucial in the determination of clear land and water rights, and in the prevention of inter-community conflicts.

APPENDICES - MAPS



East Nusa Tenggara

--Map--

--Map of AEMAU watershed--

