

Integrated rural development in East Nusa Tenggara, Indonesia

Pembangunan Pedesaan Terpadu di Nusa Tenggara Timur, Indonesia

Proceedings of a workshop to identify sustainable rural livelihoods,
held in Kupang, Indonesia, 5–7 April 2006

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Foreword

East Nusa Tenggara (Nusa Tenggara Timur, NTT) is one of the poorest and least developed of Indonesia's provinces. It is characterised by shallow soils, a long dry season and variable rainfall, poor physical and social infrastructure, isolation and low literacy levels. Poverty is widespread among rural households, with around 60% of the population living in poverty. While the majority of the population is dependent on agriculture, the province has not been able to achieve food security and self-sufficiency. One promising path to improved livelihoods and sustainable rural production for the communities of NTT is integrated rural development.

These proceedings report on an international workshop held in Kupang in April 2006. The workshop was supported by the Australian Centre for International Agricultural Research (ACIAR), together with a number of Australian and Indonesian organisations. The purpose of the workshop was to identify opportunities and constraints to improving livelihoods in NTT using an integrated rural development approach, and to discuss directions for future activities. It was agreed that successful integrated rural development must extend beyond farm productivity improvements to include environmental sustainability, the institutional environment, human capacity building, social and cultural factors and the broader economic environment.

The workshop brought together experts from Indonesia, Timor Leste and Australia to review long-term development needs and prospects for integrated rural development. Workshop participants agreed on priorities for integrated rural development including areas with potential for collaboration between Indonesian and Australian organisations.

Successful integrated rural development depends more on a new way of thinking than on new technologies or new policy measures. It depends on active participation of representatives from rural communities, government agencies, industry, non-government organisations, researchers and other relevant stakeholders. It is built on local knowledge and can adapt to changes in the broader environment.

It is hoped that these workshop proceedings will be helpful in the development of future research and capacity-building activities for NTT and provide a valuable resource for government agencies, non-government organisations, rural communities and donor agencies operating in East Nusa Tenggara, Indonesia.



Peter Core
Director

Australian Centre for International Agricultural Research

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List of abbreviations

ACIAR	Australian Centre for International Agricultural Research	MFS	microfinance services
AFTA	ASEAN Free Trade Area	MoF	Ministry of Forestry
AIPRD	Australia Indonesia Partnership for Reconstruction and Development	MSEs	micro and small enterprises
ANTARA	Australia – Nusa Tenggara Assistance for Regional Autonomy (program)	NPV	net present value
APEC	Asia–Pacific Economic Cooperation	NGO	non-government organisation
BAPPEDA	(Provincial Development Planning Board for East Nusa Tenggara)	NT	Northern Territory
BCR	benefit:cost ratio	NTB	Nusa Tenggara Barat (West Nusa Tenggara)
BPD	(village representative board)	NTFP	non-timber forest products
CBFM	community-based forestry management	NTT	Nusa Tenggara Timur (East Nusa Tenggara)
CIFOR	Centre for International Forestry Research	PICMA	participative integrated catchment management approach
DAS	(water catchment management)	PSDHBM	(community-based forestry management)
FORPELDAS	(Watershed Environment Care Forum)	PSABM	(community-based natural resource management)
HDI	human development index	SADI	Smallholder Agribusiness Development Initiative
HEI	higher education institute	SDM	Studio Driya Media (NGO)
ICRAF	International Centre for Research in Agroforestry	SDR	sediment delivery ratio
IFPRI	International Food Policy Research Institute	TLM	Tanaoba Lais Manekat (NGO)
IRD	integrated rural development	TTS	Timor Tengah Selatan (South Central Timor)
IRDO	integrated rural development opportunity	TTU	Timor Tengah Utara (North Central Timor)
IRRI	International Rice Research Institute	UBSP	Urban Basic Services for the Poor
KPMNT	Konsorsium Pengembangan Masyarakat Nusa Tenggara (NGO)	UNHCR	United Nations High Commissioner for Refugees (the UN Refugee Agency)
KUM	(small-group lending program)	VSO	Voluntary Service Overseas
LSM	Lembaga Swadaya Masyarakat (community self-reliance organisation)	WNT	West Nusa Tenggara
MCI	microcredit institution	YAO	Yayasan Alfa Omega (NGO)
MFI	microfinance (services) institution	YMTM	Yayasan Mitra Tani Mandiri (NGO)

Integrated rural development in East Nusa Tenggara, Indonesia: overview of opportunities, constraints and options for improving livelihoods

Michael Blyth¹, Siliwoloe Djoeroemana², Jeremy Russell-Smith³ and Bronwyn Myers⁴

Abstract

This paper synthesises key points raised in presentations and discussions at the workshop and defines important lessons for successfully using the integrated rural development approach to improve livelihoods in East Nusa Tenggara. An improved approach to formulating and implementing project proposals was endorsed by workshop participants. This overview also reports assessments by workshop participants of opportunities for integrated rural development and key constraints, and outlines an agreed action plan for building on the outcomes of the workshop, including a strategy for preparing new integrated rural development proposals.

Introduction

This overview paper presents a synthesis of important matters raised in presentations and discussions and the key recommendations agreed by participants attending the international workshop on integrated rural development (IRD) in East Nusa Tenggara (NTT), held in Kupang, West Timor in April 2006. While IRD is a desirable approach to improving the livelihoods of NTT rural communities, it is not a new approach and it has not always delivered planned outcomes. The papers and discussions at this workshop identified that the success of IRD in the future requires major modification of the design and implementation of the approach.

Past investments in IRD for NTT have failed to deliver promised benefits for rural communities. Poverty, unemployment and health standards have not improved. Research into these and similar project failures identified a number of shortfalls of IRD projects and this has been used to rethink the approach and how it is applied. Looking to the future, an integrated approach to rural development in NTT will be based on lessons learnt from past failures and successes and will embrace key principles for successful implementation of the approach.

Northern Australian and eastern Indonesian agencies have been working together on rural development issues within this region since the mid 1990s. These partnerships were strengthened and expanded through two ACIAR-funded projects on fire management in savanna landscapes (Russell-Smith et al. 2000, 2007). Currently land management capacity in eastern Indonesia (NTT) is being further developed through an AusAID Public Sector Linkages Program project between Charles Darwin University and BAPPEDA NTT (see PSLP project website <<http://IndonNRM-pslp.ehs.cdu.edu.au>>). These workshop proceedings capture lessons from past successes and failures, in terms of both practices and approaches, and focus on

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the need to integrate activities in the future to achieve sustainable rural development outcomes in NTT.

The objectives of the workshop were to:

- review activities related to improving livelihoods in NTT
- establish and expand collaborations between Indonesia and Australia
- develop broader relationships with donor agencies (beyond Indonesia and Australia)
- discuss directions for future activities.

Over the three days of the workshop there were 27 invited presentations addressing the IRD approach, the potential of various rural enterprises for NTT, aspects of environmental management, activities of NGOs in supporting rural communities, the role of women, land rights and the contribution of education and microcredit to rural development. Collectively, these presentations adequately met the first objective. Furthermore, the outputs of plenary discussions and small-group discussions added to the review of issues and opportunities for improving rural community livelihoods. Directions for future activities were addressed through a collective assessment of priorities for the province and agreement on an improved approach to IRD. It was proposed that this approach be used as the basis for designing and implementing research strategies and project proposals for consideration by international donor funding agencies and other funding bodies. Representatives of four international donor agencies made presentations at the workshop. The prospect of strengthening and expanding collaboration between Indonesia and Australia in NTT was enhanced by the active involvement of representatives from relevant Australian and NTT-based organisations including government agencies, universities, NGOs, and national and international research organisations. Reflecting on the importance of collaboration in his presentation, Dr Frans Seda acknowledged the value of partnerships between NTT and the Northern Territory over more than a decade and suggested that these establish a pathway for IRD in NTT.

The outcomes expected from the workshop included:

- lessons (successes and limitations) learnt from past and current activities in NTT relating to IRD approaches
- identification of opportunities for and constraints to IRD in NTT

- agreement on IRD priorities for NTT and areas with potential for collaboration between Indonesian and Australian organisations.

These three outcomes determine the structure of the remainder of this overview paper.

Lessons learnt for future success with integrated rural development

In his opening speech to the workshop the Governor of the Province of East Nusa Tenggara indicated that IRD is about providing opportunities for rural communities to improve their wellbeing by moving beyond subsistence production to commercial production in an environmentally sustainable way. He proposed that IRD requires knowledge inputs, supportive government policy, government services and infrastructure development, access to finance and a commitment to working collaboratively both locally and internationally. The Chief Minister of the Northern Territory in her opening address to the workshop characterised IRD as the integration of rural enterprise development and natural resource management built on critical knowledge inputs and capacity development. The Chief Minister also emphasised the importance of sustainability.

Professor Saragih presented an agribusiness system as an example of IRD, with farm production integrated with upstream input suppliers, downstream processors, and those sectors and services that support all enterprises including government infrastructure services and banking and financial services. Saragih noted that within an agribusiness system all the stakeholders benefit from its growth including farmers, marketers, processors, exporters and consumers.

Djoeroemana, Salean and Nope argued that IRD approaches of the past failed to improve the wellbeing of NTT's rural communities because they were centralist, technocratic and focused narrowly on increasing agricultural productivity. Poverty is still widespread among rural households in NTT, with around 60% of the population living in poverty in 2005. Past efforts failed because they ignored sustainability, local context, local capacity building and community participation. Djoeroemana, Salean and Nope proposed an alternative approach to IRD that emphasises community capacity building, participation and sustainability. They acknowledge that IRD must account for factors in the physical, sociocultural, economic and political environments. They

defined their approach to IRD as the sustainable rural community livelihood approach.

Key elements of the sustainable rural community livelihood approach to IRD are that:

- It is people-centred and people-driven.
- It is an holistic approach built on a community’s existing knowledge of opportunities and constraints and its capacity to improve and grow,
- It is dynamic and adapts to change, with shared learning and participative monitoring.
- It focuses on capacity building for individuals and social networks that improve the potential to achieve goals.

- It is built on mutual understanding of relevant issues and context at the community (micro) level and the policy and strategic level (macro), and of the links between them.

- It recognises the existence of cycles and the importance of sustainability.

Their proposal to the workshop was that sustainable rural community livelihood development requires integration of the physical, sociocultural, economic and political environments. They presented a model of their system for consideration.

These presentations on approaches to IRD aroused supportive comments from participants who added

Table 1. Lessons learned for improving the design and implementation of integrated rural development projects

Area	Past failings	Towards success
Institutional environment	<ul style="list-style-type: none"> • Top down control by central governments and donor agencies • Supply driven as distinct from demand driven (user community driven) • Project establishes own project management units, bypassing local agencies 	<ul style="list-style-type: none"> • Decentralise control • Encourage community participation • Build commitment to project goals • Cater for local needs • Involve local players through local organisations • Build shared ownership through joint management of initiatives • Develop and adopt institutional arrangements to coordinate decision making across communities, between communities, and between communities and other stakeholders such as government and private organisations
Project design and implementation	<ul style="list-style-type: none"> • Poor project design based on poor assessment of problem • Inadequate account of local conditions—social, cultural, economic 	<ul style="list-style-type: none"> • Project design flexibility • Location-tailored research to inform project design and implementation • Source local knowledge
Relationship management and networking	<ul style="list-style-type: none"> • Poor interaction between project actors and those likely to be affected by project outcomes 	<ul style="list-style-type: none"> • Analyse social capital and institutional settings • Create networks within community and build trust
Sustainability	<ul style="list-style-type: none"> • Insufficient training provided to local staff • Inadequate attention to ongoing maintenance of project-funded equipment and capacity of locals to continue after the project • Project time horizon too short to deliver results during the implementation phase • Low community involvement and ownership 	<ul style="list-style-type: none"> • Train local staff to be able to continue beyond the project’s completion • Keep equipment investments within the maintenance capacity of local communities • Integrate projects into existing institutions • Define realistic project time horizons • Ensure community participation at every project stage

emphasis to the critical importance of the following factors:

- understanding the special characteristics of the local people who are the focus of IRD plans
- provision of long-term technical and agribusiness guidance through community engagement with culturally appropriate agents
- the need for a mechanism to link research, policy and planning
- using agroecological zoning, micro-ecological niches and agro-social/cultural zoning
- community-led development strategies (community centred)
- the role of women in breaking the cycle of poverty
- avoiding the weakness of past IRD projects that were oriented towards short-term economic growth.

Table 1 summarises the points made in presented papers and in plenary discussions at the workshop. The table provides guidance for those planning to develop project proposals based on IRDand for those managing IRD projects.

Opportunities for, and constraints to, integrated rural development

Presentations to the workshop addressed various opportunities for and constraints to integrated rural development. Some papers, such as that by Masadu on land tenure and those by Siagian and Rozali on microcredit, addressed specific limitations to rural development in NTT. Others addressed physical, economic, environmental and institutional factors influ-

Table 2. Opportunities for integrated rural development

IRDO	Component areas			
Integrated agroforestry	High value timber trees Fuel wood Sustainable harvesting of natural forest resources	Fuel wood Catchment protection	Forage trees Perennial crops—cashews, coffee, other	Small animal production
Timber processing	Construction timber	Value-adding products	Milling	
Non-timber forest products	Lac Rattan	Dyes and mordants Spices	Oils Medicines	Honey, fruit, palm sugar Nuts
Sustainable cropping systems	Horticulture Crop protection	New dry season crops	Sequence crops, e.g. N fixation	Subsistence farming
Sustainable livestock systems	Semi-intensive cattle husbandry	Small animal production	Forage trees	Subsistence farming
	Management of livestock diseases			
Postharvest processing	Crop products	Livestock products	Transport, packaging and storage	
Handicrafts	Textile weaving	Woodcarving	Incense	
Marketing of agricultural products	Pricing policy Role of women in marketing	Cooperatives Product differentiation	Market development—relations with retailers Cross-border trade with Timor Leste	Market analysis
Tourism	Eco-tourism	Agricultural tourism	Cultural tourism	
Sustainable coastal fishery management	Skills and equipment	Processing	Market development and infrastructure	Fishery management and role of government

encing particular enterprises including cropping, livestock and forestry. Presentations also addressed the role of women, environmental management and the role of NGOs. During the workshop, participants worked in small groups to identify and discuss opportunities and constraints to IRD based on the presentations, plenary discussion and their own knowledge and experience. The outcomes of those group discussions are summarised in Tables 2, 3 and 4.

Eleven IRD opportunities (IRDO) were defined, based on clustering the many individual activities and enterprises nominated by workshop participants. The integrated nature of these IRDOs is evident in a number of ways including the sharing of component activities between IRDOs (e.g. forage trees for livestock as part of the integrated agroforestry enterprise and the sustainable livestock enterprise) and the inclusion of key supply chain stages in the case of sustainable coastal fisheries. The mix of production and environmental factors is clearly illustrated by the integrated catchment management IRDO presented in Table 3. This IRDO embraced many components of the other 10 IRDOs as well as critical environmental quality factors. Similarly, the marketing agricultural products IRDO includes components of many of the other IRDOs.

Integrated rural development opportunities extend beyond farm production to include critical input supply arrangements, institutional factors and the efficient operation of the product supply chain and markets for farm outputs. Box 1 contains a description of the agroforestry IRDO prepared by one of the small groups during the workshop. It also addresses the challenges facing farmers, marketing agents, governments and rural communities in implementing

such initiatives. This example is typical of IRDOs and of changes needed for successful implementation and sustained performance.

Constraints to IRD were sorted into 10 areas: social, cultural, land tenure, infrastructure capacity, marketing, technology, institutional arrangements, financial services, knowledge, skills and training, and the natural environment. Table 4 presents the constraints nominated by the small groups during the workshop. Changes in any of these will influence the success of IRD projects. Constraints may be directly addressed as an integral part of a project strategy to achieve IRD aims. However, the likelihood of influencing a constraint varies from area to area. Figure 1 provides an indication of the potential to influence constraints in each area through an IRD project. Constraints with low potential to be changed, while critical to the success of IRD projects, are usually addressed directly and/or as part of broader reform or development initiatives. For example, decisions on investment and maintenance of telecommunications infrastructure are made by governments as part of a national telecommunications development agenda. Within IRD projects these types of constraints have to be tolerated.

Constraints that have moderate potential to be influenced by or through an IRD project are manipulated to get the best possible outcome without permanently modifying the constraint. For example, the commitment of government and other key stakeholders can be achieved for a particular project by ensuring their participation and by regular communication with them during the term of the project. However, this does not mean that these stakeholders will always be committed to IRD projects. Similarly,

Table 3. Integrated rural development opportunity—integrated catchment management

IRDO	Component areas			
Integrated catchment management	Improved water supply and quality	Fire management	Weed management	Mixed farming
	River flow management	Cropping according to water availability	Sequence crops, e.g. N fixation	Subsistence farming
	New dry season crops	Food security	Climatic conditions	Local and traditional knowledge or wisdom
	Human health and nutrition	Drinking water	Forests for watershed management	
	Integrated coastal resource management		Upstream and downstream reaches of river linked	

Table 4. Constraints to integrated rural development

Constraint area	Key constraints
Social capital	Gender equity and opportunities for women Social demographics Local/traditional knowledge Human health and nutrition—malaria Labour shortages—competition between agriculture and other sectors; declining importance of agriculture as a career Leadership
Cultural	Population density Subsistence orientation Theft of crops Language differences Illiteracy
Land tenure issues	Unclear land use and function Reform land use planning No individual tenure for villagers
Infrastructure capacity marketing	Telecommunications Roads Ports Utilities—electricity, sanitation, safe water Long-term investment
Marketing	Marketing system development Access to market intelligence Supply chain infrastructure—storage, handling, transport Certification of organic produce
Technology adoption	Community resistance to new technology Low community productivity
Institutional arrangements—governance and policy	Commitment of government NGO commitment Stakeholder coordination National–provincial–regional government relations Government–community communications Gender mainstreaming NTT is distant from Jakarta, where national decisions are made Institutional strengthening Extension services Information and telecommunications technology access
Access to financial services	Microcredit Grants Capital shortages
Knowledge, skills and training	Climate knowledge Agriculture and farming knowledge Low levels of formal education Quality of management (management knowledge) Lack of research capacity and postgraduate education Lack of multidisciplinary and integrated curriculum Tendency to focus on pure science and not livelihood curriculum Access to information and technology Market information
Natural environment	Natural disasters Pests and diseases Water shortages—rainfall Shallow topsoil Climate

technology can offer protection against natural hazards but it cannot prevent their occurrence. Constraints that have high potential to be influenced are those that can be transformed permanently. For example, by incorporating capacity building for key project participants (farmers, traders, government service providers) into an IRD project, new knowledge can be embedded in people and processes and sustained beyond the life of the project. In many cases these constraints are eliminated.

The determination of IRD project priorities must consider the size and distribution of the potential benefits of each opportunity including the economic, environmental and social benefits, and the nature and impact of the constraints to achieving the benefits including the capacity of communities to sustain new enterprises and processes.

Integrated rural development priorities

During plenary discussion at the workshop on priorities one IRDO stood out from the rest: integrated catchment management. It emerged because it embraced components of many of the other IRDOs. However, this does not mean the other 10 IRDOs are not important. In fact, the biggest revelation from discussions on priorities was that the fundamental need

is a framework or strategy for the design and implementation of IRD projects.

The integrated sustainable rural community livelihood approach to IRD proposed by Djoeroemana, Salean and Nope received strong support from workshop participants. Therefore, it was agreed to use this approach as the basis for developing a research strategy that could be discussed with government and international aid agencies to define specific projects, acknowledging their particular priorities for the region. The core of the sustainable rural community livelihood approach is reproduced in Figure 2. Other key elements of the approach described earlier must be incorporated into project design and management as well. It must be participative, people-driven, knowledge-based, dynamic and adaptive; and incorporate capacity building, mutual understanding between stakeholders, and recognition of the importance of cycles and sustainability.

Figure 2 presents the conceptual model. The goal of integrated sustainable rural development may be driven by any one of the four components of the model, but it is not achieved unless connections between all four components are represented. For example, the primary driver for improvement may be an economic one such as improving the marketing system for horticultural crops within a district or region that is focused on supplying formal markets in major centres. While enhancing the efficiency and effectiveness of the marketing system has the poten-

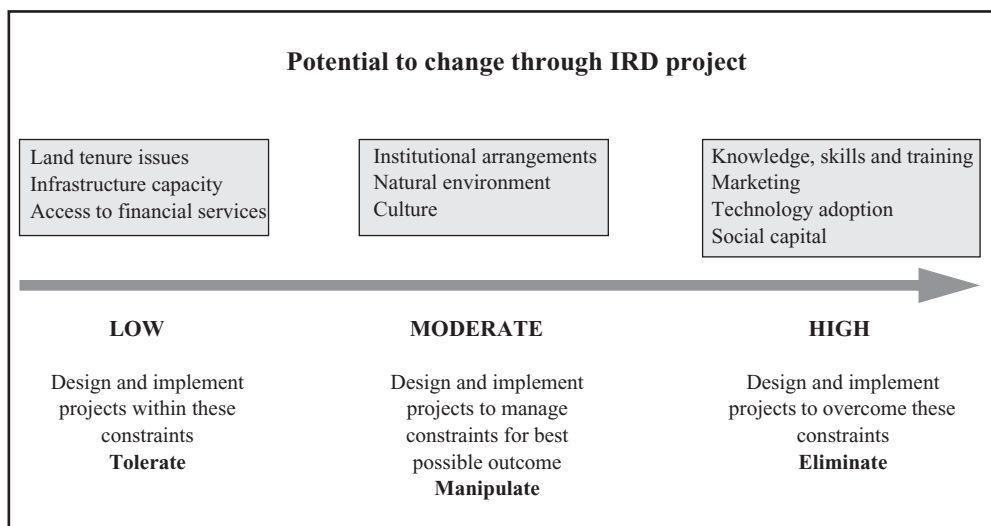


Figure 1. The potential to influence constraints through integrated rural development projects

tial to increase incomes for rural communities, a sustainable livelihoods solution must also recognise the critical importance of human relations to successful marketing, the role of government in providing key infrastructure such as serviceable roads and telecommunications services and a supportive policy environment, and the capacity of the physical environment to

Box 1. Integrated agroforestry

Integrated agroforestry may include high value timber trees intercropped with forage trees, tethered cattle, crops and/or other agricultural activities. Important issues include deciding on the optimal balance of the component activities and determining cash flow needs given the long time to harvest for trees and tree crops. Strategies are needed to improve existing practices, bring in additional income and provide economic buffering during hard years. What mix of species is required and what kind of training is needed, such as harvesting for fodder, pruning and thinning for timber? Successful agroforestry enterprises depend a lot on supportive marketing, governance and institutional arrangements. For example, resolution of land tenure issues will facilitate expansion of agroforestry in NTT. Until then, how can landholders be confident that pursuing integrated agroforestry will generate sufficient income? Leadership training and farmer-to-farmer communication is required as well. Also, land users will require training in managing and marketing crops. Market analysis and market information will be required and establishment of farmer groups or cooperatives may be necessary. Investment in off-farm technology will be required for efficient processing and handling of products. Marketing systems will need to be developed or improved to ensure that farm products reach consumers in accordance with their preferences. While an integrated agroforestry system adds diversity for land users, it is not completely free of risk. The likelihood and consequences of crop failures need to be assessed.

Another group commented that integrated agroforestry has the potential to ensure food security, water supply and construction materials. Furthermore, planted forests relieve pressure on unsustainable harvesting in natural forests.

Papers in this proceedings by Roshetko et al. and Narwir et al. provide valuable insights and lessons for successful establishment and management of agroforestry enterprises.

sustain production to meet consumer needs in the formal markets. A successful IRD project to improve a commodity marketing system must connect or integrate sociocultural, political and environmental elements with the driving economic element.

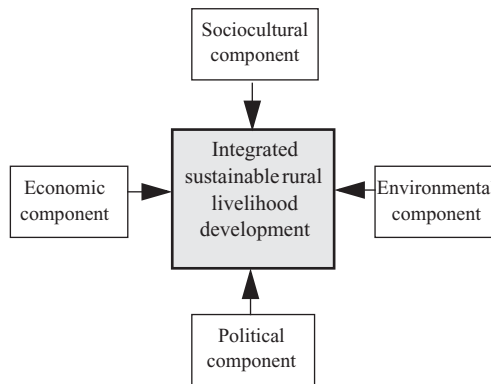


Figure 2. The integrated sustainable rural community livelihood approach to integrated rural development

Another example that was discussed at the workshop and developed subsequently is integrated catchment management. In this case the main impetus is coming from the environmental element such as conservation of scarce water resources and protection of remnant vegetation and soil resources. The impetus may also come from the sociocultural element in the form of the need for an adequate supply of clean drinking water and to improve the health and nutrition of communities living within a catchment. A catchment defines the spatial basis for the project. Figure 3 presents the Participative Integrated Catchment Management Approach (PICMA) to IRD that is based on the sustainable rural livelihoods concept of Djoeroemana, Salean and Nope. An important component of the approach is participative monitoring of planned outcomes using key performance indicators such as changes in water availability and quality, food security, income levels, health and nutrition status, participation in education programs, gender equality, environmental sustainability, cooperation and collaboration, and rural democracy (see Table 3). PICMA also emphasises the importance of stakeholder participation and adaptive management processes.

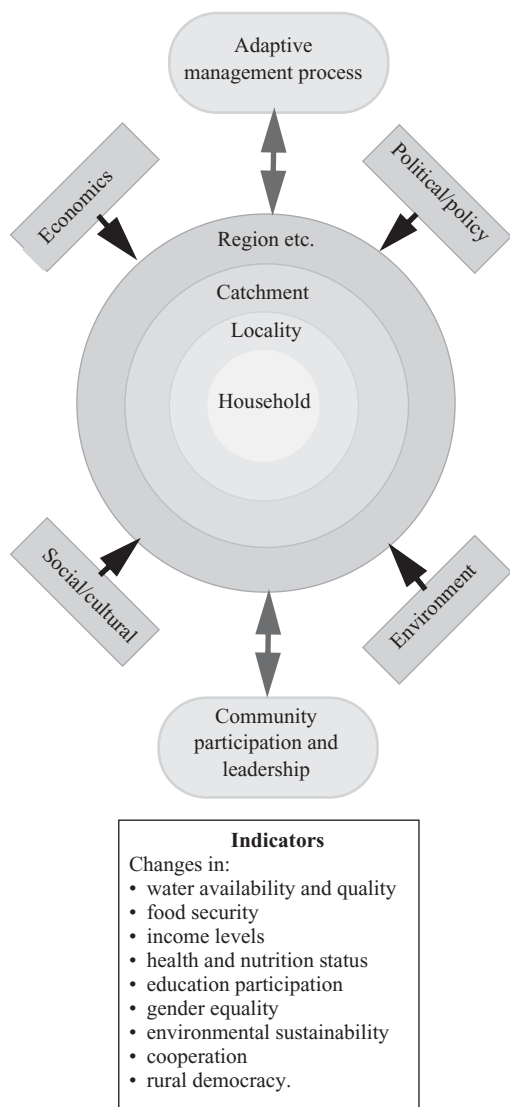


Figure 3. The participatory integrated catchment management approach

A strategy for developing successful integrated rural development projects for NTT

At the conclusion of the workshop an action plan was agreed. It included the following steps:

- approach the Governor of NTT seeking endorsement of workshop outcomes and proposals for future activities

- establish a small steering committee involving key representation from government, NGOs, and higher education and research institutions to drive the new IRD approach
- inform current rural development planning in NTT
- influence development of current initiatives of international donor agencies
- develop a research strategy with time lines.

Subsequently, a development strategy was designed with particular reference to PICMA, although it has wider application, as noted in the following five steps:

Form an integrated rural development steering committee

It is proposed that the NTT Government appoint an autonomous steering committee to advise and help steer IRD in NTT. The committee should comprise respected representatives from government, community, rural industry, and the scientific research and education communities who have demonstrated rural development leadership credentials. The committee would be responsible for integrating, prioritising and championing rural development with respect to a number of components including:

- key regional issues and opportunities
- sociocultural, economic, political, and environmental and natural resource management issues
- key sectoral issues, both horizontally (between sectors) and vertically (within sectors)
- stakeholder engagement, ensuring that all key stakeholders are represented, and that both ‘top-down’ and ‘bottom-up’ approaches are considered equally
- applied research requirements.

Other key responsibilities of an IRD steering committee are to coordinate development of an IRD research strategy and to monitor and report regularly on its effectiveness.

Collate baseline information and determine research priority

It is proposed that future research projects will be most effective if they build on, extend and learn from positive IRD initiatives already underway.

The first step is to describe or map relevant characteristics such as natural resource assets, sociocultural characteristics, policy features and economic processes as well as identify opportunities and constraints

for a number of defined entities. Entities may be delineated according to a spatial, sectoral, demographic or other basis. In the case of catchments (spatial entities), for example, mapping data could be used to characterise or classify catchments for the purposes of identifying and prioritising those sites that (i) most urgently require management and/or investment intervention, and (ii) afford the greatest short- or longer-term potential for IRD investment return. A similar approach could be applied on a sectoral basis to assess priorities between sectors, or on a demographic basis to assess priorities between villages or other population centres. Initial assessments should take no more than a year to be completed. These assessments would guide future IRD investment initiatives and projects. The critical first decision is agreeing on the basis on which entities are defined. This should be done in consultation with key stakeholders including government, communities and international aid agencies.

Learn from past and current IRD projects

At the present time, a number of recently completed and continuing participatory projects provide positive, innovative examples of IRD projects. These can be built upon and extended while the baseline study outlined above is being undertaken. Examples of catchment scale projects exist on all major NTT islands, for example: Kambaniru and Maidang Catchment Area (East Sumba); Aesesa Catchment Area (Ngada, Flores); and Noelmina Catchment Area (West Timor). An example of a sector-based project is given in these proceedings in the paper by Roshetko et al. on agroforestry.

Importantly, based on past experience, the design and implementation of each case study or catchment-based project needs to incorporate a number of participatory elements, as follows.

Social preparation

It is necessary to pre-condition both outsiders (e.g. researchers, donor partners) and community members to generate effective participation. This is fundamental to developing social networks, linkages and communication, and to reducing trans-cultural barriers between villagers and other project partners.

Entry point action

Initial activities and actions are decided in a participatory fashion between all contributing stakeholders, from local government to local community members. Key entry points concern those initiatives

or issues that have been identified as crucial for addressing village-scale needs.

Significant impact implementation and adaptive management

After some time, entry point actions may be inappropriate or may require (substantial) modification. It is important to modify IRD programs as conditions dictate by applying adaptive management.

Let the community take control

This is the empowering process that enables the community to take long-term responsibility for their destiny, while researchers and other participants gradually withdraw from the decision-making process. When the community has taken full responsibility for their own development needs, the PICMA process is reaching maturity.

Build on and develop available institutional capacity including research capacity

An important objective of IRD projects is to strengthen the capacity of individuals and organisations to sustain the benefits of IRD beyond the project time frame. The regional research capacity of NTT research and tertiary education institutions can be strengthened through further development of linkages both within Indonesia and externally, especially through collaborations with Australian institutions given their geographic proximity. A process of engagement with (particularly northern) Australian institutions will have very significant long-term cultural, economic, educational and political benefits for regional communities in both countries.

Higher education institutions represented at the workshop have developed a strategic framework for the long-term, sustainable development of skills and knowledge relating to IRD particularly in NTT (see Appendix).

Establish a time frame and funding

This strategy is an agreed IRD approach based on decades of (mostly negative) experience. As indicated above, baseline information needs to be assembled within the first year of this strategy, with concurrent support for identified positive IRD examples. An ongoing strategic program would be developed from the results of these initiatives and through informed consultations with government and aid agencies.

Concluding remarks

In his introductory comments to session four of the workshop, Dr Ferry Karwur captured the essence of successful IRD in his comment that ‘a new mentality is more important than new science or new technology’. James Adam and Urbanus Olahurek echoed this sentiment in their papers suggesting the need to change community behaviours and to change the way of thinking. The mindsets of government and NGOs must also change. Integrated rural development is not a new approach to development but, because of past failures, it has fallen out of favour. A revitalised approach to IRD was proposed to the participants at this workshop by Djoeroemana, Salean and Nope based on the failures and successes of past approaches. Their integrated sustainable rural community livelihood approach is the vehicle for changing individual and organisational mindsets and ways of thinking about IRD.

This workshop represents a break with past approaches to IRD and defines a way forward for more successful projects based on a new approach. The new approach is inclusive of all key stakeholders, is dynamic and adaptive to changes in the broader environment, recognises key constraints and their appropriate management, is built on local knowledge and assessment of the current situation, includes capacity building for individuals and groups to ensure that project benefits are sustained for rural communities and, most importantly, it integrates economic, social and cultural, political, policy and environmental factors to deliver integrated sustainable rural development.

The workshop participants identified 11 IRD opportunities and 10 areas constraining IRD in NTT. While much attention was focused on integrated catchment management because of its pervasive influence, each of the other opportunities is an important component in IRD for East Nusa Tenggara. The proposed research strategy agreed at the workshop, built on the sustainable rural community livelihoods approach, provides a framework for determining more specific development priorities and developing project

proposals in consultation with government and international aid agencies. The proposed PICMA for IRD may be a valuable application for testing the feasibility of the approach with community groups, government agencies, NGOs and other key stakeholders in the context of the many constraints identified during the workshop. Being a dynamic and adaptive approach, refinements and revisions can be made to the approach for future application.

Acknowledgments

The following organisations are gratefully acknowledged for their sponsorship and support for this workshop: Australian Centre for International Agricultural Research (ACIAR), Charles Darwin University, the Cooperative Research Centre for Tropical Savannas Management, BAPPEDA NTT, AusAID’s International Seminar Support Scheme, the Crawford Fund and University of the Sunshine Coast. The support of the governments of Northern Territory and Nusa Tenggara Timur is greatly appreciated. Mr Yudhistira Yewangoe (BAPPEDA NTT) and his team provided valuable logistics support and hosted the workshop in Kupang. Ms Umi Rasmi of Charles Darwin University provided expert interpretation and translation services in the preparation of papers, presentations and the proceedings. Kim Wells and Georgina Hickey prepared the proceedings for publication. The constructive contributions of workshop participants and the continuing goodwill of the regional partners are also acknowledged.

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Pembangunan pedesaan terpadu di Nusa Tenggara Timur, Indonesia: tinjauan terhadap kesempatan, kendala dan pilihan untuk meningkatkan matapencaharian

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Abstrak

Makalah ini merupakan kumpulan kunci utama yang timbul dalam presentasi dan diskusi pada lokakarya serta penjabaran terhadap pelajaran penting yang dapat diambil untuk sukses masa depan program pembangunan desa terpadu demi peningkatan mata pencaharian di Nusa Tenggara Timur. Peningkatan program untuk pembangunan desa terpadu yang disepakati oleh peserta lokakarya telah pula di sampaikan. Telah disepakati bersama bahwa semestinya program tersebut dapat dijadikan sebagai dasar dalam merumuskan serta melaksanakan proposal proyek. Makalah ini juga melaporkan hasil pemeriksaan yang dilakukan oleh peserta lokakarya terhadap kesempatan untuk pembangunan pedesaan secara terpadu serta kunci kendalanya. Kendala-kendala tersebut dibedakan sesuai dengan tingkat kemampuan terhadap perubahan melalui proyek pembangunan desa terpadu. Garis besar dalam makalah ini adalah kesepakatan dalam rencana pelaksanaan untuk mengembangkan hasil dari lokakarya dan strategi dalam mempersiapkan proposal proyek pembangunan desa terpadu dengan sukses.

Pengantar

Dalam makalah tinjauan umum ini akan disampaikan sintesis masalah penting pada presentasi dan diskusi serta rekomendasi kunci yang telah disepakati oleh peserta yang hadir pada lokakarya pembangunan pedesaan terpadu (integrated rural development,

IRD) di Nusa Tenggara Timur (NTT), yang diselenggarakan di Kupang, bulan April 2006. Meskipun pembangunan pedesaan terpadu merupakan sebuah pendekatan yang menarik dalam memperbaiki mata pencaharian penduduk desa di NTT, hal ini bukan merupakan hal yang baru dan tidak selalu terlaksana sesuai dengan rencana yang diharapkan. Makalah dan diskusi pada lokakarya ini mengidentifikasi bahwa kesuksesan IRD di masa yang akan datang memerlukan modifikasi mayor terhadap pola serta implementasi pendekatan yang akan digunakan.

Investasi yang telah lalu dalam pembangunan pedesaan terpadu di NTT telah gagal dalam memberikan janji keuntungan pada penduduk pedesaan. Kemiskinan, pengangguran, dan standar kesehatan tidak membaik. Penelitian terhadap masalah ini dan

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kegagalan proyek-proyek serupa telah mengidentifikasi sejumlah keterpurukan proyek-proyek IRD dan ini telah digunakan sebagai bahan pemikiran ulang terhadap pendekatan serta pelaksanaannya. Dengan melihat kedepan, pembangunan desa terpadu di NTT akan berbasis pada kegagalan dan keberhasilan yang pernah dialami sehingga dapat mencakup prinsip-prinsip kunci terhadap pelaksanaan pendekatan yang sukses.

Kerjasama antara Australia Utara dan Indonesia Timur pada pembangunan desa terpadu telah terjalin sejak pertengahan tahun 1990an. Kerjasama tersebut diperkuat dan diperluas melalui dua proyek yang dibiayai oleh ACIAR, yaitu proyek pengelolaan kebakaran pada penataan lahan sabanah (Russell-Smith et al 2000 dan Russel-Smith et al.2007). Saat ini kapasitas pengelolaan lahan di Indonesia Timur (NTT) telah dikembangkan melalui proyek *AusAID Public Sector Linkage Program* antara Charles Darwin University dan BAPPEDA NTT (lihat situs proyek PSLP (<http://IndonNRMpslp.ehs.cdu.edu.au>). Dalam laporan hasil lokakarya telah ditangkap beberapa pelajaran atas keberhasilan serta kegagalan dimasa lalu, baik dalam praktek maupun pendekatannya, dan focus pada aktivitas terpadu untuk masa datang demi tercapainya hasil pembangunan di pedesaan NTT yang berkesinambungan.

Tujuan dari lokakarya tersebut adalah untuk:

- meninjau kembali aktifitas yang berkenaan dengan perbaikan mata pencaharian di NTT
- membangun dan memperluas kolaborasi antara Indonesia dan Australia
- mengembangkan hubungan yang lebih luas dengan badan penyumbang dana (diluar Indonesia dan Australia)
- mendiskusikan arah kegiatan-kegiatan di masa depan.

Dalam tiga hari pelaksanaan lokakarya, Dua puluh tujuh presentasi disampaikan mengenai pendekatan pembangunan pedesaan terpadu, potensi dari berbagai bentuk usaha untuk NTT, aspek pengelolaan lingkungan, kegiatan LSM dalam mendukung penduduk desa, peran wanita, hak akan tanah dan kontribusi pendidikan serta kredit-mikro dalam pembangunan desa. Secara umum presentasi tersebut telah memenuhi tujuan yang pertama. Selanjutnya, hasil dari diskusi pleno dan diskusi kelompok-kecil juga ditambahkan pada tinjauan terhadap masalah serta kesempatan dalam memperbaiki mata pencaharian penduduk desa. Arah kegiatan kedepan telah di sampaikan dalam kajian prioritas untuk propinsi

dan kesepakatan pada pendekatan pembangunan desa terpadu yang lebih baik. Telah diajarkan bahwa pendekatan tersebut akan dijadikan sebagai basis dalam pembuatan pola serta implementasi dari strategi penelitian dan proposal proyek untuk dipertimbangkan oleh badan penyumbang dana internasional. Perwakilan dari empat badan penyumbang dana internasional juga telah memberikan presentasinya dalam lokakarya tersebut. Prospek dalam memperkuat dan memperluas kolaborasi antara Indonesia dan Australia di NTT didukung oleh keterlibatan aktif dari perwakilan organisasi terkait dari Australia dan NTT termasuk badan pemerintah, perguruan tinggi, LSM dan organisasi penelitian nasional dan internasional. Seperti tercermin dalam presentasinya mengenai pentingnya kolaborasi, Dr Frans Seda menyampaikan nilai yang terkandung dalam kerjasama antara NTT dan Northern Territory selama lebih sepuluh tahun pula disampaikan bahwa hal ini merupakan jalan setapak menuju pembangunan desa terpadu di NTT.

Hasil yang diharapkan dari lokakarya tersebut termasuk:

- pelajaran (keberhasilan dan keterbatasan) dari kegiatan masa lalu serta saat ini di NTT dalam kaitannya dengan pendekatan pembangunan desa terpadu.
- mengidentifikasi kesempatan dan kendala untuk pembangunan desa terpadu di NTT
- kesepakatan pada prioritas pembangunan desa terpadu untuk NTT dan daerah yang berpotensi untuk kolaborasi antara organisasi Indonesia dan Australia

Tiga hasil tersebut diatas merupakan struktur pada makalah tinjauan umum ini.

Pelajaran yang didapat untuk suksesnya pembangunan pedesaan terpadu di masa depan

Pada sambutan pembukaan lokakarya yang disampaikan oleh bapak Gubernur Nusa Tenggara Timur disebutkan bahwa pembangunan desa terpadu adalah mengenai penyediaan kesempatan pada penduduk desa untuk memperbaiki kehidupan mereka yaitu dengan bergerak dari prokusi untuk nafkah belaka menuju ke produksi untuk komersil dengan cara yang berkelanjutan. Beliau mengajukan bahwa pembangunan desa terpadu memerlukan masukan pengetahuan, dukungan kebijakan pemerintah pelayanan

pemerintah dan pembangunan prasarana, akses financial serta komitmen untuk bekerja sama baik local maupun internasional. Northern Territory Chief Minister pada sambutannya menggambarkan bahwa pembangunan desa terpadu sebagai integrasi pengembangan kegiatan usaha pedesaan dan membangun pengelolaan sumber alam pada pengetahuan yang kritis serta pembangunan kapasitas. Chief Minister juga mengungkapkan pentingnya tindakan yang berkelanjutan.

Profesor Saragih menyampaikan makalahnya mengenai sistem agribisnis sebagai contoh dari pada IRD, pengintegrasian antara produksi pertanian dengan pemasok masukan dari hulu, pemroses dari hilir dan dari segala sektor serta pelayanan yang mendukung usaha tersebut termasuk didalamnya adalah pelayanan prasarana pemerintah, perbankan dan pelayanan finansial. Bapak Saragih menekankan bahwa dalam sistem agribisnis semua pihak terkait akan mendapatkan keuntungan atas perkembangannya termasuk petani, pasar, pemroses, eksportir dan konsumen.

Djoeroemana, Salean dan Nope mengungkapkan bahwa pembangunan pedesaan terpadu telah gagal dalam memperbaiki kehidupan masyarakat pedesaan karena mereka sentralis, teknokratis, dan fokusnya sempit dalam meningkatkan produksi pertanian. Kemiskinan masih meluas di kalangan rumah tangga di NTT yaitu sekitar 60% dari jumlah penduduk yang tergolong miskin di tahun 2005. Upaya-upaya masa lalu telah gagal karena mereka tak menghiraukan tindakan berkelanjutan, konteks local, pembangunan kapasitas local, dan partisipasi masyarakat. Djoeroemana, Salean dan Nope mengajukan pendekatan alternatif untuk pembangunan pedesaan terpadu yang menekankan pembangunan kapasitas masyarakat dan keberlanjutan. Mereka menyadari bahwa pembangunan pedesaan terpadu harus mencakup sector fisik, sosial-budaya, ekonomi dan politik. Dirincikan bahwa pendekatan pembangunan pedesaan terpadu mereka sebagai pendekatan mata pencaharian masyarakat pedesaan yang berkelanjutan.

Elemen-elemen kunci dari pendekatan mata pencaharian penduduk desa yang berkelanjutan untuk membangun pedesaan terpadu adalah:

- berpusat pada masyarakat dan dikendalikan masyarakat
- pendekatan holistik yang dibangun atas dasar pengetahuan yang telah ada pada masyarakat

mengenai kesempatan, kendala serta kapasitasnya untuk peningkatan dan pertumbuhan

- didamik dan bersedia untuk berubah, dengan berbagi dalam belajar dan memonitor partisipasi
- berfokus pada pembangunan kapasitas untuk individu dan jaringan sosial yang dapat meningkatkan potensial yang ada demi mencapai sasaran
- harus dibangun atas dasar pemahaman setara dalam berbagai permasalahan yang relevan serta konteksnya dengan masyarakat kecil dan kebijakan serta strategi makro dan segala kaitannya
- adanya kelangsungan dan keberlanjutan suatu proses dan hasil dalam suatu siklus

Usulan mereka pada lokakarya yaitu bahwa pembangunan mata pencaharian penduduk desa yang berkelanjutan memerlukan integrasi fisik, sosial-budaya, ekonomi dan politik. Mereka mengajukan suatu sistem untuk dapat dipertimbangkan.

Presentasi pada pendekatan pembangunan desa terpadu menimbulkan komentar yang mendukung dari para peserta yang menambahkan pentingnya factor-faktor tersebut dibawah ini:

- memahami karakteristik khusus dari penduduk setempat, kepribadian penduduk yang merupakan fokus pada perencanaan pembangunan desa terpadu
- penyediaan bimbingan teknis jangka panjang dan bimbingan agribisnis melalui keterlibatan masyarakat dengan pihak yang sesuai menurut budaya mereka.
- perlunya mekanisme untuk menghubungkan penelitian, kebijakan dan perencanaan.
- dengan menggunakan pembagian area agro-ekologi, mikro ekologi pasar, agro-sosial-budaya.
- strategi pembangunan yang dipimpin oleh masyarakat (pemusatan masyarakat)
- peran wanita dalam pemecahan lingkaran kemiskinan.
- menghindari kelemahan yang dialami pada proyek IRD yang lalu yaitu yang berorientasi pada pertumbuhan ekonomi jangka pendek.

Tabel 1 rangkuman atas butir-butir yang di buat dari makalah yang disampaikan serta diskusi pleno pada lokakarya. Dalam tabel tersebut tercantum tuntunan untuk pengembangan usulan proyek yang direncanakan berdasar pada pembangunan pedesaan terpadu serta untuk pengelolaan proyek IRD.

Kesempatan dan kendala pada pembangunan pedesaan terpadu

Presentasi yang disampaikan dalam lokakarya menyebutkan berbagai kesempatan serta kendala dalam pembangunan pedesaan terpadu. Beberapa makalah, seperti yang disampaikan oleh Masadu mengenai kepemilikan lahan dan yang disampaikan oleh Siagian dan Rozali mengenai kredit-mikro, menyebutkan keterbatasan khusus untuk pembangunan desa terpadu di NTT. Sementara yang lain menyampaikan bahwa faktor fisik, ekonomi dan lin-

gkungan serta kelembagaan telah mempengaruhi usaha-usaha seperti pemanenan, peternakan dan kehutanan. Dalam presentasi juga disebutkan tentang peran wanita, pengelolaan lingkungan serta peran dari LSM. Selama lokakarya tersebut, peserta bekerja dalam kelompok kecil untuk mengidentifikasi serta mendiskusikan kesempatan dan kendala dalam membangun desa terpadu dengan berdasarkan pada presentasi, diskusi pleno, dan pengetahuan serta pengalaman masing-masing. Hasil dari diskusi kelompok tersebut dirangkum dalam tabel 2, 3 dan 4.

Tabel 1. Pelajaran yang diperoleh untuk perbaikan rancangan dan implementasi dalam proyek pembangunan pedesaan terpadu

Area	Kelemahan masa lalu	Menuju sukses
Lingkungan institusional	<ul style="list-style-type: none"> Kontrol dari atas ke bawah oleh pemerintah pusat dan lembaga bantuan Pengendalian persediaan merupakan pengendalian permintaan (menggunakan pengendalian masyarakat) Proyek yang di selenggarakan memiliki pengelolaan unit, dengan mengabaikan lembaga setempat 	<ul style="list-style-type: none"> Mendesentralisasikan kendali Mengajak masyarakat untuk berpartisipasi Membangun komitmen untuk menuju sasaran proyek Memenuhi kebutuhan penduduk setempat Melibatkan peserta local melalui organisasi lokal Membangun kepemilikan bersama melalui pengelolaan bersama inisiatif Mengembangkan dan mengadopsi rancangan institusional dalam mengkordinir pembuatan keputusan dalam masyarakat, antar masyarakat, dan antara masyarakat dengan pihak terkait seperti pemerintah dan organisasi sosial
Rancangan dan implementasi proyek	<ul style="list-style-type: none"> Buruknya rancangan proyek atas dasar pengkajian permasalahan yang buruk Perhitungan yang tidak tepat mengenai kondisi setempat—sosial, budaya dan ekonomi 	<ul style="list-style-type: none"> Fleksibilitas pola proyek Lokasi – akan membentuk pola proyek informasi dan implementasiannya Sumber pengetahuan setempat
Hubungan pengelolaan dan jaringan	<ul style="list-style-type: none"> Buruknya interaksi antara pemeran proyek dan orang-orang yang akan menanggung akibat hasil dari proyek 	<ul style="list-style-type: none"> Analisa modal sosial dan penerapan institusional Menciptakan jaringan di dalam masyarakat dan membangun kepercayaan
Keberlanjutan	<ul style="list-style-type: none"> Pelatihan yang diberikan pada staff local tidak mencukupi Perhatian yang tidak memadai untuk perawatan yang berkelanjutan perlengkapan dari proyek yang dibiayai dan kapasitas local untuk melanjutkannya setelah pelaksanaan proyek Gambaran waktu proyek terlalu pendek untuk penyampaian hasil selama fase implementasi Rendahnya keterlibatan dan kepemilikan masyarakat 	<ul style="list-style-type: none"> Melatih staf local supaya dapat melanjutkan setelah selesainya proyek. Investasi perlengkapan harus di jaga sesuai dengan kapasitas perawatan dari masyarakat setempat Pemaduan proyek kedalam institusi yang ada Gambaran waktu proyek harus jelas Keterlibatan masyarakat harus ada di tiap tahap proyek

Tabel 2. Kesempatan untuk pembangunan pedesaan terpadu (IRDO)

IRDO	Area komponen			
Wanatani terpadu	Nilai tinggi pohon penghasil kayu	Kayu untuk bahan bakar	Tanaman pakan ternak	Ternak kecil
	Kayu untuk bahan bakar	Perlindungan DAS		
	Pemanenan yang terus menerus pada sumber daya alam hutani		Hasil tanaman umur panjang – Mede, kopi dan lainnya	
Pemrosesan kayu	Konstruksi kayu	Produk nilai tambah	Pabrik penggilingan	
Produk hutan non-kayu	Lak	Zat pewarna kain	minyak	Madu, buah, gula aren
	Rotan	Bumbu-bumbu	Obat-obatan	Kacang-kacangan
Sistem tanam berkelanjutan	Hortikultura	Tanam di awal musim kering	Tanaman tahunan – contoh, N fixation	Usahatani subsisten
	Perlindungan panen			
Sistem peternakan berkelanjutan	Semi-intensif peternakan sapi	Produksi ternak kecil	Tanaman pakan ternak	Usaha ternak subsisten
	Pengendalian penyakit ternak			
Proses pasca panen	Hasil tanaman	Hasil ternak	Transportasi, pengepakan dan penyimpanan	
Kerajinan tangan	Tenun	Ukiran kayu	Wewangian	
Pemasaran hasil pertanian	Kebijakan penentuan harga	Koperasi	Pembangunan pasar-kaitannya dengan pedagan eceran	Analisa pasar
	Peran wanita dalam pemasaran	Perbedaan produksi	Perdagangan lintas batas dengan Timor Leste	
Pariwisata	Eco-Pariwisata	Pariwisata pertanian	Pariwisata kebudayaan	
Pengelolaan perikanan pesisir pantai yang berkelanjutan	Perlengkapan dan ketrampilan	Pemrosesan	Pembangunan pasar dan prasarana	Pengelolaan perikanan dan peran perintah

Tabel 3. Kesempatan pembangunan pedesaan terpadu—Pengelolaan DAS terpadu (IRDO)

IRDO	Wilayah komponen			
Pengelolaan DAS terpadu	Memperbaiki persediaan air dankwalitasnya	Pengelolaan kebakaran	Pengelolaan rumput liar	Pertanian campuran
	Pengelolaan aliran sungai	Penanaman sesuai dengan persediaan air	Susunan penanamam—contoh N fixation	Usahatani subsisten
	Tanaman musim kering yang baru	Ketahanan pangan	Kondisi iklim	Pengetahuan atau kebijakan local dan tradisional
	Kesehatan dan gizi manusia	Air minum	Hutan sebagai sumber ketahanan air	
	Pengelolaan sumber daya pesisir pantai terpadu		Pertemuan aliran sungai dari hulu dan hilir	

Tabel 4. Kendala dalam pedesaan desa terpadu

Area kendala	Kendala kunci
Modal sosial	Kesteraan gender dan kesempatan bagi wanita Demografi sosial Pengetahuan local/tradisional Kesehatan dan gizi manusia—malaria Keterbatasan tenaga kerja—kompetisi antara pertanian dan sector lain, pentingnya pertanian sebagai karir menurun Kepemimpinan
Budaya	Kepadatan penduduk Berorientasi usahatani subsisten tanaman Perbedaan bahasa Butahuruf
Masalah kepemilikan lahan	Tidak jelasnya penggunaan dan fungsi lahan Reformasi perencanaan penggunaan lahan Tidak ada kepemilikan perorangan untuk penduduk desa
Prasarana dan kapasitas pasar	Telekomunikasi Jalan Pelabuhan Perlengkapan—listrik, sanitasi, air yang tak berbahaya Investasi jangka panjang
Pemasaran	Pembangunan system pemasaran Akses terhadap kecerdasan pasar Penyediaan rantai prasarana—penyimpanan, pengendalian, angkutan. Hasil organic sertifikasi
Pengadopsian teknologi	Penolakan masyarakat terhadap teknologi baru Produktifitas masyarakat rendah
Pengaturan institusional— keperintahan dan kebijakan	Komitmen pemerintah Komitmen LSM Kordinasi pihak terkait Hubungan pemerintah daerah-propinsi dan nasional Komunikasi pemerintah–masyarakat Aspek gender Jauhnya NTT dari Jakarta yang merupakan pusat pembuatan keputusan Memperkuat Institusi Perluasan pelayanan Akses informasi dan teknologi telekomunikasi
Akses pelayanan finansial	Kredit - mikro Bantuan Keterbatasan modal
Pengetahuan, keahlian dan pelatihan	Pengetahuan iklim Pengetahuan pertanian dan peternakan Rendahnya tingkat pendidikan formal Kwalitas menegemen (pengetahuan dalam bidang menegemen) Kurangnya kapasitas penelitian dan pendidikan pasca sarjana Kurangnya kurikulum multidisiplin dan terpadu Kecenderungan untuk berfokus pada ilmu murni dan bukan kurikulum yang mengarah kepada matapencaharian Akses terhadap informasi dan teknologi Informasi pasar
Lingkungan alami	Bencana alam Hama dan penyakit Keterbatasan air—curah hujan Tipisnya humus Iklim

Sebelas kesempatan pembangunan desa terpadu (IRDO) telah didefinisikan, berdasar pada pengelompokan berbagai kegiatan dan usaha yang diajukan oleh peserta lokakarya. Sifat dasar IRDO telah terbukti pada beberapa hal seperti pembagian kom-

ponen kegiatan antara IRDO (seperti; tumbuhan pakan ternak sebagai bagian dari gabungan usaha wana tani dan usaha peternakan yang berkelanjutan) dan terkait pula dalam mata rantai perikanan pesisir pantai yang berkelanjutan. Percampuran factor produksi dan lingkungan secara jelas diilustrasikan dengan pengelolaan DAS terpadu IRDO yang disebutkan dalam Tabel 3. IRDO telah menarik banyak komponen dari sepuluh komponen lainnya begitu pula factor kualitas lingkungan. Begitupun pemasaran produk pertanian IRDO mencakup komponen-komponen yang ada pada komponen IRDO lainnya.

Kesempatan pembanguana desa terpadu berkembang tidak hanya terbatas pada produksi pertanian tetapi juga termasuk pengaturan penyediaan pasokan, factor institusi dan efisiensi oprasional pada rangkaian pasokan produk serta pasar untuk hasil pertanian. Kotak 1 berisi diskripsi wana tani IRDO yang dipersiapkan oleh kelompok kecil dalam lokakarya. Juga disebutkan tantangan yang dihadapi para petani, agen pemasaran, pemerintah dan penduduk desa dalm mengimplementasi inisiatif tersebut. Contoh ini merupakan khasnya kesempatan pembangunan desa terpadu dan perubahan yang diperlukan demi keberhasilan serta kelanjutan pelaksanaanya.

Kendala dalam pembangunan desa terpadu terbagi dalam sepuluh area: sosial, budaya, kepemilikan lahan, kapasitas prasarana, pemasaran, tehnologi, pengaturan institusi, pelayanan keuangan, pengetahuan, keahlian dan pelatihan dan lingkungan alam. Tabel 4 menyebutkan kendala yang disampaikan oleh kelompok kecil dalam lokakarya. Perubahan dari hal ini akan berpengaruh pada suksesnya proyek IRD. Kendala mungkin langsung disebutkan pada bagian integral dari strategi proyek dalam mencapai tujuan IRD. Akan tetapi, sepertinya pengaruh terhadap kendala berbeda dari area satu dengan yang lainnya. Bagan 1 menunjukkan potensi untuk mempengaruhi kendala di masing-masing daerah melalui proyek IRD. Kendala dengan potensial rendah harus di rubah, mengingat pentingnya pada keberhasilan proyek IRD, biasanya disampaikan langsung dan/atau bagian dari batasan reformasi atau inisiatif pembangunan. Sebagai contoh, keputusan pada investasi dan perawatan sarana telekomunikasi dibuat oleh pemerintah sebagai bagian dari agenda pembangunan telekomunikasi nasional. Dalam proyek IRD tipe kendala seperti ini harus dapat di toleransi. Kendala yang mempunyai potensi menengah harus dipengaruhi melalui proyek IRD yang di manipulasi untuk mendapatkan hasil sebaik mungkin tanpa harus memodifikasi kendala

Kotak 1. Wanatani terpadu

Penanaman campur antara tumbuhan kayu nilai tinggi dengan tanaman pakan ternak dapat termasuk dalam Wana tani terpadu, termasuk juga pengikat lembu, tanaman yang dapat dipanen dan kegiatan pertanian lainnya. Masalah penting yang lain adalah memutuskan keseimbangan optimal antara komponen kegiatan dan penetapan alur keuangan yang diperlukan mengingat jangka waktu yang lama untuk memanen tumbuhan kayu. Strategi amat diperlukan untuk memperbaiki cara yang dilakukan saat ini, Dengan membawa penghasilan tambahan dan penyediaan ekonomi penyanggah selama masa sulit. Perpaduan bumbu apa yang diperlukan dan pelatihan apa yang di jalankan, seperti pemanenan, pemangkasan, dan pengurusan untuk kayu? Keberhasilan usaha wana tani tergantung pada dukungan pasar, pemerintah dan pengaturan institusional. Sebagai contoh, Penyelesaian masalah kepemilikan lahan akan memfasilitasi perluasan wanatani di NTT. Kalau itu belum tercapai, bagaimana pemilik tanah akan meragukan apakah wanatani terpadu dapat membawa pendapatan yang memuaskan? Pelatihan kepemimpinan dan komunikasi petani ke petani juga diperlukan. Begitu pula pengguna lahan memerlukan pelatihan mengenai pengelolaan dan pemasaran hasil pertanian. Analisa pasar dan informasi pasar akan diperlukan dan pembuatan kelompok tani atau koperasi mungkin juga perlu. Investasi tehnologi disamping pertanian akan diperlukan untuk efisiensi pengolahan dan penanganan produk. Sistem pemasaran perlu dikembangkan dan diperbaiki untuk menjamin produksi pertanian mencapai kebutuhan konsumen Di saat system wanatani terpadu di tambah dengan keragaman pengguna lahan, bukan berarti bebas resiko. Kemungkinan akan gagal panen perlu dikaji.

Sebuah kelompok memberikan komentar bahwa wanatani terpadu berpotensi untuk ketahanan pangan, penyediaan air dan konstruksi meterial. Lebih dari pada itu, penanaman hutan akan mengurangi tekanan pada ketidak bertahannya panen pada hutan alami.

Makalah oleh Roshetko et al dan Narwir et al memberikan tilikan nilai dan pelajaran untuk keberhasilan pembentukan dan pengelolaan usaha wanatani.

secara permanen. Sebagai contoh, komitmen pemerintah dan pihak terkait dapat terwujud dalam suatu proyek tertentu dengan kepastian atas partisipasi masing-masing pihak dan dengan komunikasi yang reguler dalam jangka waktu proyek yang ditentukan. Namun demikian, ini bukan berarti bahwa pihak terkait akan selalu berkomitmen pada proyek IRD. Seperti halnya dengan teknologi yang memberikan perlindungan terhadap bencana alam, tapi tidak dapat mencegah terjadinya bencana. Kendala yang memiliki potensial tinggi harus dipengaruhi oleh hal-hal yang bisa di transformasi secara permanen. Sebagai contoh, dengan menggabungkan pembangunan kapasitas sebagai kuci peserta proyek (petadi, pedagang, pelayanan pemerintah) dalam proyek IRD, pengetahuan baru dapat dilekatkan dalam masyarakat, pengolah dan kelangsungan proyek. Dalam banyak kasus kendala seperti ini di eliminasi.

Kepastian prioritas proyek IRD harus mempertimbangkan ukuran dan distribusi dari potensi keuntungan pada masing-masing kesempatan termasuk ekonomi, lingkungan dan keuntungan sosial dan akibat alami dari kendala dalam mencapai keuntungan termasuk kapasitas penduduk untuk terus melanjutkan usaha serta pengolahannya.

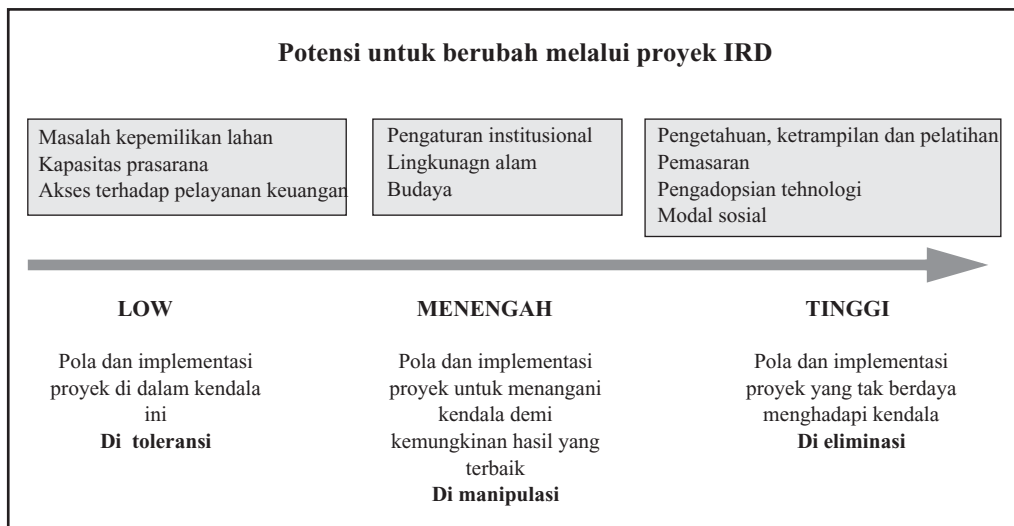
Prioritas pembanguna desa terpadu

Pada waktu prioritas didiskusikan pada diskusi pleno dalam lokakarya salah satu IRDO yang menonjol

adalah: pengelolaan DAS terpadu. Hal ini terjadi karena banyaknya komponen yang terserap dari IRDO lain. Akan tetapi, bukan berarti sepuluh IRDO lainnya tidak penting. Justru, paling besar terungkap dalam diskusi pada prioritas yaitu kebutuhan fundamental yang berupa kerangka kerja atau strategi untuk rancangan dan implementasi dari proyek pembangunan pedesaan terpadu.

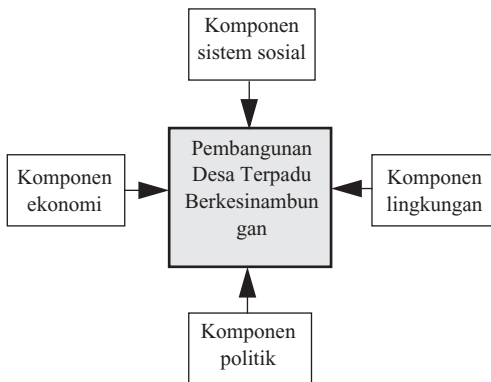
Pendekatan mata pencaharian penduduk desa berkelanjutan terhadap IRD yang di ajukan oleh Djoeroemana, Salean dan Nope mendapat dukungan kuat dari peserta lokakarya. Oleh karena itu, telah disepakati bahwa untuk menggunakan pendekatan ini sebagai basis strategi pengembangan penelitian hal ini dapat didiskusikan dengan pihak pemerintah dan badan bantuan internasional untuk mendefinisikan proyek tertentu, mengingat pemahaman yang dimiliki mengenai prioritas tertentu pada wilayahnya. Pusat pendekatan mata pencaharian penduduk desa berkelanjutan adalah reproduksi yang ada pada Bagan 2. Elemen-elemen kunci lain dengan pendekatan yang tersebut diatas harus ditunjang dengan rancangan dan pengelolaan proyek (partisipasi, pengendalian masa, dasar pengetahuan, dinamika dan adaptasi, kapasitas bangunan, pemahaman setara antara semua pihak dan memahami pentingnya lingkungan dan kelanjutannya).

Bagan 2 menunjukkan model pemikiran. Sasaran dari pembangunan desa terpadu berkelanjutan mungkin dikendalikan oleh salah satu dari empat kom-



Bagan 1. Potensi untuk mempengaruhi kendala yang ada melalui proyek pembangunan pedesaan terpadu

ponen dari model tersebut, tapi tentu saja tak akan tercapai kecuali dengan adanya hubungan antara empat komponen yang disampaikan dalam presentasi. Sebagai contoh, pengendali utama untuk perbaikan mungkin perekonomian yang memperbaiki sistem pemasaran dari pemanenan pertanian dalam sebuah kabupaten atau kecamatan. Disaat menarik efisiensi dan efektifitas dari system pemasaran memiliki potensi untuk meningkatkan pendapatan penduduk desa, solusi terhadap mata pencaharian berkelanjutan harus juga dipertimbangkan sebagai kepentingan kritis pada hubungan manusia untuk pemasaran yang sukses, peran pemerintah dalam menyediakan prasarana kunci seperti pelayanan jalan, telekomunikasi dan kebijaksanaan yang mendukung, serta kapasitas lingkungan fisik untuk produksi yang berkelanjutan demi memenuhi permintaan pasar. Kesuksesan proyek IRD untuk memperbaiki sistem komoditi pasar harus saling berhubungan dengan sosial-budaya, politik, dan elemen lingkungan dengan pengendalian terhadap elemen ekonomi.



Bagan 2. Pendekatan matapencaharian yang berkelanjutan dalam pembangunan pedesaan terpadu

Salah satu contoh lain yang juga didiskusikan dalam lokakarya dan terus dikembangkan adalah pengelolaan DAS terpadu. Dalam kasus tersebut tenaga penggerak utama berasal dari elemen lingkungan seperti pelestarian sumber air yang sulit didapat dan perlindungan terhadap vegetasi yang masih tersisa dan sumber daya tanah. Tenaga penggeraknya mungkin juga dari elemen lingkungan seperti dalam bentuk kebutuhan terhadap sumber air minum yang bersih dan untuk memperbaiki kesehatan dan gizi pada masyarakat yang termasuk dalam DAS. DAS terdefinisi sebagai ruang untuk proyek.

Bagan 3 menunjukkan Pendekatan Partisipasi Pengelolaan DAS terpadu/*Participative Integrated Catchment Management Approach* (PICMA) untuk IRD yang berdasar pada konsep Djoeroemana, Salean dan Nope tentang mata pencaharian penduduk desa terpadu. Komponen penting dalam pendekatan ini adalah pengawasan aktif terhadap hasil yang direncanakan dengan menggunakan indikator kunci kinerja, seperti perubahan persediaan air dan kualitasnya, ketahanan pangan, tingkat pendapatan, kesetaraan gender, keberlanjutan lingkungan, kerja sama dan kolaborasi dan demokrasi pedesaan (lihat Tabel 3). PICMA menyampaikan pentingnya partisipasi pihak terkait dan menerima proses pengelolaan yang berlangsung.

Strategi untuk pengembangan suksesnya proyek IRD di NTT

Perencanaan telah disepakati dalam kesimpulan yang diambil pada lokakarya. Termasuk didalamnya langkah-langkah tersebut dibawah ini:

- pendekatan kepada Gubernur NTT untuk memohon persetujuan atas hasil lokakarya dan proposalnya sebagai kegiatan di masa yang akan datang.
- membentuk panitia pengarah kecil yang melibatkan perwakilan penting dari pemerintah, LSM, Perguruan Tinggi, dan institusi penelitian untuk mengendalikan pendekatan pembangunan desa terpadu yang baru.
- pemberitahuan tentang perencanaan pembangunan pedesaan yang berlangsung saat ini di NTT
- mempengaruhi badan pemberi bantuan internasional dengan pengembangan inisiatif yang tengah berlangsung.
- pengembangan strategi penelitian dengan batas waktu.

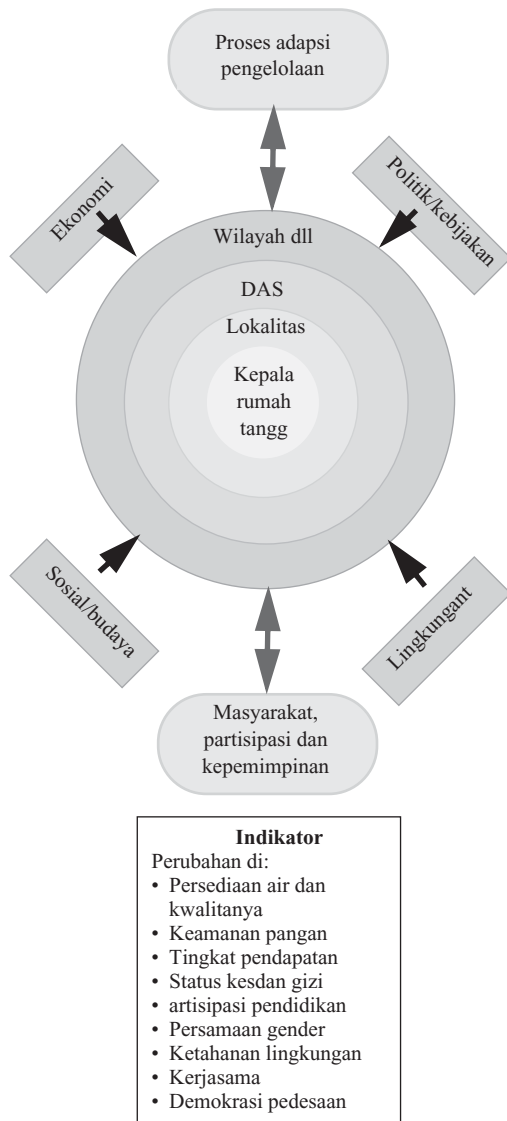
Selanjutnya strategi penelitian dikembangkan dengan referensi khusus pada Pendekatan Partisipatif Pengelolaan DAS Terpadu, meskipun hal ini dirasa lebih luas tapi tercatat sebagai bagian dari langkah tersebut.

Bentuk dari pada kepantiaan pembangunan pedesaan terpadu

Diusulkan kepada Pemerintah NTT untuk mengangkat panitia pengarahswantara yang memberikan dalam pengendalian IRD di NTT. Panitia harus terdiri dari wakil-wakil pemerintahan, masyarakat,

industri pedesaan, dan lembaga penelitian ilmiah dan komunitas pendidikan yang telah menunjukkan kepemimpinannya dalam pembangunan pedesaan. Panitia bertanggung jawab untuk memadukan, memprioritaskan, dan mengunggulkan pembangunan pedesaan dengan beberapa komponen termasuk:

- permasalahan kunci daerah dan kesempatan
- sosial-budaya, ekonomi, politik dan lingkungan / masalah pengelolaan sumber alam



Bagan 3. Pendekatan partisipasi pengelolaan DAS terpadu

- permasalahan kunci sektoral, baik horizontal (antar sector) maupun vertical (dalam sector)
- keterlibatan pihak terkait, meyakinkan adanya perwakilan dari semua pihak terkait dan pendekatan hubungan “dari atas- ke bawah” dan “dari bawah – ke atas” setara.
- pemenuhan persyaratan terapan.

Tanggung jawab kunci yang lain dari panitia pengarah IRD adalah mengkoordinasi strategi penelitian IRD dan memantua serta melaporkan secara berkala mengenai efektifitasnya.

Menyusun informasi dasar dan menetapkan prioritas penelitian

Diusulkan bahwa untuk proyek penelitian yang datang bisa sangat efektif bila dibangun atas dasar perluasan dan pelajaran positif dari IRD yang sudah berlangsung.

Langkah pertama adalah pemetaan karakteristik seperti sumber alam yang dimiliki, karakter sosial-budaya, kondisi kebijakan dan proses perekonomian begitu pula kesempatan dan kendala yang ada. Keberadaannya mungkin digambarkan sesuai dengan lingkup, sektoral, demografik atau dasar lain. Dalam kasus DAS (entitas spacial) sebagai contoh, pemetaan data yang dapat digunakan untuk mengklasifikasi DAS dengan tujuan untuk mengidentifikasi dan memprioritaskan situs-situs tersebut yang (i) memerlukan pengelolaan/intervensi investasi yang sangat mendesak, dan (ii) mampu memperoleh kembali potensi dari investasi IRD dalam jangka pendek maupun panjang. Pendekatan serupa dapat diaplikasikan pada basis sektoral untuk mengkaji prioritas antar sector atau basis demografik untuk mengkaji prioritas antar desa atau pusat populasi. Insial pengkajian harus diselesaikan tidak lebih dari satu tahun. Pengkajian ini akan dapat memberikan petunjuk bagi inisiatif investasi IRD dan proyek yang akan datang. Keputusan pertama yang kritis adalah menyetujui keberadaan dan maksud dari basis yang ditetapkan. Hal ini harus dilakukan melalui konsultasi dengan pihak-pihak terkait termasuk pemerintah. Masyarakat dan badan bantuan internasional.

Belajar dari proyek IRD masa lalu dan yang tengah berlangsung

Saat ini sejumlah proyek partisipatori telah terselesaikan maupun yang tengah berlangsung yang memberikan contoh positif dan inovatif dari pada proyek IRD. Hal ini dapat dibangun dan diperluas dikala

studi dasar yang garis-garis besarnya tersebut diatas sedang dilakukan. Contoh dari proyek skala DAS ada pada mayoritas pulau di NTT, sebagai contoh: DAS Kambaniru dan Maidang (Sumba Timur); DAS Aesesa (Ngada, Flores); DAS Noelmina (Timor Barat). Contoh proyek yang berbasis sectoral termasuk disini adalah makalah Wanatani oleh Roshetko.

Tak kalah pentingnya, berdasarkan pada pengalaman masa lalu, rancangan dan implementasi dari masing-masing kasus – atau proyek berdasarkan DAS perlu untuk bekerjasama dengan berbagai elemen partisipatori sebagai tersebut.

Persiapan sosial

Sangat perlu untuk persiapan kondisi baik pihak luar (seperti, peneliti, patner donor) dan anggota masyarakat untuk mengerakkan partisipasi yang efektif. Hal ini merupakan dasar dalam membangun jaringan sosial, koneksi, dan komunikasi, serta mengurangi hambatan trans-budaya antara penduduk desa dan patner proyek lainnya.

Tindakan Titik Masuk

Tindakan dan aktivitas diputuskan dalam mode partisipatori antara semua pihak yang memberikan kontribusi, mulai dari pemerintah local sampai dengan anggota masyarakat. Titik masuk kunci dari inisiatif atau masalah ini telah teridentifikasi sebagai kebutuhan skala-desa yang sangat penting.

Akibat dari Implementasi yang Signifikan dan Pengelolaan yang dapat diterima

Setelah beberapa waktu, aksi titik masuk mungkin kurang pas atau perlu adanya modifikasi. Memang sangat penting untuk memodifikasi program IRD sebagai kondisi yang di dikte oleh pengelolaan yang di adaptasi.

Serahkan kepada masyarakat sebagai pihak pengontrol

Proses pemberian kuasa agar masyarakat dapat memegang tanggung jawab jangka panjang demi nasib mereka sendiri, sementara pihak peneliti dan peserta lain sedikit demi sedikit keluar dari proses pengambilan keputusan. Ketika masyarakat mampu untuk mengambil tanggung jawab penuh untuk kebutuhan pembangunan mereka sendiri maka dapat diyakinkan bahwa proses PICMA telah mencapai kedewasaan.

Membangun dan mengembangkan kapasitas institusional termasuk kapasitas penelitian yang ada

Tujuan penting dari proyek IRD adalah untuk memberkuat kapasitas individu dan organisasi untuk keuntungan yang berkelanjutan atas proyek IRD. Kapasitas penelitian daerah pada PEMDA NTT dan perguruan tinggi NTT dapat diperkuat melalui jaringan pembangunan lebih lanjut di dalam Indonesia, dan keluar, khususnya kolaborasi dengan institusi Australia mengingat kedekatannya secara geografis. Proses keterlibatan institusi Australia (khususnya bagian utara) akan memberikan keuntungan pada masyarakat regional kedua negara dalam jangka panjang di bidang budaya, ekonomi, pendidikan, dan politik.

Lembaga-lembaga perguruan tinggi yang di wakili dalam lokakarya telah menghasilkan suatu kerangka kerja strategik jangka panjang, pengembangan keterampilan dan pengetahuan yang berkelanjutan dalam kaitannya dengan pembangunan pedesaan terpadu (IRD) khususnya di NTT (lihat lampiran 1)

Kerangka waktu dan dana

Strategi ini merupakan pendekatan IRD yang disepakati berdasarkan pengalaman selama puluhan tahun (kebanyakan negative). Seperti yang telah disebutkan diatas, informasi dasar perlu dibentuk dalam satu tahun pertama dalam strategi ini, dengan dukungan yang bersamaan untuk mengidentifikasi contoh positif dari IRD. Program strategi yang terus berlangsung akan terbangun dari inisiatif dan melalui konsultasi dengan pemerintah dan badan bantuan.

Kesimpulan

Dalam komentar pembukaan pada empat sesi lokakarya, tertangkap adanya keberhasilan pembangunan desa terpadu dari komentar yang disampaikan oleh Dr. Ferry Karwur ‘mentalitas baru lebih penting dari pada penemuan ilmiah atau tehnologi baru’. James Adam dan Urbanus Olahurek menggemakan sentimental ini pada makalahnya yang menyarankan perlu adanya perubahan pada tingkah laku masyarakat dan cara berfikirnya. Pola pikir pemerintah dan LSM juga harus dirubah. Pembangunan desa terpadu bukan merupakan pendekatan baru dalam pembangunan, tetapi karena kegagalan masa lalu membuatnya tak lagi mendapat perhatian. Penggerakakan kembali pendekatan IRD diajukan pada peserta

lokakarya oleh Djoeroemana, Salean dan Nope berdasar kepada kegagalan dan keberhasilan dari pendekatan yang lalu. Pendekatan mereka melalui mata pencaharian penduduk desa berkelanjutan merupakan kendaraan untuk perubahan pole pikir individu dan organisasi dan cara berfikir tentang pembangunan desa terpadu.

Loka karya ini mewakili pemecahan pendekatan yang lalu pada pembangunan desa terpadu serta mendefinisikan suatu jalan menuju proyek yang lebih sukses berdasarkan pada pendekatan baru IRD. Pendekatan baru tersebut termasuk didalamnya semua pihak kunci terkait, dinamik dan menerima perubahan pada lingkungan yang lebih luas, menyadari kendala dan pengelolaan yang sesuai, di dirikan atas dasar pengetahuan local dan kajian situasi sekarang ini, termasuk membangun kapasitas untuk individu dan organisasi untuk meyakinkan bahwa keuntungan proyek untuk penduduk desa berkelanjutan dan yang paling penting adalah memadukan factor ekonomi, sosial dan budaya, politik dan kebijakan dan lingkungan untuk menyampaikan pembangunan desa terpadu yang berkelanjutan.

Peserta lokakarya mengidentifikasi sebelas kesempatan pembangunan desa terpadu dan sepuluh area yang menjadi kendala IRD di NTT. Sementara banyak perhatian tertuju pada pembangunan pengelolaan DAS karena pengaruhnya, masing-masing kesempatan merupakan komponen penting dalam IRD di Nusa Tenggara Timur. Usulan mengenai strategi penelitian telah disepakati di lokakarya, membangun pendekatan mata pencaharian penduduk desa yang berkelanjutan, menyediakan kerangka kerja untuk memastikan prioritas pembangunan yang lebih spesifik dan membangun proposal proyek dengan berkonsultasi pada pemerintah dan badan bantuan internasional. Usulan mengenai pendekatan Partisipatif Pengelolaan DAS Terpadu (PICMA) ke IRD mungkin aplikasi yang bernilai untuk pengujian akan penampakanya pada pendekatan dengan kelompok masyarakat, badan pemerintah, LSM dan pihak terkait lainnya dan konteksnya dengan teridentifikasi banyaknya kendala yang dihadapi dalam proyek.

Sebagai pendekatan yang dinamik dan adaptif, penyarangan dan refisi dapat dibentuk untuk aplikasi pendekatan yang akan datang.

Ucapan terima kasih

Kami mengucapkan terima kasih kepada organisasi-organisasi berikut yang mensponsori dan mendukung Lokakarya ini : Australian Centre for International Agricultural Research (ACIAR), Charles Darwin University, the Cooperative Research Centre for Tropical Savannas Management, BAPPEDA NTT, AusAID's, International Seminar Support Scheme, the Crawford Fund and University of the Sunshine Coast. Kami sangat menghargai dukungan dari pemerintah Northern Territory and Nusa Tenggara Timur. Terima kasih tertuju pula kepada saudara Yudhistira Yewangoe (BAPPEDA NTT) dan timnya yang telah menyediakan dukungan logistik dan tempat Lokakarya di Kupang. Juga kepada saudara Umi Rasmi dari Charles Darwin University yang telah melayani interpretasi yang cemerlang dan layanan terjemahan dalam mempersiapkan makalah-makalah, presentasi-presentasi dan proceedings. Terima kasih pula kepada Kim Wells and Georgina Hickey yang telah mempersiapkan proceedings untuk publikasi. Juga kami ucapkan terima kasih kepada peserta Lokakarya yang telah memberikan sumbangan pikiran konstruktif dan budi baik yang berkelanjutan dari para mitra regional.

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Integrated rural development based on agribusiness in East Nusa Tenggara¹

Bungaran Saragih²

Abstract

A new market-oriented rural development paradigm is proposed for enhancing the economic situation of rural communities in East Nusa Tenggara (NTT). The agribusiness approach encompasses the entire value chain from input suppliers, farming enterprises, transport, processing, distribution and marketing. The agribusiness approach is presented as a system with four integrative subsystems: upstream, on-farm, downstream and institutional. For the agribusiness system to work effectively, the subsystems must be aligned. Good returns from investment in on-farm improvements require complementary capacity and performance in the other three subsystems. Past development initiatives have concentrated on the farm subsystem but expected growth in farm incomes has not occurred because of underinvestment in other subsystems. The paper assesses the agribusiness potential of crop, plantation and livestock enterprises for NTT. The potential of cooperatives is explored and the need for public investment in critical infrastructure, especially roads, is demonstrated.

Pembangunan pedesaan terintegrasi berbasis agribisnis di Nusa Tenggara Timur

Bungaran Saragih^{2a}

Abstrak

Orientasi-pasar baru pada paradigma pembangunan pedesaan telah diajukan demi meningkatkan taraf perekonomian masyarakat pedesaan di NTT. Pendekatan agribisnis meliputi seluruh nilai mata rantai mulai dari pemasokan bahan, usahatani, transportasi dan pengolahan serta distribusi dan pemasaran. Pendekatan agribisnis disajikan sebagai sistem dengan empat subsistem yang berintegrasi; hulu, kegiatan agribisnis, hilir dan institusional. Demi bekerjanya usahatani secara efektif maka subsistem harus saling terkait. Hasil investasi yang baik dalam peningkatan kegiatan usahatani memerlukan adanya gabungan kapasitas dan kinerja dari tiga subsistem lainnya. Pada inisiatif pembangunan masa lalu telah mengkonsentrasikan pada subsistem usahatani dengan mengharapkan kenaikan pendapatan petani yang ternyata tidak terwujud akibat rendahnya investasi pada subsistem yang lain. Makalah ini menafsirkan potensi agribisnis pada usaha-usaha tanaman, perkebunan dan peternakan untuk NTT. Potensi kerjasama telah pula dijelajahi dan menunjukkan perlunya investasi public pada prasarana utama, khususnya jalan.

¹ Keynote paper

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I was asked by the workshop steering committee to give a keynote speech on ‘Integrated rural development based on agriculture in NTT’. The traditional understanding of agriculture is limited to primary agriculture and is aimed at increasing production.

This understanding is adopted from A.T. Mosher (1966) who thought that agriculture had five main requirements:

- markets for farm products
- constantly changing technology
- local availability of supplies and equipment
- production incentives for farmers
- transportation.

In order to increase farmers’ income, add extra value and give market orientation, the old understanding of agriculture has to be replaced with a new paradigm—a new way of seeing agriculture. It is known as the agribusiness approach. The agribusiness approach is not the agricultural commodity business that everyone knows of. It is more than that; agribusiness is a new way of seeing and building agriculture. Therefore, the title of my speech has been modified to include reference to it.

Agribusiness comprises four subsystems: (1) upstream agribusiness, (2) on-farm agribusiness, (3) downstream agribusiness and (4) supporting institutions.

1. *Upstream agribusiness* includes all activities and organisations associated with the production and distribution of agricultural inputs such as fertiliser manufacturers, prime seed enterprises, livestock and fish stock suppliers, feed manufacturers, pesticide producers and trading activities.
2. *On-farm agribusiness* includes activities at a farmer or fisher level and sometimes extends to forestry. These activities are aimed at managing inputs (land, labour, technology, material inputs, finance and management) for agricultural production.
3. *Downstream agribusiness*, often called agroindustry, includes industrial activities for agricultural product processing such as palm oil, fish canning and tapioca flour production. National and international trading in both processed and unprocessed agricultural products, and transportation and storage are part of this subsystem.
4. *Supporting institutions* include governments, banks and other financial institutions.

In short, it can be said that the agribusiness system emphasises vertical integration and linkages between business subsystems for a commodity supply chain. Those subsystems are interrelated and dependent on one another. Any problems in a subsystem will create problems in the others. For example, agroindustry cannot be developed without a supply of agricultural products and supporting trade and market arrangements.

The new agribusiness approach means building the four subsystems from upstream to downstream simultaneously and consistently. The development of agroindustry must occur at the same time as the development of farmers’ enterprises and upstream agribusiness. This is different to the previous agriculture system that was limited to farmers’ enterprises.

Agribusiness development is basically integrative intersector development as well as inter-district in NTT (between districts and between villages in each district). Through this, intersectoral and inter-district synergy in NTT will achieve sustainable agribusiness development.

According to East Nusa Tenggara’s 2004–05 economic data, agriculture was the dominant sector of the economy. Agriculture’s contribution to PDRB (gross regional product) in NTT was 45.01% in 2000, 43.88% in 2001, 42.87% in 2003 and 42.46% in 2004, followed by the hotel, restaurant and services sector.

Looking further into the agriculture sector, the gross value added in the period 2002–04 was dominated by crop farming, which, on average, contributed 51.84%, followed by livestock 29.35%, revealing these two subsectors as the most important for development of agriculture in NTT.

Economic indicator data for NTT in 2004 show that the rate of employment in 2000 was 81.93% (80.21% employed, 1.72% job seekers) while in 2004 the rate had fallen to 77.39% (73.93% employed and 3.47% job seekers).

These data also reveal that employment in agriculture in 2000 was 79.35%, and in 2004 was 73.66%, indicating agriculture’s overwhelming dominance as an employer. Based on the above data, it can be said that the majority of NTT’s population (80%) relies on agriculture, especially farming enterprises, meaning that the other agribusiness subsystems—upstream, downstream and supporting institutions—are less well developed. In order to develop agribusiness in the rural area of NTT, the first step is to develop the food crop agriculture and livestock subsectors

because both have been dominant in terms of gross value added in past years. The plantation and forestry subsectors should also be considered.

Agriculture in NTT is mostly dryland agriculture. Therefore crops such as corn, cassava, sweet potato and peanut are potential food crops for the agribusiness approach. The data show that dry corn kernel production in 2004 reached 622,812 tonnes from 264,907 hectares, which is up from 583,355 tonnes from 257,742 hectares in 2003. Cassava production increased from 861,620 tonnes in 2003 to 1,041,280 tonnes in 2004. Sweet potato was only 13,637 tonnes in 2003 but increased to 17,680 tonnes in 2004.

Plantation agriculture does not play a significant role in adding gross value; however, some plantations such as coffee, coconut, chocolate, candle nut, and cashew need to be developed through the agribusiness approach. Plantation production has increased over the past few years. Forest products also have high economic value that can be enhanced through the agribusiness approach.

Livestock production that can benefit from the agribusiness approach include cattle, pigs, goats, lambs and chickens. Cattle numbers in 2004 were 522,929, with most of them in Kupang, TTS, TTU, Belu, East Sumba and Ngada districts. Pig numbers in 2004 were 1,276,164, with most of them in TTS, Ngada, Lembata, Kupang, Belu and Sikka districts. Chicken numbers in 2004 were 9,389,209, with most of them in Kupang, Ende, Belu, Ngada and Rote Ndao districts.

In the past, agricultural development in NTT has focused on farming enterprises. Indeed, enterprises could increase production but would not necessarily increase farmers' incomes or the value of agricultural production. This is because farming enterprises have lower added value compared with upstream and downstream agribusiness (trading and processing industries). Agriculture in NTT needs to change from being primarily agriculture-dominant to a more market-focused agribusiness.

In order to develop agribusiness in NTT, efforts need to focus on the area of prime seed commodity enterprise to meet farmers' requests. It is also important to develop agricultural product processing industries that source products from NTT. We need to develop high value industries that use corn, cassava, sweet potato, peanut, coffee, coconut, chocolate, candle nut, cashew and forest products. By developing agribusiness, NTT will generate additional value.

Meanwhile, to increase farmers' incomes as well as expand farmers' business networks, support for business organisation development, specifically cooperative farmer agribusiness in NTT, is needed. Cooperative agribusiness is unlike the KUD (Unit Village Cooperative) concept that handles many different types of commodities and only focuses on primary agriculture. An agribusiness cooperative handles one type of commodity from upstream to downstream. Through an agribusiness cooperative, farmers can expand their business networks, both upstream and downstream (processing industries and trade), adding extra value that will be reflected in extra income to farmers. An agribusiness approach to rural development would make farmers proud and encourage younger generations to continue agribusiness enterprises within their farming families.

For the development of agroindustry and farmer business organisations, development of road infrastructure by the supporting institutional subsystem is necessary. The NTT government should prioritise the development of road infrastructure since there are many villages in NTT that have high potential for agribusiness development but they cannot be reached by vehicle. Road development will encourage agribusiness growth and increase efficiency of agricultural commodity transportation in NTT.

When agribusiness development in NTT succeeds, NTT will be ready to face challenges and respond to business opportunities in the future. The development of agribusiness in NTT will encourage farmers to provide materials and services required by agribusiness and informal sectors. It will also encourage capital flow and attract human resources to NTT. In other words, the development of agribusiness will facilitate increased production and intersector integration to support the development (self-financing) of district autonomy.

Agribusiness products in NTT have positive income elasticities of demand. So an increase in the average income of consumers (mainly in the cities) will attract further growth of agribusiness though increased demand for value-added agricultural commodities (e.g. quality aspects, location, packaging). The development of agribusiness can integrate economies in rural and city areas within NTT and nationally. The development of the agribusiness system should be driven by consumer preferences and likely changes in the consumption of agricultural and food products.

Furthermore, as the demand for agribusiness commodities from NTT increases internationally, the benefits created by further international economic liberation and economic integration (specifically AFTA and APEC) in the 21st century can be enjoyed by communities in NTT.

Agribusiness development based on rural assets will open opportunities for integrated rural development growth. Micro-enterprises, processing indus-

tries, home industries and other activities will emerge and grow in rural areas as part of the development of integrated rural development in NTT based on agribusiness.

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Partnership between East Nusa Tenggara and the Northern Territory, Australia: implications for integrated rural development¹

Frans Seda²

Abstract

An official relationship has existed between the Northern Territory of Australia and Eastern Indonesia since 1976. A Joint Policy Committee, formed in 1992, explored strategies for cooperation across many sectors. The paper outlines the range of development activities in East Nusa Tenggara supported by the Northern Territory and Australian governments in the past and proposes areas for possible future collaboration.

Kerja sama antara Nusa Tenggara Timur dengan Northern Territory Australia dan pengaruhnya untuk pembangunan desa terpadu

Frans Seda^{2a}

Abstrak

Hubungan resmi antara Wilayah Utara Australia dan Indonesia bagian Timur telah terjalin sejak tahun 1976. *Joint Policy Committee* kemudian dibentuk pada tahun 1992 demi mengeksplorasi strategi kerjasama dalam berbagai sektor. Garis besar pada makalah ini adalah pengembangan berbagai aktifitas di NTT yang di dukung oleh pemerintah Northern Territory, Australia, pada masa lalu dan pengajuan kemungkinan adanya kerjasama di masa mendatang.

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Establishment of the partnership

The official relationship between the Northern Territory of Australia and Eastern Indonesia began when an Indonesian Honorary Consul was appointed in the Northern Territory in 1976. In 1978, the Northern Territory was granted self-government (before that, it was part of South Australia). Since 1978 the Chief Minister of the Northern Territory has led business delegations to Indonesia to promote a permanent commercial link.

The relationship between the Northern Territory (NT) and East Nusa Tenggara (NTT) was established in 1990, with the visit of NTT delegates to Darwin in February 1990 and a reciprocal visit by NT business delegates to Kupang, NTT, in March 1990. NTT business delegates and government officials have participated in the NT Expo since 1990.

Stronger relations between Eastern Indonesia and the Northern Territory were established after the signing of a Memorandum of Understanding in January 1992 between the governments of Indonesia and the Northern Territory. A Joint Policy Committee was appointed, consisting of six officials from both countries. The role of this Joint Policy Committee is to formulate comprehensive cooperation strategies and plans in several sectors including:

- manufacturing and processing industry
- trade and trading infrastructure
- transport services
- physical infrastructure development
- professional services, including health and education
- technical and advisory expertise and technology transfer
- primary and tertiary industry, including minerals and energy developments, rural industries and tourism.

In the development of these strategies and plans both parties recognise the importance of strong involvement from their respective private sectors, and endorse and support private enterprise initiatives that will lead to the fulfilment of common economic development objectives, including those from NTT.

Assistance from the Australian Government and the Northern Territory Government

Nearly every fiscal year, the Australian Government allocates funds for assisting the development of

several projects in Indonesia, including projects in NTT. Projects supported by the Australian Government include:

- cattle farm at Biena, West Timor
- integrated water resources on Flores Island (five districts)
- supply of electricity in some villages using solar energy
- water pumping facilities on Rote Island and Sumba using solar energy.

Assistance provided by the Northern Territory Government to NTT falls within a number of sectors. Projects supported by the Northern Territory Government include:

- education sector: training in fisheries
- health sector: reconstruction for leprosy sufferers; eradication of malaria and tuberculosis
- agriculture sector: upgrading an agriculture research centre in Soe, W. Timor; grain seeds sent from NT to NTT farmers
- fisheries sector: fishermen training at Sumba
- livestock sector: cattle farm at Biena NTT
- tourism sector: promotion of NTT to Australian tourists
- transportation sector: air link between Darwin and Kupang—AirNorth and Merpati.

Agreements

A range of official agreements have been signed between the NT and NTT agencies, including:

- agreement on collaboration between NT DPIF and Naibonat, Kupang
- agreement on cooperation between cities of Kupang, NTT, and Palmerston, NT
- agreement on cooperation in air transport between AirNorth and Merpati
- agreement between NT Chamber of Commerce & Industry and Mbay Integrated Economic Development Zone.

Future cooperation

Because of the commonality of environment and geography, and distances from centres of national administration, there are many areas in which cooperation and collaboration can be developed between the Northern Territory of Australia and Eastern Indonesia including:

- dryland agriculture

- fish farming
- cattle breeding
- small–medium enterprise training.

The history of positive partnerships and the substantial potential for further cooperation and collabo-

ration between NTT and the NT address some of the fundamental elements of integrated rural development in NTT.

An overview of environmental, sociocultural, economic and political aspects of rural development in East Nusa Tenggara¹

Siliwoloe Djoeroemana², E.Th. Salean³ and W. Nope⁴

Abstract

Integrated rural development (IRD) began in the early 1970s to deal with rural backwardness, ignorance and poverty, as well as to create communities and rural areas that were developed and modern. An integrated programming approach was implemented to achieve linkage between all factors. However, after 35 years of IRD, poverty in East Nusa Tenggara (NTT) is still manifest. Data from 2005 show that the poverty rate amongst households in NTT is 58%.

An alternative approach is needed. We advocate a sustainable rural community livelihood approach that encompasses the physical environment, sociocultural, economic and political factors. Key factors in the environmental context are fire management, reforestation and water supply. Factors in the sociocultural context are land ownership, social capital, local wisdom and education. Factors in the economic context are small-medium enterprises, microfinance institutions and cooperatives. Factors in the political context are rural leadership, community participation and sector linkages. These factors influence the success of integrated sustainable rural community livelihood development.

This approach builds the capacity of rural communities, both as individuals and as groups, to enable them to develop their assets and dynamics so that both are transformed within the framework of integrated sustainable rural livelihood development.

Tinjauan umum aspek-aspek lingkungan, sosial-budaya, ekonomi, dan politik pembangunan pedesaan Nusa Tenggara Timur

Siliwoloe Djoeroemana^{2a}, E.Th. Salean^{3a} dan W. Nope^{4a}

Abstrak

Pembangunan desa terpadu dimulai pada awal tahun 1970 untuk menjawab keteringgalan, kebodohan maupun kemiskinan desa, sekaligus menciptakan wilayah dan penduduk desa yang modern dan maju. Untuk itu ditempuh pendekatan perencanaan terpusat dengan tujuan agar keterpaduan berbagai sektor dapat dicapai.

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Namun setelah 35 tahun pembangunan pedesaan dilancarkan tingkat kemiskinan di NTT masih saja nampak, bahkan data tahun 2005 memperlihatkan tingkat kemiskinan rumah tangga sebesar 58% rumah tangga miskin.

Diperlukan pendekatan alternatif yang disebut penghidupan masyarakat desa yang berkelanjutan dalam konteks Ekologi, Sosial Budaya, Ekonomi, dan Politik. Faktor-faktor dalam konteks ekologi terdiri dari pengelolaan api, penghutanan kembali/reboisasi dan sumber air. Faktor-faktor dalam konteks sosial budaya terdiri dari kepemilikan tanah, modal sosial, kearifan sosial, dan pendidikan. Faktor-faktor dalam konteks ekonomi terdiri dari usaha kecil-menengah, lembaga kredit mikro, dan koperasi. Faktor-faktor dalam konteks politik terdiri dari kepemimpinan desa, partisipasi masyarakat dan keterpaduan sektoral. Faktor-faktor tersebut mempengaruhi keberhasilan Pengembangan Penghidupan Desa yang Berkelanjutan Terpadu.

Pendekatan ini memberi peluang kepada masyarakat desa baik sebagai individu maupun sebagai kelompok untuk memperkuat kemampuannya bagi pengembangan aset yang ia miliki dan dinamika yang ada menjadi mampu ditrasformasikan dalam rangka Pengembangan Penghidupan Desa yang Berkelanjutan Terpadu.

Introduction

There have been various state-led rural development programs, both sectoral and spatial, directed at rural areas in Indonesia. In the early 1970s, the state, supported by the World Bank and other supporters of development implemented integrated rural development (IRD) to respond to rural backwardness, ignorance and poverty, and to create communities and rural areas that were developed and modern. This regional-based growth strategy was formulated by the World Bank and was specifically focused on rural areas. Typically, IRD emphasised improvements in agricultural productivity as the basis of rural community income and advocated the integrated synergistic contribution of education, health, social services, training and rural infrastructural development. To achieve sectoral linkages, IRD programs were planned centrally. Various programs were implemented in rural communities by the government through presidential instruction. These instructions covered villages, districts, elementary schools, health, roads, reforestation, neglected villages and other such programs.

After 35 years of IRD, poverty in NTT is still apparent with the level rising and falling from year to year. Data for 2005 show 58% of households or 60% of the population to be in poverty and, according to data released on 17 January 2006, these percentages have increased to 75% of households or 78% of the population (Central Statistics Bureau: BPS NTT 2005 and 2006). All but a few per cent of these poor live in rural areas. This proves that IRD has not been able to increase rural community welfare. Why do the problems still exist in rural areas? This paper will discuss

problems faced and lessons learned in IRD focusing on four aspects: physical environment, sociocultural, economic and political.

Physical environment

NTT covers an area of 47,350 km², with the topography breaking down into: 4,591 km² plains, 7,945 km² undulating, 18,025 km² steep, and 16,789 km² very steep (more than one-third of NTT). The average temperature is 29.96° C, average humidity 76.25%, average rainfall 117 mm/month falling in only 4 months, and average wind velocity 5.0 knots (BAPPEDA NTT 2005a). Only 64% of the land area is cultivatable. The NTT Regional Profile 2005 shows annual outbreaks of fire in forest and savannah areas in July–October, and a lack of water supply (BAPPEDA NTT 2005b). These limitations lead to the poor performance of agriculture that is the main source of income for rural NTT communities.

Sociocultural

The population of NTT is 4,188,774 (2,088,156 males and 2,100,618 females) with a density of 88/km² and growth rate of around 2% a year. Within the sociocultural analysis there are four factors that need to be addressed: land ownership, social capital, local wisdom and education levels of the work force.

Land ownership is largely communal and thus there is no clear system of ownership for community individuals. Land ownership conflict frequently occurs both within and between communities and between rural communities and government. Land can even become a commodity that is sold by

members of rural communities to people from cities. These difficulties greatly inhibit agriculture.

The core of *social capital* lies in community organisations and groups that build trust and solidarity as well as inter-group and inter-organisational reciprocity (Nan et al. 2001; Sutoro 2005). Thus, community-held capital can be ‘a social bridge’ to manage conflicts according to Coletta et al. (in Sutoro 2005). Social capital should represent a medium for interaction between government and communities to build trust, accountability, partnership, responsibility and participation (Sutoro 2005). However, to date its potential has been under-utilised as community groups and local government still act largely independently in rural communities.

Local wisdom is reflected through ecological adaptation, leadership, social democracy, moral economy and social piety (Sutoro 2005). Market expansion to rural areas has forced rural communities to leave behind their ecological understanding that has been passed down from generation to generation. The traditional spirit of leadership that exalts exemplary behaviour and promotes social democracy has also experienced erosion. The same can be said for the moral economy as reflected in production, distribution and models of consumption. Local production systems that pay careful attention to balance and sustainability and distribution systems based on reciprocity and redistribution break down in the face of market expansion. Finally, religious traditions that promote piety have also begun to fade as a consequence of market expansion.

For the majority of the work force the attained *education level* is elementary school (around 38%), but many (around 39%) have not been to school at all (BAPPEDA NTT 2006).

Economic

The NTT economy is dominated by the agriculture sector that in 2004 represented 42.46% of the gross regional domestic product (GRDP). In 2003 per capita income was Rp.2,248,333, higher than in the previous year (BPS NTT 2004). The rate of economic growth was 5.58% p.a. in 2004, up from 4.37% p.a. in 2001, 4.88% p.a. in 2002 and 4.57% in 2003. This shows that production performance in NTT has improved recently, resulting in per capita GRDP based on current prices in NTT increasing from Rp.3 million in 2001 to Rp.3.1 million in 2004. (BPS NTT 2004).

There are three principal supporting units of the rural economy (Sutoro 2005; Dinas Koperasi Propinsi NTT 2005): small–medium enterprises, microfinance institutions and cooperatives. The small-medium enterprises that have grown in rural areas have their ups and downs, with some well developed but others performing very poorly. There are too few microfinance institutions and their distribution is insufficient to support the rural economy. This applies to cooperatives also (Saragih 2001; Sutoro 2005).

Political

NTT’s main islands of Flores, West Timor, Sumba, Lembata, Alor and Rote are divided into 15 *kabupaten* (regencies) and 1 *kota* (municipality). These in turn cover 197 *kecamatan* (districts), 292 *kelurahan* (towns) and 2,414 *desa* (villages) (BAPPEDA NTT 2006).

There is dualism in leadership in NTT rural areas. There are formal state-appointed leaders (village heads) and local traditional leaders (Djoeroemana 2004). This leads to a split in loyalties and obedience among rural communities. As a consequence local participation in rural development is less than optimal. There is also the possibility of having two decision-making forums for rural development. Furthermore, the presence of government departments independently implementing sectoral programs disrupts the possibility of truly integrated rural development.

These environmental, sociocultural, economic and political aspects influence the implementation of IRD and explain the high levels of rural poverty and low levels of community welfare. Furthermore, a centralist IRD approach impedes local creativity and innovation in rural development.

Rural development oriented towards economic growth, and social services that are technocratic and centralist, ignores aspects of sustainability, the local context and the need for participation and local capacity building (Djoeroemana 2005; Sutoro 2005). This approach to rural development concentrates on economic growth and regionally based basic services. The main actors in rural development are thus the state and the market. This ignores communities since they are merely recipient objects and not considered subjects that ought to be respected and hold key positions in participative development. Concentration on economic growth is based on a theory of modernisation (developmentalism) that focuses on

how to guarantee the improvement of human living standards (Sutoro 2005). This improvement in living standards is reflected in purely economic indicators such as the real and cumulative increases in income or income per capita.

There is a need for an alternative approach to rural development that emphasises community capacity. An alternative is the sustainable rural community livelihood approach. Such an approach brings rural community livelihoods from a condition of susceptibility to sustainability by developing the assets and capabilities they possess and enabling them to be transformed, recognising the dynamics that exist. Community livelihood is the capability for survival that is possessed by all, both materially and socially, that is realised through a variety of activities performed to fulfil the needs of life. A community livelihood approach looks at the complexity of individual and community assets and is concerned with the dynamics of transformation. As one individual or group may respond more quickly than others, it is important to have a variety of activities based on individual character empowerment. The approach builds individual and group capacity to develop local potential so they are able to overcome their own problems and indeed use them as a means of achieving their goals. A sustainable livelihood approach transforms

communities by building local capacity so that their living assets can be transformed by it.

The basic concept of sustainable livelihood development (Sutoro 2005) is as follows:

- People are the focus of all development activities (people-centred). All understanding, analysis, planning and change within the process comes from the people themselves.
- An holistic approach begins with the community’s understanding and priorities. All factors, be they hindrances or opportunities, should be understood within the context of the community’s knowledge and ability, so that eventually communities can develop their own solutions.
- Bearing in mind that life is dynamic, we can only ever get a temporary snapshot of any given situation; therefore, sustainable livelihood development needs to be aware of, and adjust to, change, making it important to develop participative monitoring and shared learning among community and other stakeholders.
- This approach is more concerned with capacity building than needs analysis. Building on strengths means there is an acknowledgement of every individual’s capability to develop themselves, and through strengthening social networks problems can be solved (either individually or collectively),

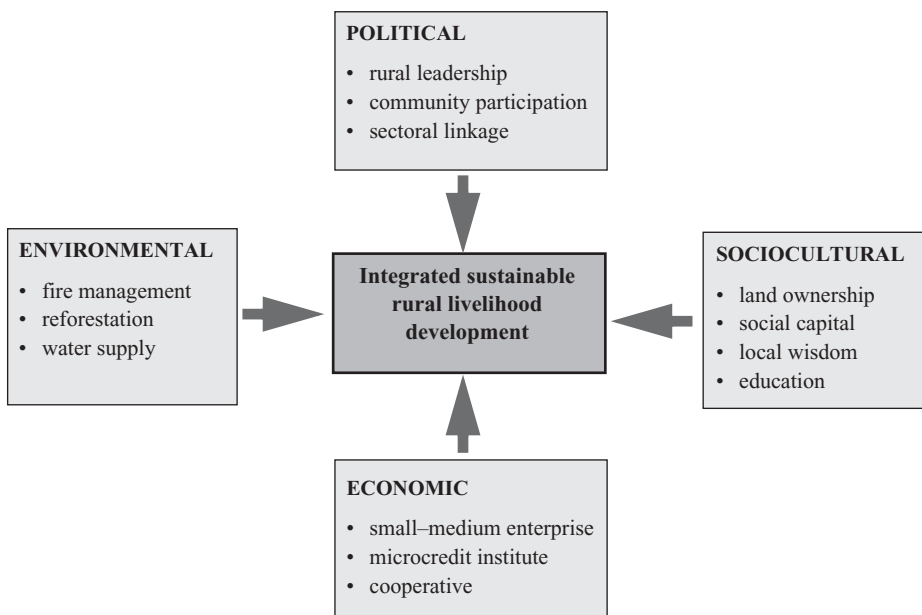


Figure 1. Integrated sustainable rural community livelihood development

obstacles can be overcome and the potential to achieve goals can be realised.

- There is a link between the macro and the micro in the process of change and development. The approach endeavours to become a bridge in the gap between theory and practice and between macro policy and micro activity. It is essential that the individual and the community have an understanding as to what is happening in the macro context that is influencing their lives. Similarly, for those influencing the macro environment, such as policy makers, it is important that they understand issues and events at the community level.
- This approach demonstrates the tangibility and sustainability of a given process working as part of a cycle. This cycle should be continuous and experience no upset that leads to its deterioration or collapse. The result should be a transformation from susceptibility to sustainable improvement.

To implement integrated sustainable rural community livelihood development a model is required that encompasses environmental, sociocultural, economic and political components. The environmental component needs to include such factors as fire management, reforestation and improved water supply. The sociocultural component should encompass factors such as land ownership, management, use of social capital, gender equity, revitalisation of local wisdom and improvements in education. For the economic component, we need to improve small and medium-sized agricultural enterprises, marketing systems and infrastructure, and microfinance institutions (and access to microfinance), and increase the number and kinds of cooperatives. The political component should include accommodation for the dualism in local leadership, increased community participation in rural development and improved

inter-sector cooperation in rural development so there will be dynamic integration.

Effective implementation of community and individual-based sustainable rural community livelihood development requires integration of these components, as illustrated in Figure 1.

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Livestock production in East Nusa Tenggara: potential of small animals in integrated rural development programs

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Abstract

This paper reviews the potential, opportunities and constraints in rearing small animals for integrated rural development based on experiences and review of studies. This review may prove useful for developing the potential of small animal husbandry particularly for farmers, partnerships and activities models.

Small animals such as goats, sheep, local chickens, pigs and ducks are potentially a major component of integrated rural development. Farmers generally have low education levels so need continuing advice and guidance to develop agribusiness acumen. Programs for rearing small animals in rural areas should be managed within a cooperative system with diversification activities, and sustained with wise management based on agribusiness principles. There is a need for cooperation from supporting and skilled partners in order to ameliorate problems and realise opportunities. These outcomes are important for integrated rural development programs, with small animals as the basic unit of rural animal industries.

Produksi ternak di Nusa Tenggara Timur: potensi ternak kecil pada program pembangunan desa terpadu

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Abstrak

Makalah ini bertujuan untuk menemukan potensi-potensi, kesempatan-kesempatan, dan keterbatasan dalam memelihara ternak kecil untuk pembangunan pedesaan terpadu berdasarkan pengalaman-pengalaman dan studi-studi peninjauan lapangan. Dari studi-studi peninjauan itu diperoleh informasi yang berguna untuk menentukan strategi bagi pengembangan potensi-potensi ternak kecil khususnya strategi-strategi untuk sumber daya manusia atau petani, model kegiatan-kegiatan dan kemitraan.

Ternak kecil termasuk kambing, domba, ayam lokal, babi, dan bebek dipandang potensial untuk mendukung pembangunan pedesaan terpadu. Oleh karena itu petani sebagai sumber daya dengan tingkat pendidikannya yang rendah perlu secara terus menerus diberikan nasihat dan pendampingan dalam jangka

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waktub tertentu agar berjijwa wirausaha. Demikian pula program pemeliharaan ternak kecil di daerah pedesaan harus dikelola dengan system koperasi dengan keragaman aktivitas, dan dipertahankan dengan pengelolaan yang baik berdasarkan pendekatan agribisnis. Dalam pendekatan ini kerjasama membutuhkan dukungan dan mitra agar mampu menyelesaikan masalah-masalah yang dihadapi dan mengenali kesempatan-kesempatan yang tersedia. Kemampuan ini bermanfaat untuk program-program pembangunan pedesaan terpadu dengan ternak kecil sebagai unit dasar untuk mencapai industri ternak pedesaan.

Introduction

As stated in *Undang-Undang Dasar* 1945 and *Garis Besar Haluan Negara*, development in Indonesia is mainly focused on creating employment opportunities and increasing the prosperity of the people. The majority (60–80%) of Indonesian people live in rural areas and most of the rural population are classified as 'poor' (Yasin and Echiwati 2004), so it is reasonable that development programs be initiated in rural areas. These programs must involve the participation of several relevant sectors in integrated roles in order to achieve their aims.

It is important that development programs in rural areas of East Nusa Tenggara (NTT) are sustainable in the long term. Development programs in rural areas should consider three factors: natural resources or *Sumber Daya Alam*; human resources or *Sumber Daya Manusia* and regional government policies. Small animals are significant resources in rural areas. Unfortunately, 30% of the people are poor (Pangestu 2006) and 80% of these people are concentrated in rural areas (Anon. 1994). Most of those people are poorly educated. In addition, 468 of 1,734 registered villages are classified as poor (Lamijan 1994) with over 110,000 people jobless (Mukhlisin 2006). Also, regional government policies may be inappropriate; therefore, investment in animal production is necessary.

Poverty in rural areas is caused by many factors, the major factor being poor education and the consequent poor natural resources management. With poor economic returns in rural areas there is a trend to urbanisation in NTT as people seek employment in the cities, or possibly as labourers *Tenaga Kerja Indonesia*—employment overseas.

This article describes a system involving poorly educated rural people in optimising small animal production to develop a rural small animal industry. The industry may offer jobs and sufficient earnings for labourers and so reduce loss of rural populations to

cities, and finally achieve the aims of the development program.

General review of Nusa Tenggara Timur region

NTT is composed of four large islands and a hundred small islands, at 8–12°S and 112–125°E, with over 47,350 km² of land and a 200,000 km² maritime zone. Most (75%) of the land is hilly with 50° slope and a high erosion potential. NTT's climate is wet–dry tropical, with long dry seasons (8–9 months) and relatively short rainy seasons (3–4 months) each year. Commonly annual rainfall in this region ranges from 254 to 508 mm with 100 rainy days per year, but some areas are wetter, with 800–3,000 mm annual rainfall. About a third (36%) of the land cover is savanna that is suitable for pastoral activities. However, with the expansion of housing, shifting populations, reforestation and plantations, there will be encroachment on pastoral land in the future. Current rural development is more suited to holding small animals than big animals. In NTT, holding animals has been a part-time activity, but it can be the main source of a family's income. Most (86%) farmers holding small animals in rural areas are poorly educated and consequently the adoption of development programs using small animals has been poor.

Small animal population, distribution and potential

Small animals including goats, sheep, pigs, local chickens and ducks are a significant source of meat in rural areas during seasons when crops fail and during other times of food shortage or when there are sudden unexpected food requirements for ceremonies such as marriages and funerals. Commonly, traditional animal husbandry systems in rural areas are extensive, but there is potential to increase profitability in the future (see substantial population sizes in Table

1). Until now the purpose of holding small animals in rural areas was only for meat and egg production. This enterprise could be improved by developing more intensive systems for greater economic returns.

Table 1 shows that, except for Kupang city and West Sumba, all kabupaten (regions/municipalities) in NTT have potential for goat production. Kabupaten Kupang and Rote-Ndao have potential for sheep production; all kabupaten except Kupang city are suitable for pig production. Local chicken production is appropriate for Kabupaten Kupang, South Central Timor (TTS), Belu, Alor, East Flores, Sikka, Ende and Ngada conditions. Ducks are well adapted in Kabupaten Kupang, Belu, Lembata, Sikka and Ende. The economic value of holding small animals depends on farmers developing animals according to their potential economic return. Current small animal populations could be used to select kecamatan (sub-districts) for small animal development in each kabupaten.

The potential of small animals as meat and fertiliser sources is not optimised, and economic value is low because traditional husbandry systems are extensive. This article suggests small animal holdings have potential for development at the home industry scale or at rural industry scale. If these enterprises are not developed resources are wasted and environmental pollution may result. Industries that can be developed at the home industry scale include waste processing (producing fertiliser); meat processing, making

krupuk, egg production, rope weaving, producing mosquito drugs and producing polish (Figure 1).

Opportunities and constraints in small animal enterprises

Before developing small animal enterprises, it is necessary to identify the opportunities and constraints pertaining to the program. The following factors *enhance* opportunities for developing small animal businesses in NTT:

Climate

NTT's climate is mostly semi-arid, with long dry seasons (8–9 months) and short (3–4 months) rainy seasons and is suitable for developing small animal enterprises.

Populations of small animals

Existing populations of small animals (Table 1) are high in all kabupaten so they are a potential asset for developing small animal businesses in NTT.

Lands

Hazibuan and Mangunsong (1993) found that class IV–VI soils that have potential for growing animals dominate lands in NTT. CIDA (1976) reported that of the 4.7 million ha of available land in NTT, 830,000 ha are pasture and 155,000 ha are bush areas that are suit-

Table 1. Population of small animals in each kabupaten in NTT, 2004

Kabupaten/kotamadya	Small animals				
	Goats	Sheep	Pigs	Local chickens	Ducks
Kotamadya Kupang	3,942	34	20,200	20,200	2,557
Kabupaten Kupang	76,283	29,984	94,429	1,932,615	17,698
Timor Tengah Selatan	33,668	–	243,235	781,731	9,679
Timor Tengah Utara	15,621	35	57,523	139,621	8,915
Belu	11,664	23	90,656	773,479	20,018
Alor	24,379	6	60,311	371,724	11,444
Lembata	29,586	459	43,663	189,812	17,773
Flores Timur	52,795	2,105	114,446	500,631	10,761
Sikka	34,742	201	88,843	495,559	44,347
Ende	19,694	48	61,592	1,699,494	56,622
Ngada	41,776	3,064	131,393	609,767	17,132
Manggarai	41,088	93	126,689	615,209	8,051
Sumba Timur	37,125	891	32,788	516,275	2,432
Sumba Barat	10,057	–	53,124	629,101	2,537
Rote Ndao	29,682	19,560	57,072	110,617	550
NTT	462,102	56,502	1,276,166	9,389,208	230,515

Source: Dinas Peternakan Nusa Tenggara Timur 2005

able for animal breeding businesses. However, there is an expansion of housing, agricultural plantations and forestry, so that land available for animal production is diminishing. Fortunately small animal husbandry is suited to small land areas.

Government policies

Regional income from the animal sector is second only to the food sector. From the 1960s to the 1980s,

government policies were mainly focused on the development of large animals (especially cattle); now, 20 years later, the focus is more concentrated on small animals. Programs that are examples of focus on small animal production include *Intensifikasi Ayam Buras*—intensification of local chicken breeding systems; and *Bantuan Pembiayaan Langsung Masyarakat*—direct loans to farmers conducted by animal, social, labour and related departments.

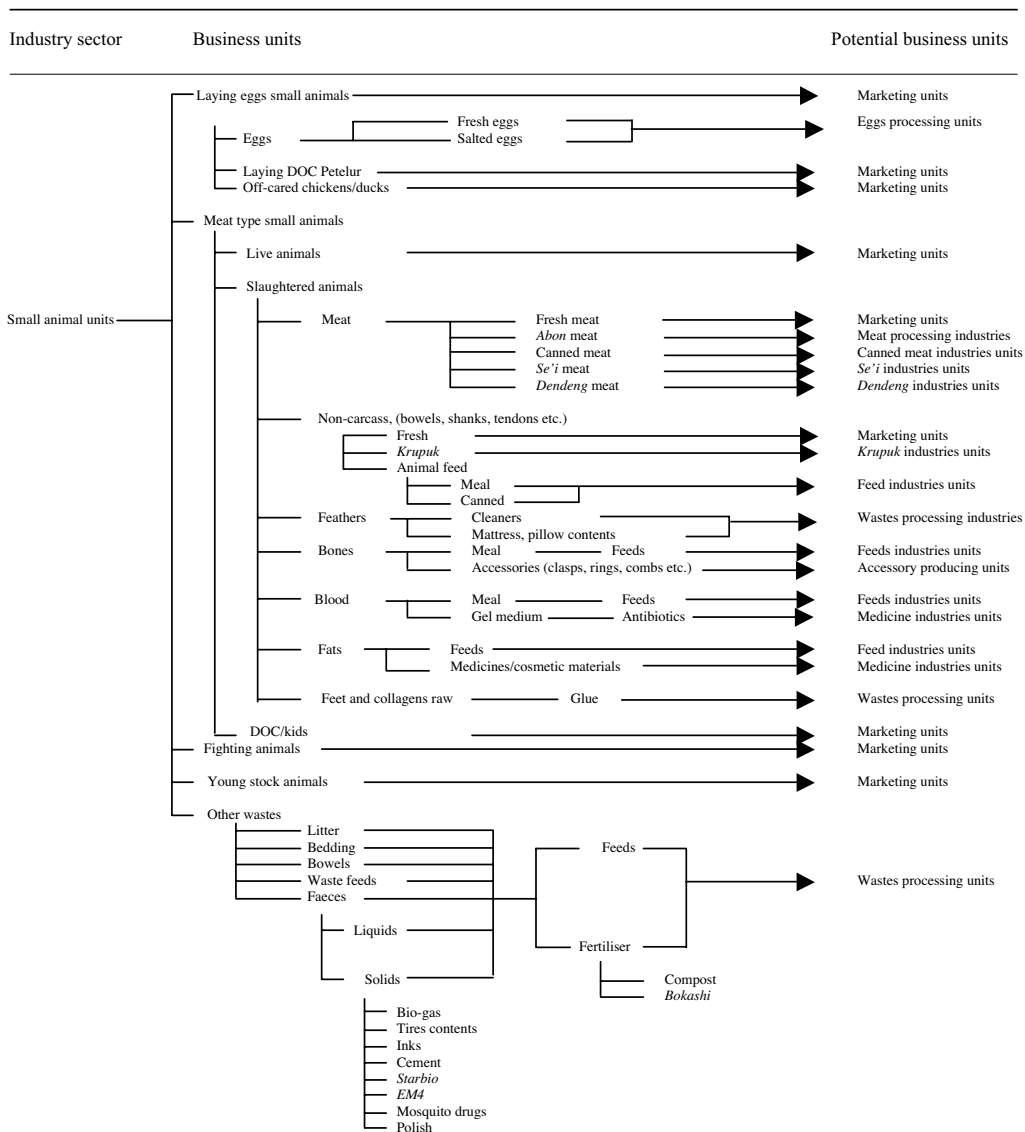


Figure 1. The tree of small animal industry units

Market demand

Market demand is one of the determining factors in animal systems and their product flow. Demand will increase as the population of residents increases, particularly with increased education and knowledge of nutrition needs. Protein requirement of NTT's residents has increased from 4.24 to 8.6 kg/year and 60% of these requirements are supplied from small animals, mainly pigs and chickens. Increasing domestic demand may stimulate increased productivity of small animals and increase the value of their products. It could provide opportunities in economic returns for the development small animal industries.

Human resources

The potential for small animal production is evident in the high populations of small animals in rural NTT. These potentials could be enhanced through greater involvement of institutions such as the Department of Animals, the Faculty of Animal Husbandry, and other non-degree agricultural schools.

Institutions

Institutions that could be involved in the development of small animal programs include non-government organisations (NGOs/LSM), sellers of animal supplies, farmers' cooperatives and banks. NGOs in NTT provide and conduct training; cooperatives and banks provide capital for people to invest in animal development programs; animal supplies shops may provide materials needed to accelerate the programs. These contributing institutions are present in most kecamatan in NTT.

The following factors may *constrain* development of small animal programs in NTT:

Climate

NTT's seasonally dry climate limits development of small animal enterprises due to seasonal lack of water and feedstuff. Also, some animals have low resistance to this climate.

Human resources

Low education levels and existing cultural practices of farmers in rural areas of NTT could influence their capability to adopt innovations. Traditionally, farmers care for their small animals using local extensive methods. As a result, small animals are not valuable, business in this commodity does not attract

interest, and consequently small animal production grows slowly. Therefore, educational institutions must be involved and integrated into planning and development programs for small animal industries.

Marketing

Until now, marketing small animals and their products has been local and traditional. Production under the extensive traditional holding system being insufficient to supply either regional or international market needs.

Ineffective counselling

Low education of farmers has been a barrier in adopting innovations. Learning has been limited due to inappropriate counselling methods for improving animal production in rural NTT, and this situation has been worsened by inexperienced or inept field counsellors or *Pekarja Praktek Lapangan* (PPL). It is helpful for extension officers to be aware of traditional practices and be accompanied by experienced and competent PPL.

Low income

Farm income from holding small animals is generally low due to high buying prices, high holding costs and low selling prices. Time and energy spent on small animal production are rarely justified by the price received. Consequently, farmers consider care of small animals to be part-time work.

Government policies

Government policies focus on large animals rather than small animals. This has been one of the constraints in developing small animal programs in rural NTT. Regional government has not seriously considered policies tailored to investment and growth of sectors that support small animal industries. This has resulted in the aid offered to farmers not achieving the program goals.

Potential of small animals for integrated rural development programs

The most crucial factors influencing small animal development programs are lack of feedstuff and water. New programs must first overcome these limitations.

Conversion of surplus rainy season forages to hay or silage products can overcome the lack of feedstuff during the dry season. In addition, introducing adaptable forage on farmers' lands or into low capacity pastures will help ensure the quality and continuity of feed. These strategies are not only useful for feedstuff sustainability but also for improving farmers' knowledge and their commitment to animal production, and in enhancing the quality and capacity of land and pasture for grazing. These revegetation programs can also be applied to areas surrounding dams to optimise the use of these areas for human and small animal needs, or for creating barriers to garden and farm areas. Feed for animals can be sustained by processing dried grass or straw and other plant by-products using fermentation methods and bioconversion techniques, as well as reusing treated animal wastes. A strategy for achieving the nutrient requirement of animals is to provide supplements such as palm oil extracts, rice bran and tofu extract. In addition, local sources of concentrates, such as tamarind seeds, *putak* and tubers, may be used.

Scarce water can be addressed in several ways. Adding fat to animal diets is one way to increase the amount of metabolic water in an animal's body, thus reducing water intake. Anggorodi (1979) stated that lipid metabolism produces metabolic water, each unit of metabolic lipid producing one unit of metabolic water in the animal's body. Adding fat is also useful for inhibiting methane formation but increasing propionate production (Demeyer et al. 1967). Methane and propionate are ruminal fermentation products important in sheep and goat fattening techniques.

Developing market- and agribusiness-oriented small animal industries can be realised through partnership programs between private firms, NGOs or government firms *Badan Usaha Milik Negara* (BUMN) and farmer groups or farmers' cooperatives. Partnerships can be by an adoption or by capital loan. In such a partnership program, farmers are responsible for animal husbandry including diversification activities. Firms are responsible for providing and supplying facilities, capital, marketing and training programs. The program is not only for profit generation but also beneficial by improving the farmers' knowledge of farm and capital management, animal husbandry, and in adopting innovations and selecting the most effective and appropriate technologies for their small animal industries. In these programs it is important that PPL are present to advise and accompany the farmers in all activities.

Government policies such as tax concessions and price standardisation are also important to stimulate and motivate farmers to maintain their small animal enterprises. These policies are also positive for investors interested in animal industries, particularly investors creating and developing other sector and commodity industries linked to the animal sector. When small animal industries are well developed in an area, the NTT government must identify regional or international markets for those industries. In this way the government's role is facilitation of an integrated sector partnership among farmers, money sectors, marketing agencies, NGOs and BUMNs in order to create a profitable system for small animal industries.

Strategies for developing small animal enterprises within integrated rural development programs

Based on identified opportunities, constraints and solutions in developing small animal industries in NTT rural areas, strategies need to focus on developing capacity within farmer activities and the partnership models.

Farmers

The success of small animal industries in rural areas depends on farmers being educated, trained and prepared. Farmers are the main determining factor in animal enterprises (Suhadji 1991). At present, farmers in rural areas are poorly educated and therefore continuing guidance, advice and mentoring by PPL are important to achievement of the development goal. Indeed, to achieve this, the PPL should be adequately rewarded in their salary and supported with necessary operating materials and equipment. For example, in South Korea, the salary of PPLs is nine times that of city officers, and as a result development in rural areas is growing rapidly.

Business model

In establishing a business model for small animal enterprises, the following factors are to be taken into account: system; type of business; partnership; and supporting factors such as capital availability and sustainability of production facilities, human resources and marketing condition. Considering these factors, development of small animal enter-

prises should be managed as cooperative systems with diversification activities between various animal sectors and between animal and agricultural sectors. The model of Kaira District Cooperative Milk Producers Union in Anand, India, is an example of well-managed cooperation that could be adopted in Indonesia. In 1978, this cooperative involved 250,000 dairy farmers spread over 700 villages with diversification activities and US\$40 billion yearly income. A cooperative system must provide adequate services for customers and the public, and should apply agribusiness approaches (Turk 1978). In this approach, farmers in each desa (village) are gathered into a desa cooperation unit and those units are assembled to perform host cooperation in their kabupaten. Village cooperatives collect products from all members (farmers) and bring those to the host cooperative to be marketed or processed according to the customer's wishes. Product marketing can be carried out directly by the host cooperative or by partner services.

Partnership model

The cooperative model for small animal industries needs partners similar to those of large-scale animal industries for marketing their products and banks for providing and supporting sufficient capital. Financial input is needed because funds from members of the cooperative are not sufficient for meaningful investment. Other partners are industrial and animal husbandry departments or NGOs providing assistance with quality control, guidance, advice and participation in field programs.

Conclusions

Sustainable small animal industries in rural areas can be developed in cooperative systems with diversification activities. The system requires supportive services, agribusiness-based approaches and partnerships in marketing, providing capital, and processing products and by-products. PPLs, as partners in guidance, advice and participatory field activities, should be rewarded sufficiently for the serious and intensive services they provide. Successful programs will enhance the cooperative's income and farmers' incomes, thus helping to reduce poverty. These

advantages can be realised with support from appropriate government policies. Success of programs will promote prosperity in rural areas of NTT.

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Pengembangan kehutanan melalui pengembangan produk hutan non kayu di Nusa Tenggara Timur

Silver Hutabarat¹

Abstrak

'Forest for people' adalah tema dari Kongres Kehutanan Sedunia VIII yang diadakan di Jakarta pada tahun 1978. Arti dari pada tema tersebut adalah bahwa hutan semestinya dapat memberikan keuntungan pada masyarakat, khususnya penduduk yang tinggal disekitarnya. Akan tetapi, dalam kenyataannya sumberdaya hutan Indonesia, baik secara kuantitas maupun kualitas semakin menurun dengan dahsyat, demikian juga kesejahteraan masyarakat di dalam dan sekitar hutan tidak banyak berubah. Dari 1.8 juta hektar lahan hutan di Nusa Tenggara Timur (NTT), 661 ribu hektar mengalami penurunan. Penurunan hutan terus berlanjut semakin cepat sehingga penguranganpun tak dapat dihindari. Pengelolaan hutan selama ini menekankan pada pengelolaan produksi kayu. Dimasa mendatang semestinya lebih ditekankan pada pengelolaan sumberdaya alam hutan secara menyeluruh (termasuk sumber kayu dan non kayu) serta meningkatkan peran serta masyarakat. Propinsi NTT tidak terbilang sebagai penyedia kayu di Indonesia, akan tetapi, akibat dari kemiskinan yang ada di dalam dan sekitar hutan maka penebangan kayu ilegal pun terjadi di banyak kabupaten di NTT. Untuk mencegah kegiatan tersebut alternative untuk pemberdayaan ekonomi harus di lakukan. Salah satunya adalah pemberdayaan hasil hutan non kayu. Ada beberapa produk hutan non kayu yang cocok untuk bisa dikembangkan di NTT, seperti Lak (*Laccifer lacca*), madu (*apis*), ulat sutra (*Bombyx mori*), kemiri (*Aleurites moluccana*), mede (*Anacardium occidentale*), asam (*Tamarindus indica*) dan jathropa (*Jathropa curcas*). Permasalahan dalam pengembangan produk hutan non kayu adalah tidak adanya master-plan pada pengembangan produk hutan non kayu, tidak adanya modal, dan bibit-bibit tenaga berkemampuan.

Forestry development through development of non-timber forest products in East Nusa Tenggara

Silver Hutabarat^{1a}

Abstract

'Forest for people' was the theme for the Eighth World Forestry Congress held in Jakarta in 1978. The meaning was that forests should benefit people, especially the people in and around the forests. However, the fact is that forests in Indonesia are decreasing in terms of quantity and quality, but people are still in the same social condition as previously. From 1.8 million hectares of forest land in East Nusa Tenggara (NTT), 661,000 ha are

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degraded. Forest degradation continues at an even higher rate today and desertification may be unavoidable. Until now, forest management has focused on timber management. For the future, it has to shift to forest resource management, including both timber and non-timber resources, and more people participation. NTT province is not considered a timber supplier in Indonesia; however, due to the poverty of the people in and around forests, illegal cutting is rampant in many districts. In order to avoid this, some alternatives for generating income are needed. One alternative is the development of non-timber forest products. There are many non-timber forest products suitable to be developed in NTT, including lak (*Laccifer lacca*), honey (*Apis*), silkworm (*Bombyx mori*), kemiri (*Aleurites moluccana*), cashew nut (*Anacardium occidentale*), tamarind (*Tamarindus indica*) and jathropa (*Jathropa curcas*). The problems in developing these products include no master plan, lack of capital, lack of seedlings and lack of skills.

Pendahuluan

'Forest for people'. Kalimat ini adalah tema yang sangat terkenal dari suatu kongres besar yaitu Kongres Kehutanan Sedunia VIII yang diadakan di Jakarta pada tahun 1978. Begitu luas pengertian forest for people disini dan begitu tinggi cita-cita yang diharapkan dari tema tersebut, intinya adalah hutan harus digunakan untuk kemaslahatan umat manusia. Setelah sekian lama kongres tersebut berakhir, apakah cita-cita atau harapan yang diinginkan oleh kongres tersebut terwujud? Apakah hutan telah dikelola dan dimanfaatkan untuk kemaslahatan umat manusia terutama masyarakat di dalam dan sekitar hutan? Kenyataannya harapan yang dicetuskan di dalam kongres dengan kenyataan yang ada sangat jauh. Sumberdaya hutan Indonesia, baik secara kuantitas maupun kualitas semakin menurun dengan dahsyat, demikian juga kesejahteraan masyarakat di dalam dan sekitar hutan tidak banyak berubah sejak kongres berakhir (Hutabarat 2005).

Sebagai dampak dari pemanfaatan sumber daya hutan yang tidak sesuai dengan azas kelestarian, kita telah meninggalkan lahan dan hutan rusak sangat luas. NTT dengan luas kawasan hutan 1.808.990 ha (38.21 % dari luas daratan) mempunyai luas lahan kritis 2.109.496 ha (44.55 % dari luas daratan). Luas lahan kritis dalam kawasan hutan 661.680 ha dan di luar kawasan hutan 1.447.816 ha. Laju lahan kritis selama 20 tahun terakhir seluas 15.163 ha per tahunnya, sedangkan luas tanaman RHL selama 20 tahun terakhir 3.615 ha, sehingga perbandingan antara laju degradasi dengan upaya penanaman adalah 4:1. Kondisi ini sangat memprihatinkan dan dikhawatirkan akan terjadi peristiwa penggurunan.

Sesuai dengan UU No. 41 tahun 1999 tentang kehutanan, menyatakan bahwa penyelenggaraan kehutanan bertujuan untuk sebesar-besarnya bagi kemakmuran

rakyat yang berkeadilan dan berkelanjutan dengan mengoptimalkan aneka fungsi hutan yang meliputi fungsi konservasi, fungsi lindung, dan fungsi produksi untuk mencapai manfaat lingkungan, sosial, budaya dan ekonomi yang seimbang dan lestari.

Pengelolaan hutan selama ini lebih menekankan pada produksi kayu (timber based management), dimasa sekarang dan mendatang seharusnya lebih ditujukan kepada pengelolaan sumberdaya alam hutan secara menyeluruh (forest resources management) dengan berorientasi pada peningkatan peran-serta masyarakat. Pembangunan kehutanan di NTT diarahkan pada pemberdayaan ekonomi rakyat dengan visi terwujudnya fungsi hutan dan lahan secara optimal untuk kesejahteraan masyarakat, sedangkan misinya adalah memulihkan, mempertahankan dan meningkatkan fungsi hutan dan lahan baik sebagai faktor produksi maupun sebagai penyangga kehidupan.

Pengembangan Aneka Usaha Kehutanan merupakan jawaban terhadap tantangan tersebut diatas. Pengembangan Aneka Usaha Kehutanan diarahkan pada pengembangan komoditi hasil hutan bukan kayu yang memiliki keunggulan komparatif dan kompetitif yang tinggi, sehingga peluang pengembangannya sangat tinggi bagi peningkatan pendapatan asli daerah (PAD) dan devisa Negara. Tekanan terhadap hutan semakin besar dan semakin sulit dihadapi. Hal ini disebabkan salah satunya oleh semakin banyaknya aktor yang berkepentingan dengan permasalahan hutan dan kehutanan. Oleh karena itu tak bisa dihindari lagi bahwa permasalahan hutan dan kehutanan tidak bisa diselesaikan hanya oleh pihak kehutanan saja, tetapi harus melibatkan semua pihak yang terkait. Apalagi dengan bergulirnya otonomi daerah, banyak sekali daerah yang mengandalkan eksploitasi hutan untuk peningkatan PAD mereka. Demikian juga hutan tidak bisa

dilihat sebagai suatu sistem yang terlepas dari kegiatan lainnya, tapi hutan harus dipandang sebagai suatu subsistem dalam suatu sistem pembangunan kewilayahaan.

Kondisi umum

Nusa Tenggara Timur merupakan provinsi kepulauan yang terdiri dari 566 pulau dengan luas daratan 4.734.990 hektar. Dari luas daratan tersebut 70 % nya merupakan daerah berbukit sampai bergunung dengan kondisi tanah yang berbatu dan pada umumnya tingkat kesuburan tanahnya rendah. Keseluruhan luas daratan tersebut diperkirakan hanya sekitar 2.6 % saja yang cocok untuk pertanian lahan basah dan sekitar 31.7 % cocok untuk pertanian lahan kering, sedangkan sisanya cocok untuk pertanian tanaman keras atau hutan.

Luas kawasan hutan NTT sesuai hasil Paduserasi antara Pola Tata Guna Hutan Kesepakatan dengan Rencana Tata Ruang Wilayah Propinsi NTT adalah 1.808.990 hektar (Surat Keputusan Menteri Kehutanan dan Perkebunan No. 423/Kpts-II/1999 tanggal 15 Juni 1999) atau 38.2% dari luas daratan (Tabel 1).

Tabel 1. Rincian luas kawasan hutan tersebut sebagai berikut (hektar)

Cagar Alam	67
Suaka Margasatwa	19
Taman Wisata Alam	159
Taman Nasional	59
Hutan Bakau	41
Taman Buru	6
Hutan Lindung	731
Hutan Produksi Terbatas	197
Hutan Produksi Tetap	428
Hutan Produksi Konversi	102

Dengan semakin meningkatnya penebangan liar, perambahan lahan kawasan hutan, kebakaran/pembakaran maka dikhawatirkan angka-angka diatas telah banyak menalami penurunan baik secara kuantitas maupun kualitas. Oleh karena itu untuk

menekan laju penurunan kuantitas maupun kualitas hutan maka upaya pembangunan hutan harus terus digalakkan dengan berorientasi pada peningkatan kesejahteraan masyarakat. Selain menggalakan Gerakan/GN RHL (Gerakan Rehabilitasi Hutan dan Lahan), pengembangan aneka usaha kehutanan juga harus menjadi prioritas dalam pembangunan kehutanan. Dengan semakin meningkatnya kerusakan hutan di NTT maka telah terlihat dampaknya dalam beberapa tahun terakhir ini, antara lain berupa bencana banjir, tanah longsor dan kekeringan yang semakin panjang.

Aneka usaha kehutanan

Beberapa hasil hutan non kayu yang potensial untuk dikembangkan untuk meningkatkan kesejahteraan masyarakat antara lain:

1. Kutu lak (*Laccifer lacca*) (Figure 1)

Lak merupakan hasil sekresi kelenjar hipodermis serangga *Laccifer lacca*. Jenis tanaman inang yang dibutuhkan oleh kutu lak diantaranya pohon kesambi (*Schleichera oleosa*), Akasia (*Acacia vilosa*), kaliandra (*Calliandra* spp.). Di NTT paling banyak digunakan sebagai inang adalah kesambi. Bila tanaman kesambi dikembangkan dan diusahakan secara baik maka dapat menjadi peluang usaha ekonomi rakyat. Sebagai contoh hasil penjualan lak di Kabupaten Sumba Timur sebagai berikut (Tabel 2).

Beberapa hambatan yang dihadapi dalam pengembangan kutu lak a.l. (Hidayat 2001):

- Teknik budidaya kutu lak dan cara produksi masih belum dikuasai sepenuhnya oleh petani
- Sarana produksi seperti benih dan bibit belum cukup tersedia
- Teknologi, peralatan dan teknik pengolahan hasil belum dikuasai sehingga mutu masih rendah
- Data tentang potensi lokasi yang dapat dikembangkan untuk tanaman inang dan kutu lak belum tersedia dengan baik

Tabel 2. Poduksi di NTT—million Rp per tahun

	2000	2001	2002	2003	2004	2005
KutuLak	1.107	2.586	2.268	6.800	7.779	26.604
Kemiri	1.2	8.1	2.3	4.2	7.1	7.7
Asam	1.1	7.8	4.6	11.9	9.2	11.8



Figure 1. Kutu lak (*Laccifer lacca*)



Figure 2. Lebah madu (*Apis* sp.)



Figure 3. *Morus* spp. dengan ulat sutera (*Bombyx mori*)



Figure 4. Kemiri (*Aleurites moluccana*)



Figure 5. Asam (*Tamarindus indica*)



Figure 6. Jarak pagar (*Jatropha curcas*)

2. Lebah madu (*Apis sp.*) (Figure 2)

Pengembangan lebah madu sudah lama dikakukan, namun hasilnya belum optimal. Padahal peluang usaha ini cukup potensial untuk dikembangkan, mengingat beragamnya sumber pakan lebah yang terdapat di Nusa Tenggara Timur. Kondisi iklim NTT yang panas membantu mempercepat proses penurunan kadar air madu, sehingga kualitas madu menjadi baik. Jenis-jenis lebah penghasil madu di Indonesia antara lain *Apis cerana*, *Apis florum*, *Apis mellifera* dan *Apis dorsata*. Sampai saat ini *Apis dorsata* masih mempunyai peranan penting dalam perlembahan di Indonesia (Departemen Kehutanan 1996).

3. Ulat sutera (*Bombyx mori*) (Figure 3)

Di beberapa tempat antara lain di kabupaten TTS (Timor Timur Selatan) telah dilakukan percobaan penanaman murbei (*Morus spp.*) sebagai pakan ulat sutera oleh Dinas Kehutanan Kabupaten TTS. Hasilnya masih perlu diuji pada skala yang lebih besar. Salah satu kendala usaha persuteraan alam di Indonesia adalah produktivitas kebun murbei yang relative masih rendah rata-rata 8 ton/ha/th dibandingkan dengan kebun murbei di RRC yang bisa mencapai 22 ton/ha/th (Pudjiono 2005).

4. Kemiri (*Aleurites moluccana*) (Figure 4)

Hampir semua daerah di Nusa Tenggara Timur telah mengupayakan penanaman kemiri sebagai tanaman multi-manfaat pada kegiatan reboisasi dan hutan rakyat. Pemanfaatan buah kemiri ini juga merupakan peluang usaha yang dapat dikembangkan oleh masyarakat. Biji buah kemiri banyak digunakan oleh masyarakat untuk bumbu masak. Biji kemiri dapat juga diambil minyaknya untuk berbagai keperluan bahan industri, misalnya untuk bahan cat, pernis, sabun, obat-obatan dan kosmetik (Sunanto 1994).

5. Jambu mete (*Anacardium occidentale*)

Dalam Gerakan Rehabilitasi Hutan dan Lahan pemerintah pusat telah mengalokasikan dana yang cukup besar untuk merehabilitasi hutan dan lahan kritis di Nusa Tenggara Timur. Salah satu jenis tanamannya adalah jambu mete. Hampir semua daerah di NTT cocok untuk penanaman jambu mete, dan permintaan pasar atas komoditas ini cukup tinggi. Adaptasi tanaman jambu mete sangat tinggi pada lahan kering dengan jumlah curah hujan rendah.

Kualitas jambu mete dari NTT sangat terkenal dengan mutunya yang tinggi.

6. Asam (*Tamarindus indica*) (Figure 5)

Tanaman asam banyak ditanam di berbagai wilayah di Indonesia termasuk di NTT. Hampir semua bagian tanaman asam dapat digunakan untuk berbagai keperluan, sehingga tanaman ini disebut tanaman multiguna. Kegunaannya antara lain: daunnya untuk bumbu masak, bahan obat dan kosmetika; bunga tanaman asam merupakan sumber madu yang penting bagi pengembangan budi daya lebah madu; buahnya banyak digunakan dalam industri minuman, es krim, selai, obat tradisional; biji asam dapat digunakan sebagai makanan ternak dan bahan industri (Rukmana 2005).

7. Jarak pagar (*Jathropa curcas*) (Figure 6)

Pemanfaatan minyak Jarak (Pengembangan Jarak-Penanaman jarak pagar sangat dimungkinkan di NTT yang mempunyai lahan kritis yang cukup luas. Pada tahun 2006 ini pemerintah tampaknya akan memulai program penanaman jarak pagar secara besar-besaran di NTT. Namun untuk sektor kehutanan tampaknya harus dilakukan secara hati-hati. Untuk menjadi tanaman murni di kawasan hutan tidaklah memungkinkan, karena tanama ini bukan termasuk tanaman kehutanan. Bila dijadikan tanaman sela, perlu diperhatikan bahwa tanaman ini mengandung minyak yang mudah terbakar, sehingga bisa menimbulkan bahaya kebakaran.

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Masalah penggunaan dan pemilikan tanah di pedesaan di propinsi Nusa Tenggara Timur

Daniel R. Masadu¹

Abstrak

Pertanian di pedesaan terfokus pada dua aspek yaitu penggunaan tanah dan pemilikan tanah.

Tanah: berdasarkan data tahun 2005 menjelaskan, dari luas wilayah Propinsi Nusa Tenggara Timur 47.350 km² atau 4.735.000 ha, 80% berupa hutan dan padang rumput. Luas hutan mencapai 40% dari luas wilayah, hutan lebat hanya 10%. Tanah yang sudah diusahakan secara intensif mencapai 15% dari luas wilayah, didominasi oleh pertanian tanah kering berupa tegalan (8%).

Keadaan pemilikan tanah: Penguasaan tanah yang dominan adalah Tanah Negara dan Tanah dan Tanah Ulayat/Suku mencapai 50% dari luas wilayah Tanah yang merupakan hak 25%, baru 6% terdaftar pada Badan Pertanahan Nasional.

Permasalahan tanah: Adanya permukiman di daerah konservasi (ketinggian 500 m dan lebih, lereng 40% dan lebih) merupakan permasalahan utama/permasalahan lainnya adalah areal padang rumput yang luas belum digarap.

Permasalahan pemilikan tanah: Belum jelas perbedaan di lapangan antara Tanah Negara dan Tanah Ulayat/Suku menyulitkan proses pemberian hak atas Tanah Negara. Minimnya alat bukti dan kurang jelasnya sistem pewarisan adat, mempersulit proses pembuktian hak atas tanah.

The problem of land use and ownership in villages in East Nusa Tenggara province

Daniel R. Masadu^{1a}

Abstract

In villages the main occupation is farming. The use of land and the ownership of land are considered.

Land use: Based on data for 2005, the province of East Nusa Tenggara (NTT) has an area of 47,350 km² or 4,735,000 ha, of which 80% is forest and savannah. The area of forest is about 40% with only 10% under dense forest. The land that is cultivated intensively is about 15%, and it is dominated by dryland farming (8%). In the province of NTT there is less arable land than savanna on which to develop agriculture.

Condition of land ownership: The dominant land ownership classifications are 'country' land and 'ethnic' land. These make up about 50% of the total land area. Of the 25% of the land that is subject to land rights claims, only 6% is listed by the National Council of Land as successfully claimed. The status of 'country' and 'ethnic' land is not yet clear and the slow settlement of land rights claims make ownership a major impediment in catchments.

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Problems of land capability: There are problems using land where settlement has occurred in the conservation areas (more than 500 metres high with greater than 40% slope) and in areas of savanna that are not cultivated. The problems of land and soil conservation are most severe where land is more than 500 metres elevation and of greater than 40% slope.

Problem of land ownership: The difference between country land and ethnic land is not completely clear so it is difficult to process land claims. The limited evidence and the lack of clarity in the system of custom inheritance cause difficulties in establishing land rights.

The following recommendations are made: implement careful and intensive management of areas in upper catchments of river systems; acknowledge the existence of ethnic land and the system of inheritance; improve administration of land tenure in villages; sustainable implementation of inventories of land ownership, use and capability; and issue ownership certificates in relation to productive farming land and land subject to government financial programs (*Anggaran Pembelanjaan Negara* (national) and *Anggaran Pembelanjaan Daerah* (provincial)).

Pendahuluan

Tulisan ini untuk memenuhi permintaan Panitia Penyelenggara Lokakarya Internasional Badan Perencanaan Pembangunan Daerah Propinsi Nusa Tenggara Timur dalam rangka pelaksanaan: 'Lokakarya Internasional tentang Pembangunan Perdesaan Terpadu di Nusa Tenggara Timur' tanggal 5 sampai dengan 7 April 2006 di Kupang.

Berbicara mengenai pembangunan perdesaan tentang fokus perhatian kita terutama ditujukan pada pembangunan pertanian. Salah satu faktor penting dan merupakan modal dasar dalam pembangunan pertanian adalah tanah.

Tanah dalam konteks pelaksanaan tugas di bidang pertanahan meliputi dua aspek yaitu penggunaan tanah berkaitan dengan kondisi fisik wilayah atau bidang tanah sedangkan pemilihan tanah berkaitan dengan status hukum hak atas tanahnya.

Data yang digunakan merupakan hasil kegiatan dari Badan Pertanahan Nasional yang dilaksanakan oleh Kantor Wilayah Badan Pertanahan Nasional Propinsi Nusa Tenggara Timur dan Kantor Pertanahan Kabupaten/Kota se- Propinsi Nusa Tenggara Timur.

Kedaaan penggunaan dan pemilikan tanah di bidang Nusa Tenggara Timur

Penggunaan tanah

Penggunaan tanah merupakan wujud kegiatan manusia di atas tanah. Penggunaan Tanah yang bersifat perdesaan menitikberatkan pada bidang perta-

nian dalam arti luas. Hasil kegiatan pemetaan penggunaan tanah oleh Badan Pertanahan Nasional menjelaskan keadaan penggunaan tanah di Propinsi Nusa Tenggara Timur sebagaimana ditunjukkan pada Tabel 1.

Tabel 1. Luas Penggunaan Tanah Perdesaan. Propinsi Nusa Tenggara Timur (Tahun 2005)

No.	Penggunaan tanah	Luas	
		ha	%
1	Perkampungan	50.530	1,07
2	Sawah:	96.849	2,05
	Sawah Irigasi	30.994	0,66
	Sawah Tadah Hujan	65.855	1,39
3	Tegalan	383.028	8,09
4	Kebun Campuran	200.206	4,23
5	Perkebunan Rakyat	52.165	1,10
6	Kawasan Industri	1.472	0,03
7	Hutan:	1.999.075	42,30
	Hutan Lebat	412.830	8,72
	Hutan Belukar	978.866	20,67
	Hutan Sejenis	603.379	12,74
8	Semak	78.100	1,65
9	Padang Rumput	1.849.233	39,05
10	Tanah Kosong/Tandus/ Rusak	20.407	0,43
	Perairan/Rawa/Danau	6.985	0,15
	Jumlah	4.735.000	100,00

Dari data luas penggunaan tanah dari Tabel 1 dapat diketahui penggunaan tanah hutan dan padang rumput mendominasi penggunaan tanah di daerah ini ($\pm 80\%$). Hutan hampir mencapai 2 juta hektar tetapi mempunyai kualitas yang masih rendah berhubung hutan lebat sekitar 10% saja. Padang rumput yang

tergolong penggunaan tanah kurang produktif jika ditambah dengan semak juga hampir mencapai 2 juta hektar atau 40% dari luas wilayah. Di lain pihak, penggunaan tanah pertanian yang intensif meliputi sawah, tegalan, kebun campuran dan perkebunan rakyat 0,7 juta hektar atau 15% dari luas wilayah, sebagian besar (8%) berupa tegalan.

Keadaan pemilikan tanah

Pemilikan tanah merupakan hubungan antar orang dan tanah, baik penguasaan yang bersifat komunal maupun kepemilikan yang bersifat individual.

Undang-Undang Nomor 5 Tahun 1960 tentang Peraturan Dasar Pokok-Pokok Agraria yang biasa dikenal dengan Undang-Undang Pokok Agraria singkatnya UUPA mengatur Status Penguasaan Tanah yang terdiri dari Tanah Negara dan Tanah Hak. Tanah Negara adalah Tanah yang belum dilekati sesuatu hak atas tanah sedangkan Tanah Hak adalah yang sudah dilekati sesuatu hak atas tanah seperti Hak Milik, Hak Guna Usaha, Hak Guna Bangunan dan Hak Pakai. Disamping itu ada hak khusus yang bersifat publik yang diberikan kepada Instansi Pemerintah dan Pemerintah Daerah yaitu Hak Pengelolaan dan Hak Pakai selama dipergunakan. Undang-Undang Pokok Agraria (UUPA) juga mengakui Hak Ulayat yang merupakan hak komunal masyarakat hukum adat yang di Nusa Tenggara Timur dikenal dengan Suku/Tanah Suku, sepanjang menurut kenyataannya masih ada. Hasil pemetaan status penguasaan tanah dan pendaftaran hak atas tanah di tunjukkan pada Tabel 2.

Tabel 2. Luas penguasaan/ pemilikan tanah. Propinsi Nusa Tenggara Timur

No.	Penguasaan/ pemilikan tanah	Luas	
		ha	%
1	Tanah Hak UUPA	296.476	6,26
2	Tanah Milik Adat	390.924	8,26
3	Tanah Kawasan	1.700.000	35,90
4	Hutan/Lindung		
	Tanah Negara/Ulayat/ Suku	2.347.600	49,58
	Jumlah	4.735.000	100,00

Dari hasil pemetaan Status Penguasaan Tanah pada Tabel 2 menunjukkan sulitnya membedakan antara Tanah Negara dan Tanah Ulayat/Suku, yang luasnya kurang lebih 2,3 juta hektar atau 50% dari

luas wilayah. Tanah hak diperkirakan mencapai 0,7 juta hektar, atau 15% dari luas wilayah, telah terdaftar di Badan Pertanahan Nasional (sampai dengan tahun 2005) seluas 294.476 Ha (6%), sisanya (14%) merupakan Tanah Milik Adat. Akan tetapi dari luas tanah yang terdaftar hanya 6% (atau 10% luas wilayah Budidaya ±3 juta hektar), telah mencakup 417.972 bidang tanah, hampir mencapai 30% dari perkiraan 1,5 juta bidang tanah di Propinsi Nusa Tenggara Timur, 95% merupakan Hak Milik.

Permasalahan penggunaan dan pemilikan tanah dalam pembangunan perdesaan di propinsi Nusa Tenggara Timur

Permasalahan Penggunaan Tanah

Dengan berpedoman pada peraturan perundangan dan kriteria kendala fisik wilayah maka untuk mewujudkan penggunaan tanah dengan azas lestari, optimal, seimbang dan serasi dapat didefinisikan beberapa permasalahan penggunaan tanah sebagaimana uraian berikut.

Permukiman di daerah konservasi

Menurut I Made Sandy dalam buku Penggunaan Tanah (Land Use) di Indonesia, publikasi No.75 Direktorat Tata Guna Tanah Direktorat Jenderal Agraria Departemen Dalam Negeri, dihadapkan bahwa ada dua hal yang rupanya paling menentukan bagi tanah (wilayah) sebagai tempat kegiatan masyarakat, atau 'tanah usaha' yaitu : 1) Ketinggian, 2) Lereng. Dari segi ketinggian tempat, daerah antara 500–1000 meter memerlukan tumbuhan dan tanaman yang dapat mencegah erosi, sedangkan ketinggian di atas 1000 meter seyogyanya dihentikan demi keawetan tanah usaha di bawahnya. Dari segi lereng permukaan tanah ditetapkan lereng 40% sebagai batas tanah usaha baik dan tidak baik. Tanah dengan lereng 40% dan lebih tinggi, disarankan agar tidak diusahakan, dibiarkan supaya ditutupi hutan lindung. Hasil pemetaan menunjukkan daerah ketinggian di atas 500 meter di Propinsi Nusa Tenggara Timur mencapai 1,3 juta hektar. Sedangkan daerah berlereng 40% dan lebih tinggi mencapai 1,7 juta hektar dan sebagian besar berada pada ketinggian di atas 500 meter dari permukaan air laut.

Dengan demikian seyogyanya daerah seluas 1,7 hektar seyogyanya dijadikan daerah konservasi,

namun pada kenyataannya banyak terdapat permukiman beserta tanah usaha pertanian yang luas.

Hutan berkualitas rendah

Kondisi hutan lebat tidak lebih dari 10% luas wilayah sebagai akibat dari tingginya tingkat okupasi masyarakat di daerah konservasi. Hutan lebat berubah menjadi hutan belukar di samping hutan sejenis yang cukup luas. Walaupun secara kuantitatif luas hutan telah memenuhi kriteria dalam Undang-Undang Nomor 41 Tahun 1999 tentang Kehutanan yaitu paling kurang 30% dari luas wilayah secara kualitatif luas hutan lebat masih sangat kurang.

Tanah kurang produktif sangat luas

Padang rumput yang demikian luas menunjukkan tanah kurang produktif masih banyak yang sebenarnya merupakan potensi untuk pengembangan usaha lain misalnya perkebunan.

Tanah pertanian produktif masih sempit

Tanah sawah dan perkebunan yang dapat mendorong petani keluar dari sistem pertanian sub sistem ternyata hanya meliputi areal yang sempit.

Permasalahan penguasaan/pemilikan tanah

Sistem Penguasaan Tanah dan Tanah Ulayat/Suku boleh jadi antara Tanah Negara dan Tanah Ulayat/Suku. Hal ini mempersulit dalam proses pemberian hak atas Tanah Negara.

Alat bukti pemilikan tanah tidak lengkap/tidak ada.

Alat bukti tertulis sebagai alas hak menjadi pemilikan suatu bidang tanah umumnya tidak lengkap bahkan tidak ada. Juga ketentuan pewarisan adat kurang jelas, mempersulit upaya pembuktian hak atas tanah sesungguhnya.

Banyak bidang tanah yang belum terdaftar

Data 70% bidang tanah belum bersertipikat menunjukkan betapa luasnya wilayah yang berada di luar kendali Pemerintah dalam hal ini Badan Pertanahan

Nasional. Berkaitan dengan adanya bantuan dana Pemerintah (APBN/APBD) dalam suatu kegiatan yang memerlukan tanah, seyogyanya bidang tanah tersebut telah terdaftar.

Penutup

Sabagai penutup dikemukakan beberapa kesimpulan dan saran sebagai berikut:

Kesimpulan

1. Penggunaan tanah di Propinsi Nusa Tenggara Timur menunjukkan areal tanah pertanian masih sempit sementara areal padang rumput yang dapat dikembangkan untuk berbagai jenis usaha cukup luas.
2. Masalah konservasi tanah terutama di atas ketinggian 500 meter dan lebih dan atau kemiringan 40% dan lebih menjadi persoalan penggunaan tanah yang utama.
3. Belum jelasnya Status Tanah Negara dan Tanah Ulayat/Suku serta minimnya alas hak dan bidang tanah yang terdaftar masih sedikit, menjadi persoalan dalam pemilihan tanah.

Saran

Hal-hal yang perlu dilakukan:

1. Pengelolaan daerah hulu Daerah Aliran Sungai (DAS) secara intensif.
2. Penelitian mengenai eksistensi Tanah Ulayat/Suku dan Sistem pewarisan adat.
3. Penertiban dan peningkatan kualitas sistem administrasi pertanahan di tingkat desa.
4. Pelaksanaan Inventarisasi penguasaan, pemilikan, penggunaan dan pemanfaatan tanah (P4T) secara cepat dan berkelanjutan.
5. Pensertipikatan tanah pertanian produktif dan tanah-tanah letak kegiatan dari program Pemerintah (Sumber dana APBN/APBD).
Demikian penjelasan, semoga bermanfaat.

Pengaruh sosial budaya masyarakat terhadap produktivitas petani pada daerah intervensi CARE di kabupaten Belu

Charles A. Bisingslasi¹ dan Ludo Korbafo²

Abstrak

Fokus dari makalah ini adalah memahami pengaruh sosial budaya terhadap produktivitas pertanian lahan kering. Orientasi para petani di wilayah-wilayah target di mana Care bekerja masih sangat dipengaruhi oleh cara berpikir yang tradisional. Para petani memelihara hubungan yang baik di antara Tuhan, alam, nenek moyang, keluarga, dan sanak saudara. Kegiatan petani tidak dikendalikan oleh pasar dan produksi tetapi oleh hubungan yang harmonis. Pola pikir yang demikian menimbulkan akibat terhadap kegiatan-kegiatan pertanian. Fenomena pengolahan pertanian yang diamati secara langsung adalah pertanian subsisten. Kegiatan petani tidak bertujuan melibatkan produksi dengan teknologi inovatif melainkan bagaimana petani menjaga ketersediaan pangan sampai panen berikutnya. Orientasi bukanlah pada produktivitas yang tinggi dan pasar. Oleh karena itu petani tidak memiliki motivasi yang tinggi untuk meningkatkan produksi mereka dan memasarkannya dalam jumlah besar.

Untuk memperbaiki kualitas hidup petani, khususnya pendapatan mereka, tenaga penyuluh pertanian harus membangun kesadaran petani untuk orientasi yang baru. Pertanian tradisional atau pertanian subsisten tidak relevan lagi dalam era globalisasi yang sarat dengan kompetisi. Pertanian subsisten harus dirubah menjadi pertanian produktif untuk pasar. Petani sebaiknya terbuka terhadap teknologi inovatif untuk meningkatkan jumlah produksi serta memelihara kualitas dan ketersediaannya. Agen-agen pembangunan juga harus mengembangkan jaringan pasar bagi petani. Pasar adalah juga factor pendorong untuk melipatgandakan produksi mereka. Nilai-nilai social budaya hanyalah merupakan kekuatan moral untuk menjaga identitas. Akhirnya penulis setuju terhadap pernyataan A.W. Whitehead yang mengatakan mentalitas yang baru lebih penting daripada ilmu dan teknologi yang baru.

Social and cultural impacts on farm productivity in CARE projects in Belu district

Charles A. Bisingslasi^{1a} and Ludo Korbafo^{2a}

Abstract

The focus of this paper is understanding the influence of sociocultural factors on the productivity of dryland agriculture. Farmers in the target areas where CARE works are still highly influenced by traditional ways. Farmers maintain good and harmonious relationships with the Supreme God, nature, ancestors, family and

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relatives. Farmers' activity is not highly market driven but rather it is a means to maintain this harmonious relationship. Such a way of thinking impacts on agricultural activities. Farmers are not aiming at increasing production with innovative technology: instead they aim to maintain food security at home until the next harvest. In other words their orientation is not towards high productivity and satisfying markets.

To improve the quality of life of farmers, especially through their income, development programs need to increase awareness of the potential advantages of new orientation. Traditional farming, or subsistence farming, is not relevant in the era of globalisation where the emphasis is on competition. Activities could move from purely subsistence farming to more productive farming to supply markets. Those farmers who are open to innovative technology could increase production and maintain high quality products and continuity of supply. Development programs should improve market networks for farmers because supply to markets would be a factor driving increased production. Sociocultural values are only a moral force to maintain identity. The writer favours adopting the slogan: *a new mentality is more important than new science and new technology.*

Kabupaten Belu merupakan salah satu Kabupaten di Propinsi Nusa Tenggara Timur (NTT) yang letaknya sangat strategis, karena berbatasan langsung dengan Negara Republic Democratic Timor Leste (RDTL) baik darat maupun laut, dengan batas-batas wilayah sebagai berikut :

- Sebelah utara : Selat Ombai
- Sebelah selatan : Laut Timor
- Sebelah timur : Negara Republic Democratic Timor Leste (RDTL)
- Sebelah barat : Kabupaten Timor Tengah Utara dan Timor Tengah Selatan

Kondisi umum wilayah

- Iklim : Tropis
- Musim hujan : Nopember–Maret
- Musim kemarau : April–Oktober
- Curah hujan : 644,58 mm/tahun
- Suhu udara : 24°–34°C
- Morfologi wilayah : Berbukit–bukit dengan derajat kemiringan lebih dari 50%
- Jenis tanah campuran : Aluvial, campuran alluvial dan litosol serta mediteran, rendzina dan litosol
- Wilayah administrasi : 17 Kecamatan 12 kelurahan dan 181 desa
- Letak geografis : 124°–126° BT dan 0,9°–10° LS
- Luas wilayah : 343.777 km² (5,16% luas wilayah Propinsi NTT)

- Penduduk tahun 2004 : 334.439 jiwa (63.165 KK)
- Kepadatan penduduk : 140,57 jiwa/km²
- Pertumbuhan penduduk : 1,76% per tahun

Pengalaman Kegiatan Pembangunan di Pedesaan

Dalam rangka membangun masyarakat Kabupaten Belu, maka pemerintah telah menetapkan Strategi Pembangunan Daerah Kabupaten Belu untuk tahun 2004–2008 melalui 5 Program Prioritas yang disebut lima pilar pembangunan, yaitu Pembangunan Ekonomi; Pembangunan Sumber Daya Manusia; Pembangunan Prasarana Wilayah; Peningkatan Kualitas Pelayanan Pemerintah; dan Pembangunan Lingkungan Hidup.

Sasaran utama dari semua pembangunan di atas ditujukan kepada masyarakat dan berlokasi di semua desa berdasarkan potensi dan permasalahan yang dimiliki oleh setiap desa. Pada kesempatan ini kami hanya akan mengangkat sebagian kecil pengalaman kegiatan pembangunan di desa yakni yang berkaitan dengan pengaruh sosial budaya masyarakat terhadap produktivitas petani di Kabupaten Belu.

Pertanian di Kabupaten Belu pada umumnya masih tradisional dan sangat dipengaruhi oleh sosial budaya masyarakat dan topografi wilayah. Secara agro-ecozone petani tradisional di Kabupaten Belu sudah mempunyai kebiasaan tersendiri dalam bercocok tanam, yaitu mulai dari memilih jenis tanaman, waktu menanam, waktu panen sampai pada pasca panen berdasarkan kondisi wilayah masing-masing, yaitu daerah pantai, dataran rendah, pegunungan maupun pada lahan sawah, lahan kering, daerah delta dan daerah bebatuan.

Di Kabupaten Belu terdapat 3 (tiga) wilayah adat yang mempunyai karakteristik pertanian masing-masing, yaitu (1) Wilayah Adat Tasimane; (2) Wilayah Adat Tasifeto dan (3) Wilayah Adat Lamaknen.

Wilayah Adat Tasimane mempunyai wilayah pertanian di pinggir pantai dengan tanah delta yang luas membentang dan didominasi oleh tanaman padi sawah, kacang-kacangan, ubi-ubian, pisang dan kelapa. Sedangkan di daerah pegunungan didominasi oleh budidaya lahan kering dengan tanaman pangan jagung, kacang-kacangan, ubi-ubian dan pisang.

Wilayah Adat Tasimane memiliki musim tanam sampai tiga kali dalam setahun, sehingga wilayah ini menjadi lumbung pangan untuk Kabupaten Belu dan sekaligus menjadi daerah yang surplus sehingga dapat mengekspor hasilnya ke luar wilayah NTT sejak 50 tahun silam. Namun demikian wilayah ini juga merupakan wilayah rawan bencana banjir pada sepuluh tahun terakhir, seperti yang terjadi pada tanggal 10 dan 19 Januari 2006 lalu, dimana 24 Desa dalam tiga Kecamatan yaitu Malaka Barat, Malaka Tengah dan Weliman terendam air dengan ketinggian antara 1-2 meter yang mengakibatkan banyak kerusakan dan kehilangan harta benda masyarakat seperti rumah, lahan pertanian beserta tanamannya dan ternak bagi 7.804 KK (30.838 jiwa). Demikian juga sarana dan prasarana kesehatan, pendidikan dan fasilitas umumnya lainnya mengalami kerusakan ringan sampai kerusakan berat.

Tindakan cepat yang telah dilakukan oleh pemerintah Kabupaten Belu untuk menanggulangi musibah ini adalah segera membangun pos-pos komando untuk mendekatkan pelayanan kepada masyarakat yang terkena bencana, menyalurkan bantuan pangan, sandang, air bersih serta obat-obatan dan petugas medis sebagai tindakan antisipatif terhadap akibat susulan yang biasanya terjadi setelah bencana banjir seperti penyakit dan lain-lain. Masyarakat juga mendapat bantuan dari lembaga sosial keagamaan, pemerintah propinsi dan LSM lokal dan internasional serta berbagai lembaga/organisasi lainnya.

Upaya pemerintah untuk memindahkan masyarakat dari daerah-daerah yang rawan bencana banjir belum berhasil, karena masyarakat tetap berkeras dan bertahan untuk menempati wilayah-wilayah tersebut walaupun harus menghadapi bencana banjir yang terjadi setiap tahun.

Akibat setiap tahun dilanda bencana banjir, maka wilayah ini mengalami berbagai masalah antara lain

berkurangnya hasil pertanian masyarakat dari tahun ke tahun sebagai dampak dari berubahnya tekstur tanah. Daerah yang dulunya menjadi gudang pangan kini beralih menjadi daerah yang sering kekurangan pangan.

Untuk mengatasi berbagai permasalahan yang terjadi di wilayah ini, maka pemerintah Kabupaten Belu telah melakukan berbagai kegiatan, demikian juga perhatian dan upaya dari institusi Agama dan LSM lokal maupun internasional, seperti CARE Internasional Indonesia. Namun karena bencana banjir ini terus terjadi dari tahun ke tahun, maka permasalahan yang dihadapi belum tuntas diselesaikan pada tahun berjalan telah muncul lagi bencana banjir tahun berikutnya yang pada gilirannya memunculkan masalah baru yaitu meningkatnya masyarakat miskin di wilayah ini. Masyarakat di wilayah ini seakan pasrah pada keadaan dan menganggap persoalan yang terjadi setiap tahun adalah persoalan pemerintah dan LSM, sedangkan masyarakat hanya bersikap menunggu bantuan dari semua pihak. Ketergantungan masyarakat kepada pemerintah dan LSM sangat besar, belum ada sikap proaktif untuk mengelola DAS Benenain dari masyarakat, padahal sejak Mei 2004 telah diadakan pertemuan para petani dan bersepakat untuk mengelola DAS dalam rangka mengatasi permasalahan luapan banjir yang terjadi setiap tahun, namun kesepakatan itu tidak pernah ditindaklanjuti sampai sekarang.

Wilayah Adat Tasifeto lebih didominasi oleh pertanian lahan kering, dan hanya sebagian kecil wilayahnya merupakan sawah tadah hujan dan sawah irigasi tradisional maupun irigasi teknis/semi teknis yang dibangun oleh pemerintah. Tanaman pangan yang dominan adalah jagung, padi, ubi-ubian, kacang-kacangan dan bawang.

Wilayah ini sebagian besar terdiri dari pegunungan/perbukitan, sehingga menjadi wilayah yang sering terkena bencana angin, hama belalang dan kekeringan. Dan bagian yang sering mengalami kekeringan ialah daerah sekitar pantai.

Sedangkan Wilayah Adat Lamaknen yang hampir seluruh wilayahnya terdiri dari pegunungan, lebih didominasi oleh tanaman pangan berupa jagung, ubi-ubian, kacang-kacangan, bawang dan sebagian kecil tanaman padi sawah.

Masalah yang sering dihadapi oleh masyarakat di wilayah ini adalah hama belalang dan bencana angin serta masalah masalah sosial ekonomi lainnya.

Paham Antropologis Petani di Kabupaten Belu

Penduduk Kabupaten Belu merupakan rumpun bangsa Timor yang mempunyai asal usul sejarah yang sama walaupun terbagi dalam beberapa suku dan rumah adat. Melalui perkawinan, mereka memiliki hubungan persaudaraan dan pertalian darah. Namun demikian mereka selalu terkotak-kotak dalam suku, rumah adat dan kebiasaan-kebiasaan hidup setiap hari, yang menyebabkan sering terjadi perselisihan diantara mereka akibat salah paham maupun karena perebutan sumber hidup seperti hewan, hasil hutan maupun tanah/lahan garapan.

Masyarakat tani tradisional di Kabupaten Belu masih memiliki kepercayaan terhadap tiga dunia yang dalam kesehariannya sangat mempengaruhi pola hidup mereka termasuk dalam hal bercocok tanam. Dunia pertama disebut sebagai 'Dunia Atas' atau 'Dunia Supernatural', yang diyakini sebagai dunia yang didiami oleh Nai Maromak bagi masyarakat yang berbahasa Tetum dan Hot Essen bagi masyarakat yang berbahasa Bunak/Marae, Usi Neno bagi masyarakat yang berbahasa Dawan, yakni Tuhan Yang Maha Tinggi dan Maha Kuasa.

Masyarakat Belu sudah memiliki kepercayaan dan menghormati Tuhan Allah Yang Maha Tinggi secara turun temurun, dalam ungkapan doa untuk persembahan pada berbagai upacara adat, nama Tuhan Yang Maha Tinggi dan Maha Kuasa dikenal dengan nama 'Lolo liman la too, ain la too'. Ungkapan ini menunjukkan Tuhan Allah Yang Maha Tinggi, jauh di atas langit yang tidak dapat dijangkau oleh tangan dan kaki. Kepercayaan kepada esensi Tuhan Allah Yang Maha Tinggi sudah dikenal oleh masyarakat Belu jauh sebelum kedatangan agama dari Barat pada abad ke 15. Tuhan Yang Maha Tinggi selalu dipuja dan disembah dalam seluruh siklus pertanian masyarakat adat tradisional di Belu.

Dunia Kedua yang turut mempengaruhi kehidupan petani di Kabupaten Belu adalah 'Dunia Realita' yang sementara dialami dan dijalani dengan berbagai persoalan yang kompleks dan rumit. Secara tradisional mereka dapat menjelaskan semua fenomena alam yang terkait dengan Tuhan, namun mereka tidak mampu keluar dari realita yang ada. Berbagai persoalan pertanian yang dihadapi setiap hari, antara lain iklim yang ekstrim seperti curah hujan yang terlalu rendah atau terlalu tinggi, panas yang berlebihan, hama belalang, angin topan, bencana banjir, hasil pertanian yang semakin menurun dan

harga jual hasil pertanian yang murah mengakibatkan pendapatan masyarakat petani selalu rendah dan pada gilirannya berdampak pada tingkat kesejahteraan petani yang selalu memprihatinkan.

Semua fenomena di atas telah dialami para petani bertahun-tahun bahkan berabad-abad lamanya, namun hingga saat ini mereka belum menemukan solusi yang tepat untuk mengatasi berbagai fenomena alam dimaksud. Dengan tingkat pendidikan yang sangat rendah bahkan ada yang tidak pernah mengenyam pendidikan formal, mereka menjadi gembala yang setia pada tradisi dan tidak ingin menjadi nabi yang cakap untuk dapat meramal masa depan sekaligus mempunyaiantisipasi yang tepat terhadap semua fenomena alam yang terus berubah melalui kegiatan-kegiatan strategis dan nyata.

Dunia Ketiga yang dihadapi adalah 'Dunia Bawah' atau 'Dunia Arwah Leluhur'. Dunia Bawah diyakini masyarakat tani tradisional sebagai satu kelompok yang turut mempengaruhi kehidupan mereka di dunia realita atau dunia sekarang. Untuk menghormati keluarga yang meninggal, biasanya dilakukan acara kenduri yang melibatkan banyak keluarga, sahabat dan kenalan. Banyak biaya yang harus dikeluarkan demikian juga waktu yang lama untuk menyelesaikan acara dimaksud. Bangunan pekuburan yang dianggap sebagai rumah para keluarga yang telah meninggal selalu diperbaharui sebagai penghormatan kepada mereka. Banyak fenomena sosial dan kejadian, terutama bencana alam dan penyakit senantiasa dihubungkan dengan leluhur atau keluarga yang marah atau kecewa karena diperlakukan tidak sewajarnya, atau jasanya telah lama dilupakan oleh keluarga. Bencana dianggap sebagai suatu teguran atau peringatan kepada keluarga yang masih hidup atau sebagai ungkapan kekecewaan terhadap sesuatu kesalahan yang telah dilakukan oleh mereka yang masih hidup.

Untuk memulihkan hubungan yang telah rusak atau dengan kata lain untuk melakukan rekonsiliasi diantara ketiga dunia tersebut, maka masyarakat tradisional melakukan upacara-upacara baik menyangkut perbaikan hubungan antara manusia dengan Tuhan Yang Maha Tinggi, hubungan antara manusia dengan manusia lain dan lingkungannya dalam kehidupan setiap hari maupun hubungan manusia dengan leluhur. Semua perbaikan hubungan tersebut berupa doa syukur, persembahan dan perayaan yang membutuhkan biaya besar, tenaga dan waktu. Tentu saja semua ini merupakan beban sosial yang harus ditanggung setiap keluarga tani sepanjang tahun.

Menurut observasi dan pengalaman empiris, setiap keluarga petani harus mengeluarkan jutaan rupiah untuk membiayai semua beban sosial yang dibutuhkan untuk memulihkan hubungan manusia dengan ketiga dunia tersebut. Pemulihan yang telah dilakukan mengandung makna bahwa perbaikan kehidupan akan terjadi karena tidak ada halangan dalam usaha yang datang dari Tuhan Yang Maha Tinggi dan Maha Kuasa, dari sesama manusia maupun leluhur serta dari lingkungan alam sekitar berupa bencana alam yang sulit dijelaskan dengan pikiran rasional.

Cara kehidupan tersebut telah dijalani dan dihayati secara turun temurun dan telah berlangsung berabad-abad lamanya, sehingga untuk merubah filsafat berpikir semacam ini dan mengaplikasikannya dalam kehidupan setiap hari memerlukan berbagai intervensi dari semua pihak berupa peningkatan pendidikan dan ilmu pengetahuan supaya masyarakat secara perlahan-lahan dapat keluar dari cara berpikir yang kontaminatif yaitu magis, mitis, religius dan kultural serta subsisten. Selanjutnya masyarakat petani mulai berpikir logis, pragmatis, produktif, berorientasi ke pasar, terbuka terhadap teknologi dan informasi, profesional, menggabungkan antara kekuatan tradisi dan teknologi baru yang dijiwai oleh nilai-nilai religius dan kultural yang positif yang mendukung pembaharuan untuk kehidupan yang lebih baik.

Persoalan yang kita hadapi sekarang adalah bagaimana merubah petani uji coba menuju petani produktif dan profesional yang berorientasi ke pasar besar. Bagaimana masyarakat mengaplikasikan semua ilmu dan petunjuk yang baik yang pernah diajarkan oleh pemerintah maupun CARE Internasional Indonesia dalam berbagai program dan kegiatan mulai dari tahun 1999 pada saat situasi emergensi sampai sekarang dengan mulai secara bertahap menuju masa transisi dan pengembangan/development.

Beberapa aplikasi yang telah dilaksanakan masyarakat sebagai perwujudan dari berbagai ilmu pengetahuan yang diajarkan secara partisipatif bersama masyarakat, antara lain seperti:

- Pemakaian pupuk bokasi untuk sayur mayur yang masih diterapkan di Welolon Kecamatan Rinhat. Permasalahan yang dihadapi ialah tidak ada keberlanjutan program/kegiatan karena waktu pendampingan yang dilakukan CARE dirasa sangat singkat. Sedangkan produktivitas yang rendah disebabkan oleh kecilnya areal tanam (satu keluarga 2 bedeng untuk lahan sayur dan tanaman

jagung hanya \times hektar atau paling besar \times hektar), disamping itu pemasaran yang tidak prospektif, infrastruktur belum memadai, petani tidak mempunyai analisa pasar, network lemah dan resiko iklim belum diperhitungkan secara baik.

- Kelompok tani kacang hijau di Belu Selatan melalui proyek Mandiri, petani mengolah rata-rata 1 hektar lahan dengan penerapan teknologi seperti jarak tanam, pemakaian pupuk bokasi, penyemprotan dan ukur pertumbuhan perminggu. Diakui bahwa masih banyak kekurangan dari masyarakat tani untuk meningkatkan produktivitas dan mempertahankan hidupnya, namun disisi lain mereka juga memiliki kelebihan dan untuk mengurangi pemanfaatan sumberdaya yang berlebihan pada kegiatan-kegiatan sosial, hal yang dapat dilakukan ialah melalui kesepakatan adat/peraturan desa untuk mengurangi konsumsi yang berlebihan pada kegiatan-kegiatan sosial adat. Bisa juga melalui gereja dan pemerintah desa.

Kesetiaan Terhadap Sistem Pertanian Tradisional Subsisten Dan Pemanfaatan Teknologi Pertanian Yang Berorientasi Ke Pasar

Petani pada daerah intervensi CARE Internasional pada tahun 2001–2005 masih didominasi oleh sistim pertanian tradisional lahan kering yang dikenal dengan sistim tebas bakar, jarang bahkan tidak memakai pupuk non organik. Jenis tanaman pangan didominasi oleh tanaman jagung, padi, kacang-kacangan, ubi-ubian dan pisang. Semua tanaman pangan tersebut bersifat subsisten, berorientasi pada kebutuhan pangan keluarga dan hanya sebagian kecil yang disisihkan untuk kebutuhan pasar. Teknologi yang diterapkan oleh CARE adalah teknologi tepat guna berupa pupuk bokasi, jarak tanam, pemilihan bibit, persiapan lahan dan pengukuran daya tumbuh. Sistim pertanian ini dikenal dengan nama LEISA (*Low External Input and Sustainable Agriculture*).

Walaupun ada pengakuan petani uji coba pada lahan sayur-sayuran dan lahan padi bahwa teknologi yang diterapkan cukup efektif untuk meningkatkan produksi dibandingkan dengan sistim pertanian tradisional, namun ketekunan petani untuk terus memakai teknologi ini belum maksimal bahkan terhenti setelah proyek selesai. Kalaupun diterapkan hanya sebatas pada lahan yang tidak luas yakni untuk sayur-sayuran.

Dalam upaya pemberdayaan petani, CARE Internasional menerapkan sistem pertanian intensif dan petani uji coba. Perluasan dan pemanfaatan teknologi tepat guna yang dialihkan ke petani melalui beberapa pelatihan, studi banding dan praktek lapangan untuk usaha pemberdayaan petani/sekolah lapang tani telah dilakukan oleh CARE tetapi penerapan dan pemanfaatannya merupakan keputusan petani. Upaya maksimal telah dilakukan, tetapi kehidupan petani masih belum berubah secara signifikan terutama setelah proyek selesai. Beberapa hambatan yang dapat dilihat baik dari pihak petani, pemerintah maupun CARE dapat dijelaskan di bawah ini.

Masyarakat petani dampingan masih lebih setia pada sistem pertanian tradisional yang subsisten karena berbagai alasan, seperti kondisi alam yang berbata, iklim yang tidak menentu dan kemarau panjang menyebabkan para petani enggan untuk bertani secara profesional. Lahan pertanian yang diolah sempit dan ditanami dengan berbagai tanaman sehingga hasilnya yang dipanen tidak maksimal. Petani tidak biasa ditantang untuk berpikir keras dan berbuat maksimal untuk kehidupan mereka. Kegiatan pertanian yang dilakukan berorientasi sempit yakni hanya untuk kebutuhan rumah tangga sendiri dan sedikit kelebihan untuk pasar. Banyak tanah yang dianggap sebagai lahan tidur, padahal bukan lahannya yang tidur tetapi petaninya yang masih tidur dan enggan bekerja keras kata Pater Piet Salu, SVD yang tidak henti-henti memberi contoh nyata tentang upaya membangun kesejahteraan petani.

Permasalahan-permasalahan lain yang dihadapi oleh pemerintah dan LSM adalah:

- Terjadinya perubahan perilaku masyarakat; dengan adanya berbagai bantuan dari pemerintah dan LSM, maka sebagian besar masyarakat berubah perilaku menjadi bergantung terhadap kekuatan luar, menunggu bantuan, sifat gotong royong menjadi semakin berkurang bahkan hilang.
- Rasa memiliki dan bertanggung jawab terhadap fasilitas-fasilitas umum menjadi berkurang, apalagi memeliharanya dengan memanfaatkan sumber daya sendiri.
- Kehadiran pengungsi eks Timur Timur di Kabupaten Belu menambah beban dan menjadikan masalah pembangunan di Kabupaten Belu semakin kompleks walaupun harus diakui pula bahwa kehadiran mereka juga menjadi potensi pembangunan yakni penggerak ekonomi lokal.
- Kehadiran beberapa LSM dengan berbagai program dan kegiatannya terkadang menimbulkan

masalah baru, karena tidak dikoordinasikan secara baik dengan pemerintah setempat.

Menghadapi situasi dan kondisi seperti ini, maka pemerintah Kabupaten Belu dan CARE Internasional maupun LSM lainnya bersepakat untuk tidak henti-hentinya membangun kesadaran masyarakat tani dengan berbagai program dan kegiatan yang berkaitan dengan pertanian, kesehatan, pendidikan dan sektor-sektor lainnya tanpa meninggalkan pelestarian lingkungan hidup.

Pemerintah dan CARE dan mitra kerja yang lain senantiasa mendorong masyarakat untuk maju sekaligus menjadi perencana masa depan mereka sendiri melalui berbagai kegiatan nyata yang terukur, baik secara kuantitatif maupun kualitatif. Beberapa contoh kegiatan dalam gambar menunjukkan betapa besar perhatian dan karya nyata yang telah dilakukan oleh pemerintah dan CARE serta lembaga lainnya.

Konsistensi Dan Keberlanjutan Program Dalam Kehidupan Petani Setelah Proyek Selesai

Persoalan utama yang dihadapi oleh pemerintah dan setiap lembaga bantuan kemanusiaan ialah keberlanjutan program setelah proyek berakhir. Mekanisme yang sedang dilakukan oleh pemerintah dan CARE serta LSM lainnya ialah melalui peningkatan koordinasi dan melibatkan masyarakat mulai dari perencanaan, pelaksanaan, pengawasan dan evaluasi program/kegiatan. Hal ini kelihatannya sangat ideal, tetapi diakui bahwa dalam prakteknya terkadang tidak seperti yang diharapkan yang disebabkan antara lain sebagai berikut:

- Koordinasi antar berbagai pihak masih kurang, sehingga terkesan ada program/kegiatan yang berjalan sendiri-sendiri, masih ada ego sector.
- Tanggung jawab terhadap suatu program/kegiatan dari masyarakat masih rendah.
- Keberlanjutan dari suatu program/kegiatan belum terlaksana dengan baik, karena ketergantungan masyarakat terhadap bantuan pemerintah dan LSM masih tinggi.
- Pendampingan terhadap masyarakat masih kurang, walaupun ada masih dalam waktu yang singkat sehingga mereka merasa belum mampu mandiri.
- Orientasi proyek lebih bersifat bantuan material tanpa dibarengi dengan ketrampilan yang memadai untuk menjaga keberlanjutannya.

- Lama periode suatu proyek tidak berbanding lurus dengan dampak/ketrampilan dan pengetahuan yang harus diambil over oleh petani.
- Titik orientasi dan penekanan berbeda dari semua pihak setelah proyek selesai.
- Tidak banyak inisiatif yang bersifat mandiri terutama menyangkut biaya pemeliharaan, keberlanjutan dari masyarakat dan pemerintah termasuk LSM
- Donor trend terus berubah dan memfokuskan pada proyek-proyek yang baru.
- Pendidikan masyarakat masih rendah (30,28%) berpendidikan SD (Sumber Data Pokok Kabupaten Belu, tahun 2005).
- Petani subsisten tidak dapat dipertahankan lagi dalam era globalisasi yang kompetitif.
- Kerjasama Pemerintah, LSM dan masyarakat dengan pembagian tugas yang jelas, transparan dan profesional.
- Berpikir keras dan bekerja keras untuk menerapkan teknologi dan inovasi.
- Meningkatkan daya saing demi kemandirian dan menumbuhkan kepercayaan diri semakin tinggi.
- Tanggap dan responsif terhadap setiap tanda jaman baik informasi dan teknologi.
- Koordinasi perlu ditingkatkan antar dan lintas sector dan semua komponen lainnya
- Pemberdayaan lembaga adat, pemanfaatan potensi dan sumberdaya lokal.
- Pengambilalihan keberlanjutan program dan proyek harus dapat dituangkan dalam satu manajemen sistim yang terpadu oleh pemerintah dan LSM.
- Perencanaan sistim partisipatif, transparan dan konsisten.
- Joint monitoring dan indikator sukses bersama.

Kesimpulan Dan Saran

- Pembangunan mental digali dari akar budaya masyarakat setempat untuk kemudian secara perlahan mengubah cara berpikir dan berbuat yang baru.
- Orientasi perluasan volume usaha dan peningkatan jaringan kerja serta pemasaran.

Higher education experience in rural development

James D. Adam¹

Abstract

Artha Wacana Christian University is a private higher education institution in East Nusa Tenggara province. The university has a specific program focused on rural development through field studies. It is an interdisciplinary program that is compulsory for all students. The program is conducted once a year at some villages in a number of districts in East Nusa Tenggara province.

Some approaches applied to support the rural development field study program include the indigenous knowledge approach, interpersonal relationship approach, group behaviour approach and participatory rural approach. Since the program began in 1990 improvements have occurred in a number of key areas, including knowledge and skills of the people, the community economic system, education, infrastructure development, and community performance and cultural aspects.

The objective of the field study program is to give students the chance to learn from the community and put classroom theory into practice in the field. The greatest difficulties in implementing the program are changing community attitudes towards more appropriate practice, and changing ways of thinking to accept new changes.

Pengalaman perguruan tinggi dalam pembangunan pedesaan

James D. Adam^{1a}

Abstrak

Universitas Kristen Artha Wacana adalah Perguruan Tinggi swasta di Propinsi Nusa Tenggara Timur. Universitas ini memiliki program khusus yang berfokus pada pembangunan pedesaan melalui program studi lapangan. Program tersebut merupakan mata kuliah wajib bagi seluruh mahasiswa/i-nya. Program ini diselenggarakan sekali dalam setahun pada beberapa pedesaan dari beberapa kabupaten di Propinsi Nusa Tenggara Timur.

Beberapa metode pendekatan yang digunakan dalam mendukung program tersebut adalah; pendekatan dengan pemahaman penduduk asli, pendekatan hubungan antar penduduk, pendekatan tingkah laku kelompok, pendekatan keterlibatan di pedesaan. Universitas Kristen Artha Wacana memiliki berbagai pengalaman sejak tahun 1990 di mana dimulainya program tersebut.

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Pengalaman yang menjadi perhatian utama adalah pada pengetahuan dan keahlian penduduk, sistem ekonomi masyarakat, perkembangan pendidikan dan sarana serta menghadapi aspek budaya dan cara kerja masyarakat.

Tujuan dari program studi lapangan adalah untuk dapat memberikan kesempatan yang lebih banyak pada mahasiswa/i untuk belajar dari masyarakat dan berbagi pengetahuan yang telah mereka pelajari di ruang kelas dalam teori dan mempraktakkannya di lapangan. Pengalaman yang sulit setelah beberapa kali penyelenggaraan program ini adalah: Merubah tingkah laku masyarakat untuk dapat mengambil jalan yang lebih pantas, dan proses perubahan pola pikir untuk menerima perubahan baru.

Introduction

The mission of the Artha Wacana Christian University, Kupang, is to deliver the word of God through the education system. This is the main responsibility of the university towards communities and churches but there are many community programs offered, one of them being the 'Field Study Program'. This program is offered once a year from July to September. As part of the program students have 2 months of activities in a village.

The field study program is a component of the Core Scientific Patterns of Artha Wacana Christian University, with a focus on rural study. The objective of this program is to encourage students to implement and develop their knowledge in the context of society. The field study program is an interdisciplinary program and includes all students from different faculties. The program is conducted in six districts in East Nusa Tenggara province, namely Kupang City, District of Kupang, District of Rote Ndao, District of Middle South of Timor, District of Alor and District of East Sumba. The students are placed in 67 locations (villages), with 8–12 students at each location.

Alternative approaches

The following approaches are used to support the program in the community:

- indigenous knowledge approach
- interpersonal relationship approach
- group behaviour approach
- participatory rural appraisal.

Past experience

Many field conditions faced in this program before the year 2000 were different from those later. Pre-2000 experiences included the following:

- Some field study locations were inaccessible.

- Community understanding, knowledge and skills were very limited. It was observed that there were increasing numbers of children who were poorly educated
- Agriculture, livestock and forestry had potential to support community life, but these were not well-developed.
- The community's economic system was subsistence-based, not for economic production.
- Infrastructure and other support facilities were limited.

Current experience

Experience since the year 2000 has indicated a number of changes in the condition of rural communities:

- Almost all field study locations are accessible.
- Education, knowledge and community skills are improving with better education methods, improved technology and communication systems, and other skills development programs supported by government and NGOs.
- Areas of potential have been developed although simple methods based on traditional management are still being used.
- There is increasing economic activity supported by government with most people able to apply economic principles to daily activities; for example, empowering business groups through revolving fund programs, and the development of a social economy program.
- Infrastructure support programs, such as on transportation, are improving.

Challenges

The greatest difficulties facing the program are:

- changing community attitudes so as to embrace more appropriate practices
- changing ways of thinking to accept change.

Conclusion

All stakeholders (public and private sectors, higher education institutions, NGOs) need to address the core challenges in order to move towards integrated rural development. The community, as the object of

development programs, has to be well prepared to accept programs from government and others. If they are to benefit, rural communities themselves must understand, accept and apply development programs, so it is important to build these programs from the bottom up.

Integrated development for rural communities in East Nusa Tenggara: an overview of the role of higher education institutes

Urbanus Ola¹

Abstract

The paper examines the role of higher education institutes (HEIs) in addressing rural development and chronic poverty issues in NTT. While it is recognised that HEIs have a major role to play in lecturing and educating, research and community outreach/services, in reality the HEIs, especially the private institutes, have limited funding resources available to undertake substantial long-term programs. On the basis of the Universitas Katholik Widya Mandira's experience, it is suggested that the contribution of HEIs to rural development in NTT requires (1) a comprehensive 'village data bank' to inform more focused and targeted programs, (2) more integrative, 'bottom up' approaches involving all community sectors, and (3) sustainable long-term funding and resourcing.

Pembangunan terpadu untuk masyarakat pedesaan di Nusa Tenggara Timur: tinjauan terhadap dinamika institusi perguruan tinggi

Urbanus Ola^{1a}

Abstrak

Makalah ini menggali peran Institusi Perguruan Tinggi (IPT) dalam isu perkembangan daerah pedesaan dan penanggulangan kemiskinan yang berkepanjangan di NTT. Meskipun sudah ada pemahaman bahwasanya IPT berperan besar dalam dunia pendidikan, penelitian dan pelayanan-pelayanan terhadap masyarakat, akan tetapi IPT, dan terlebih-lebih institusi swasta, jarang yang memiliki sumber dana untuk program-program yang besar dan jangka panjang. Pengalaman yang dapat dipetik dari Universitas Katholik Widya Mandira, sepertinya kontribusi dari IPT terhadap perkembangan desa di NTT membutuhkan (1) Database desa, pengumpulan data desa yang akan menjadi dasar untuk mengarahkan program yang lebih terfokus dan tepat sasaran, (2) Pendekatan yang lebih terpadu dan dengan dorongan dari bawah 'bottom up' yang melibatkan semua lapisan masyarakat, dan (3) Pendanaan dalam waktu jangka panjang dan berkesinambungan.

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Introduction

The spirit and willingness to assist with development of rural communities in East Nusa Tenggara (NTT), and Indonesia in general, is not a new issue. A number of empirical facts illustrate this. First, our national and regional governments have a stated focus on developing rural society. Efforts for developing the capacities of rural people and communities engage government at various levels, together with NGOs (local and international) and higher education institutes (HEIs). Second, the progress of rural inhabitants is a core issue for the political leadership. This emanates from the understanding that rural development—many rural areas of Indonesia would be characterised as underdeveloped—is a mainstay of the political agenda and a national responsibility. On the other hand, sometimes the attention given by government to this issue appears to be only political rhetoric.

Notably, this buoyant spirit and intention for rural development has been a long-term preoccupation of all parties. The HEIs have launched various programs—directly or indirectly—for developing village communities and their inhabitants. Those programs have included research programs, investigation-action

(kaji-tindak), field-action-study, community outreach and business incubator programs, among others. Based on that varied experience we should be able to answer the questions:

1. What are the main problems facing rural communities in NTT?
2. What types of programs have been undertaken to address those issues?
3. What are the key results and conclusions?

Problems facing rural communities in NTT

NTT consists of many islands and covers an area of 47,350 km² in eastern Indonesia. This area has a semi-arid climate with marked seasonal rainfall distribution. The topography comprises hilly, rugged terrain mostly covered by savanna and, due to the dry climate, marginal farmland. In 2005, it is estimated the population comprised 4,372,000 people spread over 15 districts and one municipality. Most of the population relies on farming. Provincial statistics published in 2005 indicate that the average gross income is Rp2,248,323 per person, which is very low by national standards. These physical and demographic

Table 1. Estimated number of poor residents in NTT, 2003 and 2004

No.	District	Year					
		2003			2004		
		Population ('000)	Poor ('000)	%	Population ('000)	Poor ('000)	%
1	Sumba Barat (West Sumba)	382.2	67.8	43.78	390.0	164.3	42.04
2	Sumba Timur (East Sumba)	195.3	81.2	41.55	198.7	83	40.32
3	Kupang	430.2	116.6	35.42	332.8	109.0	32.68
4	South Central Timor	395.7	148.1	37.43	400.5	149.5	37.38
5	North Central Timor	201.2	60.0	29.82	204.4	62.7	30.65
6	Belu	334.4	69.1	20.66	343.8	70.4	20.51
7	Alor	165.6	46.7	28.22	168.6	48.7	29.06
8	Lembata	96.6	32.2	33.30	98.1	33.5	34.56
9	Flores Timur (East Flores)	213.6	33.8	15.81	215.3	33.1	15.35
10	Sikka	274.5	56.1	20.43	276.1	53.0	19.20
11	Ende	236.6	51.8	21.91	293.5	49.6	20.86
12	Ngada	237.2	35.8	15.09	238.9	37.3	15.54
13	Manggarai	597.2	155.7	32.82	667.3	151.5	31.41
14	Roter Ndao	–	29.6	29.18	103.5	28.2	27.45
15	Manggarai Barat (West Manggarai)	–	52.8	29.51	262.7	53.1	29.13
16	Kota Kupang	255.5	28.82	11.25	257.6	27.8	10.65
	Total	4,073.2	1,165.9	28.62	4,139.2	1,152.1	27.86

Source: BPS NTT (NTT Dalam Angka 2005)

conditions, as well as other factors, underlie the main problem facing the people of this province: poverty.

Other problems facing NTT urban and rural communities are calamities that add to the causes of poverty. Over the past 5 years, there have been two kinds of disasters confronting the region: (1) natural disasters such as landslides, earthquakes, storms and (2) human-caused disasters such as problems associated with refugees, acute malnutrition and famine (food shortages). Other factors such as poor human resources, physical isolation, limited infrastructure and access to information exacerbate the situation. The regional incidence of poverty in NTT is shown in Table 1. The relative position of NTT as measured by the human development index (HDI), indicates that NTT is ranked 24 out of 26 provinces (Table 2). Besides having a low HDI ranking, NTT is also known as the ‘calamity province’.

Challenges for higher education institutions in rural development in NTT

The HEIs in the NTT are committed to rural development for the province. There are two main approaches that have been applied in this endeavour: the physical construction and empowerments approach, and non-physical development. These programs are run in line with the three missions of higher education (*Tri Dharma Perguruan Tinggi*): (a) lecturing and educating, (b) research and (c) community outreach services. By definition, one might conclude that HEI commitment in community development relies solely on implementation of the third mission. This notion is not entirely accurate. In fact, execution of community outreach programs implies the application of the other two missions.

Table 2. Human development index for 26 Indonesian provinces, 2005

No.	Province	Life expectancy (years)	Literacy (%)	Years of schooling	Yearly expenditure (Rp '000)	HDI
1	Jakarta	71	98	9.7	593	72.5
2	Yogyakarta	71	85	7.9	598	68.7
3	Kalimantan Timur	69	94	7.8	578	66.8
4	Riau	68	96	7.3	580	67.3
5	Maluku	67	96	7.6	577	67.2
6	Sulawesi Utara	68	97	7.6	578	67.2
7	Kalimantan Tengah	69	95	7.1	565	66.7
8	Sumatera Utara	67	96	8.0	569	66.6
9	Sumatera Barat	66	95	7.4	577	65.8
10	Bali	70	83	6.8	588	65.7
11	Jambi	67	94	6.8	574	65.4
12	Aceh	68	93	7.2	563	65.3
13	Bengkulu	65	93	7.0	577	64.8
14	Jawa Tengah	68	85	6.0	584	64.6
15	Jawa Barat	64	92	6.8	584	64.6
16	Sumatera Selatan	66	93	6.6	564	63.9
17	Sulawesi Selatan	68	83	6.5	571	63.6
18	Lampung	66	92	6.4	567	63.0
19	Sulawesi Tenggara	65	87	6.8	572	62.9
20	Sulawesi Tengah	63	93	7.0	569	62.8
21	Kalimantan Selatan	61	93	6.6	577	62.2
22	Jawa Timur	66	81	5.9	579	61.8
23	Kalimantan Barat	64	83	5.6	571	60.6
24	East Nusa Tenggara	64	81	5.7	577	60.4
25	Papua	65	71	5.6	580	58.8
26	West Nusa Tenggara	58	73	5.2	566	54.2

The implementation of the above missions could be classified generally into two activity models: (a) rural development as an integral part of the higher education curriculum and (b) rural development as an extra-curricula program. Both students and staff are involved.

The HEIs finance their rural development programs from their own limited budgets and from assistance provided through other parties such as government and NGOs. Physical conditions in NTT demand high outreach costs; however, institutions have limited budgets given the low economic status of the population, putting rural development programs run by the HEIs, especially the private institutes, in jeopardy. Quite simply, the institutions need greater financial support in order to run programs involving, and needed by, rural people. This situation leads to relatively limited involvement of local HEIs in physical and human development in rural areas. Although the importance of rural development is recognised by all, it is very difficult to achieve financially and requires continuous exertions to maintain any large-scale programs.

The following examples of integrated programs show the involvement of HEIs in rural development. In response to the destructive earthquakes befalling NTT during 1992 (in Flores) and 1995 (in Alor), Widya Mandira Catholic University undertook a study of, and designed, convulsion-proof housing using local raw materials. Their design, known as the 'earthquake-proof house' (*rumah tahan gempa*), has been used in various other earthquake-prone districts, including Sikka, Ende, Ngada, Flores Timur, and Alor. An example was also exhibited during the celebration of Indonesian Independence Day. Construction and exhibition of the design was aimed at helping rural people build cheap, comfortable and safe dwellings based on local raw materials. However, adoption of this innovative construction design has been disappointing, with many houses being reconstructed using concrete.

Another example is an integrated community development program developed jointly by Widya Mandira Catholic University and UNHCR. This program, *Program Pertanian Terpadu Lestari* ('Everlasting farming program'), has involved ex-refugee housewives being resettled in residences in the Belu district. It involves local government and communities, local businesses, college teachers and students undertaking a variety of courses with the students

playing facilitating roles. While this program has been evaluated as being very successful, attributable largely to the level of planning and the involvement of all stakeholders, its continuity is uncertain.

Conclusion

The comments above raise a number of points concerning the role of HEIs in rural development activities in NTT:

1. Integrated rural development requires the development of a 'village data bank'. Our experiences have shown a lack of adequate data for at least the eastern portion of NTT. Information needed includes such factors as historical background, development issues, economic potential and the village's social structure. While the government has collected data on other aspects such as the number of villages, population demography, administrative borders and other artificial data, to date there has been no serious investigation of these other important aspects in order to develop village profiles for development planning and program purposes.
2. More innovative, integrative approaches need to be developed. Applying partial program approaches such as participative planning models, bottom-up planning, as undertaken in rural villages in the Savanna Flobamora Isles to date, is negligent and futile given that they are formally mechanistic. Our experience in running rural community development programs in NTT indicates that integrative approaches that empathetically involve all sectors are more effective. Such approaches engender feelings of being 'in the same boat' between the community and project facilitators. The success of the Everlasting Farming Program described above demonstrates the effectiveness of this approach.
3. Management of program sustainability is crucial to the long-term success of integrated rural development. Along with maintaining adequate funding, the example of the development of innovative, cheap, convulsion-proof housing provides a salutary lesson. While this building program was found to be readily accepted by the community, the actions of government and other community leaders in replacing these with concrete structures undermined the broader credibility of the program in the longer term.

Community assistance experience in the Aemau watershed—Aesesa catchment, Ngada, Flores

Josef Maan¹ and Paskalis Nai²

Abstract

An innovative approach to catchment-based management and development has been implemented since 1997 in the Aesesa watershed, Ngada (central Flores). The paper describes the three main approaches adopted to date, including the development of participatory, community-based partnerships involving local communities, local government and the NGO sector. In recent years, the program has focused particularly on developing community capacity in the Aemau sub-watershed through community-based planning, development of sustainable agroforestry and agricultural enterprises and associated land management, development of affordable credit facilities, and building of local governance institutions.

Pengalaman pendampingan masyarakat di sub das Aemau-das Aesesa, Ngada Flores

Josef Maan^{1a} dan Paskalis Nai^{2a}

Abstrak

Inovasi pendekatan terhadap pengelolaan berbasis DAS dan pembangunan yang telah terimplementasi sejak tahun 1997 di aliran sungai dataran tinggi Aesesa, Ngada (Flores tengah). Makalah ini mendeskripsikan tiga pendekatan utama yang di jalankan hingga saat ini, termasuk pengembangan partisipatori, kerjasama berbasis kemasyarakatan yang melibatkan penduduk setempat, Pemerintah setempat, dan sector LSM. Di tahun belakangan ini, program yang diselenggarakan berfokus pada pembangunan kapasitas masyarakat di Aemau sub-dataran tinggi, melalui perencanaan berbasis kemasyarakatan, pembangunan wana tani berkelanjutan dan usaha pertanian serta yang berkaitan dengan pengelolaan tanah, pengembangan fasilitas kredit yang dapat terjangkau, dan pembangunan institusi pemerintahan setempat.

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Introduction

The paper reports on community-based development work conducted as a partnership between two non-government organisations, Yayasan Mitra Tani Mandiri (YMTM) and Studio Driya Media (SDM), with other key stakeholders in the Aesesa catchment of Ngada, central Flores. YMTM is a non-profit organisation that was established in 1997. The vision of the organisation is to empower and improve the lives of men and women within more marginal rural communities, while conserving and preserving natural resources through sustainable development and partnership. SDM was formed in 1995 to support community-based sharing, networking and collaborative learning through the development of appropriate media in Nusa Tenggara. Both organisations are concerned with community-based resource management, as part of the broader Nusa Tenggara Community Development Consortium (KPMNT).

YMTM has been assisting community development in the Aesesa watershed, Kabupaten Ngada, Flores, since 1997. This watershed has become a

major focus since it is the second largest watershed in NTT, with very low annual rainfall over a 3–4 month period. The watershed is the main water source for wet rice field irrigation in Mbay, which is one of the major rice-growing areas in Flores. The Aesesa watershed comprises five sub-watersheds of which Aemau is the largest and the driest. In 2002, the total Aesesa population comprised 3,996 families or 21,002 people, with 9,839 males and 11,163 females.

The Aemau sub-watershed covers 15 villages, comprising nine villages in subdistrict Aesesa, three in subdistrict Boawae and three in subdistrict Nangaroro (Figure 1). This area is home for at least 316 households or an estimated 5,798 people, who depend on this watershed as their main source of water, especially for rice production and other agriculture-based livelihoods. Formal education of the population generally does not extend beyond primary school. Ninety-eight per cent are farmers and 2% are teachers, small traders and others. Communities are organised culturally in tribes, of which the largest is the Rendu tribe comprising five villages.

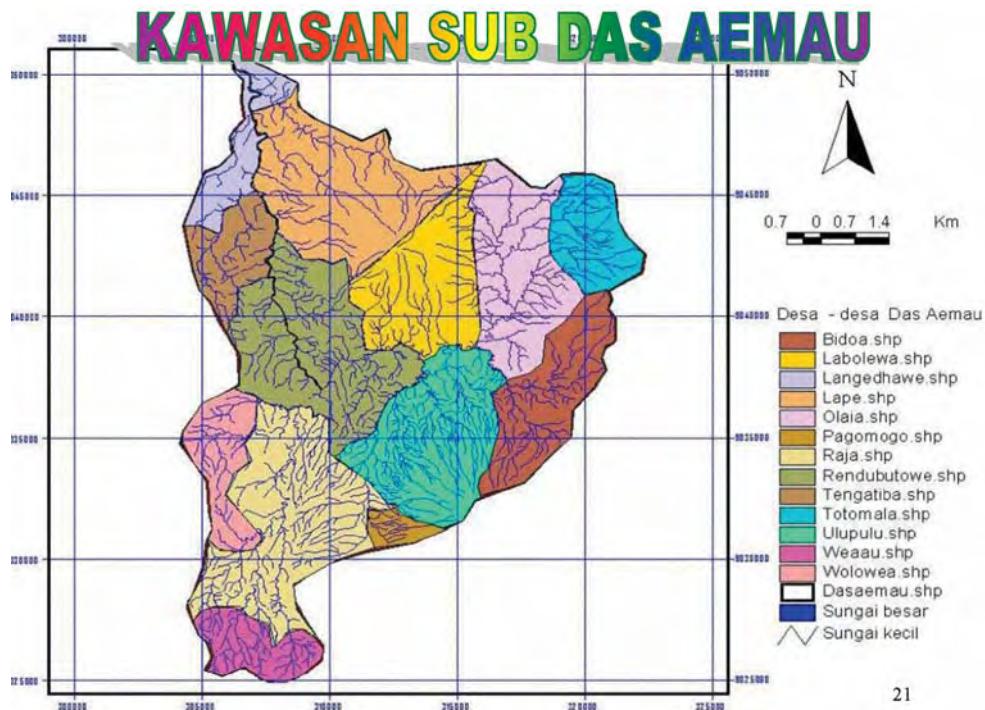


Figure 1. Aemau sub-watershed catchment area

Currently the Aemau watershed is said to be in a critical condition as water that originates from the headwaters of the Aesesa watershed has almost dried up. Land cover is mainly open grassland with land infertility and erosion commonplace. About 70% of the Aemau sub-watershed is barren savanna vegetation, which is mostly in a critical condition. Trees are rare, occurring mostly in areas near streams. The landscape is seasonally arid and comprises sedimentary rock with a thin layer of surface soil. Soils are readily eroded because of steep terrain (30–40% slopes), annually recurrent burning and the impact of free-ranging livestock (cattle, goats). Clean water supply for the communities is limited and is normally in bottom slope locations. Farmers use traditional methods that are typically short-term oriented.

Program

To address catchment management problems, YMTM Ngada has been developing programs since 1997 using a strategic program approach. Integrated development programs in the Aemau sub-watershed, Aesesa watershed, are aimed at:

- sustainable agriculture/agroforestry through:
 - land conservation development—applying liquid fertilisers, adding organic substances to the soil, using compost and organic pesticides
 - developing long-lived plant crops—forestry, plantation, horticulture
 - vegetable gardens, from land preparation to postharvest
 - cattle livestock enterprises—fattening up and breeding
- developing economic enterprises:
 - credit cooperatives / Urban Basic Services for the Poor (UBSPs) (bookkeeping training and assistance, administrative and institutional)
 - home enterprises (ginger, morinda syrup, coarse grass / thatching, carrots and cashew nuts)
 - commodities marketing (cashew, candle nut)
- strengthening farmer group institutions, UBSPs, cooperation and farmer forums (training and developing organisation management, monetary, advocacy, lobbying stakeholders)
- advocacy policy (government policy development and practice control, facilitating local policy establishment)
- local government levies facilitating participative establishment of local-based policies, participative local budgeting and local temporary plans

- facilitating participative studies (land, tribe, GIS, fire management).

Program approach

Individual/farm approach (1997–1999)

Field staff approached people or farms individually, explaining the aims and benefits of the program, training, family discussion, practice and continuing assistance. This approach was effective because farmers could understand benefits to their farming practices and could seek assistance with any problems. The result is reflected in ongoing farming application, with those farmers, in general, becoming farmer ‘activators’ or program ‘motivators’ for others. For example, farming development is ongoing at 3–8 farms per village in 17 villages assisted. Currently YMTM has 30 farmer activators, most of whom are local government staff from the Local Planning Board and the Local Community Endurance Institution. Problems faced in this approach include labour, time and high costs, as well as relatively slow reaction time. However, the approach is cost-effective when community demand is high.

Group approach (1999–2003)

Rather than creating new groups, YMTM operated within existing village groups (such as the *Woe* and *Hamparan* groups), neighbourhood groups and other less-developed district groups. YMTM’s role was to strengthen existing groups by delivering training assistance in areas such as group dynamics; administrative and financial bookkeeping; constitution, planning and evaluation issues; leadership; collaboration; enterprise analysis; and critical legal education. In order to strengthen existing groups, establishment of the UBSPs (Credit Cooperative Community base) was facilitated. Through this body farmers could either loan or save money to support their enterprise. Meetings were conducted every month to monitor transactions, evaluate activities, plan and discuss other problems and issues.

To support UBSPs in relation to maintaining cash flow, YMTM facilitated economic enterprise development in cash crops such as ginger, coarse grass / thatch, carrots, morinda syrup, cashew nuts, cattle livestock and vegetable garden development. Through the above activities and by weaving, a regular cash flow for the monthly support of UBSPs was created.

As a result of this approach groups were able to support organisational costs, enterprise development and capital management by themselves. There were 125 assisted farmer groups. Of these, 76 groups (61%) were categorised as stand-alone, meaning they were able to continue without further assistance. On average there was Rp2–4 million capital for farmer groups and Rp6–70 million for UBSPs. The total number of UBSP-facilitated groups is also 76. Despite successes, there were also problems. Access to capital was very difficult as each group worked separately, so the need for a new program became apparent.

Collaboration PSABM – sub-watershed Aemau approach (2003 to date)

In 2002 YMTM started developing a wider and more integrated approach than the group approach described above. The Community-based Integrated Watershed Management Approach (CIWMA) was finalised in 2003. This is a community-based collaborative initiative for managing the Aesesa watershed, starting with the Aemau sub-watershed.

The district Ngada Government, through the Department of Forestry and BAPPEDA (the regional planning board), YMTM and community leaders with support from the non-government organisations VECO and VSO and world neighbours, established the Aemau program. The following main activities have been conducted since 2003:

- An initial community, social, economic, participative evaluation identified problems and potential solutions. These were then assessed at neighbourhood, village and Aemau sub-watershed levels.
- Planning workshops produced village-level plans that could be run by local communities without external assistance.
- Workshops were conducted at the Aemau sub-watershed level to develop inter-village level planning. Such planning requires collaboration between villages and surrounding areas because various problems cannot be solved by one village on its own, e.g. fire management and free-ranging livestock management.
- Participative government policy evaluation aimed to discover whether policies of local government, district agencies and government actually support or hinder watershed management.
- Plenary multi-party planning workshops were undertaken at district level, involving departments,

organisations, agencies, heads of subdistricts (camat), NGOs, and community and religious leaders. Findings from these workshops result in the multi-party plan to be followed up by agencies and NGOs. To enable commitment, mutual agreement is established and endorsed by nine village chiefs, three heads of subdistricts, head of the district and an NGO representative.

- Networks were developed between the community and the multi-party level. A FORPELDAS (Watershed Environment Care Forum) multi-party group has been created at community level as a monitoring body. This forum has nine village representative members and nine village chiefs. At the multi-party level, a forum has been formed that is coordinated by the Bupati (head of district) and BAPPEDA (*Badan Perencanaan Pembangunan Daerah*, Planning Board). Monitoring and meetings are conducted regularly both by FORPELDAS and multi-party forums. FORPELDAS conducts monitoring every month, meetings every 3 months and meetings with the multi-party forums every 6 months.
- Work was done to integrate the Watershed Management Plan with government development planning mechanisms and the activities of NGOs. These plans are to be brought to *Musrenbangdes* (Village Development Plan meetings), *Musrenbangcam* (Subdistrict Development Plan meetings) and *Musrenbangda* (District Development Plan meetings). Team executives were reminded of the Aemau sub-watershed plan during the consultation process for the development of BAPPEDA budget allocations.
- Participative evaluations supported Aemau sub-watershed management. These included:
 - an evaluation of rights of ownership and land management in Rendu tribe (five villages). This evaluation includes investigating the possibility of dividing tribal land and the management rights between the members—an investigation stemming from one farmer's refusal to follow a sustainable agricultural program without knowing his rights.
 - GIS mapping, which has been done in some areas, especially prior to undertaking agroforestry.
 - implementation of fire management and research activities. This research has included fire prevention, especially in relation to agricultural and agroforestry plots; group

strengthening; use of local forest plant species; and planning benefits using GIS.

Strategic assistance program

In order to support the program, YMTM has developed strategic approaches as follows:

- allocating staff and developing cadre (farmer activators) in new villages to encourage the community to develop their enterprises with the possibility that staff can be reallocated to different villages. Meanwhile cadres will be trained so that in future they can assist groups or villages.
- periodic supervision. Villages that have passed the first phase and are able to manage their own program will have periodic scheduled supervision
- capacity support. Activities conducted through training, periodic inter-village meetings and visits that increase knowledge, competence and confidence in communicating with external parties will have positive impacts on local enterprises
- media support. Media plays a big role as a tool to deliver information effectively. Existing media experience has been collated to further extend useful collaborative concepts.
- networking in order to strengthen community rights struggles and to exchange information not only among farmers but also with other stakeholders
- joint evaluation and planning. This is the best strategy for building commitment since members feel they own the program. Through this process groups and communities are able to discuss developments and achievement each 6 or 12 months.

Lessons

- Having YMTM personnel living with communities is good for the development and implementation of mutual programs.
- High participation between the community and agencies during evaluation builds understanding and mutual commitment.
- There are changes in knowledge and the abilities necessary facilitate the watershed management system.
- Self-supporting communities support watershed management activities from evaluation to inter-village meetings. Communities feel that programs are theirs.

- Financial management is open to government and NGOs, which is creating trust and support between them.
- Relationships between government and NGOs is improving, opening opportunities to establish wider collaboration.
- Communities see collaboration between NGOs and government as demonstrating unity.
- Egocentric emphasis is decreasing because of existing mutual programs between government, NGOs and other institutions.

Problems and challenges

YMTM experience during stays with the community in building programs to support watershed management and community livelihood in the Aemau sub-watershed has identified a number of problems and challenges, including:

- Farmers who are program motivators have a limited capacity to influence other communities (their influence is limited to groups and inter-groups within their own village).
- There is limited capacity and power of the FORPELDAS committee and members at a regional level, which creates difficulties in assisting with cross-village plans or for the Aemau sub-watershed region.
- The program's potential for increasing community livelihoods in the Aemau sub-watershed are limited to assisted farmer and UBSP groups.
- Realisation of the program planned in the Aemau sub-watershed depends on external parties because of a lack of funding by villages and local governments.

Future Aemau sub-watershed and Aesesa watershed strategic management

As mentioned earlier, during development of the Aemau sub-watershed program there have been successes as well as challenges and barriers. A need for new strategies able to improve management of the Aemau sub-watershed was indicated. We would like to offer the following strategies for the future. We need to:

- strengthen village government as a central development and management platform for the Aemau sub-watershed (Act. No 32, Provincial Autonomy). For this, the following activities are required:
 - facilitate participative mapping and planning land management supported by GIS

- facilitate work plans with a land mapping follow-up
- build an agreement or inter-community and inter-village rules to bind communities into implementing work plans
- facilitate external funding (government and overseas) that can be managed by the villages themselves.
- strengthen and increase the number of farmer activators. Leader cadres can be built through training, continued assistance and individually approaching farmer activators.
- expand the area of impact of the sustainable farming program to increase community livelihoods as well as conserve the Aemau sub-watershed and support fire management
- strengthen farm group institutions and UBSPs as bodies for program implementation.
- facilitate the village financial body as a UBSP central body. A UBSP is a body to assist the community in accessing capital and a cooperative body to market community commodities.
- strengthen FORPELDAS as an inter-farmer coordinating body acting as an advocacy body at district level.
- increase the use of the multi-party forum as a body to coordinate the Aemau sub-watershed and Aesesa watershed management plan with assistance from government and NGOs
- focus on and expand the use of media for information and instruction in order to increase community and stakeholder knowledge, as well as to document experience to be shared among communities.

Conclusions

For addressing critical livelihood and environmental management issues facing villagers living in the Aesesa catchment of central Flores, key participative activities have been carried out from the beginning. These include participatory rural appraisal, participatory planning, participatory policy research and the development of the most essential groups, such as forums for local people, a multi-stakeholder tech-

nical working group where community member involvement within all the processes at all stages is evident. One success of this approach, aside from community involvement, was the acceptance of the development plans by local government and their integration into the government planning system.

Lessons drawn from the approaches used by YMTM (from individual to area-based) include:

- The farmer-to-farmer approach helped the progress of community participation and helped stimulate the formation of farmer groups in the villages. Also, individual farmers were left with concrete benefits from participating in the program, such as permanent agroforestry land, a small increase in income as an effect of increased production, and an increase in participation during village planning, training workshops etc.
- The group approach encouraged the development of micro-level partnerships. Presently the Aesesa watershed is at the crossroads of a sector-based approach and a collaborative, participative, community-based and integrated program where all the stakeholders (such as the local government, the community, and local and international NGOs) play an important role. The local government's commitment and support has been crucial, as has been the integration of results from the community assessments into government planning and budgeting.

Despite these developments, many challenges remain. Community organisations (e.g. farmer groups, people's forums and village government) remain weak and some traditional structures (adat) are unsupportive of sustainable development. The participation and the role of women are still not regarded as important and collaboration among villages needs to be strengthened. Local government policies supporting collaborative, integrated and community-based natural resource management are still weak. There is also limited funding, and local NGOs and donors use short-term project-based approaches despite the fact that the development of collaborative multi-stakeholder processes requires long-term commitment and support.

Activities of NGOs in East Nusa Tenggara province: an overview of Alfa Omega's experience

Sofia Malelak-de Haan¹ and Alberthina Riwu-de Queljoe²

Abstract

In this paper we describe some of the characteristics of Yayasan Alfa Omega (YAO) and its work for the poor and marginalised in the rural areas of East Nusa Tenggara (NTT).

Development as a matter of ethics. At the root of development is poverty alleviation and improving the livelihoods of the poor. Poverty may lead to individuals or communities becoming demoralised due to a failed harvest, poor supplies of food, hunger and isolation from the seat of political power. These factors combine to make the poor vulnerable. Intervention is needed to improve the conditions for those living in poverty, for humane and ethical reasons. YAO has tried to promote development through direct action targeted at the micro or local level with direct benefits for the poorest people. This approach is flexible and incorporates authentic participation, utilising local skills and knowledge, and local policy. Development is based on freedom, 'freedom from' and 'freedom to'. This is a new paradigm contrasting the more conventional technocratic and bureaucratic approaches. YAO implements its service and community development programs through education and training to build capacity in the villages so that the community becomes the agent of reform, starting with changes in thinking and influencing changes in behaviour.

Church solidarity toward poverty. YAO is an agency of the Christian Evangelical Church of Timor (GMIT) and was formed to deal with disaster responses, working in solidarity with the poorest people who are often overlooked. YAO is modelled on the work of Jesus, bringing reform to the role of the church in alleviating poverty. YAO promotes a new paradigm—'the church that lives' or *gereja yang hidup*. The church brings active change through its members, rather than imposing change from outside. Furthermore, YAO delivers the church's teachings through meaningful activities with practical outcomes in many areas. Consequently, YAO's movement has brought about the reform of GMIT with activities that promote better livelihoods.

YAO faces the future. History has been examined to plot a course for the future. In the long term YAO is directed by spirituality. Future action grows from assessing the present and learning from the past, because development is a process of social learning for self-improvement, reform of commitment and increased effectiveness of work. The role of YAO in integrated village development in NTT has been through development programs based on a holistic approach and a long-term commitment, with the motto *Build our nation from villages*. To work effectively together into the future, partnerships are an important component of building synergistic networks. These are essential for strong and successful implementation of integrated village development in NTT.

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Aktivitas lsm di propinsi Nusa Tenggara Timur tinjauan terhadap pengalaman Alfa Omega

Sofia Malelak-de Haan^{1a} dan Alberthina Riwu-de Queljoe^{2a}

Abstrak

Dalam makalah ini kami sampaikan layanan yang telah dilakukan oleh Yayasan Alfa Omega (YAO) dalam menangani masalah kemiskinan daerah pedesaan di NTT.

Nilai Pembangunan YAO dan Etikanya. Pengangkatan masyarakat dari kemiskinan dan peningkatan mata pencaharian merupakan akar pembangunan. Kemiskinan dapat merujuk pada individualisme pada masyarakat akibat gagal panen, kurang pangan, kelaparan, serta terisolasi dari struktur kekuasaan. Faktor tersebut telah membuat mereka menjadi lemah dan mudah terpengaruh. Untuk itu diperlukan sebuah intervensi untuk memperbaiki kemiskinan sebagai bagian dari etika kemanusiaan dan bukan tuntutan politik YAO mencoba melakukan pendekatan subversif dalam tingkat mikro lokal demi menangani masalah kemiskinan. Pendekatan ini bersifat fleksibel dalam penggunaan berbagai potensi termasuk pemanfaatan peraturan daerah. Perkembangan ini berdasarkan kepada kebebasan, 'kebebasan dari' dan 'kebebasan untuk'. Hal tersebut merupakan paradigma dan alternatif yang ditempuh oleh YAO yang sangat berbeda dengan jalan birokrasi teknokrat. YAO mengimplementasi pelayanan dan program pembangunannya melalui pendidikan dan pelatihan dalam mempersiapkan sumber daya manusia di pedesaan. Selanjutnya masyarakat diharapkan dapat menjadi alat reformasi yang dapat merubah pola pikir serta perilaku.

YAO dan Solidaritas Gereja dalam menghadapi kemiskinan. YAO murni milik gereja yang dengan kesadarannya telah mengambil bagian dalam menangani masalah kemiskinan yang sering kali terabaikan. YAO mencoba menggunakan Yesus sebagai contoh dalam membawa reformasi dan pengangkatan kemiskinan sebagai bagian dari fungsi keberadaan gereja. YAO memperkenalkan paradigma baru yaitu 'gereja yang hidup'. Gereja yang membawa perubahan dari dalam dan bukan dari luar. Untuk itu, YAO memproklamkan reformasi gereja dalam sejarah perjuangan dengan melibatkan berbagai bentuk aktivitas di berbagai bidang. Resonansi gerakan YAO kemudian berkembang pada pembentukan GMIT yang beraktivitas untuk memberikan pelayanan pada masyarakat demi perbaikan mata pencaharian.

YAO Menghadapi Masa Depan. Sejarah telah memberikan arti dalam persiapan menghadapi masa depan. Langkah yang akan di tempuh untuk masa depan harus bercermin pada spirit yang diberikan oleh YAO selama ini. Yang perlu di ingat bahwa kita harus belajar dari sejarah, karena pembangunan adalah proses pelajaran sosial, untuk memperbaiki dan membentuk sebuah komitmen untuk bekerja. Tugas dari YAO pada pembangunan desa terpadu di NTT telah tercermin melalui program pembangunan dengan pendekatan holistik, konsisten terhadap spirit serta pembangunan pelayanan dengan motto *Bangun Bangsa Kita Dari Desa*. Untuk kedepan, kerjasama merupakan nilai penting dalam membangun jaringan dengan sinergi untuk memperkuat kehidupan serta berjuang bersama dalam mengimplementasikan pembangunan desa terpadu di NTT.

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Introduction

The Alfa Omega Foundation (YAO) in East Nusa Tenggara (NTT) provides a service through long-term social transformation and it focuses on the poorest people. The purpose of YAO is to help the marginalised people, who are victims of the past era of political development. Social conscience underlies the philosophy that guides YAO in its responses to social problems and the various humanitarian services that follow. The characteristics of poverty are complex and specific to each location and cultural group so that there is no single solution. YAO is an NGO that focuses its service on community development in NTT province through dynamic responses. This paper describes an integrated rural development model that utilises partnerships among stakeholders.

The challenges of the NGO

YAO provides an alternative approach to the ‘top-down development model’ that has been the approach of the government in the past. The approach of YAO and some other NGOs is ‘people-centered development’ based on community empowerment to develop autonomy and discourage dependence on aid from outsiders. Through this approach, YAO changes the perception of the community from the *object* of aid to the *subject* of development whose capacity will be strengthened.

YAO is the first of many NGOs in NTT, Maluku and Papua. YAO plays a central role in strengthening the development of NGOs through training leaders as well as providing facilities and capital support. Potential leaders are given opportunities for experience in the NGO and eventually develop independence.

YAO assists and strengthens many local NGOs to achieve autonomy and improved effectiveness through training and supporting capacity building, for instance in formulating strategy management and program management by the community. Community-based management focuses on empowerment of the group because groups are more effective in raising awareness, building collective power, strengthening networks, and growing and learning together.

The strength of YAO to continue depends on building networks. Networking is based on sharing visions and committing resources to shared aims. YAO produces community leaders who are popular,

true to the people and have social integrity. It is most important that leaders of NGOs have strong characters and are motivated to serve the people rather than to gain positions of authority. YAO’s strengths include being responsive to communities and sharing knowledge, experiences and ideas. The richness of YAO is based on the giving principle, viz. ‘the more we give, the more we will get’.

Development based on the environment

Development can have negative impacts on the environment, from small to disastrous scales. Environmental damage caused by development can be extreme. YAO tries to ensure that environmental impacts are taken into consideration in development activities leading to sustainable productivity, such as the following:

- In some regions, land and water have been conserved through revegetation and constructing terraces on farming land.
- Agriculture development models based on development without sacrificing the natural forest by using *wanatani* (agroforestry) have been built. Conflicts between agriculture and forestry interests can be resolved through integrated activities, with positive consequences for conservation of the environment. As natural forest land continues to be converted for shifting cultivation, the area of unproductive land increases. The agroforestry or *wanatani* model has been established by YAO at several villages by combining agriculture with traditional *wanatani* on both dryland and coastal land. Farmers can have the benefits of sustainable harvesting of resources from the forest and agricultural yield from their fields.
- Water catchment management has been introduced (*Daerah Aliran Sungai* or DAS) that integrates all management components within a specific spatial framework (catchment). YAO plans to support eight villages at the Noelmina DAS in West Timor.
- YAO has provided training to increase knowledge and skills for wise environmental management—the training has included *wanatani*, organic agriculture, dryland farming, revegetation, mangrove forest management and facilitator skills for village development.

- To understand the characteristics and conditions of coastal environments, YAO cooperated with *Lembaga Ilmu Pengetahuan Indonesia* in the activity *COREMAP* to study beach and coastal ecosystems in Kupang Mbay.
- YAO was involved in creating a manual for conducting an environment impact analysis, *Analisis Dampak Lingkungan*.

Government structural reform

Government decentralisation is a major component of the Indonesian Government's reform agenda. YAO has taken a role in strengthening the local government at the grassroots level, i.e. village government. The local government, including the village head and his staff, and the Village Representative Board or *Badan Perwakilan Desa* (BPD) have been excluded from regional government. The village government is the heart of the community and understands the community's needs. If their position is strengthened, and their authority and financial resources are increased, the village government can become an effective government in implementing area autonomy at village scale. YAO is concerned with strengthening village governance, so it has cooperated with Universitas Nusa Cendra—UNDANA (Kupang) and the NTT Provincial Government in running training programs for Village Heads, staff and BPDs at 186 villages in Kupang regency and at 83 villages in Rote Ndao regency. The training aims to empower grassroots village governments by increasing knowledge of government processes and teaching skills in government management. The strategy is to develop human resources for village governments. If village staff and institutions are stronger and more autonomous, it is expected that the region can devolve authority and financial management to villages. This training also aims to build democratic processes at the village level. In the training, a simulation was used to learn about relationships for building cooperation and managing village government. The training has contributed to reform of village government, especially in Kupang and Rote Ndao regencies.

Community economic empowerment

YAO has always focused on the process as well as the output. Management by community-based organisations empowers the poorest people, considered to be

at the centre of development. Development through YAO aims to give people freedom from their problems. The aim is to remove dependence of communities on external aid in the long term. YAO has applied a self-help group model to convince communities that they have real potential to help themselves. Through the empowerment concept, YAO acts as facilitator and enabler, so the community can determine the best way to plan for the future. The philosophy of YAO is to develop the potential of the people. What people need is not only money but confidence, skills and collaboration with strong agencies. YAO has focused on community economic empowerment for 300 productive groups across the whole service area of YAO including businesses such as kiosks, livestock, agriculture, product marketing service, handicraft, pottery, fishponds and fishery. To strengthen capital support, YAO has worked together with community members to build six cooperatives and microfinance institutions, and has also distributed capital aid from donors. Cooperation with business groups has specifically provided assistance for small-scale enterprises run by women, with a corn plantation as a project model on 10 ha at Oelpua village. The approach used by YAO is considered by Kantor Menko Kesra (Minister for Economy and Community Welfare) and LPEM—Universitas Indonesia to be good practice for empowering the community economy.

Community health

YAO designed a program for village community health development based on preventive intervention and focused on health awareness, behaviour change, and the development of management for community-based health. Some activities include:

- training for medical professionals and village health workers who increase awareness of health in the village and develop programs to promote good health in the community
- creation of 'healthy sub-village development' managed by the community by establishing 'village medicinal booths', developing family medicine plantations and promoting improved sanitation
- supply of food aid to eight villages across several kabupaten (regencies) in Pantai Selatan, South Central Timor regency, in emergency situations where harvests have failed

- establishment of health clinics called *BKIA YAO* to promote the health of mothers and children
- distribution of nutritional supplements in five subdistricts in Kupang regencies
- promotion of improved sanitation by providing rainwater reservoir systems, pipes wells and dams
- research on child nutrition in Kupang Tengah subdistrict and research on impacts of Department of Health programs in Kupang regency and South Central Timor regency
- participation in forming the NGO *Yayasan Citra Husada GMIT* which later built the Christian hospital *Rumah Sakit Kristen*, for which YAO provides medical aid and funds
- efforts to minimise HIV/AIDS impacts on the young generation through extension, seminars workshops.

Empowerment of women

YAO recognises that the patriarchal system is strong in the sociocultural structure of NTT's communities, so it has tried to establish fairness in gender issues by raising awareness of gender policy. YAO worked intensively (in the late 1980s) in villages to change the patriarchal system through the following activities:

- gender mainstreaming by including women in every aspect of programs for community strengthening and project management
- raising awareness of equal status of men and women through workshops and training that focuses on women's organisations, NGOs, government organisations, religious leaders, church members, youth organisations and regional government agencies
- active participation in formulating public policy that guarantees rights of women and children
- participation in seminars and workshops about gender equity, providing key speakers and participants in local, national and international forums
- active participation in networking for women's rights
- dissemination of information about gender issues and promotion of community concerns regarding gender equity through mass media publication of opinions, commentary and interactive dialogue
- involvement in demonstrations and street carnivals to support women's rights, including participation in some political events.

Advocacy

YAO has supported community advocacy by:

- formation of *Yayasan Cinta Damai*, which handles legal cases by providing a consultation service, advice and legal advocacy to the community
- facilitation for communities to establish development organisations through raising awareness of rights to express their concerns through demonstration action and formal discussion about legislature in political forums
- human rights seminars to increase awareness, including traditional community rights, land tenure, legal advocacy and community organisation.

Freedom of the press

It is realised that the press can have an important role in the democratic process as an institution that provides information and education to the community about the control of power. It is believed by YAO that press institutions that are strong, free and independent are conducive to promoting social change and avoiding misuse of government power. YAO has a social responsibility to increase the local press capability through journalism training. YAO also publishes the bulletins 'Garam', 'Embun Kehidupan' and 'Berita Seputar Kita'.

Church reform

YAO was approached by GMIT to change the image of the church and to reform the church's role, in order that the church could grow in line with changes in the community. YAO is a part of the church responsible for reformation, known as the 'church that acts'. YAO has a principle of belief in freedom in tackling widespread problems of poverty and underprivilege. YAO aims to put the reformation policies of the church into action. YAO is central in providing training for church members in church concepts and community development. YAO has transformed human resource development through workshops for church members such as regional religious leaders (priests and vicars). Community leader training has succeeded in promoting the important role of the church in combating poverty. YAO participated in developing a village campus in Loli village so that church members and students could experience and learn about the challenges of village life. The campus

is a laboratory for socio-theology with the aim that the students will have a full contextual understanding of social and practical problems. It has so far not achieved success so YAO is now collaborating through ecumenical networks with many other church organisations to achieve its aims at this campus.

Religious harmony

The Director of YAO has initiated concord between members of different religions in all aspects of creating good relationships through the program ‘Peace travel’, or *Safari Damai*, held in four regencies,

namely: Belu, North Central Timor, South Central Timor and Alor. This activity was continued through dialogues between different religions in the form of ‘Pluralism Dialogue’, or *Dialog Kemajemukan*. Ceremonies called ‘Evening Reflection on Peace’ (*Malam Perenungan Damai*) were held to acknowledge the role of religion and community as the source of peace. YAO membership is open to all people who believe in the basic YAO principle, which is to develop community empowerment and equity between Christian and non-Christian peoples. With that principle, the aim is not only to empower communities in an economic sense but also to develop capacity in collaboration with the community.

Application of the catchment concept for integrated rural development

R.J. Wasson¹

Abstract

The catchment concept can be used to integrate understanding and management of biophysical and socioeconomic phenomena where both land and water resources are important for rural development. Changes of land use/land cover, particularly in upland and riparian zones, to achieve economic and social objectives have impacts downstream that are often damaging. A drive for economic development in one part of a catchment can therefore produce negative economic impacts elsewhere. Piecemeal economic development is therefore a risky venture. The integrative value of the catchment concept is illustrated using sediment budgets from Java and East Timor.

Aplikasi terhadap konsep pengelolaan daerah aliran sungai untuk integrasi perkembangan daerah pedesaan

R.J. Wasson^{1a}

Abstrak

Konsep Daerah Aliran Sungai (DAS) dapat digunakan untuk menggabungkan pemahaman dan pengelolaan fenomena bio-fisikal dan sosio-ekonomi dimana tanah dan air merupakan sumber alam yang sangat penting bagi perkembangan daerah pedesaan. Perubahan yang terjadi pada penggunaan tanah/permukaan tanah, khususnya di daerah dataran tinggi dan tepi sungai, dalam mencapai tujuan ekonomi dan sosial kerusakan sering terjadi pada arus sungai. Pengendalian perkembangan ekonomi pada bagian Daerah Aliran Sungai dapat menghasilkan dampak negative ekonomi di daerah lain. Bagaimanapun pengembangan ekonomi merupakan pekerjaan yang banyak mengandung resiko. Nilai integrasi pada konsep Daerah Aliran Sungai terilustrasi dengan menggunakan anggaran endapan dari Jawa dan Timor Timur.

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Introduction

Integrated rural development involves land, water and human capital. A catchment (watershed is the term used in some parts of the world) is a natural unit for the study and management of water resources and the ways in which use of land impacts on water (Willet and Porter 2001). The catchment concept is also a framework within which people affected by both land and water management decisions can work together to find solutions. Economic, social, cultural and environmental goals can be integrated with the imperatives of decision-makers by using the catchment concept.

Issues that are best handled within a catchment framework include:

- economic development where water is a key resource
- soil erosion and the sedimentation of rivers, reservoirs, lakes and estuaries
- water pollution by nutrients (from erosion, sewage, fertilisers) and agricultural chemicals
- water supply for irrigation and drinking
- flood abatement
- fishery protection
- conservation
- protection of cultural values.

The catchment concept is an essential integrative framework where water is a key resource. Irrigation farming is the iconic example where land use depends upon a secure supply of water of adequate quality from a reservoir, or by pumping from a river or groundwater, or by direct offtake from a riverside canal. Land use upstream of a water source can degrade water quality so that it is not useful for irrigation, or may lead to sedimentation of a reservoir thereby reducing its usable volume. Removal of upland forests can lead to other forms of water resource degradation. Springs often dry up after deforestation and river water is degraded, reducing supplies of potable water and aquatic resources such as fish.

But the catchment concept is not the only framework of value to integrated rural development. Economic development needs to take into account the integration of markets and supply chains, and agroecosystems require an integration of components to provide resilience in the face of fluctuations in commodity prices, weather and pests. However, where markets and supply chains are local and agroecosystems are managed at a village or smallholder scale,

both of these integrative frameworks can be nested within a catchment framework. Where markets and supply chains are regional, national or international the catchment concept is still useful for joint management of land and water resources. Nonetheless, management of the catchment is crucial to economic development and environmental sustenance, but should not be the only framework to be used in integrated rural development.

This paper cannot include all possible uses of the catchment concept. Streamflow, spring activity and flooding have been discussed in detail by Calder (2005) and Bruijnzeel (2004) for many tropical locations, including parts of Indonesia. Water pollution by material other than sediments has not received as much attention in Indonesia and East Timor. Water supply for irrigation has received detailed analysis in Java by many consultants (e.g. SMEC 1981), and is receiving attention by Japanese International Corporation Agency (JICA) and Norwegian Agency for Development Corporation (NORAD) in East Timor. The impact of catchment processes on coastal fisheries has been the subject of preliminary work in East Timor (Carvalho et al. 2006) along with aspects of the protection of cultural values. Conservation in a catchment context has not received much attention in either Indonesia or East Timor.

Most analysis thus far in Indonesia and East Timor has focused on erosion and sedimentation. But this topic has been analysed most completely only in Java and to some extent in East Timor. Because of the existence of these analyses, the remainder of this paper will concentrate on erosion and sedimentation, taking into account economic issues.

Economic development issues, erosion and sedimentation

The key issues are summarised as follows: upland land use can so reduce resistance to rainfall and runoff that erosion is severe, leading to reservoir sedimentation, aquatic resource degradation by turbidity and sedimentation, poor water quality for irrigation and drinking purposes, loss of cultural values, and loss of flood plains and agricultural land by channel widening following stream sedimentation. Loss of riparian vegetation can also lead to channel widening with consequent loss of agricultural land, damage to bridges, roads, canals and buildings.

Upland and riparian management are therefore crucially important in attempts at economic develop-

ment that minimise impacts on water resources. Planning of upland use should therefore consider links to downstream impacts. For example, plantation forestry can provide both a cash income and forest products to local people but, as will be shown later, can lead to serious erosion if the ground is kept bare. Increasing the area of cash cropping can have similar effects if carried out at the expense of scrubland or native forest. Even soil conservation techniques such as bench-terracing can increase erosion. And improved road networks designed to transport produce to markets can worsen erosion if not well designed, located and maintained.

So some attempts at economic development in the agricultural sector of the uplands can worsen economies in the lowlands. Integration of economic development within the catchment framework is the only way to avoid such problems.

There is one more aspect of these issues that deserves attention. Some upland uses are threatened by their perceived, rather than demonstrated, impact on water resources, to the point where the elimination of those land uses is sometimes called for. In Eastern Indonesia and East Timor, shifting agriculture and burning are two such land uses (management systems). Uncontrolled fire, for example, is specifically credited with exacerbating soil erosion and downstream sedimentation of rivers and coasts (Bamaulin 2000; Gadas 2000; Mudita 2000). Shifting agriculture has been blamed for the same impacts in East Timor and elsewhere in SE Asia (Sandlund et al. 2001).

A proven way of analysing the relationships between land use/land cover (either actual or potential), erosion, sedimentation and economic impacts is the sediment budget. Before examining this aspect of the catchment concept, the river catchment is first considered.

The river catchment

The river catchment is the land area from which surface water drains to the river network. Groundwater also drains to the river network, but can come from outside the surface catchment. A river catchment is a spatially organised set of river links or 'reaches' between each river junction and the subcatchments that drain to each link. Each of these subcatchments consists mainly of hillslopes extending from the divides between each subcatchment. Floodplains and alluvial fans sometimes lie between hillslopes and river channel links.

Land use and land management can be viewed within this framework. For example, average hillslope gradient is low at the downstream end of a large catchment and increases upstream. So land uses on hillslopes in upland regions are more likely to yield eroded soil and thereby add to stream sediment loads. But where floodplains intervene between hillslopes and river links, soil eroded from hillslopes is deposited before it can reach the river. Floodplains can be natural sediment buffers but are most common downstream. Once again we see that the uplands are most likely to contribute sediment directly to rivers.

While the recognition of catchment organisation based on the drainage network is most helpful in analysis of land-use impacts on water resources and rivers, the amount of data required for an understanding of the erosion – sediment-transport system in every subcatchment and every link is daunting. It is more common to estimate erosion rates for classes of land that include many subcatchments and stream links. Classes can be: landforms (e.g. steep vs gentle slopes), land susceptible to particular erosion processes (e.g. sheet erosion on hillslopes, gullies), and/or land use/land cover (e.g. forest, rainfed agriculture). These classes are not necessarily mutually exclusive. Both sheet erosion and gully erosion can occur in a forest, for example. If the purpose of estimating sediment yield from a particular class of land use/land cover is to ameliorate both the on-site loss of soil and the downstream or off-site impact, significant information is lost if different erosion processes are included in one land use/land cover class such as forest. Limiting sheet erosion requires different methods to slowing gully erosion.

This discussion leads to the idea of a sediment budget set within the spatial framework provided by the catchment concept. The sediment budget is both an analytical and a management tool, and the idea can be used for other materials such as water, nutrients, agricultural chemicals and carbon. However, many of these materials are transported attached to fine sediment so a sediment budget is often a useful surrogate for other materials.

The sediment budget

A sediment budget is a quantitative accounting of the sources and distribution within a catchment of sediment as it moves from its origins to the mouth of the catchment. A complete budget includes estimates of rates of erosion and sediment transport on hillslopes

and in channels; rates of temporary storage of sediment in channels, in alluvial fans, on footslopes, in reservoirs etc.; and rates of weathering and break-down of sediments in transport and temporary storage (Dietrich et al. 1982; Reid and Dunne 1996). But simpler budgets that do not include all of these elements can nonetheless be very useful for catchment management.

Examples of sediment budgets of varying degrees of detail and generality are available from South-East Asia, including Java and East Timor.

Sediment budgets in South-East Asia

Summary data for South-East Asia

Bruijnzeel (2004) collated data on erosion and river sediment yield for SE Asia. In his Figure 10, land use and geology are combined to show that for small catchments the highest yields are on cleared volcanic and marl substrates. Between 1,000 and 9,000 t/km²/year are produced from these source areas. Between 8 and 400 t/km²/year is produced from forested granite, sandstone or shale, and volcanic catchments. But forested marl areas yield the same as cleared marl catchments, demonstrating that substrate (rock and soil type) in some cases controls erosion rates, along with rainfall.

Bruijnzeel's results combine substrate, land use, land cover and different erosion processes in one category. From a management perspective, this is not very useful. By contrast, for the tropics as a whole, Wiersum (1984) has summarised surface erosion rates (by sheeting and rilling) under different land uses/land covers (Table 1). Differences in rates between natural forests, shifting cultivation (fallow phase), plantations, tree gardens and tree crops with

cover crop and/or mulch cannot be detected in these highly aggregated data. The cropping phase of shifting agriculture can be a highly erosive land use, depending upon rainfall, but agricultural intercropping in young forest plantations produces (at the maximum) less sediment. Serious erosion occurs under tree crops and forest plantations where ground cover is removed. Trees by themselves are not the answer to reducing surface erosion. Ground cover is the key.

Similar summary data are not available for other important erosion processes, namely gullying, landslides and stream erosion. Also, the estimates in Table 1 do not explicitly account for changes from one land use/land cover to another. For example, after logging of a forest, as much as 15,000 t/km²/year of sediment was produced in Java over 2 to 3 years (Gupta 1996).

Summary data exist for catchment sediment yield (load). Milliman et al. (1999) derived the following equation for mean annual suspended load (*SY*) and catchment area (*A*) for catchments in Papua New Guinea, Java and the Philippines:

$$SY = 3.5A^{0.76} \quad r^2 = 0.77 \quad (1)$$

where *SY* is in 10⁶ t/year and *A* is in 10³ km². This equation allows the calculation of *SY* for any ungauged catchment in Eastern Indonesia and Timor Leste, at least within the range of the data from which it was constructed, namely for catchments ranging in area between about 500 and 100,000 km².

Interestingly, the specific yield (t/km²/year) for these catchments decreases with *A*, showing that they are like most other disturbed catchments in the world (Wasson 1998). Sediment is stored between source regions and the catchment mouth, accounting for the decreasing specific yield.

Table 1. Surface erosion rates in tropical forest and tree crop systems (t/ha/year) (from Wiersum 1984)

	Minimum	Median	Maximum
Natural forests	0.03	0.3	6.2
Shifting cultivation, fallow phase	0.05	0.2	7.4
Plantations	0.02	0.6	6.2
Tree gardens	0.01	0.1	0.2
Tree crops with cover/mulch	0.10	0.8	5.6
Shifting cultivation, cropping phase	0.40	2.8	70
Agricultural intercropping in young forest plantations ('taungya')	0.60	5.2	17.4
Tree crops, clean-weeded	1.20	48.0	183.0
Forest plantations, litter removed or burned	5.90	53.0	105.0

A partial sediment budget for Java

Using the factors in the universal soil loss equation, Magrath and Arens (1989) estimated the surface (i.e. sheet and rill) erosion for all of Java. This ambitious project also related agricultural productivity decline to soil erosion, and thereby calculated the costs to the economy. They also estimated the costs of off-site sedimentation in reservoirs and irrigation canals.

The predicted soil loss is provided in Table 2. The total sediment discharge to the ocean by the rivers of Java is 330×10^6 t/year (or 3,400 t/km²/year estimated by Milliman et al. (1999)). The difference between this figure and the total surface erosion (in Table 2) does not include other sources (gullies, landslides, channel erosion), and storage (in floodplains, channels, fans) is not counted. Much more research is needed to complete the budget so that realistic management decisions can be taken on how to reduce downstream sedimentation.

Table 2. Predicted soil loss in Java from surface erosion (from Magrath and Arens 1989)

Land use	Soil loss ($\times 10^6$ t/year)
Rainfed agriculture (tegel)	646
Forest	15
Degraded forest	34
Sawah	2
	697

The calculations by Magrath and Arens (1989) indicate that erosion costs the economy between US\$340 and US\$406 million/year. Of this, US\$315 million is attributed to on-farm losses of productivity, and the balance of US\$25 to US\$80 million is the result of downstream damage. This calculation can be criticised on many grounds, particularly the accu-

racy of the soil loss estimates, the inferred nexus between surface erosion and downstream sedimentation without knowledge of other sources, and the absence of any estimates of downstream costs for fisheries. Purwanto (1999) claims that the on-farm costs are too high because on terraced farms most sediment comes from the riser of the terrace, not the tread. Soil loss from the riser does not impact on productivity.

Nonetheless, the natural methodological link between a sediment budget and an economic analysis stands (Wasson 2003). This is a profitable field for future research as a basis for management.

Catchment-specific sediment budgets

The Cimanuk catchment

By far the most useful sediment budgets for management are catchment specific, but even these are of variable specificity. For example, in the Cimanuk catchment of Java, measurements of stream sediment loads for tributaries and the main channel are listed in Table 3 (from NEDECO and SMEC 1973). These data do not show a simple decrease of specific yield with area of catchment as found by Milliman et al. (1999). The Cilutung River, a tributary of the Cimanuk which rises on the flanks of the Gunung Ciremai (or G. Cereme) and also receives sediment from an area of highly eroded marl, yields more sediment/unit area than the Cimanuk for about the same catchment area. The Cikeruh and Ciranggan River also has a high specific yield, and rises on the flanks of G. Ciremai, a 3,000 m high active volcano.

Volcanoes are likely to be major sources of sediment in this and other catchments, with distance from the volcano likely to be a key variable. The Cimanuk

Table 3. Sediment yields in the Cimanuk catchment, Java

Location	Catchment area (km ²)	Yield ($\times 10^6$ t/year)	Specific yield (t/km ² /year)
Cimanuk R.	3,200	27.5	8,594
• at Anicut	2,950	24.4	8,270
• at Rentang Weir	1,460	8.8	6,030
• at Parakankondang (1)	840	5.3	6,310
• at Balubar Limbangan (2)	620	3.2	5,650
• between (1) and (2)			
Cilutung R. at Kamun Dam	600	7.9	13,170
Cipeles R. at Cipeles	410	2.2	5,370
Cikeruh and Ciranggan R. at Anicut	250	3.1	12,400

River, for example, rises south of Garut on the large volcanoes G. Cikurang (2,820 m) and G. Nangklak (2,573 m), but the river's specific yield just below the junction with the Cilutung is about half that of the Cilutung. Considerable sediment storage probably occurs between the upper end of the catchment and the Cilutung junction.

The specific yield in the lower end of the catchment (area 2,950–3,200 km², Table 3) is higher than at any other point on the Cimanuk River. The yield on the delta has been estimated by comparison of topographic surveys in 1948 (Hollerwöger 1964) and 1969 (SMEC 1979). Therefore the difference of specific yield upstream and downstream of the delta apex is probably due to method.

Detailed measurements (Rutten 1917) in the Cimanuk River near Anicut between 1912 and 1916 indicate a mean annual suspended sediment load of $2.7\text{--}4.45 \times 10^6$ t/year (900–1,480 t/km²/year), i.e. 10–50% of the later estimate (Table 3). The increase is reflected in the increasing rate of delta growth (Hollerwöger 1964), and is attributed to increasing pressure of land use in the uplands (introduction to Hollerwöger 1964, by I. Reksohadiprodo).

From the river sediment loads various inferences have been made about sources and storage. These inferences should be tested by complete sediment budgeting if sound decisions are to be made that may affect the lives of many people. The next two examples indicate what is required.

Cikumutuk catchment

This 105 ha (1.05 km²) catchment is in the upper Cimanuk catchment (Purwanto 1999). It lies on volcanic breccia and ash, and most of the area is used for rainfed agriculture and sawah (Table 4). A variety of measurement techniques were used to derive estimates of source quantities for a sediment budget, including stream gauging, sediment collecting tanks, volumetric estimates and empirical equations for bedload. The sawah sink was estimated directly, and the storage on hillslopes and on the floodplain is the difference between the total yield (6,060 t/year) and source inputs (12,770 t/year) (Figure 1).

Most of the sediment is derived from areas of rainfed agriculture on steep slopes and, on average, about 53% of the total erosion is stored in the catchment each year. The rainfed areas are almost all bench-terraced to conserve soil (Purwanto 1999). This catchment is typical of the uplands.

Konto River catchment

In the Brantas River catchment of east Java, the upper Konto River drains into the Selorejo Reservoir. The mean annual input of sediment to the reservoir is 1.106×10^6 t/year (4,750 t/km²/year) (Brabben 1981). Studies of three sub-catchments upstream of the reservoir have been used to construct a sediment budget for the entire catchment (Rijdsdijk and Brujnzeel 1991). Techniques similar to those used in the Cikumutuk catchment were employed.

Table 4. Land use and specific yield, Cikumutuk catchment, upper Cimanuk catchment, West Java.

Land use/land cover	Area (ha)	t/ha/year
Rainfed agriculture	59	190
Shrubs, bushes, bamboo	14	14
Sawah (and fish ponds)	20	0
Settlement area	7	60
Agroforestry	4	
Mulberry plantation	1	

A significant proportion of the catchment is forest and scrub (Table 5). Bench-terraced rainfed fields are next in area, followed by sawah. Roads, trails and villages cover 12% of the catchment. The sediment budget (Figure 2) shows that rainfed agricultural land yields most sediment, but its specific yield is lower than from roads, trails and villages that produce about 42% of the total erosion (Table 5). Only about 7% of the total erosion is stored (in sawah and on floodplains). Within the errors of the measurements, this implies that very close to 100% of the eroded sediment leaves the catchment. The sediment delivery ratio (SDR), that is the ratio of catchment yield to total erosion, is therefore approximately 1.0. It is estimated to be 0.93 (93%) in Figure 2. This contrasts with the Cikumutuk where the SDR is about 0.47.

Table 5. Land use/land cover and specific yield, Konto River Catchment.

Land use/land cover	Area (km ²)	t/km ² /year
Forest and scrub	152	200
Rainfed fields	44	2,400
Sawah	21	0
Roads and trails	7	11,300
Villages	5	11,900
Lake	5	

Laclo River catchment (and a comparison with the Cimanuk)

A different approach has been taken to the construction of a sediment budget for the Laclo catchment on the northern side of East Timor (Carvalho et al. 2006). The source of suspended sediment transported in the Laclo River and tributaries has been traced by means of geochemical fingerprints (Wasson et al. 1987; Wallbrink et al. 1998). Surface soil washed down hillslopes is rich in the atmospherically derived radionuclides ^{210}Pb (excess) and ^{137}Cs (from nuclear weapons tests). In the Laclo catchment, the average ^{137}Cs concentration in surface transported soil is 4.2 ± 0.8 Bq/kg, and the average ^{210}Pb (excess) is $97.0 \pm$ Bq/kg in areas that are regularly burned, coppiced and used occasionally for shifting cultivation. By contrast, sediments in the large rivers have no detectable amounts of these radionuclides. A small creek at Sananai, in the Sumasse River sub-catchment, draining a frequently burnt area used for grazing and hunting, has 8.5 ± 3.9 Bq/kg of ^{210}Pb (excess). The Susan River near Hera, outside the Laclo catchment, has 15.3 ± 8.1 Bq/kg ^{210}Pb (excess) in a catchment where hillslopes are burned regularly for hunting and grazing, and used for shifting agriculture.

The absence of topsoil in the main rivers shows that topsoil is only a few per cent of the total suspended load (Figure 3), an estimate that takes

account of the uncertainties in the measurements. Although a proper quantitative analysis is not possible with existing data, this conclusion is sound. Therefore, almost all of the fine (and coarse) sediment in transit comes from deeper material. Gullies, river channel erosion and landslides produce most of this sediment.

The mean annual suspended sediment yield to the ocean from the Laclo River has been estimated from Milliman et al. (1999) at 4.5×10^6 t/year ($3,240$ t/km²/year from 1,386 km²). Storage has not been properly assessed but a few observations have been made. The bed of the Laclo River at Manatuto has aggraded by 1.5–2.0 m since 1985 according to the local people. This has been accompanied by channel widening and floodplain erosion. The floodplains are also aggrading by overbank flow, but the net rate of change in the floodplains is not known. The local people ascribe all these changes to deforestation of the uplands within the last ~30 years.

The absence of topsoil in the rivers shows that shifting agriculture and burning for grazing and hunting do not contribute significantly to downstream sediment transport and sedimentation from sheet and rill erosion. However the geochemical tracing method sometimes cannot detect the erosion products of cultivated sites because ploughing mixes the radionuclide-labelled soil with unlabelled soil so that concentrations of the tracers are reduced. In a cultivated site at Maubisse, in the Caraulun catch-

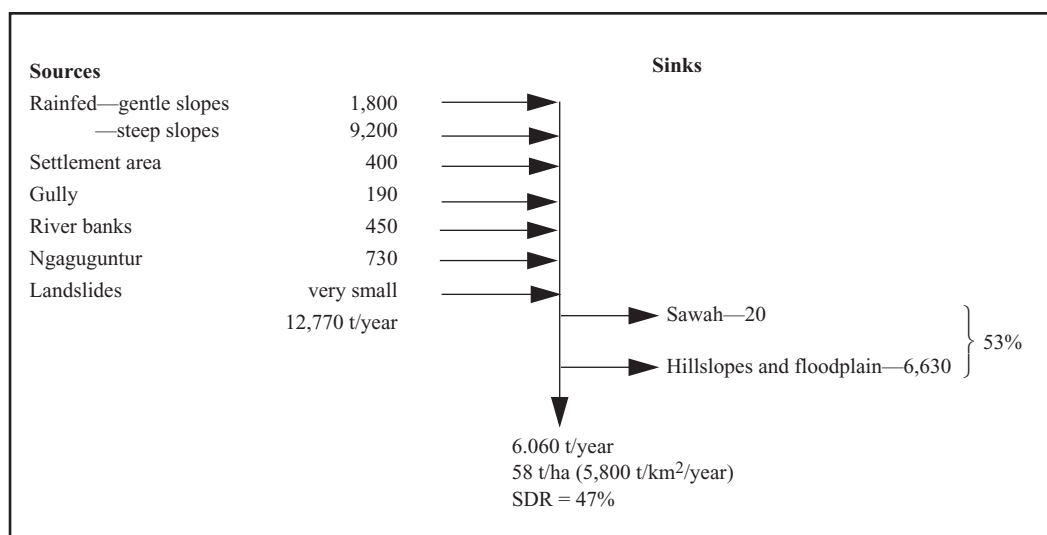


Figure 1. Cikumutuk catchment: Average annual sediment budget (1994–1996) t/year

ment, the ^{137}Cs is 0.99 ± 0.64 Bq/kg and ^{210}Pb (excess) is 21.9 ± 5.2 Bq/kg in the top 10 cm of transported topsoil. While topsoil tracers are detectable, the concentrations are comparable with steep uncultivated slopes where radionuclide retention is low because of high erosion rates. In the Laclo catchment, this is not likely to be a serious problem because permanent cultivation covers only ~5% of the main districts and therefore is not likely to yield much sediment. Nonetheless, even the low concentration of

topsoil tracers (found at Maubisse) is not detectable in the Laclo River.

Samples from the Cimanuk catchment in Java (Wasson, unpublished data) also show very low ^{137}Cs concentrations in cultivated soils: 0.9 ± 0.2 Bq/kg in the surface of a tread on a bench-terrace at Ambit village; 1.0 ± 0.8 Bq/kg in stream sediment derived from badly rilled dryland terraces at Garela; and 1.0 ± 0.6 Bq/kg in outwash from a dryland terrace system at Ambit village. Freshly deposited sediment

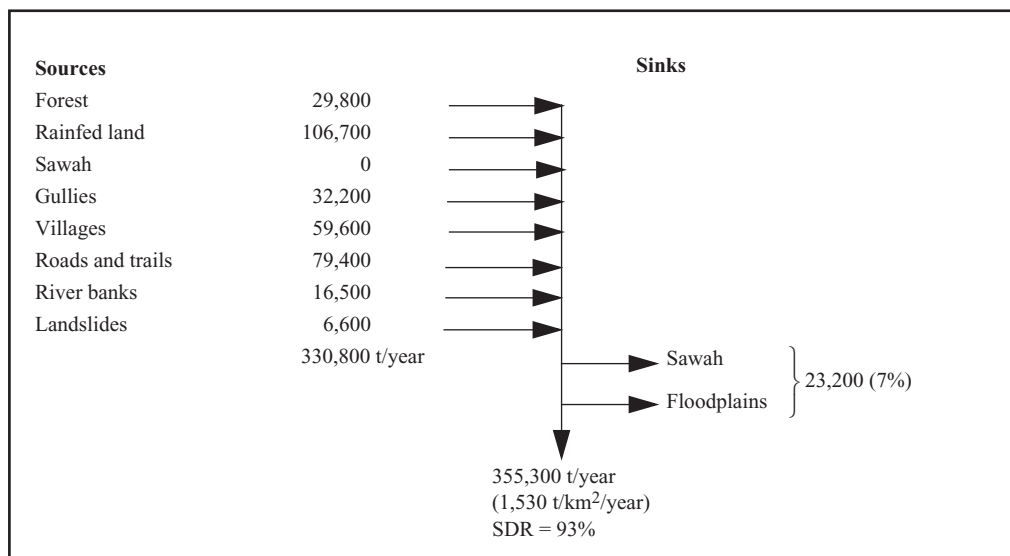


Figure 2. Konto River catchment: East Java. Average annual sediment budget (1987–1990)—tonnes/year

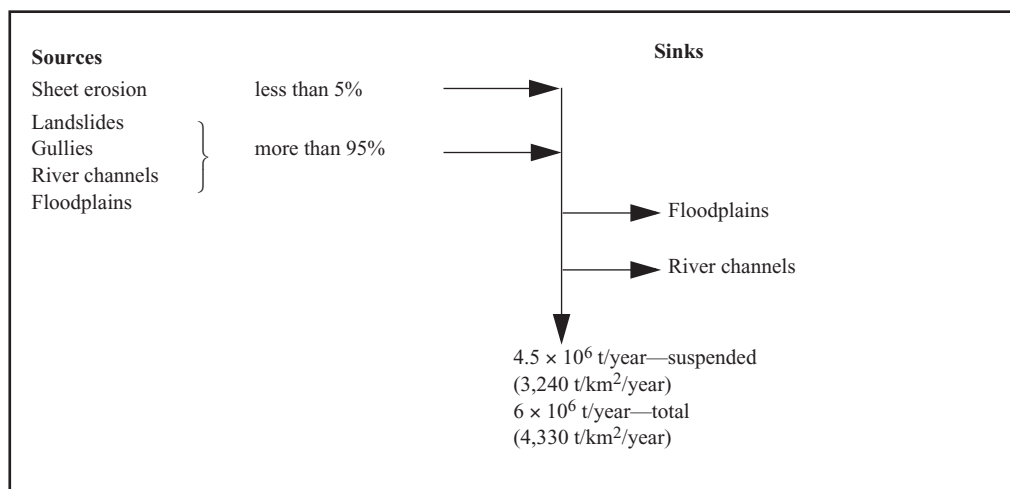


Figure 3. Laclo River catchment: Timor Leste. Elements of an annual sediment budget

in the Cimanuk River in the delta had 0.5 ± 0.3 Bq/kg and in the Cilutung River 0.9 ± 0.5 Bq/kg. A small stream draining marl near Pancurendang village had 0.7 ± 0.6 Bq/kg. At Garut, the Cimanuk River had 0.0 ± 1.5 Bq/kg.

From these data it is clear that the erosion products of rainfed terraces contain detectable ^{137}Cs but at very low concentrations. River sediments contain even less ^{137}Cs , and the most prudent conclusion is that they contain zero ^{137}Cs . It can be tentatively concluded that subsoil sources (gullies, channels, landslides, dryland terrace risers) contribute most sediment to the Cimanuk River.

Some socioeconomic implications of the sediment budgets

Purwanto (1999) has provided a thoughtful analysis of some of the implications of his work at Cikumutuk, as follows. The rate of soil loss from rainfed agriculture is much higher than the so-called tolerable loss, and erosion carries away valuable nutrients and organic matter (cf. Ananda and Herath 2003). But at least 50% of this erosion comes from dryland terrace risers, not treads. Not only have the impacts of soil loss on crop productivity been exaggerated because all soil was assumed to come from treads, but the construction of bench-terraces on steep land as a solution to soil erosion has probably worsened the situation for the reasons that more soil is exposed to raindrop impact and large amounts of soil are available for erosion during bench construction. Maintenance of benches is difficult, and traditional conservation methods such as mixed gardens and grove maintenance are neglected because bench-terraces are said to be a better soil conservation method. Fagi and Mackie (1987), however, claim that in the Citanduy catchment of west Java, traditional methods yield about eight times more sediment than bench-terraces but it is not clear if riser erosion was included in their estimates. Purwanto has carefully applied the sediment budget approach to rainfed terraces, demonstrating the value of the approach even at small spatial scale.

The results of Purwanto should lead to a reconsideration of the cost estimates of Magrath and Ahrens (1989) referred to earlier. Also, it is claimed that the soil conservation effort in the uplands of Java, based mainly on bench-terracing, has thus far failed to reduce river sediment levels (Diemont et al. 1991). This should lead to a re-evaluation of the costs and benefits of upland management aimed at both on-

farm productivity and downstream amelioration of sedimentation in reservoirs, irrigation systems and rivers. Purwanto, however, argues that the SDR of 0.47 for the Cikumutuk catchment means that '... the poor ecological stability of the bench terraces does not necessarily have an equally adverse effect downstream' (p. 177). This is unlikely to be the case in the Konto catchment where the SDR is ~ 1.0 .

Purwanto goes on to promote level bed terraces rather than outward-sloping or backward-sloping treads. Both outward and backward sloping terraces can induce erosion, depending upon rainfall intensity and infiltration rates. Level bed terraces are cheaper and do not seem to induce worse erosion than other types. He also promotes what he calls 'vertical mulching'; that is, vegetation of risers to stabilise them and also provide fodder.

Clean weeding and frequent tillage are attributes of farming in Purwanto's study area. Both practices can enhance erosion. Vertical mulching should stabilise the risers, and strip tillage of bench treads will also help to minimise soil loss. Strip tillage is the practice of minimum tillage along the gutter at the back of the tread, with fine tillage of the remainder. The minimally tilled area traps soil washed from the area of fine tillage.

About 3% of the total erosion in the Cikumutuk catchment and 18% in the Konto River catchment comes from villages. In the Konto, a further 24% comes from roads and trails. Reducing runoff, and therefore erosion, from villages by trapping water coming from roofs will also improve water availability during the dry season.

The high SDR in the Konto catchment may have an unforeseen adverse effect. The stored sediment will contain metals from chemical fertilisers and pesticide and/or herbicide residues. The effects (if any) of these materials on human health and aquatic organisms in Java is unknown. What is clear is that storage of sediment in upland areas, while of benefit to the larger rivers and the people who depend upon them, can dramatically harm upland aquatic ecosystems and the resources found in them, including fish.

This discussion was begun by highlighting the perceived effects of uncontrolled fire and shifting agriculture on erosion and downstream sedimentation. These are generally not common land uses and management techniques in Java, but they are in Eastern Indonesia and East Timor. The only analysis available at the whole-of-catchment scale relevant to this issue comes from the Laclo River. Here, a semi-quantitative analysis indicates that fire and shifting

agriculture could only affect erosion rates if they exacerbate gullying, landsliding or riverbank erosion. Sheet erosion of hillslopes used for shifting agriculture and burned for hunting and grazing may affect on-site productivity but contributes little to downstream sediment loads.

One of the purposes of the Laclo study was to determine if upland erosion had any effect on coastal fisheries. In the case of the Laclo River, almost all of the sediment discharged into the ocean goes quickly into deep water. The substrate for mangroves appears to come almost completely from the ocean. So on the north coast of East Timor, and probably in West Timor, land-derived materials have little effect on coastal fisheries. On the south coast, however, where deltas are common and the offshore gradient is gentler than on the north coast, there probably is a link between land-derived materials and coastal fisheries. This has yet to be explored.

Even though upland accelerated erosion does not appear to adversely impact coastal fisheries, it appears to be producing sediment aggradation in the Laclo River, channel widening and loss of floodplains where wet rice is cultivated. Gullying also appears to have reduced spring flow, thereby increasing the difficulty of obtaining drinking water. Reforestation of gullied uplands in France (Piegay et al. 2004) and New Zealand (Marden et al. 2005) has reduced sediment yield markedly. If applied to the uplands of East Timor, and relevant parts of Eastern Indonesia, would the socioeconomic impacts be positive? Can forests and plantations be established that have good ground cover, provide firewood and building materials, provide cash incomes, and also provide opportunities for hunting without burning? These issues await investigation.

Conclusions

The catchment concept has been illustrated first conceptually then by means of sediment budgets of varying specificity and therefore information content. By far the most useful for management are sediment budgets that quantify all sources, sinks and yield. But for large catchments this is impractical and a simpler approach based on geochemical tracers has been adopted. This approach does not have the same information content as a complete budget, but can guide more detailed studies of key elements of the system and also management.

A sediment budget has been shown to provide a guide to the most important conservation measures both for on-farm and downstream purposes. The socioeconomic implications of the results of sediment budgeting are also clarified where possible, and some long-held beliefs challenged.

Application of the whole-of-catchment approach to Eastern Indonesia and East Timor would permit questions to be answered about links between upland land use and lowland impact, and would allow integrated assessment of both land and water resources (including coastal fisheries) and solutions to problems identified by local people. Integrated economic development should be set within the catchment framework, although it is not the only integrative framework that can be used. Others include market and supply chain integration and agroecology. While the catchment framework is essential to integrate land and water management, it is not sufficient if economic development extends to areas outside a particular catchment, especially if markets are offshore.

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Fire management, community partnerships and rural development in East Tenggara Timur: lessons from an ACIAR-funded project in Sumba Timur and Ngada

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Abstract

East Tenggara Timur (NTT) supports over 4.5 million people; 85% of them reliant on subsistence agriculture. Much of the region is composed of fire-prone savanna where fire is used as an essential tool both in pastoral and cropping management systems. Given the rapid transformation of rural societal structures across much of NTT in recent decades, high population growth (2% p.a.), limited well-watered land, and significant land tenure conflicts among communities and between communities and government, there has been a breakdown of traditional forms of locally coordinated fire management, with the result that uncontrolled fires today impact significantly on environmental assets, livelihood resources and economic conditions.

Building on preliminary regional workshops held in Kupang in 1995 and Darwin in 1999, a research project commenced in 2000 focusing on developing fire management capacity in regional NTT institutions and communities. It is funded principally by the Australian Centre for International Agricultural Research (ACIAR) and other Australian partners. The project has demonstrated coordinated, community-based approaches to fire management at four village-scale demonstration sites in eastern Sumba and central Flores. Working with local communities, the NTT Government, higher education institutions and the well-organised local NGO sector, the project has implemented:

- fire management activities at each study village, focusing especially on protection of high-value agroforestry plantings. Importantly, this component of the project was developed within an 'action research' framework, where activities are collectively developed, monitored and assessed by community, institutional and research partners.
- community extension, planning and training activities. The latter includes remote sensing and associated GIS training for BAPPEDA NTT staff, resource inventory training and educational capacity development, particularly through the transfer of tertiary ecological modules developed through the Tropical Savannas Cooperative Research Centre and associated training courses delivered to Satya Wacana University. A recent independent review found that the project approach successfully addressed local needs by being inclusive of community and institutional partners.

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Pengelolaan kebakaran, kerjasama masyarakat dan pengembangan daerah pedesaan di Nusa Tenggara Timur: pelajaran dari proyek yang dibiayai oleh ACIAR di Sumba Timur dan Ngada

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Abstrak

Nusa Tenggara Timur (NTT) menghidupi lebih dari 4.5 juta jiwa; 85% dari jumlah populasi bergantung pada pertanian sebagai nafkah penghidupan. NTT banyak terdiri dari sabana rawan kebakaran. Api digunakan sebagai alat penting pada kehidupan pedesaan and system pengelolaan hasil bumi. Dengan transformasi pesat pada struktur masyarakat pedesaan dalam dekade dewasa ini, tingginya pertumbuhan penduduk (2% p.a.), terbatasnya lahan cukup-air, adanya konflik kepemilikan tanah baik antar-masyarakat maupun masyarakat-pemerintah, di NTT banyak terjadi kegagalan pada cara tradisional dalam pengelolaan kebakaran yang dikelola oleh penduduk setempat sehingga kebakaran yang tak terkendali berakibat pada assets lingkungan hidup, sumber mata pencaharian, dan kondisi ekonomi.

Menindak lanjuti loka karya preliminary regional di Kupang pada tahun 1995 dan Darwin pada tahun 1999, proyek penelitian berfokus pada pembangunan kapasitas pengelolaan kebakaran di institusi regional NTT dan masyarakat yang secara resmi terselenggara pada tahun 2000 dengan dukungan biaya pokok dari the Australian Centre for International Agricultural Research (ACIAR) dan badan lain di Australia. Proyek tersebut telah menunjukkan terkoordinasinya, pendekatan berdasar-masyarakat pada pengelolaan kebakaran di empat skala-desa sebagai tempat peragaan di Sumba timur dan Flores tengah. Bekerja dengan masyarakat setempat, pemerintah NTT (BAPPEDA NTT, Dinas Kehutanan), sekolah tinggi (Wira Wacana Christian School of Economics, Satya Wacana University), dan sector LSM setempat yang terorganisir dengan baik, proyek tersebut telah terimplementasi:

- Aktivitas pengelolaan kebakaran pada tiap desa studi (berkisar pada ukuran antara 10–70 km²), khususnya berfokus pada tanaman wanatani nilai-tinggi. Yang terpenting, komponen proyek ini telah dikembangkan dalam kerangka kerja 'action research', dimana aktivitas dikembangkan secara kolektif, termonitor dan teruji oleh masyarakat, institusional dan patner peneliti.
- Perluasan masyarakat, kegiatan perencanaan dan latihan—yang kemudian termasuk pengamatan daerah terpencil (pemetaan kebakaran dengan menggunakan data satelit) serta dalam kaitannya dengan latihan GIS untuk staff BAPPEDA NTT, dan latihan sumber inventaris yang berfokus pada pemeriksaan status limitasi yang tersisa pada sumber kehutanan. Pengembangan kapasitas pendidikan, khususnya melalui transfer susunan modul ekologi yang dikembangkan melalui *the Tropical Savannas Cooperative Research Centre*, dan kursus-kursus pelatihan terkait, disampaikan ke Satya Wacana University (berada di Salatiga, Java), yang merupakan penyeter utama pendidikan tinggi untuk NTT. Dari pengkajian independen belum lama ini diketahui bahwa proyek pendekatan tersebut dirasa sukses dan tepat sasaran untuk kebutuhan setempat dengan mengikut sertakan masyarakat dan para institusi terkait.

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Introduction

In recent years there has been considerable international attention and discussion concerning massive fires in western Indonesia and West Papua associated with major El Niño Southern Oscillation (ENSO) events. This has prompted a number of major studies that have examined underlying causes, especially in western Indonesia (Applegate et al. 2001; Colfer 2002; Tacconi 2003; Mudiyarso et al. 2004; Dennis et al. 2005). By contrast, there has been little appreciation of the extent, underpinning conditions and implications of fire patterns in other parts of the Indonesian archipelago, particularly in seasonally markedly dry monsoonal regions, including East Nusa Tenggara (NTT) (Dennis 1999).

Given that, in NTT:

- over 85% of the population is reliant on subsistence agriculture with that sector employing between 75–80% of the population directly (Barlow et al. 1990)
- agriculture contributed 40% of the region's GDP during 1993–97 (Djoeroemana et al. 2000)
- fire is an integral component of traditional and contemporary agriculture and forestry management systems (Fox 1977; Ataupah 2000; Bamaulin 2000; Gadas 2000; McWilliam 2000; Mudita 2000; Therik 2000),

it can be readily appreciated that appropriate fire management is a critical issue for environmental sustainability and rural livelihoods in this fire-prone region.

It was in this context that, in 1995 at a meeting in Kupang involving eastern Indonesian and northern Australian tertiary education and research institutions, the understanding of current fire patterns and their causes in NTT was identified as a priority area for a joint research effort. Subsequently, the topic was investigated at an international workshop funded by the Australian Centre for International Agricultural Research (ACIAR) held in Darwin in 1999. Papers were published in the ACIAR's Proceedings series (Russell-Smith et al. 2000). An outcome of the 1999 workshop was the development of a research project, funded principally by ACIAR, titled 'Impacts of fire and its use for sustainable land and forest management in Indonesia and northern Australia', which commenced in 2000 and was completed in 2005.

The remainder of this paper addresses two main issues. First, as a basis for understanding key design

features of the research, it is instructive to consider the role of fire management within the context of the 'integrated sustainable rural development' model for NTT as presented by Djoeroemana (2007) in these proceedings. The model itself was a product of the fire research program. Second, we describe the partnerships and activities that were developed to deliver an effective program.

Fire management and the NTT integrated sustainable rural development model

Economic and livelihood development in NTT can be considered to be influenced by four major components or 'domains': sociocultural, political, environmental and economic (Djoeroemana 2007 in these proceedings). Fire management interacts with and impacts on each of these domains. With respect to environmental and economic influences, the direct impacts of uncontrolled or unmanaged fire on environmental sustainability and people's livelihoods are largely self evident—destruction of crops, pasture and buildings; impacts on forest resources; promotion of soil erosion; and resultant downstream and coastal sedimentation (Bamaulin 2000; Gadas 2000; McWilliam 2000; Mudita 2000). Less obvious are significant sociocultural and political influences. Russell-Smith et al. (2006) consider a number of pertinent cultural and political issues that need to be addressed if we are to deliver effective development outcomes.

First, within the sociocultural domain it is necessary to appreciate that:

- Local clan structures or social stratification, and land ownership systems, may differ markedly from village cluster to village cluster.
- Very significant societal change has been occurring in recent decades, most notably the replacement of traditional hierarchical social structures with more classless forms.

Conflicts over land ownership both within and between village communities are common, and can manifest in open disagreements over use and management of resources, with one result perhaps being that no fire management is undertaken on contested land, and/or fire is used actively as a weapon of dispute. Such conflicts are only exacerbated by increased population pressures. Population increase in NTT is currently running at around 2% p.a. (Biro Pusat Statistik 2002).

Second, within the political domain, a major issue impacting directly on community livelihoods concerns land tenure conflicts and attendant issues such as access to and utilisation of resources between local communities and regulatory authorities, especially the Dinas Kehutanan (Department of Forestry). Dinas Kehutanan directly administers around 30% of NTT including significant areas of unforested land. Conflicts can result in the burning of designated forestry lands and plantations by disaffected communities as an assertion of traditional rights (McWilliam 2000). Dennis et al. (2005) describe land tenure conflicts as a major factor contributing to destructive fire activities in western Indonesia.

Third, and also in the political domain, current NTT Provincial Government policy, according to McWilliam (2000):

...proscribes all cultural burning in a wholly futile attempt to curb the practice. This policy position derives in large degree from national perspectives and guidelines, but its origins can also be identified in historical Dutch Colonial proscriptions against any local use of fire in land management and clearing.

Addressing the broader national policy agenda, Tacconi and Ruchiat (2005) state the issue equally bluntly:

...the current zero burning policy does not address regional management needs, is unenforced, and is unenforceable.

The practical effects of this policy on people's livelihoods are felt throughout Indonesia (Tacconi 2003; Dennis et al. 2005), especially in semiarid regions where the use of fire continues to be an intrinsic component of farming systems.

In summary, these sociocultural and political factors, combined with the natural propensity of regional savanna landscapes to carry fire as the dry season progresses, conspire to have a major impact on environmental conditions, livelihood resources and thereby economic conditions. Further, given these factors, it is almost trite to state that, without effective fire management and a supportive policy environment, sustainable forestry and agricultural development will continue to be elusive in NTT.

Research for fire management outcomes—developing community partnerships

From the outset, it was recognised that, if the project was to deliver useful outcomes for rural communities in NTT, planning must involve all key community partners—local communities themselves, local government, the non-government organisation (NGO) sector and (given that this was fundamentally a research project) appropriate regional research institutes and the tertiary education sector. The project was to be undertaken at three sites, Timur Barat, Sumba Timur and Ngada in central Flores, focusing on catchment-scale issues and involving local communities directly in the design and implementation of research.

As it happened, funding realities and other political events resulted in the project being conducted at four village-scale demonstration sites in Sumba Timur and Ngada (Figure 1), with each site located in relatively close proximity to the regional capitals Waingapu (Sumba Timur) and Bajawa (Ngada). Regardless, the focus remained on action research activities involving local communities, local government (regional offices of the Provincial Planning Board—BAPPEDA NTT, Dinas Kehutanan), local NGOs or LSM (*Lembaga Swadaya Masyarakat*), and tertiary education institutions (Wira Wacana Christian School of Economics and Satya Wacana University). Northern Australian partners comprised the Charles Darwin University, Tropical Savannas Management Cooperative Research Centre and the Bushfires Council of the Northern Territory (an NT Government agency).

Project leadership, staff selection and overall administration for the NTT component was provided through Wira Wacana, although in Ngada project activities were delivered through a local NGO, Yayasan Mira Tani Mandiri (YMTM). This latter arrangement proved to be very effective as it enabled project activities to complement other rural development programs conducted by YMTM. BAPPEDA contributed two gifted young staff members for Geographic Information System (GIS) and remote sensing training, while project staff selection was undertaken independently through Wira Wacana and YMTM—with excellent results. The role of northern Australian partners was essentially to provide technical guidance and input where required—particularly through regular planned visits, with some formal training elements conducted in Darwin and Bogor.

A further key element was that, once staff were employed, in Sumba Timur especially, a lengthy process of consultation and ‘socialisation’ was undertaken with prospective village communities. This process had already been undertaken in Ngada through ongoing YMTM activities. Once agreement was reached between the parties concerning proposed action research and development activities, the project was effectively delivered on-ground as a community-based partnership.

Over the duration of the project, major activities included:

- background documentation and appraisal of livelihood and associated land management activities including fire-management practices, community and social structures, and demographic data to better understand contemporary fire management issues at the different villages and more regionally. These data were published separately (ACIAR 2004a,b).

- implementation of structured fire management activities at each study village (villages, including their surrounding lands, are in the 10–70 km² size range), focusing especially on protection of high-value agroforestry plantings.
- community extension, planning and training activities including remote sensing (fire mapping using satellite data) and associated GIS training for BAPPEDA staff, and resource inventory training focusing on assessing the status of the limited remaining forest resources. The fire mapping work is presented in Fisher et al. (2006), and the resource inventory work is summarised in Russell-Smith et al. (2006).
- educational capacity development, particularly through the transfer of tertiary ecological modules developed by the Tropical Savannas Management Cooperative Research Centre, and associated training courses delivered at Satya Wacana University (based at Salatiga, Java), a major higher education supplier to NTT.

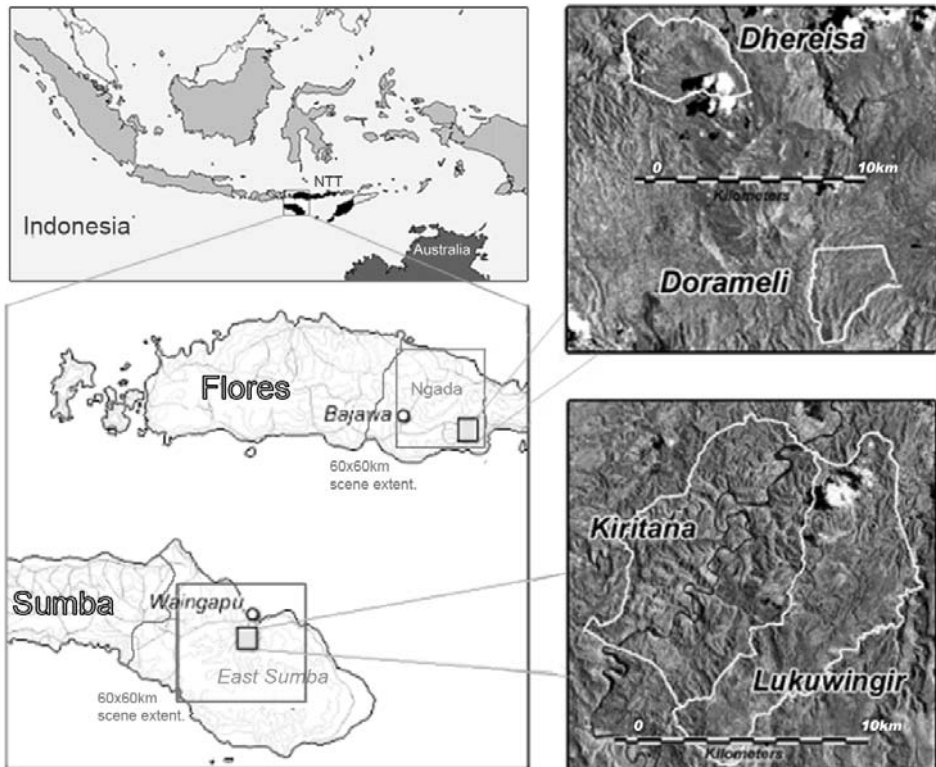


Figure 1. Location of study village areas on the islands of Sumba and Flores, Nusa Tenggara Timur

A recent independent review found that the project approach successfully addressed local needs by including all community and institutional partners (House and Saragih 2005). As noted by those reviewers, the project was found to have a number of impacts.

Community impacts (social, economic, environmental etc.)

- There were immediate benefits to village incomes through additional productive land, especially in Flores where vegetables were being grown among timber and fodder species.
- There were short-term impacts on Sumba, restricted to awareness and understanding of fire and its management.
- The most significant community impacts have been in the organisation of village groups to tackle a common problem. These groups all said they would continue to apply the new knowledge they have about fire management, and hopefully extend this both within the villages and beyond to neighbouring districts. This is the most powerful form of 'extension', where the research participants themselves show others what can be done.

Capacity-building impacts

- Very successful GIS/remote sensing training undertaken by local BAPPEDA officers has resulted in their now having a range of skills that have clearly been of great value to the project; in addition, these skills are already in demand for other resource management purposes.
- It was particularly encouraging to see that the NGOs on both islands also had the chance to see the value of such training, and it is anticipated that project staff will be able to pass on some of their new knowledge for the broader community benefit.

Scientific impacts

There are no substantial scientific impacts arising from this project: rather it was the application of tested methods to new environments, in novel ways, that is the project's major scientific achievement. The capacity building outlined above could also be considered as having scientific impact in the region by raising awareness of the range of potential applica-

tions for GIS/remote sensing technologies in rural development.

Further outcomes of this project have been the development of an ongoing technical training program, 'Enhancing land management capacity for sustainable rural development in eastern Indonesia', currently funded through AusAID, and the impetus for holding this workshop.

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Ketahanan pangan dan pembangunan pedesaan di Timur Tengah Selatan berdasarkan studi di kecamatan Pollen dan Kualin

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Abstrak

Presentasi ini mendeskripsikan hubungan antara pola curah hujan serta distribusinya, persediaan air, aktivitas pertanian, persediaan pangan untuk tingkat rumah tangga dan hubungannya dengan akses terhadap pangan, konsumsi pangan dan gizi masyarakat di Kecamatan Kualin kabupaten Timur Tengah Selatan. Berlawanan dengan kenyataan yang ada di Kecamatan Pollen, di Kecamatan Kualin tidak ada hubungan langsung antara curah hujan dengan persediaan air. Apapun alasannya, kemarau telah mengakibatkan menurunnya persediaan pangan bagi petani dan yang lebih buruk lagi adanya penurunan dalam mengonsumsi pangan dan gizi di pedesaan. Upaya telah dilakukan oleh masyarakat pedesaan/rumah tangga untuk menggandakan panen dari berbagai usaha pertanian, mencampurkan usaha khususnya pada peternakan, dan berbagai kebutuhan dasar *coping mechanism*, keterlibatan pihak luar (struktural pemerintah desa, LSM, dan gereja setempat) dengan penyediaan pangan pada waktu yang tepat dengan sasaran untuk para penduduk desa dalam menghindari kekurangan pangan, strategi melihat keluar untuk menjelajahi pertumbuhan ekonomi di sekitar wilayah yang dapat membantu mengembangkan masyarakat di Kecamatan Kualin dan TTS secara umum.

Food security and rural development in South Central Timor based on case studies in Pollen and Kualin subdistricts

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Abstract

This paper describes the relation between rainfall patterns and distribution, water availability, agriculture activities, household food stocks and food access, food consumption and nutrition status of villagers in the Kualin subdistrict of the Timor Tengah Selatan district in West Timor. It was found that in contrast to the situation in the Pollen subdistrict, there was no direct relation between water availability and rainfall occurrence.

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Nevertheless, it was found that dry seasons reduced farmers' foodstocks and, in the worst conditions, led to reduced food consumption and nutrition status of villagers. Efforts have been made by villagers and households to devise cropping systems to sustain multiple harvests of different crops, and mixed crop and livestock systems to meet various basic needs. External intervention (village suprastructure government, NGOs and local church) to provide foodstuffs in times of most need have helped villagers avoid the worst effects of food shortages. Providing villagers with appropriate technologies and knowledge to improve their resilience and skills to better manage the impacts of dry seasons and water shortages, and devising strategies to explore growth options, should help the development of the villages in Kualin subdistrict and South Central Timor.

Pendahuluan

Nusa Tenggara Timur (NTT) merupakan daerah yang memenuhi dua ciri dari daerah yang oleh Oram (1989) dikatakan memiliki resiko-resiko khusus, *per-tama*: daerah ini marginal menurut sifat iklimnya; dan *kedua*, daerah ini secara sosial rentan (*socially vulnerable areas*). Marginal menurut sifat iklimnya karena tropik kering dengan hujan yang *eratik*. Daerah ini rentan secara sosial karena tingkat pendapatan ekonominya yang rendah, memiliki kepadatan penduduk yang tinggi, sering mengalami kekurangan pangan, dan gangguan kesehatan yang berhubungan dengan kurang gizi.

Sejumlah daerah di NTT sering mengalami suatu kondisi insekualitas pangan transisional yaitu suatu penurunan sementara dari akses rumah tangga terhadap pangan yang cukup, yang terutama disebabkan oleh: (i) rendahnya produksi usahatani, dan (ii) ketiadaan akses pangan pada waktu-waktu kritis, karena gagal panen atau rendahnya produksi pertanian, ketiadaan pekerjaan diluar usahatani, dan oleh sebab itu ketiadaan pendapatan untuk membeli pangan, atau ketiadaan sumber lain diluar cara-cara ini. Keadaan ini berakibat langsung pada asupan pangan dan derajat kesehatan masyarakat.

Penelitian untuk mengetahui hubungan antara pola dan curah hujan, produksi pertanian, stok pangan, konsumsi dan status gizi keluarga di Kec. Pollen TTS (Karwur et al. 2005) menemukan sejumlah kesimpulan, antara lain: (i) Terdapat variasi antar-desa dalam hal awal dan akhir dari periode hujan; (ii) Periode waktu tiga bulan sejak minggu pertama Nopember (Februari 2005) merupakan periode yang paling kritis dalam hal ketersediaan stok pangan bagi sebagian besar keluarga; (iii) Defisit pangan pokok (jagung dan beras) setiap tahunnya sering terjadi dan dialami sebanyak 77,8% terutama sejak Oktober sampai dengan awal musim panen; (iv) Kejadian kelaparan berhubungan erat dengan periode menurun atau habisnya stok pangan di tingkat rumah tangga;

(v) Upaya mengatasi terjadinya defisit pangan pokok (jagung dan beras) yang dilakukan Rumah Tangga adalah mengadakan pengaturan persediaan pangan pokok (84,4%), mengurangi frekuensi makan dari 3 kali menjadi 2 kali sehari, melakukan pencampuran antar pangan pokok (jagung dengan beras) dan atau pangan pokok dengan berbagai jenis pangan lainnya; (vi) Dalam keadaan defisit pangan pokok, *copping mechanism* yang dilakukan Rumah Tangga, adalah bekerja diluar desa (57,8%), menjual hasil kebun (46,7%), menjual ternak (37,8%), meminta bantuan pemerintah (17,8%), menjual hasil hutan dan mengkonsumsi umbi-umbian hutan (6,7%) serta meminta bantuan tetangga (4,4%); (vii) Pola kebiasaan pangan pada tingkat Rumah Tangga sangat erat kaitannya dengan ragam jenis tanaman maupun ternak yang diusahakan; (viii) Rata-rata tingkat konsumsi energi baru mencapai 97,6% dan protein 77,5% dari baku kebutuhan energi sebesar 1744 Kalori dan protein 47,4 gram/kapita/hari; (ix) Prevalensi Rumah Tangga defisit konsumsi energi mencapai 20,0% dan protein 66,6%; (x) Pola konsumsi kelompok pangan padipadian (jagung dan beras) sebagai sumber energi utama mencapai 77,64% dan umbi-umbian 8,16%; (xi) Mutu keragaman konsumsi pangan masih sempit; (xii) Status gizi masyarakat di Pollen belum memadai, diantaranya sebagai akibat dari belum tercukupinya jumlah dan mutu pangan yang dikonsumsi, ditemukan prevalensi anak balita gizi buruk maupun kurang (KEP nyata) sangat tinggi serta sebanyak 41,12% orang dewasa berada dalam kategori kurus sampai sangat kurus-Indeks IMT.

Makalah ini melaporkan hasil pertanian yang sama yang dilakukan setahun kemudian (2005) di Kecamatan Kualin yang terletak di bagian selatan TTS (\pm 90–96 Km dari kota Soe, 2.5 jam dengan bus) berbatasan dengan Laut Timor; dan berdasarkan temuan-temuan tersebut (dan temuan di Pollen), diajukan pikiran-pikiran pengembangan masyarakat di pedesaan di TTS dan NTT umumnya.

Kecamatan Kualin

- Luas 237 km²
- Penduduk 19.201 jiwa (Agustus 2005)
- 7 Wilayah administrasi (Nunusunu, Toineke, Kiufatu, Tuafanu, Kualin, Oni dan Tuapakas)
- 30 Dusun dengan 71 RW dan 160 RT.
- Lima desa bagian selatan berbatasan dengan laut.
- Jumlah penduduk per desa antara 1840 sampai 3336 jiwa
- Penduduk dengan pendidikan formal 14.235:
 - 54.8% SD
 - 31.7% SMP
 - 12.5% SMU
 - 1% (148 jiwa) Perguruan Tinggi.
- Jalan penghubung antar dusun yang berjarak rata-rata 3.5 km, terdiri dari:
 - 26.6% Jalan tanah
 - 16.7% jalan berbatu
 - 16.7% jalan dengan pengerasan
 - 16.7% jalan aspal
- Fasilitas transportasi tersedia, terutama ojek yang mencapai 73.3%
- Jarak untuk ke pasar rata-rata 7.37 km (\pm 30 menit dengan ojek)
- Jarak terjauh menuju pasar 16 km dan terdekat 0.5 km
- Tidak ada warung makan di kecamatan Kualin, tapi banyak kios;
 - Kiafatu 18 kios
 - Toineke 11 kios
 - Desa-desa lain antara 3–5 kios
- Pasar berlangsung sekali dalam seminggu di hari Rabu, kecuali di Kiufanu dua kali seminggu

Metode Penelitian

Deteksi stok pangan, asupan pangan dan status gizi dilakukan antara bulan Oktober–Nopember 2005, yakni di akhir kemarau dan awal musim penghujan. Data klimatologis diacukan dari stasiun klimatologi terdekat. Data kependudukan dan agregat Desa dikumpulkan dengan pendekatan Diskusi Kelompok Terfokus (DKT), yang dalam DKT pandangan informan kunci ikut disaring. Data rumah tangga dikumpulkan dengan pencuplikan yang mewakili dusun, dengan mempertimbangkan strata umur dan tingkat sosial ekonomi. Penimbangan berat badan dan tinggi badan dilakukan secara langsung dengan keluarga/anggota keluarga. Data sekunder lain dikumpul dari instansi yang relevan.

Hasil Penelitian

Kejadian Hujan, Ketersediaan Air dan Aktifitas Pertanian

Curah hujan tahunan di wilayah ini 973,75 mm (data 1991–2000). Antara Mei–Nopember (selama 7 bulan) hujan bulanan tidak melebihi 100 mm/bln (Oldemand (1977); dan bulan lembab hanya terjadi selama 5 bulan (Desember–April). Dari hasil DKT, didapati bahwa pada periode tanam 2004–2005 hujan datang pertama kali pada minggu pertama dan kedua bulan Nopember untuk desa-desa Tuapakas, Kualin dan Toineke. Di desa Oni dan Kiufatu hujan berlangsung pada minggu 1 dan 2 bulan Desember. Sisanya (Nunusunu dan Tuafanu) berlangsung pada minggu pertama Januari. Kejadian hujan ini terjadi lambat dibanding dengan catatan stasiun klimatologis: 1–2 minggu untuk desa Tuapakas, Kualin dan Toineke, semakin lambat di desa-desa lain, bahkan di desa Nunusunu dan Tuafanu keterlambatannya sampai 2 bulan.

Untuk kejadian akhir hujan, walaupun beragam, berlangsung jauh lebih awal dari catatan stasiun klimatologis hujan masih terjadi sampai Mei–Agustus walaupun hari hujannya tidak lebih dari 6 hari selama sebulan, sedangkan kebanyakan hujan sudah berakhir di akhir Februari.; paling cepat terjadi di desa Toineke (minggu pertama Desember 2004). Di desa Kualin dan Oni, hujan terakhir terjadi pada berturut-turut minggu 1 dan 3 Januari 2005. Di Tuapakas dan Kiufanu hujan terakhir kali terjadi pada minggu pertama bulan Februari 2005, dan di Nunusunu dan Tuafanu terjadi pada minggu ke-3 dan minggu ke-4 April 2005. Akibatnya, periode hujan dalam musim tanam 2004–2005 terlalu singkat, yakni kurang dari 16 minggu/tahun, bahkan ada yang kurang dari 10 minggu/tahun, (Desa Kualin: 8 minggu, Toineke: 5 minggu, Oni: 6 minggu), dan Kiufatu: 6 minggu). Periode hujan yang singkat ini (maksimum 2 bulan) menyulitkan para petani dalam mengusahakan tanaman semusim. Namun demikian, nampaknya ketidakterediaan air hujan yang panjang tidak diikuti oleh ketidakterediaan air tanah. Air sumur dan mata air umumnya tetap tersedia dan ini penting bagi kebutuhan MCK dan pemeliharaan ternak.

Peristiwa turunnya hujan juga menentukan kegiatan pemanenan dan terutama kegiatan penanaman. Waktu penanaman tanaman pangan utama, (Jagung, Ubi kayu, Padi, K. Hijau, K. Kedele, K. Nasi, K. Tanah, Kentang dan Labu, ubi jalar dan padi ladang) (n=104 responden) terjadi pada Nopember 2004 (48%),

Desember 2004 (81%) dan Januari 2004 (29%). Pola yang sama, juga nampak untuk aktifitas penanaman tanaman lain (ubi kayu, kacang hijau, kacang kedele, kacang nasi, ubi jalar dan kacang tanah). Studi yang sama namun mengenai waktu panen menunjukkan: Jagung dipanen pada bulan April–Mei (3.5–5 bulan setelah penanaman). Selang pemanenan ubi kayu berlangsung 5–6 bulan, yakni Juni–Nopember. Dibandingkan dengan waktu menanam, waktu panen berlangsung tersebar sepanjang tahun, nampaknya agar waktu panen terdistribusi dalam rentang setahun dan risiko ketiadaan panen diminimalkan.

Terhadap curah hujan, tanaman tahunan sumber pangan (ekonomis) tidak sensitif tanaman musiman. Aktifitas memanennya berlangsung sepanjang tahun walaupun dengan intensitas yang berbeda-beda. Pepaya dan Pisang dipanen sepanjang waktu namun terutama pada bulan-bulan Mei, Juni, Juli dan Agustus. Pepaya bunga jantan dimanfaatkan sebagai sumber sayuran. Mangga terutama diakhir tahun. Pisang merupakan tanaman yang diusahakan baik pada musim hujan maupun pada musim kemarau. Tuak sebagai sumber minuman, namun sebagian besar dijual, terutama pada bulan September–Nopember, dan menyumbangkan kepada stok pangan yang dimanfaatkan manakalah akhir musim kemarau atau ketersediaan pangan semakin menipis.

Ketersediaan air sumur dan mata air sepanjang tahun menempatkan peternakan sebagai suatu bidang penting penyangga ketahanan pangan keluarga, terutama dalam menyediakan uang tunai. Sapi, babi, ayam, dan kambing adalah ternak utama (Tabel 1). Tabulasi terhadap jawaban dari jumlah KK (n=105) yang memiliki ayam di Kecamatan Kualin berkisar antara 86 hingga 100%; babi berkisar antara 75–100% (rata-rata 90.4%), kambing berkisar antara 20–73% (rata-rata 34.6%), dan Sapi berkisar antara 6.7–47% (rata-rata 36.5%).

Jumlah kepemilikan perkeluarga bervariasi. Untuk Ayam berkisar antara 2–10 ekor; Babi berkisar antara

1–4 ekor; Kambing berkisar antara 1–2 ekor (60% responden); Sapi, berkisar antara 1–2 ekor, (66% responden). Data di atas menunjukkan peran yang signifikan dari ternak terhadap perekonomian rumah tangga di desa-desa di Kecamatan Kualin.

Ketersediaan Stok Hasil Pertanian Pangan Keluarga

Studi mengenai keadaan stok hasil pertanian pada 74 keluarga menunjukkan bahwa stok hasil pertanian oleh keluarga-keluarga di Kualin dalam bentuk hasil panen jagung (94.5%), ubi kayu (60.3%), beras/padi (17.8%), kac. Hijau (4.1%), kac. Nasi (4.1%), dan ubi-ubian lainnya (2.7%). Jumlah KK yang menyimpan hanya jagung saja sebanyak 28%; yang menyimpan hanya keteloh pohon saja sebanyak 2.7%; yang menyimpan jagung dan keteloh pohon sebanyak 46%; yang menyimpan stok pangan dalam kombinasi jagung, ubi kayu dan beras sebanyak 10.8%.

Data ini menunjukkan bahwa jagung dan ubi kayu merupakan stok tanaman hasil pertanian utama, walaupun ubi kayu tidak dapat berdiri sendiri sebagai stok pangan. Hampir semua responden yang memiliki ubi kayu juga memiliki jagung; sehingga nampaknya ubi kayu merupakan hasil panen komplementaris; dan apabila dilihat dari waktu panen adalah dalam rangka distribusi waktu panen yang lebih panjang.

Berapa banyakkah rumah tangga yang masih memiliki stok pangan hasil pertanian? Dari total 74 responden, 51% dari mereka tidak lagi memiliki stok hasil pertaniannya. Ada 10 KK atau 13.5% masih memiliki stok pangan jagung saja. Ada 5.4% dari total responden yang masih memiliki ubi kayu saja (karena total responden yang panen ubi kayu saja sebesar 2.7%, maka berarti beberapa dari mereka telah kehabisan jagung sebagai stok pangan), dan hanya 5.4% responden yang memiliki stok pangan jagung + ubi

Tabel 1. Jenis dan Populasi Ternak Desa-Desa di Kecamatan Kualin

Desa	Sapi	Kerbau	Babi	Ayam	Bebek	Kuda	Kambing
Nunusunu	852	–	850	1245	–	4	448
Kiufatu	500	–	500	1000	–	–	1000
Toineke	1602	–	1100	2247	–	3	551
Tuafanu	2022	–	1934	4228	–	36	2781
Kualin	*	*	*	*	*	*	*
Oni	200	–	500	5000	100	50	300
Tuapakas	530	–	1074	4790	40	13	255

Sumber: Daftar Isian Potensi/Profil Desa tahun 2004; *Data di desa maupun di Kecamatan belum tersedia

kayu. Menariknya bahwa masih ada 10 responden (13,5%) yang memiliki stok pangan dengan jagung + beras sebagai stok hasil pertanian. Hal ini tidak dapat dijelaskan dengan jumlah petani yang memanen padi yang hanya 10%. Diduga stok yang ada ini termasuk bahan yang dibeli atau merupakan bantuan.

Keuangan dan Pendapatan

Apakah keluarga yang tidak lagi memiliki stok hasil pertanian masih memiliki kemampuan untuk melakukan transaksi pembelian tunai? Studi yang dilakukan terhadap 105 responden menunjukkan bahwa sebagian besar (71.43%) keluarga memiliki pendapatan perbulan kurang dari Rp50.000; sebesar 12.38% responden berpendapatan antara Rp51.000 s/d Rp100.000; sebesar 7,6% berpendapatan antara Rp101.000 s/d Rp200.000; dan sebesar 3.8% berpendapatan lebih besar dari Rp200.000. Dengan demikian, Walaupun pendapatan bulanan tunai per KK sebagian besar tidak lebih dari Rp50.000, tetapi sebagian besar dari mereka memiliki uang tunai pada saat penelitian lapangan dilakukan. Hal ini menunjukkan bahwa masyarakat masih memiliki uang tunai sebagai stok yang dapat digunakan manakalah membutuhkan uang tunai. Uang tunai ini diduga terutama berasal dari (i) penjualan hasil pertanian tanaman tahunan (terutama hasil kemiri, buah asam, dan kelapa), (ii) penjualan ternak; (iii) Bantuan Langsung Tunai (BLT) yang disalurkan antara September–Oktober 2005.

Peristiwa Kelaparan dan Penanganannya

Hasil DKT mensinyalir bahwa masyarakat di desa-desa di Kecamatan Kualin mengalami ‘peristiwa kelaparan’ yang cukup meluas (DKT: peristiwa kelaparan terjadi di semua (30) dusun, dan mencakup 99,6% KK. Pertanyaannya ialah: ‘apakah benar terjadi peristiwa kelaparan yang demikian meluas?’ Seberapa jauhkah atau seberapa tekniskah tingkat kelaparan yang dimaksudkan oleh para peserta DKT?’ Kami mendeteksi bahwa peristiwa kelaparan yang dimaksudkan adalah *peristiwa kekurangan suplai pangan dari aktifitas usahatani tanaman panganannya*, karena terjadi kegagalan panen tanaman semusim di semua desa akibat gangguan ketersediaan air hujan (dan dengan alasan lain pada bagian lanjut).

Untuk menangani kekurangan pangan akibat gagal panen, masyarakat berupaya sendiri terutama melalui praktek produksi pertanian (dalam artian luas), dis-

amping mendapat bantuan dari berbagai pihak: Pemerintah, Lembaga Swadaya Masyarakat (CWS, Care, COME, FKPB, dan YPK GAMKI), dan Gereja (Effata Soe). Jenis bantuan hampir semuanya adalah kebutuhan dasar pangan berupa: Beras, Gula, Ikan Kering, Jagung, Kacang Hijau, Kacang Tanah, Kacang Merah, Kentang, Minyak Goreng, Sapi, Susu, dan Rumah Sehat. Bantuan terbesar adalah beras dan minyak goreng.

Dalam kaitannya dengan bantuan beras, bantuan pemerintah melalui Program Raskin memberi kontribusi 22.64%, Care (31.4%), CWS (27.7%) dan FKPB (12.12%). Jumlah rata-rata beras yang diterima oleh masyarakat di Kualin dalam periode bantuan 2005 sebesar 13.5 Kg/orang atau sebesar 55.35 kg/keluarga. Dari angka ini menunjukkan bahwa bantuan beras memberi kontribusi signifikan kepada ketersediaan stok pangan di tingkat keluarga di desa-desa di Kecamatan Kualin.

Coping Mechanism Pangan

Sembilan puluh empat persen (94,1%) responden menyatakan setiap tahunnya selalu mengalami defisit pangan pokok (jagung dan beras). Upaya yang dilakukan or *coping mechanism* (CM) masyarakat di Kecamatan Kualin dalam mendapatkan pangan, khususnya pangan pokok jagung dan beras guna mempertahankan kelangsungan hidupnya adalah dengan cara: (i) pengaturan persediaan pangan, yakni mengurangi jumlah dan frekuensi makan, pencampuran antar pangan pokok (jagung dengan beras) dan atau dengan berbagai jenis pangan lainnya; (ii) menjual hasil hutan (asam, kelapa dan tuak); dan (iii) menjual ternak. Sebagian kecil responden lainnya bekerja di luar desa, yakni sebagai tukang, buruh bangunan, ojek motor, meminta bantuan ke Pemerintah, serta mencari umbi-umbian hutan, arbila dan sebagainya.

Konsumsi Pangan

Kebiasaan Pangan

Pengertian makan yang berkembang di tengah masyarakat adalah mengkonsumsi nasi dan atau jagung beserta lauk-pauk 2–3 kali sehari. Bilamana belum mengkonsumsi jagung atau nasi, tidak dikatakan sebagai makan. Alasan yang dikemukakan sehubungan dengan hal tersebut, yaitu sebagai upaya memenuhi rasa kenyang, tahan lapar dan kuat bekerja. Kebiasaan makan selain nasi atau jagung, yakni sarapan (makan sesuatu sebelum makan pagi) berupa

kopi atau teh manis yang dihidangkan dengan singkong atau pisang rebus dan atau makanan lainnya, walaupun kebiasaan sarapan ini hanya ditemui pada sebagian kecil Rumah Tangga dan tidak berlangsung secara kontinyu setiap hari (tergantung ketersediaan bahan pangan tersebut). Konsumsi makanan jadi jarang, yakni hanya bilamana sedang bepergian menjual hasil pertanian ke pasar.

Umumnya mereka memperoleh pangan dengan cara membeli di pasar dan atau dari hasil produksi lahan sendiri, yaitu pangan pokok, kacang-kacangan, sayuran dan buah-buahan. Pangan hewani seperti ikan diperoleh dengan cara membeli; sedangkan pangan hewani asal ternak jarang dikonsumsi. Ternak yang dipelihara diprioritaskan pada keperluan pesta, pendidikan, perbaikan rumah dan mengatasi pacleklik pangan.

Tabel 2 memperlihatkan kebiasaan pangan masyarakat di Kecamatan Kualin dengan pilihan ker-

agaman yang sempit. Kebiasaan pangan sumber karbohidrat, ditemukan bersumber dari jagung (78,1%) dan beras (61%) setiap hari. Jenis pangan lainnya yang sering dikonsumsi, yakni dengan frekuensi konsumsi 3–4 kali/minggu adalah berupa singkong (49,5%). Pilihan konsumsi demikian karena ketersediaan pangan tersebut mudah diperoleh serta sesuai dengan konsep pengertain ‘makan’ bagi penduduk setempat.

Kebiasaan pangan sumber protein bagi penduduk yang berasal dari jenis pangan nabati maupun hewani relatif jarang dikonsumsi. Hanya 26,7% responden yang sering mengkonsumsi ikan. Jarang, bahkan tidak pernah mengkonsumsi pangan sumber protein hewani maupun sumber protein nabati. Terbentuknya kebiasaan pangan demikian ada kaitannya dengan ketersediaan jenis-jenis pangan tersebut terbatas diproduksi dan atau harganya relatif mahal di pasar. Diketahui bahwa ternak yang dipelihara,

Tabel 2. Sebaran Rumah Tangga Contoh (%) di Kecamatan Kualin, Dirinci Menurut Jenis Pangan yang Dipilih untuk Dikonsumsi

Kelompok/Jenis Pangan	Tiap Hari	Sering	Kadang-Kadang	Jarang	Tidak Pernah	Jumlah
Sumber Karbohidrat						
Beras	61,0	29,5	8,6	1,0	0,0	100,0
Jagung	78,1	14,3	6,7	1,0	0,0	100,0
Singkong	18,1	15,2	49,5	16,2	1,0	100,0
Putak	6,7	1,0	1,9	41,0	49,5	100,0
Talas	0,0	0,0	1,9	29,5	68,6	100,0
Ubi Jalar	0,0	1,9	7,6	41,9	48,6	100,0
Sumber Protein Hewani						
Daging (Sapi,Ayam)	1,0	7,6	10,5	36,2	44,8	100,0
Ikan (Kering, Segar)	4,8	26,7	31,4	35,2	1,9	100,0
Telur	1,0	8,6	12,4	56,2	21,9	100,0
Sumber Protein Nabati						
Kacang Ijo	0,0	1,0	11,4	51,4	36,2	100,0
Kacang Nasi	0,0	8,6	24,8	37,1	29,5	100,0
Kacng Panjang	0,0	1,0	0,0	59,0	40,0	100,0
Kacang Tanah	0,0	1,9	7,6	41,9	48,6	100,0
Sayuran dan Buah						
Buah Pepaya	21,9	22,9	36,2	16,2	2,9	100,0
Kelor/Marungga	1,0	2,9	21,9	44,8	29,5	100,0
Daun Singkong	18,1	21,0	45,7	15,2	0,0	100,0
Daun/Bunga Pepaya	58,1	18,1	12,4	9,5	1,9	100,0
Kangkung	0,0	8,6	17,1	61,9	12,4	100,0
Sawi	4,8	13,3	17,1	32,4	32,4	100,0
Jeruk	0,0	0,0	5,7	49,5	44,8	100,0
Pisang	5,7	9,5	44,8	38,1	1,9	100,0

Keterangan: Sering (3–4 kali/minggu), kadang-kadang, (1–2 kali/minggu atau 3–4 kali/bulan), jarang (1–2 kali/bulan) dan atau tidak pernah dikonsumsi

tidak untuk dikonsumsi melainkan diprioritaskan dijual guna membeli sebagai kebutuhan lainnya, termasuk kebutuhan pangan.

Dalam hal kebiasaan pangan sayur-sayuran dan buah-buahan sebagai sumber vitamin dan mineral, ditemukan terutama bersumber dari daun/bunga pepaya, buah pepaya dan daun singkong. Kebiasaan pangan demikian erat kaitannya dengan faktor musim dan ketersediaan pangan.

Pola Konsumsi Pangan

Pola Konsumsi Pangan prinsipnya menunjukkan pada susunan jenis dan jumlah pangan yang dikonsumsi seseorang atau kelompok orang pada waktu tertentu. Susunan jenis dan jumlah pangan yang dikonsumsi dapat menunjukkan tingkat keragaman pangan masyarakat yang selanjutnya dapat diamati atau dinilai dengan parameter pola pangan harapan (PPH). PPH merupakan suatu komposisi normal (standar) pangan untuk memenuhi kebutuhan gizi penduduk, sekaligus mempertimbangkan keseimbangan gizi yang didukung oleh citarasa, daya cerna, daya terima masyarakat, kuantitas dan kemampuan daya beli masyarakat. Tingginya skor mutu pangan (PPH) menunjukkan situasi pangan yang semakin beragam dan semakin baik komposisi maupun mutu gizinya.

Tabel 3 menunjukkan jumlah bahan makanan yang dikonsumsi penduduk Kualin menurut kelompok pangan. Kelompok pangan padi-padian, yakni jagung dan beras yang dikonsumsi memberikan kontribusi energi terbesar, yakni 79,1% dari total konsumsi energi/kapita/hari; selanjutnya kontribusi dari umbi-umbian sangat kecil, yakni sebesar 1,3%. Kelompok bahan makanan sumber protein hewani, yakni

berupa ikan, daging, dan telur memberikan kontribusi energi sebesar 1,8% dari total konsumsi energi/kapita/hari. Kontribusi terbesar berasal dari ikan, sedangkan daging dan telur relatif kecil. Kontribusi energi dari kelompok pangan kacang-kacangan sebagai sumber protein nabati (terutama dari kacang nasi) sebesar 2%.

Hal menarik dijumpai bahwa kontribusi energi dari kelompok pangan minyak dan lemak relatif tinggi (6,1%), yaitu berasal dari minyak goreng dari pada kelompok pangan lainnya. Begitu pula kontribusi energi dari kelompok pangan buah/biji berminyak relatif besar yang berasal dari kelapa sebesar 2,7%. Kelompok pangan sayur-sayuran (daun, bunga dan buah pepaya serta daun singkong dan sawi); dan buah-buahan (terutama pisang rebus) sebagai sumber vitamin dan mineral memberikan kontribusi energi cukup tinggi, yakni sebesar 4,1%.

Analisis keragaman susunan pangan yang dikonsumsi menggunakan skor Pola Pangan Harapan (PPH) atau *desirable dietary pattern* susunan beragam pangan yang didasarkan pada sumbangan energi dari tiap kelompok pangan utama dari suatu pola konsumsi pangan dan atau ketersediaan pangan yang berlaku secara nasional. Didapati bahwa Pola konsumsi pangan Rumah Tangga di Kualin baru mencapai angka kecukupan gizi sebesar 72,5% dari standar kecukupan gizi nasional sebesar 2.200 Kalori (Tabel 4). Selanjutnya keragaman konsumsi pangan Rumah Tangga baru mencapai skor PPH sebesar 53,6. dari total skor PPH sebesar 100. Hal tersebut mengindikasikan bahwa keragaman atau mutu konsumsi pangan Rumah Tangga di Kualin relatif rendah.

Tabel 3. Jumlah dan Proporsi Konsumsi Energi Rumah Tangga di Kualin Menurut Kelompok Bahan Makanan Yang Dikonsumsi

No.	Kelompok Bahan Makanan	Konsumsi Energi/Kapita/Hari	
		Kalori	%
A	Padi-Padian	1261	79.1
B	Umbi-Umbian	20	1.3
C	Pangan Hewani	29	1.8
D	Minyak dan Lemak	98	6.1
E	Buah/Biji Berminyak	43	2.7
F	Kacang-Kacangan	32	2.0
G	Gula	32	2.0
H	Sayuran dan Buah-Buahan	66	4.1
I	Bumbu-Bumbu	13	0.8
	Jumlah Konsumsi Energi per Kapita	1594	100.0

Tabel 4. Pola Konsumsi Pangan Rumah Tangga Kualin, Diukur Berdasarkan Pola Pangan Harapan Nasional

Kelompok Pangan	Konsumsi Aktual Kualin			Standar			
	Energi	%AKG	Skor PPH	Energi	%AKG	Skor PPH	Bobot
Padi-Padian	1261	57.3	28.7	1.100	50.0	25.0	0.5
Umbi-Umbian	20	0.9	0.5	132	6.0	2.5	0.5
Pangan Hewani	29	1.3	2.6	264	12.0	24.0	2.0
Minyak dan lemak	98	4.5	2.2	220	10.0	5.0	0.5
Buah/Biji Berminyak	43	2.0	1.0	66	3.0	1.0	0.5
Kacang-Kacangan	32	1.5	2.9	110	5.0	10.0	2.0
Gula	32	1.5	0.7	110	5.0	2.5	0.5
Sayuran dan Buah	66	3.0	15.0	132	6.0	30.0	5.0
Bumbu-Bumbu	13	0.6	0.0	66	3.0	0.0	0.0
Total	1594	72.5	53.6	2200	–	100.0	–

Kebutuhan dan Tingkat Konsumsi Energi dan Protein

Kebutuhan Energi dan Protein

Guna mencapai derajat kesehatan yang optimal, diperlukan adanya pedoman jenis dan jumlah zat gizi yang dibutuhkan oleh individu secara rata-rata dalam satu hari. Bagi keperluan tersebut maka konsep kebutuhan gizi, khususnya kebutuhan energi dan protein yang dimaksudkan adalah jumlah yang dianjurkan sehari (*recommended dietary allowance*) untuk dimakan agar menjamin kesehatan yang sebaik-baiknya. Dimaksudkan dengan jumlah yang dianjurkan adalah suatu kecukupan rata-rata zat gizi (energi dan protein) setiap hari bagi hampir semua orang (97,5%) menurut golongan umur, jenis kelamin, ukuran tubuh dan aktivitas untuk mencapai derajat kesehatan yang optimal.

Untuk menghitung jumlah kebutuhan energi dan protein penduduk di Kecamatan Kualin, dilakukan survei sampling untuk diketahui karakteristik golongan umur, jenis kelamin, ukuran tubuh (berat badan dan tinggi badan) dan aktivitasnya. Selanjutnya dilakukan perhitungan kebutuhan zat gizi yang dianjurkan berdasarkan pada rata-rata patokan berat badan untuk masing-masing kelompok umur dan jenis kelamin (Widya Karya nasional Pangan dan Gizi 1998). Hasil perhitungan, diperoleh rata-rata kebutuhan energi sebesar 1629 Kalori dan protein sebesar 35 gram per kapita sehari. Angka kebutuhan tersebut lebih rendah dibandingkan dengan rata-rata standar kebutuhan energi yang dianjurkan secara Nasional, yakni 2.200 Kalori. Rendahnya angka kebutuhan energi penduduk tersebut diduga ada kaitannya dengan ukuran tubuh yang relatif kecil/ramping.

Tingkat Konsumsi Energi dan Protein

Tingkat konsumsi energi dan protein dimaksudkan adalah rasio konsumsi energi dan protein terhadap kebutuhan gizi yang dinyatakan dalam persen.

Hasil *recall* terhadap konsumsi pangan Rumah Tangga, ditemukan rata-rata jumlah konsumsi energi penduduk di Kecamatan Kualin sebesar 1594 Kalori dan protein sebesar 39 gram per kapita sehari. Memerhitungkan kebutuhan energi dan protein per kapita sehari, ditemukan rata-rata tingkat konsumsi energi Rumah Tangga telah tercapai sebesar 100% dan protein 114% dari baku kecukupan.

Berpedoman pada tingkat konsumsi energi dan protein cukup adalah Rumah Tangga dengan tingkat konsumsi energi dan protein >80% baku kecukupan dan yang sebaliknya defisit, maka prevalensi Rumah Tangga defisit konsumsi energi di Kecamatan Kualin mencapai 39,1% (Tabel 5) (atau 60,9% Rumah Tangga tidak mengalami defisit konsumsi energi) dan prevalensi Rumah Tangga defisit konsumsi protein relatif 23,8% (atau proporsi tidak defisit sebanyak 76,2%).

Tabel 5. Proporsi Jumlah Rumah Tangga Berdasarkan Kategori Tingkat Konsumsi Energi dan Protein

Kategori Tingkat Konsumsi	Energi		Protein	
	n	%	n	%
> 100 %	48	45.7	63	60.0
80–100%	16	15.2	17	16.2
60–80%	32	30.5	16	15.2
<60%	9	8.6	9	8.6
Jumlah	105	100.0	105	100.0

Fenomena tingginya prevalensi defisit konsumsi energi dan protein tersebut, diduga berkaitan dengan: (i) semakin menipisnya stok pangan sehingga Rumah Tangga mulai mengurangi porsi konsumsi energi maupun protein; disamping itu ada kaitannya dengan harga persatuan bahan makanan yang relatif mahal, dan (ii) pengeluaran untuk kebutuhan Rumah Tangga lainnya cukup tinggi. Kebijakan ke arah peningkatan konsumsi masyarakat patut mendapat prioritas.

Hal menarik dari penelitian ini adalah curah hujan di Kualin sangat terbatas bagi berbagai usaha pertanian secara optimal. Konsekuensinya produksi pangan (stok pangan) yang bersumber dari usaha pertanian menjadi rendah bagi pemenuhan kebutuhan konsumsi Rumah Tangga. Dengan demikian di puncak kemarau, yakni di bulan Oktober akan ditemukan sebagian besar Rumah Tangga mengalami defisit konsumsi energi dan protein. Namun hasil penelitian menunjukkan dua pertiga dari total responden Rumah Tangga di Kualin tidak mengalami defisit konsumsi pangan berdasarkan variabel kebutuhan energi dan protein. Fenomena tersebut dimungkinkan karena dalam kondisi terbatas maka Rumah Tangga responden melakukan upaya *coping mechanism* yang bersifat agraris (menjual hasil hutan maupun ternak) dan bersifat non agraris, yakni mencari tambahan pendapatan di luar desa sebagai tukang dan sebagainya untuk membeli pangan yang dibutuhkan dan terutama dengan adanya bantuan terutama beras, minyak uang tunai.

Status Gizi dan Kesehatan Masyarakat

Umumnya status gizi seseorang atau kelompok masyarakat secara langsung mencerminkan pengaruh-pengaruh dari konsumsi pangan dan status kesehatannya. Untuk menilai luas dan besarnya masalah gizi masyarakat, disamping menilai tingkat kesejahteraaannya, digunakan status gizi anak balita diukur berdasarkan indikator antropometri, yakni indeks BB/U (berat badan menurut umur), TB/U (tinggi badan menurut umur) dan BB/TB (berat badan terhadap tinggi badan). Penggunaan indeks antropometri BB/U, dimaksudkan untuk menilai/menapis terjadi kurang energi protein akut maupun kronik yang sedang berlangsung saat ini (*current nutritional status*); indeks antropometri TB/U dimaksudkan untuk menilai riwayat terjadinya kurang gizi masa lampau; selanjutnya indeks BB/TB dimaksudkan untuk menilai proporsi tubuh yang normal, yaitu untuk membedakan anak balita yang kurus atau

gemuk. Disamping itu indeks BB/TB memberikan pula gambaran tentang riwayat gizi masa lampau. Bilamana suatu wilayah ditemukan banyak anak balita menderita gizi buruk maka dikatakan tingkat kesejahteraaan masyarakat di wilayah tersebut rendah.

Indeks BB/U (current nutritional status)

Keragaan status gizi anak balita menurut indeks BB/U, disajikan pada Tabel 6. Ditunjukkan bahwa 8,0% dari total anak balita di Kualin berada dalam kategori status gizi buruk, 20,4% berstatus gizi kurang dan 21,6% berstatus gizi sedang, dan prevalensi anak balita dengan kategori status gizi baik sebanyak 50%.

Jika menggunakan batasan anak balita yang menderita kurang energi dan protein (KEP) adalah anak balita dengan status gizi kurang dari 80% baku WHO NCHS dan anak balita bergizi baik adalah anak balita dengan status gizi lebih besar dari 80% baku WHO NCHS, maka prevalensi anak balita menderita KEP sesuai indeks BB/U mencapai 50%. Tingginya prevalensi KEP, mengindikasikan telah terjadi penurunan kemampuan Rumah Tangga dalam mengakses pangan yang dibutuhkan untuk dikonsumsi; disamping itu dimungkinkan terjadinya kejadian penyakit-penyakit infeksi sebagai akibat dari kesehatan lingkungan pemukiman yang kurang memadai sebagai penyebab status gizi anak balita menjadi rendah.

Indeks TB/U (Mengukur satus gizi masa lalu)

Tabel 6 memperlihatkan prevalensi status gizi anak balita berdasarkan indeks TB/U dan ditemukan 48,9% anak balita berstatus gizi baik dan gizi lebih, 31,8% berstatus gizi sedang, 8,0% berstatus gizi kurang, dan 11,4% berstatus gizi buruk. Dengan kata lain 51,1% anak balita di daerah ini menderita gizi kurang-buruk (KEP) sejak lama.

Indeks BB/TB (Mengukur status gizi yang sedang berlangsung akibat pengaruh konsumsi pangan maupun penyakit infeksi)

Tabel 6 menunjukkan bahwa 75% anak balita di daerah ini mempunyai status gizi baik, dan sisanya (25%) menderita KEP (status gizi sedang, kurang dan buruk). Fenomena demikian menjelaskan bahwa sekitar 75% dari populasi anak balita di daerah ini mempunyai proporsi tubuh normal dan 25% lainnya mempunyai proporsi tubuh kurus (BB/TB kurang proporsional).

Indeks Gabungan: BB/U, TB/U dan BB/TB

(Gambaran status gizi anak balita masa kini maupun masa lampau) Rekomendasikan WHO (Jahari 1988). Untuk mempertajam interpretasi keadaan status gizi agar penanggulangan masalah gizi akan lebih terarah, baik dalam menentukan prioritas maupun jenis perlakuan yang diberikan.

Indeks Gabungan

Tabel 6 memperlihatkan jumlah anak balita dengan kategori status gizi baik mencapai 80,6% dari total populasi anak balita di Kualin; selanjutnya sebanyak 19,4% anak balita menderita KEP, yakni

status gizi kurang 6,8% dan 12,5% lainnya mempunyai status gizi buruk. Dengan demikian intervensi program penanggulangan sebaiknya diprioritaskan pada kelompok Rumah Tangga yang mempunyai anak balita gizi buruk dan berikutnya Rumah Tangga dengan status anak balita kurang.

Status Gizi Orang Dewasa: Indeks Massa Tubuh (umur > 18 tahun)

Keadaan status gizi orang dewasa diukur dengan indeks massa tubuh (IMT), yakni menggambarkan proporsi tubuh berdasarkan berat badan terhadap tinggi badan. Hasilnya disajikan pada Tabel 7; yang

Tabel 6. Keragaan Status Gizi Anak Balita Menurut Indeks dan Kategori Status Gizi di Kecamatan Kualin, Kabupaten Timor Tengah Selatan

No.	Indeks Status Gizi	Kategori Status Gizi		Prevalensi Status Gizi	
				Jumlah	%
A	BB/U	Baik	Baik (>80%)	44	50.0
		Sedang	Sedang (71–80%)	19	21.6
		Kurang	Kurang (61–70%)	18	20.4
		Buruk	Buruk (≤60%)	7	8.0
		Jumlah		88	100
B	TB/U	Baik	Baik (>90%)	43	48.9
		Sedang	Sedang (81–90%)	28	31.8
		Kurang	Kurang (71–80%)	7	8.0
		Buruk	Buruk (≤ 70%)	10	11.4
		Jumlah		88	100
C	BB/TB	Baik	Baik (>90%)	66	75.0
		Sedang	Sedang (80–90%)	6	6.8
		Kurang	Kurang (71–80%)	3	3.4
		Buruk	Buruk (≤ 70%)	13	14.8
		Jumlah		88	100
D	Indeks Gabungan (BB/U, TB/U dan BB/TB)	Baik		71	80,6
		Kurang		6	6.8
		Buruk		11	12.5
		Jumlah		88	100

Tabel 7. Keragaan Status Gizi Orang Dewasa (Suami dan Istri) Berdasarkan Indeks Massa Tubuh (IMT) di Kecamatan Kualin, TTS

No.	Kategori IMT	Suami		Istri		
		Jumlah	%	Jumlah	%	
1	< 17,0	Sangat Kurus	15	14.3	25	23.8
2	17,0–18,4	Kurus	22	21.0	22	21.0
3	18,5–25,0	Normal	66	62.9	57	54.3
4	25,1–27,0	Gemuk	2	1.9	0	0.0
5	> 27,0	Gemuk Sekali	0	0.0	1	1.0
		Jumlah	105	100	105	100.0

memperlihatkan bahwa sebanyak 35,3% kepala keluarga dan 44,8% ibu rumah tangga di daerah ini berada dalam kategori kurus sampai sangat kurus. Keadaan ini (berdasarkan IMT) selaras dengan indikator yang diukur pada keadaan status gizi anak balita.

Tingginya masalah gizi kurang maupun gizi buruk pada orang dewasa tersebut menunjukkan rendahnya kemampuan Rumah Tangga dalam mengakses pangan yang cukup untuk dikonsumsi maupun mendapatkan pelayanan kesehatan yang memadai. Untuk itu diperlukan kebijakan strategis dalam memacu peningkatan kemampuan mengakses peroleh pangan maupun pelayanan kesehatan yang memadai.

Kesimpulan dan Refleksi: Pembangunan Pedesaan di TTS dan NTT umumnya, dapatkah dirampatkan dari studi di Pollen dan Kualin?

Di Kec. Kualin, curah hujan tidak selalu berhubungan langsung dengan ketersediaan air, suatu hal yang berbeda dengan di Kec. Pollen. Apapun hubungannya, pertanian tanaman pangan di daerah ini sangat terpengaruh, dan oleh sebab itu berdampak pada kejadian kekurangan stok pangan keluarga. Di Kualin, akibat dari gagal panen tanaman semusim dapat diringankan oleh sebagian kecil usaha tanaman tahunan, dan terutama peternakan. Namun demikian, dalam kondisi tahun 2005, sistem desa secara keseluruhan tidak bersifat *self-sufficient*, dan oleh sebab itu bantuan langsung dari luar memberi kontribusi nyata pada pemenuhan kebutuhan pokok dan performansi gizi. Tanpa itu, efek gagal panen dan kemarau panjang tidak hanya mempengaruhi indikator-indikator kurang gizi tetapi sampai pada kesehatan. Efek yang lebih buruk akibat musim kering tanpa diikuti intervensi pihak luar adalah penurunan drastis stok pangan dan kekurangan gizi, seperti yang ditunjukkan pada keadaan di Kec. Pollen. Kondisi lingkungan fisik, sumberdaya setempat, kedisiplinan pemimpin desa dan pendidikan keluarga menentukan *coping mechanism* yang lebih tangguh (seperti dalam kasus di salah satu desa di Kec. Pollen). Menariknya, sumberdaya perikanan pantai praktis tidak dimanfaatkan karena keterbatasan kultur yang berpusat di darat dari suku Timor.

Upaya yang dilakukan masyarakat desa, seperti yang terdeteksi pada tingkat keluarga sangat jelas berupaya untuk (1) mengurangi risiko ketiadaan pendapatan, (2) menjaga kontinuitas pendapatan sepanjang waktu, (3) mengurangi risiko gagal panen dengan diversifikasi tanaman, (4) mengurangi risiko berusahatani dengan strategi mix-farming ternak-tanaman, (5) mendiversifikasi sumber-pendapatan ke wilayah *non-agriculture sector*—terutama pada keadaan-keadaan kritis

Oleh sebab itu upaya pembangunan desa disarankan agar melakukan peningkatan resiliensi internal terhadap tekanan lingkungan pertanian melalui pengurangan risiko berusahatani/produksi pertanian, antara lain:

- Penggunaan pupuk nitrogen (Karwur et al. 2003) dan varietas yang responsif, serta peningkatan penggunaan dan preservasi bahan organik
- Peningkatan sinergi antara tanaman, pakan hijauan, dan ternak di tingkat usahatani (lihat juga Piggin 2002)
- Pengembangan teknologi pengolahan bahan hasil pertanian skala rumah tangga dan peningkatan kemampuan kemampuan women-microentrepreneurship termasuk akses modal
- Dalam konteks yang terkait dengan potensi lokal, program Gerakan Masuk Laut khususnya masyarakat yang tinggal di wilayah pesisir harus merupakan program yang terstruktur dan perlu mengalami *scaling-up*, baik itu ketrampilan melaut maupun perbaikan fasilitas pendukung
- Intervensi strategis dari luar untuk mengurangi efek dari musim kering harus spesifik terarah pada mereka yang benar-benar kekurangan stok bahan makanan/hasil panen.

Peningkatan ragam jenis pendapatan diluar sektor pertanian diperlukan, bahkan diperluas guna mengurangi tekanan lingkungan fisik dan juga meningkatkan pilihan-pilihan pendapatan yang lebih luas. Usaha pendidikan ketrampilan yang terkait langsung dengan aktifitas ekonomi seperti ketrampilan konstruksi bangunan, pembuatan mebel, dll sangatlah penting. Adalah perlunya suatu pembangunan desa dengan *outward-looking strategies*, yakni membuka lebar interaksi dengan kemajuan ekonomi dari luar agar dapat memetik keuntungan dari pertumbuhan ekonomi sekitar. Hal ini dapat didorong melalui pemasaran keluar daerah produk-produk unggul, adopsi teknologi baru, pendidikan profesional, dan pengembangan pariwisata.

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The role of women in rural communities in East Nusa Tenggara

Mien Ratoe Oedjoe¹

Abstract

This research aimed to describe East Nusa Tenggara (NTT) village women's participation in the following three areas of activity: production, reproduction and social endeavours. Both qualitative and quantitative approaches were used. The research was carried out in the village of Naioni in Kupang district and Bena in the South Central Timor district. Sources of data were chosen purposefully and this method is combined with the snowball sampling technique. Data were collected from 29 informants by in-depth interviews, participatory observation and the study of documents, and combined and compiled under two categories: (i) roles and (ii) intensity of activities of men and women in the rural communities of the two villages. Results show that: (i) women play a dominant role in productive activities except hunting for wild animals in the forest; (ii) women's role in reproductive activities and in community social affairs is overwhelmingly dominant; (iii) women in rural communities rate highly in participation but low in control, access to information and receipt of benefits. Gender injustice and inequality continues to prevail. It is recommended that government carry out socialisation of gender and apply gender mainstreaming.

Peran wanita pada masyarakat pedesaan di Nusa Tenggara Timur

Mien Ratoe Oedjoe^{1a}

Abstrak

Penelitian ini bertujuan untuk menggambarkan partisipasi perempuan desa di NTT dalam tiga bidang kegiatan, yaitu produksi, reproduksi, dan usaha-usaha sosial. Pendekatan yang dipakai adalah pendekatan kualitatif dan kuantitatif dengan menggunakan statistik sederhana. Penelitian dilakukan di desa Naioni (di Kabupaten Kupang) dan Bena (di Kabupaten TTS). Sumber data penelitian dipilih secara sengaja dan metode ini dikombinasikan dengan teknik penarikan sample bola salju. Selama penelitian ini 29 orang menjadi informan. Data dikumpulkan dengan teknik wawancara mendalam, pengamatan partisipatori dan studi dokumen. Analisa dilakukan atas data yang diperoleh dari dua desa kasus. Data tersebut digabungkan dan disatukan dengan kategori-kategori peranan dan intensitas kegiatan-kegiatan laki-laki dan perempuan di masyarakat pedesaan Naioni dan Bena. Hasil penelitian memperlihatkan bahwa (1) peranan perempuan amat dominan dalam kegiatan-kegiatan produktif kecuali berburu satwa liar di hutan; (2) peranan perempuan sangat tinggi dalam kegiatan reproduksi dan dalam masalah-masalah sosial komunitas; (3) peranan perempuan di masyarakat pedesaan di NTT dinilai tinggi dalam partisipasi, namun rendah di dalam control, akses, dan perolehan keuntungan. Dapat disimpulkan bahwa perempuan dalam masyarakat pedesaan NTT sangat dominant dalam 3 (tiga) bidang kegiatan namun terhambat oleh kurangnya akses, control, dan keuntungan-keuntungan sehingga ketidakadilan dan ketidaksetaraan jender terus berlanjut. Oleh karena itu direkomendasikan kepada pemerintah untuk melakukan sosialisasi jender dan menerapkan pengarusutamaan jender.

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Introduction

Data from the Central Bureau of Statistics (BPS) indicate that the number of women in East Nusa Tenggara (NTT) is somewhat more than men, that is 2,089,273 women and 2,049,933 men (BPS 2004). Of that number, 70% of women live in rural areas (Women Studies Center of Nusa Cendana University (PPW), pers. comm.). They are a valuable human resource that can be utilised to support development processes. The question is why should women be involved? It is not only for the sake of justice and efficiency, but also because women play a critical, central role in family and society. As a human resource, they are as important as men. Many researchers have proved that women have an important role for the continuation of family life and social welfare. As pointed out by Kodiran (1990) and PPW, women have played an important role in determining the lifestyle of family and society and even coloured the history of human beings. They will continue to have a role, the nature of which will be determined by their educational, economic, social, ethnic and residential background.

It can not be denied that women are an inseparable part of family, household and society, so it is difficult to separate which roles are specified for women and which roles are not. In fact, women, as members of families, households and society, play a role in all aspects of life. We need to identify whether the role is leading or not, and whether it is a direct or an indirect role. Not involving women in life activities will impact negatively (Boserup 1974). For rural women there is no other choice than to keep on doing their traditional activities such as child-rearing, caring for the elderly, looking after the house, cultivation tasks, marketing and participating in social activities. Furthermore, because of the heavy economic burden, many men in rural areas in NTT have to migrate to work as labourers in formal sectors outside their villages. Women have to work inside and outside their home because they are responsible for children and for food (Ratoe Oedjoe 1981, 2005). For women in rural areas in NTT, housework is an important part of their roles that is taken for granted as obligatory and even as a woman's destiny. They also consider working outside the house to fulfil their needs a natural thing. Furthermore, since non-irrigated agriculture in general is the main means of livelihood for people of NTT, it is easier for women to actively participate compared with other fields such as fishery or mining that are relatively difficult for women.

Since childhood rural women have been taught by their parents that women's main tasks are child-bearing and childcare, cooking, house cleaning, caring for their husband and family, water collection, weaving, marketing, cultivation and socialising. Rural women are allowed to get married once they can take care of a house, weave and help their parents with cultivation. The value and status of those women who have double skills, known as *punya kaki tangan*—with hand and legs—are high.

So the role of rural women in society is dual, and often their working day, especially in the planting season, ranges from 12 to 14 hours (Ratoe Oedjoe 1981, 2005). This affirms that women of NTT should be considered as a group with a significant role to play in successful development.

Women's triple role

A woman is a creation of God with a womb and natural functions of menstruation, pregnancy, giving birth and breastfeeding, and is socially responsible for caring and nurturing babies. The range of caring and nurturing activities extend to family and household. This is the origin of the division of work based on biological differences between men and women (Rosaldo 1974). Traditionally, women are associated with reproductive works at home and men are associated with productive works outside the home. Such a role division cannot be maintained for ever and there is evidence that it is gradually changing. The change is occurring because of changes in environment and in social, economic, cultural and educational conditions, so that the basic roles of men and women are becoming less clearly defined and more interchangeable. Now it is more difficult to make a distinction between the basic roles of men and women. Roles can be divided into three, viz. reproductive role, productive role and social role (Moser 1993).

Reproductive role

People see reproduction as a woman's responsibility. According to Moser (1993: 29):

The reproductive role comprises the children bearing and rearing responsibilities and domestic tasks undertaken by women required to guarantee the maintenance and reproduction of labour force. It includes not only biological reproduction but also the care and maintenance of workforce (husband and working children) and the future workforce (infants and school-going children).

The reproductive role can be divided into a biological reproduction role (child-bearing) and a social reproduction role (child caring and nurturing). It is clear why the reproductive role falls naturally to women, but there is no natural reason to extend it to the task of rearing, maintenance and taking care of adults and elderly people. The reproductive role includes domestic tasks such as washing, house cleaning and guaranteeing that the family is healthy and fed. This role is unpaid and is performed at home so, statistically, reproductive activities are not valued as work.

Productive role

The productive role results in directly producing money or things, as Moser (1993: 31) explains:

The productive role comprises work done by both women and men for payment in cash or kind. It includes both market production with an exchange value, and subsistence home production with an actual use value, but also a potential exchange value.

Examples of people in a productive role are labourers, sellers or traders, tailors, farmers, fishermen and formal workers (teachers, nurses, civil servants). The productive role is considered an economic activity—a ‘real’ job.

Social role

The social role relates to all activities necessary to perform and manage social activities and is an extension of women’s reproductive role (Moser 1993). The social role of women is in public activities for family and community, while the social role usually performed by men relates to organised, often ceremonial, activities. Examples of women’s social role include voluntary participation in religious activity, the integrated health service unit and regular social gatherings. Examples of men’s social role include being head of an RT (neighbourhood association), head of an RW (administrative unit at the next-to-lowest level in a city) or Head of Village.

Description of women’s and men’s participation in household and social activities

It is not difficult to identify women’s and men’s participation in rural communities, either inside or outside the home, and it has been proved empirically

that women demonstrate flexibility by taking on roles that, up till now, have been considered to be those of men. While women can take over from men when men cannot play their productive role (breadwinning, for example), men cannot take over women’s reproductive role, so that women may sometimes play a triple role. To make it clear, the following is a description of women’s and men’s participation in family and rural community activities in NTT (from data in Table 1).

Productive role

Cultivating non-irrigated fields

From the agricultural tradition point of view women’s participation in agricultural activities is dominant from the beginning of the process of cultivation. Adult women contribute in cutting down, collecting and burning shrubs for new fields, and weeding established old fields. It is the men’s task to repair or erect a fence around the garden, while women plant the garden. Clearing, planting and weeding are women’s tasks, and because there is still a myth that women, as food controllers and managers, are able to keep the spirit of seed in peace, they should not speak when bringing the seed to the field to plant. Harvesting activities are carried out together, often cooperatively with the help of relatives, neighbours and children. Men are dominant in picking up and hulling the yield. Men and women, with the help of children, work together in spreading out the yield in the sun to dry, cleaning and counting it. Women are dominant in storing and pounding activities because there is still a belief that they are able to keep the peace of yield in storage, and they have the right to control the use of yield for daily needs.

Second crop cultivation

When women are not involved in cutting down shrubs, they prepare the field around their house for second crop cultivation. Generally, the activity of selling the product is the task of women and female children, and after selling the product they will buy their daily needs (in the market). Sometimes men are involved in the activity, but the products they sell are varied and include livestock (pig, cow, goat).

Breeding animals

Women and female children are dominant in breeding small animals, with society perceiving different breeds of small animal as the same. This may be because this activity occurs around the house and

so it is not too risky for women. For example, poultry husbandry is seen as a safe and easy task for women to do because it can be done around the house. While

women dominate in breeding small animals, men and boys dominate in breeding bigger animals such as cows, buffalo and horses.

Table 1. The roles and intensity of activities of women and men in rural communities of Naoni and Bena, 2005

Activities	Women			Men		
	AW	FC	%	AM	MC	%
I. Productive activities						
<i>A. Cultivate non-irrigated field</i>						
1. Cutting down shrubs	+	–	25	+	–	75
2. Burning	+	–	10	+	+	90
3. Clearing the field	+	–	50	+	+	50
4. Planting	+	–	70	+	+	30
5. Weeding the garden	+	–	50	+	+	50
6. Harvesting	+	–	50	+	+	50
7. Picking up yield	+	–	25	+	+	75
8. Hulling / flay yield	+	–	25	+	+	75
9. Spreading out yield in sun to dry	+	–	60	+	+	40
10. Cleaning the yield	+	–	60	+	–	40
11. Counting the yield	+	–	25	+	–	75
12. Storing	+	+	75	+	–	25
13. Pounding	+	–	90	+	–	10
14. Milling	+	–	10	+	+	90
15. Selling	+	–	60	+	–	40
<i>B. Second-crop cultivation</i>						
1. Chilli / tomato	+	–	70	+	–	30
2. Vegetable	+	–	70	+	–	30
3. Cucumber	+	–	70	+	–	30
<i>C. Breed animals</i>						
1. Chicken / poultry husbandry	+	+	90	+	–	10
2. Pig	+	–	70	+	–	30
3. Goat	+	–	10	+	+	90
4. Cow	–	–	0	+	+	100
<i>D. Pursue wild animals</i>						
1. Wild boar	–	–	0	+	–	100
2. Deer	–	–	0	+	–	100
<i>E. Labour</i>						
1. Farmhand	–	–	0	+	+	100
2. Carpenter / builder	–	–	0	+	+	100
<i>F. Weaving</i>						
	+	+	100	–	–	0
<i>G. Plaiting</i>						
	+	+	90	+	–	10
II. Reproductive activities						
A. House cleaning	+	+	95	+	+	5
B. Washing	+	+	90	+	+	10
C. Collecting water	+	+	60	+	+	40
D. Cooking	+	+	100	–	–	0
E. Child rearing	+	+	100	–	–	0
F. Collecting firewood	+	+	50	+	+	50
III. Social activities						
A. Farmer group	+	–	10	+	–	90
B. Dasawisma (group of 10 houses)	+	–	100	–	–	0
C. Integrated healthcare unit	+	–	100	–	–	0
D. Community self help	+	–	30	+	–	70
E. Wedding arrangement	+	+	70	+	–	30
F. Traditional ceremony	+	–	10	+	–	90
G. Praying group/community	+	–	90	+	–	10
H. Choir practising	+	–	80	+	–	20
I. Visiting relatives	+	+	75	+	–	25
J. Others	+	–	50	+	–	50

Source: Primary Data 2005

AW = adult women; FC = female children; AM = adult men; MC = male children

Hunting

Hunting wild animals such as wild boar and deer is an activity for men.

Labour, weaving and plaiting

Labour here means builder (carpenter). It is men's role to be builders, which tends to be seasonal depending on the project. Weaving is a women's activity during the dry season, because during the wet season women work in the garden and, anyway, thread absorbs water so that it becomes wet and sticky (interview, 5 January 2006). Plaiting, which is done by women at night or in spare time, produces products such as mats, kinds of flat baskets, baskets, betel-nut boxes and movable covers for food. Generally, every woman in rural areas in NTT is able to weave, except for those from certain villages where it is forbidden by their custom. The products of weaving or plaiting are used domestically or sold.

Reproductive role

Women's natural function is to menstruate, be pregnant, give birth and breastfeed, and with their femininity, they are to be in the house. Housework including child care, care for the elderly, house cleaning, washing, collecting water and collecting firewood is considered to be women's work because they need care, patience, wisdom and neatness. The traditional domestic roles are perpetuated by parents through the habitual processes of family life. Girls are accustomed to helping their mothers cook, clean the house, take care of their younger sister or brother, and clean up plates, while boys are accustomed to helping the father outside the house. Socialisation of domestic and public roles is handed down and taken for granted by the younger generation in rural communities. For women, especially in rural communities in NTT, domestic work is considered to be a natural obligation or task. Women take care of children and provide food either from their garden, storage or market. They wash clothes and clean their house. Women also continue doing productive work such as weaving and feeding small domestic animals. It seems strange if boys cook, wash clothes and clean the house. Not only men, but also women, consider it improper that men do housework such as cooking, child-rearing and washing. Women will feel guilty if they leave domestic work for their husband or men of the family. For them, psychological and social binding to women's tasks is very strong and accepted as natural.

Social role

The involvement of rural women in productive and social activities cannot be considered as a benefit of development but more as a potential tool or measure to get earnings and welfare (White 1991: 20). Rural women are involved in activities of integrated health-care units, Dasawisma (group of 10 houses), social activities, traditional ceremony, and visiting patients and sick people. They do this because of social responsibility and familial relationship. They are also dominant in religious activities such as worship, choir practice and prayer groups. As an illustration, women are the dominant active members in three prayer groups in Belo, while male members join the group only when they have to play guitar or deliver a sermon. Observations during the first 3 weeks of January 2006 showed that, of 12 members of one group, only one was male and he joined to deliver a sermon. The same situation happened the next week. Of the 16 members who joined the worship, only one member was a man, and he joined to play guitar. There is an impression that women are calmer than men and there is a strong relationship among members to bear the burden of life by praying. Women will feel something is lost if they are not involved in any social, health and religious activities in their community. Even if they are tired from working all day, they will try to join in if there is a religious activity.

The analysis clearly shows that both men and women play active roles and contribute to the life of family and society, and women play a major role.

Development in rural areas

Rural women have a role inside and outside the household although they have less access to information, education, banks or economic centres, health centres and the justice system. They give a special characteristic to families and rural communities. The question is to what extent this reality should be anticipated institutionally by government and private sectors through activities designed for rural women. The results of an evaluation done by the Women's Study Center of Undana in January 2006 shows that activities implemented by the 48 local government sectors of NTT in 2005 were not responsive to gender. This affirms the thesis proposed by Longwe and Mafriana on male dominated development projects. Sector programs should be gender respon-

sive in their formulation but in fact they are gender blind; consequently, there is a gender bias when the policy is implemented by those who are gender blind. Furthermore, some sectors consider that gender activities are the same as women's activities and are not their concern. Others consider that men who join a training course will transfer their knowledge to women. In fact women play a dominant role inside and outside the house, so why aren't they directly involved in the process of accessing information and in training activities? This affirms the results of many researchers that rural women in NTT have a major role in reproductive, productive and social activities but they have less access to, control of and benefit from, the development programs than men do. Gender equity and gender justice will be better served if development planning considers apportioning roles, access, control and benefit to both men and women in rural community.

Conclusion

Women play a dominant role in three spheres. They work hard but it is ironic that their role is not counted or is taken for granted by society and government,

and also by themselves through valuing their role less than that of men.

The increasing and broadening of women's roles in the productive and social sectors has not been followed by a change in men's role to lighten women's burden in the domestic sphere, resulting in women's double burden and creating women's triple role.

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Role of women in rural areas in Asia

Maria Fay Rola-Rubzen¹

Abstract

Women play important roles in agriculture and food security and household welfare in rural areas. Hence, development programs and policies must consider gender concerns. In Asia, some of the main challenges confronting women in development efforts include achieving gender equity particularly in rural areas, translating policies into action, empowering women and creating opportunities for rural women to better achieve food and livelihood security. Some recommendations to achieve this are:

- recognise that women are equal partners in development and as such must be included in the planning and implementation of development programs and strategies
- translate the recognition of the important roles of women into positive policies and programs that will benefit women and their households
- improve gender mainstreaming at all levels including national and local governments
- develop plans of action to translate gender mainstreaming policies into practice and implement such plans
- monitor and evaluate progress on gender mainstreaming and execute any required action to ensure real implementation
- improve measurement of Asian rural women's contributions to agricultural production and rural development
- recognise explicitly roles and needs of women including women-headed households and take these into account in the design of technologies
- empower women by improving education, land rights and access to common property resources and forest reserves
- build the capacity of women in agricultural tasks and also in decision-making
- in collaboration with the government, NGOs, research institutions and funding bodies, take measures to improve women's access to technology in production, postharvest activities and household tasks.

Supporting and empowering women will enable them to maximise their potential contributions to the household and to the social, economic and environmental development of the rural sector as articulated by the Food and Agriculture Organization of the United Nations (FAO 2006):

Given equal access to opportunities and resources, women like men, have proven to be efficient, dynamic and indispensable partners. Together, on the farm and at all levels of society, women and men contribute a formidable partnership to achieve food security in the 21st century.

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Peran wanita daerah pedesaan di Asia

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Abstrak

Wanita berperan penting dalam pertanian, keamanan pangan dan kesejahteraan keluarga di pedesaan. Oleh sebab itu, pengembangan program dan peraturan harus mempertimbangkan masalah gender. Di Asia, beberapa tantangan utama adalah penentangan terhadap wanita dalam pengembangan tenaga termasuk pada keadilan dalam berprestasi khususnya di pedesaan. Melaksanakan peraturan menjadi tindakan, memberi kuasa dan kesempatan pada wanita pedesaan untuk mencapai keamanan pangan dan mata pencaharian dengan kesetaraan gender. Beberapa rekomendasi untuk mencapai area ini:

- mengakui wanita sebagai patner sejajar dalam pengembangan seperti termasuk di dalamnya perencanaan dan implementasi pengembangan program dan strategi
- mengartikan pengakuan tersebut sebagai peran penting wanita pada peraturan dan program positif yang akan menguntungkan bagi wanita dan rumah tangganya
- memperbaiki aspek gender di segala tingkatan termasuk pemerintah nasional dan daerah
- mengembangkan perencanaan tindakan untuk mengartikan peraturan aspek gender pada pelaksanaan dan implementasi perencanaan tersebut
- mengamati dan mengevaluasi perkembangan aspek gender dan menghentikan tindakan bila perlu untuk meyakinkan bahwa implementasi dapat terselenggara secara nyata
- memperbaiki tolak ukur pada kontribusi wanita pedesaan di Asia pada produksi pertanian dan pengembangan daerah pedesaan
- mengakui kejelasan peran dan kebutuhan wanita termasuk wanita sebagai kepala rumah tangga dan mempertimbangkan ini dalam rancangan tehnologi
- memberi kuasa pada wanita dengan meningkatkan pendidikan, hak tanah dan akses pada sumber property umum dan cagar alam hutan
- membangun kapasitas wanita dalam tugas pertanian serta pengambilan keputusan
- dalam kolaborasi dengan pemerintah, institusi penelitian LSM dan badan bantuan keuangan, melakukan pengukuran untuk meningkatkan akses wanita pada tehnologi produksi, kegiatan pasca panen dan tugas dalam rumah tangga.

Kesimpulan, memberikan dukungan dan kuasa pada wanita akan membuat mereka memaksimalkan potensi kontribusi pada rumah tangga serta perkembangan social, ekonomi dan lingkungan di sektor pedesaan. Seperti yang di sampaikan oleh Organisasi Pangan dan Pertanian PBB (FAO 2006):

Memberikan akses sejajar dalam kesempatan serta prasarana, wanita seperti pria, telah terbukti efisien, dinamik dan patner yang sangat dibutuhkan. Bersama-sama di ladang pada semua tingkat kemasyarakatan, wanita dan pria menyumbangkan kerjasama yang berat untuk mencapai keamanan pangan di abad 21.

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Background

During the Millennium Summit held in September 2000, global leaders reached a consensus that poverty and gender inequality remain among the foremost problems in the world, thus prompting the development community to target poverty reduction and gender equality in its priority goals. Global leaders set a target of reducing the number of poor people by half by 2015. More than 5 years after this landmark meeting, despite a decrease in the number of poor people, poverty remains a global scourge. Latest figures cited by the World Bank show that more than a billion people live on less than US\$1 a day (World Bank 2006). Most of the poor are located in rural areas and many of these poor are women or in households headed by females (FAO 1998; Rola-Rubzen 2003).

Women comprise about half of the world's population. In some countries in Asia, the number of women is slightly higher than the number of men. For instance, in Cambodia 52% of the adult population are women and in Thailand, 51% of the population

are females. In Korea, Indonesia, the Philippines, Myanmar, Lao, Nepal, Indonesia, Singapore and Vietnam, the number of adult females equate to the number of adult males (Table 1). It is not surprising therefore that women comprise a significant portion of the labour force globally.

Women's status in Asia can be characterised by a diversity in achievement economically, socially, politically and in terms of educational advancement. As aptly described by Balakrishna (1998), 'the status of women in Asia could be summed up as a duality characterised by the coexistence of gender equity gain and gender equity gap amid economic prosperity and abject poverty'. Because of this, the gains in gender equity and the status of women, especially among urban women, tend to mask the constraints that are often confronted by rural women within the region. According to Balakrishna, rural women in Asia continue to struggle under the dual burden of production and domestic labour, and are confronted by poverty, lack of access to productive resources, illiteracy, high health risks and denial of market access in profitable food sectors.

Table 1. Population by gender in selected Asian countries

Country	Population ('000)				
	Total	Women		Men	
		No.	%	No.	%
Bangladesh	141,822	69,363	49	72,459	51
Brunei Darussalam	374	180	48	194	52
Cambodia	14,071	7,270	52	6,801	48
China (mainland)	1,315,844	639,992	49	675,852	51
Hong Kong SAR	7,041	3,728	53	3,313	47
Macao SAR	460	239	52	221	48
Democratic People's Republic of Korea	22,488	11,255	50	11,233	50
India	1,103,371	537,593	49	565,778	51
Indonesia	222,781	111,551	50	111,231	50
Japan	128,085	65,506	51	62,578	49
Lao People's Democratic Republic	5,924	2,960	50	2,964	50
Malaysia	25,347	12,483	49	12,865	51
Myanmar	50,519	25,436	50	25,083	50
Nepal	27,133	13,687	50	13,446	50
Pakistan	157,935	76,653	49	81,283	51
The Philippines	83,054	41,241	50	41,814	50
Republic of Korea	47,817	23,844	50	23,973	50
Singapore	4,326	2,148	50	2,177	50
Sri Lanka	20,743	10,202	49	10,541	51
Thailand	64,233	32,690	51	31,543	49
Timor-Leste	947	455	48	492	52
Vietnam	84,238	42,171	50	42,068	50

Source: UN (2005)

The economic contribution of women

Women in Asia make a major contribution to economic activities. As shown in Table 2, 43–80% of females participate in economic activities. Among the countries listed, Cambodia had the highest female participation rate in economic activities at 80%, closely followed by Vietnam, Thailand and Timor-Leste at about 73% each. Although the rates of female participation as percentage of male rates vary (50–97% depending on the country), the rates are significantly high.

Women contribute in all sectors. Taking the case of Thailand, for example, 46% of working women are involved in the agricultural sector, 17% in the industrial sector, while the remaining 35% are employed in the services sector. In Indonesia, 43% are employed in agriculture, 41% in services and 16% in industry (Table 2).

In most of Asia, the majority of the population lives in rural areas. In Timor-Leste, for example, 92% of the population reside in rural areas, while in Indonesia 55% are located in rural areas (Figure 1). In countries in south Asia such as India, Pakistan, Bangladesh and Nepal, most of the people (72–85%) live in rural areas. The development of the rural sector is therefore vital in the overall growth and development of most countries in Asia.

In rural areas, both men and women play an important role as food producers, income earners and managers of agricultural and natural resources. Women in particular play a key role because of the multiple responsibilities they have in the household, on the farm, in the economic sphere and in the community.

The role of women in rural areas in Asia

As with most women living in rural areas across the world, rural women in Asia play multiple roles in the household and in the community. They have productive, reproductive and social roles. Women play a very important role in the home as carers of children and other household members, but they also contribute to economic activities, both on and off the farm, to ensure that the household needs are met. They participate in farm activities such as seeding, planting, tending, harvesting, threshing and marketing. In addition women are active in the community, often helping out in cultural activities, festivities, and religious activities and events, and often volunteering for health, livelihood and other social development activities in their communities.

Table 2. Economic contribution of women in selected countries in Asia

Country	Female economic activity		Employment by economic activity (%) 1995–2002						Contributing family workers (%) 1995–2003	
	Rate (%)	As percentage of male rate	Agriculture		Industry		Services			
	2003	2003	Women	Men	Women	Men	Women	Men	Women	Men
India	43	50	–	–	–	–	–	–	–	–
Sri Lanka	44	56	49	38	22	23	27	37	56	44
Malaysia	49	62	14	21	29	34	57	45	–	–
The Philippines	50	62	25	45	12	18	63	37	–	–
Indonesia	56	69	43	43	16	19	41	38	–	–
Nepal	57	67	–	–	–	–	–	–	–	–
Myanmar	66	75	–	–	–	–	–	–	–	–
Bangladesh	67	76	77	53	9	11	12	30	81	19
China	72	91	–	–	–	–	–	–	–	–
Thailand	73	85	48	50	17	20	35	30	66	34
Timor-Leste	73	96	86	–	–	–	–	–	–	–
Vietnam	73	91	–	–	–	–	–	–	–	–
Cambodia	80	97	–	–	–	–	–	–	–	–

Source: UNDP (2005)

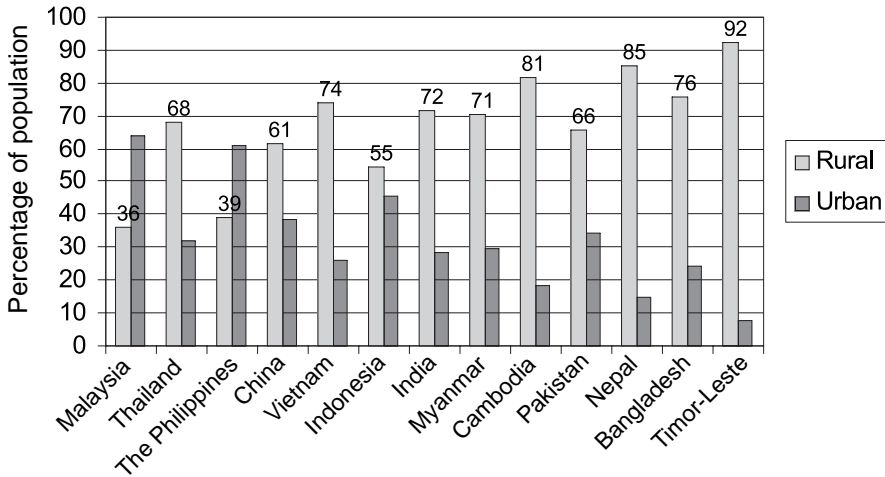


Figure 1. Distribution of the population by location (rural–urban), selected countries in Asia. Source: UNDP (2005)

Rural women and household management

In Asia, women are considered the primary caregivers in the household. Quite apart from their reproductive role, one of the most important roles of women is to look after the children and the household, to ensure that children are well cared for and fed. They also maintain the household and do most of the household chores such as cooking, cleaning the house, washing clothes, fetching water, washing dishes and purchasing groceries and other household needs. Women are often responsible for the day-to-day subsistence of the household; hence, they have a key role in the nutritional wellbeing of household members in general and children in particular (Rola-Rubzen 1995, 1997; FAO 2006; IFPRI 2006).

The critical function that women exercise in the household has far-reaching implications in the health and wellbeing of children and other family members. Studies have found a strong link between women and nutrition. For instance, IFPRI (2005) found that in south Asia child malnutrition is much higher than in sub-Saharan Africa, despite this region having a better record of economic growth, poverty reduction and education. According to IFPRI, a key reason is the weak status of women in south Asia. Improving the status of women is therefore likely to have positive repercussions for households. IFPRI research found that improvement in women’s education and status within the household contributed to a 55% overall reduction in child malnutrition between 1970

and 1995. Quisumbing and Meinzen-Dick (2001) claim that increases in women’s education and improvements in women’s status over the past quarter century have contributed to more than half of the reduction in child malnutrition.

Rural women as farmers and food producers

A majority of the population in Asia is dependent on farming as the main source of their livelihood. For example, in Bangladesh 72.5% of the population depend on agriculture as a source of livelihood, while in Nepal close to 94% of the population depend on agriculture. In Laos close to 80% of people depend on agriculture (Table 3).

Both women and men play important roles in agriculture—in producing, processing, transporting and marketing agricultural produce. Rural women are responsible for half of the world’s food production and produce 60–80% of the food in most developing countries (FAO 2006).

Women’s role in agriculture

Women’s role in the production of the main agricultural crops

Women produce more than 50% of the food grown globally (FAO 1995). Rural women are the main producers of the world’s staple crops, which, according to the FAO, provides up to 90% of the

food intake of the rural poor (FAO 2006). Women are active in both the cash and subsistence agricultural sectors and their work encompass all agriculture activities such as sowing, weeding, fertiliser and pesticide application, harvesting and threshing (Chen et al. 1986; Illo and Veneracion 1988; Poats et al. 1988; UPLB, IRRI and PIDS 1988; Rola-Rubzen 1997). They are also active in postharvest operations, processing and marketing of farm produce. In SE Asia, women play a major role in rice production (Heyer 1987; Karl 1996; Rola-Rubzen 1997). In a study conducted by Rola-Rubzen (1997) it was found that women contribute in all agricultural activities (including sowing, weeding, fertiliser and pesticides application, harvesting and threshing) except for land preparation, which was mainly considered as men's work. Land preparation was seen as men's domain as the equipment used is often considered too heavy for women to handle (e.g. plough) and often requires handling large animals such as the water buffalo. In India, women were found to contribute up to 54% of total family labour in farm work including pulling seedlings, transplanting, applying fertiliser, weed management, irrigation, harvesting and threshing (Singh et al. 2004). In both south and SE Asia, women supply a significant amount of the labour on plantations producing tea, rubber and fruit (FAO 1998).

Women's role in the production of secondary crops

Many households in Asia maintain secondary crops such as legumes and vegetables in home gardens or in small plots located in their backyards. These secondary crops provide essential nutrients to household members and are often an important source of protein and minerals for rural households. Secondary crops are the only food available to some households during lean seasons or if the main harvest fails. They also represent a potential source of income with which women can supplement household income.

According to FAO (2006) the contribution of women to secondary crop production is even greater than in the main agricultural crop production. This is because maintenance of household gardens is often considered the responsibility of women. Apart from planting, women often tend to their home gardens on a daily basis—weeding, watering or irrigating—and then harvesting for home consumption or for selling.

Women's role in livestock production

Women also contribute to livestock husbandry and production. Women generally raise smaller livestock such as poultry, goats and pigs (Rola-Rubzen 1997; FAO 2006). In some parts of Asia such as the Philippines, while large animals are seen as men's work,

Table 3. Population in agriculture and non-agriculture, selected Asian countries

Country	Agriculture population ('000)		Non-agricultural population ('000)	
	No.	%	No.	%
Bangladesh	61,639	72.5	23,365	27.5
Cambodia	5,004	75.7	1,609	24.3
China	741,631	73.9	262,537	26.1
India	441,865	64.1	246,991	35.9
Indonesia	80,492	53.6	69,636	46.4
Korea, Democratic People's Republic	7,677	44.6	9,520	55.4
Korea, Republic of	12,935	33.9	25,189	66.1
Laos	2,550	79.5	656	20.5
Malaysia	5,390	39.2	8,373	60.8
Myanmar	25,556	75.8	8,149	24.2
Nepal	13,952	93.8	928	6.2
Pakistan	53,889	66.7	26,891	33.3
The Philippines	25,092	52.2	22,996	47.8
Thailand	29,818	64.3	16,523	35.7
Vietnam	38,744	73.1	14,261	26.9

women also feed and milk large animals, such as cattle and water buffaloes (Rola-Rubzen 1997). Likewise, a study conducted by FAO (1998) showed that in Pakistan women carry out 60–80% of the cleaning, feeding and milking of cattle.

Women's role in postharvest activities

Many of the postharvest activities involve women. While men often cart the produce from the farm to the homestead, women are often involved in winnowing, drying and storage of the crops. Women are also involved in seed collection. In a study conducted in Java by Roshetko et al. (2004) seed collection and processing activities were found to be dominated by women—a minimum of 75% of these activities being done by women. They also found that, although some men are involved in seed collection, none of them are active in seed collection without the wife's partnership. Women also play an active role in processing (drying, grinding and pounding grains, smoking fish and meat, processing and preserving fruit and vegetable produce), packing and marketing of both crops and livestock (Rola-Rubzen 1997; FAO 2006).

Food processing contributes to the food security of the household in three main ways. First, processing foods can reduce food losses as perishable food can be processed or preserved through drying or other means of processing. Second, processing can add to the diversity of diet, offering household members a variety of food products. Third, processed products can be sold by women as an additional source of income that they often use to purchase the basic needs of the household including other food products.

Rural women and non-agricultural work

Rural women, particularly those in farming families, work not only as (unpaid) farm labour but also as wage earners off farm and doing non-farm work. A study conducted by Chen et al. (2005) showed that a significant number of women work in non-agricultural employment and that the proportion of women workers engaged in informal employment is generally higher than the proportion of men workers. In addition, women are concentrated in the more precarious types of informal work where earnings are low.

Women's earnings are important to the household as women are often responsible for providing food for their families; hence, it is not surprising that a sig-

nificant proportion of women's income is often spent to purchase food and other basic household needs.

Rural women and food security

Food security is an important goal in all Asian countries. Unfortunately, as pointed out by ILO (1990), the rural people who produce the world's food also make up the majority of the world's poor and hence are among those most vulnerable to food insecurity. In the Rome Declaration on World Food Security signed at the World Food Summit, governments declared it unacceptable that more than 800 million people worldwide, and particularly in developing countries, did not have enough food to meet their basic nutritional needs (FAO 2006). Despite increases in food production, many households are still unable to access it for various reasons including lack of resources and buying capacity, resulting in hunger and undernourishment. Figures released by the UNDP (1996) indicate that in some countries in Asia a significant portion of the population are undernourished (Vietnam 19%, Thailand and Pakistan 20%, India 21%, Sri Lanka and the Philippines 22%, Bangladesh 30% and Cambodia 33%).

Hunger and food insecurity have repercussions in social dimensions such as education, health and well-being of people, all of which have a direct bearing on poverty.

According to FAO (1998), food security depends on the availability, accessibility, adequacy and acceptability of food. Due to their multiple roles, women play key roles in meeting food security in their capacity as food producers, income earners who purchase food for their households, processors and persons responsible for preparing foodstuffs to keep their families healthy and active (FAO 1998, 2006). According to Quisumbing et al. (1995), women contribute 10–50% both as family labour and as hired labourers for various crops in Asia and Latin America.

Rural women and biodiversity

Various studies of the International Rice Research Institute (IRRI), the International Food Policy Research Institute (IFPRI) and the Food and Agriculture Organization of the United Nations (FAO) show that women play an important role in the preservation of biodiversity. According to the FAO (2006), because women are responsible for supplying their

families with food and care, they often have special knowledge of the value and diverse uses of plants for nutrition, health and income. Other researchers have found that women often experiment with and adapt indigenous species and thus become experts in plant genetic resources (Moreno-Black et al. 1994; Bunning and Hill 1996; Karl 1996). As a result, they unwittingly become preservers of traditional knowledge of indigenous plants.

It is now widely recognised that the preservation of biological diversity and plant genetic resources is essential to food security. Hence, the role that women play in this area is likely to be important in the preservation of genetic resources.

The ‘feminisation’ of agriculture

Arguably, one of the trends worldwide is the so-called ‘feminisation’ of agriculture (Rola-Rubzen 1998; FAO 2006). Feminisation of agriculture refers to the increasing number of women in agriculture, and the associated decrease in the numbers of men in the sector as a result of several factors such as male out-migration to seek better economic opportunities, war, and health issues in relation to HIV/AIDS. Feminisation of agriculture and the resulting increase in female-headed households (either *de facto* or *de jure*) makes it more imperative than ever to take action to enhance women’s ability to carry out their tasks in agricultural production and their other contributions to food security (FAO 2006).

According to FAO (2006), feminisation of agriculture in Asia is harder to trace because of insufficient data. In the mid 1980s, Asia had a relatively low percentage of female-headed households (only 9% overall and 14% when India and China are excluded). However, recent trends show that there is an increasing occurrence of male migration in rural areas in Asia. A study currently being conducted in four countries by IRRI to examine this issue is expected to shed light on the prevalence of male migration and its impact on agricultural productivity and household welfare.

The main issues in regards to women

While women are major players in the rural sector in Asian countries, often they do not get an equal share from the gains and may be the last to benefit from economic growth and development. Moreover women face many constraints such as unequal access to

resources, heavy workloads and financial constraints. While there has been progress in incorporating women’s concerns in some countries in Asia, still more work is needed. Given women’s crucial roles and their importance to livelihood and food security, rural development programs must address the constraints women face, thereby improving women’s ability to carry out these roles more effectively and maximise their contributions both to their households and to the society at large. Below are some of the issues faced by women.

Invisibility of women’s roles

Despite an improvement in the availability of gender disaggregated data, there is still a general lack of sufficient data and information on women’s work. This is because much of the work of women is under-reported and the methodologies for data gathering do not take into consideration a significant portion of the work women do (Rogers 1980; Beneria 1981; Brydon 1989). For instance, studies conducted by FAO have indicated that some work done by women is not counted in surveys and censuses, since generally only remunerated work is counted. Unpaid household tasks that usually comprise a significant part of women’s work are therefore automatically excluded. This leads to the ‘invisibility’ of women’s roles. In some cases, costs of labour are not calculated because of the assumption that labour will be supplied by women to which no value or opportunity cost is attached (e.g. Rogers 1980). The implication of this is that government policy makers and planners do not have the complete picture about women’s situations when developing policies and strategies; consequently, women’s needs are often not adequately taken into account in the design of projects.

Poor access to resources and services

One of the greatest challenges to women is their poor access to resources and services such as land, credit, membership in rural organisations, agricultural inputs, technology, training and extension, marketing and other services (Thwin 1991; Stephens 1993; FAO 1995a,b,c; Quisumbing et al. 1995; Gittinger et al. 1996). There are various reasons for this including customs, traditions and social mores in some societies, gender-blind development policies and research, discriminatory legislation, attitudes and women’s lack of access to decision-making. The lack of access to resources and services acts as an imped-

iments to increasing women's productivity and capacity to earn income from farm or off-farm work.

Agricultural development policies and research

Due to the increase in micro-studies of women's roles, there has been an improvement in the awareness of the important contribution of women in rural development and the importance of taking their needs into account. Nonetheless, agricultural policies on the whole still do not address the needs of women farmers adequately, mainly because the policies are often not translated into actions (FAO 2006).

FAO pointed out that even in research, women's needs are often neglected. An example is in the development of technology: when women are not consulted, the ensuing technology may be suited to men but not women. As Jiggins (1986) pointed out, neglect of gender issues in agricultural research and technology development holds output and welfare below potential.

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Produktivitas usahatani dalam sistem pertanian terpadu: studi kasus di kecamatan Amarasi, kabupaten Kupang, Nusa Tenggara Timur

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Abstrak

Banyak petani di Amarasi yang menggabungkan peternakan dan pertanian dalam usaha tani pada skala kecil. Kebanyakan pada usaha tani tersebut, produktivitas baik sistem produksi pertanian maupun peternakan sangat rendah. Namun demikian ada potensi peningkatan terhadap produktivitas peternakan. Produksi pertanian dapat dikembangkan dengan meningkatkan praktek pertanian dengan penggunaan teknologi yang tersedia serta pemberian akses terhadap fasilitas pinjaman, informasi agricultural dan peningkatan peran institusi desa. Sementara penggabungan pengembangbiakan dan penggemukan menunjukkan adanya alternative untuk peningkatan sistem produksi ternak.

Integrated farming systems productivity: a case study in Amarasi, Kupang district, East Nusa Tenggara

Maximilian M.J. Kapa^{1a}

Abstract

Many farmers in Amarasi operate small-scale mixed crop–livestock farms. In most of these farms, productivity of both food crops and livestock production systems is quite low. There is, however, potential to improve the productivity of the farms. Food crop production can be enhanced by improving farm practice using available technology and access to credit facilities, agricultural information and the increasing roles of village institutions. Combining breeding and fattening represents an alternative for improving livestock production systems.

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Pendahuluan

Amarasi merupakan salah satu dari 22 kecamatan di Kabupaten Kupang Nusa Tenggara Timur (NTT) yang terdiri dari 7 buah desa dan tiga di antaranya yakni desa Oesena, Ponain dan Tesbatan merupakan lokasi studi kasus. Luas wilayah Kecamatan Amarasi saat ini adalah 154,9 km² dengan kepadatan penduduk 91 orang per km². Kondisi iklim di daerah ini, seperti yang dipublikasikan oleh beberapa penulis, adalah kering yang dipengaruhi oleh angin muson tenggara yang bertiup dari Australia dimana musim kemaraunya cukup panjang (8–9 bulan) (Nulik et al. 1999; Kapa 1999; Piggin 2003) dengan curah hujan tahunan pada tahun 2004 berkisar antara 12,7 mm (bulan Mei) sampai 463,8 mm (bulan Februari). Suhu dan kelembaban tertinggi terjadi pada bulan Desember masing-masing 33,5°C dan 92 persen. Evaporasi rate berkisar antara 4 sampai 9 mm per hari dan dalam setahun dapat mencapai total 2000 mm (BPS Kabupaten Kupang 2004).

Kadaan di atas ditambah kondisi topografi daerah yang bergelombang sampai berbukit serta tanah yang bersifat calcareous dengan pH berkisar antara 8–9 menyebabkan sulit bagi tanaman untuk bertumbuh dengan baik. Oleh karena itu yang perlu mendapat perhatian dalam pengembangan pertanian di daerah Amarasi adalah aspek konservasi tanah maupun air. Hal ini perlu dalam rangka mengantisipasi musim hujan yang singkat berakibat pada kurangnya ketersediaan air. Pada kondisi seperti ini petani peternak mengalami kesulitan dalam usahatani maupun usaha ternak. Hal ini berdampak lanjut pada rendahnya produktivitas pertanian dan peternakan di daerah ini.

Dengan demikian diperlukan pengenalan terhadap sistem usahatani yang telah ada di Amarasi untuk diperbaiki dalam kerangka *Integrated Rural Development*. Untuk tujuan tersebut makalah ini membahas kajian dari beberapa hasil studi kasus yang dilakukan di Kecamatan Amarasi Kabupaten Kupang terkait produktivitas usahatani dan ternak dalam sistem usahatani terpadu di Amarasi.

Potensi Sumberdaya

Kecamatan Amarasi sebagaimana dijelaskan di depan memiliki wilayah sekitar 2,6 persen dari luas Kabupaten Kupang. Jumlah penduduk Kecamatan Amarasi pada Tahun 2004 adalah 14.113 orang yang

terdiri dari 7.273 laki-laki dan 6.840 perempuan tergabung dalam 3.371 rumah tangga serta tidak kurang dari 75 persen penduduknya bekerja di sektor pertanian dengan pendapatan perkapita yang relatif rendah yakni Rp974.000 (BPS Kabupaten Kupang 2004).

Tabel 1 di atas memperlihatkan bahwa lahan kering menjadi tumpuan kegiatan pertanian di Kecamatan Amarasi. Sedangkan di sektor peternakan didominasi oleh ternak sapi dan unggas. Luas lahan sawah 300 ha merupakan sawah tadah hujan berpenyairan sederhana.

Pola Usahatani di Amarasi

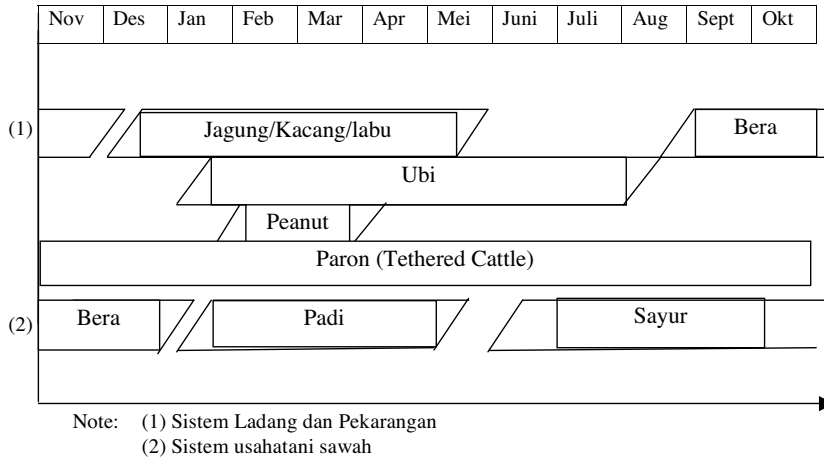
Pengelolaan usahatani di Amarasi menurut hasil penelitian selama tahun 1994–2004 di tiga desa (Oesena, Ponain, dan Tesbatan) dilaksanakan pada empat jenis lahan yakni:

Usahatani lahan kering (usahatani ladang)

Sistem ladang di Amarasi dicirikan oleh sistem tebas-bakar (*slash-and-burn systems*). Komoditas yang ditanam pada usahatani ladang adalah jagung sebagai tanaman utama, kacang gude (*Cajanus cajan*), labu dan ubi kayu. Jagung, kacang dan labu ditanam pada satu lubang pada bulan Desember dan dipanen pada bulan April atau Mei. Sedangkan ubi kayu ditanam diantara tanaman utama pada waktu yang sama dan dipanen pada bulan Agustus sampai Oktober. Rata-rata produksi jagung pada tahun 2004 adalah 1,21 ton ha⁻¹, kacang 0,34 ton ha⁻¹, ubi kayu 2,560 umbi per ha, serta 35 karung plastik kacang tanah per ha. Gambar 1 memperlihatkan pola tanam petani di lahan kering dan sawah di Amarasi.

Usahatani pekarangan

Sebagaimana halnya di ladang tanaman jagung juga menjadi tanaman utama di lahan pekarangan yang ditumpangsarikan dengan kacang dan ubi kayu (Kapa 2004). Beberapa tanaman tahunan dalam jumlah kecil seperti kelapa, nangka dan tanaman makanan ternak misalnya lamtoro, gamal dan galaga juga ditanam di pekarangan. Jagung yang ditanam biasanya varietas umur pendek dengan maksud untuk menyediakan sumber makanan bagi keluarga. Produksi jagung dari lahan pekarangan sangat sulit untuk diketahui namun menurut estimasi para petani sekitar 760 kg/ha.



Gambar 1. Pola Tanam oleh Petani di Amarasi (study areas), Kupang. (1) = Sistem Ladang dan Pekarangan; (2) = Sistem usahatani sawah.

Usahatani Sawah

Hasil penelitian Kapa (2004) menyatakan tidak semua petani di Amarasi memiliki lahan sawah, dari 50 responden yang diwawancarai hanya 20 % petani yang mengusahakan sawah. Rata-rata luas lahan sawah per kepala keluarga (per farm) hanya 0,32 ha. Pada lahan ini diusahakan tanaman padi (*monocrop*) dengan pola umum padi–bera, namun di desa Tesbatan dengan memanfaatkan musim hujan dan ketersediaan mata air polanya adalah padi–sayur–bera. Waktu tanam umumnya dimulai pada akhir bulan Desember sampai Januari dan dipanen sekitar bulan Maret/April. Pada pola pertama setelah padi dipanen maka lahan dibera sampai musim tanam berikutnya. Sedang pada pola tanam kedua, setelah padi dipanen lahan dibiarkan beberapa saat (1–2 minggu) kemudian diolah untuk menanam sayur. Rata-rata produksi padi 1,7 ton ha⁻¹. Sedangkan dari usahatani sayur karena sulit untuk mendapatkan produksi fisik sehingga dinilai dengan rupiah. Hasil studi menunjukkan rata-rata pendapatan petenai sebesar Rp 2.250.000 per tahun.

Usahatani mamar

Mamar (tradisional agroforestry) adalah lahan yang biasanya terletak dekat mata air atau sungai. Tetapi mamar kering tidak harus dekat dengan mata air. Rata-rata luas lahan mamar 0,47 ha. Mamar identik dengan tanaman kelapa, pinang, sirih, pisang, nagka dan beberapa tanaman hijau makanan ternak seperti lamoro, gala-gala dsbnya. Pemilikan mamar biasanya

diturunkan dari generasi ke generasi dan luasnya makin lama makin sempit. Pada tahun 1994, rata-rata luas lahan mamar di Amarasi 0.6 ha dan pada tahun 2004 menjadi 0,47 ha. Hal ini terjadi karena ada fragmentasi lahan dan pertambahan jumlah penduduk. Selain kelapa, hasil dari tanaman lainnya sulit diukur dalam bentuk fisik tetapi petani menyatakan bahwa mamar mempunyai peranan penting dalam menyediakan uang tunai untuk menutupi kebutuhan sehari-hari. Pada tahun 2004 penghasil rata-rata dari mamar yang diperoleh dari penjualan kelapa dan produk lainnya adalah sebesar Rp. 672.000.

Usaha Ternak di Amaras

Usaha ternak merupakan bagian integral dari sistem usahatani di Amarasi. Ternak yang banyak dipelihara adalah sapi, dan unggas sedangkan ternak lainnya dipelihara dalam jumlah kecil. Sebagian besar dari usahaternak sapi dipelihara dengan cara ekstensif tradisional dimana intervensi pemilik terhadap usaha ternak sangat minim. Pada sistem pemeliharaan ini biasanya pada siang hari sapi dibiarkan merumput di padang penggembalaan umum, atau di kebun milik peternak dan pada malam hari dikandangkan. Namun dengan meningkatnya derajat komersialisasi ternak sapi mendorong peternak untuk melakukan sistem pemeliharaan yang lebih produktif. Sistem ini dikenal dengan sistem paron atau sistem Amarasi yang berbasis lamtoro.

Sejak diperkenalkan pada tahun 1971, sistem paron menarik minat peternak untuk memeliharanya sapi paron dan bersandar sepenuhnya pada lamtoro sebagai sumber utama pakan. Dengan pemberian lamtoro sebanyak 15–20 kg daun segar perhari dapat menaikkan berat badan 0,5–1 kg per hari. Dengan demikian untuk mencapai berat pasar sekitar 350 kg dari berat badan awal 150 kg membutuhkan waktu hanya 3–6 bulan dan dapat memberikan kontribusi 30–70 % terhadap pendapatan petani.

Adanya serangan kutu loncat pada lamtoro di awal tahun 1986 telah menghancurkan tegakan lamtoro yang berdampak langsung pada penurunan produktivitas usahatani dan ternak di Amarasi seperti yang dilaporkan Mudita dan Kapa (1987) dan Widiyatmika et al. (1989). Misalnya produksi tanaman jagung turun sebesar 53 persen, sedang bagi sapi paron kekurangan lamtoro menyebabkan masa pemeliharaan menjadi lebih lama dan jumlah sapi paron juga berkurang dari rata-rata 7 ekor sebelum tahun 1987 menjadi rata-rata 3 ekor per tahun. Tidak jarang petani harus berjalan sejauh 1–3 km perhari guna mendapatkan HMT. Guna mengatasi hal ini peternak juga mencari sumber HMT alternatif seperti galaga, kapok, limbah pertanian disamping lamtoro.

Tenaga Kerja

Penggunaan tenaga kerja dalam pelaksanaan usahatani masih didominasi oleh tenaga kerja manusia yang bersumber dari dalam keluarga dan dari luar keluarga berupa tenaga gotong royong sedang sistem upahan jarang dilakukan. Kapa (2001) melaporkan kurang lebih 11.000 jam per keluarga yang digunakan setiap tahun untuk melakukan aktivitas usahatani. Dari jumlah tersebut 48 persen digunakan untuk tanaman pangan, 37,5 persen untuk usaha ternak dan sisanya untuk kegiatan off farm. Intensitas penggunaan tenaga kerja berhubung erat dengan musim. Penggunaan tenaga kerja yang paling intensif terjadi menjelang dan pada musim hujan (Oktober dan April). Penggunaan pada bulan Oktober adalah untuk persiapan lahan sedang pada bulan April untuk kegiatan panen dan pasca panen. Pada bulan lain intensitasnya berkurang, bahkan pada bulan-bulan tertentu intensitasnya sangat rendah. Untuk itu perlu dipikirkan pembukaan lapangan kerja guna memanfaatkan tenaga kerja yang ada.

Kendala Usahatani

Produktivitas hasil beberapa komoditas tanaman pangan yang dicapai oleh petani dari tiga desa kasus di Amarasi (Oesena, Ponain, dan Tesbatan) umumnya masih rendah bila dibandingkan dengan hasil produksi potensial yang bisa dicapai. Hal ini terjadi karena kendala teknis maupun kendala sosial ekonomi. Keterbatasan air, penyediaan varietas, pemupukan, dan pengendalian hama dan penyakit masih merupakan kendala utama di desa-desa kasus. Dari segi penyediaan tenaga kerja, tenaga kerja utama adalah tenaga kerja manusia namun dari segi pemanfaatannya masih kurang produktif. Tenaga kerja ternak walaupun tersedia namun pemanfaatannya masih sangat terbatas, lahan usahatani yang dimiliki sempit dan kurang subur juga merupakan kendala utama. Kendala sosial ekonomi ditandai dengan motivasi yang sedang disertai kurangnya keterampilan. Walaupun tersedia sarana penunjang kelembagaan namun peranannya kurang aktif dan tidak lancar, terbatasnya kredit modal kerja, serta tidak tersedianya teknologi di tingkat desa menjadi kendala pengembangan usahatani.

Kendala Usaha Ternak

Musim hujan yang singkat disertai dengan belum pulihnya tanaman primadona lamtoro menyebabkan minimnya suplai pakan baik jumlah maupun mutu bagi ternak NTT. Hal ini berdampak pada rendahnya produktivitas ternak sapi seperti yang dijelaskan di atas.

Tumbuhan yang relatif lebih tahan terhadap kekeringan dibandingkan dengan jenis-jenis sumber hijauan lain seperti lamtoro kini tidak lagi menjadi pemasok utama hijauan bagi ternak yang bergizi tinggi dan palatable dan juga sebagai tumbuhan penyubur tanah sekaligus pencegah erosi tidak dapat lagi diandalkan sepenuhnya karena adanya invasi kutu loncat. Kejadian ini telah mengganggu produktivitas pertanian di daerah ini. Masalah menurunnya produktivitas ternak dipengaruhi oleh beragam faktor yakni (1) faktor lingkungan seperti kurangnya ketersediaan pakan yang berkualitas serta keberagaman HMT alternatif yang rendah, penyakit, (2) faktor biologi misalnya tingkat kematian anak (calf mortality) cukup tinggi bahkan pada kondisi tertentu bisa mencapai 30 persen, (3) faktor manajemen berhubungan dengan sistem pemeliharaan. Dimana sebagian besar peternak masih menggunakan sistem ekstensif seh-

ingga kontrol terhadap breeding, feeding dan penyakit sangat rendah, dan (4) Sosial ekonomi berhubungan dengan kurangnya modal, kurangnya akses terhadap fasilitas kredit dan pasar, serta diperburuk oleh krisis ekonomi yang terjadi saat ini.

Kesimpulan dan Harapan Ke depan

Persoalan pokok yang dihadapi saat ini rendahnya produktivitas tanaman dan ternak di daerah Amarasi yang disebabkan oleh adanya beberapa kendali baik itu teknis, biologi, manajemen maupun sosioal ekonomi. Namun demikian ada potensi yang dapat dikembangkan untuk meningkatkan produktivitas usahatani di Amarasi.

Setelah melihat potensi dan kendala-kendala usahatani/ternak di atas maka ke depan perlu dipikirkan hal-hal sebagai berikut:

1. Adanya kolaborasi baru antara pihak Indonesia (baca: NTT) dengan badan atau lembaga-lembaga dana Australia atau Internasional lainnya dalam konteks pembangunan pedesaan terpadu serta mempererat kolaborasi yang sudah ada baik dalam bentuk bantuan dana, ekpertis, maupun penelitian dengan penekanan pada upaya mendukung pembangunan pertanian dalam rangka menciptakan usaha pertanian yang efisien, berorientasi pasar, agribisnis dan agroindustri di daerah pedesaan.
2. Bidang lain yang perlu mendapat perhatian untuk diteliti adalah adanya kerjasama untuk mengkaji upaya konservasi tanah dan air termasuk teknologi penampungan air, bioteknologi, teknologi pasca panen dan penanganan hama penyakit tanaman secara terpadu.
3. Di bidang tanaman pangan adalah adanya peningkatan hasil usahatani melalui penyediaan benih yang berproduksi tinggi, umur pemdek, tahan kekeringan dan hama/penyakit.

4. Di bidang peternakan perhatian diarahkan pada kerjasama dalam pengkajian feeding strategy untuk mengatasi masalah kekurangan pakan pada musim kemarau, pendirian breeding stock untuk ternak sapi dalam rangka perbaikan mutu genetik sapi bali termasuk di dalamnya penggunaan indigenous genetik stocks serta aspek kesehatan ternak.

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Agroforestry for livelihood enhancement and enterprise development

**James M. Roshetko^{1,2}, E. Nugraha¹, J.C.M. Tukan¹, G. Manurung¹,
C. Fay¹ and M. van Noordwijk¹**

Abstract

Agroforestry is a dynamic, ecologically based, natural resources management system that, through the integration of trees on farms and in the agricultural landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels. By nurturing trees on their farms, pastures and homesteads farmers have been managing agroforestry systems for millennia. Most smallholder farmer agroforestry systems are diverse, multi-species and integrate trees with annual crops and/or animals. Traditionally, these systems are extensive in nature, with small quantities of many products produced for household consumption. Tree management tends to be non-intensive and largely limited to product harvesting. The advent of market economies and improved rural infrastructure has expanded commercial opportunities to many farm communities. However, traditional tree management often leaves communities ill-equipped to produce reliable quantities of high-quality products that meet market specifications. In addition, a lack of security of land tenure has, in many places, led to a corresponding lack of incentives for farmers to invest in long-term land management improvements. Experience also indicates that farmers lack access to professional technical assistance and have limited linkages to market channels and information. As a result, most farmers do not manage their trees because they are not sure where to focus and what can be sold. A system of technical assistance and innovation is needed to empower farmers to seize market opportunities by enhancing and diversifying the productivity and profitability of their agroforestry systems. This paper presents an integrated approach that emphasises market studies that appraise existing and future demand for products that are, or can be, produced by farmers; recommends farmer group extension to help farmers address market opportunities; and encourages farmer group evolution towards farmer enterprise development when appropriate. Examples of the impacts achieved through implementation of this approach and its components are provided.

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Wanatani sebagai matapencaharian tambahan dan pengembangan usaha

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Abstrak

Wanatani adalah sistem pengelolaan sumber alam berdasarkan ekologi yang dinamik melalui penggabungan pepohonan pada lahan perkebunan dan pertanian, keanekaragaman produksi berkelanjutan untuk menambah keuntungan dalam penggunaan lahan di segala tingkat social, ekonomi dan lingkungan. Petani telah melakukan pengelolaan sistem wanatani dengan memelihara pepohonan di kebun, lahan pengembalaan dan halaman rumah selama ribuan tahun. Petani usaha kecil kebanyakan menggunakan sitem wanatani beragam, multi-species, dan menggabungkan pepohonan dan/atau ternak yang dapat di ambil hasilnya tiap tahun. Secara tradisional, sistem ini meluas secara alami. Dalam jumlah kecil banyak hasil yang dihasilkan untuk konsumsi rumah tangga. Pengelolaan pepohonan cenderung untuk produk yang dapat dipanen dalam keterbatasan peningkatan dan perluasan. Terciptanya ekonomi-pasar dan membaiknya sarana di pelosok telah memperluas kesempatan komersial bagi banyak petani. Akan tetapi, pengelolaan pepohonan secara tradisional sering meninggalkan masyarakat tak berbekal untuk dapat menghasilkan produk dalam jumlah yang memadai dan dengan kualitas tinggi yang memenuhi spesifikasi pasar. Selanjutnya, keamanan dalam kepemilikan lahan, di banyak tempat, berakibat pada semangat bagi petani dalam melakukan peningkatan pengelolaan lahan jangka panjang. Pengalaman menunjukkan bahwa petani tidak mendapatkan bantuan teknis profesional dan keterbatasan hubungan dengan jaringan pasar dan informasi. Sebagai hasilnya, kebanyakan petani tidak memelihara pohon mereka karena ketidakyakinannya pada fokus kerja serta apa yang dapat di jual. Sistem bantuan teknis dan inovasi perlu memberikan kuasa pada petani untuk diberi kesempatan menguasai pasar dengan menambah dan meragamkan produk/keuntungan untuk sistem wanatani mereka. Presentasi ini merupakan penggabungan pendekatan yang ber emphasis pada study pasar serta analisa yang dapat menyebar luaskan permintaan akan barang yang ada dan yang akan datang yang dapat di produksi oleh petani, kelompok tani yang menunjuk pada bantuan dalam menangani masalah kesempatan pasar, dan evolusi kelompok tani menuju pengembangan usaha tani apabila mungkin. Contoh dampak yang dihasilkan melalui implementasi pendekatan ini dan komponennya disediakan.

Introduction

Agroforestry is a dynamic, ecologically based, natural resources management system that, through the integration of trees on farms and in the agricultural landscape, diversifies and sustains production for

increased social, economic and environmental benefits for land users at all levels (ICRAF 2006). Agroforestry systems may be defined as land-use systems in which woody perennials (trees, shrubs, palms, bamboos) are deliberately used on the same land management unit as agricultural crops (woody or annual) and/or animals in some form of spatial arrangement or temporal sequence (Huxley and van Houten 1997). For millennia, farmers developed and managed agroforestry systems by nurturing trees on their farm,

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pasture lands and homesteads. Traditionally, these systems produced a wide variety of products—timber, fuelwood, fruits, vegetables, spices, resins, medicines, etc.—primarily to meet household needs but also to generate some income through sales in local markets. Declines in the area of forests, the advent of market economies, and improvement of rural infrastructure have opened commercial opportunities for farm communities to expand or intensify their agroforestry systems. This type of process has been documented in Bangladesh (Byron 1984), Sri Lanka (Gunasena 1999), North Mindanao, the Philippines and the highlands of Kenya (Place et al. 2002). In Indonesia the following commodity-oriented agroforestry systems have evolved: *repong damar* system (Krui, Lampung), jungle rubber system (Jambi and South Sumatra), *tembawang* fruit and timber system (West Kalimantan), *pelak* cinnamon system (Kerinci, Jambi), durian fruit garden (Gunung Palung, West Kalimantan) and *parak* fruit system (Maninjau, West Sumatra) (de Foresta et al. 2000).

Market opportunity and willingness to establish agroforestry systems does not always translate directly to technical capacity and success. Although market-oriented agroforestry systems have developed in many areas, there are a greater number of areas where such systems have not yet developed. Our experience indicates there are a number of factors that might stifle the development of smallholder agroforestry. In many areas smallholder farmers have little experience with intensive tree planting; and little access to technical information and germplasm (seed or seedlings). In Central America, the Caribbean and Kenya, Scherr (1995, 1999) identified the following conditions that favour the development of successful smallholder agroforestry systems: available planting material of species that are appropriate for the site and agroforestry system, experience with tree planting and management, and accessible markets. Potter and Lee (1998) found that the ability of smallholders to plant trees or expand traditional tree-based systems is limited by resource scarcity, absence of technical capacity and experience, and market and policy disincentives. In Lampung, Indonesia, a team of socioeconomic, forestry, horticulture and livestock specialists determined that smallholder agroforestry systems and the productivity of those systems are limited by a lack of technical information, resources and consultation (Gintings et al. 1996). Across South-East Asia, smallholders' tree planting activities are often

restricted by limited access to quality planting material, poor nursery skills and a dearth of appropriate technical information (Daniel et al. 1999; Gunasena and Roshetko 2000).

Quality germplasm of appropriate species is an important innovation and intervention, particularly for smallholders farming marginal lands, who have low capacity to absorb high risk and few resource options (Cromwell et al. 1993; Simons et al. 1994). In South-East Asia quality tree seed is most often controlled by the formal seed sector (research organisations, government agencies and forest industry), to which smallholders have little access (Harwood et al. 1999). Efforts must be made to link smallholders with these sources of quality germplasm and expand smallholder access to a wider range of species that are suited to the biophysical and socioeconomic conditions they confront. This should include developing farmers' tree propagation and tree nursery management skills. Training and participatory nursery development are proven methods of building farmers' awareness, leadership, technical skills and independence regarding germplasm quality, production and management capacity (Koffa and Garrity 2001; Carandang et al. 2006).

Most smallholder agroforestry systems are characterised by limited proactive management and planning. Spacing is irregular and species components often primarily the result of chance (Manurung et al. 2005; Michon 2005). Harvesting products is often the most common management activity, with minimal weeding to control herbaceous and woody competition. As a result, the quality and quantity of products may be far below the system's potential. The productivity of most smallholder agroforestry systems can be improved by enhancing smallholder management skills. Key skills include: species selection for site; identifying tree farming systems that match farmers' land, labour and socioeconomic limitations—including annual crops, tree crops, intercropping and understorey cropping options; tree management options to produce high quality products; pest and disease management; and soil management. Efforts should seek to develop a range of deliberate management techniques for trees and systems that enable farmers to produce quality products for specific market opportunities.

Smallholders generally have weak market linkages and poor access to market information (Hammett 1994; Arocena-Francisco et al. 1999). Working in the Philippines, Predo (2002) found that tree farming

was more profitable than annual crop production, but uncertain marketing conditions deterred tree planting. The existence of accessible markets for tree products is a vital criterion for site selection (Scherr 1995, 1999; Landell-Mills 2002); otherwise, the development of economically viable systems is doubtful.

In summary, the following factors seem to have strong bearing on the successful development of market-oriented smallholder agroforestry systems: (i) secure land tenure/use conditions; (ii) supportive policy conditions; (iii) access to and knowledge regarding the management of quality germplasm; (iv) tree management skills and information; and (v) adequate market information and linkages. The first two factors (land tenure and policy support) are basic enabling conditions, required to facilitate the development of smallholder systems. Developing supportive tenure and policy conditions often requires broad-based negotiations that include participation from local, regional and national governments as well as the private sector and community organisations. A central part of such negotiations is determining just what environmental services require careful regulation (Fay and Michon 2005). Successful negotiations lead to consensus land management agreements and natural resource security for local farmers. The other three factors (quality germplasm, tree management and market linkages) are technical issues that can be effectively addressed at the local level by government extension agencies, non-government organisations (NGOs), farmer organisations or individual farmers.

The World Agroforestry Centre and Winrock International have worked on these three technical factors in South-East Asia since the early 1990s. Our experience indicates that these factors can be successfully addressed through a replicable and efficient extension approach designed to reach motivated and innovative farmers who are committed to improving their incomes by increasing production and market access for their agroforestry products (Roshetko et al. 2004a). The approach includes emphasis in three components: market studies and analysis to appraise the existing and future demand for products that are or can be produced by farmers; farmer group extension to help farmers address market opportunities; and farmer group evolution towards farmer enterprise development when appropriate. These three components are interdependent and conducted simultaneously, with technical assistance and farmer group

development based on market opportunities. This paper documents our experience with this approach and its three components.

Market studies and analysis

Experience in Indonesia indicates that farmers generally: (i) lack access to market information (product demand, specifications and prices); (ii) lack understanding of market channels; (iii) produce products of unreliable quality and quantity; (iv) rarely engage in grading or processing to improve product quality (and their profit margin); and (v) sell their products as individuals (not through groups to achieve economies of scale). These conditions also have negative consequences for market agents. They spend a lot of time and resources searching for, collecting and sorting smallholder products to get a sufficient quantity of mixed quality. The time and effort of engaging farmers is a main reason given by market agents to explain why farmers are paid low rates for their products (Roshetko and Yulianti 2002; Tukan et al. 2006a). In order to enhance farmers' livelihoods and develop agroforestry-based enterprises, the shortcomings mentioned above should be documented and then addressed.

In our approach we conduct market surveys using a rapid survey format modified from ILO (2000) and Betser (2001) to identify and understand: (i) the agroforestry species and products that hold potential for farmers (their specifications, quantities, seasonality and the like); (ii) the market channels that are used and hold commercial potential for smallholder products; (iii) the marketing problems faced by farmers and market agents; (iv) the opportunities to improve the quantity and quality of farmers' agroforestry products; and (v) market integration (through vertical price correlation and price transmission elasticity) and efficiency.

We start with informal visits to make observations in the study area and hold discussions with farmers and other stakeholders. The information from these visits and knowledge gained from relevant secondary information is used to customise the market survey. The survey is then conducted with farmers, market agents and other key stakeholders within the project area. The information provided by each respondent is followed through the market chain to the end consumer until information concerning the market channel is complete. The information gathered is cross-checked with direct observation and informal

discussions with relevant respondents and different groups of stakeholders in the project area. The cross-checking process continues until the information gathered is clear and consistent, and no new information is found. A draft summary of the information is then shared with stakeholders in a formal meeting or workshop. This provides opportunity for additional cross-checking with individual and groups of stakeholders. Any inconsistencies or gaps in the information are identified and addressed through further field investigation. Once these questions are answered the summary of ‘farmer marketing conditions and priorities’ (priority species, marketing channels and agents, farmers’ market roles, marketing problems and opportunities) is finalised. At this point, work plans are developed to identify what actions farmers, market agents and other stakeholders agree to take to improve the production and marketing of small-holder products.

Our approach is an iterative process. It utilises relevant information gathered from participatory appraisals (both individual and group discussions) with various stakeholders, direct observation, detailed surveys and secondary data sources. Its iterative feature and the utilisation of multiple sources allow all the information and data to be reviewed and checked for accuracy. Appropriate planning is a prerequisite for successful implementation of the marketing approach as well as for each component activity.

Farmer group extension

The farmer group extension approach seeks to empower motivated farmers to enhance and diversify the productivity and profitability of their agroforestry systems to seize market opportunities, both existing and developing. This approach can also be used with NGOs. Initial training is provided to farmer or NGO leaders so that they may: (i) analyse existing conditions and problems; (ii) identify technical options; and (iii) set work agendas. According to work agendas, more intensive follow-up assistance is provided to farmer groups that these leaders have helped organise. The approach is flexible and dynamic, adjusting to the actual conditions of the target communities. It is also informal, practical, impact-oriented and focused on priorities identified by target communities. To avoid wasting resources and time, efforts are made to keep the structure and process of the farmer group approach simple and straightforward.

Farmer leader training workshops focus on species, systems, problems, markets or other priorities. Common topics include seedling propagation and nursery management, tree and agroforestry system management, farmer–market linkages and farmer-operated commercial enterprises. Training events are participatory and typically planned and conducted in the following manner: After initial discussions, staff develop a training curriculum that is then reviewed by farmer leaders. During the events, staff or other resource persons provide relevant background information and then facilitate discussions. Working group sessions are held for farmer leaders to share and compile their experience and knowledge on relevant topics. Working groups then report to all participants in a plenary session. Practical sessions are common. The training events build the technical capacity of farmer leader participants. More importantly, the training exposes leaders to new ideas and helps them recognise the depth of their own knowledge and the capacity they can offer to local community development. The training is very valuable in motivating the farmer leaders and helping them identify appropriate local priorities. The development of draft work plans is an integral part of each training event.

Following training workshops, staff assist farmer leaders or NGOs to: (i) share the workshop ideas and results with a greater number of farmers, and (ii) review, revise and implement the work plan drafted at the workshop. These follow-up technical assistance activities may include farmer meetings, mini-training, and field implementation such as nursery construction and operation or farmer demonstration trial establishment and management (Roshetko et al. 2005). The activities are mutually supportive and integrated so that the objectives and topics of each activity are relevant to the objectives and results of earlier activities. The follow-up assistance forms a continuous flow of contact and activities between the farmer groups and staff. Activities are implemented through three main channels: (i) staff facilitating and monitoring progress towards achievement of farmer groups’ objectives on a periodic (monthly, bi-weekly) basis; (ii) staff and other technical specialists (including market agents) providing subject-specific technical assistance as requested by farmer groups; and (iii) farmer-to-farmer and farmer group-to-farmer group technical assistance on an informal basis, with facilitation by staff (see Figure 1).

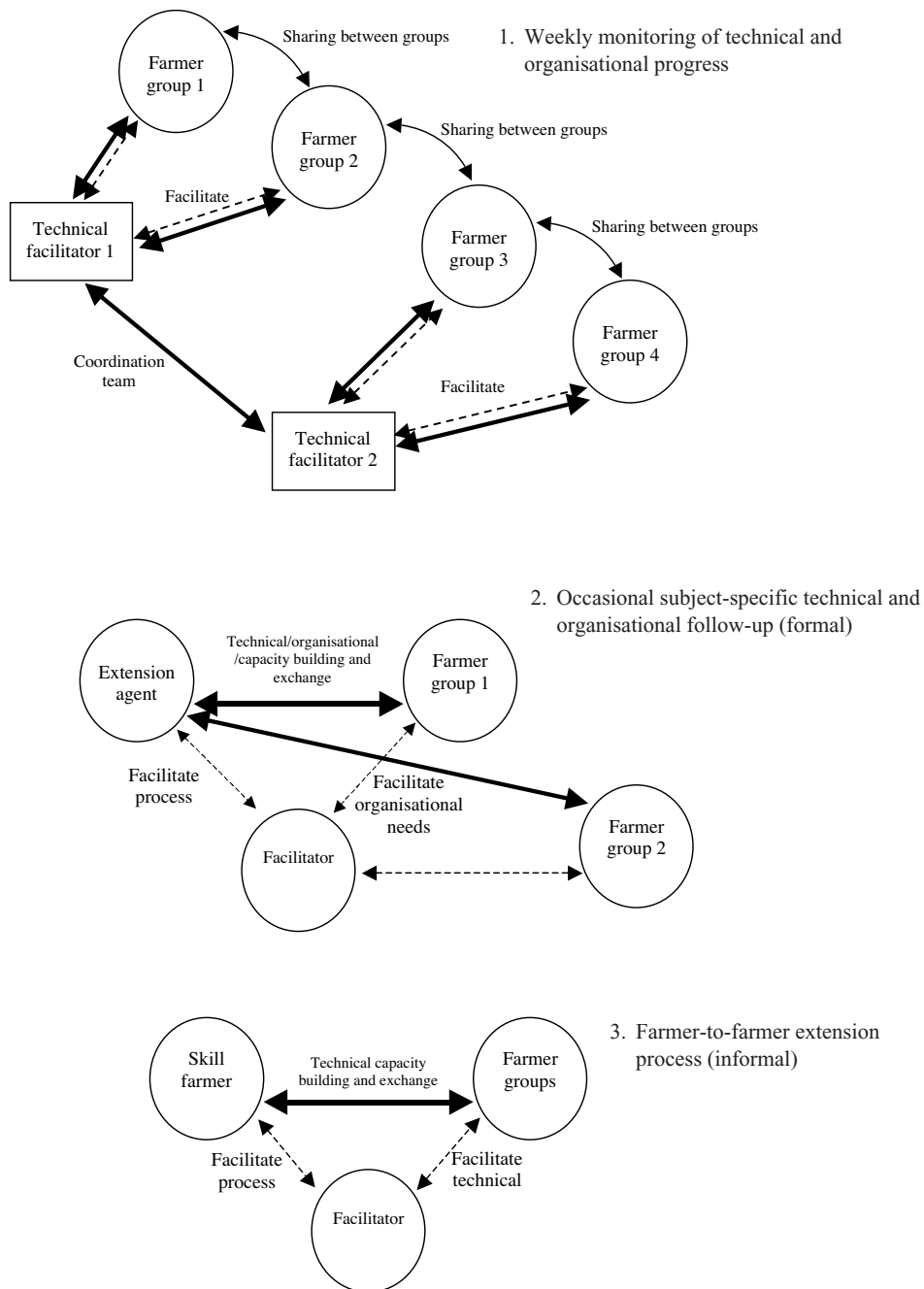


Figure 1. Channels to implement farmer group extension activities

The first channel assures frequent contact, enabling staff to assist farmer groups to concentrate on their objectives and plans, monitor and gauge progress and, if necessary, change their objectives. The second channel enables staff or other specialists to provide technical assistance related to previous activities or new topics requested by the group. These two channels allow staff to assist farmers develop their organisational capacity and provide opportunities to coordinate activities between farmer groups; they are important early in a program or series of activities. Experience indicates that the greatest impact is achieved through the third channel, farmer-to-farmer and farmer group-to-farmer group technical assistance. Farmer specialists are farmers themselves and intimately understand the conditions and concerns of fellow farmers. Their language and communication style is readily understood by the farmer participants. More comfortable under such conditions, farmer participants ask questions and offer their own experience more often when farmer specialists are leading sessions. Active farmer participation leads to greater learning and sharing of knowledge. In the third channel staff retain a role in providing technical input, but their main role evolves to facilitating the extension process. A key function of staff is to identify additional local ‘farmer specialists’ and communities where successful ‘farmer-based enterprises’ are located. Identifying these farmer specialists leads to a strong network of farmers, farmer groups, technical specialists and related institutions—including market agents.

The third channel and resulting farmer network can lead to spontaneous farmer adoption, spontaneous farmer-to-farmer extension and expansion of the farmer network. This may be the single greatest impact of the approach. For example, in Nanggung, West Java, the International Centre for Research on Agroforestry (ICRAF)/Winrock team helped strengthen or form eight farmer groups that established eight tree nurseries. As the success of program activities was recognised, farmers from neighbouring areas sought help from ICRAF/Winrock, but also directly from the program farmer groups. Those farmer groups helped neighbouring communities develop eight subgroups and provide technical assistance, resulting in the establishment of an additional 38 group and individual nurseries. Using their own funds, some farmer groups even hired farmer specialists to provide training.

Box 1. Farmer groups achieve impact

Focusing on farmer groups or NGOs is an appropriate method to make efficient use of resources, reach a large number of farmers and promote the development of agroforestry-based enterprises. However, it is important to remember that the development or existence of ‘farmer groups’ is not an objective in itself. Farmer groups are an avenue to reach farmers, implement activities, affect change and achieve planned-for objectives. Farmer groups often change and may be ephemeral. Members come and go. The farmer group exists to serve the needs of the farmers—not the project, program or an outside institution. Successful farmer groups may disappear after farmers have learned all they can under group conditions. At such times it may be more appropriate for farmers to focus on individual action. Effort should not be wasted trying to maintain a farmer group that has served its purpose or is not a cohesive unit.

Farmer group evolution towards farmer enterprise development

The implementation of *market studies* and the *farmer group extension* components build farmers’ awareness of market conditions, enhance their technical skills, and strengthen or form community-based farmer groups. The development of market awareness, technical skills and a farmer group all facilitate the development of farmer-based enterprises. But what is an enterprise? An *enterprise* can be broadly defined as any *venture, project, endeavour, or activity*. We consider farmer-based enterprises as any activity that contributes to farmers’ livelihoods or incomes. We consider the role of ICRAF/Winrock is to assist or empower farmers to expand their activities (enterprises) to achieve improved livelihoods or higher incomes.

Experience indicates that initial efforts to expand farmers’ activities/enterprises should focus on:

- improving the quality and quantity of farmers’ products through intensification or expansion of their agroforestry system
- improving the quality and value of farmers’ products through sorting, grading and packaging
- transforming farmers’ products from the raw to the semi-processed state

- learning about markets (product demand and specification) and developing market access (identifying channels and developing linkages with agents).

The first point represents the intensification of farmers' usual activities. This typically involves the use of more or better agricultural inputs (improved germplasm, fertilisers, pesticides and labour) and, most importantly, better planning to develop and utilise deliberate management regimes that will yield quality products to meet market specifications. The next three points may represent new activities for most farmers, but are well within their capacity. Undertaking these activities also requires more inputs from the farmer—labour, time, capital, skills and planning. This is a significant investment for farmers that will be rewarded with higher incomes. The keys to success are (i) a well planned/executed market study and (ii) expanding farmer enterprises based on the market opportunities identified in the market study.

Any of the four activities mentioned above can be conducted more efficiently by a farmer group united in purpose and social context. Group members can share experience, knowledge, resources and responsibilities related to the enterprise for mutual benefit. It is an appropriate next step for the farmer group to assume a marketing role through proactive and cooperative involvement with willing market agents. This process should start small and gradually expand as the capacity of farmers, program staff and agents grows.

In most circumstances, additional opportunities exist for individual farmers or farmer groups to form businesses or associations that focus on:

- assuming transportation, wholesaling or other mid-channel activities
- processing materials and manufacturing finished goods.

Such enterprises require a profoundly different set of resources, information, skills, planning and capital than are available to most individual farmers or farmer groups. They also require a lot of financial risk. Forming and operating those types of enterprises is not an easy progression and should be carefully evaluated before being pursued. Observation indicates that the development of such enterprises may depend on an outside champion or local leader who is connected and knowledgeable regarding the operation of the enterprise and/or is able to shoulder financial risk. It is advisable that most farmer groups

focus on: (i) the capacity to produce reliable quantities of high quality products; (ii) establishment of permanent and profitable market linkages; and (iii) development of sufficient entrepreneurial capacity to assure financial success before considering other enterprises. In other words, mastering the four activities listed previously is a prerequisite before considering forming enterprises that tackle these other activities.

Discussion

ICRAF/Winrock have implemented market analysis, farmer group extension and farmer enterprise development components across a range of locations over different time periods and at various intensities. The components have been used both separately and as a whole approach. The following discussion cites examples of impact where the components and the whole approach have been used by ICRAF/Winrock, or where similar approaches have been applied by associates.

Indonesia has a large area of degraded lands and a long history of both government and privately organised reforestation and tree planting activities. Tree seed is a key input for conducting these activities. With encouragement from government organisations, private seed companies, NGOs and their own activities, farmers often source the tree seed, operating seed collection enterprises at the family or farmer group level. Based on orders for specific quantities and species, farmers collect, dry, clean, grade and even package tree seed. Some individual farmers and farmer groups even plant trees for the purpose of seed production. In the Wonogiri–Ponorogo area of Central and East Java it is estimated that up to 22,500 farmers are involved in tree seed collection activities annually. These farm families earn Rp795,000 to Rp275,000 from their seed collection enterprises; this equals 66–33% of their 3-month dry-season income (Roshetko et al. 2004b). An ICRAF/Winrock survey of associates indicates that 15 of 22 NGO respondents are involved in tree seed enterprises directly or through farmer group partners. In total these enterprises sell 16 tons of seed annually, earning a gross income of Rp36 million (Harum et al. 2006). NGOs consider tree seed enterprises as positive programmatic components that provide tree seed to support their planting activities and income to offset operational expenses. Farmers, farmer groups and NGOs have developed the market awareness,

technical skills and market linkages to operate viable tree seed and seedling enterprises. ICRAF/Winrock work with these individuals and organisations in Indonesia and the Philippines to strengthen their enterprises. Market information, capital investment, policy support and technical training are the types of assistance these enterprises need to further expand their business (Carandang et al. 2006; Harum et al. 2006).

In Krui, Lampung, farmers have developed an agroforestry system based on the production of the resins damar (*Shorea javanica*), durian (*Durio zibethinus*) and duku (*Lansium domesticum*), and other fruit and timber trees. Over roughly a 100-year period, farmers have developed keen market awareness and market linkages with regional, national and international dealers. Farmers plant and deliberately manage these priority species for products that meet market demand. Farmers' roles includes harvesting, processing and grading fruits and resins. They are rewarded with higher prices for their high quality products (Michon et al. 2000). ICRAF and IRD (Institut de Recherche pour le Développement) have worked with these communities to enhance and document these locally developed agroforestry enterprises.

ICRAF/Winrock implemented all three components in Nanggung, West Java, to help farmers enhance their livelihoods through the development of agroforestry enterprises. Market studies identified a large unsatisfied demand in the greater Jakarta–Bogor area for five varieties of bananas (*Musa paradisiacal*). Results of the study included market specifications for different grades of bananas. ICRAF/Winrock conducted market awareness and technical training for interested farmer leaders in banana production, handling and marketing. We also revitalised farmer groups and conducted mini-training for a larger number of interested farmers. Market agents enthusiastically participated in these activities. Farmers and agents agreed that initial efforts would focus on improving postharvest practices; farmers assuming fruit grading responsibilities; and bananas being sold or purchased by grade weekly at a specific day, time and place. Through these efforts, participating farmers more than doubled their gross income from bananas (from Rp6,500–10,000 to Rp20,000/bunch) without incurring additional monetary costs. Farmers estimated that their involvement with bananas increased by 2 days/week, but the work was done in combination with other farm activities and

did not represent an increase in their overall workload. Agents and their staff did spend more time and effort with farmer groups, but their overall workload decreased because they dealt with 'groups' instead of individual farmers, received bananas that were already sorted by grade, and procured larger quantities or better quality bananas (Tukan et al. 2006b). After successfully developing this market link, farmers began to expand banana cultivation focusing on the five priority varieties identified by the market study, and to intensify cultivation according to recommendations made by ICRAF/Winrock (Tukan et al. 2006b). As a result banana productivity (fruit weight per stem) increased by 20–25%. Additionally, deliberate stem management and improved postharvest management increased the portion of farmers' banana crop that met market grade specifications from 50–60% to 85%. As a result of improved banana production, handling and marketing practices, farmers report that their agriculture-based income has increased by about Rp2,161,000/year, representing an increase of 152% (Roshetko and Tukan 2006).

Similar processes have been used at other sites in West Java, where farmer group partners of ICRAF/Winrock have made field visits to study successful farmer-based enterprises. In Purwakarta and Cimande, Bogor district, an agriculture development project implemented by the District Agriculture Office from 1990–94 promoted the production and marketing of mangosteen (*Garcinia mangostana*) and salak (*Salacca edulis*). After the project finished, district agricultural officers and farmer leaders maintained cooperation and forged linkages with regional and international markets. The farmer group enterprise is now well established and operates independently, while maintaining collaboration with the district agriculture officers. In 1998 farmers in Cipaku, Bogor district, developed an enterprise focused on durian production and marketing though the assistance of the Fruit Research Agency in Bogor. A direct market linkage was developed with Jakarta-based agents, who guarantee a high price for quality fruit. This linkage benefits both the producer (farmer) and agent by avoiding local and district level collectors and agents. Farmers protect this lucrative market linkage by maintaining high-quality products through deliberate management of their durian gardens. Cipaku farmers have also diversified their enterprise by developing commercial tree nurseries that produce high-quality seedlings of durian and

other fruit species. These farmers have also become technical specialists and been hired by farmer groups in neighbouring villages and by projects in Aceh to provide ‘farmer-to-farmer’ technical training. Farmers and farmer groups from other parts of West Java frequently visit Nanggung, Purwakarta, Cimande and Cipaku, seeking to duplicate the successful farmer enterprises in those communities. In most cases these individuals and groups lack the knowledge, experience, resources and confidence to start an enterprise themselves. Empowering such farmers and farmer groups to initiate agroforestry enterprises is an important role for development organisations, research organisations, NGOs and government agencies.

Conclusions

Commercial opportunities exist for farm communities to transform their traditional agroforestry systems using market orientation. To achieve this transformation, smallholder farmers must develop intensive, deliberately managed systems designed to yield quality products of priority species that meet market specification. Most farmers are ill-prepared for this challenge because their traditional extensive management approach produces small quantities of many products, primarily for household consumption, and limits market sales. Based on experience at multiple sites in Indonesia, ICRAF/Winrock recommend a replicable and efficient extension approach designed to reach motivated and innovative farmers who are committed to improving their incomes by increasing the production and market access for their agroforestry products. The approach includes three components: (i) market studies and analysis; (ii) farmer group extension; and (iii) farmer enterprise development. Training and activities undertaken in the farmer group extension and enterprise development components are based on market opportunities identified by the market survey. Initial attention is focused on farmer leaders, who then help extend more intensive follow-up assistance to farmer groups they have helped to organise. The approach is flexible and dynamic, adjusting to the conditions of target communities. The approach can also be used with NGOs. The approach defines *enterprises* broadly as any *venture, project, endeavour* or *activity*. Experience shows that farmers are best positioned to enhance their agroforestry-based incomes through the following activities (enterprises): (i) improving

the quality and quantity of their products through intensification or expansion of their agroforestry system; (ii) improving the quality and value of their product through sorting, grading and packaging; (iii) transforming their product from the raw to the semi-processed state; and (iv) learning about markets (product demand and specification) and developing market access (identifying channels and developing linkages with agents). These four activities can be efficiently implemented through a farmer group united in purpose and social context. It is a natural next step for the farmer group to assume a marketing role through proactive and cooperative involvement with willing market agents. Program staff have the role of initiating and facilitating the approach and program activities. Farmer leaders, farmer specialists and market agents should be involved in planning and implementation from the start, and in time assume a leading role. Experience shows that farmer leaders, farmer specialists and market agents are keenly interested in the approach. The technical capacity, leadership qualities and confidence built through involvement in the approach benefit these stakeholders and lead to spontaneous farmer-to-farmer extension and spontaneous adaptation of program-promoted technologies by non-program farmers. We suggest that this approach has great potential to strengthen the success of national reforestation programs and environmental service programs through the development of market-based rewards.

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Feasibility of community-based forestry management in partnership with a forestry district agency (case studies: Sumbawa and Bima, West Nusa Tenggara)

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Abstract

A wide range of community groups are engaged in formal partnerships with the forestry district agencies to manage community forestry in teak plantations, including those of the Sumbawa and Bima Districts of West Nusa Tenggara province. In each case a memorandum of understanding has been signed to establish a partnership agreement between the community group and the forestry district agency. However, implementation and technical guidelines including a clear revenue-sharing agreement between the partners have not been defined. Such guidelines are important in securing community commitment to managing the areas in a sustainable way. Each partnership agreement should include a sound economic assessment of the venture. The objectives of this study are to assess the financial and economic feasibility of partnership schemes, to identify and assess the social and economic aspects and impacts of long-term forestry partnership schemes and to estimate revenue sharing outcomes for a number of partnerships.

Results from financial analyses reveal that community-based forestry management partnership programs are potentially feasible over the long term, generating positive net present values (NPV). Results from broader economic analyses that take environmental and social costs and benefits into consideration reveal negative NPVs, meaning the social opportunity costs are high. Taking into account the costs and benefits of environmental and social aspects justifies a higher proportion of returns going to the community under a revenue-sharing agreement. Partnerships have increased community responsibility to maintain and control plantations and their standing stocks. However, it also raises the community's expectation of a secure share of the revenues from planted forests. Some challenges for community forest management in West Nusa Tenggara include lack of secure rights for the community to harvest planted teak in state forests; underdeveloped community institutions at the village level; high potential for forest exploitation (when there is increasing external demand); and inadequate local government capacity to lead implementation on the ground.

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Kemungkinan perekonomian pada pengelolaan kehutanan berbasis kemasyarakatan dalam kerjasamanya dengan dinas kehutanan di kabupaten (studi kasus; Sumbawa dan Bima, Nusa Tenggara Barat)

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Abstrak

Keaneka ragaman kelompok masyarakat bergabung dalam kerjasama resmi dengan dinas kehutanan untuk mengelola kehutanan pada perkebunan jati, termasuk di dalamnya kabupaten Sumbawa dan Bima di propinsi Nusa Tenggara Barat. Pada masing-masing kasus penandatanganan memorandum of understanding (MOU) telah di lakukan untuk menciptakan kesepakatan antara masyarakat dengan dinas kehutanan di kabupaten. Akan tetapi, panduan tehnik dan implementasinya termasuk kesepakatan pembagian hasil pada masing-masing pihak belum jelas. Panduan seperti yang di maksud sangat penting sebagai jaminan komitmen masyarakat dalam pengelolaan daerah secara berkelanjutan. Tiap kesepakatan kerjasama harus mencakup perhitungan ekonomi kerja. Sasaran dari studi ini adalah untuk memperhitungkan financial dan perkiraan ekonomi dalam skema kerjasama, untuk mengidentifikasi dan memperhitungkan aspek social ekonomi serta dampaknya pada skema kerjasama kehutanan jangka panjang dan perkiraan hasil pembagian keuntungan pada beberapa kerjasama.

Hasil dari analisa keuangan menunjukkan program kerjasama pengelolaan kehutanan berbasis masyarakat berpotensi untuk dapat dilaksanakan sebagai program jangka panjang yang dapat menggerakkan net present value (NPV). Hasil dari analisa ekonomi yang lebih luas yang memerlukan lingkungan, biaya social dan keuntungan dalam pertimbangan, menunjukkan NPV negative, itu berarti biaya kesempatan social tinggi. Dengan mempertimbangkan biaya serta keuntungan pada lingkungan dan aspek social memenuhi proporsi lebih tinggi pada lanjut kehidupan masyarakat dibawah perjanjian kerjasama usaha. Kerjasama tersebut telah meningkatkan tanggung jawab pada masyarakat dalam menjaga dan mengendalikan perkebunan serta persediaan. Akan tetapi, hal ini juga telah meningkatkan harapan pada masyarakat atas jaminan pembagian atas hasil tanaman. Beberapa tantangan yang dihadapi pada pengelolaan hutan masyarakat di Nusa Tenggara barat termasuk keterbatasan jaminan akan hak panen pada perkebunan jati di hutan daerah; institusi masyarakat tertinggal di tingkat desa; potensi tinggi dalam pengexplotasian hutan (pada waktu adanya kenaikan permintaan dari luar);serta kemampuan pemerintah dalam memimpin pelaksanaan lapangan tidak memadai.

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Background

Forestry management in Indonesia has shifted gradually from state-based forest management to community-based forest management. This has mainly happened since the reformation era began and with implementation of the decentralisation policy in 1998. Social forestry has become the main umbrella approach for Indonesia's five forestry strategic programs covering the period 2001–04. Social forestry arrangements are developed under a partnership or co-management approach. Under such arrangements local people are the main actors in decision-making regarding management of state forests (Suharjito 2005).

Smallholder timber production on mainly private and/or communal land under a partnership agreement between a community and a second party, such as the local forestry district agency (Dinas Kehutanan Kabupaten), has increasingly become an alternative to meeting economic, social and ecological objectives, such as rehabilitating degraded forest areas. Partnerships between the community and companies/forest industries are important mechanisms for transferring the benefits from forestry plantation development to local people (Figure 1).

Despite a good number of partnership programs initiated by the Ministry of Forestry, there are not many examples of successful partnerships for the following reasons (Nawir et al. 2003; Nawir and Santoso 2005):

- Most partnership programs have been developed from the top down (government-initiated partnerships).
- Principles of a mutually beneficial partnership, embracing social, economic and management aspects have not been applied.
- There has been a lack of careful consideration of the long-term financial and economic feasibility and the capacity to ensure shared benefits for the parties involved in the partnerships.
- There has been a lack of fair valuation of inputs invested by both parties as the basis for defining the contractual agreement
- Mutual economic and social objectives have not been discussed and negotiated between the parties involved.
- Parties involved in the partnerships have not clearly understood the social and economic risks involved in a partnership.

Understanding the economic feasibility and social implications of a range of partnership schemes is an important basis for negotiating agreement on revenue sharing and for securing commitment from the community's partner to a long-term partnership arrangement. Given this situation, a study focusing on assessment of the economic feasibility of community forestry managed under partnership was conducted in the districts of Sumbawa and Bima in West Nusa Tenggara. The aim of the study was to assist the local forestry district agency to design efficient and effective revenue-sharing agreements for partnerships with tree grower groups (*Koperasi Tani Hutan*).

Objectives

In the District of Sumbawa the government endorsed a local regulation, *Perda-Peraturan Daerah* no. 25, 2002, on community-based forest resources management, or *Pengelolaan Sumber Daya Hutan Berbasis Masyarakat* (PSDHBM), with reference to the Ministry of Forestry (MoF) decree no. 622, 1997, on community forestry. Under this Perda, communities are now an important part of sharing the responsibilities of forest management with other stakeholders such as government and NGOs. Sharing responsibilities is relevant to overcoming the limitations of the forestry district agencies in handling forest management and its problems, mainly due to limited human resources and funding. Following this Perda as the umbrella law, the forestry district agency determined six priority locations on former state company (Perhutani) land within production forests to implement PSDHBM models. The MoF responded very well to this initiative by assigning the Social Forestry Program to some of these locations. All these initiatives implemented under partnership schemes are included in a memorandum of understanding (MoU). However, technical and implementation guidelines have not been drafted due to the lack of a clear basis for defining profit sharing, which is critical to securing the commitment of communities to a MoU.

In contrast to Sumbawa, forestry development in the District of Bima remains focused on technical aspects instead of putting priority on community participation and institutional development. The lack of a local regulation to provide an umbrella law (*payung hukum*) has been an impediment to accelerating progress on community-based forestry management (CBFM) initiatives under partnerships.

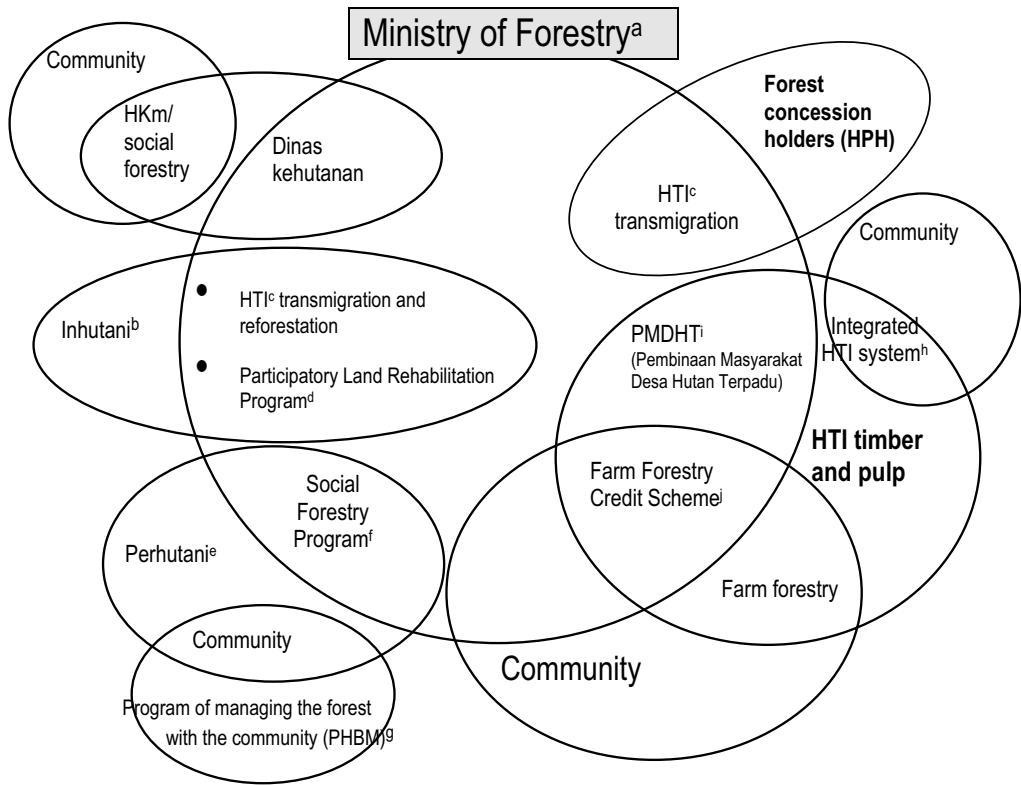


Figure 1. Partnership programs initiated by government and companies

Notes:

- ^a Government programs since 1970s under the control of Directorate General of Social Forestry and Land Rehabilitation and/or Directorate of Forestry Plantation Development within the Directorate General of Forest Production Development Program (*Direktur Jenderal Bina Produksi Kehutanan*).
- ^b Inhutani is a state company with the responsibility to manage production forests in outer islands and to rehabilitate logged-over forests.
- ^c HTI, *Hutan Tanaman Industri*, is a timber plantation concession granted by the Ministry of Forestry to the companies.
- ^d Participatory land rehabilitation program was still at preliminary formation and there were no complete guidelines during the period of former Minister Nur Mahmudi (early 2000).
- ^e Perhutani is a state company with the main responsibility of managing teak plantations on Java.
- ^f The social forestry program during the 1970s–1980s mainly focused on providing opportunities for local people to practice *Taungya* inside teak plantations.
- ^g Managing the forest with the community or PHBM, *Pengelolaan Hutan Bersama Masyarakat*, was initiated (early 2000) by Perhutani which focuses on providing revenue sharing from harvested teaks.
- ^h Integrated HTI system, which is not a common practice in timber plantation development in Indonesia, focuses on developing timber plantation under partnership schemes (Potter and Lee 1998).
- ⁱ Social Forestry Program called PMDHT (*Pembinaan Masyarakat Desa Hutan Terpadu*).
- ^j Farm Forestry Credit Scheme or *Kredit Hutan Rakyat* was mainly provided from reforestation funds and stopped in 1998. The credit was provided to the community with a competent business partner, such as a timber plantation company, both concession and non-concession holders.

Source: Revised from Nawir et al. (2003)

At the community level, collaborative management has become a necessity. It is a viable alternative to improving forest management and household incomes. However, the government doubts whether the partnership scheme is the right option to move forward. There are still some differences in understanding the concept of CBFM among stakeholders. Providing information based on objective analysis of potential benefits of collaboration may help in establishing a clearer understanding of the implications of CBFM. Furthermore, with better understanding of the consequences of CBFM, an appropriate Perda could be drafted as the basis of strategic discussion among stakeholders searching for better forest management alternatives.

This study has four objectives, as follows:

- to analyse the economic and financial feasibility of partnership schemes, which is important in providing transparent information to key stakeholders and for ensuring the economic viability of long-term commitments to partnerships
- to identify and understand the social costs and benefits of smallholder plantation development under partnership schemes (This is crucial to ensuring the long-term continuity of partnerships based on mutually beneficial terms. Assessment will generally be qualitative, although quantification will be done wherever possible.)
- to understand the ecological impacts associated with the development of small-scale plantations within partnership schemes qualitatively and/or by drawing on secondary sources
- to calculate the proportion of revenue sharing under various partnerships/CBFM programs.

All of the information mentioned above will be included in the technical/implementation guidelines of Perda CBFM for the Sumbawa District, and will provide inputs to the design of a similar Perda for the Bima district.

Methodology

Assessment of the economic feasibility of community forestry⁶ managed under partnership was conducted using participatory cost and benefit analysis that was developed from Perkins (1994). Multi-

stakeholder teams, including community members, participated in all stages of the processes, namely designing the research approach, data collection, data analysis, verification (triangulation) and dissemination. Figure 2 illustrates the participatory process. Participatory assessment was selected given that there are many stakeholders involved in smallholder partnerships, as well as to accommodate the following objectives: (i) to reach mutual agreement on each component of costs and benefits to be included in the analysis; (ii) to build ownership of the results of the analysis among all stakeholders; (iii) to encourage shared learning between researchers and stakeholders involved in the partnerships, and (iv) to ensure effective dissemination and adoption. The study was conducted during the period July 2004 to September 2005 in Sumbawa and Bima districts of the province of West Nusa Tenggara (WNT). The case study villages were selected on several criteria: (i) the existence of an ongoing partnership scheme; (ii) being representative of most partnership schemes being implemented; (iii) distance to market; (iv) low level of conflict over land status; and (v) diversity of trees species.

Two major analyses were conducted. First, financial analysis assessed actual cash expenditures and cash receipts expected to be incurred by smallholders. This is equivalent to a cash flow analysis. Second, economic analysis extended the financial analysis to include estimates of social and environmental costs and benefits associated with community forestry partnerships. This includes external costs and benefits.

For the financial analysis, information collected focused on cash costs borne, and potential benefits to be received, by both parties involved in the partnership, i.e. community members and government (forestry district agency). For Sumbawa, since the initial investment was made by the state forest company (Perhutani), budget figures from this investment were also collected. Perhutani left the areas in 2000 and they are now under the responsibility of the forestry district agency (*Dinas Kehutanan*). The potential benefits of harvested timber will be shared between the forest district agency and the community. Understanding the historical time lines is important as the basis to develop cash flow scenarios, as well as visualising the process to identify environmental and social impacts.

For the economic analysis, costs and benefits of environmental and social aspects were also collected

⁶ A complete manual on participatory economic feasibility assessment of community forestry will be published in a forthcoming CIFOR Working Paper.

to complement the direct costs and benefits of the financial analysis. The collected information focused on community perceptions of changes in impacts in relation to identified environmental and social indicators comparing the situation before and after the areas were managed under community partnerships. In the case of intangible costs and benefits, quantification and prices were estimated in consultation with community members using the participatory rural appraisal (PRA) method (Abbot and Guijt 1998; Guijt 1998) during focus group discussions (FGD) in both the studied and the neighbouring villages.

Indicators used in analysing the feasibility of the partnership cases are described below (Perkins 1994):

$$NPV = \sum_{t=1}^n \frac{Bt - Ct}{(1+i)^t}$$

Net present value (NPV) indicates the present value of benefits (*B*) less the present value of costs (*C*) for the total life in years (*t*) of the activity, after having been deflated by an appropriate discount rate

(*i*). Activities are considered feasible if they generate a positive NPV.

Benefit:cost ratio (BCR) indicates the ratio of the sum of an activity's discounted benefits to the sum of its discounted investment and operating costs. Activities are considered feasible if the BCR is greater than 1.

$$BCR = \frac{\sum_{t=1}^n \frac{Bt}{(1+i)^t}}{\sum_{t=0}^n \frac{Ct}{(1+i)^t}}$$

The total period included in the analysis was based on the longest rotation period, which was 25 years for growing teak. The discount rate used was 13% following the interest rate for saving purposes in the commercial banks. The 13% discount rate is an alternative option for community members wishing to invest their money and is selected due to the need for investors to receive quick returns.

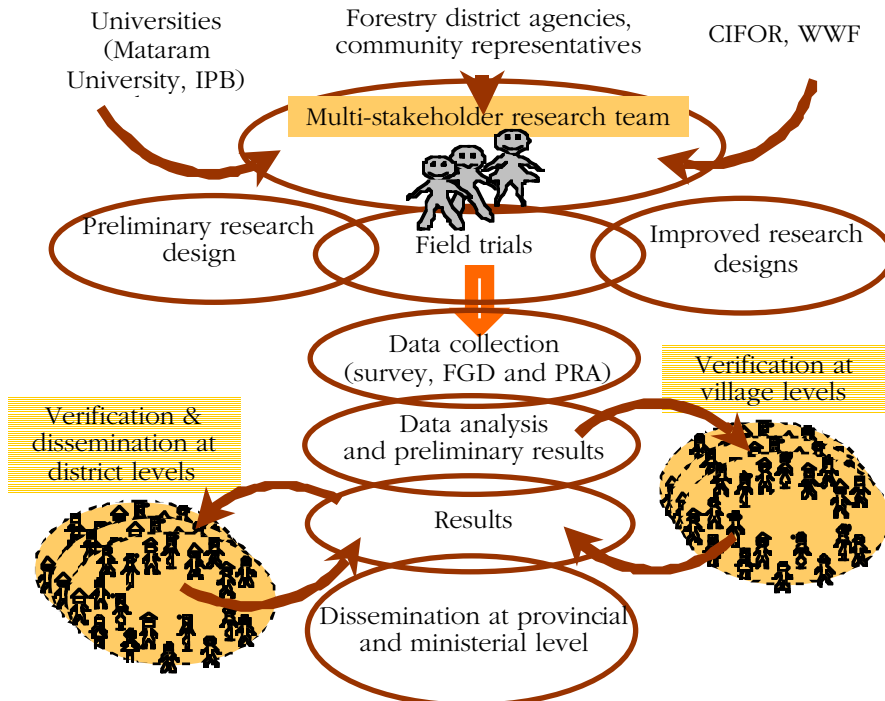


Figure 2. Flows of participatory assessment of the economic feasibility of community forestry managed under partnership

Results and discussion

Categories of partnership and community-based forest management programs

The research was conducted in the province of West Nusa Tenggara (WNT) in Sumbawa and Bima districts (see Figure 3). The Sumbawa and Bima districts have the highest proportion of forest area compared with other districts in WNT: 48% for Sumbawa and 25% for Bima. Sumbawa is considered to be a progressive district in WNT and in comparison with other provinces, as demonstrated by its umbrella law to support CBFM. On the other hand, Bima is very well known for its potential for farm forestry, with some 8,000 ha available in WNT.

In the province of West Nusa Tenggara, about 60% of the total population, or 5 million people, are below the poverty line, earning Rp. 110,487 per capita month in Sumbawa and Rp. 83,945 per capita month in Bima (BPS 2001). Rice production has been the main source of household basic needs, and land required to cultivate dry paddy often has been the main reason for communities to clear planted trees inside the forest areas. In Bima, limited application of advanced technologies in rice cultivation and lack of production inputs such as fertilisers have caused low rice production yields from dry paddy fields (around 500 kg per ha) compared with the production levels in other areas; e.g. for Sumbawa average yields are 900 kg per ha. However, on lower lands with better irrigation systems, rice production is higher at 2.5–3 tons per ha. Other sources of household income are from non-

timber forest products (NTFP) such as candle nuts, cashew nuts, rattan, medicinal plants and *gaharu*.

Three villages in Sumbawa district and three villages in Bima district were selected to represent different categories of ongoing partnerships or CBFM programs as shown in Table 1.

Community forestry (Hutan Kemasyarakatan or HKm) program

This program was initiated in 1999 on areas where Perhutani (state forest company) developed a teak plantation in 1992, as directed by the Ministry of Forestry. In 2000, Perhutani left the area and the forestry district agency, following MoF policy, included the area as part of the Community Forestry Program or *Hutan Kemasyarakatan* (HKm). Multicropping with cashew nuts had been practised in these areas before the Perda was enacted in 2002 so the community already had access to cultivated agricultural crops. Under the Perda, the forestry district agency initiated several pilot sites of the CBFM model, including one at Semamung that involved partnerships with community members represented by tree grower cooperatives. Under the partnership arrangement, community members have shared the responsibility for preventing illegal logging in this area.

Social forestry

Under the social forestry policy declared by the MoF, the forestry district agency established a pilot project on former state company areas of the Lamenta village production forest in 2004 to trial the social forestry model. A teak plantation was developed under a monoculture system where land pressure was low

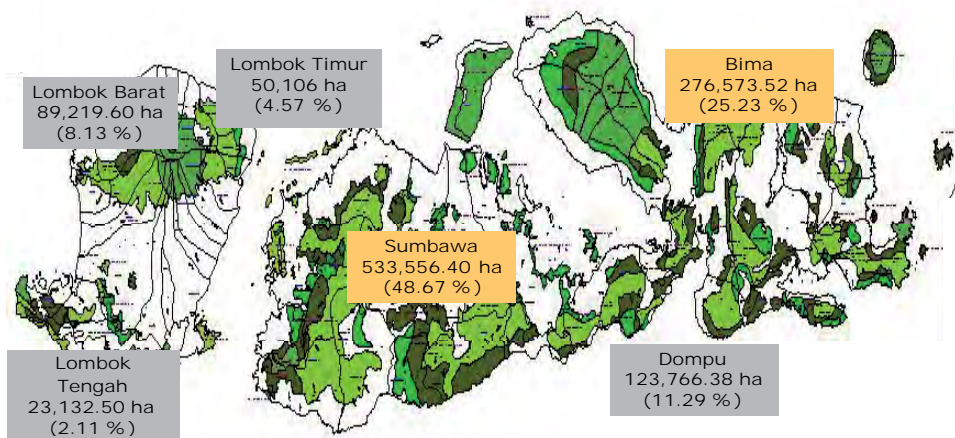


Figure 3. Locations of Sumbawa and Bima districts

because the community had separate fields for agriculture. The community has maintained the teak trees well, with standing stock at 60–80 % of the number of trees initially planted.

The program of UPUPM (Unit Percontohan Usaha Pertanian Menetap), or demonstration areas for sedentary farming system

Demonstration areas were developed outside of state forest areas and funded by the forestry district agency. Species planted included teak, cashew nuts, mahogany, jack fruits and mango. The project was initiated under a partnership arrangement between the cooperative and the community.

Teak coppicing project as part of a community forestry or Hutan Kemasyarakatan (HKm) program

Under allocated rights of community forestry (1999 to 2001–02), the community has continued to maintain the teak coppice after harvesting as part of a previous project implemented by the forestry district agency in the location. Initiatives were then expanded to include planting of other crops funded by the cooperative, such as candle nuts, spices, cashew nuts, jack fruits and mango. Teak will be ready for harvest in 2009 at age 25 years. The cooperative has been very active and is well developed, providing opportunities for outsiders to learn about this forestry extension program.

Small-scale plantation program

The forestry district agency provided funds for the community cooperative to establish a small-scale

plantation program in 2002 on 200 ha of damaged former state company land. Teak, mahogany and cashew nuts were planted.

Farm forestry

Farm forestry has been managed intensively by the local community since the 1970s and has resulted in one of the best teak plantations in the Bima district. Although the community mainly use their own funding for maintenance and replanting of the second rotation, initially the forestry district agency invested in village nurseries to provide seedlings. It also provided forestry extension programs to local cooperative members. The cooperative won the prize for the most successful afforestation program at the provincial level in 2002.

Financial analysis

Results of the financial analysis of the alternative agroforestry systems in the Sumbawa district are presented in Table 2. NPV per ha is highest for the social forestry project developed on former state company areas in Lamenta, Sumbawa (Rp 37 million per ha), and lowest is the community-managed forest in Marga Karya where NPV was negative Rp60 million per ha. Community participation in securing the standing stock of trees on former state company land in Lamenta, with only 20% of the originally planted trees lost, and new trees planted under the social forestry project, has resulted in the highest NPV per ha. Low community commitment to maintaining the standing stock under the sedentary farming system program in Marga Karya has resulted in 50% of planted trees being lost

Table 1. Research sites in the districts of Sumbawa and Bima

Districts	Villages (managed areas)	Previous management	Partnership/CBFM program
Sumbawa	Lamenta (1,670 ha)	Perhutani (1992–2000)	Social forestry (2004)
	Semamung (257 ha)	Perhutani (1996–2000)	Community forestry (HKm) since 2003
	Marga Karya (48 ha)	Demonstration areas for sedentary farming system (1997)	Community managed forest (2000)
Bima	Ntori (30 ha)	Planting contract with Dinas (1966–68)	Maintaining teak coppices under HKm (1999–2000)
	Nggelu (200 ha)	Perhutani (1996–2000)	Small-scale plantations (funded by Dishut) (2002)
	Nata (125 ha)	Village nurseries (1986)	Farm forestry (community funds)

and a financially infeasible community-managed forest scenario. The lack of commitment can be blamed on the absence of a clear management agreement between the community and the forestry district agency after the former program ended. The income from agricultural production on these lands was Rp 1,600,000 per year per household (from data collected during the household survey, 2004).

All of the schemes implemented in the Bima district are financially feasible, with each returning a positive NPV per ha. Returns were Rp 2 million each for the small-scale plantation funded by the forestry district agency in Nggelu and the farm forestry areas in Nata. The program on community lands has an advantage because there are less administrative costs in harvesting and transporting logs. Another important factor determining financial feasibility is the proportion of income received from timber compared with non-timber species. The higher the proportion of income from timber (not only teak), the more feasible the scheme is likely to be. In Ntori village, where 82% of income came from non-timber species (cashew nuts, candle nuts and other marketable products), the scheme proved to be just feasible.

In weighing up options it is useful to consider the dominant cost components affecting the feasibility of

the programs (Table 3). For options with a higher proportion of income coming from timber planted inside state forests, harvesting dominated the cost structures, ranging between 52% (Semamung) to 95% of total costs (Lamenta). Lamenta has considerably higher average standing stocks per ha of mixed ages and combined trees species (615 trees per ha) compared with Semamung (154 trees per ha). Harvesting costs for farm forestry conducted on community private lands are less significant than other costs, such as government investment—expenses for land preparation, seedlings and forestry extension services (43%), labour (18%) and non-timber tree seedlings (20%) (figures for Nata, Table 3). For options with a high proportion of income coming from non-timber species, dominant costs are mainly labour costs to cultivate the non-timber crops, ranging from 61% to 93% of total costs. Understanding dominant cost components is important for managing to avoid the risks of negative profits.

Income from timber (mainly teak) has an important role in the household economy, like savings, since a community will harvest the timber based on their needs. In Sumbawa and Bima, where dry periods are longer than in other regions of western Indonesia, timber production is important in household financial crisis situations during long dry seasons. However,

Table 2. Net present value (NPV) per ha of partnership/CBFM programs

Partnership/CBFM program	NPV per ha (Rp '000,000)	BCR	Proportion of total income	Factors influencing feasibility
Community forestry (HKm), Semamung	2.8	1.06	98% from timber (teak, mahogany, sonorkeling, johar)	65% of losses
Social forestry pilot project, Lamenta	37	1.08	98% from teak	<ul style="list-style-type: none"> • High commitment from community in securing the standing stocks from illegal logging (25% of losses) • New planted teak under social forestry program
Community-managed forest, Marga Karya	(60)	0.17	25% teak 75% non-timber	<ul style="list-style-type: none"> • 50% of losses • No clear management agreement
Teak coppices under HKm, Ntori	0.4	1.01	18% teak 82% non-timber	Significant revenue from a range of non-timber production (e.g. candle and cashew nuts)
Small-scale plantation, Nggelu	2	3.13	84% teak 16% non-timber	Good standing stocks
Farm forestry, Nata	2	2.63	97% teak 3% non-timber	On community lands (fewer administrative requirements, e.g. retribution fees)

low market prices (Rp460,000–Rp 900,000 per m³) and limited wood processing skills are restraining factors for community timber marketing in these areas. Lack of basic knowledge at the tree grower level, mainly in calculating the potential volumes of harvested timber, needs to be addressed by providing appropriate training; otherwise, the buyers and brokers will always take advantage of the situation.

Costs and benefits of environmental and social components

The economic benefits and costs that take into account environmental and social aspects of imple-

menting different partnership/CBFM programs were analysed. The analysis focused on changes in environmental and social indicators identified by communities based on comparing conditions before and after the partnership/CBFM programs were initiated. Results are presented in Tables 4 and 5. Quantifying the costs and benefits allowed estimation of the overall environmental and social NPV. The quantitative estimates are also useful in calculating revenue sharing.

Environmental indicators identified varied significantly between villages because they relate to historical conditions existing before plantations were established, e.g. primary or secondary forest condi-

Table 3. Dominant cost components on various partnership/CBFM program

Partnership/CBFM program	Dominant cost components
Community forestry (HKM), Samamung (98% teak)	<ul style="list-style-type: none"> • Timber harvesting (52%) • Labour (15%) • Fees and taxes (11%) • Government investment (19%)
Social forestry pilot project, Lamenta (98% timber)	<ul style="list-style-type: none"> • Timber harvesting (95%)
Community-managed forest, Marga Karya (25% teak, 75% non-timber species)	<ul style="list-style-type: none"> • Labour (93%)
Teak coppices under HKM, Ntori (19% teak, 82% non-timber species)	<ul style="list-style-type: none"> • Labour (61%) • Government investment (25%)
Small-scale plantation, Nggelu (84% teak, 16% non-timber species)	<ul style="list-style-type: none"> • Labour (57%) • Retribution fees and taxes (14%) • Government investment (15%)
Farm forestry, Nata (97% teak, 3% non-timber species)	<ul style="list-style-type: none"> • Government investment (43%) • Labour (18%) • Seedlings for non-timber species (20%)

Table 4. Environmental and social costs

Environmental and social costs		Present values (Rp'000,000)	%
Semamung	1. Warmer climates	741	42
	2. <i>Permanent</i> cultivation	914	51
	3. Fences for livestock	108	6
Lamenta	1. Replacing fuel woods with kerosene	920	13
	2. No more opportunity for cultivation	5,075	70
	3. Forest areas supervision	1,144	16
Marga Karya	1. Cooperative management	331	28
	2. Fences for livestock	863	72
Nggelu	1. Less water resources	92	56
	2. Soil erosion	23	14
	3. Less suitable land for rice production	49	30
Ntori	1. Land rent	415	100
Nata	1. Less water resources	261	55
	2. Land rent	207	43

tion. Some important environmental costs included lost opportunities to practise shifting cultivation (quantified by the costs to establish permanent cultivation areas in Semamung), and no more opportunities to cultivate agriculture crops because of shading by timber trees (as in the case of Lamenta).

Socially, important impacts include the time that is allocated to managing the cooperative as part of implementing the partnership/CBFM programs. Time allo-

cated for supervising the partnership/CBFM areas is often overlooked, for instance in Lamenta, but this has proved to be effective in controlling damage associated with illegal logging and encroachment of lands.

Revenue sharing

The calculation of revenue sharing uses both tangible and intangible (environmental and social) costs and benefits as shown in Figure 4. Including intan-

Table 5. Environmental and social benefits

Environmental and social benefits		Present values (Rp '000,000)	%	NPV (Rp '000,000)
Semamung	1. Farming opportunities	89	11	(1,003)
	2. Managing the cooperative	415	53	
	3. Rights to manage the forest	219	28	
Lamenta	1. Improved water irrigation	928	78	(6,029)
	2. Rights to manage the forest	234	20	
Marga Karya	1. Improved forest diversities	713	37	1,376
	2. More productive lands	792	41	
	3. Cooperative development	411	21	
Nggelu	1. Forest diversity	39	40	(1.06)
	2. Cooperative's rules	58	60	
Ntori	1. Less soil erosion	22	12	(268)
	2. Improved diversity	54	29	
	3. Improved soil fertility	20	11	
	4. Cooperative's rules	61	33	
	5. Good cooperative performance	25	14	
Nata	1. Cooperative's rules	2,030	99	(214)

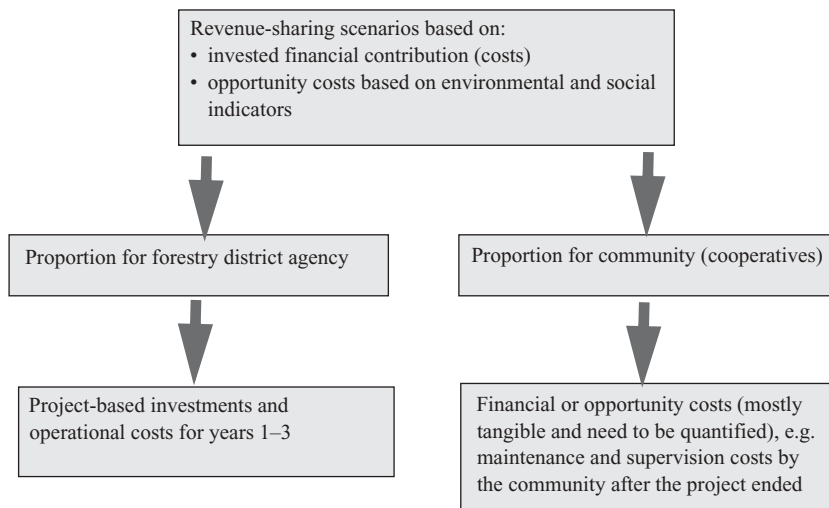


Figure 4. Invested costs by forestry district agency and community as the basis for revenue sharing scenarios

gible costs and benefits allows scenarios to also capture the opportunity costs to society of implementing various partnership/CBFM programs. The proportion that goes to the forestry district agency (representing government) is justified by all of the public investment made in various programs, such as the costs of buying seedlings of timber species and tree maintenance from years one to three. The proportion that goes to the community is justified by total direct expenses during the rotation period of 25 years, such as labour, tools and equipment, and seedlings of non-timber species. Negative returns associated with environmental and social indicators (represented by negative NPV) justify a higher proportion going to the community as part of the overall cost to society.

Table 6. Revenue sharing proportion under various partnerships/CBFM agreements in Sumbawa

Sumbawa	Revenue shares (%)	
	Financial	Economic
Lamenta Community	97.74	98.08
Forestry district agency	2.26	1.92
Marga Karya Community	97.98	94.69
Forestry district agency	2.02	5.31
Semamung Community	49.77	93.53
Forestry district agency	50.23	6.47

Based on the financial analysis, revenue shares for the community in Sumbawa range from almost 50% (community forestry in Semamung) to nearly 98% (social forestry in Lamenta), and for Bima range from 72% (farm forestry in Nata) to 93% (teak coppicing project in Ntori) (Tables 6 and 7). There are significant changes in revenue share in the communities under economic analysis scenarios that include environmental and social indicators. For community for-

estry in Semamung the share rises from 50% to 93%, and for farm forestry in Nata it increases from 72% to 91%. This happens because the community bears a higher share of the environmental and social costs of community forestry programs.

Despite the lower revenue share going to government (2–50%), there is potential for revenue from permit fees for harvesting and transporting the harvested timber or *Surat Keterangan Sahnya Hasil Hutan* (SKSHH). For the central government, there is also potential for revenues from fees for collecting timber in state forest or *Pungutan Sumber Daya Hasil Hutan* (PSDH).

Table 7. Revenue sharing proportion under various partnerships/CBFM agreements in Bima

Bima	Revenue shares (%)	
	Financial	Economic
Ntori Community	92.79	94.50
Forestry district agency	7.21	5.50
Nata Community	72.06	90.83
Forestry district agency	27.94	9.17
Nggelu Community	83.04	82.88
Forestry district agency	16.96	7.12

The potential for timber-based revenues for the government is quite high in Lamenta, mainly from administration costs of SKSHH and timber fees (PSDH). Analysis predicts perhaps Rp. 4.5 billion for the district government and Rp7.7 billion for the central government (Table 8). On the other hand there is no potential for revenue to the central government from farm forestry in Nata, since it is on private lands with no obligation to pay PSDH fees.

Table 8. Potential revenues for local and central governments (Rp '000,000)

Sumbawa	Retribution	Semamung	Lamenta	Marga Karya
	SKSHH (local government)		90	4,520
PSDH (central government.)		135	7,729	33
Bima	Retribution	Nggelu	Ntori	Nata
	SKSHH (local government)	37	2	21
PSDH (central government.)		233	12	–

Conclusions and recommendations

The results from the financial analysis reveal that the partnership/CBFM programs are potentially feasible in the long-term, with positive NPVs. Economic analysis that includes environmental and social costs and benefits has shown negative NPVs, which mean the social opportunity costs are high(er). Taking into account the costs and benefits of environmental and social aspects justifies a higher proportion of forestry revenues going to the community.

Partnerships have increased community responsibility to maintain and control plantations and the standing stock of trees. However, they have also raised community expectation of shared revenues from planted trees. Some challenges for community forest management in WNT include: insecure community rights to harvest planted teak in state forests; under-developed community institutions at the village level; high potential for exploitation (when there is increasing external demand); and lack of local government capacity to lead implementation on the ground.

Recommendations to improve the implementation of various partnerships and CBFM programs in Sumbawa and Bima include the following:

- There should be more explanation to stakeholders of the potential benefits of community forestry.
- A process to develop multi-stakeholder agreements (including central government—Ministry of Forestry) is required to secure community rights for harvesting teak. CIFOR and WWF are actively involved in a process to approach the Ministry.

- Scenarios and models to optimise production and returns from timber and non-timber species should be developed, in coordination with the Agricultural District Office or Dinas Pertanian.
- Multi-stakeholder forums should discuss ways to find better marketing strategies, especially in relation to preventing brokers from taking big profit margins. One option is to establish partnerships with local processing mills.

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Microcredit in rural development: requirement and recommendations for government support and intervention

Herbert Siagian and Jermias R.A. Manu¹

Abstract

One of the major problems of micro and small enterprises (MSEs) in Indonesia is access to capital, but, in fact, even if capital is provided, microcredit institutions do not exist or are unable to service microcredit for MSEs. This paper will discuss the kinds of institutions that are involved in providing microcredit in Indonesia and explore the kinds of microcredit that is offered to MSEs. Constraints and challenges that microcredit institutions face currently, and the efforts that have been, or should be, made to develop the role of microcredit institutions are discussed. Importantly, this paper makes recommendations for government actions to encourage the role of microcredit institutions.

Kredit mikro di pembangunan pedesaan: syarat dan rekomendasi pada pengaruh serta dukungan pemerintah

Herbert Siagian dan Jermias R.A. Manu^{1a}

Abstrak

Salah satu masalah utama yang dihadapi Usaha Kecil dan Menengah (UKM) di Indonesia adalah modal. Bahkan bila modal tersedia untuk usaha-usaha kecil di pasar, lembaga yang memberikan kredit usaha kecil tidak ada atau tidak mampu memberikan kredit mikro bagi UKM. Makalah ini akan membahas mengenai lembaga macam apa atau siapa yang terlibat di dalam menyediakan kredit mikro di Indonesia. Makalah ini juga membahas jenis kredit mikro yang ditawarkan kepada UKM sert menunjukkan hambatan-hambatan dan tantangan yang dihadapi oleh lembaga kredit mikro. Selain itu usaha-usaha apa yang telah dan harus dilakukan untuk membangun peranan lembaga kredit mikro. Yang paling penting makalah ini memberikan rekomendasi untuk dilakukan pemerintah dalam mendorong peranan lembaga-lembaga kredit mikro.

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Introduction

It is expected that micro and small enterprises (MSEs) will continue to dominate the business environment of Indonesia. Changes may occur because MSEs are becoming more linked due to advances in information technology. It does not occur spontaneously however and requires effort. In fact MSEs in Indonesia are facing various difficulties (Table 1).

Table 1. Difficulties for microbusiness

No.	Type of difficulties	Domestic small industries	Small industries
1	Capital difficulties/ access to capital	34.55%	44.05%
2	Raw material supply	20.14%	12.22%
3	Marketing	31.70%	34.00%
4	Other difficulties	13.60%	9.73%

Source: Data from Indonesian Central Bureau of Statistics, analysed by Ismawan (2003)

Table 1 illustrates that microcredit is a strategic factor for the development of MSEs. There are about 40 million MSEs in Indonesia, meaning 98% of business entities in Indonesia are waiting for microcredit. Based on the supposition that the average enterprise need for microcredit is about Rp1 million, funds needed for microcredit are substantial at about Rp40 trillion. Referring to the notes of *Harian Bisnis Indonesia* (2003), the number of non-bank microcredit institutions is about 9,000 units, and the loans distributed to their customers is just Rp2.53 trillion. This means that only 6.7% of MSEs have the chance to access microcredit. Based on the observation of Kantor Mennegkop and MSEs, there is a need for at least 8,000 new microcredit institutions (MCIs) to serve MSEs in Indonesia (Budiantoro 2003).

Structure and concept of microcredit

Credit or financial systems include many institutions, instruments and markets. They consist of formal, semi-informal and informal financial arrangements and institutions.

- *Formal* financial institutions include commercial banks, development banks, specialised savings banks, postal savings systems, cooperative banks, and unit and regional rural banks.

- *Semi-formal* financial systems comprise farmers' associations, credit cooperatives, credit unions, village banks, self-help groups, integrated rural development programs and non-government organisation (NGO) financial programs.
- *Informal* finance includes communal and savings clubs, mutual aid societies, rotating savings and credit associations, input suppliers, storekeepers, trader/farmer/agent lenders, moneylenders, and friends and relatives.

Besides structure, some key concepts of rural or microcredit are viability, self-reliance, sustainability, outreach and impact.

- Viability means that it covers costs.
- Self-reliance means that it mobilises its own resources.
- Sustainability means that it preserves the value of resources.
- Outreach means that it broadens services for the poor.
- Impact means that it helps the poor help themselves (Seibel 2001).

There are three key elements of MCIs:

- They provide various financial services relevant to the real needs of the community.
- They serve community groups that have low income (i.e. poor people become the main beneficiaries).
- They use procedures that are contextual and flexible so that they are easily reached by poor people who need the service.

Various factors have resulted in MCIs becoming an option for low income people, largely because they are responsive to grassroots activities using simple procedures not complicated by regulations. Also, MCIs support the sustainability and development of micro and small enterprises that are proven to be the basis of the Indonesian economy (Sumodiningrat 2003).

Provider and target of microfinance

In 2000 a movement to empower microcredit was established. The movement comprised microcredit stakeholders, i.e. government, finance institutions, NGOs, private sector, academic researchers, community organisations and funding institutions. They made a commitment to empower microcredit institutions throughout the country, and targeted 10 million poor families in 2005. Through various efforts, in 2004 this movement nearly reached the target by

giving financial services to more than 9 million poor families, as shown in Table 2.

It can be seen from the table that even this effort lags well behind demand. Ismawan and Budiantoro (2005) estimate that less than 25% of MSEs can be served through MCIs.

Constraints of microcredit institutions

Budiantoro (2005) has identified some major constraints faced by MCIs in Indonesia. They are unclear government policies, the need for microfinance wholesalers and poor capacity building.

There is still no clear policy regarding the issue of microcredit. Most practitioners are uncertain where microcredit is positioned in national financial systems. There are no clear directions that can be used by stakeholders to develop microcredit. The development of microcredit so far has been influenced and shaped by different, often competing or even conflicting, policies for poverty alleviation, subsidised credit and financial sector development. For example, there are 70 projects of government institutions that have a microcredit component. They are primarily supported by donors, with a budget of almost US\$300 million, but, as many of them do not follow microcredit best practices, they may not be sustainable. These projects may even impede progress for MCIs developing commercial and professional approaches.

The need for wholesalers of microcredit is related to the problem of lack of capital. The process of lending from MCIs to MSEs may go past ‘the point of

no return’. After receiving credit, MSEs can expand and will require more and more credit. Capital is the most significant problem of MSEs. If they do not get more credits from MCIs, they will be reluctant to pay the instalments as they need the money for running their businesses. Credit for MSEs is mostly without collateral, so it is difficult to force them to repay. This situation is unsustainable in the absence of regulations to govern MCIs and greater financial responsibility by MSEs.

According to Indonesian law, banks are the only institutions allowed to mobilise saving from the public. This means that MCIs in Indonesia needs to be supported by sufficient capital to avoid problems. Moreover, without microfinance regulations, MCIs run by NGOs are not legal entities, which makes it difficult for them to cooperate with other (financial) institutions to access capital. To solve the problem of lack of capital, some countries have microcredit wholesalers or a ‘central bank alternative’ for the poor. Most MCIs agree they need such institutions. While this may address the supply of capital, MCIs need to ensure that MSE borrowers understand their responsibility to maintain loan repayment. This requires capacity building within the MSEs and the MCIs in regard to financial management.

Capacity building within MCIs is required since skills are required to run financial services. There seems to be enthusiasm among the NGOs in Indonesia to establish MCIs as they want to serve the poor by providing a sustainable means to alleviate poverty. They do not want to depend on donors in the long term so they offer microcredit. However, transforming NGOs to professional MCIs needs a para-

Table 2. Microfinance in Indonesia

No.	Institution	Unit	Creditor	Credit (million Rp)	Saver	Saving (million Rp)
1	BPR	2,148	2,400,000	9,431,000	5,610,000	9,254,000
2	BRI Unit	3,916	3,100,000	14,182,000	29,870,000	27,429,000
3	Badan Kredit Desa	5,345	400,000	197	480,000	380
4	KSP	1,097	665,000	531,000	na	85,000
5	USP	35,218	na	3,629,000	na	1,157,000
6	LDKP	2,272	1,300,000	358,000	na	334,000
7	Pegadaian	264	16,867	157,697	No savers	No savings
8	BMT	3,038	1,200,000	157,000	na	209,000
9	Credit union and NGO	1,146	397,401	505,729	293,648	188,015
	TOTAL	54,444	9,479,268	28,951,624	36,253,648	38,656,395

Data compiled by Gema PKM, analysed by Ismawan and Budiantoro (2005)
n.a.: data not available

digm and cultural shift. To run a credit institution requires discipline and a prudent attitude or the institution will most likely lose money. The capacity to retail microcredit in Indonesia through NGO–MCIs remains low. The absence of quality training at reasonable prices for MCI staff to learn capabilities in microcredit is a major reason why NGOs still lack the capability to run financial services for the poor (Budiantoro 2005).

The need for a government role

To serve the poor with financial services in an effective and sustainable way, financial reform is urgently needed. There is need for a national policy of microcredit within a legal and regulatory framework. Without a legal basis, MCIs work in a grey area between legal and extralegal and could even be accused of illegal banking.

Governments and the central bank play a critical role in enabling institutions, markets and instruments to flourish by creating various elements of a complex framework. There is consensus that a conducive policy environment is a prerequisite for the development of viable and sound credit institutions to service the huge demand of the ‘unbanked’ market. Of particular importance are:

- macroeconomic stability
- deregulated interest rates, exchange rates and commodity prices
- a legal system that protects property and land-use rights, the autonomy of credit institutions and regulatory authorities, functioning prudential regulation and due legal process.

In addition, institutional support mechanisms are required in fields such as training and consultancy, technical support and deposit protection. A conducive framework would also imply a legal framework directed towards protecting the interests of small depositors, thus supporting soundness of deposit-taking financial institutions and reducing the systemic risk in the financial market. Prudential regulation is essential for stabilising and developing the financial sector. A microfinance regulatory framework should focus strictly on prudential issues in order to keep roles and responsibilities of authorities clearly defined and to smooth implementation. In particular, despite some policy makers suggesting this, the regulatory framework should not address monetary policy issues such as interest rate policies or minimum reserve requirements.

As a general principle, the regulatory framework should be flexible enough to permit non-licensed microfinance institutions to evolve. These institutions, although refraining from mobilising deposits from the public, have the potential to test innovative technologies, to regulate and to maintain outreach to rural areas and the poor. The coexistence of regulated and non-regulated financial institutions can be supported by adopting a tiered approach. This approach is conducive to the development of strong microfinance institutions (MFIs) that mobilise deposits from the public without constraining the large number of small institutions that can continue to operate as credit-only institutions financed by donor agencies or by their members. It also permits commercial banks to offer microfinance services without submitting their microfinance portfolios to inappropriate regulations (Jansen et al. 2004).

Strategy framework for microcredit development

The strategy framework for building rural credit is three pronged: (i) creating the policy environment; (ii) building financial infrastructure; and (iii) institutional development. Governments and donors need to evaluate these three areas as they set priorities for interventions and investments. The key objective of the financial system was once narrowly defined as providing financial services at prices that reflect their cost. In recent years the emphasis has broadened, especially for microfinance, to take into account the dual objectives of outreach and sustainability. When scarcity of a public resource is considered, outreach involves more than just the number of clients served. Generally speaking, a financial system meets more of society’s objectives and merits the allocation of more scarce resources if it:

- serves many clients
- serves many poor clients
- provides a large range of services
- costs users as little as possible
- provides services over a long period of time
- can be sustained with only minimum support from non-users or taxpayers.

These should be the objectives of the policies and programs for rural financial markets.

Historically, governments have intervened in financial markets by controlling the means of payment to guarantee soundness. More recently, they have attempted to influence credit allocation. Their

primary concern has been to ensure prudent behaviour by banks. The impact of bank failure can be especially severe in developing countries since there are few alternative sources of finance for both firms and households. Financial crises can occur when regulation fails, as happened recently in Asia. Depositors lose confidence in the banking system in such circumstances, so governments may have to introduce deposit insurance and lender-of-last-resort facilities and bail out failed institutions to prevent bank runs, reduce depositor losses and restore confidence. Owing to a lack of confidence in banks during the crisis that began in 1997, many Indonesians shifted deposits to state and foreign banks (Krisnamurti 2005).

Governments influence growth in money supply and interest rates as part of overall macroeconomic management. Prudential regulation and supervision procedures are implemented to prevent fraud and excessive risk taking by financial institutions. These include minimum capital requirements, auditing and reporting requirements, and portfolio restrictions. The difficult task of regulation is one of balancing efficiency and innovation that requires, at the same time, freedom to act and stability. A recent concern is the potential moral hazard if banks are not allowed to fail. If bank owners and managers are not required to pay for their mistakes, they may be induced to undertake risky investments in the future knowing that the government or an international agency will cover their losses.

Government policy framework and stakeholders

It is expected that the basic policy framework of government will be based on the following strategies:

- providing policies for microcredit oriented to people's needs and offering incentives for increased public and private sector involvement in the microfinance market
- avoiding distortions due to credit subsidies and unsustainable high costs that have in the past failed to serve end users, weakened existing microfinance mechanisms and burdened the government with an even bigger financial burden, discriminating between credit policy and social welfare policy (Social welfare does not necessarily involve subsidised credit, soft loans and the like any more. Credit requests from poor families and

microentrepreneurs are provided through various MFIs with innovative financial products. The role of government in this case is to build the capacity of MFIs and implement supervision as well as regulation of microfinance market so that it functions well.)

- supporting the development of institutional frameworks for microfinance in Indonesia to include various stakeholders as follows:
 - *microfinance institutions (MFIs)*—directly give various forms of microfinance services based on what poor families and micro-entrepreneurs require
 - *microfinance council*—develop microfinance policies that are market oriented and can promote microfinance efficiently and support MFIs in enlarging their microfinance services
 - *commercial banks and other microfinance institutes*—provide wholesale funds and other financial services
 - *government*—supervise MFIs that have sufficient customers to operate professionally, have level playing fields, and facilitate the development of wholesaler institutions and other supporting institutions
 - *NGOs*—provide technical assistance for poor families and microentrepreneurs to deal with MFIs and promote their services as well as to help build their capacity
 - *donors*—provide various support either to MFIs, NGOs, commercial banks and government so that they perform their roles optimally.

The government might be expected to perform the following strategic steps based on these policy frameworks in order to provide access to finance for poor families and micro-entrepreneurs (Krisnamurti 2005):

- develop a conducive policy environment for the financial market to function efficiently and effectively by reforming financial policy to eradicate distortion
- rationalise various programs and projects with microfinance components so they are sustainable and market-oriented
- realise a microfinance policy environment that is oriented to emphasise product type and service, technology design and implementation, and new microfinance practices aimed to provide intermediary services between MFIs and poor families or microentrepreneurs. These services are

performed through policy regulation that protects the existence and operation of MFIs, as well as developing innovative solutions based on need

- develop professional performance and business practice for MFIs
- promote various technologies and innovations
- implement programs of capacity building for MFIs through provision of technical assistance specifically aimed at:
 - savings mobilisation
 - financial management and project management
 - empowerment of information technology
 - technology development for microfinance
- encourage various policy studies and discussions focusing on new capacity-building initiatives for MFIs and to develop extensive consciousness of the strategic potentials of MFIs
- facilitate the development of supporting institutions for microfinance through:
 - providing financial and technical support to wholesaler institutions that can be accessed by MFIs
 - giving technical assistance for the establishment of rating institutions in cooperation with microfinance wholesalers and investors
 - developing support for establishment of education and training institutions for microfinance.

Closing comments

The growth and development of micro and small enterprises in Indonesia is a consequence of domestic economic experiences and the liberalised market. Establishment and enhancement of microcredit institutions is urgent. In developing countries such as Indonesia, and specifically in areas such as East Nusa Tenggara, the government needs to play a role in empowering MCIs through implementing conducive

regulation without excluding fair and relatively free competition. The government and stakeholders have shown their commitment through allocating various and many financial or credit programs to MSEs. This is beneficial to the welfare of the people but it is essential for sustainability of these programs and optimisation of the benefits of microcredit programs that local government, in consultation with stakeholders, develop and implement regulations that strengthen and enhance the number and performance of MCIs.

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Microfinance for developing poor communities in East Nusa Tenggara: problems and solutions from the perspective of a non-government organisation

S.M. Rozali¹

Abstract

The paper describes the experiences of Tanaoba Lais Manekat (TLM), a non-government organisation, that is successfully involved in delivering microfinance services as part of a broader program aimed at assisting poor people and business in East Nusa Tenggara, especially Timur Barat. TLM's microfinance services program currently focuses on four components: (i) small group lending; (ii) individual lending; (iii) cattle fattening; and (iv) seaweed cultivation. As well as offering financial services, TLM provides targeted financial and business development training and support. Given this supportive business model, TLM's microfinance program has grown dramatically since 1994 to include around 17,000 active clients at the end of 2005.

Microfinance bagi pembangunan masyarakat miskin di Nusa Tenggara Timur: masalah dan solusinya dalam pandangan lembaga non-pemerintah

S.M. Rozali¹

Abstrak

Makalah ini menjelaskan tentang pengalaman Tanaoba Lais Manekat, yaitu sebuah Lembaga Swadaya Masyarakat, yang telah berhasil memberikan pelayanan dalam microfinance sebagai bagian dari program yang lebih luas yang bertujuan untuk membantu masyarakat miskin dan pengusaha di NTT, khususnya Timur Barat. Program pelayanan microfinance TLM saat ini berfokus pada empat komponen: (1) pinjaman kelompok kecil, (2) pinjaman perorangan, (3) penggemukan sapi, (4) pemeliharaan rumput laut. Disamping itu TLM juga menawarkan pelayanan keuangan, yang dalam hal ini diberikan pada pembangunan keuangan dan usaha di bidang pelatihan. Dengan model usaha seperti ini, program microfinance TLM berkembang pesat sejak tahun 1994 yang termasuk didalamnya 17,000 anggota aktif terhitung sampai dengan tahun 2005.

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Introduction

East Nusa Tenggara (NTT) in Indonesia is categorised as a province with a high level of poverty. Household income in 2004 was approximately Rp3 million, less than one-third of the national household income of Rp9.5 million. Poverty is also indicated by the level and quality of human life that is, on average, lower than in Indonesia in general. Statistically, the number of people in NTT who are living below the poverty line is about 27%, almost twice the national level (15%). Population density is low and the majority of people are living in rural areas. Almost no industry operates in NTT.

Various strategic programs have been developed and implemented by government as well as non-government organisations (NGOs) to overcome the poverty issue. One of them is the provision of microfinance services (MFS), which is often limited only to the provision of microcredit. But microfinance services can be much broader in scope than just microcredit; they are believed to be a key strategy for helping communities out of poverty.

In Indonesia some microfinance providers are considered to be successful in overcoming or at least reducing poverty, among them Bank Rakyat Indonesia (BRI) Unit Desa (Robinson 2002), microcredit provided by Proyek Peningkatan Pendapatan Petani Nelayan Kecil (P4K), as well as microfinance services by Purba Bank in Semarang and Mitra Karya in East Java (Seibel and Parhusip 1997). While microfinance services have succeeded in reducing poverty in some places in various countries as found in a number of studies, some studies have documented the limitations of microfinance's capacity to alleviate poverty, especially for the poorest. The formats or designs of MFS and local conditions contribute significantly to the success of programs in dealing with poverty.

This paper discusses problems and solutions related to helping poor communities in Indonesia, especially in NTT, through microfinance services. It also presents an example or model of MFS implemented by an NGO, namely the Tanaoba Lais Manekat Foundation (TLM).

Microfinance services

Definition of microfinance

Microfinance is interpreted as the supply of various kinds of financial services including credit, savings, insurance and money transfer services for poor people, poor families or low income communities and their microbusinesses (Usman et al. 2004). This definition allows a wider scope for microfinance than just the provision of microcredit, and also focuses on poor or low income communities. There are two main features of microfinance that differentiate it from formal financial services: size of loan and/or savings, and lack of collateral.

Microfinance institutions in NTT

There are various microfinance services institutions (MFI) in NTT, including formal bank and non-bank institutions, non-formal institutions, government programs and informal institutions. The SMERU Research Institution (2004) divides MFIs that operate in NTT into four groups as follows:

- *Formal institutions* are legally structured institutions that are formally acknowledged by the prevailing legislation as financial institutions. These formal institutions are divided into two types: bank (e.g. BRI, Bank Mandiri, BPR) and non-bank (Village Unit Cooperative, credit cooperative, pawnshop service).
- *Non-formal institutions* are legally structured institutions, such as foundations or other structures formed by the approval of the Governor or Head of District that do not have permission and acknowledgment as formal financial institutions by the prevailing legislation. Examples include Usaha Simpan Pinjam (USP) and Lembaga Swadaya Masyarakat (LSM).
- *Government programs* that provide or contain microfinance components generally in the form of credit and microcredit programs. Included in this category are Kredit Pemberdayaan Ekonomi Masyarakat (PEM) and Bantuan Pinjaman Langsung Masyarakat (BPLM).
- *Informal institutions* are those that have no legal structure, such as artisan groups, church groups or other informal groups.

Problems and challenges in providing microfinance services in East Nusa Tenggara

There are many institutions, government or non-government, formal or non-formal, involved in providing MFS through a number of different programs and activities and their programs are continually developing. However, not all the programs have been able to help poor communities in addressing their economic issues. Problems apparently come from the program design and policy, size of credit and accessibility as described below:

- MFS provided by formal institutions, particularly banks, cannot be fully accessed by all poor communities. Collateral and business feasibility determined by the bank are the determining factors. Poor communities that consist predominantly of farmers generally do not have the types of collateral required by the formal institutions (household assets, land ownership certificate etc.).
- MFS in Indonesia, particularly in NTT, are still dominated by the provision of credit only, and very few institutions give attention to the other financial services needed by the poor such as savings and insurance.
- Size of credit needed by poor communities is generally small, so is not accommodated in credit schemes offered by the majority of banks.
- MFS are mainly linked to providing additional business capital but often the reason that poor people request loans is not to increase capital but is an effort to address non-business expenses.
- MFS institutions are generally located in cities and major districts and subdistricts and are therefore difficult to access by poor remote communities.
- Poor communities who have difficulty accessing services from formal and non-formal institutions often borrow from loan sharks and get trapped into very high interest loans.

Microfinance programs and implementation by NGOs in NTT: experiences of TLM

There is very little information available about the MFS provided by Lembaga Swadaya Masyarakat (LSM) in NTT; therefore, empirical experience of TLM in providing microfinance services is relied on here. The vision and mission of the TLM – GMIT

Foundation have certainly become the inspiration, spirit and basis of design and management of its MFS programs. The vision of TLM is to show God's love to the world. Its mission is to improve the lives of poor communities in NTT via economic, social and spiritual transformation.

The TLM Foundation was established in November 1994 and currently has a Head Office located in Kupang City and 10 Branch Offices distributed in Kupang City (one office), Kupang District (four), and one office in each of TTS district (Soe), TTU (Kefa) and Alor (Kalabahi). Additionally, there are two Service Posts: the Seaweed Service Post in Rote (Nembrala) and the Cattle Fattening Service Post in Baun. TLM is managed by 158 staff comprising 71 administration and 87 field staff.

Scope of microfinance services and client target of Yayasan Tanaoba Lais Manekat

MFS are one of TLM's five main programs, the four other programs being Training, Business Developments Service, Community Development, and Spiritual Development. TLM's MFS program is integrated into four microlending programs: (i) the small group lending program (KUM); (ii) the individual lending program; (iii) the cattle fattening program; and (iv) the seaweed cultivation program.

The target of these services is small traders, poor farmers and low income employees. The number of active loan clients has been increasing year by year; at the end of December 2005 TLM had 16,849 active clients. The majority are in the KUM program (67.8%), followed consecutively by the individual lending program (21%), the cattle fattening program (7.5%) and the seaweed program (3.7%) (Table 1). Client numbers are projected to increase to 35,000 by the end of 2007.

Small-group lending program (KUM)

This program is known as KUM (*Kelompok Usaha Mandiri*). The program is aimed at small traders, poor farmers and low-income employees who run businesses and earn income on a daily basis. These people need capital to develop their businesses but have no opportunities to borrow from banks because of the unavailability of collateral. To take part in this program, potential clients must meet certain criteria and requirements determined by TLM such as type of business, amount of existing capital, age, place of residence and integrity.

Table 1. Number of active clients (people) in TLM’s microfinance programs, 2002–05

No.	Program	2002	2003	2004	2005
1	KUM	5,385	7,250	11,605	11,425
2	Individual	–	–	1,775	3,539
3	Cattle	28	146	720	1,254
4	Seaweed	–	55	623	631
	Total	5,413	7,451	14,723	16,849

Note: – = program not yet implemented

KUM groups each consist of five members and each member must have existing business capital of less than Rp2,000,000. The loan has six cycles, beginning at Rp500,000 and ranging up to Rp5,000,000 at the sixth cycle. Interest charged is 3% per month with a 20-week (5-month) repayment period. The basis of loans disbursed to clients is *trust*. The organisation trusts that each member will be able to repay loans fully as agreed together. TLM makes sure that all clients understand the importance of their loans and that the loans can be easily repaid if they are correctly managed. Conversely, clients understand that poorly managed loans will cause business problems.

In every loan, each member is obligated to save repayment money every day so that at the end of each week the clients can repay the full amount owing. To discipline clients in managing income and spending money wisely, TLM provides each member with a locked wooden safety box. Loan repayments are collected by field officers when groups meet every week. Field officers also have the task of motivating members and training them.

Individual lending program

This program includes people who have graduated from the KUM program and new clients, both men and women, whose businesses have experienced better development compared with clients in the KUM program. The target of this program is small traders and low level employees who run businesses to earn additional income on a daily basis, and require capital to develop their businesses but have no opportunity to borrow money from banks. Because clients involved in this program are those whose businesses are relatively larger, their business capital needs are also higher—Rp2,000,000 minimum. The loan interest rate is 3% per month with a repayment period from 12 to 24 months. For every loan, TLM charges a 3% administration fee. Repayments are made by clients directly to the nearest TLM branch office.

Cattle-fattening program

NTT is renowned as a beef cattle producer in Indonesia. Among all large livestock that are cared for by the community, the cattle population is the biggest, followed by water buffalo and horses. Most of the cattle (77%) are cared for on Timor Island (Table 2). The majority of cattle farmers are also agricultural farmers and livestock makes a significant contribution to the income of communities and local economies. An analysis of Produk Domestik Regional Bruto (PDRB), NTT, in 2004 shows that livestock (especially cattle) and its derivatives are very important for NTT communities. Of the total contribution from the agriculture sector to the PDRB, NTT, livestock makes up about 30%. Though this figure is lower than the contribution from food crops (51%), it is still higher than other subsectors in the areas of agriculture/fishery and far higher than many businesses in non-agriculture sectors (Biro Pusat Statistik 2005).

Implementation of the cattle-fattening program (the majority are Bali cattle) is concentrated on Timor Island, particularly the Kupang district. Twenty-six per cent of cattle are in the Kupang regency (Table 2) and a cattle-fattening culture known locally by the term ‘*paron*’ has been practised in this area for a long time, especially in the Amarasi subdistrict.

The fattening program developed by TLM is a group-lending program for groups with between 15 and 20 members. Loan size depends on market prices at the time. Loans are in the form of cattle, not cash, to avoid deviations in the usage of the loan. The loan term is 6 months, coinciding with the cattle fattening period. Each client is charged 3% interest from the initial cattle-buying price. Profits that clients and TLM receive are based on profit sharing, comprising 60% to the client, 30% to TLM and 10% to the local church where the group resides.

Clients are actively involved in the process of buying as well as selling cattle to ensure transparency.

Determination of the fattened cow's selling price is done by actually weighing the cattle, not by guessing the body weight, as has been practised generally in the fattening business and which has very often been the cause of losses to cattle farmers. TLM actively participates at the selling stage by identifying and selecting potential buyers to get the best price. Besides that, TLM, through their field officers, also provide training and guidance during the fattening period.

In recent times TLM has begun to obtain a number of cattle for its cattle-fattening program from its cattle service post in Baun. Cattle that are bought from local cattle markets are generally in a stressed condition. Prior to disbursement, TLM holds these cattle for 1–2 weeks at the post for recovery treatment and weighing. Treatment includes vitamin injections, worm medicine and vaccinations, so when cattle disbursement takes place, all cattle are healthy and in good condition. Known initial body weights allow productivity during the fattening period to be predicted.

At present, besides implementing the cattle-fattening program, TLM is also piloting a cattle-breeding program. This program includes the purchase of productive pregnant female cattle to be cared for by clients. Calves are given to the client to be raised and used in the cattle-fattening program or for cattle breeding. Insemination is also undertaken using a Brangus bull. This initiative will address the issue of cattle availability and quality for fattening

(sapi bakalan) and hopefully will reduce the current high rate of slaughtering of productive females that threatens sustainable cattle production in NTT, especially in Timor.

Seaweed cultivation program

This program is aimed at communities living in coastal areas with potential to cultivate seaweed but with no access to capital from banks or other financial institutions. Size of loans is based on need, requests and analysis and is between Rp250,000 and Rp1,000,000. The loan repayment period is 20 weeks and is repaid fortnightly (10 repayments per loan). Interest rate charged is 3% per month or 1.5% per 2 weeks. TLM actively supports the marketing of harvested seaweed and provides training and guidance to improve skills and quality of production.

Disbursement performance of TLM's microfinance program

TLM's loan disbursement increased by 122% between 2003 and 2004 (Table 3). Disbursement continued to increase in 2005 at 17%. In 2005 the KUM and seaweed programs were the most popular, as shown by their shares of the total loan disbursement (51% and 32% respectively), followed by the individual and cattle programs. Over the period from 2002 to 2005 KUM has received almost 51% of the total loan disbursements. Since their establishment the individual and cattle programs have grown significantly.

Table 2. Livestock population (number) per district/city NTT province, 2004

No.	Regency/city	Cattle	Buffalo	Horse
1	West Sumba	6,234	32,759	16,852
2	East Sumba	40,325	33,603	27,577
3	Kupang Regency	133,920	7,051	11,762
4	South Central Timor	116,169	515	4,706
5	North Central Timor	57,003	706	2,278
6	Belu	92,586	2,513	3,730
7	Alor	1,243	–	143
8	Lembata	1,381	5	1,511
9	East Flores	1,528	33	2,471
10	Sikka	4,711	495	3,185
11	Ende	6,517	2,515	2,547
12	Ngada	33,505	11,923	8,097
13	Manggarai	8,076	15,001	6,058
14	Rote Ndao	14,191	10,084	4,290
15	West Manggarai	2,149	19,742	1,160
16	Kupang City	3,301	33	49
	Total NTT province	522,929	136,968	96,416

Table 3. Loan portfolio (in rupiah) TLM, 2002–05

No.	Program	2002	2003	2004	2005
	Loan outstanding				
1	KUM	1,712,793,375	1,653,619,272	2,689,871,984	2,601,879,288
2	Individual	–	–	2,712,248,025	4,656,543,348
3	Cattle	44,238,500	145,920,531	1,229,735,868	2,310,638,233
4	Seaweed	–	–	2,712,248,025	4,656,543,348
	Total	1,757,031,875	1,818,564,334	6,871,618,235	9,837,134,371
	Loan disbursement				
1	KUM	4,783,440,650	8,062,788,600	12,237,500,290	10,922,364,205
2	Individual	42,950,000	229,950,000	1,844,683,499	3,369,465,000
3	Cattle	–	19,766,250	395,835,000	356,250,000
4	Seaweed	–	–	3,922,585,000	6,852,175,242
	Total	5,927,450,000	8,311,504,850	18,440,603,789	21,500,254,477

Note: – = program not yet implemented

The strong growth in the individual program indicates successful improvements that former KUM clients have made in their businesses, enabling them to continue to borrow and increase the size of loans. In 2005 the seaweed loan was the second highest, growing by 75% since 2004.

Conclusion

The following are some conclusions that can be drawn from the observations above:

- Microfinancial services can be a key strategy in reducing poverty.
- Management of microfinance programs should be done comprehensively, not only focused on microcredit but also covering other economic needs such as savings and insurance, and provide training for the community.
- Microfinance programs will make maximum contribution to alleviating poverty if they are designed and managed to align with the local

economic activities of the poor. These economic activities are small and highly sensitive to the fluctuations of broader economic factors.

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Evaluation of non-timber forest product species as potential elements of agroforestry systems

A.B. Cunningham, S.T. Garnett and N. Stacey¹

Abstract

Eastern Indonesia's high biological and cultural diversity is reflected in diverse and dynamic agroforestry systems. Systematic evaluation of non-timber forest products produced from agroforestry systems can identify those that could generate returns to help lift rural families out of poverty. What are the characteristics of 'winning products'? Which of these can be linked to Fairtrade or certification to reach selected markets? These are important questions at a time when farm income is in decline in West Timor and in East Nusa Tenggara (NTT) generally for a variety of reasons, including technological change, low commodity prices and globalisation.

Although farm income is in decline, agriculture and agroforestry are still the main sources of total household income for rural households, followed by income from marine resources. On drier islands, agriculture contributes a much smaller component of household income. Two off-farm sources are crucial to many households: first, income from the processing and sale of non-timber forest products (such as from palm species, *kutu lak* and woven textiles); and second, remittances from emigrants commonly working in Malaysia and the Middle East (particularly Saudi Arabia). The income share from handicrafts is higher on drier islands such as West Timor, Sumba, Lembata and Rote.

Commercial trade in the higher value non-timber forest products in NTT, such as sandalwood and *gaharu* (*Aquilaria* resin), has a very long history, often characterised by overexploitation of wild populations and market control by well-connected traders. In some cases species have been added to agroforestry systems for social, economic and cultural reasons. Selecting 'winning' species for agroforestry systems in West Timor should be based not only on economic values, but also on cultural and social context including land tenure, prospects for local value-adding, market security and lessons from the past.

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Evaluasi terhadap species produksi hutan non-kayu sebagai elemen berpotensi dari sistem wanatani

A.B. Cunningham, S.T. Garnett dan N. Stacey^{1a}

Abstrak

Tingginya biologis dan keragaman budaya di Indonesia Timur tercermin pada keragaman sistem wanatani yang dinamis. Sistematika evaluasi terhadap produk hutan non-kayu yang dapat diproduksi dengan sistem wanatani sangatlah penting untuk diidentifikasi dimana hal tersebut akan dapat memberikan pendapatan yang bisa mengangkat keluarga pedesaan keluar dari kemiskinan. Apa saja karakteristik dari pada 'winning products'? Yang manakah yang dapat dikaitkan pada Fairtrade atau sertifikasi dalam mencapai pasar yang dipilih? Pertanyaan-pertanyaan tersebut sangatlah penting dikala pendapatan pertanian mengalami kemunduran tidak hanya di Timor barat tapi juga di Nusa Tenggara Timur (NTT), untuk berbagai alasan, termasuk perubahan teknologi, harga komoditi rendah dan globalisasi.

Meskipun pendapatan pertanian mengalami kemunduran, pendapatan dari agraria dan wanatani masih merupakan sumber utama bagi kepala rumah tangga di pedesaan, disusul dengan pendapatan dari penangkapan sumber laut. Pada pulau yang lebih kering, agraria merupakan komponen yang lebih kecil kontribusinya dalam pendapatan kepala rumah tangga. Dua sumber diluar pertanian yang penting bagi banyak kepala rumah tangga. Pertama, pendapatan dari memproses dan menjual produk hutan non-kayu (seperti hasil dari berbagai jenis palem, kutulak dan kain tenun) dan yang kedua, penghasilan dari perburuhan diluar negeri untuk pria biasanya bekerja di Malaysia, Timur Tengah (khususnya Saudi Arabia). Pendapatan dari kerajinan tangan proporsinya lebih tinggi di kepulauan yang lebih kering, seperti Timor Barat, Sumba, Lembata dan Rote.

Perdagangan komersil pada produk hutan non-kayu nilai tinggi di NTT, seperti cendana dan *Agularia* resin (gaharu) memiliki sejarah panjang, sering berkarakter akibat eksploitasi berlebih pada populasi liar dan kontrol pasar oleh jaringan pedagang. Pada beberapa kasus, species telah ditambahkan pada sistem wanatani, untuk alasan sosial, ekonomi dan budaya. Memilih 'winning' species untuk sistem wanatani di Timor barat tidak perlu berdasar pada nilai ekonomi saja, tetapi juga pada budaya dan konteks sosial, kuatnya hak kepemilikan, berkembang pada kemungkinan tambahan nilai lokal, keamanan pasar dan pelajaran dari pengalaman masa lalu.

Introduction

East Nusa Tenggara (NTT) is one of the poorest provinces in Indonesia. Five hundred and fifty islands, dominated by Flores, Sumba and West Timor, support just over four million people, of whom about three-quarters rely on subsistence agri-

culture. Literacy rates are low, with a secondary school enrolment rate of 39%, while child malnutrition (32%) and child mortality (71 per 1,000) are higher than in most of the rest of Indonesia (Anon 2006). Declining on-farm productivity, as well as declining catches from the next most important sector, marine resources, have also resulted in high levels of labour migration, mainly to Malaysia and the Middle East (particularly Saudi Arabia). Between 30,000 and 100,000 workers travel annually from NTT (Hugo 2005). There is an urgent need to find

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alternative ways in which NTT farmers can supplement their incomes.

One way by which this can be achieved is through an increase in production of non-timber forest products (NTFPs), especially where this can be combined with forestry or agroforestry to reduce impacts on the remaining natural forests. This offers potential not only to increase household income to real subsistence levels that will reduce malnutrition and increase health but also, through trade, to allow a transition out of poverty.

Commercial trade in the higher value products has a very long history in NTT. The name Nusa Cendana, an earlier name for the islands, was derived from the sandalwood that has been traded from the region since the 10th century and which contributed to colonisation by western powers in the 16th century (Rohadi et al. 2000). However, overexploitation of wild populations of this and other NTFPs has led to a rapid decline in productivity in recent decades. Also, markets are often controlled by well-connected traders who reduce returns to local farmers from whose land the products are harvested. Nevertheless, sandalwood is only one of many NTFPs being traded; farmers are frequently adding new species to agroforestry systems as they identify opportunities. This paper proposes guidelines by which such new products can be identified, and discusses some examples of specific interest to NTT.

Winning products

‘Winning products’ have a range of characteristics most likely to provide a return to smallholders. Assuming it has been established that there is a market for the product, the following 10 characteristics are important.

Uniqueness

Products found nowhere else in the world are going to have a competitive advantage. These can be products of natural species or varieties that are endemic to an area, or transformed products that are found nowhere else. In a mobile world, however, uniqueness is often transitory until species are exported to be grown elsewhere or products and processes are copied at sites where they can be produced more cheaply. In fact there is considerable pressure through the World Trade Organization to allow free flow of products and ideas as this is believed to drive wealth creation in the

global economy. On the other hand, there are increasingly stringent provisions to ensure that benefits from biodiversity are retained in, or at least partially returned to, the country of origin. There are also international agreements to ensure that intellectual property contained within local production systems can be protected.

Opportunity for certification or cultural branding

A distinctiveness is most likely to be maintained in products that can be registered easily through groups like Fairtrade, based in the United Kingdom, or that receive some other form of certification such as ‘organic’ or ‘not made by children’. While this does not necessarily secure a market, it can mean that a premium price is received for the products on the basis that they have guaranteed values (Walter 2002).

Ingredients for sustainable harvest

Too often NTFPs have been exploited to commercial extinction. While innovations may find suitable substitutes and NTFPs can be domesticated and integrated into agroforestry systems, there will be short-term consequences for those whose livelihoods depend on access to natural forests. There should be a market advantage for production that is sustainably grown and harvested. Sustainability is necessary at every stage of the food chain. For example, the use of artificial dyes that cause health problems and can pollute waterways are just as unsustainable as over-harvesting of natural dye plants.

Niche markets

Unique products rarely have mass markets. Usually, markets for such products are specific to demographic sectors, either locally or internationally. Knowledge of the requirements of these markets can be used to develop marketing strategies. Buyers can also be educated to discern differences in production, quality and benefit distribution such that premium prices can be gained, thus providing good returns to producers.

Sufficient volume and reliability of supply

While markets for a winning NTFP are likely to be small, they must nevertheless be large enough to justify expenditure on market development. Supply to the market must also be sufficiently reliable for the

market to stay engaged with the product. Planning development of such a product does not necessarily mean that production needs to be from a single source. In fact it can be better to spread risk by meeting market demand from multiple suppliers or sites so that temporary declines in production, such as might result from climate or political fluctuation, cause minimal disruption to supply.

Consistently high quality

To receive a high price, quality control is essential. Variable quality can lead not only to lower prices for some goods but also introduce extra handling costs associated with quality assessment at points along the supply train. The greater the consistency of quality the lower these assessment costs, the more reliable the return to producers and the greater the incentive to produce and to purchase.

High price/volume

A common cause of rural poverty is poor access to markets for smallholders. Often there is limited capacity and inadequate infrastructure to move large volumes of goods to markets. High product turnover is one basis of wealth creation but is unlikely to be an option for many producers. A winning product usually has a high value per given weight or volume, thus minimising transport and handling costs and maximising returns. This is often achieved by processing the raw material near its source to reduce product bulk.

Long shelf life and physical sturdiness

While storage processes are rapidly improving and time to market is being reduced, stable and durable products that do not deteriorate with age are more likely to be successful than those that decline rapidly in quality or need special conditions to maintain quality. Product sturdiness can also be a consideration where transport infrastructure is poorly developed. Protection of fragile products, such as shells or delicate carving, can add substantially to costs, just as refrigeration adds cost to perishable goods.

Potential for local value-addition

Raw products fetch only a small proportion of the price of transformed goods. Winning products can be processed locally into high-value goods that meet other criteria. Primary produce seldom has qualities that warrant raw export and the choice of NTFPs that

might be incorporated into agroforestry must consider the extent to which such transformation can take place close to the source of supply and at relatively low cost.

Limited policy ‘bottlenecks’

The harvesting of some products is strictly controlled by social and policy processes in a manner that limits returns to local producers. For example, ownership of all sandalwood in NTT was traditionally claimed by local rulers. They gifted only the branches to those who harvested the wood, even if the trees were growing on the harvesters’ land. This arrangement was maintained after Indonesian independence, with ownership being transferred to the national government, with the result that prices need to be high to warrant local production by smallholders (Rohadi et al. 2000). Taxes and local, national and international regulations and policies can also inhibit economic development of particular products. For instance, the trade in species listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora needs to be highly profitable to enable compliance with regulations about sustainability.

Potential for certification

Of these 10 winning product characteristics, potential for certification can have the greatest influence on product competitiveness. However, certification itself costs both for compliance and in the time taken to become and remain certified. Thus, there are several questions that need to be asked before products are considered for certification.

Does the market care?

For some products the origin has no bearing on the price. Industrial oils, for example, can have a range of sources and, currently, few buyers will pay a premium for oils produced under sustainable conditions that maximise benefits to poor producers. The niche market for certified products is one that is willing to pay extra for such certification.

Will certification bring access to a wider market?

The market for some products may be so narrow, or the product so specialised, that certification is not necessary. This is also true if there is no competition

and the product is unique. However, success breeds imitation and, while there may be no competition at present, certification can be seen as an investment for the future.

What are the costs?

Certification costs vary with type and organisation. Use of the Fairtrade mark costs 1.8% of net sales value for all products, with a minimum of Rp1.5 million per quarter (Fairtrade 2006). Organic certification costs through International Certification Services is at least Rp2.4 million per year (International Certification Services 2006) and, at a different scale, certification with the Forest Stewardship Council costs more than Rp225 million as a one-off cost (Forest Stewardship Council 2006). These charges are levied on each product either as a flat charge or a charge per unit of output, depending on the certification scheme, and are generally levied on the marketing organisation. Benefits from certification must at least exceed these costs if it is to be warranted.

Is the product eligible for certification?

The applicability, benefits and costs of each form of certification need investigation before being sought. Each of the certification groups has a different range of criteria for eligibility. The Fairtrade Mark, for instance, covers foods including bananas, cocoa, coffee, cotton, dried fruit, fresh fruit and fresh vegetables, honey, juices, nuts/oil seeds, quinoa, rice, spices, sugar, tea and wine as well as cotton, cut flowers, ornamental plants and sports balls. Certification for herbal and fruit teas and handicrafts is under development. Organic certification has different standards for different markets and different requirements along the market chain (International Certification Services 2006). The Forest Stewardship Council has developed 10 principles and 57 criteria that address legal issues, indigenous rights, labour rights, multiple benefits and environmental impacts surrounding forest management that are applicable to forests around the world (Forest Stewardship Council 2006).

Multiple values

The selection of ‘winning species’ is the first step in expanding the potential for agroforestry systems. The most favourable characteristics for agroforestry will mean little without a number of conditions being met in the place where it is to be grown.

Strong tenure

Agroforestry, particularly when it involves long-term investment in slow-growing trees, requires security of tenure to balance the many risks involved with such an enterprise. Often tenure uncertainty can introduce the risk that discourages investment either by local farmers or by external investors in joint ventures. Strong tenure, backed up by a just system of dispute resolution, is thus a fundamental pre-condition for NTFP profitability.

Economic values and an understanding of existing markets

Market research is a critical initial step to determine whether a product has potential. Analysis must include cost of production against the economic return to producers, handling, packaging, transport, certification and marketing. None of these can be ignored.

Cultural and social context

The social context of production is often critical to success. Important factors will be the cultural constraints on the way decisions are made and implemented. Sometimes collaboration between producers is an essential precondition to success by generating savings in handling and marketing, and coordinating consistency of supply. There may also be issues of gender preference, with some activities likely to favour employment of women over men, or vice versa, that can have consequences on business sustainability. How production of NTFPs fits in with other economic activity should also be investigated. In some places increasing the financial independence and power of one group may be seen as a threat by others who have traditionally held power. An understanding of the likely consequences of business development and the development of contingency plans is thus an important precursor to development. If cultural issues are likely to prevent new product development they may need to be discussed and negotiated before investment is committed.

Extent of local value-adding

As noted above, the potential for value-adding is an important attribute of a ‘winning product’. This potential must exist not only in the product but in the community where the product is grown if maximum benefit is to be derived by growers, and sometimes if the growing is to be profitable at all. The principal con-

straints on local value-adding are likely to be lack of equipment or skills. The cost of investment in equipment or skills needs to be built into business planning.

Lessons from the past

There are many examples from around the world of success and failure in the development of NTFPs in agroforestry and the return of a just share of benefits back to growers. Examples can be accessed through certification organisations and, as part of the research, lessons learned need to be considered.

Case studies

Gaharu (*Aquilaria resin*)

Gaharu has been a source of material for high quality incense for thousands of years and has a global market. Furthermore, prices have been high, up to Rp. 2.3 million /kg. Owing to overharvesting the trees bearing resin have become increasingly scarce in their natural habitat, and the value of the product has attracted increasingly destructive harvest practices (TRAFFIC 2000, Soehartono et al. 2002). However, new technology enabling production from young trees is making it possible to consider production of gaharu on an industrial scale (Blanchette 2006). Inevitably this will increase availability and decrease price. Countries that have developed commercial plantations of the trees and the appropriate technology will reap rewards from adopting the innovation. Those who brought the species into horticulture intended that benefits should accrue to small growers in remote areas, but the production costs and pricing structure have not yet settled enough to know whether this will be possible.

Kutu lak (Lak insects and varnish)

Shellac or lak is produced from the secretions of the shellac insect (*Tachardia lacca*). There are three host trees for the insect, *kesambi* (*Schleichera oleosa*), *akasia* (*Acacia catechu*) and *jamuju* (*Cuscuta australis*), but the best quality lak is derived from *Schleichera oleosa*. The main global production centre is currently India, which determines the overall price, but it has been exported from Sumba for many years, primarily through Surabaya in Java where the trade is controlled by a small number of exporters. Prices vary from Rp10,000–25,000/kg, depending on quality, with a farm-gate price of around Rp10,000–12,000/kg.

Harvesting is non-destructive and is possible every 5–6 months, so it can provide a relatively reliable source of extra income. Production is, however, strongly affected by fire and fire management that itself is affected by land tenure issues.

Handicrafts

Over 80,000 people in NTT are involved in the production of handicrafts of various sorts (Table 1), so are already value-adding to raw materials. Of these the most important are woven textiles, which can make a substantial difference to livelihoods, and are an essential source of cash in years when crops fail or are burnt by wild fire (Russell-Smith et al. 2006). The textiles themselves rely on a range of NTFPs. They are woven from cotton (*Gossypium* spp.). This can be hard to source, especially in a pure form lacking rayon that will hold dyes effectively (Ingram and Ingram 2006). A range of other species are used for dyes and mordants. Amongst the dyes is lac, which produces a red colour. Another is *mengkudu* (*Morinda citrifolia*), the roots of which produce high concentrations of the dye morindin (McClatchey 2002). However, use of *mengkudu* requires a source of mordant, which is derived from the bark of the increasingly scarce rainforest plant *jirak* (*Symplocos* sp.) (Grae 1974). While imitations using factory looms and artificial dyes are supplied cheaply to tourist shops, often using traditional motifs from other areas, original textiles using traditional dyes can fetch a premium price. Incorporating plants important to the textile industry such as superior breeds of *mengkudu* and *Symplocos* into agroforestry can increase productivity and reduce costs, thus improving returns to weavers.

Table 1. Handicraft production in NTT 2002–Kerajinan Tangan NTT 2002 (Independent Research and Advisory 2005)

Type/jenis	No. of villages/desa	No. of people/rakyat
Leather/Kulit	19	46
Wood craft/Kerajinan kayu	323	2,009
Metal jewellery/Perhiasan logam	47	188
Cane work/ceramics/Hasil rotan/Ceramics/keramik	356	11,557
Weaving textiles/Kain tenun	1,168	64,818
Food/Makanan	307	6,766
Others/Lain-lain	201	4,602

Industrial products

A range of species that grow readily in NTT are becoming increasingly attractive as sources of industrial products. Oil from the seeds of *kemiri* (*Aleurites moluccana*) is already exported to Surabaya, but faces competition from the larger Indian market. So too does *Jarak budeg* (*Jatropha curcas*), a source of seed oil that can be used as an additive to diesel. Another potential source of industrial products is *tuwa areuy* (*Sapindus saponaria*). Commonly planted as a living fence in Indonesia, the seeds are also a source of industrial saponins that can be used, for example, in fish farming, fire extinguishers and molluscicides. While markets have not yet been established, it has potential to be collected on a large scale in NTT.

For each of these examples, and many other potential products, a careful assessment needs to be made against the criteria listed above. In NTT there appears to be considerable potential to extend the long tradition of incorporating NTFPs into agroforestry for the benefit of subsistence farmers.

Recommendations

Survey existing markets—local, regional and international—in order to:

- identify NTFPs with suitable silvicultural and growth characteristics for agroforestry systems
- evaluate the economic potential of the most promising products, giving prominence to species with the highest potential for agroforestry systems
- evaluate the social, cultural and economic context to support the most promising products
- establish demonstration plantings of the most promising species.

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Australia – Nusa Tenggara Assistance for Regional Autonomy (ANTARA) Program

John Maxwell

Abstract

The Australia – Nusa Tenggara Assistance for Regional Autonomy (ANTARA) Program is primarily aimed at reducing poverty in the Indonesian provinces of East Nusa Tenggara and West Nusa Tenggara, which are amongst Indonesia's poorest provinces. The mandate of ANTARA is outlined. ANTARA is initially funded for 2005–09 and is likely to be extended.

Australia – Nusa Tenggara Assistance for Regional Autonomy (ANTARA) Program

John Maxwell

Abstrak

Program Australia – Nusa Tenggara Assistance for Regional Autonomy (ANTARA) bertujuan dasar untuk mengurangi kemiskinan di propinsi NTT dan NTB di Indonesia yang merupakan bagian propinsi termiskin di Indonesia. Mandat kepada ANTARA telah diberikan. ANTARA pada dasarnya diberikan dana untuk masa 2005–09 dan ada kemungkinannya untuk diperpanjang.

In the Indonesian provinces of East Nusa Tenggara (NTT) and West Nusa Tenggara (NTB), poverty is a complex phenomenon and poverty levels have remained largely unchanged throughout decades of domestic and external development interventions. NTT and NTB are among the five poorest provinces in Indonesia.

In line with the Australia–Indonesia Development Cooperation Strategy, the Australia – Nusa Tenggara Assistance for Regional Autonomy (ANTARA) Program is an innovative, flexible program aimed at reducing poverty in NTT and NTB. It is intended that this will be achieved through a longer-term commitment to sustainable and equitable social and economic development by improving district and provincial governance, improving the quality of and access to essential services and increasing peri-urban and rural incomes.

ANTARA will operate initially over 5 years (2005–09), with funding of up to A\$30 million. It is

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anticipated that a second phase of ANTARA assistance will be required post-2009, given the scale of the development challenges faced by these provinces. ANTARA will commence in NTT, with a base in Kupang, and will be extended progressively into NTB at some point in the future.

ANTARA has a threefold mandate:

- to improve coordination and cohesion among relevant current and future Australian development projects, and help build greater synergy between these programs and the programs of other key donors so as to maximise their impact on poverty reduction
- develop targeted new activities (for example, in areas such as local planning and budgeting and small business development)
- strategically invest in local and international initiatives with a proven capacity or strong potential for impact and expansion.

To strengthen prospects for sustainability, ANTARA will develop pragmatic partnerships with a broad range of stakeholders within local governments, business communities and civil society organisations. The aim would be to promote local ownership and, to the extent possible, work through local systems and processes. ANTARA will build on the experience of other significant donors active in NTT, or elsewhere under similar programs.

The Ministry of Home Affairs (Regional Development) is the counterpart agency at central govern-

ment level and Provincial BAPPEDA the counterpart agency at the province level.

AusAID has engaged a program director and a management support team to lead the implementation of the program. They will be responsible for the overall strategic direction, management and quality assurance aspects of the program on behalf of the Government of Australia.

Some early activities to be undertaken under the ANTARA program will include, but are not limited to, the following:

- expanded provision of specialised clinical and surgical services to public hospitals in certain districts within NTT undertaken by a team of Australian specialist surgeons and support personnel working closely with local hospital administrations
- assistance to improve the efficiency and effectiveness of the procurement and distribution of essential pharmaceuticals and other medical supplies initially in two districts and the relevant provincial agencies
- support for the West Manggarai Tourism Assistance proposal, in collaboration with Swisscontact
- support for the sharing of information and experiences about current responses to the food insecurity situation in NTT. AusAID is already funding a World Food Programme resident position in Kupang for the next 2 years.

Funding agencies' program priorities—ACIAR

Russell Haines¹

Abstract

ACIAR's mandate to focus on identifying and solving agricultural research problems puts its activities in the medium- to long-term time frame. This does not prohibit responses to unexpected and therefore unforeseen events that are not factored into ongoing activities. The priorities that ACIAR sets are designed to integrate and deliver against the drivers of the Australian aid program, the areas where they intersect with Indonesian Government priorities, and the overlap with Australian expertise in agricultural research. As a guide, ACIAR publishes an annual operational plan that outlines priority areas for the coming year within the broader context of a changing external environment, the internal dynamics of Indonesian Government policies, and the impacts of both on agriculture and changing priorities. Through a combination of projects bringing together Australian, Indonesian, and sometimes multilateral, expertise, results can be delivered that help boost the incomes of Indonesian smallholders.

Increasingly, ACIAR is seeking to link extension specialists from government, NGO and private sectors into the development and delivery of projects, particularly where these impact on farming systems at the community level. The end result has been the delivery of a range of project outcomes that are of benefit to Indonesian farmers and agribusiness and, through these, the broader economy.

ACIAR's commitment to working in Indonesia remains, with growth in the overall program expected to continue, particularly as components of the Australia Indonesia Partnership for Reconstruction and Development begin. Agriculture continues to underpin livelihoods in many areas of Indonesia; while this remains the case, research for development to boost farmer incomes through increased system productivity will be needed. While the nature of agriculture might change, and with it priorities for research and development, addressing agricultural development problems remains the mandate of ACIAR.

Agen pendanaan prioritas program funding— ACIAR

Russell Haines^{1a}

Abstrak

ACIAR bertugas untuk berfokus pada pengidentifikasi-an dan penyelesaian permasalahan yang terjadi pada penelitian pertanian pada jangka waktu menengah dan panjang. Hal ini bukan melarang pemberian tanggapan terhadap kegiatan yang tak nampak dan tak terduga, yang tidak berfaktor pada kegiatan terus menerus.

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Prioritas yang di tetapkan ACIAR dirancang untuk memadu dan menyampaikan program Australian Aid dalam kerjasamanya dengan prioritas pemerintah Indonesia yang ditunjang oleh tenaga ahli Australia dibidang penelitian pertanian.

Sebagai petunjuk, ACIAR mempublikasi Rencana Operational Tahunan yang menggaris bawah prioritas di tahun berikutnya, dalam konteks yang lebih luas pada perubahan lingkungan eksternal, dinamika peraturan dalam negeri pemerintah Indonesia serta akibat dari pada pertanian dan prioritas perubahan.

Melalui kombinasi proyek membawa bersama Australia dan Indonesia, tenaga ahli multilateral, latihan bersama pada topik yang relevan,, hasil yang dapat meningkatkan pendapatan pemegang saham kecil Indonesia dapat terselenggara.

Secara meningkat ACIAR terus mencari perluasan penghubung di bidang spesialisasi, dari pemerintah, LSM dan sector pribadi, kedalam perkembangan dan pelaksana proyek, khususnya dimana dampak sistem pertanian sampai pada tingkat masyarakat.

Hasil akhir merupakan penyampaian dari hasil berbagai proyek yang berupa keuntungan bagi petani Indonesia dan pengusaha tani, serta ekonomi yang lebih luas.

ACIAR berkomitmen untuk bekerja di Indonesia tertinggal, dengan pertumbuhan program secara umum yang diharapkan untuk terus berlanjut, khususnya sebagai komponen dari kerjasama Indonesia Australia untuk memulai rekonstruksi dan pembangunan.

Di banyak daerah di Indonesia pertanian masih terus merupakan penopang hidup, selama hal ini terus berlangsung kasus penelitian untuk pengembangan demi memicu pendapatan petani melalui peningkatan sistem produktifitas harus terus dibutuhkan. Sementara sifat pertanian berubah, dan dengan prioritas untuk penelitian dan pengembangan, penyampaian permasalahan tetap menjadi tugas ACIAR.

Introduction

The relationships between Indonesia and Australia are wide-ranging and have grown stronger in recent years. The breadth and depth of these ties cover strong political, commercial, academic and cultural links, characterised by people-to-people connections. Commercially, trade between Indonesia and Australia was valued at A\$6.9 billion in 2004–05. More than 18,000 Indonesian students were studying in Australia in 2006, and almost 12,000 Australians list Indonesia as their present country of residence. In 2005 alone there were 23 visits between the two countries by government ministers and parliamentarians, including reciprocal visits by the Indonesian President and Australian Prime Minister.

One area where these ties are strong is cooperation in agricultural and rural development. Many of the activities in this field operate through Australia's aid program to Indonesia. The emphasis of this program is poverty reduction and sustainable development.

Australian aid to Indonesia is valued at almost A\$2 billion over the next 5 years. The Australia Indonesia Partnership for Reconstruction and Development (AIPRD) announced in January 2005 accounts for half of this funding, focusing on economic management, democratic institutions, security and stability, and basic social services. In total the AIPRD comprises A\$500 million in grants and

A\$500 million in highly concessional loans over 5 years.

In rural and regional areas of Indonesia, where agriculture is the foundation of livelihoods and the main form of employment and food security, achieving the goals of poverty reduction, security and stability is greatly enhanced through increased production of staple foods and also marketable commodities.

ACIAR in Indonesia

The Australian Centre for International Agricultural Research (ACIAR) is the lead agency for this component of the Australian aid program, with a mandate to help identify agricultural problems in developing countries and to commission collaborative research and development in fields where Australia has special research competence.

ACIAR began commissioning research in the early 1980s, with support for a program of collaborative research with Indonesia beginning in 1982. Today ACIAR's largest bilateral partner is Indonesia, with an expected investment in 2006–07 of around A\$10 million.

There are several reasons for this, some of which overflow into the wider Indonesia–Australia relationship. Australia and Indonesia share common resources, notably fishing stocks in the Timor and Arafura seas, and species of crop plants, trees and

animals. A number of key trade commodities are derived from these resources. The mechanisms by which pest and disease threats are spread are also shared; for example, migratory birds may spread avian influenza not just across the region but across the globe.

While all these issues and many others are important, it is not possible for ACIAR, operating throughout the Asia-Pacific region, to respond directly to each and every one in any single country, let alone in many countries. For Australia, the proximity of Indonesia, together with these shared resources, creates a level of strategic importance that results in increased investment. This is reflected in the growth of ACIAR's program in Indonesia in recent years.

Ensuring that agricultural production continues to reduce poverty and increase national and regional stability is important, but it is also important to ensure that the institutions that can deliver such productivity advances are maintained and enhanced. This is a major challenge, particularly with the recent decentralisation of Indonesian government and, with it, decentralisation of scientific research and extension responsibility. Despite this, a majority of the expertise remains in Jakarta, Bogor and other Javanese centres. The need for capacity development in science in regional centres outside Java is vital to continued efforts to lift productivity. Building capacity linkages into ACIAR projects and capitalising on these has been a feature of ACIAR's partnership model.

Building research capacity

Rather than deliver a product through Australian-based research, ACIAR projects involve partner country institutions in project activities. For ACIAR, developing capacity in eastern Indonesia, and recently in Aceh following the December 2004 tsunami, is an important component of research activities.

This is achieved in two ways: through informal project-specific training and through formal fellowship schemes and courses. Training is designed to boost not only the capacity but also the ability of partner country scientists to contribute within and beyond the project's life. Fellowships are restricted to scientists currently or recently involved in an ACIAR-funded project. ACIAR is increasing its investment in fellowships that allow eligible scientists to gain postgraduate qualifications at Australian universities.

Courses to build research capacity cover a variety of themes linked to the needs of the partner country. For Indonesia, courses seek to link researchers to applied research results. Course components include: economics and social science for biophysical scientists; experimental design and analysis; participatory agricultural research; project evaluation and impact assessment training; and agribusiness, particularly in supply chain management. However, training is secondary to the commissioning of research projects to address the agreed priorities for ACIAR work in Indonesia.

Agricultural research themes

Projects cover the full range of agriculture from policy and farming inputs to generating productivity increases and delivering sustainable resource management.

Segregating the delivery of agricultural research into component parts, such as separating policy from production, does not always deliver the best results. ACIAR has grouped its research program streams into four broad categories each of which produces significant complementarities without negating opportunities for cross-category project linkages.

The four categories, with three research program streams, are:

Economics

- agricultural development policy
- agricultural system economics and management
- policy linkages and impact assessment

Crop production, protection and processing

- crop improvement and management
- crop protection
- horticulture

Livestock and fisheries

- animal health
- livestock production systems
- fisheries

Natural resource management

- land and water resources
- soil management and crop nutrition
- forestry.

In Indonesia, projects operate within a broad medium-term strategy that emphasises increases in farmer and fisherfolk incomes. This is achieved by focusing on the production systems for livestock, fisheries, forestry and horticulture crops. Focusing on production systems is intended to add value to Indonesian agricultural products, including those

with potential to develop into export commodities and markets. An emphasis on farming as agribusiness underpins research.

ACIAR's projects take a longer-term view of development, rather than delivering through direct handouts. By increasing productivity throughout the whole system farmers can leverage against this increased production, to sell to markets, to gain more income, to have a living 'savings bank' and to diversify their farming activities.

The longer-term engagement also involves a strong research component addressing conservation of the resource base for agriculture. Investing in increased production today at the expense of limiting future production by degrading the resource needed for tomorrow is irresponsible and unsustainable.

Responding to emerging issues

On occasion ACIAR projects also respond to short-term needs, most notably following the December 2004 tsunami, and more recently the outbreaks of avian influenza.

Activities in Aceh demonstrate the linkages between the short-term and longer-term approaches. ACIAR was not involved in the immediate response, agricultural research taking a back seat to the need to recover life and re-establish infrastructure. Once this had been achieved or, in the case of infrastructure rebuilding, had begun, the importance of agriculture in the livelihoods of many smallholders was addressed.

The first stage of ACIAR's response was a visit by a team of specialist scientists, including ACIAR staff, to establish the most immediate priorities. From this visit, and consultations with Indonesian authorities and staff of research institutes in Aceh and beyond, priorities were identified.

Training in key areas of soil sampling and analysis, and fisheries and aquaculture research was provided to ensure that the expertise and capacity to undertake research locally and engage in projects with Australian partners was in place. Since that time two projects addressing soil rehabilitation and assessing the status of fisheries resources and community needs have begun. Both have been underway for 1 year.

In the longer-term ACIAR continues to engage with Indonesian, Australian and international efforts aimed at rebuilding in Aceh. Further training as part of a capacity-building program on the re-establishment of brackish-water aquaculture has been devel-

oped. Scoping of further project work is also underway. Some of these projects are in conjunction with the AIPRD.

The approach adopted in Aceh is similar, though far more compressed than normal, to that adopted by ACIAR elsewhere in Indonesia; namely, to understand the local situation and priorities; match Australian expertise to these priorities; build up Indonesian expertise where needed; and deliver, through the project modality, sustainable and realistic research results that can be used by smallholders to increase productivity through their systems and from this boost income-earning potential.

A key component of this approach is delivering the results that can increase productivity for farmers. Increasingly, ACIAR is placing priority on identifying the pathways that will lead to adoption within the project development phase. Adoption pathways are those that lead to end users at the community or farm level. For ACIAR this has involved engaging with new players, NGOs, extension agencies and the private sector in addition to, and where appropriate in conjunction with, research scientists. At times this approach will involve closer interactions between researchers and end users.

This support for development linkages between research agencies and beyond mirrors the support for linkages between research capacity in Java and elsewhere in Indonesia. ACIAR is encouraging links between research agencies in agriculture, forestry and fisheries and the policy and implementation directorate generals in those ministries; and links between research agencies in Java and adaptive research agencies and planning agencies in eastern Indonesia and northern Sumatra.

Priority areas in Indonesia

The emphasis on eastern Indonesia and northern Sumatra reflects a geographic shift in ACIAR's program in Indonesia. As previously mentioned, decentralisation has changed the dynamics of research in Indonesia. Where once centralised agencies were responsible for conducting research that was applicable across the nation, and extension agencies delivered this, now decentralised agencies bear a far greater proportion of this responsibility.

The Australian Aid program, including ACIAR, has recognised the need to help in this difficult transition. Eastern Indonesia is the highest priority area, with the total regional balance of investments being

influenced by the coincidence of Australian comparative advantage and the Australian Aid program.

Nusa Tenggara Timur, Nusa Tenggara Barat, West Papua and Sulawesi are the focal points of Australian Aid initiatives, with appropriate collaboration with research and development providers in Java and parts of Sumatra able to support such interventions playing an important role.

One example of this is agricultural policy research, where a strong centralisation in Java is still evident. Such policy research has the potential to be far-reaching, both in terms of geographic spread and also downstream impacts. The recent avian influenza outbreak saw the need for policy decisions that have ramifications far beyond poultry farmers in any one area of Indonesia.

While ACIAR has responded with a small suite of projects targeting areas that complement activities by other groups and engaging several countries in Asia, one aspect that remains in need of research is policy approaches and ramifications. Feedback gathered during the course of project development indicated that both the Jakarta-based Directorate General of Livestock Services and the Disease Investigation Centre in Denpasar (responsible for all eastern provinces) believed that properly conducted risk analysis and evaluation of potential policy strategies would be invaluable aids in decision-making.

A key concern was the direct and indirect costs of disease outbreaks including spillovers to other sectors. With both agencies responsible for advising the Government of Indonesia regarding policy responses, and considering the potential of these responses to impact on eastern provinces both directly through agricultural losses and more indirectly through flow-on losses, effective policy research that links the centralised agencies to eastern provincial agencies is vital. For this reason it will also remain an important component of ACIAR's program.

Complicating these matters is the changing global trade environment, including the changes required for World Trade Organization compliance and the emerging trade regulatory environment.

With an aim of increasing agricultural production, including focusing on commodities that have potential to be exported, policy approaches to facilitate a positive trade environment are important. Research is being undertaken to support a greater understanding of the impacts of this increasingly globalised environment, and of factors such as technological

changes to facilitate improved productivity both within agriculture and within industries that are end users of agricultural products.

The implications of decentralisation for the sustainable management of agricultural and land resources has also been addressed through ACIAR-supported research. This includes support for policy initiatives of provincial and regional agencies that are dealing with these issues directly, such as forestry policy.

Another aspect of this program is establishing linkages with international agricultural research centres based in, or with representation in, Indonesia, and those with a comparative advantage. These international centres are not-for-profit research institutions with a mandate covering key crops, animals or resources.

ACIAR supports these centres through both direct or core funding and by engaging relevant centres in projects. Where the expertise of these centres provides a competitive advantage, ACIAR engages this expertise in projects that also link Australian and partner country research scientists, including those in Indonesia. Projects in Indonesia involve the Center for International Forestry Research, the World Agroforestry Centre, the International Potato Center and the Asian Vegetable Research and Development Center. This represents a significant increase in multilateral investment, through ACIAR, in Indonesia.

The year ahead—addressing priorities

Within this broader context ACIAR seeks to outline priorities for the coming year through publication of an Annual Operational Plan that includes key priority areas for each country. Priorities for Indonesia are based on the formal consultation that took place between Indonesian agencies and ACIAR representatives in 2002, emerging priorities since that time, and areas of emphasis in the coming year.

To facilitate possible linkages in projects addressing priority areas, ACIAR has grouped priority areas into six thematic areas. In 2006–07 the collaborative program emphasises animal health and production, crop protection (especially where integrated with horticultural crop production), forestry, fisheries and agricultural policy research. The six themes and their subthemes are:

Policy options for Indonesian agribusiness

- Impact of trade agreements on food security and incomes of small producers
- Empowerment of small producers for better access to production factors and market returns
- Structural adjustment options for agribusiness to optimise economic and social benefits.

Recent and proposed projects on this theme examine the implications and possibilities of a changing internal environment, including aspects such as decentralisation, and ramifications of policy decisions and external developments upon agricultural sectors in Indonesia. A secondary component is improvements in productivity for smallholders through both macro and microlevel policies.

One project in this area is building a small-scale model of the North Sulawesi economy to examine linkages between broader economic policies, the coconut industry and the Indonesian economy as a whole. The coconut industry is in many ways a microcosm of the changes that are taking place in other agricultural industries in Indonesia and of the potential for regional and national policy initiatives to impact, both positively and negatively, at the provincial scale. A recently concluded project examined contract farming arrangements and the implications for smallholders of entering into contractual agreements.

Ideas for potential projects include the role of social capital in rural development in Eastern Indonesia and the possible implications of trade futures for structural adjustments.

Pest and disease management for Indonesian agriculture

- Management of livestock diseases and disease risk to improve production, enhance food safety and establish trade relationships
- Integrated pest management, especially in vegetables
- Rodent pest control in upland crops and paddy rice
- Host plant surveys and preharvest control of fruit flies
- Diagnosis and control of *Phytophthora* on citrus rootstocks, potato and pepper
- Management of major pests and diseases of bananas
- Information systems for quarantine.

A range of pests and diseases are present in Indonesia, affecting animal health, vegetable and horticultural

cropping, and tree utilisation. Animal health has been and continues to be a priority for research in Indonesia, particularly as it reduces productivity and impacts on potential income generation through sales of livestock, both domestically and internationally. Jembrana disease, classical swine fever and foot and mouth disease are all the subject of projects, including one to develop a national surveillance system for the last two diseases mentioned and also avian influenza.

Utilising integrated disease management packages, and management options to limit or mitigate the threats of wilt diseases, huanglongbing, anthracnose and phytophthora blight are the subject of a suite of current and developing projects. The importance of horticulture industries, both for vegetables and fruit production make this a continued area of priority. Deforestation in parts of Indonesia requires a careful approach to management, both for new and existing resources. Disease constraints are one area of concern, with projects to select improved trees and disease-resistant trees for planting a priority.

Productive smallholder aquaculture

- Sustainable shrimp and finfish farming systems (genetic improvement, disease management, feeds and nutrition)
- Improved processing, packaging and transport technologies that extend product life and increase market value.

Increasing pressure on catches of wild fish from the waters surrounding Indonesia is placing stress on aquaculture industries to produce more fish. This in turn results in an increased number of disease outbreaks as production intensity expands, and an exploitation of new coastal lands not always suited to aquaculture. Disease outbreaks affecting shrimp and finfish farming are being examined, along with assessing land and water suitability, including in reservoirs. Environmental impacts are being addressed too.

Management options for both shrimp and finfish production, to boost survival rates, particularly from larval stages, are being developed and disseminated. Past project results are being incorporated into the development and testing of such packages.

Sustainable utilisation and management of fisheries and forestry resources

- Impact of decentralisation on natural resource management and agricultural policy development

- Stock assessment and management of shared and common interest fisheries
- Management of inland open water fisheries, including aquaculture
- Development and domestication of eastern Indonesian non-timber forest product species for income generation
- Species selection and breeding to support plantation development, with emphasis on indigenous species, land rehabilitation and environmental services in eastern Indonesia
- Development of tree farming models with improved smallholder to plantation company cooperation
- Improved utilisation and value-adding to timber from fast growing plantation species.

Increased utilisation of both fisheries and forestry resources has resulted in reduced richness of both resources, and with this a threat to the livelihood of coastal and forest-based communities. The sustainable management of wild fisheries resources is at the heart of several projects examining issues including illegal, unregulated and unreported fishing that makes monitoring catches for sustainable harvests more difficult, and boosting Indonesia's capacity to monitor tuna and other stocks. Shared resources between Australia and Indonesia remain a priority, as does tapping into the lucrative live reef fish trade in the Asia-Pacific without accelerating harvesting towards unsustainable levels.

Forestry resources are equally valuable to many communities, particularly partnerships for plantation forestry between local communities and timber companies. Ensuring sustainability in these partnerships, and policy initiatives to boost sustainable forest management at the provincial government level, are important research priorities. Management options that boost plantation productivity and improve income for smallholders are also the subject of proposed research.

Profitable agribusiness systems for eastern Indonesia

- Improving the capacity of eastern Indonesian R&D providers to support market-driven adaptive research
- Development of sustainable crop–livestock systems for the dry tropics of eastern Indonesia
- Enhancement of Bali cattle productivity through improved management

- Improved on-farm water management in eastern Indonesia.

Livestock industries in eastern Indonesia have substantial capacity for improvement without significantly altering traditional practices to the extent of completely replacing these systems. Instead, recent research initiatives have worked with livestock farming communities, introducing simple changes that boost calf numbers, growth rates and, ultimately, incomes. Scaling up these herd management techniques is the subject of research drawing together past project outcomes. Linking scaling up with extension agencies and building these groups to practice outcome delivery at the village level remains a priority.

The proven success of this past research has also shown that crop–livestock systems can be similarly enhanced through appropriate and targeted management strategies. This extends to management of other aspects of farming systems, from rodent pest management to improving crop utilisation and soil and water management. The focus on whole systems includes suitable linkages between systems where these can add value to production outcomes.

Technical cooperation to underpin post-tsunami rehabilitation of agriculture and fisheries

- Redevelopment of capacity and facilities for brackish-water aquaculture of shrimp and finfish in Aceh
- Needs assessment and resource status of fisheries
- Restoration of salinised and silted agricultural areas to crop production
- Integrated vegetable crop production in tsunami-affected areas.

The Australia Indonesia Partnership for Reconstruction and Development

ACIAR's involvement in technical training and research in tsunami-affected areas of Aceh will continue in the medium term, with a dual focus on re-establishing cropping and the rehabilitation of fishing industries, both wild capture and aquaculture. Linkages with international efforts, and with the Australia Indonesia Partnership for Reconstruction and Development (AIPRD) that enhance research to rebuild Aceh, are a priority.

ACIAR and AIPRD are cooperating on the rehabilitation of the Regional Brackishwater Aquaculture Development Centre (RBADC) at Ujung Batee, the technology development and extension centre for aquaculture in northern Sumatra extensively damaged in the tsunami. AusAID is managing the physical infrastructure and construction component while ACIAR's focus is on training and re-establishment of aquaculture research and development. Re-establishing farming in saline land affected by the tsunami, including managing soils that have had salt and debris deposited over them, is also being investigated for project-based implementation.

Beyond Aceh ACIAR's involvement in AIPRD will focus on long-term sustained cooperation, giving priority to economic and social development projects and Indonesia's programs of reform and democratisation. ACIAR is likely to assist in the design and management of at least one component of other AIPRD programs.

As of February 2006, ACIAR had been asked to design and deliver a Private Sector Development and

Rural Productivity program component. The major program at this stage is the Smallholder Agribusiness Development Initiative (SADI).

The goal of SADI is to improve rural sector productivity and growth in four eastern provinces—Nusa Tenggara Timur, Nusa Tenggara Barat, South East Sulawesi and South Sulawesi. ACIAR will manage the third SADI subprogram 'Support for market-driven adaptive research'. The other two subprograms are 'Enhanced smallholder production and marketing and strengthened private sector agribusiness' and 'SME development'.

The objective of the third subprogram is to strengthen adaptive agricultural research and development provision in the four targeted provinces. Capacity building would centre on 'learning-by-doing', with implementation mechanism through collaborative projects and training. Province-level consultative processes will ensure that activities are driven by demand.

Appendix

Higher education capacity building in eastern Indonesia: a briefing paper

**Dr Penny Wurm¹, Professor Carole Kayrooz², Dr Ferry Karwur³
and Professor Greg Hill⁴**

This proposal builds on the existing teaching and research strengths, cross-institutional collaborations, research networks and goodwill already established among the proponent universities. In light of an increasing focus on eastern Indonesia and on collaborations that can support improved living conditions for this poorest region, as well as the existing links among regional partners, the time is ripe for a substantial project focusing on building capacity for higher education in eastern Indonesia. This paper captures resolutions arising from the *Integrated Rural Development in NTT Workshop* held in Kupang during 5–7 April 2006.

Aims of the project

This new project will build capacity for higher education in Nusa Tenggara Timur (NTT). It will comprise three key components:

- postgraduate training and scholarship
- joint development of innovative curriculum
- staff development through exchanges, mentoring and training.

The project will complement completed or ongoing projects in the region that share the overall goal to:

...increase the capacity to plan and monitor land management strategies to increase food security and alle-

viate poverty in rural communities in Nusa Tenggara Timur (NTT), and to enhance adoption of wise land management through community engagement. (Extract from current AusAid PSLP grant application, Charles Darwin University)

This project will involve collaboration among two Australian universities, Charles Darwin University and University of the Sunshine Coast, and two Indonesian universities, Satya Wacana Christian University and Nusa Cendana University, all with existing partnerships, expertise, interests and activities in the region.

The capacity building will be multidirectional. Indonesian partners will provide extensive and active networks within the region; students, staff and graduates who live and work in the region; and extant and developing research capacity. Australian partners will bring existing research expertise in wet–dry tropical landscapes appropriate to capacity-building issues facing eastern Indonesia, as well as high-quality existing undergraduate and postgraduate curriculums in natural resource management and primary industries. All four partners will benefit from the internationalisation of their activities, an inherent part of quality higher education.

The project will result in improvements to integrated rural development, natural resource management and livelihoods in eastern Indonesia through:

- increased capacity for international engagement among regional partners
- improved, innovative and regionally relevant university curriculum, resulting in more capable graduates working in regional institutions and organisations

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- increased research capacity at all four partner universities
- increased ability to attract collaborative, regionally targeted funding.

Specific funding will be sought for the following project activities:

- funded research collaborations among partners
- funded staff exchanges and mentoring
- new, funded postgraduate, undergraduate and short-course enrolments at partner universities
- funded collaborations for curriculum development.

Many of the supporting activities are underway or being planned, and are demonstrably achievable with appropriate funding. These activities demonstrate the existing goodwill and capacity among partners; however, individual activities will be enhanced and expedited with suitable funding for a comprehensive higher education capacity-building project.

Existing strengths, capacities and collaboration

Satya Wacana Christian University (UKSW) was established by churches in eastern Indonesia. It has a sister university in Kupang, Timor (Artha Wacana), a second campus in Waingapu, Sumba (Wira Wacana), and is in the process of developing a new campus in Soe, Timor Tengah Selatan district (TTS). Students at UKSW are drawn primarily from eastern Indonesia, and there is an extensive and growing network of UKSW graduates working in government departments and academic institutions throughout this region. The university is a key provider of postgraduate coursework education for the region, and is seeking to further develop a curriculum of specific relevance to natural resource management and sustainable development in the wet–dry tropics. The university is also working towards accreditation as a provider of postgraduate research degrees. The university is now establishing a nursing school that will focus on the requirements of eastern Indonesia. UKSW hosts a Language Centre that is renowned for its Bahasa Indonesia and English courses. Many UKSW lecturing staff have PhD qualifications and are active researchers in areas such as molecular biology, rural development, aquatic ecology and environmental chemistry. The university's senior staff have good relationships with the Jakarta-based Ministries, whose support for research and other proposals is needed if they are to be viewed favourably by international granting agencies. The university

hosts a cross-faculty Centre for Studies in Eastern Indonesia, through which research projects in eastern Indonesia are coordinated. As part of a Memorandum of Understanding (MoU) between UKSW and TTS (one of five districts in West Timor), UKSW led a land-use survey in central West Timor in 2000 in collaboration with the Provincial Development Planning Board for East Nusa Tenggara (BAPPEDA NTT). Further research projects are planned under the auspices of this MoU with TTS. UKSW has a MoU with Charles Darwin University for research and education collaboration.

Nusa Cendana University (UNDANA) is a regionally important public university, located in Kupang. It has established undergraduate programs in education and primary industries. Its students are drawn primarily from NTT. Staff members at UNDANA have a developing research profile. At an institutional level the university is seeking to foster independent learning and entrepreneurial skills in their students and graduates. UNDANA is represented on the Board for the Centre for Studies in Eastern Indonesia at UKSW.

Charles Darwin University (CDU) has existing research capacity in the sustainable development of wet–dry tropical landscapes. While already an active collaborator with non-university partners, CDU has recently signed a MoU with the Northern Territory Government that focuses on strengthening engagement between the university and government agencies. CDU researchers have an established profile in areas such as remote sensing and geographic information systems (RS/GIS), tropical ecosystem function and management, molecular sciences and sustainable livelihoods. The university is a partner in a number of research centres such as the Tropical Savannas CRC, Biosciences North Australia and the Arafura Timor Research Facility. At present CDU researchers are involved in seven projects in Indonesia, five of which focus on eastern Indonesia and East Timor. CDU has a thriving postgraduate research program, an exemplar postgraduate coursework curriculum in tropical environmental management, and established expertise in flexible teaching and learning development. CDU shares MoUs with UKSW and University of the Sunshine Coast.

The University of the Sunshine Coast (USC) has existing expertise in sustainable environments, planning and sustainable tourism. USC and CDU share a MoU (with the University of Mataram, Lombok) for a Bahasa Indonesia in-country language program. The twin pillars of the university's mission are sus-

tainability and regional engagement. There is an emphasis on teaching and research designed around the needs of the local region, so there is expertise in designing an alignment that will be useful to the Indonesian partners across areas such as sustainable land management, health and education. USC also has some complementary areas of focus to those of CDU, for example, in biotechnology aligned with primary industries. USC has close working relationships with the Sunshine Coast Research Stations of the Government of Queensland Department of Primary Industries and Fisheries (one for aquaculture, one for forestry and one for horticulture). There is a core group of staff with broad experience of projects and development work in Indonesia and tropical and subtropical countries elsewhere. CDU and USC collaborated on the recent ACIAR-funded project on fire management in eastern Indonesia.

As regional universities, both CDU and USC are particularly sensitive to, and skilled in, addressing the types of capacity-building issues facing the eastern Indonesian institutions. Both universities have a focus on sustainability and regional engagement appropriate to the challenges facing eastern Indonesia. CDU and USC have a history of cooperation through the New Generation Universities consortium and both have a commitment to Indonesian language programs.

The existing links among these partners are demonstrated by following list of collaborative activities:

- CDU and UKSW members of staff have collaborated to run short courses in GIS/RS for UKSW and government staff, at UKSW.
- UKSW, in collaboration with CDU, is developing a proposal for an intensive field course in eastern Indonesia for advanced undergraduate and postgraduate coursework students. This new course will provide opportunities for cross-cultural engagement for participants, as well as increase the understanding of ecology, natural resource management and livelihoods in wet–dry tropical landscapes.
- A UKSW lecturer has applied for a scholarship for a postgraduate research qualification at CDU, applying RS/GIS to integrated rural development.
- UKSW is establishing a nursing school, focusing on the needs of eastern Indonesia, and has formally invited the participation of CDU Health Sciences staff in its establishment.
- Discussions are underway for CDU to assist UKSW in the establishment of a GIS/RS curriculum at undergraduate level. The Faculty of

IT (UKSW) has allocated 3 months of local salary and accommodation costs to support the secondment of a CDU staff member to UKSW.

- UKSW have trialled curriculum materials developed for the Master of Tropical Environmental Management at CDU as part of the Master of Biology at UKSW.
- CDU and USC staff together teach a residential Bahasa Indonesia course in Lombok (in collaboration with University of Mataram).
- CDU, UKSW and USC collaborated on the ACIAR Fire in Eastern Indonesia Project.
- A member of the Northern Territory (NT) Government staff who is fluent in Bahasa Indonesia and with extensive experience in the Indonesian cattle industry is on secondment to CDU to develop a postgraduate course in tropical beef production.

These examples illustrate activities already underway. However, with a larger integrated project and more comprehensive funding, collaboration will be integrated institutionally at the program level rather than as a suite of small projects.

Potential sources of funding

Umbrella funding for the project will be sought from bodies and programs such as UNESCO, the ASEAN–Australia Development Cooperation Program (AADCP), AusAid and ACIAR. Additional funds for specific activities within the project will be sought from bodies such as the Crawford Fund, The Australia–Indonesia Institute and the University Mobility in Asia and the Pacific (UMAP) program. In-kind and cash contributions will be sought from university partners as appropriate, particularly where this is likely to assist in attracting further funding. In addition, the support of the NT and NTT governments will be sought in the form of short-term staff secondments to educational projects, the provision of materials that may be included in curricula, funding for project staff travel or salary top-ups, and scholarship funds as appropriate.

* * * * *

Prepared on behalf of the 2006 Kupang workshop education working group comprising:

CDU: Professor Bob Wasson (Deputy Vice-Chancellor, Research), Professor Carole Kayrooz (Dean, Faculty of Education Health & Science), Dr Bronwyn Myers (Research Project Leader), Mr

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UNDANA: Professor Frans Datta (Rektor), Dr Erna Hartati (Dean, Faculty of Animal Sciences), Mr Boi Manongga (Lecturer), Dr Maximillian Kapa (Lecturer).

PEMBANGUNAN PEDESAAN TERPADU DI NUSA TENGGARA TIMUR

Lokakarya Internasional
Kupang, April 5-7th 2006



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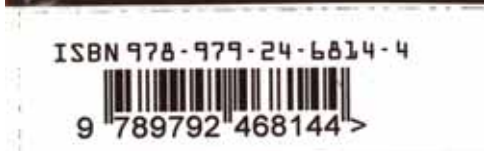
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Kata Pengantar

Prof. Ir. Frans Umbu Datta, M.App.Sc. Ph.D
(Rektor Universitas Nusa Cendana, Kupang, NTT – Indonesia)

Saya menyambut baik permintaan editor untuk menyampaikan kata pengantar pada penerbitan Prosiding Pembangunan Pedesaan Terpadu di Nusa Tenggara Timur, yang dikompilasi dari makalah- makalah dalam Lokakarya Internasional di Kupang, 5 – 7 April 2006.

Pembangunan masyarakat desa merupakan isu yang sangat penting dan strategis dalam konteks regional mengingat proporsi terbesar penduduk Indonesia, khususnya penduduk Nusa Tenggara Timur bermukim di desa dengan tingkat penghasilan yang rendah dan kualitas hidup yang masih memprihatinkan. Secara jujur haruslah diakui bahwa sudah banyak program pembangunan baik yang dilakukan oleh pemerintah maupun swasta, termasuk lembaga-lembaga swadaya masyarakat, namun belum mampu mengatasi persoalan-persoalan pembangunan di pedesaan secara tepat.

Salah satu alasan penting terhadap kegagalan tersebut adalah kurangnya atau bahkan ketiadaan kesesuaian antara problem yang dihadapi masyarakat pedesaan dengan program yang diterapkan. Di samping itu, kurangnya pendampingan juga merupakan alasan penting bagi ketidakberdayaan masyarakat pedesaan untuk memahami strategi program yang melemahkan minat, motivasi, dan tanggung-jawab masyarakat terhadap program-program yang dikembangkan. Kendala lain adalah jiwa ego-sektoral yang seringkali mengental dan mewarnai program-program pembangunan pedesaan, khususnya pada proyek-proyek pemerintah, menimbulkan konflik kepentingan yang pada ujungnya menurunkan keterpaduan dan efektifitas program pembangunan.

Terkait dengan isu-isu strategis di atas, saya menyambut gembira prosiding seminar internasional ini yang telah mengidentifikasi kendala-kendala utama, dan merumuskan strategi-strategi kunci bagi peningkatan program pembangunan pedesaan. Semoga rumusan-rumusan tersebut dapat menjadi acuan bagi para peneliti dan pemerintah sebagai pengambil kebijakan, serta para kontributor pembangunan pedesaan termasuk masyarakat dan LSM. Bagi Undana, hasil lokakarya dan prosiding internasional ini memberikan salah satu acuan dan dukungan moril bagi rencana yang sangat mendesak bagi pembukaan Program Master di Bidang Pembangunan Pedesaan Tropis (Master in Tropical Rural Development) bekerjasama dengan Charles Darwin University, University of the Sunshine Coast, dan Universitas Kristen Satya Wacana, Salatiga.

Terima kasih.

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Prakata

Lokakarya Pembangunan Desa Terpadu di Nusa Tenggara Timur (NTT) telah diselenggarakan di Kupang pada bulan April 2006. Lokakarya tersebut telah mempertemukan para tenaga ahli dari daerah untuk menyampaikan kebutuhan pembangunan jangka panjang. Makalah-makalah dalam lokakarya tersebut menyajikan tinjauan tentang kegiatan pembangunan pedesaan di NTT pada masa lalu dan masa sekarang. Yang terpenting dalam hal ini bahwa dalam makalah yang disajikan menunjukkan pentingnya pendekatan pembangunan pedesaan terpadu yang terkait erat dengan peneliti, badan pemerintah dan masyarakat yang efektif demi keberhasilan yang berkesinambungan. Dari lokakarya tersebut telah dihasilkan kerangka kerja untuk keterpaduan penelitian dan kegiatan pembangunan yang efektif di NTT. Makalah-makalah yang disajikan dalam lokakarya memberikan informasi pembangunan untuk penelitian dan kegiatan pembangunan kapasitas untuk masa depan di NTT.

Laporan lengkap hasil lokakarya diterbitkan sebagai berikut:

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Termasuk dalam jilid ini beberapa makalah lokakarya yang diterjemahkan dalam bahasa Indonesia. Disamping itu pula tercantum tinjauan lokakarya dan sambutan pembukaan yang disajikan dalam dua bahasa, Inggris dan Indonesia, dan daftar peserta loka karya.

Secara luas diketahui adanya kemiripan lingkungan, dan permasalahan utama dalam pengelolaan lahan di Indonesia Timur, Timor Timur dan Australia Utara. Pemandangan yang didominasi oleh sabana (padang rumput) merupakan tantangan utama dalam pengelolaan lahan dan sumber alam, kepemilikan lahan dan mata pencaharian penduduk pedesaan yang berkesinambungan.

Kerjasama internasional telah berkembang pada permasalahan pembangunan pedesaan di daerah selama 15 tahun terakhir. Ikatan formal telah disepakati antara badan-badan di Australia Utara dan Indonesia Timur pada pertengahan tahun 1990an. Ikatan tersebut dikembangkan dan diperluas melalui dua proyek yang didanai oleh ACIAR: tinjauan lokakarya, pengelolaan kebakaran dan pertanian yang berkesinambungan di Indonesia Timur dan Australia Utara, yang telah diselenggarakan di Darwin 13-15 April 1999 (Russell-Smith *et al* 2000) dan proyek pelaksanaan penelitian besar pada pengelolaan kebakaran pada lahan sabana dengan wilayah lapangan di Sumba Timur dan Ngada, Flores (<http://fireindon.cdu.edu.au>). Saat ini, pengelolaan kapasitas lahan di Indonesia timur (NTT) telah dikembangkan lebih lanjut melalui proyek AusAID Program Kaitan Sektor Publik (*an AusAID Public Sector Linkage Program project*) antara Charles Darwin University dengan BAPPEDA NTT (<http://IndonNRMpslp.ehs.cdu.edu.au>).

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UCAPAN TERIMAH KASIH

Kami mengucapkan terima kasih kepada organisasi-organisasi berikut yang mensponsori dan mendukung Lokakarya ini: Australian Centre for International Agricultural Research (ACIAR), Charles Darwin University, the Cooperative Research Centre for Tropical Savannas Management, BAPPEDA NTT, AusAID's, International Seminar Support Scheme, the Crawford Fund dan University of the Sunshine Coast. Kami sangat menghargai dukungan dari pemerintah Northern Territory dan Nusa Tenggara Timur. Terima kasih tertuju pula kepada saudara Yudhistira Yewangoe (BAPPEDA NTT) dan timnya yang telah menyediakan dukungan logistik dan tempat Lokakarya di Kupang. Juga kepada saudara Umi Rasmi dari Charles Darwin University yang telah melayani interpretasi yang cemerlang dan layanan terjemahan dalam mempersiapkan makalah-makalah, presentasi-presentasi dan laporan lokakarya. Juga kami ucapkan terima kasih kepada Universitas Nusa Cendana yang menolong dengan menerbit dan mencetak laporan lokakarya ini. Akhirnya kami ucapkan terima kasih kepada peserta Lokakarya yang telah memberikan sumbangan pikiran konstruktif dan budi baik yang berkelanjutan dari para mitra regional.

Daftar Singkatan:

ACIAR: Australian Centre for International Agricultural Research

AD: Anggaran Dasar

ART: Anggaran Rumah Tangga

APBDes: Anggaran Pembangunan dan Belanja Desa

APEC: Asia Pacific Economic Cooperation

AusAID: Australian Agency for International Development

Bappeda: Badan Perencanaan Pembangunan Daerah

BPD: Badan Perencana Desa

BPLM: Bantuan Pinjaman Langsung Masyarakat

BRI: Bank Rakyat Indonesia

CDU: Charles Darwin University, Northern Territory, Australia

DAS: Daerah Aliran Sungai

DPRD: Dewan Perwakilan Rakyat Daerah

Forpeldas: Forum Peduli Lingkungan Daerah Aliran Sungai

GIS: Geographic Information System

IDT: Inpres Desa Tertinggal

IRD: Integrated Rural Development (Pembangunan Pedesaan Terpadu)

ISSS: International Seminar Support Scheme (AusAID)

LKMD: Lembaga Ketahanan Masyarakat Desa

LSM: Lembaga Swadaya Masyarakat

KUD: Koperasi Unit Pedesaan

Musrenbangdes: Musyawarah Perencanaan Pembangunan Pedesaan

Musrenbangcam: Musyawarah Perencanaan Pembangunan Kecamatan

Musrenbangda: Musyawarah Perencanaan Pembangunan Daerah

NT: Northern Territory of Australia

NTT: Nusa Tenggara Timur

P4K Proyek Peningkatan Pendapatan Petani – Nelayan Kecil
PEM: Pemberdayaan Ekonomi Masyarakat
PEMDA: Pemerintah Daerah (Regional Government)
Perdes: Peraturan Pedesaan
Perda: Peraturan Daerah
PICMA: Participatory Integrated Catchment Approach (Pendekatan Partisipasi Pengelolaan DAS Terpadu)
PSDA-BM: Pengelolaan Sumber Daya Alam Berbasis Masyarakat
PSLP: Public Sector Linkage Program (AusAID)
Renstra: Perencanaan Strategis
RT: Rukun Tetangga
RTL: Rencana Tindak Lanjut
SDM K: Studio Driya Media Kupang
TLM: Tanaoba Lais Manekat
TTS: Timor Tengah Selatan
TTU: Timor Tengah Utara
UBSP: Usaha Bersama Simpan Pinjam
UKM: Usaha Kecil Menengah
USC: University of the Sunshine Coast, Queensland, Australia
UU: Undang-undang
YMTM: Yayasan Mitra Tani Mandiri

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GUBERNUR NUSA TENGGARA TIMUR
SAMBUTAN
PADA ACARA LOKAKARYA INTERNASIONAL
“PEMBANGUNAN PEDESAAN TERPADU DI NUSA TENGGARA TIMUR”
KERJASAMA PEMERINTAH NORTHERN TERRITORY AUSTRALIA DAN
PEMERINTAH DAERAH NUSA TENGGARA TIMUR
TANGGAL 05-07 APRIL 2006

Piet Alexander Tallo, SH
Gubernur Nusa Tenggara Timur

Yang terhormat :

- Chief Minister Northern Territory
- Ketua DPRD Propinsi NTT
- Anggota Musyarawah Pimpinan Daerah
- Pimpinan dinas / badan / biro/kantor atau yang mewakili
- Pejabat sipil dan militer
- Para pembicara dan peserta lokakarya

Singkatnya hadirin sekalian yang saya kasihi,
Pertama-pertama dengan keiklasan dan kesadaran yang mendalam saya mengajak kita semua untuk memanjatkan puji dan syukur ke hadirat Tuhan yang maha pengasih, karena atas cinta kasih dan perkenannya kita semua masih diberikan kesempatan untuk hadir dan mengikuti peristiwa penting dan strategis ini.

Apa yang kita lakukan pada hari ini adalah bentuk dan bukti cinta Tuhan kepada kita semua, dimana kita berkesempatan untuk saling mengisi dan memberi dalam suasana kekeluargaan. Perlu kita hayati bahwa tidak ada sesuatu yang kebetulan terjadi dalam peristiwa kemanusiaan, tetapi sudah merupakan bagian hubungan holistik dari rencana Allah terhadap manusia, rencana manusia terhadap sesama manusia dan rencana manusia terhadap lingkungannya yang kesemuanya diarahkan bagi peningkatan kualitas kehidupan dan penghidupan manusia selanjutnya, saya sampaikan terima kasih kepada pemerintah Australia, yang sampai dengan hari ini masih menyempatkan diri untuk terus memberikan bantuan dan dukungan kepada pemerintah Republik Indonesia pada umumnya dan secara khusus kepada pemerintah Propinsi Nusa Tenggara Timur.

Kita ketahui bersama bahwa sejak tahun 1970an sudah ada perhatian dan kerjasama pembangunan pedesaan melalui proyek-proyek secara sektoral, bahkan selama dua tahun terakhir ini telah terjalin kerjasama antara Australia dan Indonesia melalui program menejemen api di Kabupaten Sumba Timur dan Kabupaten Ngada yang berhasil dengan baik.

Selama pelaksanaan proyek ini banyak aspek yang sudah diteliti, terutama hubungan sumber daya alam dan pembangunan pedesaan yang berimplikasi pada kebutuhan kerjasama yang lebih intens antara masyarakat lokal, pemerintah local, LSM, dan

perguruan tinggi setempat dengan menggunakan pendekatan berbasis masyarakat. Pendekatan ini memberi peluang bagi pembangunan pedesaan terpadu yang mensejahterakan masyarakat pedesaan.

Kondisi alam Nusa Tenggara Timur pada umumnya kering dengan musim hujan yang kurang, sudah tentu memiliki karakteristik tersendiri dan karena itu menjadi sangat penting adanya upaya-upaya peningkatan kemampuan manajemen lahan sebagai bagian dari upaya peningkatan ketahanan pangan dan mengurangi tingkat kemiskinan masyarakat pedesaan di NTT serta meningkatkan kemampuan penggunaan lahan yang ramah lingkungan.

Hadirin Yang Saya Hormati

Pedesaan merupakan "*hinterland*" perkotaan dengan aktivitas utamanya adalah pertanian, karena itu sektor ini masih dominan, sekaligus sebagai sektor basis bagi pembangunan daerah NTT.

Kebijakan pemerintah dalam mendorong sektor pertanian melalui ekstensifikasi dan intensifikasi pertanian, distribusi aset, peralatan, bibit unggul, pola tanam dan berternak merupakan faktor-faktor yang perlu digerakan untuk dapat meningkatkan produksi dan produktivitas dengan dukungan perbaikan irigasi, skim kredit bagi petani, peningkatan ketrampilan petani yang pada waktunya akan mendorong pertumbuhan ekonomi daerah.

Suatu realita kehidupan pertanian pedesaan yang masih mengelola pertanian sebatas pada pertanian subsisten, mengakibatkan daya tawar pasar dari produk sangat rendah, dan untuk menjawab permasalahan ini dibutuhkan suatu pendekatan pembangunan pedesaan terpadu yang berkelanjutan.

Harapan dari Lokakarya

Kausalistik antara kearifan lokal dan upaya peningkatan produksi dan produktivitas pertanian diharapkan dapat diimplementasikan dengan baik melalui kegiatan yang bersifat holistik. Karena itu melalui lokakarya internasional ini saya berharap kita dapat membangun suatu komitmen strategis dan saling mengikat dengan "*komunitas internasional*" dalam rangka pembangunan pedesaan yang terintegrasi dan berkelanjutan kemitraan antara pemerintah, LSM, lembaga donor, dan lembaga pendidikan untuk bersama-sama menaruh perhatian pada pembangunan pedesaan yang berkelanjutan amat diperlukan.

Penjabaran "pertumbuhan melalui pemerataan" sebagai strategi pembangunan daerah Nusa Tenggara Timur adalah mensyaratkan agar aspek pemerataan sungguh-sungguh mendapat perhatian sehingga tidak diartikan sempit tentang makna "*sharing of resources*" tetapi dalam pengertian yang lebih luas dan dinamis, yaitu bagaimana memberdayakan masyarakat melalui tiga pilar yaitu SDM, ekonomi dan hukum yang digerakkan oleh tiga faktor dinamis yaitu peningkatan aksesibilitas masyarakat terhadap berbagai sumber kemajuan, transformasi birokrasi untuk meningkatkan efisiensi dalam penyelenggaraan tugas-tugas pemerintahan, pembangunan dan pelayanan publik serta pendayagunaan modal sosial untuk menjamin partisipasi masyarakat yang optimal.

Kearifan lokal yang saya maksudkan adalah membangun dengan apa yang ada sebagai salah satu perspektif millenium development goals yang mengutamakan kelestarian lingkungan dan kemitraan global karena itu siapapun dia umat manusia yang mencintai nilai-nilai kemanusiaan kita harus dapat bekerjasama saling membantu dan menguatkan untuk membangun kesejahteraan.

Tentu lokakarya internasional ini telah mengagendakan isu-isu penting yang dapat didiskusikan dan disepakati serta direkomendasikan untuk diimplementasi lebih lanjut. Saya berharap para peserta lokakarya ini mendiskusikan isu-isu itu dengan sungguh-sungguh untuk menghasilkan sejumlah rekomendasi yang dapat disumbangkan kepada pemerintah daerah Nusa Tenggara Timur, LSM-LSM, Perguruan Tinggi dan Komunitas Internasional.

Pada kesempatan ini juga saya menyampaikan terima kasih yang tulus kepada penyandang dana dari Australia untuk mebiayai lokakarya ini. Mereka adalah Northern Territory Government, Charles Darwin University, ACIAR, AusAID, Tropical Savannas Cooperative Research Centre University of Sunshine Coast, dan Crawford fund.

Akhirnya dengan memohon tuntunan dan rahmat serta bimbingan Tuhan yang maha kuasa dan dengan seijin semua yang hadir pada acara ini, saya membuka acara lokakarya internasional pembangunan pedesaanan terpadu ini dengan resmi. Kiranya tuhan memberkati kita sekalian.

**“INTEGRATED RURAL DEVELOPMENT IN EAST NUSA TENGGARA”
INTERNATIONAL WORKSHOP
OPENING SPEECH
COLLABORATION BETWEEN GOVERNMENTS OF THE NORTHERN
TERRITORY OF AUSTRALIA AND EAST NUSA TENGGARA**

Piet Alexander Tallo, SH
Governor of East Nusa Tenggara

The honourable:

- Chief Minister of the Northern Territory
- Head of DPRD East Nusa Tenggara province
- Members of Musyarawah Pimpinan Daerah (District Leaders Forum)
- Heads or representatives of agencies / bodies / bureau/ office
- Civil and military officers
- Speakers and workshop attendees

Beloved attendees,

First of all, I would like to ask you all to pray to God; it is because of his love and consent that we are able to attend this important event.

What we are doing here today is proof of God’s love for all of us. We have been given an opportunity to exchange ideas in a family atmosphere and we should understand that nothing happens by accident. Everything is part of a holistic connection between God’s plans for humans, human plans for other humans, and human plans for their environment, all of which have the common goal of improving human welfare. Next, I would like to thank the Australian government which has given support and assistance to the Indonesian government and the government of East Nusa Tenggara Province.

We are all aware of the collaboration that has occurred since the 1970s on rural development through sector-based projects. Over the past two years there has also been successful collaboration between Australia and Indonesia on a fire management program for East Sumba and Ngada districts.

During the project, many aspects have been researched, with particular attention given to examining the relationship between natural resources and rural development. As a result we have found a clear need for intensive collaboration between local communities, local government, NGOs and Universities through a community-based approach. This approach gives an opportunity for Integrated Rural Development to improve community welfare. In general, East Nusa Tenggara has a dry environment with low rainfall. The unique environment of NTT means there is a great need for increased land management skills to improve food security and reduce poverty for rural communities in an environmentally sustainable manner.

Villages are ‘hinterlands’ of cities which rely on agriculture as the dominant livelihood. Agriculture therefore forms an important basis for development in East Nusa Tenggara.

Government policy has supported the extension and intensification of the agriculture sector through the distribution of assets and tools, improving seed quality, planting methods and livestock rearing to increase production. To encourage economic growth

there need to be improvements in irrigation systems, credit schemes for farmers, and farmers need to be assisted to become more creative in their farming practices.

The reality is rural that agriculture is still limited to subsistence farming producing development approach to address this issue.

It is hoped that local wisdom can be integrated into efforts to increase agricultural productivity in a holistic way. I hope that through this international workshop, we can establish a strategic commitment amongst the international community to address sustainable integrated rural development in partnership with governments, NGOs, funding agencies and education institutions.

An important criterion for strategic development of the NTT region should be 'growth through equitable distribution'. This should not be limited to sharing of resources, but should have a more dynamic meaning that addresses the empowerment of communities through three pillars, that is, human resources, economics and law. These should be enabled through improved access to community resources, bureaucratic transformation and increased efficiency within government, the public service and using social capital to manage community participation.

Local wisdom allows appropriate development using available resources. This is in line with the Millenium Development Goals which prioritise environmental conservation and global partnerships. All of us who cherish humanitarian values should work together, support and strengthen each other to improve community well-being.

I believe that this international workshop has an important agenda to discuss issues and agree on recommendations for future implimentation. I hope that participants can discuss the issues seriously in order to make recommendations for the East Nusa Tenggara Government, NGOs, education institutions and the international community.

I would also like to take this chance to give my sincere thanks to the Australian funding bodies for running this workshop. They are the Northern Territory Government, Charles Darwin University, ACIAR, AusAID, Tropical Savannas Cooperative Research Centre, University of the Sunshine Coast and the Crawford Fund.

Finally, I would like to ask for God's guidance and request your permission to formally open this Integrated Rural Development International Workshop. God bless us.

PEMBUKAAN LOKAKARYA PEMBANGUNAN DESA TERPADU DI KUPANG

Clare Martin, MLA
Chief Minister of the Northern Territory and
Minister for Asian Relations and Trade, NT, Australia

Selamat datang di lokakarya Pembangunan Pedesaan Terpadu. Hormat saya khususnya untuk Gubernur Piet Tallo yang keterlibatannya menunjukkan betapa pentingnya forum ini. Dengan sangat menyesal saya tidak dapat menghadiri acara ini, namun saya sangat senang mengetahui hadirnya wakil-wakil forum pemerintah, dinas, badan pendidikan dan penelitian, lembaga sosial masyarakat dan badan keuangan baik Indonesia maupun Northern Territory.

Seperti yang telah diketahui bersama, Proyek ACIAR telah terselesaikan pada bulan Juni 2005. Hal ini telah membantu sejumlah masyarakat di Nusa Tenggara Timur dalam peningkatan pengelolaan perencanaan dan pelaksanaan, begitu juga dalam penyelenggaraan pelatihan bagi pegawai pemerintah Indonesia pada *Geographic Information System* serta pemetaan lahan dan kebakaran. Kesuksesannya telah banyak menunjukkan tentang organisasi di Nusa Tenggara Timur seperti BAPPEDA, Departemen Pertanian dan Kehutanan, Lembaga Sosial Masyarakat dan universitas di Sumba dan Salatiga, begitu juga organisasi di Northern Territory seperti, Charles Darwin University, Tropical Savannas CRC, dan Northern Territory Bush Fire Council. Akan tetapi yang terpenting adalah, Proyek kebakaran ACIAR telah menghasilkan kerjasama yang mantap dan kuat antara Nusa Tenggara Timur dan Australia Utara. Hal ini telah memuluskan jalan kerjasama kedepan dalam kegiatan seperti lokakarya yang kita hadiri hari ini.

Lokakarya ini merupakan kesempatan luar biasa untuk menjelajahi berbagai jalan untuk dapat bekerjasama di masa yang akan datang khususnya dalam pembangunan pedesaan terpadu di Nusa Tenggara Timur. Kita telah menjalankan kerjasama selama lebih dari satu abad dan sangat penting bagi kita untuk terus mempelajari kesalahan yang telah terjadi dan membangun diatas pondasi yang kuat yang telah kita letakkan pada pengelolaan sumber daya lahan.

Pembangunan pedesaan terpadu dan pengelolaan lahan merupakan isu besar di wilayah kami, khususnya ketergantungan terhadap sumber daya alam dan pertanian. Hal ini juga sangat penting bagi pengelolaan sumber daya alam dan pengembangan usaha pedesaan yang berkelanjutan.

Selang beberapa waktu, Australia Utara telah menjalin kerja sama dengan Nusa Tenggara Timur dalam berbagai proyek, termasuk proyek peternakan. Sebagai contoh, di tahun 1997 perjanjian kerjasama telah ditandatangani antara the Northern Territory Department of Primary Industries, Fisheries and Mines, Perikanan, dan Pertambangan serta Badan Pengkajian Tehnologi Pertanian NTT di Kupang. Perjanjian tersebut menghasilkan beberapa kerjasama proyek, pertukaran informasi dan presentasi pada seminar regional.

Dalam lokakarya ini kita akan membangun pada badan tersebut untuk bekerja dan menjelajahi kesempatan-kesempatan untuk bekerja sama di bidang seperti pertanian pangan dan kehutanan yang akan memberikan keuntungan pada kedua belah pihak, Australia Utara dan Nusa Tenggara Timur. Kita juga memiliki Pengetahuan yang cukup di bidang pemetaan penggunaan lahan dan praktek pertanian terbaik dan kami berharap untuk dapat berbagi dengan Nusa Tenggara Timur pada proyek-proyek yang akan datang.

Charles Darwin University dewasa ini tengah bekerja pada proyek pembangunan kapasitas yang di biyai oleh AusAID melalui *Public Sector Linkage Program* yang bertujuan untuk memperbaiki kapasitas pengelolaan lahan untuk pengembangan pedesaan di Indonesia Timur yang berkelanjutan.

Kami berkomitmen untuk memperkuat kerjasama tiga Negara dalam wilayah di Nusa Tenggara Timur dan Timor Leste. Hal ini telah berlangsung di bidang pendidikan, kesehatan dan olah raga. Bahkan, saya sangat berbahagia bahwa Northern Territory akan mengirimkan tim *football* ke Kupang akhir bulan ini dalam rangka perayaan ulang tahun Kota Madya Kupang.

Saya juga berharap untuk dapat mengunjungi Kupang dalam waktu dekat untuk menyampaikan sambutan pada seminar international tentang Membangun dan Mengembangkan hubungan format tiga Negara antara Kupang-Darwin-Dili pada bidang Pariwisata, Pendidikan dan Ekonomi.

Kami mempunyai keinginan dan harapan yang kuat dalam wilayah kami untuk dapat bekerja secara dekat dengan teman-teman kami di sebelah utara. Untuk itu saya ingin menyampaikan ucapan terimakasih pada semua pihak yang terlibat dalam penyelenggaraan lokakarya ini termasuk para sponsor dan peserta. Saya berharap anda semua tetap dalam keadaan baik hingga beberapa hari mendatang serta menjadi harapan kami agar kebjajikan dan persahabatan yang ada diantara kita akan terus berlanjut untuk lebih diperkuat dan dikembangkan di tahun-tahun kedepan.

Terima kasih.

OPENING ADDRESS
CHIEF MINISTER OF THE NORTHERN TERRITORY
Clare Martin, MLA

Chief Minister of the Northern Territory and
Minister for Asian Relations and Trade, NT, Australia

Welcome to the Integrated Rural Development Workshop. I'd particularly like to pay my respects to Governor Piet Tallo whose involvement today demonstrates the importance of forums such as this. I'm disappointed I can't be with you in person but I'm delighted that both Indonesia and the Northern Territory have such a strong presence, with representatives from government agencies, education and research institutions, non-government organisations and funding agencies.

As you are aware, the ACIAR fire project was completed in June 2005. It has helped a number of Nusa Tenggara Timur communities improve their fire management planning and practices, as well as providing training for Indonesian government officers in geographic information systems and land and fire mapping. Its success says a lot about organisations in Nusa Tenggara Timur like BAPPEDA, the Department of Forestry and Agriculture, non-government organisations and universities in Sumba and Salatiga, as well as organisations in the Northern Territory, such as Charles Darwin University, Tropical Savannas CRC, and the Bushfires Council of the Northern Territory. But most importantly, the ACIAR fire project has produced firm relationships and a strong sense of goodwill between Nusa Tenggara Timur and the Territory. It has paved the way for future collaborative activities like the workshop we are attending today.

This workshop is a tremendous opportunity to explore other ways we can cooperate in the future and, in particular, in the area of integrated rural development in Nusa Tenggara Timur.

We've been working together for more than a decade now and it's vital we continue to learn from past experiences and build on the strong foundation we have laid in the area of land resource management.

Integrated rural development and land management are big issues in our region, especially given our reliance on natural resources and agriculture. And it's vital that our natural resource management and rural enterprise development is sustainable.

Over the years, the Territory has worked with Nusa Tenggara Timur on a range of projects, including livestock projects. For example, in 1997 a cooperation agreement was signed between the Northern Territory Department of Primary Industry, Fisheries and Mines and the NTT Assessment Institute for Agricultural Technology in Kupang. This agreement resulted in a number of collaborative projects, information exchanges and presentations at regional seminars.

During this workshop we'll be building on that body of work and exploring opportunities for collaboration in areas such as foodcrops and forestry that will benefit both the Territory and Nusa Tenggara Timur. We also have significant knowledge of land use mapping and agricultural best practice and we look forward to sharing this with our Nusa Tenggara Timur partners in future projects.

Charles Darwin University is now working on a capacity building project funded by AusAID through the Public Sector Linkage Program. Its aim is to improve land management capacity for sustainable rural development in Eastern Indonesia.

We are committed to strengthening trilateral cooperation in our region with Nusa Tenggara Timur and Timor Leste. This is already happening in the areas of education, health and sport. In fact, I'm very pleased that the Territory is sending a football team to Kupang later this month for the 10th anniversary celebrations of the Kupang Municipality. I am also looking forward to visiting Kupang in the near future to address the International Seminar on Establishing and Developing a Trilateral Relationship Format among Kupang-Darwin-Dili in Tourism, Education and the Economy.

We have a strong interest in our region and we want to work closely with our friends to the north. I would therefore like to thank everyone who has been involved in organising this workshop, including the sponsors and participants. I wish you all well over the next few days and it's my hope that the goodwill and friendship that exists between us continues to strengthen and grow in the years ahead.

PEMBANGUNAN PEDESAAN TERPADU DI NUSA TENGGARA TIMUR, INDONESIA: TINJAUAN TERHADAP KESEMPATAN, KENDALA DAN PILIHAN UNTUK MENINGKATKAN MATAPENCAHARIAN

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Abstrak

Makalah ini merupakan kumpulan kunci utama yang timbul dalam presentasi dan diskusi pada lokakarya serta penjabaran terhadap pelajaran penting yang dapat diambil untuk sukses masa depan program pembangunan desa terpadu demi peningkatan mata pencaharian di Nusa Tenggara Timur. Peningkatan program untuk pembangunan desa terpadu yang disepakati oleh peserta lokakarya telah pula di sampaikan. Telah disepakati bersama bahwa semestinya program tersebut dapat dijadikan sebagai dasar dalam merumuskan serta melaksanakan proposal proyek. Makalah ini juga melaporkan hasil pemeriksaan yang dilakukan oleh peserta lokakarya terhadap kesempatan untuk pembangunan pedesaan secara terpadu serta kunci kendalanya. Kendala-kendala tersebut dibedakan sesuai dengan tingkat kemampuan terhadap perubahan melalui proyek pembangunan desa terpadu. Garis besar dalam makalah ini adalah kesepakatan dalam rencana pelaksanaan untuk mengembangkan hasil dari lokakarya dan strategi dalam mempersiapkan proposal proyek pembangunan desa terpadu dengan sukses.

Pengantar

Dalam makalah tinjauan umum ini akan disampaikan sintesis masalah penting pada presentasi dan diskusi serta rekomendasi kunci yang telah disepakati oleh peserta yang hadir pada lokakarya pembangunan pedesaan terpadu (integrated rural development, IRD) di Nusa Tenggara Timur (NTT), yang diselenggarakan di Kupang, bulan April 2006. Meskipun pembangunan pedesaan terpadu merupakan sebuah pendekatan yang menarik dalam memperbaiki mata pencaharian penduduk desa di NTT, hal ini bukan

merupakan hal yang baru dan tidak selalu terlaksana sesuai dengan rencana yang diharapkan. Makalah dan diskusi pada lokakarya ini mengidentifikasi bahwa kesuksesan IRD di masa yang akan datang memerlukan modifikasi mayor terhadap pola serta implementasi pendekatan yang akan digunakan.

Investasi yang telah lalu dalam pembangunan pedesaan terpadu di NTT telah gagal dalam memberikan janji keuntungan pada penduduk pedesaan. Kemiskinan, pengangguran, dan standar kesehatan tidak membaik. Penelitian terhadap masalah ini dan kegagalan proyek-proyek serupa telah mengidentifikasi sejumlah keterpurukan proyek-proyek IRD dan ini telah digunakan sebagai bahan pemikiran ulang terhadap pendekatan serta pelaksanaannya. Dengan melihat kedepan, pembangunan desa terpadu di NTT akan berbasis pada kegagalan dan keberhasilan yang pernah dialami sehingga dapat mencakup prinsip-prinsip kunci terhadap pelaksanaan pendekatan yang sukses.

Kerjasama antara Australia Utara (Northern Territory) dan Indonesia Timur pada pembangunan desa terpadu telah terjalin sejak pertengahan tahun 1990an. Kerjasama tersebut diperkuat dan diperluas melalui dua proyek yang dibiayai oleh ACIAR, yaitu proyek pengelolaan kebakaran pada penataan lahan sabanah (Russell-Smith et al 2000 dan Russel-Smith et al.2007). Saat ini kapasitas pengelolaan lahan di Indonesia Timur (NTT) telah dikembangkan melalui proyek *AusAID Public Sector Linkage Program* antara Charles Darwin University dan BAPPEDA NTT (lihat situs proyek PSLP (<http://IndonNRMpslp.ehs.cdu.edu.au>)). Dalam laporan hasil lokakarya telah ditangkap beberapa pelajaran atas keberhasilan serta kegagalan dimasa lalu, baik dalam praktek maupun pendekatannya, dan focus pada aktivitas terpadu untuk masa datang demi tercapainya hasil pembangunan di pedesaan NTT yang berkesinambungan.

Tujuan dari lokakarya tersebut adalah untuk:

- meninjau kembali aktifitas yang berkenaan dengan perbaikan mata pencaharian di NTT
- membangun dan memperluas kolaborasi antara Indonesia dan Australia
- mengembangkan hubungan yang lebih luas dengan badan penyumbang dana (diluar Indonesia dan Australia)
- mendiskusikan arah kegiatan-kegiatan di masa depan.

Dalam tiga hari pelaksanaan lokakarya, Dua puluh tujuh presentasi disampaikan mengenai pendekatan pembangunan pedesaan terpadu, potensi dari berbagai bentuk usaha untuk NTT, aspek pengelolaan lingkungan, kegiatan LSM dalam mendukung penduduk desa, peran wanita, hak akan tanah dan kontribusi pendidikan serta kredit-mikro dalam pembangunan desa. Secara umum presentasi tersebut telah memenuhi tujuan yang pertama. Selanjutnya, hasil dari diskusi pleno dan diskusi kelompok-kecil juga ditambahkan pada tinjauan terhadap masalah serta kesempatan dalam memperbaiki mata pencaharian penduduk desa. Arah kegiatan kedepan telah di sampaikan dalam kajian prioritas untuk propinsi dan kesepakatan pada pendekatan pembangunan desa terpadu yang lebih baik. Telah diajukan bahwa pendekatan tersebut akan dijadikan sebagai basis dalam pembuatan pola serta implementasi dari strategi penelitian dan proposal proyek untuk dipertimbangkan oleh badan penyumbang dana internasional.

Perwakilan dari empat badan penyumbang dana internasional juga telah memberikan presentasinya dalam lokakarya tersebut. Prospek dalam memperkuat dan memperluas kolaborasi antara Indonesia dan Australia di NTT didukung oleh keterlibatan aktif dari perwakilan organisasi terkait dari Australia dan NTT termasuk badan pemerintah, perguruan tinggi, LSM dan organisasi penelitian nasional dan internasional. Seperti tercermin dalam presentasinya mengenai pentingnya kolaborasi, Dr Frans Seda menyampaikan nilai yang terkandung dalam kerjasama antara NTT dan Northern Territory selama lebih sepuluh tahun pula disampaikan bahwa hal ini merupakan jalan setapak menuju pembangunan desa terpadu di NTT.

Hasil yang diharapkan dari lokakarya tersebut termasuk:

- pelajaran (keberhasilan dan keterbatasan) dari kegiatan masa lalu serta saat ini di NTT dalam kaitannya dengan pendekatan pembangunan desa terpadu.
- mengidentifikasi kesempatan dan kendala untuk pembangunan desa terpadu di NTT
- kesepakatan pada prioritas pembangunan desa terpadu untuk NTT dan daerah yang berpotensi untuk kolaborasi antara organisasi Indonesia dan Australia

Tiga hasil tersebut diatas merupakan struktur pada makalah tinjauan umum ini.

Pelajaran yang didapat untuk suksesnya pembangunan pedesaan terpadu di masa depan

Pada sambutan pembukaan lokakarya yang disampaikan oleh bapak Gubernur Nusa Tenggara Timur disebutkan bahwa pembangunan desa terpadu adalah mengenai penyediaan kesempatan pada penduduk desa untuk memperbaiki kehidupan mereka yaitu dengan bergerak dari prokusi untuk nafkah belaka menuju ke produksi untuk komersil dengan cara yang berkelanjutan. Beliau mengajukan bahwa pembangunan desa terpadu memerlukan masukan pengetahuan, dukungan kebijakan pemerintah pelayanan pemerintah dan pembangunan prasarana, akses financial serta komitmen untuk bekerja sama baik local maupun internasional. Northern Territory Chief Minister pada sambutannya menggambarkan bahwa pembangunan desa terpadu sebagai integrasi pengembangan kegiatan usaha pedesaan dan membangun pengelolaan sumber alam pada pengetahuan yang kritis serta pembangunan kapasitas. Chief Minister juga mengungkapkan pentingnya tindakan yang berkelanjutan.

Profesor Saragih menyampaikan makalahnya mengenai sistem agribisnis sebagai contoh dari pada IRD, pengintegrasian antara produksi pertanian dengan pemasok masukan dari hulu, pemroses dari hilir dan dari segala sektor serta pelayanan yang mendukung usaha tersebut termasuk didalamnya adalah pelayanan prasarana pemerintah, perbankan dan pelayanan finansial. Bapak Saragih menekankan bahwa dalam sistem agribisnis semua pihak terkait akan mendapatkan keuntungan atas perkembangannya termasuk petani, pasar, pemroses, eksportir dan konsumen.

Djoeroemana, Salean dan Nope mengungkapkan bahwa pembangunan pedesaan terpadu telah gagal dalam memperbaiki kehidupan masyarakat pedesaan karena mereka sentralis,

tehnokratis, dan fokusnya sempit dalam meningkatkan produksi pertanian. Kemiskinan masih meluas di kalangan rumah tangga di NTT yaitu sekitar 60% dari jumlah penduduk yang tergolong miskin di tahun 2005. Upaya-upaya masa lalu telah gagal karena mereka tak menghiraukan tindakan berkelanjutan, konteks local, pembangunan kapasitas local, dan partisipasi masyarakat. Djoeroemana, Salean dan Nope mengajukan pendekatan alternatif untuk pembangunan pedesaan terpadu yang menekankan pembangunan kapasitas masyarakat dan keberlanjutan. Mereka menyadari bahwa pembangunan pedesaan terpadu harus mencakup sector fisik, sosial-budaya, ekonomi dan politik. Dirincikan bahwa pendekatan pembangunan pedesaan terpadu mereka sebagai pendekatan mata pencaharian masyarakat pedesaan yang berkelanjutan.

Elemen-elemen kunci dari pendekatan mata pencaharian penduduk desa yang berkelanjutan untuk membangun pedesaan terpadu adalah:

- berpusat pada masyarakat dan dikendalikan masyarakat
- pendekatan holistik yang dibangun atas dasar pengetahuan yang telah ada pada masyarakat mengenai kesempatan, kendala serta kapasitasnya untuk peningkatan dan pertumbuhan
- didamik dan bersedia untuk berubah, dengan berbagi dalam belajar dan memonitor partisipasi
- berfokus pada pembangunan kapasitas untuk individu dan jaringan sosial yang dapat meningkatkan potensial yang ada demi mencapai sasaran
- harus dibangun atas dasar pemahaman setara dalam berbagai permasalahan yang relevan serta konteksnya dengan masyarakat kecil dan kebijakan serta strategi makro dan segala kaitannya
- adanya kelangsungan dan keberlanjutan suatu proses dan hasil dalam suatu siklus

Usulan mereka pada lokakarya yaitu bahwa pembangunan mata pencaharian penduduk desa yang berkelanjutan memerlukan integrasi fisik, sosial-budaya, ekonomi dan politik. Mereka mengajukan suatu sistem untuk dapat dipertimbangkan.

Presentasi pada pendekatan pembangunan desa terpadu menimbulkan komentar yang mendukung dari para peserta yang menambahkan pentingnya factor-faktor tersebut dibawah ini:

- memahami karakteristik khusus dari penduduk setempat, kepribadian penduduk yang merupakan fokus pada perencanaan pembangunan desa terpadu
- penyediaan bimbingan teknis jangka panjang dan bimbingan agribisnis melalui keterlibatan masyarakat dengan pihak yang sesuai menurut budaya mereka.
- perlunya mekanisme untuk menghubungkan penelitian, kebijakan dan perencanaan.
- dengan menggunakan pembagian area agro-ekologi, mikro ekologi pasar, agro-sosial-budaya.
- strategi pembangunan yang dipimpin oleh masyarakat (pemusatan masyarakat)
- peran wanita dalam pemecahan lingkaran kemiskinan.
- menghindari kelemahan yang dialami pada proyek IRD yang lalu yaitu yang berorientasi pada pertumbuhan ekonomi jangka pendek.

Tabel 1 rangkuman atas butir-butir yang di buat dari makalah yang disampaikan serta diskusi pleno pada lokakarya. Dalam tabel tersebut tercantum tuntunan untuk pengembangan usulan proyek yang direncanakan berdasar pada pembangunan pedesaan terpadu serta untuk pengelolaan proyek IRD.

Tabel 1. Pelajaran yang diperoleh untuk perbaikan perbaikan rancangan dan implementasi dalam proyek pembangunan pedesaan terpadu

Area	Kelemahan masa lalu	Menuju sukses
Lingkungan institusional	<ul style="list-style-type: none"> • Kontrol dari atas ke bawah oleh pemerintah pusat dan lembaga bantuan • Pengendalian persediaan merupakan pengendalian permintaan (menggunakan pengendalian masyarakat) • Proyek yang di selenggarakan memiliki unit pengelolaan, yang tidak melalui lembaga setempat 	<ul style="list-style-type: none"> • Mendesentralisasikan kendali • Mengajak masyarakat untuk berpartisipasi • Membangun komitmen untuk menuju sasaran proyek • Memenuhi kebutuhan penduduk setempat • Melibatkan peserta local melalui organisasi lokal • Membangun kepemilikan bersama melalui pengelolaan bersama inisiatif • Mengembangkan dan mengadopsi rancangan institusional dalam mengkoordinir pembuatan keputusan dalam masyarakat, antar masyarakat, dan antara masyarakat dengan pihak terkait seperti pemerintah dan organisasi sosial
Rancangan dan implementasi proyek	<ul style="list-style-type: none"> • Buruknya rancangan proyek atas dasar pengkajian permasalahan yang buruk • Perhitungan yang tidak tepat mengenai kondisi setempat – sosial, budaya dan ekonomi 	<ul style="list-style-type: none"> • Fleksibilitas pola proyek • Lokasi – akan membentuk pola proyek informasi dan implementasiannya • Sumber pengetahuan setempat
Hubungan pengelolaan dan jaringan	<ul style="list-style-type: none"> • Buruknya interaksi antara pemeran proyek dan orang – orang yang akan menanggung akibat hasil dari proyek 	<ul style="list-style-type: none"> • Analisa modal sosial dan penerapan institusional • Menciptakan jaringan di dalam masyarakat dan membangun kepercayaan
Keberlanjutan	<ul style="list-style-type: none"> • Pelatihan yang diberikan pada staff local tidak mencukupi • Perhatian yang tidak memadai untuk perawatan yang berkelanjutan perlengkapan dari proyek yang dibeayai dan kapasitas local untuk melanjutkannya setelah pelaksanaan proyek • Gambaran waktu proyek terlalu pendek untuk penyampaian hasil selama fase implementasi • Rendahnya keterlibatan dan kepemilikan masyarakat 	<ul style="list-style-type: none"> • Melatih staf local supaya dapat melanjutkan setelah selesainya proyek. • Investasi perlengkapan harus dijaga sesuai dengan kapasitas perawatan dari masyarakat setempat • Pemaduan proyek kedalam institusi yang ada • Gambaran waktu proyek harus jelas • Keterlibatan masyarakat harus ada ditiap tahap proyek

Kesempatan dan kendala pada pembangunan pedesaan terpadu

Presentasi yang disampaikan dalam lokakarya menyebutkan berbagai kesempatan serta kendala dalam pembangunan pedesaan terpadu. Beberapa makalah, seperti yang disampaikan oleh Masadu mengenai kepemilikan lahan dan yang disampaikan oleh Siagian dan Rozali mengenai kredit-mikro, menyebutkan keterbatasan khusus untuk

pembangunan desa terpadu di NTT. Sementara yang lain menyampaikan bahwa faktor fisik, ekonomi dan lingkungan serta kelembagaan telah mempengaruhi usaha-usaha seperti pertanian, peternakan dan kehutanan. Dalam presentasi juga disebutkan tentang peran wanita, pengelolaan lingkungan serta peran dari LSM. Selama lokakarya tersebut, peserta bekerja dalam kelompok kecil untuk mengidentifikasi serta mendiskusikan kesempatan dan kendala dalam membangun desa terpadu dengan berdasarkan pada presentasi, diskusi pleno, dan pengetahuan serta pengalaman masing-masing. Hasil dari diskusi kelompok tersebut dirangkum dalam tabel 2, 3 dan 4.

Tabel 2. Kesempatan untuk pembangunan pedesaan terpadu (IRDO)

IRDO	Area komponen			
Wana tani terpadu	Pohon penghasil kayu yang bernilai tinggi	Kayu untuk bahan bakar	Tanaman pakan ternak	Ternak kecil
	Kayu untuk bahan bakar	Perlindungan DAS		
	Pemanenan yang berkelanjutan pada sumber daya alam hutani		Hasil tanaman umur panjang tahun – Mede, kopi dan lainnya	
Pemrosesan kayu	Kayu untuk konstruksi	Produk nilai tambah	Pabrik penggilingan	
Produk hutan non-kayu	Lak	Zat pewarna kain	minyak	Madu, buah, gula aren
	Rotan	Bumbu-bumbu	Obat-obatan	Kacang-kacangan
Sistem tanam berkelanjutan	Hortikultura	Tanaman musim kering yang baru	Tanaman rentetan – contoh, <i>N fixation</i>	Usahatani subsisten
	Perlindungan panen			
Sistem peternakan berkelanjutan	Peternakan sapi yang semi-intensif	Produksi ternak kecil	Tanaman pakan ternak	Usaha ternak subsisten
	Pengendalian penyakit pada ternak			
Proses pasca panen	Hasil tanaman	Hasil ternak	Transportasi, pengemasan dan penyimpanan	
Kerajinan tangan	Tenun	Ukiran kayu.	Wewangian	
Pemasaran hasil pertanian	Kebijakan penentuan harga	Koperasi	Pembangunan pasar-kaitannya dengan pedagan eceran	Analisa pasar
	Peran wanita dalam pemasaran	Perbedaan produk	Perdagangan lintas batas dengan Timor Leste	
Pariwisata	Eco-Pariwisata	Pariwisata pertanian	Pariwisata kebudayaan	
Pengelolaan perikanan pesisir pantai yang berkelanjutan	Perlengkapan dan ketrampilan	Pemrosesan	Pembangunan pasar dan prasarana	Pengelolaan perikanan dan peran pemerintah

Tabel 3. Kesempatan pembangunan pedesaan terpadu – Pengelolaan DAS terpadu (IRDO)

IRDO	Wilayah komponen			
Pengelolaan DAS terpadu	Memperbaiki persediaan air dan kualitasnya	Pengelolaan kebakaran	Pengelolaan rumput liar	Pertanian campuran
	Pengelolaan aliran sungai	Penanaman sesuai dengan persediaan air	Tanaman rentetan – contoh N fixation	Usahatani subsisten
	Tanaman musim kering yang baru	Ketahanan pangan	Kondisi iklim	Pengetahuan atau kebijakan local dan tradisional
	Kesehatan dan gizi manusia	Air minum	Hutan sebagai sumber ketahanan air	
	Pengelolaan sumber daya pesisir pantai terpadu		Pertemuan aliran sungai dari hulu dan hilir	

Tabel 4. Kendala dalam pembangunan pedesaan terpadu

Kendala area	Kunci kendala
Modal sosial	Kesetaraan gender dan kesempatan bagi wanita Demografi sosial Pengetahuan local/tradisional Kesehatan dan gizi manusia - malaria Keterbatasan tenaga kerja – kompetisi antara pertanian dan sector lain, pentingnya pertanian sebagai karir menurun Kepemimpinan
Budaya	Kepadatan penduduk Berorientasi pada usahatani subsisten tanaman Pencurian hasil panen Perbedaan bahasa Buta huruf
Masalah kepemilikan lahan	Tidak jelasnya penggunaan dan fungsi lahan Reformasi perencanaan penggunaan lahan Tidak ada kepemilikan perorangan untuk penduduk desa
Prasarana dan kapasitas pasar	Telekomunikasi Jalan Pelabuhan Perlengkapan – Listrik, sanitasi, air bersih Investasi jangka panjang
Pemasaran	Pembangunan system pemasaran Akses terhadap kecerdasan pasar Penyediaan rantai prasarana – Penyimpanan, pengendalian, angkutan. Sertifikasi untuk hasil panen yang organic
Pengadopsian teknologi	Penolakan masyarakat terhadap teknologi baru Produktifitas masyarakat yang rendah
Pengaturan institusional –	Komitmen pemerintah Komitmen LSM

Kendala area	Kunci kendala
kepemerintahan dan kebijakan	Kordinasi pihak terkait Hubungan pemerintah regional, propinsi dan nasional Komunikasi antara pemerintah dan masyarakat Aspek gender Jauhnya NTT dari Jakarta yang merupakan pusat pembuatan keputusan Memperkuat Institusi Perluasan pelayanan Akses informasi dan tehnologi telekomunikasi
Akses pelayanan financial	Kredit - mikro Bantuan Keterbatasan modal
Pengetahuan, keahlian dan pelatihan	Pengetahuan iklim Pengetahuan pertanian dan peternakan Rendahnya tingkat pendidikan formal Kwalitas menegemen (pengetahuan dalam bidang menegemen) Kurangnya kapasitas penelitian dan pendidikan pasca sarjana Kurangnya kurikulum multidisplin dan terpadu Kecenderungan untuk berfokus pada ilmu murni dan bukan kurikulum yang mengarah kepada matapencaharian Akses terhadap informasi dan tehnologi Informasi pasar
Lingkungan alami	Bencana alam Harma dan penyakit Keterbatasan air – curah hujan Tipisnya humus Iklim

Sebelas kesempatan pembangunan desa terpadu (IRDO) telah didefinisikan, berdasar pada pengelompokan berbagai kegiatan dan usaha yang diajukan oleh peserta lokakarya. Sifat dasar IRDO telah terbukti pada beberapa hal seperti pembagian komponen kegiatan antara IRDO (seperti; tumbuhan pakan ternak sebagai bagian dari gabungan usaha wana tani dan usaha peternakan yang berkelanjutan) dan terkait pula dalam mata rantai perikanan pesisir pantai yang berkelanjutan. Percampuran factor produksi dan lingkungan secara jelas digambarkan dengan pengelolaan DAS terpadu IRDO yang disebutkan dalam Tabel 3. IRDO telah menarik banyak komponen dari sepuluh komponen lainnya begitu pula factor kwalitas lingkungan. Begitupun pemasaran produk pertanian IRDO mencakup komponen-komponen yang ada pada komponen IRDO lainnya.

Kesempatan pembangunan desa terpadu berkembang tidak hanya terbatas pada produksi pertanian tetapi juga termasuk pengaturan penyediaan pasokan, factor institusi dan efisiensi oprasional pada rangkaian pasokan produk serta pasar untuk hasil pertanian. Kotak 1 berisi diskripsi wana tani IRDO yang dipersiapkan oleh kelompok kecil dalam lokakarya. Juga disebutkan tantangan yang dihadapi para petani, agen pemasaran, pemerintah dan penduduk desa dalm mengimplementasi inisiatif tersebut. Contoh ini merupakan khasnya kesempatan pembangunan desa terpadu dan perubahan yang diperlukan demi keberhasilan serta kelanjutan pelaksanaannya.

Kendala dalam pembangunan desa terpadu terbagi dalam sepuluh area: sosial, budaya, kepemilikan lahan, kapasitas prasarana, pemasaran, tehnologi, pengaturan institusi, pelayanan keuangan, pengetahuan, keahlian dan pelatihan dan lingkungan alam. Tabel 4

menyebutkan kendala yang disampaikan oleh kelompok kecil dalam lokakarya. Perubahan dari hal ini akan berpengaruh pada suksesnya proyek IRD. Kendala mungkin langsung disebutkan pada bagian integral dari strategi proyek dalam mencapai tujuan IRD. Akan tetapi, sepertinya pengaruh terhadap kendala berbeda dari area satu dengan yang lainnya. Bagan 1 menunjukkan potensi untuk mempengaruhi kendala di masing-masing daerah melalui proyek IRD. Kendala dengan potensial rendah harus di rubah, mengingat pentingnya pada keberhasilan proyek IRD, biasanya disampaikan langsung dan/atau bagian dari batasan reformasi atau inisiatif pembangunan. Sebagai contoh, keputusan pada investasi dan perawatan sarana telekomunikasi dibuat oleh pemerintah sebagai bagian dari agenda pembangunan telekomunikasi nasional. Dalam proyek IRD tipe kendala seperti ini harus dapat di toleransi.

Kendala yang mempunyai potensi menengah harus dipengaruhi melalui proyek IRD yang dimanipulasi untuk mendapatkan hasil sebaik mungkin tanpa harus memodifikasi kendala secara permanen. Sebagai contoh, komitmen pemerintah dan pihak terkait dapat terwujud dalam suatu proyek tertentu dengan kepastian atas partisipasi masing-masing pihak dan dengan komunikasi yang reguler dalam jangka waktu proyek yang ditentukan. Namun demikian, ini bukan berarti bahwa pihak terkait akan selalu berkomitmen pada proyek IRD. Seperti halnya dengan teknologi yang memberikan perlindungan terhadap bencana alam, tapi tidak dapat mencegah terjadinya bencana. Kendala yang memiliki potensial tinggi untuk dirubah harus dipengaruhi oleh hal-hal yang bisa di transformasi secara permanen. Sebagai contoh, dengan menggabungkan pembangunan kapasitas sebagai peserta kunci proyek (petani, pedagang, pelayanan pemerintah) dalam proyek IRD, pengetahuan baru dapat dilekatkan dalam masyarakat, pengolah dan kelangsungan proyek. Dalam banyak kasus kendala seperti ini dieliminasi.

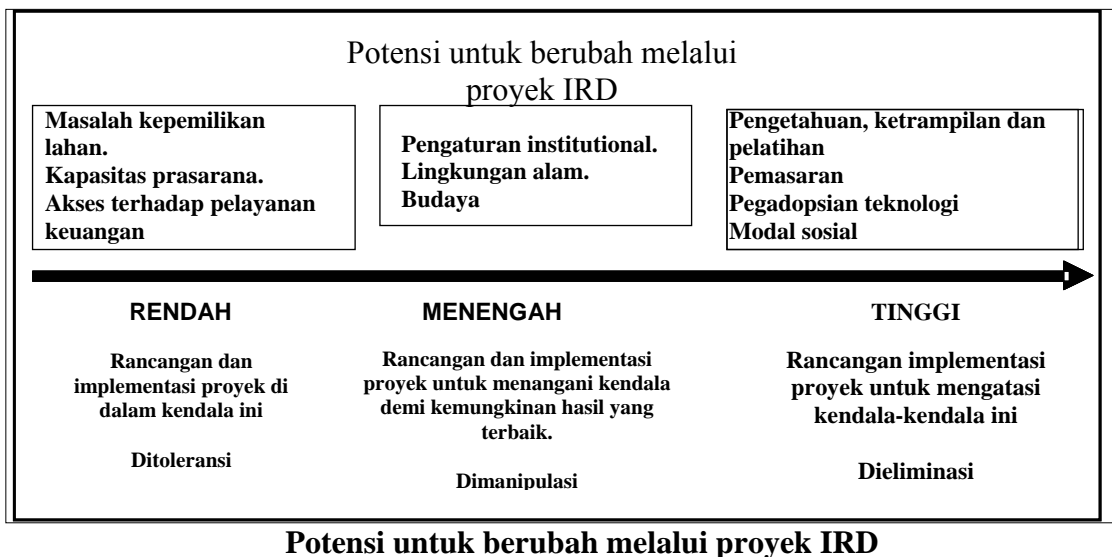
Kotak 1. Wanatani terpadu

Penanaman campur antara tumbuhan kayu nilai tinggi dengan tanaman pakan ternak dapat termasuk dalam Wana tani terpadu, termasuk juga pengikat lembu, tanaman yang dapat dipanen dan kegiatan pertanian lainnya. Masalah penting yang lain adalah memutuskan keseimbangan optimal antara komponen kegiatan dan penetapan alur keuangan yang diperlukan mengingat jangka waktu yang lama untuk memanen tumbuhan kayu. Strategi amat diperlukan untuk memperbaiki cara yang dilakukan saat ini.

Dengan membawa penghasilan tambahan dan penyediaan penahanan ekonomi selama masa sulit. Perpaduan jenis tanaman apa yang diperlukan dan pelatihan apa yang di jalankan, seperti pemanenan, pemangkasan, dan pengurusan untuk kayu? Keberhasilan usaha wana tani tergantung pada dukungan pasar, pemerintah dan pengaturan institusional. Sebagai contoh, Penyelesaian masalah kepemilikan lahan akan memfasilitasi perluasan wanatani di NTT. Kalau itu belum tercapai, bagaimana pemilik tanah akan meragukan apakah wanatani terpadu dapat membawa pendapatan yang memuaskan? Pelatihan kepemimpinan dan komunikasi petani ke petani juga diperlukan. Begitu pula pengguna lahan memerlukan pelatihan mengenai pengelolaan dan pemasaran hasil pertanian. Analisa pasar dan informasi pasar akan diperlukan dan pembuatan kelompok tani atau koperasi mungkin juga perlu. Investasi tehnologi disamping pertanian akan diperlukan untuk efisiensi pengolahan dan penanganan produk. Sistem pemasaran perlu dikembangkan dan diperbaiki untuk menjamin produksi pertanian mencapai kebutuhan konsumen. Di saat system wanatani terpadu di tambah dengan keragaman pengguna lahan, bukan berarti bebas resiko. Kemungkinan akan gagal panen perlu dikaji.

Sebuah kelompok memberikan komentar bahwa wanatani terpadu berpotensi untuk ketahanan pangan, penyediaan air dan konstruksi meterial. Lebih dari pada itu, penanaman hutan akan mengurangi tekanan pada ketidak bertahannya panen pada hutan alami.

Makalah oleh Roshetko *et al* dan Narwir *et al* memberikan tilikan nilia dan pelajaran untuk keberhasilan pembentukan dan pengelolaan usaha wanatani.



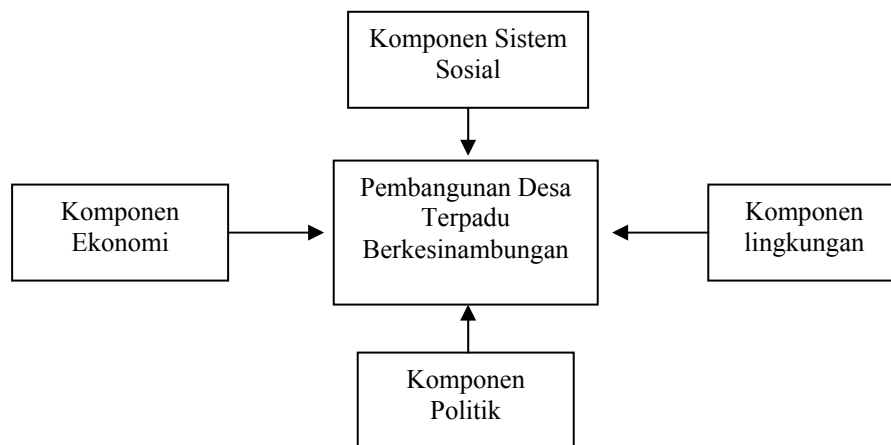
Bagan 1. Potensi untuk mempengaruhi kendala yang ada melalui proyek pembangunan pedesaan terpadu

Kepastian prioritas proyek IRD harus mempertimbangkan ukuran dan distribusi dari potensi keuntungan pada masing-masing kesempatan termasuk ekonomi, lingkungan dan keuntungan sosial dan akibat alami dari kendala dalam mencapai keuntungan termasuk kapasitas penduduk untuk terus melanjutkan usaha serta pengolahannya.

Prioritas pembangunan desa terpadu.

Pada waktu prioritas didiskusikan pada diskusi pleno dalam lokakarya salah satu IRDO yang menonjol adalah: pengelolaan DAS terpadu. Hal ini terjadi karena banyaknya komponen yang terserap dari IRDO lain. Akan tetapi, bukan berarti sepuluh IRDO lainnya tidak penting. Justru, paling besar terungkap dalam diskusi pada prioritas yaitu kebutuhan fundamental yang berupa kerangka kerja atau strategi untuk rancangan dan implementasi dari proyek pembangunan pedesaan terpadu.

Pendekatan mata pencaharian penduduk desa berkelanjutan terhadap IRD yang di ajukan oleh Djoeroemana, Salean dan Nope mendapat dukungan kuat dari peserta lokakarya. Oleh karena itu, telah disepakati bahwa untuk menggunakan pendekatan ini sebagai basis strategi pengembangan penelitian hal ini dapat didiskusikan dengan pihak pemerintah dan badan bantuan internasional untuk mendefinisi proyek tertentu, mengingat pemahaman yang dimiliki mengenai prioritas tertentu pada wilayahnya. Pusat pendekatan mata pencaharian penduduk desa berkelanjutan adalah reproduksi yang ada pada Bagan 2. Elemen-elemen kunci lain dengan pendekatan yang tersebut diatas harus ditunjang dengan rancangan dan pengelolaan proyek (partisipasi, pengendalian masa, dasar pengetahuan, dinamika dan adaptasi, kapasitas bangunan, pemahaman setara antara semua pihak dan memahami pentingnya lingkaran dan kelanjutannya).

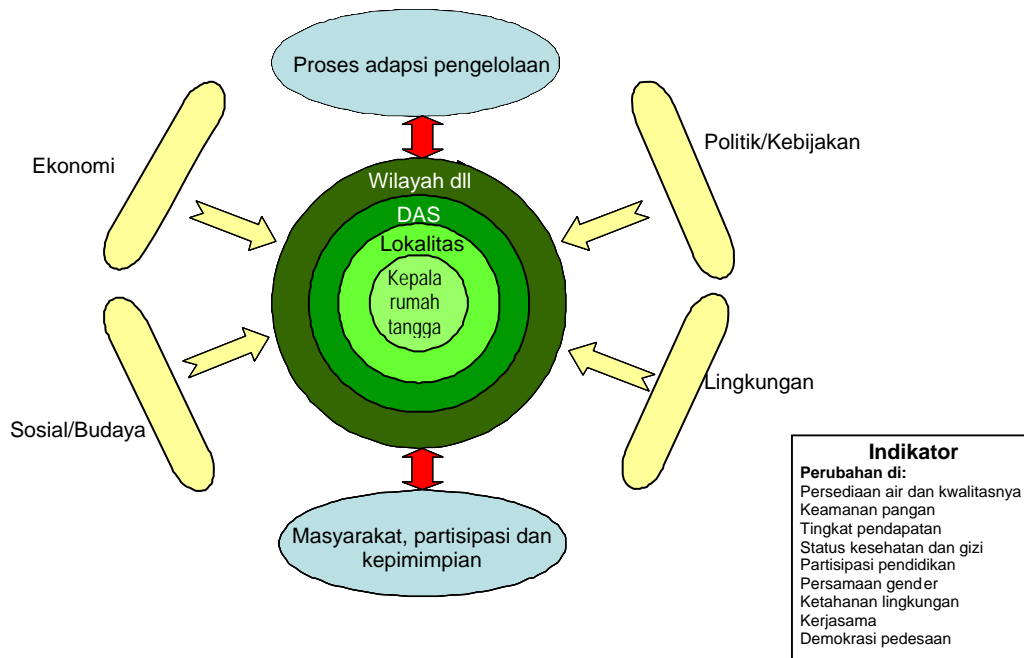


Bagan 2. Pendekatan mata pencaharian yang berkelanjutan dalam pembangunan pedesaan terpadu

Bagan 2 menunjukkan model pemikiran. Sasaran dari pembangunan desa terpadu berkelanjutan mungkin dikendalikan oleh salah satu dari empat komponen dari model tersebut, tapi tentu saja tak akan tercapai kecuali dengan adanya hubungan antara empat komponen yang disampaikan dalam presentasi. Sebagai contoh, pengendali utama untuk perbaikan mungkin perekonomian yang memperbaiki sistem pemasaran dari pemanenan pertanian dalam sebuah kabupaten atau kecamatan. Disaat menarik efisiensi dan efektifitas dari system pemasaran memiliki potensi untuk meningkatkan pendapatan penduduk desa, solusi terhadap mata pencaharian berkelanjutan harus juga dipertimbangkan sebagai kepentingan kritis pada hubungan manusia untuk pemasaran yang sukses, peran pemerintah dalam menyediakan prasarana kunci seperti pelayanan jalan, telekomunikasi dan kebijaksanaan yang mendukung, serta kapasitas lingkungan fisik untuk produksi yang berkelanjutan demi memenuhi permintaan pasar. Kesuksesan proyek IRD untuk memperbaiki sistem komoditi pasar harus saling berhubungan dengan sosial-budaya, politik, dan elemen lingkungan dengan pengendalian terhadap elemen ekonomi.

Salah satu contoh lain yang juga didiskusikan dalam lokakarya dan terus dikembangkan adalah pengelolaan DAS terpadu. Dalam kasus tersebut tenaga penggerak utama berasal dari elemen lingkungan seperti pelestarian sumber air yang sulit didapat dan perlindungan terhadap vegetasi yang masih tersisa dan sumber daya tanah. Tenaga penggeraknya mungkin juga dari elemen lingkungan seperti dalam bentuk kebutuhan terhadap sumber air minium yang bersih dan untuk memperbaiki kesehatan dan gizi pada masyarakat yang termasuk dalam DAS. DAS terdefinisi sebagai ruang untuk proyek. Bagan 3 menunjukkan Pendekatan Partecipasi Pengelolaan DAS terpadu/ *Participative Integrated Catchment Management Approach* (PICMA) untuk IRD yang berdasar pada konsep Djoeroemana, Salean dan Nope tentang mata pencaharian penduduk desa terpadu.

Komponen penting dalam pendekatan ini adalah pengawasan aktif terhadap hasil yang direncanakan dengan menggunakan indikator kunci kinerja, seperti perubahan persediaan air dan kualitasnya, ketahanan pangan, tingkat pendapatan, kesetaraan gender, keberlanjutan lingkungan, kerja sama dan kolaborasi dan demokrasi pedesaan (lihat Tabel 3). PICMA menyampaikan pentingnya partisipasi pihak terkait dan menerima proses pengelolaan yang berlangsung.



Bagan 3. Pendekatan partisipasi pengelolaan DAS terpadu

Strategi untuk pengembangan suksesnya proyek IRD di NTT

Perencanaan telah disepakati dalam kesimpulan yang diambil pada lokakarya. Termasuk didalamnya langkah-langkah tersebut dibawah ini:

- pendekatan kepada Gubernur NTT untuk memohon persetujuan atas hasil lokakarya dan proposalnya sebagai kegiatan di masa yang akan datang.
- membentuk panitia pengarah kecil yang melibatkan perwakilan penting dari pemerintah, LSM, Perguruan Tinggi, dan institusi penelitian untuk mengendalikan pendekatan pembangunan desa terpadu yang baru.
- pemberitahuan tentang perencanaan pembangunan pedesaan yang berlangsung saat ini di NTT
- mempengaruhi badan pemberi bantuan internasional dengan pengembangan inisiatif yang tengah berlangsung.
- pengembangan strategi penelitian dengan batas waktu.

Selanjutnya strategi penelitian dikembangkan dengan referensi khusus pada Pendekatan Partisipatif Pengelolaan DAS Terpadu, meskipun hal ini dirasa lebih luas tapi tercatat sebagai bagian dari langkah tersebut.

Bentuk dari pada kepanitiaan pembangunan pedesaan terpadu

Diusulkan kepada Pemerintah NTT untuk mengangkat panitia pengarah swatantra yang memberikan dalam pengendalian IRD di NTT. Panitia harus terdiri dari wakil-wakil pemerintahan, masyarakat, industri pedesaan, dan lembaga penelitian ilmiah dan komunitas pendidikan yang telah menunjukkan kepemimpinannya dalam pembangunan pedesaan. Panitia bertanggung jawab untuk memadukan, memprioritaskan, dan menggabungkan pembangunan pedesaan dengan beberapa komponen termasuk:

- permasalahan kunci daerah dan kesempatan
- sosial-budaya, ekonomi, politik dan lingkungan / masalah pengelolaan sumber alam
- permasalahan kunci sektoral, baik horizontal (antar sector) maupun vertical (dalam sector)
- keterlibatan pihak terkait, meyakinkan adanya perwakilan dari semua pihak terkait dan pendekatan hubungan “dari atas - ke bawah” dan “dari bawah - ke atas” setara.
- pemenuhan persyaratan terapan.

Tanggung jawab kunci yang lain dari panitia pengarah IRD adalah mengkoordinasi strategi penelitian IRD dan memantau serta melaporkan secara berkala mengenai efektifitasnya.

Menyusun informasi dasar dan menetapkan prioritas penelitian

Diusulkan bahwa untuk proyek penelitian yang datang bisa sangat efektif bila dibangun atas dasar perluasan dan pelajaran positif dari IRD yang sudah berlangsung.

Langkah pertama adalah pemetaan karakteristik seperti sumber alam yang dimiliki, karakter sosial-budaya, kondisi kebijakan dan proses perekonomian begitu pula kesempatan dan kendala yang ada. Keberadaannya mungkin digambarkan sesuai dengan lingkup, sektoral, demografik atau dasar lain. Dalam kasus DAS (entitas spasial) sebagai contoh, pemetaan data yang dapat digunakan untuk mengklasifikasi DAS dengan tujuan untuk mengidentifikasi dan memprioritaskan situs-situs tersebut yang (i) memerlukan pengelolaan/intervensi investasi yang sangat mendesak, dan (ii) mampu memperoleh kembali potensi dari investasi IRD dalam jangka pendek maupun panjang. Pendekatan serupa dapat diaplikasikan pada basis sektoral untuk mengkaji prioritas antar sector atau basis demografik untuk mengkaji prioritas antar desa atau pusat populasi. Pengkajian awal harus diselesaikan tidak lebih dari satu tahun. Pengkajian ini akan dapat memberikan petunjuk bagi inisiatif investasi IRD dan proyek yang akan datang. Keputusan pertama yang kritis adalah menyetujui keberadaan dan maksud dari basis yang ditetapkan. Hal ini harus dilakukan melalui konsultasi dengan pihak-pihak terkait termasuk pemerintah. Masyarakat dan badan bantuan internasional.

Belajar dari proyek IRD masa lalu dan yang tengah berlangsung

Saat ini sejumlah proyek partisipatif telah terselesaikan maupun yang tengah berlangsung yang memberikan contoh positif dan inovatif dari pada proyek IRD. Hal ini dapat dibangun dan diperluas dikala studi dasar yang garis-garis besarnya tersebut diatas sedang dilakukan. Contoh dari proyek skala DAS ada pada mayoritas pulau di NTT, sebagai contoh: DAS Kambaniru dan Maidang (Sumba Timur); DAS Aesesa (Ngada, Flores); DAS Noelmina (Timor Barat). Contoh proyek yang berbasis sectoral termasuk disini adalah makalah Wanatani oleh Roshetko.

Tak kalah pentingnya, berdasarkan pada pengalaman masa lalu, rancangan dan implementasi dari masing-masing kasus – atau proyek berdasarkan DAS perlu untuk bekerjasama dengan berbagai elemen partisipatori sebagai tersebut.

Persiapan sosial

Sangat perlu untuk persiapan kondisi baik pihak luar (seperti, peneliti, mitra pendana) dan anggota masyarakat untuk mengerakkan partisipasi yang efektif. Hal ini merupakan dasar dalam membangun jaringan sosial, koneksi, dan komunikasi, serta mengurangi hambatan trans-budaya antara penduduk desa dan mitra proyek lainnya.

Tindakan Titik Masuk

Tindakan dan aktivitas diputuskan dalam mode partisipatori antara semua pihak yang memberikan kontribusi, mulai dari pemerintah lokal sampai dengan anggota masyarakat. Titik masuk kunci dari inisiatif atau masalah ini telah teridentifikasi sebagai kebutuhan skala-desa yang sangat penting.

Akibat dari Implementasi yang Signifikan dan Pengelolaan yang dapat diterima

Setelah beberapa waktu, aksi titik masuk mungkin kurang pas atau perlu adanya modifikasi. Memang sangat penting untuk memodifikasi program IRD sesuai keadaan sesaat dengan menggunakan pengelolaan yang dapat diadaptasi.

Serahkan kepada masyarakat sebagai pihak pengontrol

Proses pemberian kuasa agar masyarakat dapat memegang tanggung jawab jangka panjang demi nasib mereka sendiri, sementara pihak peneliti dan peserta lain sedikit demi sedikit keluar dari proses pengambilan keputusan. Ketika masyarakat mampu untuk mengambil tanggung jawab penuh untuk kebutuhan pembangunan mereka sendiri maka dapat diyakinkan bahwa proses PICMA telah mencapai kedewasaan.

Membangun dan mengembangkan kapasitas institusional termasuk kapasistas penelitian yang ada

Tujuan penting dari proyek IRD adalah untuk memperkuat kapasitas individu dan organisasi untuk keuntungan yang berkelanjutan atas proyek IRD. Kapasitas penelitian daerah pada PEMDA NTT dan perguruan tinggi NTT dapat diperkuat melalui jaringan pembangunan lebih lanjut di dalam Indonesia, dan keluar, khususnya kolaborasi dengan institusi Australia mengingat kedekatannya secara geografis. Proses keterlibatan institusi Australia (khususnya bagian utara) akan memberikan keuntungan pada masyarakat regional kedua negara dalam jangka panjang di bidang budaya, ekonomi, pendidikan, dan politik.

Lembaga-lembaga perguruan tinggi yang di wakili dalam lokakarya telah menghasilkan suatu kerangka kerja strategik jangka panjang, pengembangan ketrampilan dan pengetahuan yang berkelanjutan dalam kaitannya dengan pembangunan pedesaan terpadu (IRD) khususnya di NTT (lihat lampiran 1)

Kerangka waktu dan dana

Strategi ini merupakan pendekatan IRD yang disepakati berdasarkan pengalaman selama puluhan tahun (kebanyakan negatif). Seperti yang telah disebutkan diatas, informasi dasar perlu dibentuk dalam satu tahun pertama dalam strategi ini, dengan dukungan yang bersamaan untuk mengidentifikasi contoh positif dari IRD. Program strategi yang terus berlangsung akan terbangun dari inisiatif dan melalui konsultasi dengan pemerintah dan badan bantuan.

Kesimpulan

Dalam komentar pembukaan pada empat sesi lokakarya, tertangkap adanya keberhasilan pembangunan desa terpadu dari komentar yang disampaikan oleh Dr. Ferry Karwur 'mentalitas baru lebih penting dari pada penemuan ilmiah atau teknologi baru'. James Adam dan Urbanus Olahurek menggemakan sentimental ini pada makalahnya yang menyarankan perlu adanya perubahan pada tingkah laku masyarakat dan cara berfikirnya. Pola pikir pemerintah dan LSM juga harus dirubah. Pembangunan desa terpadu bukan merupakan pendekatan baru dalam pembangunan, tetapi karena kegagalan masa lalu membuatnya tak lagi mendapat perhatian. Penggerakakan kembali pendekatan IRD diajukan pada peserta lokakarya oleh Djoeroemana, Salean dan Nope berdasar kepada kegagalan dan keberhasilan dari pendekatan yang lalu. Pendekatan mereka melalui mata pencaharian penduduk desa berkelanjutan merupakan kendaraan untuk perubahan pola pikir individu dan organisasi dan cara berfikir tentang pembangunan desa terpadu.

Lokakarya ini mewakili pemecahan pendekatan yang lalu pada pembangunan desa terpadu serta mendefinisikan suatu jalan menuju proyek yang lebih sukses berdasarkan pada pendekatan baru IRD. Pendekatan baru tersebut termasuk didalamnya semua pihak kunci terkait, dinamik dan menerima perubahan pada lingkungan yang lebih luas, menyadari kendala dan pengelolaan yang sesuai, didirikan atas dasar pengetahuan local dan kajian situasi sekarang ini, termasuk membangun kapasitas untuk individu dan organisasi untuk meyakinkan bahwa keuntungan proyek untuk penduduk desa berkelanjutan dan yang paling penting adalah memadukan factor ekonomi, sosial dan budaya, politik dan kebijakan dan lingkungan untuk menyampaikan pembangunan desa terpadu yang berkelanjutan.

Peserta lokakarya mengidentifikasi sebelas kesempatan pembangunan desa terpadu dan sepuluh area yang menjadi kendala IRD di NTT. Sementara banyak perhatian tertuju pada pembangunan pengelolaan DAS karena pengaruhnya, masing-masing kesempatan merupakan komponen penting dalam IRD di Nusa Tenggara Timur. Usulan mengenai strategi penelitian telah disepakati di lokakarya, membangun pendekatan mata pencaharian penduduk desa yang berkelanjutan, menyediakan kerangka kerja untuk memastikan prioritas pembangunan yang lebih spesifik dan membangun proposal proyek dengan berkonsultasi pada pemerintah dan badan bantuan internasional. Usulan mengenai pendekatan Partisipatif Pengelolaan DAS Terpadu (PICMA) ke IRD mungkin aplikasi yang bernilai untuk pengujian akan penampaknya pada pendekatan dengan kelompok masyarakat, badan pemerintah, LSM dan pihak terkait lainnya dan konteksnya dengan teridentifikasi banyaknya kendala yang dihadapi dalam proyek. Sebagai pendekatan yang dinamik dan adaptif, penyaringan dan refisi dapat dibentuk untuk aplikasi pendekatan yang akan datang.

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PEMBANGUNAN PEDESAAN TERPADU BERBASIS AGRIBISNIS DI NTT

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ABSTRAK

Orientasi-pasar baru pada paradigma pembangunan pedesaan telah diajukan demi meningkatkan taraf perekonomian masyarakat pedesaan di NTT. Pendekatan agribisnis meliputi seluruh nilai mata rantai mulai dari pemasokan bahan, usahatani, transportasi dan pengolahan serta distribusi dan pemasaran. Pendekatan agribisnis disajikan sebagai sistem dengan empat sub-sistem yang berintegrasi; hulu, kegiatan usahatani, hilir dan institusional. Demi bekerjanya agribisnis secara efektif maka subsistem harus saling terkait. Hasil investasi yang baik dalam peningkatan kegiatan usahatani memerlukan adanya gabungan kapasitas dan kinerja dari tiga sub-sistem lainnya. Pada inisiatif pembangunan masa lalu telah mengkonsentrasikan pada sub-sistem usahatani dengan mengharapkan kenaikan pendapatan petani yang ternyata tidak terwujud akibat rendahnya investasi pada sub-sistem yang lain. Makalah ini menafsirkan potensi agribisnis pada usaha-usaha hasil tanaman, perkebunan dan peternakan untuk NTT. Potensi kerjasama telah pula dijelajahi dan menunjukkan perlunya investasi publik pada prasarana utama, khususnya jalan.

Saya diminta oleh Panitia Lokakarya untuk menyampaikan pidato kunci pada lokakarya ini dengan judul "Pembangunan Pedesaan Terintegrasi Berbasis Pertanian di NTT". Pertanian dalam pengertian tradisional terbatas pada pertanian primer dengan orientasi peningkatan produksi. Pengertian dalam arti ini kita adopsi dari pemikiran A.T. Moshier yang kita kenal sebagai pembangunan usahatani yang didukung oleh lima sarat pokok dan lima sarat pelancar.

Untuk meningkatkan pendapatan petani, menambah nilai kepada hasilnya dan memberi orientasi pasar, maka pengertian lama tersebut perlu diubah dengan paradigma baru pembangunan pertanian (as a new way of seeing agriculture) yang kita kenal sebagai pendekatan agribisnis. Perlu saya tegaskan bahwa pendekatan agribisnis bukan sekadar bisnis komoditi pertanian yang sudah lama kita kenal, akan tetapi lebih dari itu, agribisnis merupakan cara baru melihat dan membangun pertanian. Oleh karena itu judul pidato kunci ini saya modifikasi seperti tersebut diatas.

Suatu sistem agribisnis terdiri dari empat subsistem, yaitu: (1) subsistem agribisnis hulu (upstream agribusiness), (2) subsistem agribisnis usahatani (on-farm agribusiness), (3) subsistem agribisnis hilir (downstream agribusiness), dan (4) subsistem jasa layanan pendukung agribisnis (supporting institution).

Subsistem agribisnis hulu mencakup semua kegiatan untuk memproduksi dan menyalurkan input-input pertanian dalam arti luas. Dengan demikian, di dalamnya termasuk kegiatan pabrik pupuk, usaha pengadaan bibit unggul, baik untuk tanaman

pangan, tanaman perkebunan, ternak maupun ikan; pabrik pakan untuk ternak dan ikan; pabrik pestisida; serta kegiatan perdagangannya.

Subsistem agribisnis usahatani merupakan kegiatan yang selama ini dikenal sebagai kegiatan usahatani, yaitu kegiatan di tingkat petani, pekebun, peternak dan nelayan, serta dalam arti khusus, termasuk pula kegiatan perhutanan; yang berupaya mengelola input-input (lahan, tenaga kerja, modal teknologi dan manajemen) untuk menghasilkan produk pertanian.

Subsistem agribisnis hilir, sering pula disebut sebagai kegiatan agroindustri, adalah kegiatan industri yang menggunakan produk pertanian sebagai bahan baku. Kegiatan pabrik minyak kelapa sawit, industri pengalengan ikan, pabrik tepung tapioka dan banyak kegiatan lain termasuk dalam kelompok subsistem ini. Subsistem perdagangan hasil pertanian atau hasil olahannya merupakan kegiatan terakhir untuk menyampaikan output sistem agribisnis kepada konsumen, baik konsumen di dalam negeri maupun konsumen di luar negeri (ekspor). Kegiatan-kegiatan pengangkutan dan penyimpanan merupakan bagian dari subsistem ini.

Subsistem jasa penunjang (supporting institution) yaitu kegiatan jasa yang melayani pertanian seperti kebijakan pemerintah, perbankan, penyuluhan, pembiayaan dan lain-lain.

Secara ringkas dapat dinyatakan, sistem agribisnis menekankan pada keterkaitan dan integrasi vertical antara beberapa subsistem bisnis dalam satu sistem dalam komoditas. Keempat subsistem tersebut saling terkait dan tergantung satu sama lain. Kemandegan dalam satu subsistem akan mengakibatkan kemandegan subsistem lainnya. Misalnya, kegiatan agroindustri tidak mungkin berkembang tanpa dukungan pengadaan bahan baku dari kegiatan produksi pertanian maupun dukungan sarana perdagangan dan pemasaran.

Dengan paradigma baru (agribisnis) tersebut, maka cara membangun pertanian adalah membangun keempat subsistem agribisnis tersebut mulai dari hulu hingga ke hilir secara simultan dan konsisten. Membangun dan mengembangkan agroindustri (agribisnis hilir) harus seiring dengan pengembangan agribisnis usahatani dan agribisnis hulu. Hal ini berbeda dengan paradigma lama dimana pembangunan pertanian yang kita anut di masa lalu, yang membangun pertanian hanya pada usahatani saja.

Pengembangan agribisnis pada dasarnya bersifat integratif dalam artian pembangunan antar sektor (sektor pertanian dengan sektor-sektor lainnya) dan bahkan antar wilayah di NTT (antar kabupaten dan antar pedesaan disetiap kabupaten). Dengan begitu akan terjadi sinergi antar sektor maupun antar wilayah di NTT, yang pada gilirannya bermuara pada pengembangan agribisnis yang berkelanjutan.

Dari data Nusa Tenggara Timur Dalam Angka 2004/2005 dan Kinerja Perekonomian Nusa Tenggara Timur 2004 nampak sektor pertanian merupakan sektor yang dominan dalam perekonomian NTT. dengan kontribusi kepada PDRB NTT pada tahun 2000 (45,01%), 2001 (43,88%), 2003 (42,87%), dan 2004 (42, 46%). Kemudian menyusul

sektor perdagangan hotel, dan restoran, dan sektor jasa-jasa

Selanjutnya bila ditelusuri lebih lanjut nampak pembentukan Nilai Tambah Bruto di sektor pertanian (2000-2004) ternyata didominasi tanaman bahan makanan. Rata-rata kontribusinya kepada pembentukan Nilai Tambah Bruto sebesar 51,84% dalam kurun waktu 2000-2004 kemudian menyusul subsektor peternakan sebesar 29,35% dalam kurun waktu 2000-2004, Hal ini memperlihatkan bahwa kedua subsektor ini amat mempengaruhi perkembangan sektor pertanian di NTT.

Dari segi angkatan kerja data Indikator Ekonomi NTT 2004 memperlihatkan angkatan kerja pada tahun 2000 sebesar 81,39% (yang bekerja 80,21%, mencari pekerjaan 1,72%) dan pada tahun 2004 angkatan kerja sebesar 77,39% (bekerja 73,93%, mencari pekerjaan 3,47%). Selanjutnya tingkat partisipasi angkatan kerja di NTT pada tahun 2000 sebesar 81,93% dan pada tahun 2004 sebesar 77,39%.

Data juga memperlihatkan angkatan pekerja yang bekerja di sektor pertanian pada tahun 2000 sebesar 79,35% dan pada tahun 2004 sebesar 73,66%. Hal ini memperlihatkan bahwa sektor pertanian merupakan sektor yang dominan dalam penyerapan tenaga kerja. Ini memperlihatkan pula bahwa angkatan pekerja yang bekerja di sektor pertanian tersebar di pedesaan-pedesaan di NTT karena kegiatan pertanian justru terdapat di pedesaan-pedesaan.

Dari serangkaian data tersebut diatas nampak bahwa mayoritas (sekitar 80%) penduduk NTT menggantungkan hidupnya pada sektor pertanian terutama pada subsistem usahatani yang tersebar di pedesaan-pedesaan. Nampaknya subsistem agribisnis hulu, subsistem agribisnis hilir dan subsistem jasa layanan pendukung belum berkembang.

Untuk mengembangkan agribisnis pepedesaan di NTT, saya menyarankan agar pada tahap awal bertumpu pada subsektor pertanian tanaman bahan makanan dan subsektor peternakan karena dua subsektor ini yang dominan dalam pembentukan nilai tambah bruto sektor pertanian selama ini. Juga dipertimbangkan subsektor tanaman perkebunan dan kehutanan.

Mengingat pertanian di NTT pada dasarnya adalah pertanian lahan kering, dari subsektor pertanian tanaman bahan makanan yang potensial untuk dikembangkan melalui pendekatan agribisnis adalah jagung, ubi kayu, ubi jalar, dan kacang tanah. Data memperlihatkan bahwa produksi jagung pipilan kering pada tahun 2004 mencapai 622.812 ton dari areal seluas 264.907 hektar yang meningkat bila di banding dengan produksi tahun 2003 yang hanya 583.355 ton dari 257.742 hektar. Produksi ubi kayu pada tahun 2004 produksinya 1.041.280 ton meningkat dari tahun sebelumnya (2003) yang hanya 861.620 ton. Ubi jalar pada tahun 2004 produksinya 126.406 ton yang meningkat dari tahun sebelumnya (2003) yang hanya 86.692 ton. Kacang tanah pada tahun 2004 produksinya 17.680 ton yang meningkat dari tahun sebelumnya (2003) yang hanya 13.637 ton.

Kendatipun tanaman perkebunan tidak menonjol dalam pembentukan Nilai Tambah

Bruto namun ada sejumlah tanaman perkebunan yang patut dikembangkan melalui pendekatan agribisnis yaitu kopi, kelapa, coklat, kemiri, dan jambu mente. Perkembangan produksi tanaman-tanaman ini cenderung meningkat dalam beberapa tahun terakhir. Juga hasil-hasil hutan yang mempunyai nilai ekonomi tinggi dapat dikembangkan melalui pendekatan agribisnis, seperti kutu lak di Sumba.

Dari segi ternak, jenis-jenis ternak yang dapat dikembangkan melalui pendekatan agribisnis adalah sapi, babi, kambing, domba, dan ayam kampung. Ternak sapi pada tahun 2004 berjumlah 522.929 ekor yang sebagian besar terdapat di Kabupaten Kupang, Kabupaten TTS, Kabupaten TTU, Kabupaten Belu, Kabupaten Sumba Timur Dan Kabupaten Ngada. Babi pada tahun 2004 berjumlah 1.276.164 ekor dimana jumlah terbesar terdapat di Kabupaten TTS, Kabupaten Ngada, Kabupaten Lembata, Kabupaten Kupang, Kabupaten Belu dan Kabupaten Sikka. Ayam kampung pada tahun 2004 berjumlah 9.389.209 ekor dimana jumlah terbesar terdapat di Kabupaten Kupang, Kabupaten Ende, Kabupaten Belu, Kabupaten Ngada dan Kabupaten Rote Ndao.

Selama ini pembangunan pertanian di NTT, terutama terfokus pada agribisnis usahatani saja yang memang dapat meningkatkan produksi tetapi sangat sulit meningkatkan pendapatan petani secara riil dan meningkatkan serta menahan nilai tambah yang lebih besar di wilayah pusat produksi pertanian. Penyebabnya adalah karena pada agribisnis usahatani nilai tambah yang tercipta adalah sangat kecil dan jauh lebih kecil dari pada nilai tambah yang tercipta pada agribisnis hulu dan pada agribisnis hilir (industri pengolahan dan perdagangan). Oleh karena itu, pembangunan pertanian di NTT perlu di ubah dari konsep pertanian primer ke konsep agribisnis.

Dalam rangka pengembangan agribisnis di NTT, perlu diupayakan agar di wilayah ini di kembangkan usaha-usaha pembibitan komoditi unggul yang dapat memenuhi kebutuhan bibit para petani. Disamping itu yang paling penting adalah mengembangkan industri hasil pengolahan hasil pertanian yang bahan bakunya ada di NTT. Kita perlu mengembangkan industri yang bahan bakunya dari jagung, ubi kayu, ubi jalar, kacang tanah, kopi, kelapa, coklat, kemiri, jambu mente dan hasil-hasil hutan yang mempunyai nilai ekonomi tinggi. Dengan pengembangan agribisnis industri yang demikian ini di NTT, maka nilai tambah agribisnis yang tertahan di wilayah NTT akan lebih besar.

Kemudian untuk meningkatkan pendapatan para petani dan sekaligus memperluas jaringan bisnis petani, perlu didorong berkembangnya organisasi bisnis terutama koperasi agribisnis dikalangan petani di NTT. Koperasi agribisnis yang dimaksudkan disini bukanlah konsep KUD masa lalu yang menangani segala macam komoditas dan hanya bergerak pada pertanian primer saja. Koperasi agribisnis yang dimaksudkan adalah koperasi yang menangani satu jenis komoditi mulai dari hulu hingga ke hilir. Melalui koperasi agribisnis ini, petani dapat mengembangkan jaringan bisnisnya, baik pada agribisnis hulu maupun pada agribisnis hilir (industri pengolahan, perdagangan). Dengan demikian, nilai tambah yang tercipta dalam agribisnis suatu komoditas dapat dinikmati oleh para petani sedemikian rupa sehingga pendapatan mereka dapat meningkat lebih cepat. Hal ini akan meningkatkan gairah dan kebanggaan para petani serta akan merangsang tumbuhnya generasi baru pengusaha agribisnis dari keluarga petani.

Pengembangan agroindustri dan organisasi bisnis petani tersebut perlu disertai dengan subsistem jasa agribisnis terutama pengembangan prasarana jalan. Pengembangan prasarana jalan perlu mendapat prioritas dari PEMDA NTT karena masih banyak pedesaan di NTT yang belum terjangkau kendaraan roda empat, padahal potensi pengembangan agribisnis cukup besar. Pengembangan jaringan jalan ini akan mendorong pengembangan agribisnis baru dan meningkatkan efisiensi pengangkutan komoditas pertanian di NTT.

Bila pengembangan agribisnis berhasil kita wujudkan di NTT, maka NTT akan siap menghadapi tantangan dan memanfaatkan peluang-peluang di masa yang akan datang.

Berkembangnya agribisnis di NTT akan menarik kegiatan petani lainnya, baik yang menyediakan bahan-bahan penolong dan jasa yang dibutuhkan oleh agribisnis, maupun sektor informal. Hal ini akan menarik aliran modal dan sumberdaya manusia ke NTT. Dengan demikian, pengembangan agribisnis akan mampu meningkatkan kapasitas produksi dan integrasi antar sektor di NTT untuk membiayai sendiri (self-financing) pembangunan, sehingga siap melaksanakan otonomi daerah secara penuh.

Kemudian karena produk-produk yang di hasilkan agribisnis yang dihasilkan di NTT adalah produk yang bersifat memiliki elastisitas permintaan terhadap perubahan pendapatan yang tinggi, maka meningkatnya pendapatan masyarakat di wilayah perkotaan akan menarik lebih lanjut berkembangnya agribisnis di NTT. Dengan demikian, pengembangan agribisnis dapat mengintegrasikan perekonomian pedesaanan dengan perkotaan, perekonomian NTT dengan perekonomian Nasional.

Selanjutnya, karena komoditas yang dihasilkan agribisnis NTT juga dibutuhkan di kawasan internasional, maka manfaat ekonomi yang timbul dari liberalisasi ekonomi dunia dan integrasi ekonomi (khususnya AFTA dan APEC) pada abad ke-21 ini, dapat dinikmati oleh masyarakat yang ada di NTT.

Pengembangan agribisnis yang bertumpu pada aset-aset di pedesaan-pedesaan akan membuka peluang timbul dan berkembangnya pembangunan pedesaanan yang terintegrasi. Berbagai kegiatan usaha mikro-kecil-menengah dan industri pengelolaan dan industri rumah tangga serta berbagai kegiatan lainnya akan muncul dan berkembang di pedesaanan yang pada gilirannya menggulirkan pembangunan pedesaanan terintegrasi berbasis agribisnis di NTT.

Selanjutnya dengan timbulnya liberalisasi ekonomi dunia dan integrasi ekonomi pada abad 21 ini, maka perlu di kembangkan jaringan kerja sama international dengan berbagai komunitas international. Dengan begitu NTT membuka diri bagi kerjasama yang saling menguntungkan dengan berbagai komunitas internasional.

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TINJAUAN UMUM ASPEK-ASPEK LINGKUNGAN, SOSIAL-BUDAYA, EKONOMI, DAN POLITIK PEMBANGUNAN PEDESAAN NTT

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ABSTRAK

Pembangunan pedesaan terpadu dimulai pada awal tahun 1970 untuk menjawab ketertinggalan, kebodohan maupun kemiskinan pedesaan, sekaligus menciptakan wilayah dan penduduk pedesaan yang modern dan maju. Untuk itu ditempuh pendekatan perencanaan terpusat dengan tujuan agar keterpaduan berbagai sektor dapat dicapai. Namun setelah 35 tahun pembangunan pedesaan dilancarkan tingkat kemiskinan di NTT masih saja nampak, bahkan data tahun 2005 memperlihatkan tingkat kemiskinan rumah tangga sebesar 58% rumah tangga miskin.

Diperlukan pendekatan alternatif yang disebut penghidupan masyarakat pedesaan yang berkelanjutan dalam konteks Ekologi, Sosial Budaya, Ekonomi, dan Politik. Faktor-faktor dalam konteks ekologi terdiri dari pengelolaan api, penghutanan kembali/reboisasi dan sumber air. Faktor-faktor dalam konteks sosial budaya terdiri dari kepemilikan tanah, modal sosial, kearifan sosial, dan pendidikan. Faktor-faktor dalam konteks ekonomi terdiri dari usaha kecil-menengah, lembaga kredit mikro, dan koperasi. Faktor-faktor dalam konteks politik terdiri dari kepemimpinan pedesaan, partisipasi masyarakat dan keterpaduan sektoral. Faktor-faktor tersebut mempengaruhi keberhasilan Pengembangan Penghidupan Pedesaan yang Berkelanjutan Terpadu.

Pendekatan ini memberi peluang kepada masyarakat pedesaan baik sebagai individu maupun sebagai kelompok untuk memperkuat kemampuannya bagi pengembangan aset yang ia miliki dan dinamika yang ada menjadi mampu ditransformasikan dalam rangka Pengembangan Penghidupan Pedesaan yang Berkelanjutan Terpadu.

Berbagai program pembangunan pedesaan, baik sektoral maupun spasial mengalir ke-pedesaan dengan dipimpin oleh negara (State Led Development). Pada awal tahun 1970-an, negara yang didukung oleh Bank Dunia maupun pendukung developmentalisme, menerapkan pembangunan pedesaan terpadu (Integrated Rural Development-IRD) untuk menjawab ketertinggalan, kebodohan maupun kemiskinan pedesaan, sekaligus menciptakan wilayah dan penduduk pedesaan yang modern dan maju, sebagaimana dirumuskan oleh Bank Dunia, IRD mengambil strategi pertumbuhan dan berbasis-wilayah, terutama wilayah pedesaan. Program IRD secara tipikal menekankan peningkatan produktivitas pertanian sebagai basis pendapatan orang pedesaan, sekaligus mengedepankan kontribusi yang terintegrasi (sinergis) pendidikan, kesehatan, pelayanan

sosial, pelatihan dan perbaikan infrastruktur pedesaan. Program IRD di tempuh melalui pendekatan perencanaan terpusat (*central planning*) dengan tujuan agar keterpaduan berbagai sektor dapat tercapai. Berbagai bantuan diberikan kepada pedesaan oleh pemerintah, seperti Inpres Bantuan Pedesaan, Inpres Daerah, Inpres SD, Inpres Kesehatan, Inpres Jalan, Reboisasi, IDT dan lain-lain lagi.

Namun setelah 35 tahun pembangunan pedesaan dilancarkan, tingkat kemiskinan di NTT masih saja nampak yang diperlihatkan oleh presentase yang naik turun dari tahun ke tahun. Data terakhir tingkat kemiskinan di NTT sekitar 58% rumah tangga miskin atau 60% penduduk miskin dan pada 17 Januari 2006 rumah tangga miskin melonjak menjadi sekitar 75% atau 78% penduduk miskin (BPS NTT 2005 dan 2006, PDE Propinsi NTT 2005). Dari 60% penduduk miskin tersebut di atas, sekitar 56% bermukim di pedesaan. Terlepas dari akurat tidaknya data tersebut, yang terpenting adalah kemiskinan masih nampak di pedesaan. Hal ini memperlihatkan bahwa pembangunan pedesaan terpadu selama ini belum mampu meningkatkan kesejahteraan masyarakat pedesaan.

Persoalan yang menggelitik adalah mengapa hal tersebut masih terjadi di pedesaan? Berikut ini akan dibahas dalam koridor lingkungan fisik, sosial-budaya, ekonomi, dan politik dalam pembangunan pedesaan terpadu selama ini. Pembahasannya akan lebih terpusat pada masalah-masalah dalam lingkungan fisik, sosial budaya, ekonomi dan politik.

Dari aspek lingkungan fisik. Secara umum luas wilayah Darat NTT 4.734.991 Ha, yang terdiri dari datar 0-2% 459.059 Ha, bergelombang 2-15% 794.505 Ha, Curam 15-40% 1.802.479 Ha, Sangat curam >40% 1.678.948 Ha. Iklim suhu 29.96 °c, kelembaban udara 76.25%, curah hujan 117.13 mm/th, dan kecepatan angin 5.00 knot (BAPPEDA NTT 2005).

Lahan yang bisa digunakan untuk pertanian hanya seluas sekitar 64% dari luas daratan, curah hujan yang rendah (117.13 mm/th) dengan musim hujan rata-rata 4 bulan/th. Selain itu kebakaran hutan dan padang rumput yang terjadi setiap tahun mulai bulan Juli-Oktober dan keterbatasan sumber air (BAPPEDA NTT 2005). Keterbatasan seperti ini menyebabkan kegiatan pertanian sebagai sumber pokok penghidupan masyarakat tidak optimal.

Dari segi Sosial-Budaya. Secara umum jumlah penduduk 4.188.774 (laki-laki 2.088.156 dan perempuan 2.100.618) dengan kepadatan penduduk 88 jiwa/km² dan laju pertumbuhan penduduk sekitar 2%.

Kepemilikan tanah yang belum memberikan kepastian hak milik atas tanah di kalangan penduduk pedesaan. Selain itu sering terjadi konflik kepemilikan tanah antar warga masyarakat dan antar warga masyarakat dengan pemerintah, bahkan tanah menjadi komoditas yang diperjual belikan antara orang-orang dari kota dan orang-orang di pedesaan. Hal-hal tersebut di atas menyebabkan kegiatan pertanian di pedesaan tidak bisa optimal.

Masih dalam aspek sosial budaya yang menyangkut modal sosial. Inti modal sosial adalah terletak pada kelompok-kelompok organisasi-organisasi sosial yang membangun

kepercayaan, solidaritas, resiprositas lintas kelompok dan organisasi (Lin *et al.* 2001; Sutoro 2005). Dengan begitu, menurut Colleta, dkk. (Sutoro 2005) modal sosial berfungsi sebagai jembatan sosial untuk mengelola konflik. Selain itu modal sosial dapat menjadi media interaksi antara pemerintah dan masyarakat untuk membangun kepercayaan, akuntabilitas, kemitraan, responsivitas dan partisipasi (Sutoro 2005). Masalahnya adalah pemanfaatan modal sosial belum optimal. Kelompok-kelompok organisasi sosial maupun pemerintah masih berjalan sendiri-sendiri dalam pembangunan pedesaan.

Masih dalam aspek sosial budaya adalah kearifan lokal. Kearifan lokal yang tercermin dalam adaptasi ekologis, kepemimpinan dan demokrasi sosial, ekonomi moral dan kesalehan social (Sutoro 2005). Ekspansi pasar ke pedesaan memaksa orang pedesaan untuk meninggalkan kearifan adaptasi ekologis yang telah dimilikinya turun-temurun. Demikian pula semangat kepemimpinan yang mengagungkan keteladanan dan mengedepankan semangat demokrasi sosial telah mengalami erosi. Kemudian ekonomi moral yang tercermin dalam sistem produksi, distribusi dan konsumsi telah mulai luntur. Sistem produksi dimana orang pedesaan sangat memperhatikan keseimbangan lingkungan dan keberlanjutan lingkungan warganya sudah mulai luntur dengan adanya ekspansi pasar.

Demikian pula kearifan lokal segi distribusi dalam bentuk resiprositas dan redistribusi telah mulai luntur. Tradisi keagamaan yang mengutamakan kesalehan juga mulai luntur dengan adanya ekspansi pasar. Masih dalam aspek sosial budaya adalah tingkat pendidikan angkatan kerja. Mayoritas tingkat pendidikan angkatan kerja adalah SD (sekitar 38%) dan bahkan ada yang tidak pernah mengenyam sekolah (sekitar 39%), (BAPPEDA NTT, 2006).

Dari segi Ekonomi. Struktur perekonomian NTT lebih didominasi oleh sektor pertanian yang pada tahun 2004 kontribusinya terhadap PDRB sebesar 42.46%; pendapatan perkapita pada tahun 2003 sebesar 2.248.333 lebih tinggi dari tahun sebelumnya (BPS NTT 2004). Laju pertumbuhan ekonomi pada tahun 2001 (4,73%) meningkat pada tahun 2002 menjadi 4,88%, kemudian sedikit mengalami penurunan menjadi 4,57% pada tahun 2003 dan meningkat lagi menjadi 5,58% pada tahun 2004 (BPS-NTT 2004). Hal ini menunjukkan bahwa kapasitas produksi sektor-sektor ekonomi yang ada di NTT telah kembali meningkat. Kondisi tersebut pada gilirannya telah ikut mendorong peningkatan PDRB perkapita atas dasar harga berlaku bagi penduduk NTT dari sekitar 2,3 juta rupiah pada tahun 2001 menjadi sekitar 3,1 juta rupiah pada tahun 2004 (BPS NTT 2004).

Dengan bertumpu pada pertanian ada tiga soko guru ekonomi pedesaan (Sutoro 2005; Dinas Koperasi NTT 2005) yaitu, Usaha Kecil-Menengah (UKM), Lembaga Keuangan Mikro (LKM) dan Koperasi. UKM yang mulai tumbuh di pedesaan mengalami pasang surut, ada yang berkembang namun juga tidak sedikit yang gulung tikar. LKM belum cukup besar jumlahnya dan penyebarannya untuk menopang ekonomi pedesaan. Demikian pula koperasi juga belum memperlihatkan kinerja yang mampu menopang ekonomi pedesaan (Saragih 2001, Sutoro 2005).

Dari segi Politik. NTT terdiri dari 15 kabupaten dan 1 kota yang tersebar di Flores, Timur-Barat, Sumba, Lembata, Alor Dan Rote dengan jumlah kecamatan 197, kelurahan 292 dan pedesaan 2414, (BAPPEDA-NTT 2006).

Kepemimpinan di pedesaan NTT masih diwarnai dualisme kepemimpinan yaitu kepemimpinan formal, kepala pedesaan dan kepemimpinan kesatuan masyarakat adat, tokoh/pemimpin adat (Djoeroemana 2004). Hal ini menyebabkan adanya dualisme kesetiaan dan ketaatan di kalangan masyarakat pedesaan. Konsekuensi selanjutnya adalah kurang optimalnya partisipasi masyarakat dalam pembangunan pedesaan. Hal ini juga memberi peluang adanya dualisme forum pengambilan keputusan dalam pembangunan pedesaan. Juga kehadiran dinas-dinas sektoral dalam pembangunan pedesaan secara sendiri-sendiri mengganggu keterpaduan pembangunan pedesaan.

Masalah-masalah tersebut diatas dalam aspek-aspek lingkungan, sosial budaya, ekonomi dan politik secara bersama-sama mempengaruhi jalannya pembangunan pedesaan terpadu yang bermuara pada masih terjadinya tingkat kemiskinan yang tinggi di pedesaan sehingga tingkat kesejahteraan masyarakat pedesaan masih rendah. Selain itu pendekatan pembangunan pedesaan terpadu yang bersifat sentralistik mengurangi kreativitas dan inovasi masyarakat pedesaan dalam pembangunan pedesaan.

Pembangunan pedesaan yang berorientasi pada pertumbuhan ekonomi dan layanan sosial yang dirancang sangat teknokratik dan sentralistik mengabaikan aspek keberlanjutan, konteks dan kebutuhan lokal, partisipasi, penguatan kapasitas lokal (Sutoro 2005, Djoeroemana 2005). Pendekatan pembangunan pedesaan seperti ini berpumpun pada pertumbuhan ekonomi dan pelayanan kebutuhan dasar yang berbasis wilayah. Di sini nampak bahwa aktor utama dalam pembangunan pedesaan adalah negara dan pasar. Ini mengabaikan aktor masyarakat sebab masyarakat sebagai target penerima manfaat, bukan subyek yang harus dihormati dan memegang posisi kunci pembangunan secara partisipatif.

Pumpun pertumbuhan ekonomi didasarkan pada teori modernisasi (developmentalism), suatu aliran pembangunan yang berbicara pada persoalan bagaimana menjamin perbaikan tingkat hidup manusia (Sutoro 2005). Perbaikan tingkat hidup itu tercermin di dalam indikator ekonomi murni, yaitu kenaikan pendapatan atau pendapatan perkapita secara nyata dan kumulatif.

Mengacu kepada apa yang dipaparkan di atas dipandang perlu untuk memperkenalkan suatu pendekatan alternatif dalam pembangunan pedesaan yang lebih menekankan kekuatan masyarakat. Pendekatan yang dimaksud adalah pendekatan penghidupan masyarakat pedesaan yang berkelanjutan.

Pendekatan masyarakat pedesaan yang berkelanjutan memahami penghidupan masyarakat pedesaan dari kondisi yang rentan menjadi berkelanjutan dengan mengembangkan aset yang ia miliki dan dinamika yang ada menjadi mampu ditransformasikan. Penghidupan masyarakat adalah suatu kemampuan daya hidup yang dimiliki baik itu secara material dan sosial, yang diwujudkan dalam berbagai kegiatan guna memenuhi kebutuhan hidupnya. Pendekatan ini melihat kompleksitas aset individu dan komunitas di pedesaan dan bagaimana dinamika terjadi dalam proses transformasi.

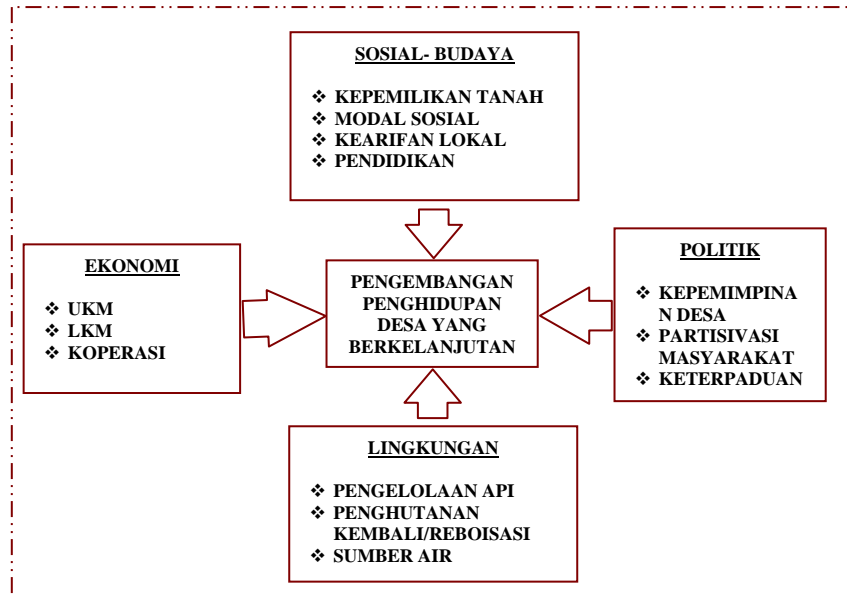
Bisa terjadi satu individu atau kelompok masyarakat merespon lebih cepat dibanding yang lain, oleh karena itu keberagaman kegiatan yang berbasis pada penguatan masing-masing karakter menjadi penting. Sebab itu pendampingan dilakukan dengan membangun kekuatan individu dan kelompok untuk mengembangkan potensinya, dan dengan begitu mampu mengatasi masalahnya sendiri dan mengembangkannya untuk mencapai tujuan. Penghidupan yang berkelanjutan bertumpu pada transformasi masyarakat dengan memperkuat kemampuan masyarakat agar aset kehidupannya dapat ditransformasikan olehnya.

Konsep dasar pengembangan penghidupan yang berkelanjutan (Sutoro 2005) adalah sebagai berikut :

1. Masyarakat sebagai pusat semua kegiatan pembangunan (people-centered). Menempatkan masyarakat sebagai pusat kepentingan, berarti semua pemahaman, analisis dan proses perencanaan dan perubahan berangkat dari masyarakat sendiri.
2. Pendekatan menyeluruh berangkat dari pemahaman dan kepentingan masyarakat. Berbagai faktor hambatan dan peluang perlu dipahami dalam konteks pengetahuan dan kemampuan masyarakat, agar dapat dikembangkan nanti solusi maupun pengembangan oleh masyarakat pula.
3. Mengingat bahwa kehidupan itu dinamis, maka kita hanya dapat memotret sesaat keadaan yang terjadi (dynamic). Oleh karena itu pengembangan penghidupan yang berkelanjutan (sustainable livelihood) dipandang perlu diikuti prosesnya dan perubahan yang terjadi, sehingga penting untuk dikembangkan proses monitoring dan pembelajaran oleh masyarakat maupun pihak-pihak yang terkait dalam pengembangan tersebut.
4. Pendekatan ini lebih melihat bagaimana kekuatan dapat di bangun daripada menganalisis kebutuhan (building on strength). Kekuatan yang dibangun berarti pengakuan pada kemampuan masing-masing orang untuk berkembang dengan memperkuat jaringan sosial agar mampu secara individu maupun kolektif mengatasi permasalahan, menghilangkan kendala dan membangun potensi untuk mencapai tujuan.
5. Adanya keterkaitan makro dan mikro dalam proses perubahan dan pengembangan (macro-micro link). Pendekatan ini berupaya untuk menjembatani jurang teori dan praktek maupun kebijakan makro dan kebijakan mikro. Disini diperlukan pemahaman oleh individu dan komunitas mengenai apa yang terjadi dalam konteks makro yang mempengaruhi kehidupannya. Demikian pula mereka yang mempengaruhi lingkungan makro, seperti para pengambil keputusan, penting bagi mereka memahami isu-isu dan peristiwa-peristiwa pada tingkat komunitas.
6. Pendekatan ini memperhatikan kelangsungan dan keberlanjutan suatu proses dan hasil dalam suatu siklus yang diharapkan tidak terputus atau mengalami goncangan yang menyebabkan terjadi keruntuhan atau kemunduran. Proses dan hasil yang diharapkan adalah melakukan transformasi dari kondisi yang rentan menuju peningkatan yang berkelanjutan (sustainable).

Untuk melaksanakan pengembangan penghidupan pedesaan yang berkelanjutan terpadu diperlukan suatu model dalam konteks komponen-komponen lingkungan, sosial budaya, ekonomi, dan politik (Gambar 1). Pada komponen lingkungan perlu dilakukan pengelolaan api, penghutanan kembali/reboisasi, dan penambahan sumber air. Pada komponen sosial budaya perlu dilakukan penataan kepemilikan tanah, pemanfaatan modal sosial, revitalisasi kearifan lokal, pemerataan dan peningkatan pendidikan. Pada komponen ekonomi perlu dilakukan peningkatan Usaha Kecil-Menengah (UKM) berbasis pertanian, peningkatan kegiatan Lembaga Keuangan Mikro (LKM) dan peningkatan jumlah dan kegiatan koperasi. Pada komponen politik perlu dihilangkan dualisme kepemimpinan pedesaan, meningkatkan partisipasi masyarakat dalam pembangunan pedesaan dan meningkatkan sinergi antar dinas-dinas sektoral dalam pembangunan pedesaan sehingga memperlihatkan keterpaduan yang dinamis.

Keterpaduan keempat komponen tadi akan memungkinkan pelaksanaan pengembangan penghidupan pedesaan yang berkelanjutan terpadu yang bertumpu pada manusia baik sebagai individu maupun kelompok seperti diperlihatkan pada Gambar 1 dibawah ini :



Gambar 1. Pengembangan penghidupan pedesaan yang berkelanjutan terpadu

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PENGALAMAN PENDAMPINGAN MASYARAKAT SUB DAS AEMAU-DAS AESESA, NGADA FLORES

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ABSTRAK

Inovasi pendekatan terhadap pengelolaan berbasis DAS dan pembangunan yang telah terimplementasi sejak tahun 1997 di dataran tinggi Aesesa, Ngada (Flores Tengah). Makalah ini mendeskripsikan tiga pendekatan utama yang di jalankan hingga saat ini, termasuk pengembangan partisipatori, kerjasama berbasis kemasyarakatan yang melibatkan penduduk setempat, Pemerintah setempat, dan sector LSM. Di tahun belakangan ini, program yang diselenggarakan berfokus pada pembangunan kapasitas masyarakat di Aemau sub-dataran tinggi, melalui perencanaan berbasis kemasyarakatan, pembangunan wana tani berkelanjutan dan usaha pertanian serta yang berkaitan dengan pengelolaan tanah, pengembangan fasilitas kredit yang dapat terjangkau, dan pembangunan institusi pemerintahan setempat.

1. Pengantar

Yayasan Mitra Tani Mandiri (YMTM) adalah sebuah lembaga swadaya masyarakat yang didirikan pada tahun 1997, dengan visi mencapai kemandirian dan kesejahteraan masyarakat laki-laki dan perempuan di pedesaan dan daerah marginal dengan memperhatikan kelestarian lingkungan dan pembangunan yang berkelanjutan berdasarkan semangat kemitraan.

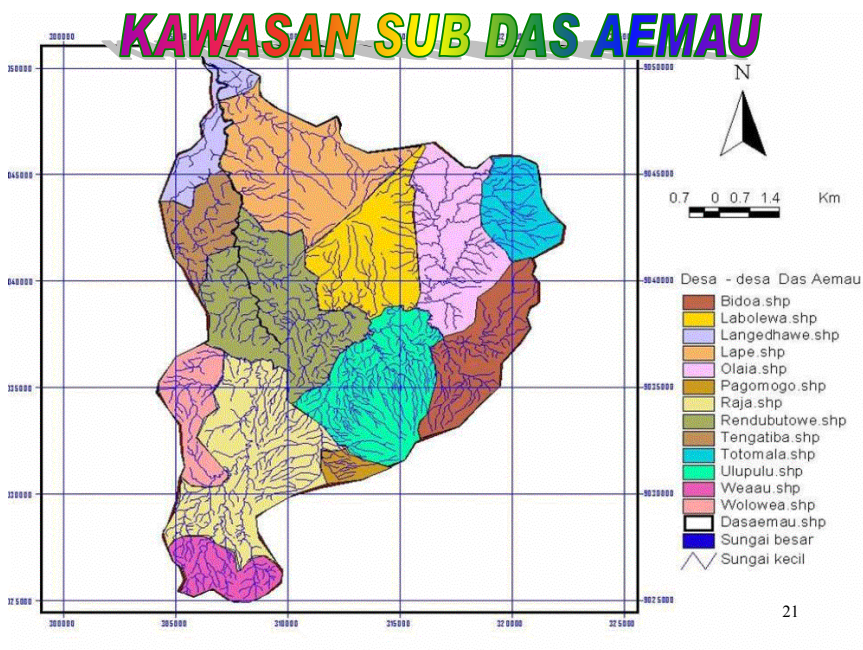
Sedangkan Studio Driya Media Kupang (SDM K) adalah sebuah lembaga yang memperjuangkan visi terwujudnya pelembagaan pendekatan partisipatif untuk mendukung pembangunan yang berkelanjutan, berhasil guna, terselenggara terus menerus dan dinikmati secara merata sebagai prasyarat menuju masyarakat yang terpenuhi hak-haknya sebagai warga negara, sejahtera dalam tatanan yang berkeadilan. Lembaga ini didirikan tahun 1995 untuk mendukung upaya-upaya sharing dan pembelajaran multipihak dalam bidang pengembangan partisipasi masyarakat dan pengembangan media tepat guna. Dalam pengembangan programnya SDM Kupang mendukung jaringan multipihak yang ada di Nusa Tenggara.

YMTM Ngada dan SDM Kupang adalah partisipan Konsorsium Pengembangan Masyarakat Nusa Tenggara (KPMNT) yang selama ini sangat peduli dengan pengelolaan sumberdaya alam berbasis masyarakat. Ada berbagai strategi dan pendekatan

pemberdayaan yang telah difasilitasi oleh YMTM Ngada dan SDM Kupang dengan dukungan KPMNT.

YMTM sejak tahun 1997, mendampingi masyarakat di Daerah Aliran sungai (DAS) Aesesa. DAS Aesesa menjadi fokus karena merupakan DAS terbesar kedua di wilayah propinsi Nusa Tenggara Timur (NTT) setelah Noelmina-Benenain dan terkering di wilayah Indonesia Bagian Timur, dengan curah hujan rata-rata 3-4 bulan. DAS Aesesa terletak di Kabupaten Ngada, Flores NTT. DAS Aesesa bagi masyarakat Kabupaten Ngada merupakan sumber air utama bagi pengairan persawahan di Mbay, dimana Mbay adalah sebagai salah satu lumbung beras di Kabupaten Ngada dan kabupaten lainnya di Flores. DAS Aesesa terbagi atas 5 sub DAS dan salah satu bagian sub DAS terkering dan tersebar adalah sub DAS Aemau.

Sub DAS Aemau meliputi 15 desa yang tersebar di wilayah kecamatan yaitu Kecamatan Aesesa 9 desa, Kecamatan Boawae 3 desa dan Kecamatan Nangaroro 3 desa. Jumlah penduduk sebanyak 3,996 keluarga atau 21,002 jiwa yang terdiri dari laki-laki 9,839 orang dan perempuan 11,163 orang (*Ngada dalam angka 2002*).



Sekitar 70% luas lahan sub DAS Aemau bervegetasi padang rumput yang gersang, kritis, dengan berbagai permasalahan lainnya yang cukup kompleks. Vegetasi pohon hanya terdapat di sekitar aliran air atau tempat-tempat tertentu. Kondisi tanah bercadas, kritis, kering, dengan solum tanah sangat tipis, dan semakin menipis apalagi didukung oleh tingkat erosi tanah yang tinggi dengan kemiringan lahan berkisar 30-40%, dan kebakaran padang yang terjadi setiap tahunnya, serta ternak lepas. Sumber air bersih bagi masyarakat sangat terbatas, dan umumnya terletak di daerah yang lebih rendah dari pemukiman. Tingkat pendidikan penduduk rata-rata sekolah dasar. Mata pencaharian 98% merupakan petani, 2% lainnya merupakan guru, pedagang dan pekerjaan lainnya. Sistem usahatani yang dikembangkan masih bersifat tradisional yaitu berpindah-pindah

dengan orientasi jangka pendek atau subsiten. Masyarakat bergabung dalam suku-suku dan suku yang paling besar adalah suku Rendu yang meliputi 5 desa.

Untuk mengatasi permasalahan-permasalahan diatas dalam pengelolaan DAS maka YMTM Ngada sejak tahun 1997 telah mengembangkan beberapa kegiatan program yang terintegrasi satu sama lain dengan beberapa strategi pendekatan program yang mempunyai kelemahan dan kelebihan.

2. Program

Program yang dikembangkan bersama masyarakat di Sub DAS Aemau DAS Aesesa yaitu:

- Pertanian berkelanjutan/Agroforestry meliputi:
 - ▶ Konservasi tanah (pengembangan: terasering, olah lubang, pupuk cair, pembenaman bahan organik, kompos dan pesetisida organik),
 - ▶ Pengembangan tanaman umur panjang (kehutanan, perkebunan, hortikultura),
 - ▶ Penanaman sayur-sayuran, persiapan lahan penanaman sampai dengan pasca panen
 - ▶ Usaha ternak sapi penggemukan/paron dan pengembangbiakan.
- Pengembangan usaha ekonomis: usaha bersama simpan pinjam/UBSP (pelatihan dan pendampingan pembukuan keuangan, administrasi dan kelembagaan), usaha industri rumah tangga (instan jahe, sirup mengkudu, instan alang-alang, instan wortel, kacang mente), pemasaran komoditi (jambu mente dan kemiri)
- Penguatan institusi kelompok tani, UBSP, koperasi dan Forum Petani (pelatihan dan pengembangan manajemen organisasi, keuangan, advokasi, lobby kepada stakeholders)
- Advokasi kebijakan (mengontrol pengembangan dan pelaksanaan kebijakan pemdes dan pemda, dan memfasilitasi pembuatan perdes)
- Penguatan pemerintah desa fasilitasi pembuatan perdes partisipatif, APBDes partisipatif, dan Renstra Desa.
- Fasilitasi kajian-kajian partisipatif (tanah, suku, GIS, pengelolaan kebakaran)

3. Pendekatan Program

1. Pendekatan Perorangan/Kebun (1997-1999)

Pendekatan perorangan/kebun: staf lapangan melakukan pendekatan orang-perorang atau dari kebun ke kebun, menjelaskan tujuan dan manfaat program, latihan, diskusi bersama anggota keluarga, praktek dan pendampingan lanjutan. Pendekatan ini sangat efektif karena petani langsung mengerti, tujuan, manfaat sehingga langsung menerapkannya di kebunnya. Jika petani kurang mengerti bisa langsung berdiskusi dengan pendamping. Hasilnya rata-rata kebun-kebun petani tersebut sangat mencerminkan **penerapan pertanian berkelanjutan** dan petani-petani yang ada pada umumnya menjadi **petani penggerak atau motivator program** bagi orang lain. Contoh model pertanian berkelanjutan 3-8 kebun per desa yang tersebar di 17 desa dampingan. Sedangkan petani

penggerak yang YMTM miliki hingga saat ini sebanyak 30 orang, dimana sebagian besar telah menduduki jabatan di pemerintah desa, BPD dan LKMD.

Akan tetapi permasalahan yang dihadapi adalah membutuhkan tenaga, waktu dan biaya cukup tinggi, serta perkembangan dampak program sangat lamban. Di lain pihak tenaga, dan biaya sangat terbatas padahal tuntutan penyebaran program dari masyarakat sangat tinggi.

2. Pendekatan Kelompok (1999-2003)

Dalam penerapan pendekatan kelompok, YMTM tidak membentuk kelompok baru namun memperbaharui kelompok-kelompok yang sudah ada di desa seperti kelompok *Woe, hamparan*, kelompok rukun tetangga/RT, kelompok inpres desa tertinggal (IDT) dan kelompok-kelompok lainnya. Peran YMTM adalah memperkuat kelompok-kelompok yang sudah ada, dengan pelatihan dan pendampingan. Materi pelatihan yang diberikan antara lain: dinamika kelompok, pembukuan dan administrasi keuangan, aturan-aturan dan sanksi/anggaran dasar-anggaran rumah tangga (AD/ART), perencanaan dan monitoring evaluasi, kepemimpinan, kerjasama, analisa usaha, pendidikan hukum kritis, dan beberapa materi lainnya.

Selain itu untuk memperkuat keberadaan kelompok maka kelompok difasilitasi untuk membentuk UBSP. Dalam wadah ini petani dapat meminjam jika membutuhkan dana untuk mendukung usaha dan menyimpan jika kelebihan uang. Setiap bulan selalu ada pertemuan rutin untuk transaksi simpan dan pinjam. Pada pertemuan rutin bulanan selain kegiatan simpan pinjam juga untuk mengevaluasi kegiatan, membuat rencana dan membahas permasalahan lain dalam kelompok serta dilakukan pendampingan dan pelatihan apabila diperlukan. Dengan adanya pertemuan rutin, pelatihan dan pendampingan secara rutin kelompok dapat menjadi lebih mandiri.

Untuk mendukung UBSP, dalam hal ini kelancaran simpan pinjam uang tunai dalam kelompok maka YMTM memfasilitasi pengembangan usaha-usaha yang bersifat ekonomis antara lain: pembuatan instan jahe, instan alang-alang, instan wortel, sirup mengkudu, kacang mente, pengembangan ternak sapi dan pengembangan sayuran. Dari kegiatan-kegiatan ini ditambah dengan *usaha catut* dan tenun ikat yang dikembangkan secara sendiri oleh petani, petani dapat memperoleh uang tunai secara rutin sehingga dapat mendukung transaksi simpan dan pinjam di kelompok UBSP setiap bulannya.

Keluaran atau hasil yang dicapai dengan adanya pendekatan ini kelompok menjamin mandiri dalam organisasi, usaha dan modal. Kelompok tani yang didampingi sebanyak 125 kelompok dan dari jumlah tersebut 60,8% atau 76 kelompok dapat digolongkan dalam kelompok yang mandiri dalam arti dapat melanjutkan sendiri kegiatan kelompoknya tanpa pendampingan. Rata-rata modal yang mereka miliki Rp.2 juta – Rp. 4 juta untuk kelompok tani dan Rp.6 juta – Rp.70 juta untuk kelompok simpan pinjam. Jumlah kelompok simpan pinjam yang dibina 76 kelompok UBSP.

Walaupun kelompok sudah cukup mandiri dan berjalan baik, yang didukung oleh petani penggerak yang dapat mempengaruhi kebijakan di tingkat desa namun masih banyak kelemahan karena untuk mempengaruhi kebijakan yang lebih luas termasuk mengakses

modal masih cukup sulit. Hal ini karena masing-masing kelompok berjuang sendiri-sendiri. Oleh karena itu dibutuhkan suatu terobosan baru yang lebih luas.

3. Pendekatan Kolaborasi PDABM- Sub DAS Aemau (Tahun 2003-sekarang)

Menyadari akan kelemahan dari pendekatan kelompok maka pada tahun 2002 YMTM mulai mengembangkan pendekatan yang lebih luas dan terintegrasi antar pihak yaitu pendekatan kolaborasi pengelolaan DAS yang berbasis masyarakat (Community Based-Integrated Watershed Management).

Untuk menindak lanjuti pendekatan kolaborasi pengelolaan DAS yang berbasis masyarakat ini, maka pada tahun 2003, muncul inisiatif dan kesepakatan untuk membangun kolaborasi multipihak dalam pengelolaan DAS Aesesa, dengan memulai kegiatan di Sub DAS Aemau. Pemerintah Kabupaten Ngada melalui Dinas Kehuatan dan BAPPEDA, YMTM, wakil masyarakat dengan dukungan VECO, VSO dan World Neighbors merumuskan rancangan program dan strategi pengelolaan Sub DAS Aemau. Kegiatan-kegiatan utama yang telah dilakukan dalam kurun waktu tahun 2003 – tahun 2006 antara lain:

- Pengkajian sosial ekonomi masyarakat secara partisipatif menggunakan metodologi PRA, menghasilkan sejumlah temuan masalah dan potensi sumber daya. Masalah dan potensi kemudian dianalisa secara partisipatif di tingkat dusun, tingkat desa dan tingkat sub DAS Aemau.
- Lokakarya perencanaan tingkat desa, menghasilkan rencana tingkat desa, yaitu rencana-rencana yang bisa diselesaikan sendiri oleh masyarakat tanpa membutuhkan dukungan dari pihak luar.
- Lokakarya tingkat sub DAS Aemau menghasilkan rencana tingkat sub DAS (antar desa), yaitu rencana-rencana yang membutuhkan kerjasama antar desa atau wilayah karena tidak dapat diselesaikan sendiri oleh desa yang bersangkutan. Contohnya adalah pengelolaan kebakaran, pengelolaan ternak lepas, dan lain-lain.
- Kajian kebijakan pemerintah secara partisipatif, diketahui kebijakan-kebijakan yang dikeluarkan oleh pemerintah desa, dinas-instansi kabupaten dan Pemda, sejauh mana mendukung pengelolaan DAS atau kurang mendukung pengelolaan DAS. Kajian ini sangat penting untuk memberikan masukan-masukan bagi perbaikan kebijakan-kebijakan pemerintah di masa yang akan datang, sehingga lebih berpihak pada pengelolaan DAS.
- Lokakarya pleno perencanaan multi pihak di tingkat kabupaten, mengikut sertakan semua pihak dinas, badan, instansi, Camat DPRD, LSM, masyarakat dan unsur tokoh agama. Hasil lokakarya adalah adanya rencana multipihak yang akan ditindak lanjuti oleh dinas-instansi, LSM dan pihak lain. Sebagai bukti komitmen bersama maka pada akhir lokakarya dibuat kesepakatan bersama yang ditanda tangani oleh 9 orang Kepala Desa, 3 orang Camat, Bupati dan 1 orang Wakil LSM.
- Pengembangan jaringan tingkat masyarakat dan multipihak. Pada tingkat masyarakat terbentuk FORPELDAS (Forum Peduli Lingkungan Daerah Aliran Sungai) sebagai wadah pengawal rencana-rencana pada tingkat masyarakat. Forum ini beranggotakan 9 orang yang merupakan wakil-wakil dari 9 desa ditambah 9 orang kepala desa. Sedangkan pada tingkat multipihak dibentuk Forum Multipihak dibawah koordinasi

Asisten II Bupati dan BAPPEDA. Untuk menyukseskan dan efektifitas FORPELDAS dan Forum Multipihak maka dilakukan monitoring serta pertemuan secara rutin. Pengurus FORPELDAS melakukan monitoring setiap bulan dan pertemuan rutin tiga bulanan, serta pertemuan 6 bulan bersama dengan Forum Multipihak. Pertemuan rutin ini untuk mengevaluasi rencana kerja 6 bulanan, perencanaan dan membahas permasalahan-permasalahan yang dihadapi, sekaligus mencari jalan keluarnya bersama-sama secara partisipatif.

- Pengintegrasian perencanaan pengelolaan DAS ke dalam mekanisme dan sistem perencanaan pembangunan pemerintah daerah dan LSM. Rencana-rencana yang sudah ada diangkat kembali dalam Musrenbangdes, Musrenbangcam dan Murenbangda. Selain itu dibawah koordinasi BAPPEDA dalam konsultasi anggaran tim eksekutif diingatkan kembali tentang rencana pengelolaan Sub DAS Aemau, yang menjadi tanggung jawab dinas-instansi yang bersangkutan.
- Kajian-kajian partisipatif yang mendukung pengelolaan Sub DAS Aemau. 1). Kajian hak penguasaan dan pengelolaan lahan suku di Suku Rendu (5 desa). Kajian ini memberikan masukan tentang kemungkinan pembagian lahan-lahan suku kepada anggota sehingga ada kepastian hak kelola lahan. Hal ini karena YMTM selama mendampingi masyarakat ada masyarakat yang belum mau mengembangkan program pertanian berkelanjutan karena ketidak pastian hak kelola lahan bagi mereka. 2). Sebagai tindak lanjut dari kajian tersebut telah dilakukan pemetaan partisipatif bersama masyarakat di beberapa wilayah sekaligus pemetaan dengan menggunakan GIS. Kegiatan ini dilakukan sebelum kegiatan pengembangan wanatani. 3). Penelitian pengelolaan kebakaran. Penelitian ini meliputi beberapa kegiatan yaitu : pembakaran pencegahan, pengembangan demplot pertanian berkelanjutan, penguatan kelompok, penelitian jenis dan manfaat tanaman hutan lokal, dan GIS. Semua kegiatan ini dilakukan untuk memberikan solusi terbaik bagi masalah kebakaran padang yang terjadi setiap tahunnya, dan berdampak pada penghidupan masyarakat Sub DAS Aemau.

4. Strategi Pendampingan Program

Dalam rangka mendukung pengembangan program, maka YMTM mengembangkan beberapa strategi program, antara lain;

- Penempatan Staf dan pengembangan kader (petani penggerak), dilakukan pada desa-desa baru karena masyarakatnya membutuhkan sharing dan diskusi yang terus menerus dalam mengembangkan usaha mereka. Walaupun demikian, disepakati bersama kapan staf dapat dipindahkan dari desa-desa baru tersebut. Selama ada staf, dilakukan pula penguatan kepada kader-kader yang ke depan diharapkan dapat mengambil alih peran pendampingan di kelompok atau desa.
- Supervisi berkala, dilakukan pada desa-desa yang telah ditinggalkan karena berdasarkan kriteria '*phasing out*' sudah mampu mengelola program sendiri. Supervisi berkala umumnya dijadwalkan dan disesuaikan dengan kebutuhan masyarakat.
- Dukungan penguatan kapasitas, banyak kegiatan yang dilakukan melalui pelatihan, pertemuan berkala antar desa, kunjungan silang. Melalui proses ini, pengetahuan, keterampilan dan sikap masyarakat berubah dan menambah kepercayaan diri mereka dalam berusaha dan berhubungan dengan pihak luar.

- Dukungan media, karena keterbatasan staf maka media-media tepat guna dijadikan alat penyampai informasi yang sangat efektif. Media-media yang ada didiskusikan oleh kelompok dalam rangka membangun pemahaman bersama.
- Pengembangan jaringan, hal ini sangat bermanfaat dalam rangka memperkuat posisi tawar masyarakat dalam memperjuangkan hak-hak mereka. Selain itu, pengembangan jaringan juga memberi ruang yang besar kepada masyarakat untuk saling berbagi informasi tidak saja dengan sesama petani tetapi juga dengan stakeholders terkait.
- Evaluasi dan Perencanaan bersama, merupakan strategi yang paling ampuh untuk membangun komitmen dan rasa memiliki program. Melalui proses ini kelompok atau masyarakat dapat mendiskusikan berbagai perkembangan dan hasil yang dicapai selama enam bulan atau setahun. Dari sana pula, masyarakat mulai membahas upaya-upaya untuk mengatasi berbagai persoalan yang dihadapi dalam pelaksanaan program.

5. Pelajaran Menarik

- Hidup bersama masyarakat mendorong terbangunnya keakraban antara masyarakat dengan YMTM dan mitra sehingga memudahkan pengembangan dan implementasi program bersama
- Partisipasi tinggi atas kehadiran dari masyarakat dan Dinas instansi waktu kajian, membangun pemahaman dan komitmen bersama
- Ada perubahan kemampuan dan pengetahuan tentang teknik dan cara memfasilitasi proses pengelolaan DAS
- Swadaya masyarakat mendukung kegiatan proses penegeloaan DAS (mulai kajian sampai pertemuan tingkat Desa RTL) dan masyarakat merasakan bahwa yang dilakukan adalah program mereka bukan orang luar
- Ada keterbukaan tentang pengelolaan dana dari pemerintah dan LSM lain dan terbangun kepercayaan untuk saling mendukung
- Hubungan Pemda dan LSM makin tinggi dan memungkinkan kerjasama kolaborasi yang lebih luas
- Masyarakat memandang kerjasama LSM dan Pemda sebagai kesatuan yang saling memperkuat
- Egosectoral menurun, karena ada program bersama Pemda LSM dan Dinas antar Dinas

6. Masalah dan Tantangan

Berdasarkan pengalaman-pengalaman YMTM selama bersama masyarakat mengembangkan berbagai program yang mendukung pengelolaan DAS dan penghidupan masyarakat di Sub DAS Aemau, DAS Aesesa terdapat beberapa masalah dan hambatan yang perlu diperbaharui lagi yaitu:

- Petani penggerak yang menjadi motor penggerak program, kurang mempunyai kapasitas yang memadai untuk mempengaruhi masyarakat dalam areal yang lebih luas, masih terbatas pada kelompok dan antar kelompok di suatu desa.

- Demikian juga pengurus dan anggota Forpeldas belum mempunyai kapasitas dan pengaruh dalam tingkat kawasan sehingga sulit untuk mengawal rencana lintas desa atau kawasan Sub DAS Aemau.
- Dampak program terhadap peningkatan penghidupan masyarakat di sub DAS Aemau masih terbatas pada kelompok-kelompok tani dan UBSP yang didampingi
- Realisasi pelaksanaan rencana kegiatan di Sub DAS Aemau, masih tergantung pada dukungan pihak luar, akibat ketiadaan dana yang dimiliki pemerintah desa

7. Strategi Pengelolaan Sub DAS Aemau DAS Aesesa Kedepan

Seperti diuraikan diatas bahwa selama bersama masyarakat dan mitra lain membangun kemitraan dalam pengelolaan Sub DAS Aemau, DAS Aesesa banyak keberhasilan dan banyak juga tantangan dan hambatan yang ditemui. Untuk itu diperlukan suatu strategi terobosan baru yang mampu memperkecil kelemahan dalam pengelolaan Sub DAS Aemau, DAS Aesesa. Strategi yang kami tawarkan untuk pengelelolaan Sub DAS Aemau pada waktu yang akan datang yaitu :

- 1) Memperkuat pemerintah desa sebagai sentral pembangunan dan pengelolaan Sub DAS Aemau (UU no.32 tentang otonomi daerah), untuk itu harus didukung dengan :
 - Memfasilitasi pemetaan dan rencana tata ruang pengelolaan lahan secara partisipatif dan didukung dengan GIS
 - Memfasilitasi rencana kerja secara detail sebagai tindak lanjuti dari pemetaan tataguna lahan
 - Membangun kesepakatan atau aturan main antar masyarakat (Perdes) dan antar desa (Perda) yang mengikat semua masyarakat dalam melaksanakan rencana kerja yang sudah dibuat.
 - Memfasilitasi desa dalam memperoleh dukungan dana dari pihak luar (Pemerintah dan donor luar) yang dapat dikelola sendiri oleh pemerintah desa
- 2) Memperkuat dan memperbanyak petani-petani penggerak sebagai kader-kader pemimpin melalui pendekatan individu yang berkualitas dengan pelatihan dan pendampingan secara kontinyu.
- 3) Memperluas dampak program pertanian berkelanjutan untuk meningkatkan penghidupan masyarakat sekaligus pelestarian lingkungan di kawasan Sub DAS Aemau, yang didukung oleh teknik-teknik pengelolaan api
- 4) Memperkuat institusi kelompok tani dan kelompok UBSP sebagai wadah pelaksanaan kegiatan program dan akses dana dalam mendukung peningkatan penghidupan yang berkelanjutan
- 5) Memfasilitasi lembaga keuangan desa (koperasi kredit) yang membawahi kelompok-kelompok UBSP sebagai wadah akses modal masyarakat, dan Koperasi pemasaran komoditi yang membantu memasarkan hasil komoditi masyarakat.
- 6) Memperkuat Forpeldas sebagai wadah koordinasi antar petani dalam memfasilitasi kegiatan-kegiatan antar desa dan wadah advokasi kebijakan pada level kabupaten.
- 7) Memaksimalkan Forum multipihak sebagai wadah koordinasi rencana pengelolaan Sub DAS Aemau dengan pihak pemerintah dan LSM.

- 8) Menggunakan media-media informasional dan instruksional untuk memperkaya pengetahuan masyarakat dan stakeholders. Serta mendokumentasikan berbagai pengalaman untuk di 'share' kepada mitra-mitra. Upaya ini didukung oleh SDM Kupang.

**PENGELOLAAN KEBAKARAN, KERJASAMA MASYARAKAT DAN
PENGEMBANGAN DAERAH PEDESAAN DI NUSA TENGGARA TIMUR:
PELAJARAN DARI PROYEK YANG DIBIYAI OLEH ACIAR
DI SUMBA TIMUR DAN NGADA**

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ABSTRAK

Nusa Tenggara Timur (NTT) menghidupi lebih dari 4.5 juta jiwa; 85% dari jumlah penduduk bergantung pada pertanian sebagai mata pencaharian. NTT banyak terdiri dari sabana rawan kebakaran. Api digunakan sebagai alat penting pada kehidupan pedesaan dan system pengelolaan tanah. Dengan transformasi pesat pada struktur masyarakat pedesaan dalam dekade dewasa ini, tingginya pertumbuhan penduduk (2% p.a.), terbatasnya lahan cukup-air, adanya konflik kepemilikan tanah baik antar-masyarakat maupun masyarakat-pemerintah, di NTT banyak terjadi kegagalan pada cara tradisional dalam pengelolaan kebakaran yang dikelola oleh penduduk setempat sehingga kebakaran yang tak terkendali berakibat pada aset-aset lingkungan hidup, sumber mata pencaharian, dan kondisi ekonomi.

Menindak lanjuti lokakarya preliminary regional di Kupang pada tahun 1995 dan Darwin pada tahun 1999, proyek penelitian berfokus pada pembangunan kapasitas pengelolaan kebakaran di institusi regional NTT dan masyarakat yang secara resmi terselenggara pada tahun 2000 dengan dukungan biaya pokok dari *the Australian Centre for International Agricultural Research* (ACIAR) dan badan lain di Australia. Proyek tersebut telah menunjukkan terkoordinasinya, pendekatan berdasar-masyarakat pada pengelolaan kebakaran di empat skala-desa sebagai tempat peragaan di Sumba Timur dan Flores tengah. Bekerja dengan masyarakat setempat, pemerintah NTT (BAPPEDA NTT, Dinas Kehutanan), Sekolah Tinggi Ekonomi Kristen Wira Wacana (Wira Wacana Christian School of Economics, Satya Wacana University), dan LSM setempat yang terorganisir dengan baik, proyek tersebut telah terimplementasi:

- Aktivitas pengelolaan kebakaran pada tiap desa studi (berkisar pada ukuran antara 10-70 km²), khususnya berfokus pada tanaman wanatani nilai-tinggi. Yang terpenting, komponen proyek ini telah dikembangkan dalam kerangka kerja 'action research', dimana aktivitas dikembangkan secara kolektif, termonitor dan teruji oleh masyarakat, institusi dan mitra (sekutu) peneliti.

- Penyuluhan masyarakat, kegiatan perencanaan dan latihan – yang kemudian termasuk pengamatan daerah terpencil (pemetaan kebakaran dengan menggunakan data satelit) serta dalam kaitannya dengan latihan GIS untuk staff BAPPEDA NTT, dan latihan sumber inventaris yang berfokus pada pemeriksaan status limitasi yang tersisa pada sumber kehutanan.
- Pengembangan kapasitas pendidikan, khususnya melalui transfer susunan modul ekologi yang dikembangkan melalui *the Tropical Savannas Cooperative Research Centre*, dan kursus-kursus pelatihan terkait, disampaikan ke Satya Wacana University (berada di Salatiga, Java), yang merupakan penyeter utama pendidikan tinggi untuk NTT.
- Dari pengkajian independen belum lama ini diketahui bahwa proyek pendekatan tersebut dirasa sukses dan tepat sasaran untuk kebutuhan setempat dengan mengikut sertakan masyarakat dan para institusi terkait.

Introduksi

Di tahun belakangan ini telah ada perhatian dan diskusi internasional mengenai kebakaran besar yang berkaitan dengan kegiatan El Niño Southern Oscillation (ENSO) di Indonesia bagian barat dan Papua Barat. Dalam hal ini telah dilakukan beberapa pengkajian yang termasuk didalamnya adalah mempelajari penyebab dasar, khususnya di Indonesia bagian barat (Applegate *et al.* 2001; Colfer 2002; Tacconi 2003; Mudiyarso *et al.*, 2004; Dennis *et al.* 2005). Namun sebaliknya, sangat kecil sekali apresiasi yang ditunjukkan, pengutamaan mengenai kondisi, serta implikasi pola kebakaran yang terjadi di daerah lain di kepulauan Indonesia, khususnya wilayah yang bermusim kemarau panjang, termasuk Nusa Tenggara Timur (NT: Dennis 1999).

Mengetahui bahwa di NTT (1) lebih dari 85% penduduknya bergantung pada pertanian sebagai mata pencaharian yang termasuk didalamnya 75-80% sektor tenaga kerja langsung dari penduduk tersebut (Barlow *et al.* 1990), antara tahun 1993-1997 berkontribusi 40% dari GDPnya sendiri (Djoeroemana *et al.* 2000), dan (2) kebakaran merupakan komponen gabungan antara tradisional/budaya dan pertanian kontemporer/sistem pengelolaan hutan (Fox 1977; Ataupah 2000; Bamaulin 2000; Gadas 2000; McWilliam 2000; Mudita 2000; Therik 2000), dalam hal ini telah digaris bawahi bahwa pengelolaan kebakaran yang tepat sangat penting bagi kelangsungan lingkungan hidup dan mata pencaharian penduduk setempat di wilayah rawan kebakaran.

Dalam kaitannya dengan ini, di tahun 1995, pada sebuah pertemuan di Kupang yang melibatkan perguruan tinggi dan lembaga penelitian di Indonesia Timur dan Australia Utara, dipahami bahwa di NTT pola kebakaran serta penyebabnya saat ini diidentifikasi sebagai area utama untuk kerja sama dibidang penelitian. Selanjutnya, topik tersebut ditindaklanjuti dengan lokakarya di Darwin tahun 1999 yang dibiayai oleh *Australian Centre for International Agricultural Research (ACIAR)*, dengan kajian makalah yang dipublikasi dalam seri *Proceeding ACIAR* (Russell-smith *et al.* 2000). Hasil dari lokakarya tahun 1999 adalah pengembangan proyek penelitian dengan biaya utama dari ACIAR, *Dampak kebakaran dan penggunaannya untuk pengelolaan lahan dan hutan berkelanjutan di Indonesia dan Australia Utara*, yang dimulai tahun 2000 dan selesai di tahun 2005.

Ada dua hal yang diungkapkan dalam makalah tersebut diatas. Pertama, memahami rancangan kunci pelaksanaan penelitian kebakaran, ini merupakan petunjuk untuk mempertimbangkan peran pengelolaan kebakaran dalam konteks model ‘pembangunan pedesaan terpadu yang berkelanjutan’ di NTT seperti yang disampaikan oleh Djoeroemana (jilid ini). Model itu sendiri adalah produk dari program penelitian kebakaran. Kedua, kami mendeskripsikan kemitraan dan kegiatan-kegiatan yang telah dikembangkan untuk menyajikan program yang efektif.

Pengelolaan kebakaran dan model Pembangunan Pedesaan Terpadu yang Berkelanjutan di NTT

Pengembangan mata pencaharian di NTT dipengaruhi oleh empat ‘komponen’ atau ‘bidang kegiatan’ – Sosial-Budaya, Politik, Lingkungan, Ekonomi (Djoeroemana, jilid ini). Pengelolaan kebakaran berinteraksi dan berdampak pada masing-masing bidang kegiatan. Pola hidup masyarakat dengan tindak pembakaran tanpa pengelolaan/pengendalian yang dilakukan terus menerus berakibat pada gangguan tanaman, pakan ternak dan bangunan, dampak pada sumber hutan, peningkatan erosi tanah dan mengakibatkan sedimentasi pada aliran sungai/tepi pantai (Bamaulin 2000; Gadas 2000; Mc William; Mudita 2000). Yang tak begitu nampak adalah pengaruh sosial-budaya dan politik. Lebih lanjut disampaikan dalam Russell-Smith *et al.* (2006), beberapa bagian permasalahan budaya dan politik perlu ditangani apabila kita ingin menghasilkan perkembangan yang efektif.

Pertama, dalam bidang kegiatan sosial-budaya perlu diperhatikan (1) struktur/tingkatan sosial suku setempat, sistem kepemilikan lahan, kemungkinan adanya pengaruh dari kelompok desa ke desa lain, dan (2) perubahan kemasyarakatan yang cukup pesat yang terjadi pada dekade belakangan ini, kebanyakan yang nampak adalah perubahan tingkatan struktur sosial tradisional menjadi bentuk yang lebih sepadan. Konflik terhadap kepemilikan lahan antar desa yang biasa terjadi yang dapat menimbulkan baik perselisihan terbuka atas penggunaan dan pengelolaan sumber, yang mengakibatkan tidak adanya pengelolaan kebakaran pada lahan bermasalah, dan/atau kebakaran digunakan sebagai alat untuk pertengkaran. Meningkatnya tekanan pada masyarakat karena pembagian lahan perkebunan dan sumber hutani yang terbatas hanya memperburuk konflik yang ada. Jumlah penduduk di NTT saat ini meningkat sekitar 2% per tahun (Biro Pusat Statistik 2002).

Kedua, dalam ranah politik, permasalahan utama yang berakibat langsung pada mata pencaharian adalah konflik kepemilikan lahan, dan permasalahan mengenai akses untuk, dan penggunaan sumber, antara masyarakat setempat dan penguasa yang memegang aturan, khususnya Dinas Kehutanan. Dinas Kehutanan membawahi sekitar 30% wilayah di NTT (termasuk wilayah bukan lahan hutan). Konflik utama mengenai lahan mengakibatkan pembakaran terhadap lahan yang dipersiapkan untuk hutan dan perkebunan karena ketidakpuasan masyarakat sebagai tuntutan hak tradisional atas lahan (McWilliam 2000). Dennis *et al* (2005) menyebutkan bahwa konflik kepemilikan lahan merupakan faktor utama terjadinya aktifitas pembakaran lahan yang mengganggu di Indonesia bagian barat.

Ketiga, juga dalam ranah politik, Kebijakan Pemerintah Daerah NTT “*Melarang segala bentuk pembakaran yang sia-sia demi upaya pengendalian tindakan pembakaran. Kebijaksanaan tersebut di dukung oleh perspektif dan petunjuk nasional, namun sumber awalnya dapat diidentifikasi dalam sejarah penghukuman penjajahan Belanda terhadap penggunaan kebakaran untuk pengelolaan dan pembukaan lahan.*” (McWilliam 2000;81). Menyinggung agenda kebijaksanaan nasional yang lebih luas, Tacconi & Ruchiat (2005) menyatakan permasalahannya sama-sama terang-terangan, “...kebijaksanaan kebakaran pada titik nol sekarang ini sama sekali tidak menangani masalah pengelolaan regional yang dibutuhkan, tidak ada upaya, dan tidak dapat diupayakan”. Akibat nyata kebijakan pada mata pencaharian masyarakat dirasakan di seluruh penjuru Indonesia. (Tacconi 2003; Dennis *et al.* 2005), kecuali khususnya pada wilayah semi-tandus dimana kegiatan pembakaran, merupakan bagian dari sistem pertanian.

Sebagai tambahan, faktor sosial – budaya dan politik tersebut, menyatu dengan kecenderungan alamia pada tatanan sabana regional untuk melakukan pembakaran di kala musim kering berlangsung, memberi pengaruh pada kondisi lingkungan hidup, sumber mata pencaharian, dan itu berarti kondisi ekonomi. Selanjutnya, dengan adanya faktor-faktor tersebut, hampir dapat dinyatakan bahwa, tanpa pengelolaan kebakaran yang efektif dan dukungan kebijakan lingkungan, perkembangan kehutanan dan pertanian yang berkelanjutan di NTT akan terus sulit untuk dilaksanakan.

Penelitian terhadap hasil pengelolaan kebakaran – pengembangan kemitraan masyarakat.

Kami mengetahui bahwa, kalau proyek yang diselenggarakan bermanfaat bagi masyarakat di NTT, semua unsur masyarakat yang bekerjasama harus dilibatkan dalam pembuatan perencanaan – masyarakat setempat itu sendiri, pemerintahan setempat, sektor non-pemerintah (LSM), dan karena dasar kegiatan berupa penelitian, maka tepat bila lembaga penelitian regional dan lembaga pendidikan tinggi untuk dilibatkan. Seperti yang telah dijelajahi dalam lokakarya, bahwa proyek diharapkan akan di selenggarakan di tiga tempat (masing-masing di Timur Barat, Sumba Timur, Ngada-central Flores), berfokus pada masalah skala-wilayah, dan melibatkan masyarakat setempat secara langsung baik dalam rancangan maupun pelaksanaan kegiatan penelitian dalam kerangka kerja penelitian.

Seperti apa yang telah terjadi, karena dana dan berbagai kegiatan politik telah mengakibatkan pengurangan proyek pada skala empat desa di Sumba Timur dan Ngada (fig.1), dengan masing-masing lokasi dekat dengan pusat kota Waingapu (Sumba Timur) dan Bajawa (Ngada). Meskipun demikian, hal ini tidak merubah fokus kegiatan serta tetap melibatkan pemuka masyarakat, pemerintah setempat (Kecamatan dan BAPPEDA NTT; Dinas Kehutanan), LSM setempat, Lembaga Perguruan Tinggi (Sekolah Tinggi Ilmu Ekonomi Kristen Wira Wacana, Universitas Satya Wacana). Badan terkait di Australia Utara, Charles Darwin University, Tropical Savvanas Management, Coopertaive Research Centre, dan Bushfires Council of the Northern Territory (Lembaga Pemerintah Northern Territory).

Proyek kepemimpinan, penyeleksian staff dan segala administrasi untuk komponen di NTT disediakan melalui Wira Wacana, namun di Ngada, aktifitas tersebut

diselenggarakan melalui LSM setempat (Yayasan Mira Tani Mandiri - YMTM). Hal ini kemudian terbukti sangat efektif karena dapat saling menghargai program pembangunan lain yang diselenggarakan melalui YMTM. BAPPEDA dalam hal ini menyumbangkan dua karyawan berpotensi untuk *Geographic Information System (GIS)* dan *Remote Sensing training (pelatihan pengindraan jarak jauh)*, sementara untuk karyawan lainnya diseleksi melalui Wira Wacana dan YMTM – dengan hasil memuaskan. Peran dari sekutu/mitra kerja Australia Utara adalah untuk menyediakan pengarahan teknis dan masukan bila diperlukan – khususnya melalui perencanaan kunjungan rutin, serta beberapa elemen pelatihan yang diselenggarakan di Darwin dan Bogor.

Elemen kunci selanjutnya adalah, mempekerjakan staff di Sumba Timur khususnya, penyelenggaraan proses panjang konsultasi dan sosialisasi dengan masyarakat desa; proses tersebut telah dilangsungkan di Ngada melalui aktifitas YMTM secara terus menerus. Setelah tercapainya kesepakatan antara pihak perencana pelaksanaan penelitian dan kegiatan pembangunan, proyek dapat dilangsungkan di lapangan atas kerjasama berdasar pada kemasyarakatan. Selang beberapa waktu dalam proyek, kegiatan utamanya dapat disimpulkan sebagai berikut:

- Latar belakang dokumentasi dan dari perkiraan mata pencaharian serta aktivitas yang berkaitan dengan pengelolaan lahan, pelaksanaan pengelolaan kebakaran, dan struktur sosial/masyarakat serta data demografik, untuk menyediakan pemahaman terhadap permasalahan pengelolaan kebakaran pada desa-desa khusus dan lebih regional. Pelajaran ini telah disusun sebagai pelajaran situs laporan yang substansial. (ACIAR 2004a, b)
- Implementasi pada struktur aktifitas pengelolaan kebakaran pada masing-masing desa studi (ukuran berkisar pada 10-70km²), khususnya berfokus pada nilai-tinggi perkebunan wanatani.
- Penyuluhan masyarakat, perencanaan dan aktifitas latihan – termasuk kemudian *remote sensing* (pemetaan kebakaran menggunakan data satelit) dan kaitanya dengan pelatihan GIS untuk staf BAPPEDA, serta pelatihan sumber inventori yang berfokus pada pengkajian status terbatasnya sisa sumber hutan. Pemetaan kebakaran telah dipresentasikan di Fisher *et al.* (2006), dan kerja sumber inventory di presentasikan di Russell-Smith *et al.* (2006).
- Pengembangan kapasitas pendidikan, khususnya dengan penyampaian pembangunan susunan modul ekologi melalui *Tropical Savannas Management Cooperative Research Centre*, dan kursus-kursus terkait lainnya, yang disampaikan oleh Universitas Satya Wacana (yang berada di Salatiga, Jawa), yang merupakan penyedia terbesar untuk NTT.

Pengkajian independen yang dilakukan belum lama ini menemukan bahwa pendekatan proyek tersebut memenuhi kebutuhan setempat dengan sukses yaitu dengan melibatkan seluruh masyarakat dan institusi terkait (House & Saragih 2005).

Catatan yang diberikan oleh para pengkaji, ditemukan beberapa dampak dari proyek tersebut, yaitu;

Dampak terhadap masyarakat (Sosial, Ekonomi, Lingkungan dll)

Keuntungan langsung pada pendapatan desa melalui bertambahnya lahan produktif, khususnya di Flores dimana sayuran ditanam diantara pepohonan dan pakan ternak. Dampak jangka pendek di Sumba terbatas pada peringatan dan pemahaman akan kebakaran serta pengelolaannya. Dampak terhadap masyarakat yang paling signifikan adalah pada kelompok-kelompok masyarakat desa dalam menyelesaikan permasalahan umum. Kelompok-kelompok tersebut mengatakan bahwa mereka akan terus menggunakan pengetahuan yang telah mereka miliki mengenai pengelolaan kebakaran, dan diharapkan akan berkembang pada desa-desa disekitarnya yang akhirnya dapat meluas ke kecamatan. Hal ini merupakan bentuk penyuluhan yang sangat kuat, dimana para peneliti dapat menunjukkan pada mereka apa yang dapat dilakukan.

Dampak pembangunan kapasitas

Pembangunan kapasitas terjadi di beberapa tempat selama berlangsungnya proyek ini. Pertama, suksesnya pelatihan GIS/remote sensing yang diikuti oleh pegawai BAPPEDA setempat telah menghasilkan tidak hanya bertambahnya keahlian yang dapat memberikan nilai tambah pada proyek ini saja, tapi juga keahlian yang sangat dibutuhkan dalam tujuan pengelolaan sumber alam. Hal yang sangat meningkatkan semangat dimana *pengelolaan lahan dan hutan di Indonesia dan Australia Utara*, yang diselenggarakan tahun 2000 akhirnya dapat terselesaikan di tahun 2005.

Dua hal yang perlu diingat dalam makalah ini. Pertama, sebagai dasar untuk memahami rancangan kunci dalam pengimplementasian penelitian kebakaran, hal ini perlu di pertimbangkan peran dari pengelolaan kebakaran itu sendiri dalam konteksnya dengan “pembangunan pedesaan terpadu yang berkelanjutan” untuk NTT seperti yang telah disampaikan oleh Djoeroemana (jilid ini); hasil yang dikembangkan dalam program penelitian kebakaran. Kedua, disebutkan sebagai kerjasama dan kegiatan yang dikembangkan untuk menyampaikan program yang efektif.

Pengelolaan kebakaran dan model Pembangunan Pedesaan Terpadu yang Berkelanjutan di NTT

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Pertama, dalam bidang kegiatan sosial-budaya perlu diperhatikan (1) struktur/tingkatan sosial suku setempat, sistem kepemilikan lahan, kemungkinan adanya pengaruh dari kelompok desa ke desa lain, dan (2) perubahan kemasyarakatan yang cukup pesat yang terjadi pada dekade belakangan ini, kebanyakan yang nampak adalah perubahan tingkatan

struktur sosial tradisional menjadi bentuk yang lebih sepadan. Konflik terhadap kepemilikan lahan antar desa yang biasa terjadi yang dapat menimbulkan baik perselisihan terbuka atas penggunaan dan pengelolaan sumber, yang mengakibatkan tidak adanya pengelolaan kebakaran pada lahan bermasalah, dan/atau kebakaran digunakan sebagai alat untuk pertengkaran. Meningkatnya tekanan pada masyarakat karena pembagian lahan perkebunan dan sumber hutan yang terbatas hanya memperburuk konflik yang ada. Jumlah penduduk di NTT saat ini meningkat sekitar 2% per tahun (Biro Pusat Statistik 2002).

Daftar Pustaka

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KEUANGAN MIKRO BAGI PEMBANGUNAN MASYARAKAT MISKIN DI NUSA TENGGARA TIMUR: MASALAH DAN SOLUSINYA DALAM PANDANGAN LEMBAGA NON-PEMERINTAH

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ABSTRAK

Makalah ini menjelaskan tentang pengalaman Tanaoba Lais Manekat, yaitu sebuah Lembaga Swadaya Masyarakat, yang telah berhasil memberikan pelayanan dalam microfinance sebagai bagian dari program yang lebih luas yang bertujuan untuk membantu masyarakat miskin dan pengusaha di NTT, khususnya Timur Barat. Program pelayanan microfinance TLM saat ini berfokus pada empat komponen: (1) pinjaman kelompok kecil, (2) pinjaman perorangan, (3) penggemukan sapi, (4) pemeliharaan rumput laut. Disamping itu TLM juga menawarkan pelayanan keuangan, yang dalam hal ini diberikan pada pembangunan keuangan dan usaha di bidang pelatihan. Dengan model usaha seperti ini, program microfinance TLM berkembang pesat sejak tahun 1994 yang termasuk didalamnya 17,000 anggota aktif terhitung sampai dengan tahun 2005.

Pendahuluan

Nusa Tenggara Timur (NTT) adalah provinsi yang tergolong memiliki tingkat kemiskinan tinggi di Indonesia. Pendapatan perkapita penduduk NTT pada tahun 2004 hanya sekitar 3 juta rupiah atau kurang dari satu per tiga pendapatan perkapita nasional yang mencapai 9,5 juta rupiah. Kemiskinan juga terindikasi dari rendahnya kualitas pembangunan manusia yang secara rata-rata nilainya lebih rendah daripada penduduk Indonesia. Secara statistik, jumlah penduduk NTT yang berada di bawah garis kemiskinan mencapai sekitar 27%, hampir dua kali lebih besar persentase nasional (15%). Tingkat kepadatan penduduk rendah dan sebagian besar penduduk NTT tinggal di pedesaan. Industri yang ada juga sangat sedikit.

Berbagai program strategis telah dikembangkan dan diimplementasi oleh pemerintah maupun lembaga-lembaga non-pemerintah (NGO) untuk mengatasi problema kemiskinan tersebut. Salah satu diantaranya adalah penyediaan layanan keuangan mikro (LKM) yang seringkali direduksi cakupannya menjadi mikro kredit saja. Pelayanan keuangan mikro sesungguhnya memiliki lingkup yang lebih luas dari mikro kredit, dan diyakini sebagai suatu strategi kunci yang dapat membantu masyarakat keluar dari kemiskinan.

Di Indonesia, beberapa pelayananan keuangan mikro (*micro finance*) dinilai telah berhasil mengatasi atau setidaknya mereduksi masalah kemiskinan. Diantaranya adalah pelayanan Bank Rakyat Indonesia (BRI) Unit Desa (Robinson, 2002), kredit mikro yang disediakan oleh Proyek Peningkatan Pendapatan Petani-Nelayan Kecil (P4K), serta pelayanan keuangan mikro oleh Bank Purba di Semarang dan Mitra Karya di Jawa Timur (Seibel dan Parhusip, 1997). Meskipun pelayanan keuangan mikro telah menunjukkan

keberhasilan pengurangan kemiskinan di beberapa tempat di berbagai negara sebagaimana dikemukakan oleh sejumlah studi, namun beberapa kajian menemukan adanya keterbatasan kemampuan keuangan mikro dalam mengentaskan masyarakat miskin, khususnya yang paling miskin. Di samping itu, format atau disain layanan mikro dan karakteristik lokal juga sangat mempengaruhi tingkat keberhasilan dari program tersebut dalam membantu menanggulangi problema kemiskinan.

Tulisan ini bertujuan untuk mendiskusikan permasalahan dan solusi terkait pengelolaan keuangan mikro dalam upaya membantu masyarakat miskin di Indonesia, khususnya di NTT. Selain itu, ditrampilkan pula contoh atau model implementasi LKM oleh NGO, khususnya dalam pengalaman Yayasan Tanaoba Lais Manekat (TLM).

Layanan Keuangan Mikro

Definisi Layanan Mikro

Keuangan mikro diartikan sebagai penyediaan berbagai bentuk pelayanan keuangan mencakup kredit, tabungan, asuransi dan transfer uang bagi orang atau keluarga miskin atau berpenghasilan rendah, dan usaha mikro mereka (Usman *et al.*, 2004). Definisi tersebut memberikan cakupan yang lebih luas daripada sekedar penekanan pada kredit mikro saja, dan juga lebih terfokus kepada masyarakat miskin atau berpenghasilan rendah. Selanjutnya, terdapat dua ciri utama keuangan mikro yang membedakannya dari produk jasa keuangan formal, yaitu kecilnya pinjaman dan/atau simpanan, dan/atau tidak adanya jaminan dalam bentuk aset.

Lembaga Penyedia Keuangan Mikro di NTT

Di Nusa Tenggara Timur terdapat beragam lembaga penyedia jasa keuangan mikro (LKM), meliputi lembaga formal bank dan nonbank, lembaga nonformal, program pemerintah, serta lembaga informal. Lembaga Penelitian SMERU (2004) membagi LKM yang beroperasi di NTT ke dalam 4 kelompok, yakni:

1. Lembaga formal, yaitu lembaga yang berbadan hukum dan secara formal diakui oleh perundangan yang berlaku saat ini sebagai lembaga keuangan. Lembaga formal ini dibedakan lagi menjadi dua, yaitu bank (BRI, Bank Mandiri, BPR dsb) dan non bank (KUD, koperasi kredit, dan perusahaan pegadaian).
2. Lembaga nonformal, yaitu lembaga yang telah memiliki dasar legalitas sebagai badan hukum, misalnya yayasan atau dasar legalitas lainnya, seperti Surat Keputusan Gubernur atau Bupati, tetapi belum memiliki izin dan belum diakui sebagai lembaga keuangan formal oleh perundangan yang berlaku saat ini. Lembaga nonformal ini antara lain berbentuk usaha simpan pinjam (USP), dan lembaga swadaya masyarakat (LSM) yang menyediakan jasa layanan keuangan mikro.
3. Program-program pemerintah yang menyediakan atau mempunyai komponen pelayanan keuangan mikro, pada umumnya dalam bentuk kredit mikro dan kredit program. Termasuk dalam kategori ini antara lain kredit pemberdayaan ekonomi masyarakat (PEM) dan bantuan pinjaman langsung masyarakat (BPLM).
4. Lembaga informal, yaitu lembaga yang tidak berbadan hukum seperti kelompok arisan, kelompok gereja, atau sumber informal lainnya.

Masalah dan tantangan pengelolaan LKM di Nusa Tenggara Timur

Sudah banyak lembaga baik pemerintah maupun non-pemerintah, formal ataupun nonformal terlibat dalam pengelolaan LKM melalui sejumlah program ataupun bentuk kegiatan LKM yang juga terus berkembang. Namun, tidak semua program tersebut berhasil dalam membantu masyarakat miskin mengatasi persoalan ekonominya. Permasalahan tampaknya terjadi pada tataran disain dan kebijakan program, besaran pinjaman, dan akses yang dapat diuraikan sebagai berikut.

- LKM yang dikelola oleh lembaga formal, khususnya perbankan tidak sepenuhnya dapat dinikmati oleh seluruh keluarga miskin. Hal ini karena adanya kewajiban memiliki agunan dan kelayakan usaha dalam pemberian kredit. Bentuk agunan yang dipersyaratkan lembaga formal (aset, sertifikat tanah, dsb) umumnya tidak dimiliki masyarakat miskin yang mayoritas petani.
- LKM yang dipraktekkan di Indonesia, khususnya di NTT masih didominasi oleh kegiatan pemberian kredit/pinjaman, dan sangat sedikit yang memperhatikan aspek kebutuhan ekonomi lainnya seperti tabungan dan asuransi.
- Jumlah kredit yang dibutuhkan masyarakat miskin umumnya dalam skala kecil tidak terakomodir dalam skema kredit sebagian besar perbankan.
- Pelayanan keuangan mikro lebih banyak dikaitkan dengan tambahan modal usaha akan tetapi masyarakat miskin seringkali mengajukan kredit pinjaman bukan untuk tambahan modal tetapi sebagai upaya untuk mengatasi pengeluaran-pengeluaran non-usaha.
- Lokasi lembaga LKM yang umumnya berada di kota ataupun pusat kecamatan sulit untuk diakses masyarakat miskin yang tinggal di pelosok.
- Masyarakat miskin yang kesulitan dalam mendapatkan pinjaman dari LKM formal ataupun nonformal yang legal seringkali terjebak dalam skema pinjaman bunga tinggi yang dikenakan oleh 'bank gelap' ataupun rentenir.

Program dan implementasi kredit Mikro oleh NGO dalam pembangunan masyarakat miskin Di NTT: pengalaman empirik TLM

Sangat sedikit data dan informasi yang tersedia maupun yang kami ketahui tentang pengelolaan LKM oleh Lembaga swadaya masyarakat di Nusa Tenggara Timur, oleh karena itu pengalaman empirik TLM dalam mengelola LKM selama ini akan mendominasi uraian dan menjadi fokus bahasan tentang layanan keuangan mikro di NTT dalam tulisan ini.

Visi dan Misi Yayasan TLM-GMIT sudah tentu menjadi inspirasi, spirit dan acuan dalam disain dan pengelolaan program LKM yayasan. Visi TLM adalah menyampaikan kasih ALLAH kepada dunia. Sedangkan misinya adalah membangun masyarakat miskin di NTT melalui transformasi kehidupan ekonomi, sosial dan spiritual.

Yayasan TLM didirikan pada November 1994 hingga kini memiliki 1 kantor pusat yang terletak di Kota Kupang dan 10 kantor cabang yang tersebar di Kota Kupang (1 buah), Kabupaten Kupang (4 buah), Kabupaten TTS (Soe), TTU (Kefa) dan Alor (Kalabahi) masing-masing 1 buah. Selain itu, terdapat 2 Pos Pelayanan yakni Pos Pelayanan Rumput

Laut di Rote (Nembrala), dan Pos Pelayanan Sapi Paron di Baun. TLM dikelola oleh 158 orang staf yang terdiri dari 71 orang staf administrasi dan 87 orang staf lapangan.

Cakupan program LKM dan target klien dari Yayasan Tanaoba Lais Manekat

Layanan Keuangan Mikro (LKM) merupakan salah satu dari 5 (lima program utama) TLM, disamping 4 program utama lainnya yakni Pelatihan, *Business Developments Service (BDS)*, Pengembangan Masyarakat, dan Pembinaan Rohani. TLM mengelola LKM yang terintegrasi dalam 4 Program, yakni: (1) Program kredit kelompok; (2) Program kredit individu; (3) Program penggemukan sapi; dan (4) program budidaya rumput laut.

Target dari ke-empat program LKM ini adalah para pedagang kecil, petani miskin, dan para pekerja yang memiliki penghasilan rendah. Jumlah klien aktif meningkat dari tahun ke tahun, dan hingga tahun 2005 jumlah klien aktif 16.849 orang dimana jumlah terbanyak ada pada program kredit KUM (67,8%), disusul berturut-turut oleh Program Kredit Individu (21%), Program Penggemukan Sapi (7,5%), dan Program Rumput Laut (3,7%) (Tabel 1). Jumlah klien ini diharapkan terus meningkat dan pada tahun 2007 ditargetkan mencapai 35 ribu klien aktif.

Program Kredit Kelompok

Program ini dikenal sebagai program “KUM” (Kelompok Usaha Mandiri) yang memiliki target pada para pedagang kecil, petani miskin dan pegawai berpenghasilan rendah yang mempunyai usaha untuk mendatangkan penghasilan setiap hari dan sangat membutuhkan modal untuk mengembangkan usaha, namun tidak mempunyai kesempatan untuk memperoleh pinjaman modal dari pihak Bank karena tidak memiliki barang jaminan. Untuk mengikuti program ini, para calon klien harus memenuhi sejumlah persyaratan yang ditentukan oleh TLM antara lain menyangkut jenis usaha, usia, status domisili, dan integritas diri calon klien.

Kelompok KUM terdiri dari 5 orang dengan modal usaha dari setiap anggota sebelum pinjaman maksimal Rp. 2.000.000. Pinjaman terdiri atas 6 tahapan, tahapan pertama sebesar Rp. 500.000 meningkat hingga Rp. 5.000.000 pada tahapan keenam. Suku bunga yang diberikan per pinjaman 3% per bulan dalam jangka waktu 20 minggu (5 bulan).

Dasar pemberian pinjaman kepada nasabah TLM adalah KEPERCAYAAN. Lembaga menaruh rasa percaya kepada setiap anggota bahwa pinjaman akan dapat dikembalikan sesuai kesepakatan bersama. TLM meyakini bahwa pinjaman atau kredit sangat penting artinya apabila dimanfaatkan secara baik dan benar. Sebaliknya, pengelolaan pinjaman yang tidak baik seringkali menimbulkan masalah bahkan dapat menyebabkan hancurnya usaha bisnis.

Pada setiap pinjaman, setiap anggota diwajibkan membayar dan menyimpan uang setiap hari sehingga setiap minggu dapat menyetor 100%. Untuk mendisiplinkan dan membiasakan diri dengan budaya menabung maka setiap anggota diberikan satu kotak tabungan oleh TLM. Pengembalian pinjaman dilakukan setiap minggu pada pertemuan yang dikoordinir oleh petugas pendamping lapangan yang sekaligus juga memberikan motivasi dan bimbingan serta pelatihan. Materi pelatihan yang disediakan TLM

disesuaikan dengan kebutuhan serta latar belakang pendidikan sebagian besar klien yang cukup rendah.

Program Kredit Individu

Program ini melibatkan bekas nasabah KUM dan atau nasabah baru baik pria maupun wanita yang usahanya relatif lebih maju dibandingkan nasabah pada program KUM. Sasaran dari program ini adalah para pedagang kecil dan pegawai berpenghasilan rendah yang mempunyai usaha untuk mendatangkan penghasilan setiap hari dan sangat membutuhkan modal untuk mengembangkan usaha, dan tidak mempunyai kesempatan untuk memperoleh pinjaman modal dari Bank.

Oleh karena nasabah yang terlibat dalam program ini adalah mereka yang usahanya sudah relatif lebih maju maka modal usahanya harus lebih tinggi, minimal Rp.2.000.000. Suku bunga pinjaman sebesar 3% per bulan dengan jangka waktu pinjaman per 20 minggu; 12 bulan, atau 24 bulan. Untuk setiap pinjaman dikenakan biaya administrasi 3% dari nilai pinjaman. Pengembalian pinjaman langsung di Kantor cabang TLM di daerah domisili klien.

Program Penggemukan Sapi

Nusa Tenggara Timur dikenal sebagai salah satu gudang ternak, khususnya ternak sapi potong di Indonesia. Diantara jenis ternak besar yang dipelihara masyarakat, populasi sapi adalah yang terbanyak, disusul kerbau dan kuda. Sebagaimana besar ternak sapi tersebut yakni sekitar 77% berada atau dipelihara di Pulau Timor (Tabel 2). Mayoritas peternak sapi adalah juga sebagai petani khususnya petani tanaman pangan. Peternakan memberikan sumbangan yang sangat signifikan bagi pendapatan masyarakat peternak dan daerah. Analisis terhadap nilai Produk Domestik Regional Bruto (PDRB) NTT tahun 2004 menunjukkan bahwa Peternakan (utamanya sapi) dan hasil-hasilnya memainkan peranan yang sangat penting bagi masyarakat NTT. Peternakan memberikan kontribusi 30% terhadap Produk domestik regional bruto (PDRB) NTT yang berasal dari sektor pertanian. Angka ini meskipun lebih rendah dari kontribusi tanaman bahan pangan (51%), namun masih lebih tinggi dari sub-sektor lain dalam bidang usaha pertanian/perikanan lainnya; bahkan jauh lebih tinggi dari sebagian besar lapangan usaha di luar bidang pertanian (BPS NTT, 2005).

Implementasi Program Penggemukan Sapi (mayoritas jenis sapi Bali) terkonsentrasi di Pulau Timor, utamanya di Kabupaten Kupang. Hal ini mengingat populasi ternak sapi terbesar (26%) ada di Kabupaten Kupang (Lihat Tabel 2) dan budaya pemeliharaan sapi penggemukan— lebih dikenal dengan istilah 'paron' memang sudah lama dipraktekkan di daerah ini (khususnya di Kecamatan Amarasi).

Program Paronisasi yang dikembangkan TLM ini merupakan pinjaman kelompok yang terdiri atas 15 sampai dengan 20 orang. Kredit berupa pinjaman yang besarnya disesuaikan dengan harga sapi bakalan pada saat realisasi/pembelian. Realisasi diwujudkan dalam bentuk sapi bakalan dan tidak diberikan secara tunai, hal ini untuk menghindari penyimpangan dalam pemanfaatan dana pinjaman tersebut untuk kegiatan di luar bisnis sapi paron atau kegiatan-kegiatan konsumtif oleh klien.

Jangka waktu pinjaman adalah 6 bulan yakni disesuaikan dengan lama pemeliharaan atau penggemukan sapi bakalan tersebut. Setiap klien dikenakan biaya administrasi sebesar 3% dari harga pembelian sapi bakalannya. Pendapatan klien (peternak) maupun TLM ditentukan berdasarkan sistem bagi hasil yaitu 60% keuntungan bagi klien, 30% bagi TLM dan 10% bagi gereja yang merekomendasi klien bersangkutan.

Untuk menjamin transparansi maka baik proses pembelian bakalan maupun penjualannya, peternak (klien) dilibatkan secara aktif. Penetapan harga jual ternak hasil penggemukan harus dilakukan dengan penimbangan ternak, tidak dengan sistem taksiran yang umum dipraktekkan dalam proses penjualan sapi paron dan sangat sering merugikan pemilik ternak. TLM berperan aktif dalam pemasaran sapi paron antara lain dengan menyeleksi calon pembeli untuk menemukan pihak yang memberikan tawaran harga tertinggi. Selain itu, TLM juga memberikan training dan pendampingan oleh petugas lapangan selama proses pemeliharaan ternak sapi.

Dalam empat bulan terakhir ini, sebagian besar transaksi pengadaan sapi bakalan dilakukan melalui Pos Servis Sapi di Baun. Di Pos ini, sapi-sapi bakalan yang baru dibeli dari pasar hewan yang umumnya dalam kondisi stress dipelihara selama 1 – 2 minggu untuk menjalani treatment perbaikan kondisi tubuh dan kesehatan serta penimbangan. Perawatan kesehatan yang diberikan meliputi pemberian vitamin, obat cacing, dan vaksinasi. Dengan demikian, saat penyerahan kepada klien kondisi ternak dalam keadaan baik dan sehat serta berat badan awalnya diketahui sehingga dapat diprediksi produktivitas ternak bersangkutan selama dalam masa paronisasi. Saat ini, disamping program paronisasi TLM sedang melaksanakan implementasi awal dari program baru di bidang ternak sapi yakni program pembibitan (breeding).

Program ini mencakup pembelian sapi-sapi betina produktif yang bunting dan selanjutnya dipelihara oleh klien. Anak sapi (pedet) yang lahir selanjutnya dipelihara oleh klien dan digunakan dalam program paronisasi ataupun program pembibitan. Perkawinan induk selanjutnya dilakukan dengan inseminasi buatan menggunakan semen jantan sapi Brangus. Program ini akan memberikan keuntungan dalam mengatasi masalah ketersediaan sapi bakalan di lapangan yang semakin hari dirasakan semakin menurun baik dalam jumlah maupun kualitas, dan diharapkan pula mampu menekan tingkat pemotongan sapi betina produktif yang sangat tinggi yang mengancam populasi ternak sapi di NTT, khususnya di Pulau Timor.

Program Rumput Laut

Program ini memiliki target pada masyarakat yang bermukim di pesisir pantai yang potensial untuk budidaya rumput laut, yang tidak memiliki akses modal terhadap lembaga perbankan atau pihak lain. Besaran pinjaman ditentukan berdasarkan kebutuhan, permintaan dan analisa, yang berkisar antara Rp. 250.000 sampai dengan Rp. 1.000.000,-. Jangka waktu pengembalian pinjaman adalah 20 minggu yang pembayarannya dilakukan setiap 2 minggu (10 kali cicilan). Tingkat bunga yang diberikan 3% per bulan atau dihitung 1,5% per 2 minggu. TLM secara aktif membantu pemasaran hasil dan memberikan training serta pendampingan kepada petani rumput laut untuk meningkatkan ketrampilan serta kualitas hasil produksi.

Realisasi keuangan program LKM TLM

Realisasi keuangan program LKM yang dikelola TLM meningkat secara tajam dalam tahun 2004 mencapai sekitar 222% dibandingkan posisi setahun sebelumnya. Jumlah ini terus mengalami peningkatan sekitar 117% dalam tahun 2005. Program Kredit Individu dan KUM menjadi program favorit memiliki angka realisasi terbesar yakni masing-masing 68 dan 20%, disusul program sapi dan rumput laut. Dilihat dari perkembangan realisasi, program KUM – meskipun termasuk dalam program dengan angka realisasi tinggi, namun jumlahnya sedikit mengalami penurunan pada tahun 2005. Sebaliknya program Kredit Individu dan Program Paronisasi Sapi mengalami peningkatan yang sangat signifikan yakni mencapai 200% atau lebih.

Perkembangan positif yang terjadi pada kedua program ini mengindikasikan keberhasilan dalam pembinaan dan pengembangan bisnis klien pada program KUM yang kemudian memampukan mereka untuk melanjutkan pinjaman pada skala modal yang lebih besar yakni pada Program Kredit Individu. Sementara itu, peningkatan realisasi program sapi memberikan sinyal bahwa program ini akan menjadi salah satu program LKM andalan pada usaha produktif TLM di masa-masa mendatang.

Penutup

Berdasarkan uraian dan bahasan dalam tulisan ini, dapat disimpulkan beberapa hal:

- Layanan LKM merupakan salah satu strategi kunci dalam mengurangi tingkat kemiskinan masyarakat.
- Pengelolaan program LKM harus dilakukan secara komprehensif, tidak hanya terfokus kepada realisasi kredit (mikro kredit) saja tetapi juga mencakup kebutuhan ekonomi lain seperti tabungan dan asuransi, yang didukung dengan pelatihan dan pendampingan bagi masyarakat.
- Program LKM akan memberikan nilai manfaat yang maksimal bagi pengentasan masyarakat miskin apabila disain dan pengelolaannya disesuaikan dengan pola kehidupan golongan miskin yang kegiatan ekonominya (produksi, konsumsi, tabungan, pinjaman dan kegiatan mencari nafkah) dilakukan dalam skala kecil, dan mempunyai tingkat kerentanan yang sangat tinggi terhadap gejolak ekonomi.

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Tabel 1. Perkembangan Jumlah Klien Aktif (orang) yang terlibat dalam Program LKM TLM, 2002 – 2005

No	Program LKM	2002	2003	2004	2005
1.	KUM	5.385	7.250	11.605	11.425
2.	Individu	-	-	1.775	3.539
3.	Sapi	28	146	720	1.254
4.	Rumput laut	-	55	623	631
TOTAL		5.413	7.451	14.723	16.849

Keterangan: (-) Program belum dilaksanakan pada tahun bersangkutan

Tabel 2. Populasi Ternak Besar (ekor) Per Kabupaten/Kota Se Propinsi NTT, 2004

No	Kabupaten / Kota	Sapi	Kerbau	Kuda
1.	Sumba Barat	6.234	32.759	16.852
2.	Sumba Timur	40.325	33.603	27.577
3.	Kab. Kupang	133.920	7.051	11.762
4.	Timor Tengah Selatan	116.169	515	4.706
5.	Timor Tengah Utara	57.003	706	2.278
6.	Belu	92.586	2.513	3.730
7.	Alor	1.243	-	143
8.	Lembata	1.381	5	1.511
9.	Flores Timur	1.528	33	2.471
10.	Sikka	4.711	495	3.185
11.	Ende	6.517	2.515	2.547
12.	Ngada	33.505	11.923	8.097

13.	Manggarai	8.076	15.001	6.058
14.	Rote Ndao	14.191	10.084	4.290
15.	Manggarai Barat	2.149	19.742	1.160
16.	Kota Kupang	3.301	33	49
Total Propinsi NTT		522.929	136.968	96.416

Tabel 3. Realisasi Keuangan (dalam Rupiah) Program SPUP TLM, 2002 – 2005

No	Program	2002	2003	2004	2005
Saldo Piutang					
1.	KUM	1.712.793.375	1.653.619.272	2.689.871.984	2.601.879.288
2.	Individu	-	-	2.712.248.025	4.656.543.348
3.	Sapi	44.238.500	145.920.531	1.229.735.868	2.310.638.233
4.	Rumput Laut	-	-	2.712.248.025	4.656.543.348
T O T A L		1.757.031.875	1.818.564.334	6.871.618.235	9.837.134.371
Realisasi Kredit					
1.	KUM	4.783.440.650	8.062.788.600	12.237.500.290	5.941.848.155
2.	Individu	42.950.000	229.950.000	1.844.683.499	6.9990.675.242
3.	Sapi	-	19.766.250	395.835.000	2.310.638.233
4.	Rumput Laut	-	-	3.922.585.000	455.500.000
T O T A L		5.927.450.000	8.311.504.850	18.440.603.789	21.500.254.477

Keterangan: (-) Program belum dilaksanakan pada tahun bersangkutan

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