
Selection Criteria and Co-Management Guidelines for
Harvest Reserves in Tropical River Fisheries

Inception and Legal Workshop Report

UK Department for International Development
Fisheries Management Science Programme
Project R7043

Central Research Institute for Fisheries, Indonesia
Provincial Fisheries Services, Indonesia
MRAG Ltd, UK

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Table of Contents

	page
Executive Summary	1
1. Introduction	3
1.1 Project Aim	3
1.2 Research Collaborators and Target Institutes	3
1.3 Project Activities	3
1.4 Workshop Dates	4
1.5 Inception Workshop Objectives	4
1.6 Legal Workshop Objectives	4
2. Workshop Participation	5
3. Workshop Activities	7
3.1 Inception Workshop	7
3.2 Legal Workshop	7
4. Project Implementation Agreements	8
4.1 Project Staff	8
4.2 Timing of Project Phases	8
4.3 Responsibilities	9
5. Legislation for Indonesian Inland Capture Fisheries	10
5.1 Introduction	10
5.2 Republic of Indonesia Act No. 9 / 1985 - Fisheries	10
5.3 Republic of Indonesia Act No. 4 / 1982 - Environmental Management	12
5.4 Republic of Indonesia Act No. 11 / 1974 - Water Resources Management ..	12
6. Prospects for Co-Management in Indonesia	14
6.1 Introduction	14
6.2 Definition of Co-Management	14
6.3 Legal basis and prospect for co-management	14

Executive Summary

1. The aims of this project are to identify ecological and institutional criteria for the selection and beneficial use of harvest reserves in tropical, artisanal river fisheries; and develop guidelines for their co-management in Indonesia. The purpose of the guidelines will be the delivery of economic benefits to fishing communities, derived from enhanced fish recruitment from reserved fish stocks to the fished stocks outside.
2. The project will run from November 1997 to March 2000, and involves collaborators from MRAG Ltd (UK), the Central Research Institute for Fisheries, Indonesia (CRIFI), and three provincial Dinas Perikanan (Fisheries Extension Service) offices in West Kalimantan, Jambi and South Sumatra in Indonesia.
3. The project includes the following five main phases or activities:
 - Inception and Legal Workshop (project inception and prospects)
 - Regional Reserve Survey (reserve identification and fieldwork planning)
 - Monitoring Programmes (biological, socio-economic and institutional surveys)
 - Analysis of Reserve Benefits (estimation of reserve benefits, and their causes)
 - Dissemination and Training (preparation and presentation of guidelines)
4. The Inception and Legal Workshops were held at the CRIFI HQ in Jakarta on 22 and 23 December 1997.
5. The objectives of the Inception Workshop were to introduce the project to the collaborators and target institutes; to plan fieldwork and reporting activities; and to discuss approaches for the effective dissemination and promotion of project outputs.
6. The objectives of the Legal Workshop were to determine the legal position on the application and use of *reserves* and *co-management* in Indonesian river fisheries, to thereby ensure that the project outputs would be legally enactable and compatible with existing legislation.
7. The Workshops were attended by representatives from MRAG Ltd; CRIFI; the collaborating provincial Dinas Perikanan offices; the South Sumatra Provincial Planning Office (Bappeda); the Ministry of Environment; Wetlands International-Indonesia Programme (ex-AWB); the Directorate General for Fisheries (Ditjen Perikanan); and the Indonesian Institute of Science (LIPI).
8. It was reported at the Legal Workshop that the national policy guidelines for the management of Indonesian capture fisheries are given in the Fisheries Act No. 9 / 1985; the Environment Act No. 4 / 1982; and the Water Resources Act No. 11 / 1974. In summary, these acts state that Indonesian fisheries should be managed by the state for the benefit of the people. Act No 9 / 1985 gives the state powers to close waterbodies from fishing (ie. as reserves) and to use any appropriate institutions (including community participation) for their effective management.
9. Advice on the management of inland capture fisheries, within the guidelines of the national Acts, is provided by Ditjen Perikanan and the regional Dinas Perikanan offices at both provincial and kabupaten levels. Proposals for new regulations may also be made by communities through the '*musyawarah desa*' village meeting system. The actual responsibility for legislating fisheries regulations at local levels is, however, vested in the provincial and kabupaten local government offices (Pemda Tk I and TkII).

So long as such local regulations are within the national policy guidelines, then any locally specific variations can be accommodated, allowing variability even between adjacent villages. The latest five-year plan (Repelita VI, 1994-1999) of the Indonesian Government also promotes, for the first time, a shift towards decentralised management of natural resources.

10. In consideration of the existing legal framework and the recent government policy shifts, it was concluded that strong prospects exist for local (regional) variation in fisheries management institutions, as would be required for effective local participation in any co-management system for inland fisheries. The proposed co-management guidelines intended for development and promotion by this project were thus welcomed by the Workshop participants and seen as entirely compatible with existing legislation. It was also recognised, however, that such approaches are still generally less familiar than the old top-down ones, and that successful uptake of this new style by Dinas Perikanan would require their active participation in the project.
11. Five types of Indonesian 'reserves' were identified:
 - Nature Reserve (decreed by the President, strictly enforced, no exploitation)
 - Wildlife Reserve (research allowed, but no exploitation)
 - National Park (exploitation allowed in buffer zone, but not core zone)
 - Harvest Reserve (within fishing areas, with core, buffer and exploitation zone)
 - Community-based Reserve

The first three of these reserves types are recognised as 'conservation reserves', and declared and managed by the PHPA Ministry of Forestry and Nature Conservation. The last two reserve types are considered 'production reserves', and managed by the Fisheries Extension Office and local communities respectively. This project will particularly focus on the production reserves, as described in more detail in the Regional Reserve Survey Report. It was noted at the Workshop that fishing activities do still exist in the Danau Sentarum Wildlife Reserve (the proposed study site in Kalimantan Barat), in contradiction to its formal status. It was agreed that the DSWR should be included in the study both to investigate its formal management structures, and also those of its fishing communities, some of which were said to use traditional harvest reserves within the DSWR boundaries.

1. Introduction

1.1 Project Aim

This project will identify ecological and institutional criteria for the selection and beneficial use of harvest reserves in tropical, artisanal river fisheries, and develop guidelines for their co-management in Indonesia. The purpose of the guidelines will be the delivery of economic benefits to fishing communities near to reserves, and ecological benefits, including broodstock maintenance and recruitment enhancement to the protected fish stocks.

1.2 Research Collaborators and Target Institutes

The project involves a collaboration between MRAG Ltd (UK), CRIFI and three provincial Dinas Perikanan offices in West Kalimantan, Jambi and South Sumatra in Indonesia. MRAG and CRIFI have worked together previously on two other FMSP projects, both mainly located in South Sumatra, and the second also briefly located in Jambi.

The provincial Fisheries Services (Dinas Perikanan) are responsible for regional management and development of both capture and culture fisheries, under the national guidance of the Directorate General for Fisheries (Ditjen Perikanan). Dinas Perikanan are both research collaborators of the project (coordinating local activities and providing local knowledge) and 'target institutes', who it is hoped will use the outputs of the project. Ditjen Perikanan is also considered a target institute due to its potential role in promoting the project guidelines to many more of Indonesia's 27 provinces.

1.3 Project Activities

The project includes the five following activities:

- 1. Inception and Legal Workshop**
To plan project activities and determine the scope for a locally-specific fisheries co-management strategy in Indonesia
- 2. Regional Reserve Survey**
To examine the types of fishery reserves currently used in Indonesia and plan a programme of investigations to determine the criteria for their success
- 3. Monitoring Programmes**
Data sampling and interview-based surveys of fish stock abundances and structures in selected categories of reserves and the economic surplus generated by fishing and its distribution in associated communities. Institutional analyses of the mechanisms whereby reserve benefits may be successfully gained, and those conditions leading to failure.
- 4. Analysis of Reserve Benefits**
Qualitative, interdisciplinary comparison of the ecological and socio-economic benefits from five different ecological and institutional categories of reserves.

5. Dissemination and Training

Development of a set of participatory guidelines for the selection and co-management of reserves, set in the broad context of inland capture fisheries development, translated into Indonesian for use by Dinas Perikanan and associated agricultural extension agencies. Training of three Dinas Perikanan collaborating offices, and of Ditjen Perikanan trainers for wider promotion.

1.4 Workshop Dates

The workshops were held on the following days at the CRIFI HQ in Jakarta:

- ! Inception Workshop: 22 December 1997
- ! Legal Workshop: 23 December 1997

1.5 Inception Workshop Objectives

The Inception Workshop had the following objectives:

- ! To introduce the project to the collaborators and target institutes
- ! To confirm local demand for the project
- ! To plan fieldwork and reporting activities with collaborators
- ! To discuss approaches for effective project dissemination and promotion of outputs

1.6 Legal Workshop Objectives

The Legal Workshop had the following objectives:

- ! To determine the legal position on the application and use of *reserves* and *co-management* in Indonesian river fisheries
- ! To ensure that the project recommendations are legally enactable and compatible with existing legislation
- ! To ensure that project recommendations are effectively promoted.

2. Workshop Participation

Name	Position	Institution
Dr. Fatuchri Sukadi	Director	Central Research Institute for Fisheries, (CRIFI) (Pusat Penelitian dan Pengembangan Perikanan) Jl. K.S. Tubun Petamburan VI, PO Box 6650 Slipi, Jakarta 11410 A Telp : (021) 5709160, Fax : (021) 5709159
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Ir. Sonny Koeshendrajana, Msc	Researcher	Research Institute for Freshwater Fisheries, (RIFF)
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3. Workshop Activities

3.1 Inception Workshop

The Inception Workshop was divided into presentations and discussion, covering the following issues:

- ! Introductions of project staff (distinguishing collaborators and target institutes)

- ! Description of Project:

 - Background:

 - Previous Research Work

 - Types of River Reserves, Impacts and Objectives

 - Co-Management

 - Project Goal and Purpose

 - Provisional Fieldwork Research Plan

 - Proposed Outputs and Anticipated Uptake

- ! Project Planning:

 - Site Selections

 - Fieldwork and Logistic Arrangements

 - Agreement of Personal Responsibilities

 - Setting of Interim Milestone Indicators

3.2 Legal Workshop

The Legal Workshop included a brief re-presentation of the project background and objectives for those people not present for the Inception Workshop. The remainder of the day was spent discussion the current Indonesian legal position on fisheries and co-management, under the following broad headings:

- ! What is the current legal framework for management of inland fisheries?

- ! Who determines national policy on inland fisheries?

- ! What are the national policies on inland fisheries (compared to marine ones)?

- ! How could the project best influence inland fisheries policy?

- ! Who sets local regulations for fisheries management?

- ! Who is able to declare fishery reserves for conservation and sustainability benefits?

- ! What types of reserves (national parks, to village ponds) exist in legal terms?

- ! What is the scope for local (regional) variation in fisheries policies and for community participation in management?

- ! How may community participation in fisheries management be legally promoted?

The outcome of these discussions are presented in sections 5 and 6 of this report, and also discussed in detail in various sections of the Regional Reserves Survey Report.

4. Project Implementation Agreements

4.1 Project Staff

It was agreed that the project activities would be the responsibility of the following collaborators, assisted by local support staff as required:

CRIFI: Ms Novenny Wahyudi, Project Leader (CRIFI)
Mr Sonny Koeshendrajana, Resource economist & Co-ordinator (CRIFI)
Dr Achmad Sarnita, CRIFI Biologist
Mr Zahri Nasution, CRIFI Socio-economist

Dinas Perikanan: Mr H. Iswahjudi, Kepala Dinas, Kalimantan Barat
Mr Ali Supardan, Kepala Dinas, Jambi
Mr Rachmat Soeyoso Soesilo, Kepala Dinas, Sumatra Selatan

MRAG: Dr Daniel Hoggarth, Biologist & Project Leader (MRAG)
Mr Mark Aeron-Thomas, Socio-economist
Ms Caroline Garaway, Institutional Analyst

It was agreed that the project should support the participation of Dinas Perikanan during the field visits by allowing per diem payments for one member of Dinas Perikanan for the duration of field activities in each province.

It was agreed that communications with the Directorate General for Fisheries (Ditjen Perikanan) target institute should be made via the Director of Fisheries Resources, Dr. Made L. Nurdjana.

The following e-mail numbers were exchanged to facilitate communication:

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Caroline Garaway		c.garaway@ic.ac.uk
Mark Aeron-Thomas		m.aeron-thomas@ic.ac.uk

4.2 Timing of Project Phases

Timing of the Regional Reserves Survey was agreed for the period 9 February to 27 March 1998. This period was selected to coincide with the high water season in Danau Sentarum (facilitating access) but to be after the 1997 Idul Fitri celebrations, when many offices would be closed and respondents unavailable for interview. In preparation for the RRS, the three Dinas Perikanan collaborators were invited to assemble material on the known reserves in their areas prior to the visit.

4.3 Responsibilities

It was agreed that permission for the project and its fieldwork phases would be obtained as follows:

- ! National authorisation for research to be obtained from AARD by CRIFI.
- ! Local authorisation for field surveys to be obtained from local police and Social/Political Agency by provincial Dinas Perikanan collaborators, assisted by CRIFI as required.
- ! Local authorisation for field surveys in Danau Sentarum Wildlife Reserve, Kalimantan Barat to be obtained from PHPA by CRIFI.

It was also agreed that the following materials would be collected by CRIFI prior to the RRS fieldwork phase:

- ! Fishery-related studies on Danau Sentarum (Kalimantan Barat), carried out by Asian Wetland Bureau (Wetlands International - Indonesia Programme).
- ! Studies carried out by 'LON-LIPI' and Dinas Perikanan Propinsi Jambi on development of river reserves in Jambi in last five years.
- ! National policy guidelines and legislation on capture fisheries.

Discussion were also held on the respective contributions to the project to be made by CRIFI and MRAG, as outlined in a draft Research Contract. Verbal agreements were made during the Inception Workshop talks, and a final draft copy of the Research Contract was later signed by Dr Fatuchri Sukadi (CRIFI) and Dr Daniel Hoggarth (MRAG) on 9 February 1998, at the start of the RRS.

5. Legislation for Indonesian Inland Capture Fisheries

5.1 Introduction

National legislation affecting Indonesian inland capture fisheries is contained in the following three acts:

- ! Republic of Indonesia Act No. 9 / 1985 - Fisheries
- ! Republic of Indonesia Act No. 4 / 1982 - Environmental Management
- ! Republic of Indonesia Act No. 11 / 1974 - Water Resources Management

The main points contained in these acts are listed in the following sections¹. Additional legislation on inland capture fisheries also exists at the provincial, kabupaten (regency) and desa (village) administrative levels (see Section 4. and Annexes C., D. and E. of the Regional Reserve Survey Report). Such regulations are locally specific, determined by local agencies, and provide the basis for a regionally variable co-management strategy. They must not, however, contradict the general, regulations specified in the national Acts.

5.2 Republic of Indonesia Act No. 9 / 1985 - Fisheries

The Fisheries Act No. 9 / 1985 includes regulations on the utilization and management of inland, coastal and marine fisheries.

The main objective of fishery resource management in Indonesia is the maximization of benefits to Indonesian communities, by the conservation of fishery resources and their supporting environment. In support of this objective, the Minister of Agriculture may establish regulations on fishery resource management covering the following items:

1. Regulation on fishing gears,
2. Regulation on technical aspects of fishing vessels,
3. Quotas for fish caught, and species and size of fish prohibited,
4. Regionalisation of fishing areas, and fishing seasons,
5. Prevention of pollution and deterioration of fish habitats,
6. Rehabilitation and enhancement of fish population and its environment,
7. Stocking and introduction of new fish species,
8. Culture fishery and its conservation,
9. Prevention and management of fish diseases,
10. Any other regulation needed for achieving the goal of fishery resource management.

In addition to these general provisions, Act No.9 / 1985 declared a number of specific nationwide fishery regulations, among which are:

1. No individual or institute may capture or culture fish using materials or methods which may be dangerous for fish conservation or the fishery environment.

¹ The Acts are written in Bahasa Indonesian, and the rough translations given here should be interpreted as approximations to the exact legislation.

2. No individual or institute may undertake any activity which causes pollution destructive to fish resources and their environment.
3. Any fish species or any water body can be declared by the government as a conserved species or as a conservation area, for scientific purposes or for natural resource conservation.
4. A commercial fisheries licence (IUP) must be owned by every fishery enterprise run by an individual or institute.
5. A commercial fisheries licence (IUP) is not needed by subsistence fishery or subsistence fisherman.
6. The government will provide education, an information system, data collection, data analysis and distribution of technical and production data, as required to support fishery resources management and development.
7. Research and scientific activities in fisheries will be managed and developed by the government.
8. Education, training and extension on fisheries activities may be undertaken by both the government and NGO's .
9. The government may help and protect small scale fisherman and fish farmer enterprises by generating and supporting fisherman and fish farmer cooperatives.
10. Fishery facilities should be constructed and managed by government.
11. The government should regulate fish marketing and post harvest quality of fish.
12. Central government allocates a part of fishery business to local government.
13. The implementation of fishery regulations will be monitored and controlled by government.

The penalties for breaking regulations are as follows:

1. For infringement of Regulation No. 1. or No 2., the maximum penalty is 10 years in prison or a fine of Rp. 100 million.
2. For infringement of Regulation No. 4. by fishing vessel operators, the maximum penalty is 5 years in prison or Rp. 50 million fine for fishing vessels greater than 30 GT; or 2.5 years in prison or Rp. 25 million fine for fishing vessels less than 30 GT.
3. For infringement of Regulation No. 4 by culture fishery operators, the maximum penalty is 6 months in prison or a Rp. 5 million fine.

5.3 Republic of Indonesia Act No. 4 / 1982 - Environmental Management

The Environmental Management Act No. 4 / 1982 specified the principles of environmental management, including those relating to fishery resources, as:

1. Every body has the right to a healthy environment for living.
2. Everybody must prevent the living environment from deterioration and pollution.
3. Everybody who has any enterprise must conserve the environment to support its sustainable development potential.
4. Community awareness of the environment should be developed by government through programmes of extension, education and investigation.
5. NGO's have important roles in the support environmental sustainability.

5.4 Republic of Indonesia Act No. 11 / 1974 - Water Resources Management

The Water Resources Management Act No.11 / 1974 includes the following guidance:

1. The water and its resources are under the authority of the government (Article 3). The government may:
 - a. Manage and develop water-use and or water resources,
 - b. Validate and licence water use based on the technical planning for water regulation,
 - c. Regulate the licenced use of water resources.
2. The Ministry authorised and responsible for coordination on all regulation and planning of water resources is the Ministry of Public Works (MPU). MPU must consider the mandates of other departments or agencies related to water uses (Article 5).
3. Research and inventarization of water resources are required for effective planning, development and utilization (Article 9).

Government Act (PP) No.22 / 1982 for Water Resources Development Planning (Tata Pengaturan Air) includes the following provision for the use of reserves:

- ! A reserve area (daerah suaka) located within water resources may be established (ditetapkan) by MPU given the consideration and suggestion of other appropriate ministries.

Government Acts (PP) No.23 / 1982 about Irrigation (Irigasi) and No. 35 / 1992 about rivers further specify that fisheries resources must be considered during the planning process:

- ! Irrigation water is primarily provided for crop irrigation, but the water requirements of settlements, animal husbandry and freshwater fisheries must also be accomodated.
- ! Rivers provide multiple livelihoods through their diverse natural resources, and must be protected, controlled and conserved.
- ! The exploitation and maintenance of rivers, as promoted by the planning and evaluation process, must be undertaken for the welfare and general security of the community.

6. Prospects for Co-Management in Indonesia

6.1 Introduction

This section considers the prospects for the application of so-called 'co-management' institutions to inland fishery resources in Indonesia. Following this section, a brief definition of co-management is introduced including the issues involved both nationally and locally. This is followed by an assessment of the legal basis for developing co-management institutions given the existing management situation. The last section provide a summary and concluding remarks for the prospects for co-management in Indonesia.

6.2 Definition of Co-Management

Co-management of inland capture fisheries may be defined as a sharing of authority for managing resources between government and community. The issues of co-management involve both national and local interests. At the national level, the issues concern the legal institutional and administrative conditions for devolution of management authority to local communities, including the type of authority that can and should be delegated. The issues may also be extended in terms of what type of priority would be given to how best to involve fishermen groups and associations so as to facilitate the operational management of the fishery. At the community level, the main issue is whether traditional or community-based fisheries management presently exists. The existence of traditional or community-based fisheries resource management serves as a valuable basis for developing any co-management system in that resource. The extension of such systems into a co-management framework may either involve some strengthening of the existing system where improvements may be made, or simply legitimising the existing system without any changes.

6.3 Legal basis and prospect for co-management

According to Article 33, paragraph 3, of the Indonesian constitution of 1945 (*Undang Undang Dasar 1945*) it states that: 'Land and water and the natural resource therein shall be controlled by the State and shall be utilized for the greatest benefits (welfare) of the people'. This implies that the UUD 1945 is considered as a constitutional foundation or legal basis for the management of its natural resources including fisheries. Implementation of this constitutional basis can be assessed according to the hierarchical level of the government, that is, national, provincial and regional (kabupaten) levels. At the national level, the Indonesian legal basis would be in terms of National Act (*Undang Undang*), Government Regulation (*Peraturan Pemerintah*) and Decision Letter and Instruction of the President (*Surat Keputusan and Instruksi Presiden*). Considering the sectoral aspects, the implementation may be followed by Ministerial Decision Letter (*Surat Keputusan Menteri*) or even Implementation Guidelines of the Director General (*Petunjuk Pelaksanaan Direktur Jenderal*). Following, a brief example is given in the case of fisheries subsector.

With the Basic Fisheries Act No. 9/1985 (*UU No. 9/1985*), at the national level, the Directorate General of Fisheries (Ditjen Perikanan), which is under the Ministry of Agriculture, is responsible for formulating and implementing fishery management policies. This is because all fishery resource throughout Indonesia are basically state property, hence should be managed for the general benefit of the society. At provincial level, implementation of fishery policies is carried out by the fisheries services (*Dinas Perikanan Tingkat Propinsi*) coordinated by the Provincial

Agency of the Agricultural Sector Ministry (*Kanwil Pertanian*) and Provincial Development Planning Board (*Bappeda Tingkat Propinsi*). At the regional level, fishery policies formulation is the responsibility of regional fishery services (*Dinas Perikanan Tingkat Kabupaten*) coordinated by the Kabupaten Development Planning Board (*Bappeda Tingkat Kabupaten*). Below kabupaten level, formal fishery institutions do not have the authority to formulate fishery management policies.

Considering the above, Warren and Elston (1994) indicate that the government still strongly favours the control of fishery resource management. In other words, institutional arrangement for the management of inland capture fisheries is based on a 'top-down' approach, although a 'bottom-up' approach is also being considered. Apart from this, there has been a long-established tradition in Indonesian culture for leaders to make decisions through a process of discussion (*musyawarah*) until unanimity (*sepakat*) is achieved. The latter intention is to formulate a solution in a way that ensures everyone is willing to accept the outcome, which is achieved either by altering the details of the proposal or by convincing reluctant members of the desirability of the proposal.

The Inception and Legal Workshop of the project indicated that there is a strong need for guidance on appropriate co-management strategies and institutions in Indonesia. Previous studies (Warren and Elston (1994) and Koeshendrajana (1997)) indicate that policies and regulations remain dependent on central government. In all five of Indonesia's five-year national plans (*Pembangunan Lima Tahun, Pelita I to V*), the government has maintained strong central control of fishery resource. A recent policy shift towards decentralization of management of natural resources (including fisheries) to lower level authorities only began with the Sixth Five-Year Plan (*Repelita VI, 1994-1999*), prompted by the need to reduce administrative overlap and better distribute economic development. Consequently, the impact of the recent shift in policy formulation and implementation in fishery management towards decentralization is still largely in the process of development.

The effectiveness of government institution to manage activities in widely scattered fishing grounds is distinctly limited by the lack of government resources, particularly in the capacity of personnel, and their budgets. Pomeroy (1993) indicates that the national government has often underestimated the needs of local management system to achieve their objectives. This has been compounded by a further tendency of national government to overestimate its ability to manage the resource. These factors may lead to an ineffective management effort wherever existing traditional resource management systems already exists. Where their value is recognised, participation of the community in managing the fishery resource may solve the problems of understaffed and underfunded government institutions. This potential benefits of community participation in natural resource management has now been recognized by the Indonesian government in the current national five-year plan. The focus of the new 25-year plan aims at greater local 'self reliance', improved human resources and greater local participation (Heady, 1994). Such recent developments provide a strong basis for this project's focus on developing new co-management systems.

In conclusion, the possibility of a co-management approach for natural resource in Indonesia has been formally acknowledged in the constitutional foundations of the most recent Five-Year National Plan. Policy and administrative commitments to this approach have, however, not yet been clearly stated. The tendency for the government is still to apply standardised solutions to problems rather than specific ones tailored to local requirements. Communities living in remote locations are also still often considered to be 'ignorant' or 'simple', rather than local experts on natural resources. Therefore, while opportunities clearly do now exist for locally specific co-management activities, their development must be considered a long-term process which may only be achieved after substantial demonstration is made of their potential.