

Task Order No 806
Contract No PCE-I-00-96-00002-00

PN-ACF-546

102072

Report

Inputs for NRM Program Work Plan Consultancy Report in Natural Production Forest Management

Prepared By
Art Klassen

November 1997

For
United States Agency for International Development/Indonesia

Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ)
Partners International Resources Group, Winrock International
and Harvard Institute for International Development

Subcontractors PADCO Management Systems International and Development Alternatives Inc

Collaborating Institutions Center for Naval Analysis Corporation Conservation International KNB
Engineering and Applied Sciences Inc Keller-Bliesner Engineering Resource Management
International Inc
Tellus Institute Urban Institute, and World Resources Institute



NATURAL RESOURCES MANAGEMENT PROGRAM

Jl Madiun No 3, Jakarta 10320, Indonesia, (62) (21) 230-5502, Fax 327-301, [http //www nrm or id](http://www.nrm.or.id)

Inputs for

NRM Program Work Plan **Consultancy Report in** **Natural Production Forest Management**

November, 1997

Environmental Policy and Institutional Strengthening IQC
OUT-PC806-96-00002-00

EPIQ

Sponsored by the US Agency for International Development

INPUTS FOR THE NRM-II WORK PLAN

CONSULTANCY REPORT IN NATURAL PRODUCTION FOREST MANAGEMENT

1 0 INTRODUCTION

This report summarizes the activities and recommendations arising from a three week consultancy. The purpose of this consultancy has been to assist the Natural Resource Management Project (NRM-II) in developing a detailed work objective and implementation plan in the area of natural forest management. This consultancy was intended to initiate the process of building on the successes of the preceding Natural Resources Management Project (NRMP) specifically in promoting improvements in forest harvesting utilization and the reduction of harvesting impacts.

The approach taken during the consultancy was to focus on a course of action which could maximize outputs for the NRM-II project in terms of measurable success in achieving improvements in forest management practices. It is assumed that this is and will continue to be an important guiding principle of the NRM-II.

Tasks identified in the Terms of Reference (TOR) have been addressed to the extent possible under the limited time constraints. At the outset, opportunities presented themselves, which necessitated a reorientation of these tasks. The opportunity arose to forge new linkages with the Alas Kusuma Group and to develop this working relationship to a degree not envisaged during the conception of the TOR. This was accomplished through two field visits to forest concessions in West and East Kalimantan.

This report is organized under two main headings according to the activities pursued during the in-country portion of the consultancy (Section 2 0 and 3 0). A third section (4 0) deals with recommendations for specific work objectives and an action plan for meeting these objectives.

2 0 WORKING RELATIONSHIP WITH THE ALAS KUSUMA GROUP

2 1 History

The NRMP has had a long-standing relationship with the Alas Kusuma Group, which facilitated a variety of NRMP investigations into forest policy, forest management practices, ecological studies, community development, park management and related work within the Pt Sari Bumi Kusuma forest concession in Central Kalimantan. With respect to the implementation of natural forest resource management policy, the NRMP pursued a strategy of promoting improved forest practices through

- Examining current regulations, decrees, guidelines and other regulatory policy, in light of their effect on forest management practices
- Promoting the concept of better utilization through quantification of avoidable logging waste, examination of the determinants of current practices, and examination of the economic opportunity lost
- Promoting the move towards sustainable forest management through operational trials in reduced impact logging (RIL) intended to demonstrate the possibility of achieving both economic and environmental benefit by applying a more rigorous approach to operational planning and control of harvesting activities

The RIL trial carried out on the SBK concession and the release of the study results¹, prompted an invitation by the Alas Kusuma Group for the NRMP to participate in an internal workshop on avoidable logging waste and reduced impact logging. The workshop was held in Pontianak in May, 1997. Alas Kusuma followed up on this workshop by conducting its own RIL trial in its West Kalimantan concession held by Pt Suka Jaya Makmur (SJM). The results of this trial strongly supported the results of the earlier NRMP study carried out in the SBK concession.

The growing conviction on the part of some of the Alas Kusuma management, that it is possible to combine direct economic benefit with a reduction in harvesting impact, led to the invitation for the Consultant to visit the SJM concession during this consultancy. The

¹ NRMP Report No 70, *Report on an Operational Logging Trial and the Evaluation of the Harvested Stand*

purpose of this visit was to identify specific actions required to operationalize RIL techniques on a concession wide basis

2 2 Visit to the Suka Jaya Makmur Concession in W Kalimantan

The Suka Jaya Makmur (SJM) concession is located approximately three hours drive east of Ketapang. Suka Jaya Makmur manages a +/-270,000 ha concession on which they log from 4,000 to 4,500 ha per year on a 35 year rotation. Base camp for the concession is located at Tangun Asam, which is 38 km from the company's log pond on the Pawan River. Forward operating areas are located from 130 to 160 km beyond base camp.

A field trip to the SJM concession was made in the company of Nana Suparna, chief forester for the Alas Kusuma Group. Two nights were spent at the SJM base camp with a one day field trip to the recently completed RIL trial carried out by the concession management staff under the direction of the camp manager, Hari Mauan, and the planning forester, Gusti Hardiansyah from the Pontianak regional office of the Alas Kusuma Group.

Gusti Hardiansyah, who organized and monitored the RIL trial along the lines of the similar trial carried out by NRMP in the SBK concession, explained the methodology and the results of the trial and, highlighted the difficulties which still stand in the way of full implementation of RIL techniques on a concession wide basis. Examination of the petak (plot) map showing the skid trails which were used, highlighted further problems related to the use of maps to plan and record operational activities.

2 2 1 Summary of Perceived Technical Constraints

During the visit to the SJM concession, Alas Kusuma management repeatedly stated their intention to operationalize the main elements of RIL in the 1998/99 fiscal year on the SJM concession with the intention of adopting these practices on two additional concessions in W Kalimantan shortly thereafter. RIL consists of a variety of steps, depending on the individual definition. The objective of RIL, however, is consistent for all definitions and includes the following core elements



Objective and core elements of RIL Minimize the impact of the harvesting activities on the residual stand through the use of detailed operational planning, preparation, and supervisory techniques consisting of

- Preparation of detailed operational contour maps
- Tree location mapping (stock mapping)
- Planning of skid trails
- Locating and constructing skid trails prior to felling
- Directional felling to facilitate extraction
- Minimizing machine movements through an increased use of winches
- Developing internal operating principles and rules which will guide all field activities concerned with extraction

The following problems and constraints were identified during the visit to SJM Alas Kusuma has expressed a strong interest in retaining continued involvement of the NRM-II in assisting it to address these constraints so that they can successfully implement RIL on their SJM concession and can expand RIL to their other concessions based on the anticipated successful implementation on SJM

- 1 Field survey procedures Field survey protocol developed by the Alas Kusuma Group has in the past been primarily designed to satisfy regulatory requirements Accuracy has not been a prerequisite, If petak maps are to be used on a routine basis for planning and operational control, field data collection protocol, which will permit the preparation of consistently accurate contour maps, has to be developed
- 2 Map using skills are weak at all levels RIL requires well developed map reading and interpretation skills for planning and recording harvesting activities
- 3 Map preparation by manual means is time consuming and often leads to errors in transcribing data from field notes Alas Kusuma has expressed an interest in adopting computerized contour mapping software, which generates contour maps from field survey data
- 4 Monitoring and evaluation Alas Kusuma staff have recognized the importance in developing a simple and reliable methodology for evaluating impact parameters in their logging areas They have expressed an interest in working with the NRM-II to develop appropriate evaluation techniques to demonstrate to other managers within the group the environmental benefits of RIL and, to be able to demonstrate to outside parties the effectiveness of Alas Kusuma's RIL efforts

2 2 2 Proposed NRM-II Contributions

It is recommended that the NRM-II assist Alas Kusuma on its SJM concession to operationalize RIL on a concession wide basis. NRM-II inputs should concentrate on training, providing assistance with further RIL trials, and the development of an appropriate evaluation protocol to assess the impact of harvesting activities.

It is suggested that during 1998, at least two visits be made to the SJM concession. The first visit would be aimed at correcting deficiencies in field data collection and in providing field guidance for operationalizing RIL techniques. The second visit would focus on the development of evaluation protocol and on the training in map use as well as training in the use of specialized engineering software for computer assisted contour mapping.

2 3 Visit to the Narkata Rimba Concession in E Kalimantan

Alas Kusuma chief forester, Nana Suparna, also extended an invitation for the Consultant to visit one of the five timber concessions managed by the Alas Kusuma Group in East Kalimantan. The purpose of this visit was to

- 1 Explore the possibilities of an NRM-II partnership with one or more concessions belonging to the Alas Kusuma Group in E Kalimantan
- 2 Evaluate the current status of management activities with an ultimate view to providing assistance aimed at improving forest practices
- 3 Examine the possibilities of alternative solutions to the perceived constraints of rugged terrain and low stocking which apparently exists in most of the Alas Kusuma concessions in E Kalimantan

The concession visited was Pt Narkata Riya Timber (NRT). The NRT concession is located on the upper reaches of the Wahau River, just north of the Telen River, approximately 8 hours by road from Samarinda.

The NRT concession is surrounded by other HPHs, one of which is Pt Mugi Treman Intercontinental, also belonging to the Alas Kusuma Group. There are no village areas

within or near to the NRT Concession consequently the entire concession area of +/- 68,000 ha is classified as limited production forest with a harvestable diameter limit of 60 cm

NRT began operating in this concession eight years ago. This still leaves 27 years of harvesting in old growth forest. Other concessions in the Alas Kusuma Group in East Kalimantan are of similar age. The five E Kalimantan concessions managed by the Alas Kusuma Group include

Concession Name	Gross Area (+/- ha)	Annual Logging Area (+/- ha)
Pt Narkata Rimba Timber	68,000	1,400
Pt Mugi Triman Intercontinental	200,000	4,000
Pt Susukan Agung	107,000	2,500
Pt Gunung Jati	50,000	1,000
Pt Begayan River	115,000	3,200
	540,000	12,100

NRT operates on 1,600 to 1,800 ha per year for an annual harvesting quota of 40 to 45,000 cu m/year. Production activities normal shut down from September to December when water levels in the Telen River become too low to permit reliable log transport. Emphasis is placed on road construction during these months.

The visit to the concession included two field days and detailed discussions concerned with the scope and technical detail of potential NRM-II involvement in assisting the NRT concession to improve its forest practices. NRT camp manager, Cecep Suganda, and overall joint concession manager, Sarminto, and concession staff, participated enthusiastically in the field trips and in discussions concerning improving forest practices.

The first field trip focused on examining logging impact on recently logged areas and on active road construction. The second field day was spent looking at NRT's forest nursery and reviewing the company's permanent sample plot program. Field trials of a long term impact study being carried out by faculty and students from the University of Bogor were

also visited. In addition, short excursions were made into areas that had been logged eight and five years ago.

2.3.1 Observations

Logging Waste

There are a number of significant differences between Alas Kusuma's concessions in West and Central Kalimantan and its E Kalimantan concessions. Harvesting typically removes only 3 to 4 stems per hectare for a net recovered volume of approximately 25 cu m per hectare.

The established manufacturing plant which consumes the entire production of the five concessions (approximately 40,000 cu m of round wood per year), consists of a plywood mill only. Production is based on very high quality plywood production. There is no sawmill or molding plant attached to the plywood factory, hence, the flexibility to utilize anything but high quality logs is extremely constrained.

Observations in the recently logged over area showed that the amount of commercial quality, main stem volume being left on the forest floor is higher than in the West Kalimantan concessions which have been visited. It is estimated that the amount of logging waste represents a potential for at least a 30% increase in current extraction levels. The causes of these wasteful practices are thought to be related primarily to the company's industrial configuration and to the Ministry of Forests cut control mechanism, which institutionalizes wasteful logging practices².

Terrain Conditions

Terrain conditions in the NRT are very rugged. The resulting road system, although very well constructed has very steep grades. Favorable grades as steep as 35% were measured while adverse grades commonly reached 20%.

² Determinants of wasteful logging practices have been discussed in NRMP Report No. 37 *Avoidable Logging Waste*

The company appears to have adopted a strategy of building all roads as close to ridge top locations. This has the environmental advantage of minimizing excessive cutting into hill sides, thus reducing site disturbance and minimizing road construction costs. Road maintenance costs, trucking costs and truck maintenance costs are, however, significantly higher.

In such difficult terrain conditions, road system planning and location are crucial to minimizing environmental impacts and minimizing costs associated with roads and hauling of logs. Examination of 1:25,000 maps showing the road system for the entire concession suggests that improvements in the company's capabilities in road system planning, road location, and road system mapping would benefit from technical assistance.

Contour Mapping and Reduced Impact Logging

Petak maps are prepared for all annual cutting areas one year in advance. NRT has not yet developed the field survey protocol, which would enable it to produce controlled contour maps. All existing petak maps show tree locations and form lines which are based on planimetric detail and show the relative land form configuration.

Concession management has expressed a strong interest in testing RIL techniques in this concession and acknowledge their limitation with respect to not yet having the technical skills to produce contour maps. The concession management has expressed a desire for assistance in developing this capability.

The possibility of sending technical staff to any NRM-II training sessions, which may be held at the SJM concession, will be proposed to Alas Kusuma management. This would be the first step aimed at developing and standardizing appropriate field data collection protocol for the production of controlled contour maps and, the testing and the testing and implementing of RIL techniques in the more difficult terrain of the NRT concession.

Logging System

Much of the NRT concession is much too steep for tractor logging by the Ministry of Forests' own standards. According to these standards, however, large areas of East

Kalimantan would have to be withdrawn from harvesting according to the forest management guidelines as defined in the TPTI

Skid trails create large scale soil displacement and often have the appearance of minor forest roads. The fact that the concessionaire takes only the very best trees due to the raw material constraints imposed by the industry and, the fact that Ministry of Forests annual harvesting allocation mechanisms permits highly selective harvesting practices, clearly contribute to the small average number of trees cut per hectare. This in turn results in a less than anticipated impact on the residual stand given the extreme terrain conditions.

Probably more than half of the concession area is suitable for long reach skyline logging. The Sumalindo Lestari Jaya concession located in similar terrain conditions in East Kalimantan, is currently experimenting with a Thunderbird skyline yarder. This is a +/- half million dollar machine designed for high volume production. Low standing volumes per hectare may make achievement of economic profitability questionable for such a machine. The lower cost and simpler European single drum skyline machines may provide a more appropriate option for the terrain conditions found in the NRT concession.

Further investigation in the possibility of introducing a suitable skyline configuration, which could be applied within the Indonesian silvicultural system, should be examined. It is clear that selective skyline logging in such hilly terrain would provide a far superior silvicultural and environmental option to current harvesting practices.

Stand Recovery

Logging in this concession started in 1989. A walking tour was made in an area logged 8 years ago and in an area logged 5 years ago. Recovery of the stand appeared to be much better than the level of site disturbance would normally have suggested possible. Site productivity in this hilly region appears to be very good. The 1992 logging area appeared to have a particularly dense understory of sapling sized regeneration, which is supported by the observation that 1992 was an excellent seed production year in this region.

Staff and students at the University of Bogor have established a long term monitoring project to measure the recovery of the residual stand logged in 1992. One hectare study areas have been demarcated on slope categories having differing levels of logging intensity. The growth and mortality are being monitored in these study areas and compared against a one hectare control area which was not logged. This study promises to provide valuable insights into the ability of the forest ecosystem to withstand disturbance as well as provide data on the rates of growth, species composition and other variables of interest to forest managers concerned with the achievement of a sustainable forest harvesting practices.

2.3.2 Recommendations for NRM-II Involvement

The two day field visit to the NRT concession and the discussions with concession staff, has highlighted two aspects which could form the immediate basis of a NRM-II contribution to improving forest practices.

1. Spatial planning. Road system planning, road location, use of 1:25,000 maps, continuous history mapping.
2. RIL. Training in contour mapping, RIL field testing (some combination with similar efforts in SJM may be possible).

There are two further areas, which will require longer term assistance and which will also require a clear expression of interest from Alas Kusuma management.

3. Avoidable Logging Waste represents a large opportunity lost in the five East Kalimantan concessions. The volume now being felled but left in the forest is of sufficient quantity and quality that it could form the basis for additional industrial investment. Alas Kusuma may wish to quantify this potential on all five of its concessions and may request NRM-II assistance in setting up the necessary sampling plan.

Further involvement of NRM-II in the issue of avoidable logging waste would present an excellent opportunity for influencing MoFr policy change in the area of

cut control mechanism where existing regulation institutionalizes highly wasteful and destructive practices

- 4 Alternative Logging Systems Alternatives to the present, ground-based extraction have a huge potential for reducing the severe impact of extraction and in moving forest harvesting onto a sustainable footing. Alas Kusuma may wish to explore this option further and may require NRM-II assistance in pursuing this investigation

3 0 CONTACTS WITH OTHER AGENCIES

Part of the TOR for this consultancy required that the Consultant contact other agencies to determine the status of their initiatives in promoting RIL and other, improved forest management practices. The following agencies were contacted. Additional activities pursued during this consultancy are detailed in the Consultant's daily diary (Appendix I)

3 1 Berau Forest Management Project (EU)

Contact Graham Tyrne

This project has built on past work by the STREK project under CIRAD-Foret

Two hundred hectares have been contour-mapped by the project on the cooperating Inhutani I concession in East Kalimantan. A contour and stock map has been prepared using computer technology. The area has been logged using RIL techniques. Evaluation of the results are now in progress. This project is still in the research phase.

This trial was not set up with controls and is intended simply to quantify the various production and impact parameters of the RIL techniques. The NRM-II has been invited to visit the project site and contribute to future initiatives through a sharing of experience and observations. The approach of the Berau project has been reasonably pragmatic and should be closely monitored and supported.

3 2 Indonesia-UK Tropical Forest Management (ODA)

Contact Alastair Fraser, Tim Nolan

The main thrust of this project has been in developing a different approach to organizing the forest concessions. The project has, however, also done some experimenting with RIL techniques. The emphasis has been on refining the detailed tree mapping computer model developed by Tropenbos on ArcInfo.

A 100 ha area has been mapped and logged. Results are still being measured and evaluated. No controls were included in the RIL trial so no direct comparison will be possible. There is no indication that this effort will be adopted by industry and operationalized. The ODA approach appears to have been primarily research orientated.

3.3 Center for International Forestry Research (CIFOR)

Contact: Plinio Sist, Dennis Dykstra

CIFOR has secured a funding arrangement with the International Tropical Timber Organization (ITTO) to carry out forest management research together with Inhutani II on the Malinau concession in East Kalimantan. Project organization is still in the early stages but CIFOR would like to start with detailed project planning and implementation in 1998.

RIL is one of the main areas of interest to CIFOR in the area of natural production forest management. There has been close contact in the past with NRMP and CIFOR. CIFOR has also expressed a very strong interest to involve any future NRM-II efforts in its Malinau research site. This connection should be actively pursued and supported.

Discussions with Plinio Sist concentrated in detail on how NRM-II could work with CIFOR in formulating and implementing its first research project in RIL. Given the NRMP's past experience in this area of forest management and the proposals for continued efforts by the NRM-II, the possibility of future collaboration in developing a technical procedures manual for forest engineering and operations, was discussed. The Consultant suggested a modular approach where RIL could be the basis of the first module. The NRM-II, in cooperation with its industry partner, could coordinate the development of a clear and simple technical guide and CIFOR could provide longer term publication support.

Since a large portion of such a modular technical procedures guide would be prepared as part of the proposed NRM-II training in the SJM concession, it is recommended that the possibility of this cooperative arrangement be included in the next consultancy. In this matter, the initial focus should be on defining responsibilities, sketching out funding arrangements, and drawing up a list of possible contributors and reviewers of such a technical guide.

3 4 Gunung Palung Buffer Zone Project, Harvard University

Contact: Mark Leighton, Ronald Cherry

A one day excursion was made to the Gunung Palung Buffer Zone Project as part of the West Kalimantan field trip. The field excursion visited a community hand logging operation in the swamp forest area adjacent to Gunung Palung National Park.

Project inception and detailed implementation documents were reviewed and the forest area was visited in terms of evaluating the appropriateness of the proposed silvicultural system and extraction methodology. Personal familiarization with this project dates back to early 1996.

This is one of a very few community orientated and operated forest management projects. It appears to have been well documented in terms of its economic, technical, social and silvicultural feasibility and is nearing the implementation phase. It is the Consultant's understanding that USAID has, in the past, been involved in the funding of this project. It is strongly recommended that NRM-II should foster a working relationship with this project since it appears to be one of the very few community based forestry projects in the country which has any realistic expectation of achieving measurable success in the foreseeable future.

3 5 Social Forestry Development Project (GFA/GTZ)

Contact: Christoph Schaefer-Kehnert, Paulus Kimman

This is a GTZ funded social forestry project, which is now moving into a phase, which will involve community harvesting, and utilization of natural forests. The Consultant has provided direct inputs into the planning aspects of this project in the past.

The GFA social forestry project based in Sengau, West Kalimantan should be part of the NRM-II network since it provides particular relevance for field testing and monitoring the outcome-based concepts of forest management and regulation which were being developed and proposed in the NRMP³ for community based forest management units.

3.6 Sustainable Forest Management Project, SFMP/GTZ

Contact: Rolph Ulbricht, Dieter Haury

This is a long term GTZ project that has carried out research in RIL techniques on the East Kalimantan concession of Sumalindo Lestari Jaya. The project office in Samarinda, East Kalimantan, was visited during the trip to the Narkata Rumba concession of the Alas Kusuma Group.

RIL was planned and implemented in cooperation with the Sumalindo group. The SFMP digitized Sumalindo's hand drafted operational contour and stock map and has presented it on AutoCad output. Implementation of the RIL trial was monitored and is well documented. A comparative analysis with conventional logging techniques was not carried out.

Current project efforts appear to be focused largely on worker training in felling techniques, etc. Although the project was orientated towards promoting operational adoption of RIL techniques, there has been no confirmation within the project as to whether Sumalindo has adopted these techniques on an operational scale.

³ Klassen, A. W. May 28, 1997. *A Discussion Paper on the Concept of Outcome-Based Regulation*. NRMP/ARD, and Chris Bennett and Silver Hutabarat, Nov 12, 1997, *Towards Outcome-Based Regulation of Logging in Natural Forest Concessions and Community Forests*.

This is a long term project, which has completed and will continue to carry out practical investigations into improved forest practices, which are beyond the mandate of the NRM-II. It is recommended that a close working relationship be developed with the SFMP to the future benefit of both projects.

3.7 Yawasan Telapak

Contact: A. Ruwindijarto

Telapak is an NGO interested in setting up a "layman" system of monitoring the activities of forest concessions in East Kalimantan.

Discussions were held in Samarinda concerning the possible parameters which village groups or NGO observers could use as indicators of poor management practices. The consultant provided suggestions regarding the monitoring of water quality, illegal log movements, and road right-of-way widths as well as observation and data collection techniques which could be adopted by a village-based monitoring effort.

4.0 RECOMMENDATIONS

This short-term consultancy has gone part way in investigating some of the potential areas of activities, which could become the focus of the NRM-II in its Forest Resources and Protected Areas Management Component (RP1). The main effort of this in-country consultancy has been to re-establish a working relationship with the former industry partner of the NRMP and to develop a clear understanding in how the NRM-II can assist its industry partner, the Alas Kusuma Group, in operationalizing RIL techniques.

While to-date, no natural production forest concessions in Indonesia have yet adopted RIL techniques which can demonstrate a clear environmental benefit in reducing the impact of harvesting activities, the Alas Kusuma Group has expressed a strong interest in pursuing such an objective. At the same time they have acknowledged technical difficulties which still stand in the way of full implementation of RIL. The NRM-II, as a follow-up to the NRMP, is poised at the brink of demonstrating large scale progress in assisting the forest

industry to improve its forest practices by continuing to support the Alas Kusuma Group's interest in RIL

To further this goal, it is proposed that the NRM-II continue with its technical assistance of the Alas Kusuma Group with the immediate aim of removing technical impediments standing in the way of successful implementation of RIL. It is, therefore, recommended that the following consultancies be fielded in 1998

Forest Management specialist, 1998-1

- Review existing petak mapping protocol. Develop field survey protocol, which addresses the need for accurate and consistent data collection. Train field crew in the use of this field data collection protocol
- Conduct training on the use of large scale contour maps for the purpose of skid trail planning and recording of operational activities
- Assist SJM staff in planning and laying out operational trials in RIL with the intention of generating statistically reliable data demonstrating the benefits of RIL
- Identify additional requirements needed to operationalize RIL techniques on a concession wide basis

Forest Management specialist 1998-2

- Work with SJM staff in developing systematic field evaluation procedures aimed at evaluating the impact of harvesting activities (i.e. Canopy opening, ground disturbance, damage to the residual trees, etc). This work will contribute to the wider NRM-II objective of developing practical criteria and indicators for outcome orientated forest practices monitoring
- Review SJM capabilities in the preparation of petak contour maps from ground surveys. Co-ordinate the activities of the short-term **Computer Training specialist**
- Review SJM efforts to improve utilization of main stem volume in light of the NRMP's experience in the SBK concession of the Alas Kusuma Group

- Develop a detailed outline for a procedures manual in contour mapping as a modular prototype for additional modules concerned with various forest engineering activities. The ultimate aim would be to produce modular field guides in Bahasa Indonesia, which could be widely disseminated for training purposes and as technical reference material intended to promote better forest practices

Computer Training specialist, 1998-1

- Assist the **Forest Management specialist** in training field staff in the collection of field data suitable for direct input into a computer program to be applied to the generation of contour maps
- Conduct training in the use of ROADENG⁴, specifically the Terrain Tools module
- Report to the **Forest Management specialist** on computer training progress and needs for the operationalization of computerized contour mapping skills
- Advise on any additional hardware and/or software requirements, which will be needed to operationalize, computer assisted contour mapping on a concession basis

These consultancies will address the objectives of promoting best practices in industrial forest management as outlined in the NRM-II work plan document⁵. They should also be used as the basis for further identifying and refining other cooperative arrangements, which could involve the NRM-II as well as further defining the forest management activities for the NRM-II into the second and third year of the project.

The Alas Kusuma Group is enthusiastic about the potential of operationalizing RIL on its SJM concession. NRM-II should, therefore, respond quickly to this opportunity for furthering better forest practices by fielding the first consultancy as early in 1998 as possible.

Contacts with other agencies who have developed initiatives in improved forest management practices such as RIL should be further enhanced. Promising connections

⁴ ROADENG is an engineering software application with built in capability to generate contour maps from field survey data or digitized information. ROADENG is a modular program developed by Softree Technical Systems Inc.

⁵ EPIQ/NRM II Task Order 1 Workplan, September 1997 - September 1999. Final Draft.

with the NRM-II initiative have been identified in Section 3.0. Continuing liaison with these projects should be built into future consultancies in forest management and should be focused on the achievement of specific objectives. Future consultancies should also attempt to establish other industry contacts so that clearly successful initiatives in RIL techniques could be actively and efficiently promoted to a wider audience in the forest industry sector.

FORESTEC
Consulting
Limited

3025 Cameron-Taggart Road
R.R.#1, Cobble Hill, B C
VOR ILO

Tel (250) 743-1163
Fax (250) 743-0871
e-mail forestec@island.net

December 17, 1997

Jim Tarrant
Team Leader
NRM-II Project

Subject CONSULTANCY REPORT - November, 1997

Jim,

This attachment along with the main report and the daily diary appendix, constitutes completion of this short-term consultancy

I found that the enthusiasm for operationalizing reduced impact logging (RIL) techniques within the management of Alas Kusuma is very high, however, they have also acknowledged that they have some serious shortcomings. This poses both a challenge and an opportunity for the NRM-II in terms of showing some clear deliverables as a project outcome.

Recommendations in the main report consist of a two-part consultancy aimed at operationalizing reduced impact logging practices on at least one concession during 1998. I believe this can be accomplished and I also believe that this will provide the basis for a rapid expansion of such improved forest practices into other concessions both within and outside of the Alas Kusuma Group.

I shall be available in mid February and again later in the year. During the second consultancy in 1998, I would envisage an additional short term (3 week) consultancy for a specialist in the use of the forest engineering software which I feel is appropriate for the Indonesian context. I have a person in mind for this position and he has completed a mock up of some actual data provided by Alas Kusuma in West Kalimantan. The results of this trial compilation have been conveyed directly to Alas Kusuma in Pontianak. I am proposing that this consultancy be carried out during my second visit in 1998.

In general my contacts with other projects in this short term consultancy were very brief but very encouraging. There are a lot of initiatives in this area of "best practices" implementation among the development projects. Most of these efforts appear to be research orientated and few seem to have taken into account the practicalities of operationalizing appropriate techniques.

My approach throughout this consultancy has been orientated towards setting the stage for

measurable outputs which can be attributed to efforts originating within the project. I trust this conforms with the project philosophy.

I am forwarding a hard copy of my work diary and report along with my time sheets and expense claim to Winrock today. Winrock has not come through with any expense advance or any further correspondence. The expense claim includes advances received in Jakarta.

I shall be in Mexico till the 19th of January. You can either fax me at (250) 743-1163 or e-mail me at forestec@island.net and I shall have the message on my return. As we discussed prior to my departure from Jakarta, any return visit will require a little more warning than this most recent visit. To obtain a work visa, travel advance, etc. and to put my own business in order, I will need a minimum of 2 week lead time with all approvals in place. You may also wish to convey this to Winrock to avoid future delays.

I trust that this consultancy has met your expectations. The response from Alas Kusuma has been way beyond what I anticipated and, I feel, the opportunity of benefiting from past initiatives is still largely untapped.

Have a good Christmas and a Happy New Year.

Regards

Art Klassen

**A W KLASSEN
DAILY DIARY**

**NRM-2 CONSULTANCY
Nov 10-Dec 4, 1997**

- Nov 3 Half day meeting with Chris Bennett to discuss the work plan for the upcoming consultancy, people to see, objectives, etc
-
- Nov 10 Depart Vancouver - San Francisco - Hong Kong
- Nov 11 Overnight Hong Kong
- Nov 12 Travel Hong Kong to Jakarta
- Nov 13 Jl Madiun office orientation meeting with Jim Tarrant Sat in on presentation given by World Resource Institute team Meeting with Chris Bennett, Lisa Curran and David McCauley re the direction of the initiatives in natural production forest management, continuing with initiatives started under the NRM-1, etc
- Nov 14 Brief meeting with David McCauley Meeting with Silva Hutabarat at the MoFr Discussed his conceptions of what the NRM-2 could do to build on NRM-1 initiatives in the area of natural production forest management
Meeting with Christoph Schaeffer-Kehnert of the GFA /GTZ Social Forestry Development Project in Sanggau, W Kalimantan
- Nov 15 Meeting with Nana of the Alas Kusuma Group re the nature of future co-operation with NRM-2 Significant interest expressed in continued co-operation, particularly as a follow-up to the past waste and reduced logging impact trials in the NRMP-1 Invitation to visit the Suka Jaya Makmur concession in W Kalimantan and one of the Alas Kusuma concessions in E Kalimantan as soon as possible
Met with Mark Leighton of the Gunung Palung community forest project Arranged visit to field site as a follow-up to the trip to the Alas Kusuma concession near Katapang in W Kalimantan
- Nov 16 Sunday
- Nov 17 Contacted GTZ in Samarinda to set up visit to their office in conjunction with the planned trip to E Kalimantan
Contacted various projects based headquartered in Jakarta to set up appointments (ODA, BERAU, CIFOR, GTZ)

- Nov 18 Attended all day workshop on the Management of Secondary Forests in Indonesia held at Bogor
Spoke with representatives of GTZ/Sustainable Forest Management Project Set up appointment date for meeting in Samarinda Met with CIFOR officials regarding participation of the NRM-2 in CIFOR's proposed reduced impact logging trials in E Kalimantan More information to be forwarded in the next two weeks
- Nov 19 Meeting with ODA regarding their status on logging trials carried out in the past year in C Kalimantan Trials completed - evaluation in progress Emphasis has been to document impact of logging using reduced impact logging techniques No comparative studies Also met with BERAU re their RIL trials in E Kalimantan Similar approach to ODA with less emphasis on the high-tech approach Two petaks mapped and logged Evaluation now being carried out Need to keep monitoring these two studies and get final reports as soon as possible
- Nov 20 Travel to Pontianak and on to Ketapang by local carrier Met by Alas Kusuma (SJM) driver and travelled approximately 3 hours to the base camp of Pt Suka Jaya Makmur Evening discussion with APHI team who were assessing on whether they were ready for assessment (for certification) by LEI
- Nov 21 Travelled for base camp to where SJM and Pk Gusti of Alas Kusuma (Pontianak) had carried out the RIL trial Returned to base camp Evenings discussion concentrated on the perceptions of the RIL and the remaining problem areas Staff seem to recognize that not all the pieces are in place yet for general application This recognition has come chiefly through their own attempts to apply the principles and methodology used in the NRMP trial Existing deficits were identified and will become the focus of at least two return consultancies There seems to be a very strong desire on the part of Alas Kusuma, Pontianak staff, and SKM staff to correct recognized shortcomings as soon as possible since the intention is to operationalize RIL for the entire concession starting in the new fiscal year
- Nov 22 These discussions continued in the morning Left for Ketapang in the afternoon Met Mary Melnyk, Marilyn Hoskins and Rini Sulaiman at the hotel Later joined by Mark Leighton and Roni Cherry of the Gunung Palung Buffer Zone Project
- Nov 23 Visit Gunung Palung park - swamp forest Hour and a half drive

and then a similar time on a small river through swamps. Visited a small swamp forest logging camp which were doing entirely manual extraction. These are men from the local village which the project expects to co-opt into the sustainable logging activities planned for this buffer zone.

It is very clear that unless this type of activity is legalized and regulated as proposed in the project document, this area adjacent to the part as well as the swamp forest area in the park will eventually end up being destroyed. Proposed harvesting system, silvicultural system, etc. all look very favourable.

- Nov 24 Travel to Pontianak. Visit with Pk Mamat and Pk Gusti in the Alas Kusuma office. Gusti will forward some sample survey notes to Jakarta so that I can do a computer mock-up of the contour information. Return to Jakarta.
- Nov 25 Jl Madiun office. Phone calls, logistical arrangements, internal meetings, etc.
- Nov 26 Traveled to Balikpapan. Met by Aji Iskandar of Pt Narkata Rimba. Drove to Samarinda. Evening meeting with Hari Antara (i/c forest planning) for the Kayu Alam Perkas Raya Group which is a subgroup of the Alas Kusuma Group. Also met Djoko Mintarjo (Director of Production ?)
- Nov 27 All day drive to the Narkata Rimba timber concession (8 hr) accompanied by Aji. In the evening, met the camp manager, Cecep Suganda and the overall camp manager, Pk Sarminto. This concession is adjacent to Pt Mugi Treman International which belongs to the same group.
- Nov 28 Logging activities currently shut down - normal for approximately 3 months of the year due to low water levels in the river. Statistics for the concession are supplied in the main report. Traveled to the forward operating area. Walked around on this year's skid trails. Visited the 1998/1999 forward operations camp for lunch. Visited active road construction site. Terrain conditions are very difficult. Logging impact is relatively high despite low volume recovery. Waste is very high. Recovery of the forest, however, appears very good. More details in the general report. Evenings discussion on how NRM-2 might be able to contribute to improved practices. Opportunities appear to be more limited than at

SJM Emphasis needs to be more on spatial planning and location of the overall road network Details in main report

Nov 29

Field trip focusing on the residual stand, forest nursery, research trials and permanent sample plot system First stop at the forest nursery Approximately 100,000 seedlings raised per year, mostly native species Still some wildlings but most of native seedlings are raised by vegetative means from a clone bank Rooting in water for approx 3 months, followed by transfer to plastic bags in high humidity environment for approx 15 days and then moved to outside beds for 6-8 months Main exotic species is *Acacia mangium* Local species favoured are *Shorea leprosila* and *Shorea parvifolia*, both of the red meranti group

Visited some of the permanent sample plots which were established 1993 in the first RKL Six one hectare plots established All trees down to 10cm dia Measured Four annual measurements already taken but not analyzed This program to continue into subsequent RKLs

Also looked at some of the trial plots established by Ir Elias of the Univ of Bogor Plots set up to monitor the long term impact/recovery of logged over areas (logged in 1993) Trials are duplicated to capture different severity of logging and different slope conditions, and are calibrated against an untouched 1 ha area

Walked about in an area logged in 1989 Recovery and growth looks very good Also walked around in an area logged in 1992 Extremely good sapling sized regen Apparently 1992 was a good seed year which accounts for very good regen along all the roads in that years logging 1997 is predicted to be a good seed year as well according to the abundance of flowering which is now apparent

Evening debriefing and discussion on the general areas in which NRM could assist towards better practices were summarized under (1) road network planning including, use of 1:25,000 contour maps, as well as field procedures and, (2) operational planning using petak maps This would include contour mapping protocol, computer assisted mapping, operational planning, and field implementation of RIL techniques

Nov 30

Travel to Samarinda

Dec 1

Meeting at the office of the Kayu Alam Perkasa Raya Group at Loa Duri approximately 35 km from Samarinda Chris B and myself met with Djoni Djoko Margono, Djoko Mintarjo and Hariantara Mintarjo Debriefing of my field visit and discussion of NRM/Alas Kusuma relationship in E Kalimantan

Visited Rolph Ulbricht at GTZ office on the university campus
Discussed GTZ's efforts in RIL and forest operations over the last 4
years and collected relevant literature

- Dec 2 Travel to Jakarta with stop off at the orangutan rehabilitation
center
- Dec 3 Debriefing meeting at USAID office - discussed field activities
carried out over the past three weeks, perceptions of what can be
achieved in the continued relationship with Alas Kusuma, the role of
NRM-II in RIL and related forest management activities, etc
- Dec 4 Travel arrive in B C
- Dec 8-17 Completion of Consultancy report correspondence, preparation of
computer mock-up
7 days work