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WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: GOI Team for Technical Discussions DATE: August 20, 1982

FROM: M. Altaf Hussain, Chief, AEPA4

SUBJECT: Supervision Report - INDONESIA - Transmigration II Project (Credit 919/Loan 1707-IND)

Please find attached a copy of the Transmigration II supervision report and draft amendments to the legal documents. We propose to discuss this report with the Team for Technical Discussions following the negotiation of Transmigration III.

cc: Messrs. Golan (AEP) and R. Stern (AEA)

GJDavis/cjc

Attachment

INDONESIA

TRANSMIGRATION II (LOAN 1707-IND, CREDIT 919-IND)
SUPERVISION JUNE 1982

His Excellency
Mr. Martono
Junior Minister for Transmigration
Jalan Let. Jen. Haryono M.T.
Jakarta, INDONESIA

Dear Mr. Martono:

Transmigration II (Loan 1707, Credit 919-IND)

I would like to thank you for the courtesy which you, your staff, and officials of all implementing agencies have shown to the Transmigration II Supervision Mission. This mission has now completed its work and I would like to call to your attention major mission findings regarding project formulation, farming systems, Singkut rehabilitation, procurement, and project implementation. The main mission findings are summarized in Annex 6 of the Supervision Report and a detailed summary of actions to be taken is appended as Annex 7.

The most important findings of the mission relate to project formulation. To date land has been firmly identified for only about 16,000 of the proposed 30,000 families and about US$60 million has been committed to mapping and other consultancy services. Therefore, to circumvent problems of land shortages, increasing implementation delays and cost overruns, and to take account of financial commitments already made, the mission recommends that:

(a) Settlement targets be reduced by one-third to about 20,000 families. Of these about 10,000 families would be settled in Jambi and 10,000 would be settled in South Sumatra;

(b) US$60 million, about one-quarter of total project costs, be allocated for mapping and consultancy services; and

(c) Disbursements be maintained at current levels until about 50% of the loan is disbursed at which time disbursement levels would be reevaluated.

The Bank has agreed to these recommendations and a draft of required changes in the loan documents is attached as Annex 8. These would be discussed after the negotiation of the Transmigration III project and we would hope

that a request from the Ministry of Finance to alter the loan documents would be forwarded when the Transmigration III negotiating team returns to Indonesia.

Another important mission finding concerns farming systems. Evidence from Singkut suggests that food crop yields are declining and that most income is now derived from minor tree crops and off-farm work. Therefore, to ensure reasonable migrant incomes and sustained development in the project area, the mission recommends that:

(a) the agricultural agencies (particularly AARD, DGFCA, and DGLS), together with Euroconsult, take urgent steps to reinforce programs of research, demonstration and extension in food crop areas;

(b) immediate steps be taken to extend the program of rubber planting in Singkut; and

(c) proposals be developed by December 31, 1982 by the DPD and PTP VI for tree crop development in new settlements.

The mission also recommends that a survey of yields and incomes be undertaken in Singkut to clarify the existing situation.

The proposal for Singkut rehabilitation was reviewed by the mission and components were divided into four categories: (1) those consistent with SAR concepts and costs and on which implementation should proceed immediately: the construction of markets, sanitary wells, storage facilities and new classrooms (DGT) and the upgrading of the REC, PPB and Seed Farm (DGFCA). (2) Components provided in the SAR, but on which proposed costs should be reduced. These include livestock distribution (DGLS), FCC and KUD development (DGC) and infrastructure improvement (PLPT). With reduced costs these should also proceed. (3) Components which are not recommended, and (4) two components which were not originally envisioned in the SAR: tree crop development and soil conservation. The details of actions to be taken are summarized in Annex 7.

To reduce procurement problems the mission has also recommended that the loan documents be changed to reflect Government procurement procedures and that actions be taken to strengthen the Transmigration II Team. Details are provided in Annex 6 of the Supervision Report.

Actions by the JMT and other agencies which are required to facilitate project implementation are summarized in Annex 7. I would particularly like to call your attention to the first section of this summary listing those actions urgently required to resolve land claims in Kubang Ujo, initiate tree crop development in Singkut and improve coordination. These should be given the highest priority by the JMT. In order to strengthen the JMT role in coordination I would appreciate it if you would request the newly formed Transmigration II Team to draft action

letters to each of the implementing agencies based on the recommendations in Annex 7. These letters should be forwarded to the agencies with copies to the Bank.

We appreciate your continued cooperation.

Sincerely yours,

M. J. Walden
Chief, Agriculture Division
Resident Staff in Indonesia

cc. Mr. Sayuti Hasibuan, BAPPENAS
Mrs. Buly Suryiatmadja, MIN FIN

INDONESIA

TRANSMIGRATION II (LOAN 1707-IND, CREDIT 919-IND)
SUPERVISION JUNE 1982

Main Mission Findings

A. Project Formulation

Background

1. The Transmigration II project was originally intended to settle about 30,000 families at approximately six sites in Jambi province and to upgrade services and conditions for 4,000 families in Singkut, an existing settlement in the area. Technical assistance was provided to prepare and implement transmigration projects. Soon after project start-up it became apparent that the identification of suitable land for settlement would be both a critical factor in migrant success and a major bottleneck in the implementation of the Transmigration II project and the GOI transmigration program. For these reasons funds were reallocated from the Transmigration II project to map additional sites for Bank-assisted projects and to identify and evaluate sites for the GOI program, and additional financial support for site selection and evaluation is provided under a proposed Transmigration III project. These efforts have assisted the Government to settle 200,000 families under the GOI program in the first three years of Repelita III, but to date, because of forest constraints, slopes and swamps, land has been found in Jambi province for only 10,000 of the 30,000 proposed families. Government has therefore proposed settlement in South Sumatra and recommended further mapping in both South Sumatra and Jambi province.

Current Status

2. Land Identification. Areas proposed for Transmigration II may be divided into three categories with roughly the following settlement potential:

Trans IIA -	Sites under construction in Jambi province	10,500 families
Trans IIB -	Sites identified and studied at Phase II or Phase III level in South Sumatra province	10,000-12,000 families
Trans IIC -	Sites proposed for settlement but not yet studied in Jambi and South Sumatra	10,000 families
Approximate Total		30,000 families

Detailed mapping has been completed for 11,000 additional families in Jambi and South Sumatra, but the areas lie in production forest. The Directorate General of Forestry is not prepared to reclassify these areas and they are no longer being proposed by Government. No judgment can be made on the IIC sites until reconnaissance level studies are undertaken. Arrangements have been made to complete Phase IIIA studies on Transmigration IIB sites. Two of these sites can be tendered immediately, two can be tendered on about March 1983 and two can be tendered either in June 1983 (if mapping firms are diverted to this task immediately) or in December 1983 (if TKTD waits until firms are engaged under the proposed Transmigration III project). The first option would permit land clearing for 20,000 families to be completed by about December 1985; the second by about June-September 1986.

3. Financial Commitments and Implications. The Transmigration II Loan/Credit is for US$157 million and the EEC Special Action Credit is for $5.5 million. Of this amount, US$23 million was allocated for mapping, consultants, research and training. To date about US$60 million has been committed for all services to be provided in this category. The increase is due largely to the addition of (a) a component in TKTD to strengthen site selection and evaluation by engaging 11 consulting firms and an advisory group (US$28.8 million), (b) Phase II studies required in advance of Transmigration III (US$5.8 million); and (c) and mapping of Transmigration II sites. Delays in land identification, settlement and in the rehabilitation component have also resulted in slow disbursement and cost overruns. At current costs and disbursement rates, the remaining funds would be fully utilized when 18,000-20,000 families were settled under Transmigration II.

Mission Recommendations

4. General. To circumvent problems of land shortages and increasing cost overruns due to implementation delays, and to take account of financial commitments already made, the mission recommends that (a) the project be reformulated to include the settlement of approximately 10,000 families in Jambi and 10,000 families in South Sumatra, (b) US$60 million, about one-fourth of total project funds, be reallocated for mapping and consulting services, and (c) disbursements be maintained at current levels until about 50% of loan funds are disbursed, when disbursement rates would be reviewed.

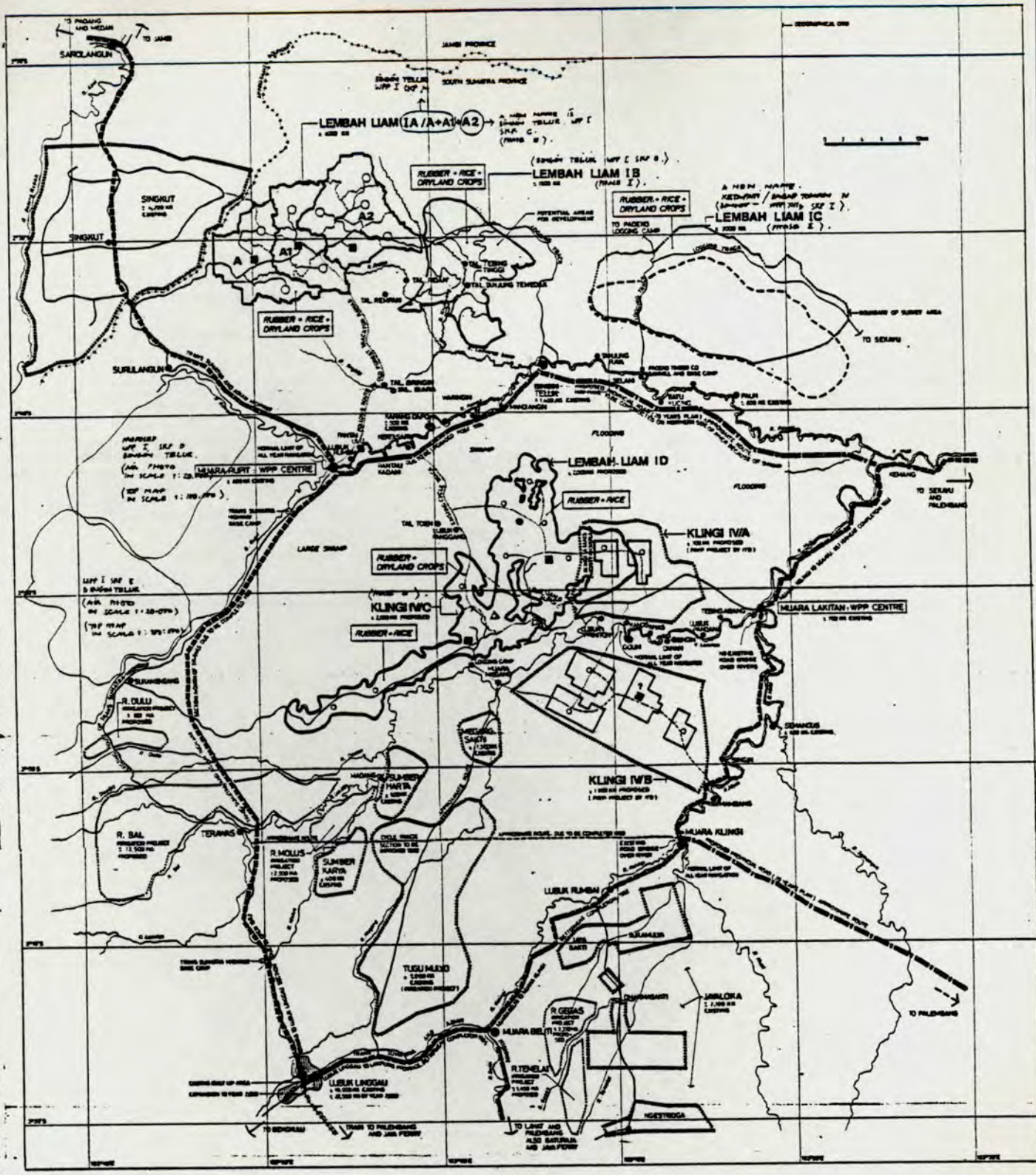
5. Project Area. To meet these objectives land clearing should be tendered for six sites in South Sumatra. The names and status of proposed sites are summarized in Table A.1. Locations are shown in Map A attached. Two sites (Bingen Teluk C and Kelingi IVC) should be tendered immediately and two sites (most likely Bingen Teluk IB and Kertapati/Babat Toman XVIb/I) should be tendered by March 1983. Arrangements for tendering the last two sites (probably Bingen Teluk ID and IE) would depend on the nature of information available at Phase II (see para. 40), however, to complete the project in a timely fashion all contractors should be in the field by April 1984, and all tendering should be started by June 1983. Pematang Panggang XVII would be mapped but would not be included within the project if sites could be found in the north. To facilitate project

Table A.1: SOUTH SUMATRA SITES PROPOSED FOR INCLUSION IN TRANSMIGRATION II

Site	No. of families	Comments
Phase III Completed		
Bingen Teluk IC	1,700	To be tendered immediately by PLPT.
Kelingi IVC	1,900	
Subtotal	3,600	
Phase II Studies Complete		
Bingen Teluk IB	1,100	Phase IIIA to be undertaken by Halcrow's or Enex, and completed by March 1983.
Kertapati XVIb/I	1,800	
Subtotal	2,900	
Phase II Studies Underway		
Bingen Teluk ID	(?)1,750	Government or Halcrow's to complete Phase II by January 1983, and Phase III no later than September 1983.
Bingen Teluk IE	(?)1,750	
Subtotal	(?)3,500	
Total	10,000	
Phase II Completed but not included in project		
Pematang Panggang	2,200	Distant from other sites. Phase IIIA would be completed but would be included only if other sites not sufficient.
Total	12,200	

development the Sekayu-Pendopo road should be improved. These and other actions requiring follow-up are summarized in Annex 7.

6. Reallocation of Loan Funds. Under the reformulated project, settlement would be reduced by one-third and about one-fourth of project funds would be reallocated to mapping and consulting services. A very rough indication of proposed project expenditures is included in Table A.2. At current disbursement levels this amount would exceed loan funds available. It is therefore recommended that disbursement rates be maintained at current levels until about 50% of the loan proceeds are expended at which time the project would be reviewed to determine modifications required to permit Bank disbursement through the closing date or until 20,000 families are settled. Because of the limited availability of funds, the mission recommends that airstrips not be constructed under the project (para. 25). Because of the



REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS, DIRECTORATE GENERAL OF HOUSING, BUILDING, PLANNING AND URBAN DEVELOPMENT (CIPTA KARYA)

1 : 200,000 SCALE REGIONAL CONTEXT MAP

SUMATERA SELATAN TRANSMIGRATION DEVELOPMENT

HALCROW FOX AND ASSOCIATES in co-operation with HEMILTON-HARRIS CONSORTIUM

LEGEND :

- STATE OR PROVINCIAL ROAD IMPROVEMENTS
- EXISTING ROADS AND TRACKS
- PROPOSED ROADS (SHORT AND MEDIUM TERM)
- PROPOSED PROVINCIAL ROADS (LONG TERM)
- FUTURE ROAD LINKS PROPOSED BY SSTD
- RIVERS NORMALLY NAVIGABLE ALL YEAR
- OTHER RIVERS
- BOUNDARY BETWEEN PHASE II & SPP3
- PROVINCE BOUNDARY
- SSTD PHASE II TRANSMIGRATION AREA BOUNDARY
- EXISTING AND PROPOSED TRANSMIGRATION AREA BOUNDARY
- BOUNDARY BETWEEN DIFFERENT FARM MODELS
- PROPOSED SHP CENTRE
- PROPOSED VILLAGE CENTRE
- EXISTING TOWN OR VILLAGE
- FUTURE TOWN EXPANSION
- CLEARANCE AREA FOR PLAN AS YOU PROCEED TRANSMIGRATION DEVELOPMENT
- FAMILIES
- PAYP PLAN AS YOU PROCEED
- ITB INSTITUTE OF TECHNOLOGY BANDUNG
- NAMA CLEARANCE AREA/VILLAGE
- PROPOSED IRRIGATION PROJECT BOUNDARY

THIS MAP SHOULD NOT BE USED FOR ACCURATE MEASUREMENT OF DISTANCES OR AREAS

REVISED JANUARY 1982

Table A.2: PROPOSED ALLOCATION OF LOAN PROCEEDS (20,000 FAMILIES)
(US$ million)

	Base cost mid-1982	Base cost + cont.	Bank Group Disburse-ment	Amount from loan proceeds
Settlement of 20,000 Families				
(expenses through closing date)				
Site preparation	44.4	52.5	0.8	42.0
Community development	33.0	39.6	0.8	31.7
Settler relocation	22.6	27.1	0.6	16.0
Agricultural supplies	6.2	8.0	0.5	4.0
Livestock	5.4	7.0	1.0	7.0
Equipment and supplies	1.6	2.0	1.0	2.0
Other civil works (REC, PPB)	6.9	9.0	0.8	7.0
Subtotal	120.1	145.2		109.7
Singkut Rehabilitation				
(from Table B.1)				
Markets, wells, storage	0.4	0.5	0.8	0.4
Livestock	1.2	1.4	1.0	1.4
PPB, Seed farm, REC	0.4	0.5	0.8	0.4
KUD development	0.5	0.7	mixed	0.6
Infrastructure improvement	0.6	0.8	0.8	0.6
Subtotal	3.1	3.9		3.4
Consulting Services				
TKTD	50.4	-	1.0	50.4
PLPT	6.5	-	1.0	6.5
DGFCA, DGLS, DGC	3.4	-	1.0	3.4
JMT	1.9	-	1.0	1.9
Subtotal	62.2	62.2		62.2
Total	185.4	211.3		175.3
Proposed New Components				
Singkut (B.1)				
Soil conservation	0.4	0.5	0.8	0.4
Tree crops	5.0	6.5	0.8	5.2
New Settlements				
Soil conservation	2.0	2.6	0.8	2.1
Subtotal	7.4	9.6		5.6
Total	192.8	220.9 /a		180.9 /b

/a Does not include operating costs or small expenditures against which no Bank disbursement expected. Revised project cost is estimated at US$ 235 million.

/b At current disbursement rates. As this amount exceeds total available funds, some categories would be reduced (para. 6).

difficulties in determining price, the Bank would not disburse against air transport (para. 42) and to simplify disbursement the mission recommends that Government disburse 100% against subsistence supplies and agricultural supplies, although the Bank is prepared to disburse against these components should the Government so request. This matter would be resolved when agencies are in Washington for the negotiation of Transmigration III. Actions to be taken by implementing agencies are included in Annex 7.

7. Farm Model - Due to organizational limitations, no major changes in the food crop farm model are foreseen under this first tranche even though there are problems of sustaining food crop production and tree crops are critically required. (Steps to ensure the introduction of tree crops in Singkut and to plan for future tree crop development are covered in para. 11.) In Kelingi IVC, a proposed site in South Sumatra, the mapping consultants have recommended settlement based primarily on 2.75 ha farms including 0.25 ha houselots, 1.0 ha for sawah, and 1.5 ha of land reserved for tree crops. They have also recommended several variations on this model depending on the amount of land suitable for sawah. The Bank has agreed to this settlement pattern and will modify the loan documents to permit variation in the farm size. To simplify implementation, however, the mission recommends that all farmers in Kelingi IVC receive 2.75 ha farms and that TKTD adjust detailed designs to increase smaller holdings to this size. Similarly, in Bingen Teluk I/C, the predominant farm model of 3.5 ha should be use for all families and appropriate adjustments should be made by TKTD.

B. Singkut Rehabilitation

Current Status

8. Singkut is a GOI settlement of 4,000 families within the Transmigration II area. Migrants have been on site 5-7 years and most migrants interviewed by mission members were found to be reducing the land put into food crop production and limiting their fertilizer usage because of declining yields. Migrant income is now based largely on minor tree crops (coffee and cloves) and off farm work. In Unit III the provincial DGE has established a rubber nursery and the KUD is organizing land clearing, and timber disposal prior to rubber establishment. About 315 ha of rubber are scheduled to be planted this year and eventually Unit III intends to plant 2 ha of rubber for each of 500 families. There are no plans to extend this program to the other units in Singkut.

9. The Transmigration II SAR provides financial assistance to upgrade Singkut to Transmigration II standards. GOI agencies with RMI assistance have prepared and submitted a proposal for US$8 million to cover this work. Proposed components and their costs are summarized in Table B.1. Of primary concern to the mission was the fact that the per family cost of these components was relatively high (US$2,000/family) while the likely increase in production was relatively low. Tree crops were not included in the proposal because they were not provided in the SAR.

Table B.1: PROPOSED SINGKUT UPGRADING COMPONENTS
(estimated base cost US$)

	Proposed	Recommended	Comments
Based on SAR			
Directorate General of Transmigration			
Construction of markets	37,000	37,000	Would bring Singkut facilities near level of other Transmigration II sites. Items already in DIP and can be implemented immediately.
Construction of 1,000 sanitary shallow wells	155,000	155,000	
Construction of storage facilities	22,000	22,000	
Construction of new classrooms x 9	35,000	36,000	
Subtotal	350,000	350,000	
Directorate General of Livestock			
Preparation of livestock facilities }	-	150,000	SAR provides for one cow for 4 families and up to 5% bulls. Other costs spread over entire project.
Acquisition of livestock x 1,050 }	2,086,000	1,050,000	
Animal breeding }	-	-	
Subtotal	2,100,000	1,200,000	
Directorate General of Food Crops			
Soil conservation	-	-	- New component, see DGFCA below
Agricultural inputs for 3 years	700,000	0	- Ongoing subsidy not replicable.
Upgrading of plant protection brigade	58,000	58,000	- Follows SAR, proceed immediately.
Upgrading of seed farm /a	200,000	200,000	- Follows SAR, proceed immediately.
REC development	122,000	122,000	- Follows SAR, proceed immediately.
Subtotal	1,080,000	780,000	
Directorate General of Cooperatives			
KUD development	1,040,000	526,000	To establish an FCC and bring KUDs up to national standards. Components should be reviewed by the Transmigration II team.
Directorate General Bina Marga (PLPT)			
Infrastructure improvement	2,435,000	600,000	Estimate based on 20% of initial investment cost. Critical needs should be immediately evaluated by PLPT.
Total	7,005,000	3,056,000	
Proposed New Components			
Directorate General of Estates			
Seedlings, fertilizer and extension for initiating rubber development on 7,000 ha	-	5,000,000	Main source of income improvement.
DGFCA			
Soil conservation	1,300,000	400,000	Assumes Rp 150,000/ha terracing on 1,600 ha (20%) of opened land, one demonstration plot and planting materials for soil conservation.
Total	1,300,000	5,400,000	
GRAND TOTAL	8,305,000	8,456,000	

/a Capital and Operating Costs. Seed for Singkut and other transmigrant communities in area. Role of seed farms to be reassessed in 1986.

Mission Recommendations

10. General. In reviewing this proposal, components were divided into four categories: (1) those components consistent with SAR concepts and costs and on which implementation should proceed immediately; these include the construction of markets, sanitary wells, storage facilities and new classrooms (DGT) and the upgrading of the REC, PPB and Seed Farm (DGFCA). (2) Components provided in the SAR, but on which proposed costs should be reduced. These include livestock distribution (DGLS), FCC and KUD development (DGC) and infrastructure improvement (PLPT). With reduced costs these should also proceed. (3) Components which are not recommended, particularly the proposed distribution of three years of free fertilizer (total 6 years) which would not be replicable and may establish a poor precedent. (4) Two components have also been included which were not originally envisioned in the SAR: tree crop development and soil conservation. These are discussed below. In addition, the mission recommends a brief survey of farmer yields and incomes by Euroconsult and RMI to establish baseline income and to assist in planning for new settlements.

11. Tree Crop Development. The introduction of tree crops to Singkut and to the new settlements is critical. Options are available, however, on the standards of development and source of finance. Three models exist for tree crop establishment, Dinas/KUD (estimated cost /1 about US$650-1,000 ha), Smallholder Rubber Development (about $3,000/ha) and NES (US$5,000/ha). Financing could come in small part from Transmigration II or entirely from new sources. To facilitate development in Singkut and to test a relatively low cost approach to tree crop establishment, the mission recommends that the Dinas Perkebunan Jambi prepare a proposal by October 15, 1982 for extending the existing low-cost program to the remaining units in Singkut, and if possible that they begin establishing the required nurseries in this rainy season. Financial assistance would be primarily for nursery establishment, fertilizer and extension. Up to US$5 million from the loan could be allocated for this purpose. Total costs and disbursement ratios would be calculated when implementation schedules and unit costs are provided. By reducing the cost of other components and allocating US$5 million to tree crops, Bank disbursement would be within the US$2,000/family originally proposed. At the same time proposals should be solicited from both DPD and PTP VI (which is working in Rimbobujang) for tree crop development in Jambi province. These proposals would be required by December 31, 1982 and would be reviewed by the next supervision mission. A decision on tree crops for sites in South Sumatra would be made in about June 1983 when the model for Jambi was set and the sites and implementation schedules in South Sumatra were known. Financing for this development would have to be from sources other than Transmigration II. The Transmigration II team in the JMT should follow-up to obtain these proposals through the DPD and team Khusus.

/1 Base cost plus contingencies over the six-year development period.

12. Soil Conservation. The DGFCA has proposed a $1.3 million package of soil conservation works for Singkut (US$290/family). However, if 1,600 ha of land (20% of that opened) were terraced at Rp 150,000 ha, planning materials for soil conservation were provided to all farmers, and one soil conservation demonstration plot were established in a central location, the cost would be reduced to US$400,000 or US$100/family. Given managerial constraints which may slow implementation, the mission recommends that the US$100/family be allocated for soil conservation and if funds are exhausted the situation be reevaluated to determine what additional funds are required. The mission also recommends that up to US$100/family be allocated for soil conservation works in new settlements although it recognizes that a portion of this program would be finished after the project is completed. Since funds for soil conservation under the DGFCA are not specifically provided in the loan, the loan documents would be modified to include this component. Actions to be taken to facilitate Singkut development are included in Annex 7.

C. Project Implementation

13. Physical progress on major works is summarized in the main report. A supervision report on the site selection and evaluation component will be issued separately. Procurement issues in resettlement components are discussed in Section D. In general, improvement is evident in the performance of most implementing agencies.

Land Clearing (PLPT)

14. General. Two land clearing contracts, each for 6,000 KK, are now being implemented. P.T. Layani Raya has finished clearing 1,800 ha in Kubang Ujo and has moved to Hitam Ulu. They are using heavy machinery for both felling and windrowing and soil disturbance is evident, although the final results in Kubang Ujo are acceptable. P.T. Sumber Harapan began working in Kuamang Kuning in April and because of rain has been forced to make extensive use of chainsaws to meet targets. Both the quality and quantity of work to date are acceptable. PLPT should now give increased attention to cost factors and interagency coordination. To avoid the waste of valuable logs, timber requirements for local construction should be met from cleared logs. Since many timber regulations have changed in the last year PLPT, and the JMT should follow-up with the DGE to determine those steps needed to ensure improved timber utilization. Other items requiring follow-up are summarized below.

15. Land Shortages. P.T. Layani Raya will complete land clearing in Hitam Ulu by April 1983. Due to land shortages, however, land for 2,800 additional families must be found so that the contract can be completed or heavy penalities will be incurred by Government. Of this, it is likely that land for 1,200 families can be found in Kuamang Kuning and TKTD and PLPT have been requested to follow up on the remainder. The JMT should request a plan from TKTD and PLPT by October 15, 1982, both to speed the decision and to permit agencies to budget properly for FY83/84.

16. Trans-Asia Performance and Future Work Program. After some delays, a new Trans-Asia project manager is in place. Not all personnel are in the field as required and training programs called for in the last supervision report have not begun. As of June 30, 1982 Trans-Asia had submitted bills for services totalling US$1,965,000 on a contract of about US$6.4 million (about 31%). As of June 30, however, only about 1,800 ha had been fully cleared and work had just begun on about 1,200 ha, about 4-6% of the work initially anticipated. Part of the discrepancy arises from delays in project implementation beyond Trans-Asia's control. PLPT is satisfied with Trans-Asia performance in the field and they have requested that Trans-Asia staff commence training of PLPT staff and contractors.

17. Due to changes in the location and scheduling of sites PLPT should request staffing proposals and cost estimates from Trans-Asia for:

(a) supervision of all land clearing and road and bridge construction in Jambi and in six SKPs in South Sumatra through work completion (target date December 1985-June 1986);

(b) drafting of "as-built" designs after land clearing is completed in South Sumatra sites in accordance with TORs for Phase IIIB studies developed by TKTD; and

(c) training of PLPT staff and contractors.

Because the size of the project has been reduced, charges should be kept within the cost of the original contract. PLPT should request these proposals by October 15, 1982.

18. Additional matters to be followed up by Trans-Asia are as follows:

(a) Timber Removal. Only a small portion of the stockpiled timber is being removed from the site. Trans-Asia should monitor the amount of timber stacked and removed in their monthly report so that a judgement can be made on continuing this practice.

(b) Cover Crops. Contractors are not properly planting cover crops. PLPT should request Trans-Asia to prepare more detailed specifications for cover crops in conjunction with agricultural specialists in Euroconsult. Generally, DGE standards should be followed, although in the absence of set standards a wide variety of cover crops could be used.

(c) Land Clearing. Stumps in Kuamang Kuning and Hitam Ulu are too high, necessitating significant subsequent labor/mechanical input in the windrowing operation. Trees are felled at random instead of along contours making the windrowing more difficult and increasing the erosion hazard. The practice of cutting larger trees in small sections to facilitate windrowing and

reduce soil disturbance noted in Kuamang Kuning is commendable and should be extended to smaller trees. Ample undisturbed forest should be left along waterways to stabilize banks and minimize erosion during floods.

(d) Roads and Bridges. Compaction of roads should be closely monitored and Trans-Asia field staff should be equiped with testing equipment. P.T. Sumber Harapan has no civil engineer to follow the road and bridge construction and PLPT should require that this gap is filled.

(e) Timing of House Construction. To circumvent long delays between land clearing and house construction, PLPT should request Trans-Asia to provide a schedule of sites available for house construction in their monthly reports. These schedules should be provided to the Trans II team in the JMT and to the DGT, and the DGT should tender in advance for this work (para. 20).

(f) Contract Specifications. Some change orders in the P.T. Layani Raya contract have not been incorporated into the new contract of P.T. Sumber Harapan. Trans-Asia should review both contracts and make recommendations for changes.

19. PLPT should notify Trans Asia that the next supervision mission will carefully evaluate the performance of the new manager, the amount of time personnel are onsite, the progress in training, and Trans-Asia's follow-up on matters required in para. 18. Based on this assessment and the work program proposed, the Bank and PLPT would determine whether the Trans-Asia work program would cover South Sumatra sites. PLPT should forward Trans-Asia monthly reports to the Bank.

Housing and Other Facilities (DGT)

20. Housing. About 800 settler houses have been constructed in Kubang Ujo by P.T. Layani Raya and the quality of construction is good. The DGT now proposes to tender for 2,300 houses, 400 in Kubang Ujo, 1,150 in Hitam Ulu and 750 in Kumang Kuning, in three packets of about 750 houses each. Government procurement procedures would be used and procurement issues are summarized in para. 41. The JMT should direct the DGT to tender these houses immediately. The DGT should also tender for additional packages of 700-800 houses and wells, in advance of the required house construction time.

21. Settler Water Supply. The DGT would like to construct hand-dug sanitary wells (with concrete casings and concrete aprons) at a ratio of one well for four families. These wells would cost Rp 150,000 (US$232) each. Deep wells with hand pumps would not be used in areas where shallow wells would suffice. The cost of these wells is of some concern. However, as the principal is sound, and the cost of water supplied in this way would not exceed appraisal estimates, the JMT should instruct the DGT to proceed to tender for housing and water supply.

22. Village Facilities. Two units of village facilities (offices, schools, health services) are now under construction in Kubang Ujo. Quality appears acceptable. The DGT should immediately tender for electricity and water supply for these units and in the future these items should be included in contracts for village facilities. Tendering should proceed for additional village facilities in Kubang Ujo, Hitam Ulu and Kumang Kuning. Facilities for the Kubang Ujo Korlap should be included in the Kubang Ujo contract and in the others as required. The JMT is to follow up with the DGT.

23. Supervision of Houses, Public Facilities and Water Supply. The DGT construction program costs more than $1,000 per family, however, the DGT does not have technical field staff to supervise contractors or give advice on alternative water supply systems and it has only a limited ability to adapt settler houses and public facilities to local conditions. The DGT has requested the services of a local consultant firm to supervise civil works until the end of the construction program (December 1985-June 1986). The staff required are summarized in Table C.1. The Bank has no objection to engaging a domestic firm on this basis and it recommends that the firm be used to supervise all DGT construction (settler houses, wells, village facilities, base camp) under Transmigration II.

Table C.1: PROPOSED STAFFING OF CONSTRUCTION SUPERVISION FIRM IN DGT

2 civil engineers to supervise construction works (one in Jambi, one in South Sumatra)	72 months
1 architect/building designer to study standard house and building designs	12 months
1 hydrogeologist/water supply/sanitation engineer	36 months
Total	120 months

24. Base Camp. The base camp in Bangko was to be completed under two contracts. The first contract is under construction. The second contract has yet to be tendered. Given the shift in sites, facilities under construction should be completed, but no new works should be begun. The DGT agrees. The DGT should therefore review physical designs to consolidate buildings and it should ensure that electricity and water supply are tendered. A preliminary proposal for the location and cost of a South Sumatra base camp (excluding architectural drawings) should be prepared by the DGT and submitted to the JMT for review and comment. Experience suggests that facilities for consultants should not be included in the base camp but should be provided by the consulting firms.

25. Airstrip. Land has been purchased for an airstrip outside of Bangko but no other action has been initiated on airstrip construction. In lieu of any strong commitment to this construction on the part of air communications

or implementing agencies and since (a) sites are being shifted, (b) all migrants would be settled in Jambi before the airfield could be completed, and (c) economic activity in the area would not support a commercial airfield, the mission recommends that no work be undertaken on the airport in Bangko and that land be deployed to other uses. The Governor of South Sumatra has requested that existing loan funds be used to rehabilitate a Japanese airstrip in Lubuk Linggau, a city of 27,000 which is the gateway to the southern transmigration sites. Given the limitations on funds and on the manpower available for follow-up and given the time it would take to prepare and implement this component, it would be difficult to include this airfield in the project at this time and the mission recommends that the GOI pursue this construction under its own program.

Resettlement and Subsistence Support

26. Settler Land. 800 families have been settled in Kubang Ujo. Owing to existing land claims, however, only 2,380 ha are available, enough for 3.5 ha parcels for only 620 families. Land titles are about to be distributed to these families. The GOI hopes to acquire additional land and has raised the price of compensation to Rp 100,000/ha. Some local farmers are expected to surrender land at this price while others are expected to relinquish land in order to settle in the project. At the moment, however, some farmers and officials are holding out for still larger incentives. Under these circumstances a closing date of October 15, 1982 should be set for resolving land claims. After this, all available land should be divided equally between the 800 transmigrant families. This would provide at least 3.0 ha/family (Government-sponsored migrants obtain only 2.0 ha of land). To follow this plan loan documents should be altered and Agraria should not distribute titles which it has already prepared. JMT follow-up on this latter point is urgently required.

27. Settler Selection, Subsistence Support and Special Studies. In order to promote Government objectives up to one-tenth of settlers may be from the military and one-tenth of local residents. The DGT should ensure that military families do not exceed the norm and that they are scattered to ensure maximum leadership development. It should also act quickly to settle local families. Subsistence packages are arriving regularly. Small problems of quality control should be addressed by tightening contract specifications. DGT is to follow up. A package of special studies under the DGT is recommended in the SAR. The JMT should review these with the DGT to determine which studies are still useful and a general proposal should be submitted to the Bank for review and comment by October 15, 1982. TORs for approved studies would be required by December 31, 1982.

Agricultural Development

28. General. Some of the Kubang Ujo house lots have been planted to a mixture of tree crops and food crops with promising results. Maize is poor. Soyabeans have germinated well but pod yield has been disappointing. Better results have been achieved with cassava, groundnuts and peas/beans.

These results may be attributed to heavy fertilizer concentrations on houselots. The first major sowing of rice will be in the next main rainy season. Evidence from Singkut and Pamenang suggests reasonable yields for 3-4 years, declining thereafter. To promote reasonable incomes key elements of the food crop farming system, varieties, sowing dates, fertilizer dosages and, other soil amendments (lime), and pesticide treatments must be more firmly established. At present, at Kubang Ujo there is uncertainty about optimum sowing dates. A Euroconsult team, which is providing technical assistance to the DGFCA and DGLS, is now on the field, and should give priority to assigning DGFCA staff on clarifying and extending technical packages on the basis of existing knowledge.

29. Agricultural Inputs. Dry season seeds and fertilizers have been provided to migrants and the DGFCA has acquired rice seed and fertilizer for distribution in August-September. Farmers must be notified when supplies will arrive. Tree crop seedlings for 400 families were procured by the DGFCA from PTP VI. No arrangements have yet been made to secure additional tree-crop seedlings for migrants who have been settled this year. The DGFCA will follow up. Issues associated with reimbursement for seeds, seedlings and rock phosphate are covered in Section D.

31. Livestock. A livestock holding ground is being established and 75 ha of elephant grass and 150 ha of Setaria, Panicum and Brachiarya have been planted in Margoyoso. Many Singkut farmers have also established pasture and are awaiting cattle. Procurement should now proceed on 2 lots of 800 cattle (see para. 45). Under the revised project, a total of about 6,000 cattle (1:4 families) and about 300 bulls should be procured. To speed cattle distribution, the distribution of one cow to 2 families in initial settlements could be permitted so long as (a) 1,000 cattle are distributed in Singkut, 2,500 in new settlements in Jambi and 2,500 in new settlements in Sumatra; and (b) farmers in later settlements have preference in receiving livestock from the calf return program until a ratio of 1:2 is reached. One central bull unit for 6-7 bulls could be constructed near the holding grounds, but individual bull units should not be established and bulls should be under farmer management. For the duration of the project farmers would maintain the bulls and collect fees for their services. Both DGLS and the Bank agree that the Margoyoso holding grounds can be used by the IFAD project when not required by Transmigration II, if arrangements can be made for cattle feed and sufficient feed is available for this project.

31. Seed Farm. Buildings have been constructed for the seed farm and one rice crop has been produced with poor results. Soybeans are also heavily attacked by pests and producing empty pods. DGFCA should ask for assistance from Euroconsult in assessing reasons for difficulties and making recommendations to overcome them.

32. Extension. Extension in Kubang Ujo is disappointing. Both PPLs have left their posts. Most farmers have not seen a PPL since their arrival

and most urgently require information on planting dates, seeds, and fertilizer requirements for the upcoming planting season. A PPM has been stationed in the REC which is about to be completed. The mission recommends that both PPLs be replaced as a matter of urgency and that a PPS be posted from Jambi in time to assist with the upcoming planting season. Two assistant PPLs should also be posted to assist with the proposed soil conservation program. The use of demonstration plots on REC land should be de-emphasized and the DGFCA together with Euroconsult should initiate a program to demonstrate important points on farmers' land.

33. Euroconsult. Euroconsult personnel have been in the field since early 1982. For Euroconsult to be successful counterparts are required and the DGFCA should act quickly to complete RECs, post basic staff and provide transport for extension workers. During the mission it was suggested that Euroconsult work with the DGE as well as DGFCA and DGLS, but the involved agencies have expressed reservations if this would involve new technical specialties and contract modifications. To simplify the situation the mission recommends that existing Euroconsult personnel look at all aspects of the farming system and maintain close coordination with the DGE but that no new staff be engaged for this purpose. When a concrete proposal for tree crop development is drawn up by the DGE the Bank would be prepared to consider additional technical assistance for this component and to discuss the appropriate organizational arrangements (see also para. 34).

34. Research. The AARD has drawn up a proposal for research in the Transmigration II areas which was originally proposed for inclusion under a research component in Transmigration III. This research should be undertaken with Transmigration II funds and the JMT should follow-up to see that this component is included in the 1982/83 DIP and that an inception report is prepared by the AARD and that Bank can review and comment is obtained on the inception report. In the meantime, Euroconsult should establish close ties with CRIA and promote a vigorous demonstration program (para. 32).

35. Health. Medical posts have been constructed under the INPRES program. The JMT should follow-up to be certain these do not overlap with facilities provided by the DGT. The JMT should also request that the Puskesmas doctor visit the area and discuss its integration into the Kabupaten health care scheme. The child weight monitoring program should be strongly supported.

36. Coordination. A Transmigration II team has been formed in the JMT and Ir. Yatmin has been appointed as team leader. To facilitate coordination, copies of all procurement and disbursement requests will be sent by the agencies to the Transmigration II team. The team will review such requests and within one week will indicate to the RSI whether or not the request is consistent with the SAR and revised implementation schedules. If acceptable, the RSI will issue a no objection statement. This must be

done through the Bank as the JMT itself has no authority over procurement matters. Since the Transmigration II team does not include technical specialists the mission recommends that technical questions (about bull units, rock phosphate, etc.) be addressed directly to Bank staff with copies to the JMT. A detailed review of the performance of RMI consultants was undertaken in January 1982 and is not summarized here. To facilitate the work of the Transmigration II team, officials and consultants working on Transmigration II should be drawn together in one place and TORs should be drawn up which allocate work between local and domestic consultants. Detailed plans for acquiring work space and TORs should be forwarded to the Bank by October 15, 1982. To speed response time, a post office box should be obtained by the Transmigration II team for incoming mail and all agencies should be directed to send copies to this address. A letter from Bank is still needed encouraging major structural change in the JMT. Consultant reports have been very good and monitoring of budgets and disbursement has begun. These activities need strong support. Proposals for monitoring and evaluation under the JMT should be submitted by December 31, 1982. The DGT has appointed a new Transmigration II project head, Ir. Veries Simandjuntak, who is working effectively.

D. Procurement

General

37. There are procurement problems in virtually every major agency. There are two main reasons for this

(a) to speed implementation, Government has introduced procedures not anticipated in the SAR and the small size of Transmigration II in relation to the GOI program makes it impractical, if not impossible, to use different procedures for this project; and

(b) to reduce Bank coordination responsibilities, RSI and HQ have agreed to route procurement matters through the JMT. The JMT, however, is not yet fully able to handle these matters thus causing additional delays and confusion in the implementing agencies.

38. To circumvent this problem, loan documents should be changed to take account of current GOI procurement practices and the JMT must be strengthened (para. 36). The most important procurement questions are summarized below.

Procurement Issues

39. Land Clearing. The SAR requires very large land clearing packages (9,000 ha and about US$14 million), implemented over a period of three

years. To accelerate land clearing the mission recommends that each SKP (for 1,500-2,000 families) be tendered separately and cleared over a period of two years. A combination of chainsaws and heavy equipment would be used. Contracts would be for US$3-4 million and would be suitable for ICB. When tendering for more than one SKP, firms would be permitted to bid on the entire package. These procedures are consistent with those used in the GOI program,/1 and are similar to those proposed for Transmigration IV.

40. Tendering on the Basis of Phase II Studies. After Phase II studies it takes about nine months to mobilize and complete Phase IIIA studies and nine more months to engage a land clearing contractor. The GOI program reduces the delay by tendering for land clearing on the basis of Phase II studies using unit costs for various forest types. This means that a contractor is engaged and land clearing can proceed as soon as Phase IIIA studies are available. If quantities deviate ± 20% the contractor is permitted to renegotiate the contract price. In the past the Bank has not permitted this procedure assuming that lower costs will be achieved by clear specifications and that international contractors would require more certainty to bid. However, Bank contracts do not appear to be less expensive than GOI contracts and both contracts being implemented have gone to domestic firms which would ordinarily be working under GOI procedures. Therefore, to speed implementation, the mission recommends that Phase II studies on the last two of six SKPs to be cleared under this project be submitted to the Bank for review and that if sufficient certainty exists about the area that tendering proceed on the basis of these Phase II studies.

41. Settler Housing. Simple civil works such as DGT houses are tendered at the provincial level on the following basis: (a) a large number of provincially based firms are prequalified (30-50); (b) of these, 5-7 firms are invited to bid on each housing contract; (c) bidders know the standard price bids must fall within a corridor, generally ± 10%, and bidders that are too low are not considered. The DGT argues that newly prequalified or unscrupulous contractors will bid low to get the contract and then be unable to complete the works. The Bank does not accept the practice of setting a lower limit on acceptable bids. Under these circumstances the DGT should be certain that the 5-7 firms bidding on Bank contracts are carefully prequalified, and except as otherwise agreed by the Bank, it should award the contract to the lowest responsive bidder.

42. Relocation and Subsistence Supplies. The SAR does not specify the means of migrant transport to site. For Jambi the DGT contacts directly with Pelita Air Service for transportation to the city of Jambi and migrants

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/1 In the GOI program one SKP is cleared in three years. However, at least 16 domestic firms have completed one land clearing package over the past three years and the best of these plus most internationally recruited firms, are capable of completing one SKP in two years.

travel by bus to the site. No tendering is involved since Pelita operates Government-owned aircraft and is, therefore, cheaper than regular commercial air services. Since it is sensible for DGT to proceed on this basis, but it would be difficult if not impossible to assess whether prices set under these circumstances are economic and sound, the Bank has no objection to transport secured on this fashion but it would not disburse against this component. The JMT should inform the DGT of this decision. The DGT has requested reimbursement for rice procured for the project directly through BULOG at subsidized rates. The Bank has no objection to this practice and this should be indicated to the DGT. The question of whether Bank should dispurse for subsistence supplies will be discussed with the agencies in August.

43. Agricultural Inputs. The SAR provides for reimbursement for "100% of foreign expenditures for agrochemicals and 50% of local expenditures on contracts awarded after international competitive bidding." This was later amended (January 14, 1981) to permit 100% disbursement for urea. Under GOI procedures supplies are not generally procured on the basis of ICB and therefore no disbursement results for supplies other than urea. The Bank has recently reviewed the procedures for procuring agro-inputs under the transmigration program and found them generally economic and efficient. The question has therefore arisen whether Bank disbursement should now be permitted against all agricultural supplies. Given constraints in funds available, three options are possible: (a) 100% disbursement against urea, 0% against other supplies, the current situation; (b) 50% against all agro-inputs; (c) 100% GOI financing of agro-inputs, which would simplify record keeping and disbursement in DGFCA. The mission recommends that these options be discussed with GOI officials and if acceptable, option (c) be adopted with the explicit recognition that procedures are currently acceptable and the GOI financing is adopted for efficiency only.

44. Rock Phosphate. There are serious problems of quality control in locally procured rock phosphate and strong differences of opinion on the utility of using rock phosphate vs TSP. The mission therefore recommends that no reimbursement be provided for locally procured rock phosphate until steps are taken to ensure quality control. As procurement of rock phosphate has been shifted back to PLPT, this agency should submit a plan for such improvement to the Bank for review and comment. If approved, rock phosphate would be reimbursed 50%. The Bank should also indicate to PLPT that it has no objection to the substitution of TSP for rock phosphate, although to

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/1 DGFCA indicates the amount of TSP, urea, pesticides, and seeds required for transmigration sites on a province by province basis. These supplies are purchased by P.T. Pertani mainly from state-owned enterprises such as P.T. Pusri at subsidized rates. Some commodities such as pesticides are acquired internationally others are procured in Indonesia. P.T. Pertani or its subcontractors deliver all supplies to the transmigration locations.

avoid further confusion it would not require this. As TSP would be applied by the farmers and procured by DGFCA, it is unlikely such a proposal would be forwarded by PLPT.

45. Livestock Procurement. The SAR calls for international tender for cattle. RSI staff feel this is uneconomic (imported cattle would cost about US$1,000-1,250/head and domestically procured cattle about US$550-650). They recommend procurement under the IFAD project to be reimbursed by Transmigration II. This is a sensible idea and the mission proposed it to the DGLS where it was rejected on the grounds that 6,000 additional domestically procured cattle would be difficult to find and the country is committed to imports to maintain and improve the national herd. Both arguments are weak. Two options are available, the Bank can insist on domestic procurement and change the SAR, or it can proceed with international tender. Since no economic work on cattle vs beef imports, or on the economic importance of cattle as draft and beef animals has been done, either choice can be disputed. For this reason, and to minimize the follow-up required, the mission recommends that the first procurement proceed on the basis of international tender, using only two supervisors and that two lots of 800 cattle be procured immediately (para. 31). It also recommends that Bank reservations be conveyed to the DGLS and that sector work be initiated on the economics of livestock development so that these questions can be addressed with more knowledge. The JMT should instruct the DGLS to tender and the Bank should follow-up on the policies involved.

INDONESIA

TRANSMIGRATION II (LOAN 1707-IND, CREDIT 919-IND)
SUPERVISION JUNE 1982

ACTIONS TO BE TAKEN

A. Actions Urgently Required

1. The following actions are urgently required:

Land Claims

(a) The JMT should notify provincial officials that the matter of land claims should be resolved by October 15, 1982; at that time, available land should be divided equally among the settled families (see para. 26, main report);

(b) The JMT should notify the Directorate General of Agraria that the proposed distribution of title to 2.25 ha in Kubang Ujo should be delayed (para. 26).

Tree Crop Development

(a) The JMT should notify the Dinas Perkebunan Daerah that the Bank is prepared to disburse up to US$5.0 million for tree crop development in Singkut through 1985/86 (para. 11);

(b) The JMT should request that the DPD submit an implementation schedule and cost breakdown of proposed development and begin nursery development in this planting seasons (para. 11);

(c) The JMT should request the DPD Jambi and Team Khusus (through PTP VI) to submit by December 31, 1982 proposals for tree crop development for 10,000 KK in Jambi province (para. 11); tree crop proposals for South Sumatra Province would be required by June 30, 1983.

Coordination

(a) All officials, domestic and expatriate consultants working on the Transmigration II team should be drawn together, and detailed plans for acquiring suitable work space should be submitted to the Bank by October 15, 1982 (para. 37).

(b) TORs for the Transmigration II team should be prepared by October 15, 1982 (para. 37).

Land Clearing

(a) TKTD and PLPT should submit a plan to the JMT by October 15, 1982, indicating how they will identify sufficient land to complete the P.T. Layani Raya contract.

B. Actions Needed to Facilitate Implementation

Development of South Sumatra Sites

2. To speed development of the South Sumatra sites, the JMT should instruct the implementing agencies to take the following actions:

(a) Bina Marga should give high priority to the development and improvement of access into the area and initiate construction on the Sekayu-Pendopo road.

(b) TKTD should restructure Bingen Teluk C (old Lembah Liam A) to exclude production forest and to provide a uniform farm model of 3.5 ha, and it should and redo village designs for Kelingi IVC to provide a uniform farm model of 2.75 ha.

(c) PLPT should prequalify firms to clear six SKP and it should call for bids by September 1982 for the two SKP on which Phase IIIA studies are completed (Bingen Teluk C and Kelingi IVC).

(d) TKTD should arrange to complete Phase IIIA on the two sites with Phase II studies (Bingen Teluk B and Kertapati/Babat Toman XVI b/I) by March 1983. This should be done by expanding the scope of work of a team now in the field.

(e) TKTD should complete their Phase II studies and initiate Phase IIIA studies on two additional sites (Bingen Teluk D and E) as rapidly as possible. If Phase II studies are not currently underway these studies should be given priority under the Transmigration II extension, and during Phase II sufficient information should be gathered on access, number of families and forest type that tendering can proceed on the basis of Phase II studies.

(f) To simplify supervision, TKTD should make every effort to investigate sufficient land in northern South Sumatra for 10,000 families. Phase IIIA studies should also be undertaken on

Pematang Panggang XXIIF although this site would be included in the project only if the northern sites proved suitable for less than 10,000 KK.

(g) DGT should draw up a proposal for a simplified base camp in Surolangun and provide this to the JMT and Bank for review and comment.

Singkut Upgrading

3. To facilitate the implementation of the Singkut component, the JMT should instruct implementing agencies to take the following actions:

(a) the DGT should immediately tender for markets, sanitary wells, storage facilities and classrooms;

(b) the DGFCA should immediately tender for civil works, equipment and supplies for the upgrading of the REC, PPB and seed farm;

(c) the DGLS should tender for 1,000 cows and 50 bulls for Singkut under agreed procurement procedures;

(d) the DGC should tender for equipment and supplies for one FCC in Singkut and a field visit should be made to Singkut to determine civil works and supplies required to bring KUDs to Transmigration II standards;

(e) PLPT should make a field visit to determine critical infrastructure improvements and to prepare a proposal not to exceed 20% of initial investment costs (about U$600,000);

(f) the DGFCA should provide seeds and extension for soil conservation and develop one demonstration area. A plan for terracing 1,600 ha should be drawn up, and the cost of the first tranche should be included in the FY83/84 budget; and

(g) RMI with Euroconsult assistance should undertake a brief survey of current crop yields and incomes in Singkut.

Implementation in Settlements under Construction

4. To facilitate project implementation the following actions are required:

(a) PLPT should request, by October 15, 1982 staffing proposals and cost estimates from Trans-Asia for:

(i) supervision of all land clearing and road and bridge construction in Jambi and in six SKP in South Sumatra until project completion (December 1985-June 1986);

(ii) drafting of "as-built" designs after land clearing is completed in South Sumatra sites in accordance with Phase IIIB studies; and

(iii) training of PLPT staff and contractors.

PLPT should notify Trans-Asia that the decision to use the firm in South Sumatra will be taken after an evaluation of their performance in the next six months.

(b) PLPT should request that Trans-Asia follow up on the following matters:

(i) Trans-Asia should monitor the amount of timber stacked and removed from project sites so that a judgment can be made on continuing this practice;

(ii) Trans-Asia should prepare detailed specifications for cover crops in conjunction with agricultural specialists in Euroconsult

(iii) Trans-Asia should include updated schedules for house construction and cadastral surveys in their monthly reports;

(iv) Trans-Asia should review contract documents and make recommendations on changes where inconsistencies exist; and

(v) Trans-Asia should follow-up on the technical recommendations for land clearing and road construction which are given in Annex 6.

(c) the DGT should immediately tender for 2,300 houses, wells and sanitary facilities and it should advance tender for all facilities to be constructed in Indonesian FY83/84.

(d) the DGT should tender for electricity and water supply for village facilities Kubang Ujo and it should include these items in future construction contracts. Tendering should also begin for any additional facilities to be constructed in FY1982/83. Facilities for Korlaps should be included in the construction contract;

(e) the DGT should engage up to 120 mm of local consultant services to supervise construction and determine appropriate housing design and water supply;

(f) the DGT should not issue a second tender for the Bangko base camp, but it should review base camp designs in Bangko in order to consolidate buildings and it should tender for electricity and and water supply;

(g) the Directorate General of Air Communications should be informed of the decision not to use project funds for airstrips;

(h) the DGFCA should notify field staff (including Euroconsult) of the date when fertilizers and seeds are to be distributed;

(i) the DGFCA should arrange to purchase tree crop seedlings for distribution in Kubang Ujo;

(j) the DGLS should be instructed to procure 1,600 cattle on the international market using two supervisors to check the condition of cattle when purchased;

(k) the DGFCA should request Euroconsult to:

(i) establish a close linkage with CRIA and together with the DGFCA initiate a vigorous program of trials and demonstration on farmers fields;

(ii) assess reasons for difficulties in the seed farm and make recommendations to overcome them;

(iii) work closely with REC personnel to provide in-service training to existing and new extension workers;

(iv) work closely with the DGE to promote integrated cropping systems;

(v) assist RMI staff in a survey of yields and incomes in Singkut.

(l) the DGFCA should ensure that the two PPLs in Kubang Ujo are replaced; that the PPS is posted to the district and that the PPL to farmer ratio of 1:500 is maintained;

(m) the JMT should follow up on the proposed AARD research component in the Transmigration II area (para. 34); and

(n) the JMT should follow up to see that health facilities are not being duplicated, that projects are integrated into the kabupaten health care systems and that child weight monitoring is begun.

Procurement

5. When the loan documents have been changed the JMT should inform all implementing agencies of changes in procurement practices.

His Excellency, Ali Wardhana
Minister of Finance
Ministry of Finance
Jakarta, Indonesia

DRAFT
ATanaka/crm
August 11, 1982

Dear Mr. Minister:

Re: Loan No. 1707 IND, Credit No. 919 IND (Transmigration II Project) and Special Action Credit No. 15 IND (Transmigration Project), Amendments to the Loan, Developme Credit and Special Action Credit Agreements

I refer to various discussions between our staffs concerning the above-referenced Loan and Development Credit Agreements as well as the Special Action Credit Agreement. In order to make the provisions of the Agreements consistent with the new understanding recently reached between our staffs, a number of amendments are required.

I. Therefore, the Development Credit Agreement dated June 1, 1979 between the Republic of Indonesia and the International Development Association, (Transmigration II Project) as amended by the letters of June 3, 1980 and January 14, 1981 is further amended as follows:

1. Subsections (a), (m), (n) and (o) of Section 1.02 are deleted. The subsections of Section 1.02 are relettered accordingly and the following new subsection is added:

"(d) "DGE" means the Directorate General of Estates within the Borrower's Ministry of Agriculture."

2. The relettered Subsection (n) is amended to read as follows:

"(n) "New Settlement Areas" means the settlement areas in Jambi and South Sumatra Provinces;".

3. The words "inter alia" are deleted from Subsection (e) of Section 3.02 and the following words are inserted therein:

"site selection and evaluation and also in"

4. The word ", DGE" is added after the word "DGC" in Section 3.14.

5. Section 3.15 is deleted and replaced by the following:

"Section 3.15. The Borrower shall: (a) ensure that each settler

in a New Settlement Area receives a certificate evidencing Hak Pakai (i) to his house lot (0.25 ha) and 1.75 ha of other land within one year after such settler has arrived, and (ii) to the remaining 1.50 ha of land within two years after such settler has arrived; or (b) make other arrangements, satisfactory to the Association, for alternative settlement models. The Borrower shall also ensure that each settler in a New Settlement Area receives a certificate evidencing Hak Milik to all land within five years after arrival on site."

6. The table in paragraph 1 of Schedule 1 is modified as follows:

Category	Amount of the Credit and of the Loan Allocated (Expressed in Dollar Equivalent)	% of Expenditures to be Financed
(1) Civil Works	61,700,000	80%
(2) Equipment, goods, cattle and vehicles:	11,300,000	
(a) imported directly		100% of foreign expenditures
(b) imported equipment and imported goods procured locally		65%
(c) equipment and goods locally manufactured		95% of local expenditures (ex-factory)
(d) locally manufactured vehicles		40% of local expenditures
(e) cattle, procured locally		80 % of local expenditures
(3) Subsistence allowances for Participating Farmers	16,000,000	60%

(4) Consultants' services including start-up vehicles, mapping, research and training	60,000,000	100%
(5) Agrochemicals	4,000,000	
(a) Urea		100%
(b) Other		100% of foreign expenditures
(6) Unallocated	4,000,000	
TOTAL:	157,000,000	

7. Part A of Schedule 2 is amended to read as follows:

"Part A:

Resettlement of about 20,000 families in Jambi and South Sumatra Provinces, and upgrading of conditions and services for about 4,000 families in the Singkut Settlement Area. In order to accomplish the resettlement and upgrading, the following will be provided:

1. Clearing of about 25,000 ha of forested land for new families and about 5,000 ha for roads and public facilities.

2. Construction of about 450km of access and link roads and about 1000 km of village roads at the New Settlement Areas, and upgrading of access and village at the Singkut Settlement Area.

3. Provision of adequate water supply by the construction of about 5,000 shallow wells and deep wells as required for water supply at the New Settlement Areas, and about 1,000 shallow wells or deep wells as required at the Singkut Settlement Area.

4. Construction of (a) about 20,000 houses with sanitary facilities for

the new families; and (b) community facilities for each village in the New Settlement Areas including, inter alia, schools, places of worship, village halls, offices, stores, markets, banks, post offices and health care facilities, including referral hospitals and a health center for every 8,000 to 10,000 families and a sub-health center for about every 1,000 families.

5. Construction and upgrading of offices and related facilities for project personnel at field project headquarters and at each Settlement Area.

6. Construction of offices, warehouses, REC's and related facilities for agricultural supporting services.

7. Construction of a centrally located cattle reception and distribution center; provision of about 6,300 head of cattle, including about 6,000 cows and 300 bulls, of which about 5,250 head would be distributed to Participating Farmers in the New Settlement Areas and about 1,050 head to the Participating Farmers in the Singkut Settlement Area; and provision of livestock extension services.

8. Construction in about 40 villages in the New Settlement Areas of warehouses and related facilities for farmers cooperatives, and construction and upgrading of farmer cooperative facilities in each village in the Singkut Settlement Area.

9. Distribution to each Participating Farmer in a New Settlement Area upon arrival at the Area of an initial package of grain, vegetable seeds and perennial seedlings.

10. Distribution to each Participating Farmer for three years of agro-chemicals to support food cropping on about 25,000 ha of land in the New Settlement Area and about 5,000 ha in the Existing Settlement Area.

11. Distribution of rice, other essential commodities, implements and tools to Participating Farmers in New Settlement Areas during the first year of settlement.

12. Mobilization and transportation of settlers to the Settlement Areas.

13. Support for agrarian activities, including, inter alia, surveying site boundaries, laying out farm parcels, and issuing certificates of Hak Pakai and Hak Milik.

14. Support for soil conservation activites including , inter alia, seed for erosion control, terracing and demonstration plots.

15. Establishment of rubber on up to 2 ha of land per farmer in the Singkut Area.

8. The words "including without limitation, agrochemicals (excluding urea);" are deleted from paragraph A.1 of Schedule 3.

9. Paragraph A.6 of Schedule 3 is deleted.

10. Paragraph B.7 of Schedule 3 is deleted and replaced by the following:

"7. Agrochemicals may be procured according to the Borrower's government procèdures."

11. In paragraph E.2 of Schedule 3 the words "With respect to all contracts estimated to cost more than $100,000 equivalent: " are deleted and replaced by the words "With respect to all contracts for civil works estimated to cost more than $2,000,000 equivalent and all contracts for goods estimated to cost more than $150,000 equivalent:".

II. It is confirmed that the amendments mentioned in I above are incorporated into the Loan Agreement dated June 1, 1979 between the Republic of Indonesia and the International Bank for Reconstruction and Development (Transmigration II Project) as amended by the letters of June 3, 1980 and February 18, 1981.

III. Pursuant to the amendments mentioned in I and II above, the following amendmen

are made to the Special Action Credit Agreement dated June 1, 1979 between the Republic of Indonesia and the International Development Association as Administrator of the Special Action Account established with funds contributed by the Member States of the European Economic Community (Transmigration Project) as amended by the letter of January 14, 1981:

1. Subsections (a), (m), (n) and (o) of Section 1.02 are deleted. The subsections of Section 1.02 are relettered accordingly and the following new subsection is added:

"(d) "DGE" means the Directorate General of Estates within the Borrower's Ministry of Agriculture."

2. The relettered Subsection (n) is amended to read as follows:

"(n) "New Settlement Areas" means the settlement areas in Jambi and South Sumatra Provinces;".

3. The words "inter alia" are deleted from Subsection (e) of Section 3.02 and the following words are inserted therein:

"site selection and evaluation and also in"

4. The word ", DGE" is added after the word "DGC" in Section 3.14.

5. Section 3.15 is deleted and replaced by the following:

"Section 3.15. The Borrower shall: (a) ensure that each settler

in a New Settlement Area receives a certificate evidencing Hak Pakai (i) to his house lot (0.25 ha) and 1.75 ha of other land within one year after such settler has arrived, and (ii) to the remaining 1.50 ha of land within two years after such settler has arrived; or (b) make other arrangements, satisfactory to the Association, for alternative settlement models. The Borrower shall also ensure that each settler in a New Settlement Area receives a certificate evidencing Hak Milik to all land within five years after arrival on site."

6. Part A of Schedule 2 is amended to read as follows:

"Part A:

Resettlement of about 20,000 families in Jambi and South Sumatra Provinces, and upgrading of conditions and services for about 4,000 families in the Singkut Settlement Area. In order to accomplish the resettlement and upgrading, the following will be provided:

1. Clearing of about 25,000 ha of forested land for new families and about 5,000 ha for roads and public facilities.

2. Construction of about 450km of access and link roads and about 1000 km of village roads at the New Settlement Areas, and upgrading of access and village r at the Singkut Settlement Area.

3. Provision of adequate water supply by the construction of about 5,000 shallow wells and deep wells as required for water supply at the New Settlement Areas, and about 1,000 shallow wells or deep wells as required at the Singkut Settlement Area.

4. Construction of (a) about 20,000 houses with sanitary facilities for

the new families; and (b) community facilities for each village in the New Settlement Areas including, inter alia, schools, places of worship, village halls, offices, stores, markets, banks, post offices and health care facilities, including referral hospitals and a health center for every 8,000 to 10,000 families and a sub-health center for about every 1,000 families.

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6. Construction of offices, warehouses, REC's and related facilities for agricultural supporting services.

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15. Establishment of rubber on up to 2 ha of land per farmer in the Singkut Area.

7. In paragraph D.2 of Schedule 3 the words "With respect to all contracts estimated to cost more than $100,000 equivalent: " are deleted and replaced by the words "With respect to all contracts for civil works estimated to cost more than $2,000,000 equivalent and all contracts for goods estimated to cost more than $150,000 equivalent:".

Please confirm your agreement to the foregoing by signing the form of confirmation on the copy of this letter and returning it to us.

Sincerely yours,

Richard D. Stern
Chief, Indonesia Division
Country Programs Department
East Asia and Pacific Regional Office

CONFIRMED:

REPUBLIC OF INDONEISA

By_____
Authorized Representative

Date_____

Copy: Mr. Soegito Sastromidjojo
Director General for International
Monetary Affairs
Ministry of Finance
Jakarta, Indonesia

His Excellency Mr. Martono
Junior Minister
Ministry of Manpower and Transmigration
Jl. Let. Jen Haryono M.T.
Jakarta, Indonesia

Mrs. Buly O. Surjaatmadja
Director for External Fund
Ministry of Finance
Jakarta, Indonesia

Cleared with and cc: Messrs. Mead (LEG), Morrow (AEADC), Miss Davis (AEP),

cc: Messrs. Walden, Richir and Radix (RSI)

JMT

I. Background

IBRD Transmigration IV Project Appraisal Report (paras 3.303-3.305) contains some proposals for strengthening the Office of the JMT. These proposals relate to:

(a) providing additional staff support for the JMT Office, and
(b) establishment of a special unit within the Office of JMT to deal with the World Bank assisted projects.

For the purpose of strengthening the Office of the JMT, suggestions have been made in the appraisal report to : (i) create new directorates within JMT Office and/or (ii) create/strengthen an internal secretariat in the Office of the JMT. (iii) to our special unit

SAR - p.18 Regarding the creation of a special unit for dealing with Bank assisted projects, it has been proposed to provide 300 man months of consultancy assistance under the proposed Transmigration IV loan package. Assurance is sought by the World Bank from the GOI in the form of a plan to 'reorganize' or to strengthen the Office of the JMT.

II. Observations on the question of strengthening the Office of the JMT

On the subject of strengthening the JMT Office, the following considerations have to be kept in view :

(1) While the duties, competence and tasks of the Transmigration Control Unit (SATDALTRANS) chaired by the Junior Minister for Transmigration are governed by the Presidential Decree No. 26/78, the post of the Junior Minister and the organization of his staff are defined by the Presidential Decree No. 13/78. Secondly, the Presidential Decree No. 13/78 which is mainly concerned with the establishment of the Office of the Junior Ministers is common for offices of 6 Junior Ministers namely Junior Minister for Food Crops, Cooperatives, Transmigration, Housing, Youth Affairs and Women Welfare. Therefore, unless the present decree no. 13/78 is modified, neither the suggested new directorates nor the internal secretariat within JMT can be created. The process of modifying this decree will involve considerable length of time.

(2) According to the presidential decree No. 26/78 the Transmigration Control Unit is supposed to be assisted in its day-to-day activities by (a) the Secretariat of the Transmigration Control Unit, i.e. the Directorate General of

Transmigration of the Department of Manpower and Transmigration; and (b) the Technical Team consisting of officers/experts taken from various agencies and departments of the Government and seconded to the Chairman of the Transmigration Control Unit.

The Office of the DGT has not yet assumed this secretariat function and therefore is not directly assisting the Transmigration Control Unit on matters relating to coordination. The Technical Team, however, is functional but not yet fully established on a regular basis. It currently consists of representatives of some of the government departments and these representatives are not seconded to work with Transmigration Control Unit (SATDALTRANS) on a permanent or fixed term basis. As a result their support to Transmigration Control Unit lacks continuity and expected contribution.

(3) As it has been pointed out in the appraisal report, the Staff Ahli of the JMT who were originally appointed as advisors to the JMT have also now assumed responsibilities for programme coordination and they do not have adequate administrative and support staff to function effectively.

(4) It is well recognized that there is an absolute need for strengthening the Office of JMT through recruitment or provision of additional administrative and support staff. In view of the fact that no additional staff recruitment can be made on a statutory basis other than the limited staff allowed under Presidential Decree No. 13/78, arrangements have to be made to recruit staff on a non-permanent basis. Supplementary resources are required to recruit the required staff.

(5) To make the Technical Team more effective in its assistance to the JMT, the members of the team must be committed to it by their departments on a full time basis, paid adequate compensation, located in a suitable office set up, and provided with required equipment including vehicles. Additional resources are also required for this purpose.

(6) The proposal to form a special unit to exclusively deal with the implementation of the Bank assisted projects appears to be sound and plausible. However, the responsibilities of this unit should be to supervise the implementation of the Bank supported projects, monitor their progress and suggest measures for coordination of their activities. This unit should closely work with the Staf Ahli concerned with foreign assistance and report directly to the Secretary of JMT. This also will call for allocation of more funds.

(7) There is an indication that UNDP might continue its support on grant basis to JMT for strengthening the overall GOI Transmigration Programme. This assistance could be used by the JMT on matters relating to policy, planning, development and improving the management and technical competence of the personnel.

III. Conclusion

In view of the foregoing, it is recommended that the proposed World Bank loan assistance for strengthening the office of the JMT could be utilized for items 4, 5 and 6 discussed in part II. An estimate of funding requirements is attached for consideration.

TRANSMIGRATION IV

COST ESTIMATES FOR STRENGTHENING THE OFFICE OF THE JMT

Based on Keppres No. 26/78. not Keppres No. 13/78.

I.	**Strengthening the Staff of JMT**		
(a)	Support Personnel including administrative assistants, bookkeepers, accountants, junior professionals, etc. at the rate of 5 per Staf Ahli and 10 for Secretary	360 mm per year at the rate of US$ 500/mm for 4 years	720,000
(b)	Equipment - 4 cars, 2 minibuses, office equipment		100,000
	Sub Total		820,000
II.	**Strengthening Technical Team**		
(a)	Compensation for Technical Team members - 10 members	at the rate of US$ 1,000 per mm. for 4 years	480,000
(b)	Office accomodation at the rate of US$ 2,500 per month	for 4 years	120,000
(c)	Equipment - 10 vehicles		150,000
(d)	Travel		50,000
	Sub Total		800,000
III.	**Special Unit for IBRD Projects**		
(a)	Consultants		
	Expatriate consultants (3)	at the rate of $ 10,000 per mm. for 4 years	1,440,000
	Domestic consultants (3)	at the rate of $ 3,000 per mm. for 4 years	432,000
(b)	Office accomodation	at the rate of $ 2,500 per month for 4 years	120,000
(c)	Equipment		100,000
(d)	Support staff - clerk, secretary, drivers		75,000
(e)	Travel		30,000
	Sub Total		2,159,000
	TOTAL		3,779,000

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DRAFT

TRANSMIGRATION III - STEERING COMMITTEE FOR SITE SELECTION STUDIES

Site selection and land evaluation studies account for over 80% of the total proposed investment of $ 188 million under Transmigration III. These studies are intended to enable the selection, evaluation of land and preparation of agricultural development proposals for the settlement of 250 to 300,000 transmigrant families. The implementation of this proposal involves cooperation and participation of several government agencies and coordination of their activities. To ensure coordination and also to guide, supervise and monitor the progress of the proposed studies as well as to help minimise the other constraints of implementation it has been proposed to form a Steering Committee.

This committee chaired by the Junior Minister for Transmigration will consist of the following members :

(1) The D.G. of Cipta Karya
(2) The D.G. of Bina Marga
(3) The D.G. of Agraria
(4) The D.G. Forestry
(5) The D.G. of Food Crops
(6) The D.G. of Estate Crops
(7) The D.G. of Transmigration
(8) Head of AARD
(9) Head of Bakosurtanal
(10) The D.G. of Anggaran

The main responsibilities of this Steering Committee will include :

(a) assistance to prepare/scrutinise the Terms of Reference for the proposed studies;
(b) support to minimise delays in approval, mobilisation and payment;
(c) guidance to solve problems concerning activities on aerial photography, mapping, soil, land use , land ownership, and forestry investigations;

(d) scrutiny of the progress reports, supervision and monitoring of the progress of site and land evaluation studies under Transmigration III; and

(e) making recommendations to minimise the rate of rejection of sites studied and to efficiently utilise the funds allocated for the studies.

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Regarding the creation of a special unit for dealing with Bank assisted projects, it has been proposed to provide 300 man months of consultancy assistance under the proposed Transmigration IV loan package. Assurance is sought by the World Bank from the GOI in the form of a plan to 'reorganize' or to strengthen the Office of the JMT.

II. Observations on the question of strengthening the Office of the JMT

On the subject of strengthening the JMT Office, the following considerations have to be kept in view :

(1) While the duties, competence and tasks of the Transmigration Control Unit (SATDALTRANS) chaired by the Junior Minister for Transmigration are governed by the Presidential Decree No. 28/78, the post of the Junior Minister and the organization of his staff are defined by the Presidential Decree No. 13/78. Secondly, the Presidential Decree No. 13/78 which is mainly concerned with the establishment of the Office of the Junior Ministers is common for offices of 6 Junior Ministers namely Junior Minister for Food Crops, Cooperatives, Transmigration, Housing, Youth Affairs and Women Welfare. Therefore, unless the present decree no. 13/78 is modified, neither the suggested new directorates nor the internal secretariat within JMT can be created. The process of modifying this decree will involve considerable length of time.

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Transmigration of the Department of Manpower and Transmigration; and (b) the Technical Team consisting of officers/experts taken from various agencies and departments of the Government and seconded to the Chairman of the Transmigration Control Unit.

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(3) As it has been pointed out in the appraisal report, the Staff Ahli of the JMT who were originally appointed as advisors to the JMT have also now assumed responsibilities for programme coordination and they do not have adequate administrative and support staff to function effectively.

(4) It is well recognized that there is an absolute need for strengthening the Office of JMT through recruitment or provision of additional administrative and support staff. In view of the fact that no additional staff recruitment can be made on a statutory basis other than the limited staff allowed under Presidential Decree No. 13/78, arrangements have to be made to recruit staff on a non-permanent basis. Supplementary resources are required to recruit the required staff.

(5) To make the Technical Team more effective in its assistance to the JMT, the members of the team must be committed to it by their departments on a full time basis, paid adequate compensation, located in a suitable office set up, and provided with required equipment including vehicles. Additional resources are also required for this purpose.

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	TOTAL		3,779,000

DRAFT

TRANSMIGRATION III - STEERING COMMITTEE FOR SITE SELECTION STUDIES

Site selection and land evaluation studies account for over 80% of the total proposed investment of $ 188 million under Transmigration III. These studies are intended to enable the selection, evaluation of land and preparation of agricultural development proposals for the settlement of 250 to 300,000 transmigrant families. The implementation of this proposal involves cooperation and participation of several government agencies and coordination of their activities. To ensure coordination and also to guide, supervise and monitor the progress of the proposed studies as well as to help minimise the other constraints of implementation it has been proposed to form a Steering Committee.

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(d) scrutiny of the progress reports, supervision and monitoring of the progress of site and land evaluation studies under Transmigration III; and

(e) making recommendations to minimise the rate of rejection of sites studied and to efficiently utilise the funds allocated for the studies.

TRANSMIGRATION III PROJECT

PROPOSE CONSULTANT SERVICES AND COST ESTIMATE

F O R

OFFICE OF THE JUNIOR MINISTER OF TRANSMIGRATION

EXPERTISE	EXPATRIATE INDIVIDUALLY RECRUITED		LOCAL PROFESSIONAL (INDIVIDUALLY RECRUITED)		LOCAL TECHNICAL (INDIVIDUALLY RECRUITED)		T O T A L	
	Man-months	Cost estimate US $	Man-months	Cost estimate US $	Man-months	Cost estimate US $	Man-months	US $
1. Financial Management and Evaluation.	60	5,000	-	-	-	-	60	300,000
2. Physical and Land Preparation.	-	-	60	2,000	-	-	60	120,000
3. Transmigration Settlement and Rural Development.	-	-	60	2,000	-	-	60	120,000
4. Monitoring and Evaluation.	-	-	-	-	60	1,000	60	60,000
T O T A L	60	300,000	120	240,000	60	60,000	240	600,000

Jakarta, 28 Juni 1982

SM / es

Attachment

Proposed Management System for Transmigration III

1. Both TAD and the appraisal mission have recommended that Transmigration III be implemented within the guidelines set down in Presidential Decree 26/78. This Decree allocates major implementing responsibility to the line agencies involved in the project.

2. To coordinate these agencies, the team recommends the establishment of a special unit in the Office of the Junior Minister for Transmigration responsible for Bank-assisted projects. Initially, this special unit would consist of the Transmigration II Project coordination team. This team would be expected to assume minor responsibilities for Transmigration III start-up and in FY83 a second team would be established for Transmigration III.

3. The main functions of these teams would be to:

   (a) coordinate budget preparation;

   (b) provide technical assistance on procurement and assure timely disbursement;

   (c) undertake day-to-day supervision, follow up on routine problems, and alert the JMT and World Bank to major implementation difficulties; and

   (d) monitor implementation and project impact.

4. To facilitate the operation of this office, the following steps should be taken immediately to facilitate the work of the Transmigration II team and establish a basis for future expansion:

   (a) all JMT staff and consultants working in Jakarta on Transmigration II should be gathered under one roof;

   (b) A full-time team leader should be appointed who is responsible to Mr. Bambang Sumantri;

   (c) this team should be provided with a full-time secretariate; and

   (d) increased attention should be given to procurement and disbursement matters.

5. Technical assistants in place until April 1983 would be expected to assist the JMT with the implementation of Transmigration II, and the start-up of Transmigration III (minor duties). In April 1983, additional technical assistance would be required.

DIREKTORAT JENDERAL TRANSMIGRASI

Directorate General of Transmigration
Directorate General de la Transmigration
General Direktorat Fur Transmigration

PROGRAM KUNJUNGAN ANDA

Programme For Your Stay
Programme de Sejour
Besucher programm

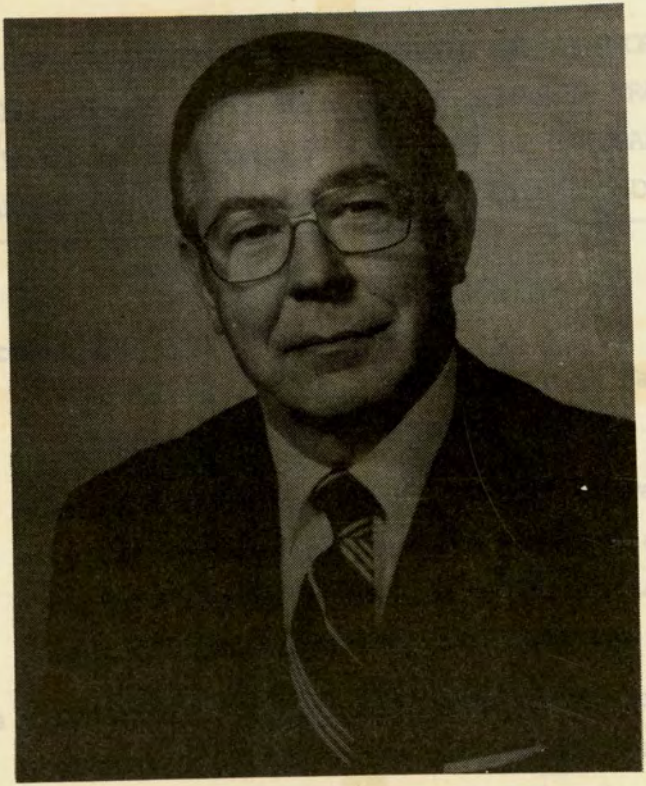
Proyek Tranmigrasi Baturaja Martapura Propinsi Sumatera Selatan

Proyek Tranmigrasi Baturaja Martapura Propinsi Sumatera Selatan

Proyek Tranmigrasi Baturaja Martapura Propinsi Sumatera Selatan

Proyek Tranmigrasi Baturaja Martapura Propinsi Sumatera Selatan

WELCOME



DOCTOR A.W. CLAUSEN
PRESIDENT, THE WORLD BANK

PROGRAMME OF THE VISIT OF THE PRESIDENT OF THE WORLD BANK DOCTOR A.W. CLAUSEN AND PARTY TO SOUTHERN SUMATERA TRANSMIGRATION AND RURAL DEVELOPMENT PROJECT SITE AT BATUMARTA (TRANSMIGRATION - I: I.B.R.D LOAN 1318/5-IND.)

Fourth day
Thursday, October 28, 1982

07.00 hours - Departure from Kemayoran Airport of Jakarta by Pelita air service foker F-28 plane.

08.00 hours - Arrival at Talang Betutu Airport of Palembang, received by the Governor of Southern Sumatera and/or Kepala Kantor Wilayah Transmigrasi (Provincial Head of Department of Transmigration) at Palembang.

08.10 hours - Departure for Batumarta site of the project (Transmigration - I) by Pelita air service Puma helicopter.

09.00 hours - Arrival at helipad in Block 'G' unit II of the project, received by the Project Director.

Continued- P.2

09.00 - 09.10 hours ' Selamat Datang ' (Welcome) Ceremonies.

09.10 - 09.40 hours - Drive through Block C and E of unit II and Block D of unit V viewing the rubber plantation in the way to seed farm.

09.40 - 10.20 hours - Arrival at Seed farm/Rural extension Centre near Block J in unit II

- Briefing on Transmigration in Indonesia in general by Bapak Bambang Sumantri, Secretary and as the representative of Junior Minister, Transmigration.

10.20 - 10.40 hours - Briefing by Drh. Haji A. Choesnan on Project Transmigration - I and Transmigration - III (Extension of Trans - I).

Continued- P.3

10.40 - 11.00 hours - Brief visit to site of trials on food crop pattern in upland areas by C.R.I.A (L.P3) in unit II.

11.00 - 11.20 hours - Informal discussion with transmigrants in Block J of unit II.

11.20 - 11.30 hours - Return drive from Block - J of unit II to helipad in Block 'G' of unit II.

11.30 hours - Departure by helicopter for Tebenan site of N.E.S - I project.

PROGRAMME

Transmigration is an important development programme in Indonesia. It involves large scale voluntary movement of people, as many as 500,000 families during the current Third Five-Year Plan Period (1979-1984) alone, from the densely populated Inner Island areas of Jawa, Bali, Madura and Lombok for resettlement in the sparcely inhabited areas, mainly the outer islands of Sumatera, Kalimantan and Sulawesi.
The objectives of the programme are manifold including better distribution of population, regional development, beneficial use of natural and human resources,national unity and security.

However, the emphasis is on increased food and agricultural production and balanced development with a view to improve the standards of living within the framework of the overall objectives of the national development. The Transmigration programme aims at not only the relocation of people but setting up of new organized communities, the achievement of balanced spread of manpower, capital and technology throughout the country. The direct recipients of the benefits of this programmes are mostly the rural poor consisting of peasants, landless agricultural workers and other low-income groups.

THE PROJECT

The Government of Republic of Indonesia is extending financial and technical assistance for closely monitored execution of two test schemes in upland areas of southern Sumatera; ie., a representative 22,500 ha. new settlement scheme at Baturaja/Martapura (Batumarta) benefitting 4,500 settler families mainly from inner islands of Jawa and Bali and upgrading of a typical on going scheme involving 30,000 ha. area and 12,000 families settlement at Way Abung I and II in the province of Lampung.

The project is also assisting in program formulation by funding technical studies of future settlement sites, by research into problems of sustained annual cropping on upland soil of moderate fertility typical of most potential transmigration areas of Sumatera and by assisting in preparation of additional settlement schemes covering about 200,000 ha. designed to benefit about 40,000 families based on planning and implementation experience in the two test schemes.

This is 12th International Bank for Reconstruction and Development (I.B.R.D.) group assisted project in support of agricultural development in the outer islands of Indonesia.

SETTLEMENT AT BATURAJA

TRANSMIGRANTS AT WORK ON THEIR
FOOD CROP LOTS AROUND THE HOUSES

HISTORY

Transmigration-I project is being carried out since 1974/75 after several appraisal reports. Initially, International Development Agency (I.D.A.) credit was used to pay to the experts working on this subject. In the year 1975/76 research continued followed by physical planning and organisational preparations for the project management. The physical development work in the field started only in the year 1976/77 and therefore, the project has since completed six years of it's actual operation and entered in seventh year of it's operational life in April 1982.

LOCATION

Batumarta site of the project is situated in district of Ogan Komering Ulu in South Sumatera province of Indonesia about 216 Km from provincial head quarters in the city of Palembang (Map 1,2,) and about 16 Km from nearby city of Baturaja. Baturaja is linked with Palembang and port city of Tanjungkarang (provincial headquarters of Lampung province) by railways as well as by roads. The road between project area and Baturaja is asphalted all weather road and being maintained by public works department in addition to a complete network of secondary roads leading to different units of the project and farm roads.

LAND CLEARING

A BULDOZER AT WORK IN BATUMARTA TO CLEAR SOME SECONDARY FOREST

AREA

The total area originally allocated by the provincial administration to the project was 65,000 ha. which is mostly characterized by uneven and waving topography with the hight of 35 to 72 meters above the sea level. The land area was mainly covered by alang-alang (Imperata cylindrica) and some secondary forest which was unproductive. The type of the soil is gley humus hydromorf grey and podzolic. The red/yellow podzolic soils of low to moderate fertility are in many places exhausted and eroded through many years of slashing and shifting cultivations.

According the above conditions of the soil and weather conditions the pattern of food crop and rubber as perennial crop was suggested for this area beside cattle as an innovative component especially as regard to the development of rainfedupland and to faster increase of transmigrant income.

EXTENTION AREA

Additional land measuring 15,225 ha. had since been allocated under special orders of the Governor of Southern Sumatera in nortwest of existing project.

BASIC WOODEN STRUCTURE OF A TYPICAL TRANSMIGRANT HOUSE

AIMS OF THE PROJECT

A. To develop the southern Sumatera transmigration area in line with the national objectives of the government of Indonesia for rural development and national integrity by completing land development, preparation and settlement of 4500 families in Batumarta project area and another 3000 families in the extension areas.

B. To improve living conditions and to make efforts to increase per-capita income of transmigrants consisting of 12,000 families in Way Abung I and II project area and 4,500 families being settled in Baturaja/Martapura project area by using improved agricultural system in dry lands, development of rubber plantation, cattle program and development of other exportable commodities.

C. To assist in program formulation by funding technical studies of future settlement sites by research into problems of sustained annual cropping on upland soil of moderate fertility typical of most potential transmigration areas of Sumatera.

D. To assist in preparation of additional settlement schemes covering about 200,000 ha. designed to benefit about 40,000 families based on planning and implementation experience in this project.

ROAD CONSTRUCTION

NEW VILLAGE ROAD UNDER CONSTRUCTION

MAJOR COMPONENTS OF THE PROJECT.

A. PROJECT MANAGEMENT UNIT (P.M.U.)

During first five years of the project operation this unit was operating at Jakarta and it's main function included :

I. Centralized and coordinated planning.

II. Formulation of policies for implementation of physical planning.

III. Supervisory Control of the project operation.

IV. Financial and budgetary control of funds allocated by the Government of Indonesia and disbursed/re-imbursed by the World Bank.

V. Coordination on liaison with the World Bank, the Directorate General of Transmigration and other government department and agencies.

According to the revised planning and with a view to further speeding up the project operations, the P.M.U. has since moved to Baturaja project site during the year 1980/81.

SHALLOW WELL PUMP INSTALLED NEAR EARTH DAM

B. NEW SETTLEMENT AREA AT BATURAJA/MARTAPURA PROJECT SITE

Location of this project site is in Ogan Komering Ulu district of Southern Sumatera Province. Main activities in this site cover the land clearing preparations and new settlements, rubber development, cattle program and other related activities in the field.

C. REHABILITATION PROJECT IN WAY ABUNG I AND II.

Located in North Lampung district of Lampung Province this project site is the oldest transmigration area which started receiving settles as back as in 1965 and the same now comprises of 18 villages; Mainly it covers the rehabilitation of old settlement with addition of rubber development and cattle program.

D. EXTENTION OF TRANSMIGRATION-I (TRANSMIGRATION-III)

Newly allocated land is situated in north-west of existing project. According to planning mostly spontaneous and some local transmigrant families will be settled in extension area.

HEALTH

A VILLAGE HEALTH UNIT UNDER EXTENTION

MAIN ACTIVITIES

Following are the key indicators of development at the Batumarta site of the project.

SETTLEMENT AT BATUMARTA

Before the end of year 1981 a total number of 4500 transmigrant families including 105 local families were settled in Batumarta site of the project. These transmigrants totalling now 20,408 persons come from East, West and Central Jawa, West Nusatenggara, Bali, local people and a portion coming from natural disaster site of Sinila Dieng in Island of Jawa.

LAND CLEARING

As originally planned in this project each transmigrant family was allocated with 5 ha. of land out of which 0,5 ha. per family was initially cleared by the project for a house and a small garden around the house for relatively extensive form of seasonal food cropping.

The project is also assisting transmigrants by providing heavy equipment for clearing the land for development of their second and third food crop lots through village Co'operatives.

SECOND JUNIOR HIGH SCHOOL OF THE PROJECT

HOUSES FOR TRANSMIGRANTS

Each transmigrant family is provided with a small house measuring 5m x 7m at a unit cost of about US $ 600 - which is entirely borned by the government.

ROAD CONSTRUCTION

Untill the end of last year 42 Km main access roads, 74 Km secondary roads and 288 Km farm roads were constructed for the project while the work for improvement of 15 Km main access roads, 52 Km secondary roads and 24 Km farm roads is nearing completion during the current year.

WATER SUPPLY

191 Earth dams constructed earlier and additional 48 dams being constructed during the current year are the main source of water supply to all inhabitants of the project.

These dams are supplemented by 750 shallow well pumps installed untill the end of last year and 525 being installed during current year. Water treatment and purification unit is nearing completion at project centre and planning for expansion of the facility to village centres in underway.

A VILLAGE UNIT MOSQUE

HEALTH

In addition to project health centre every village unit has its own health post and a dispensary. During last year a maternity home building has been added to project centre facility which after starting it's full operation will serve not only the transmigrant families but to the dire need of nearby areas as well where there is no such facility available.

FAMILY PLANNING

Good advise is constantly available to transmigrants from project health officials as well as from extensionists of family planning department and family planning material is regularly been provided to them free of charge. As a result, growth rate of population in project area is slower than their areas of origin although infant mortality rate is much lower in project area in comparision to areas of origin

RUBBER PLANTED IN BLOCKS

EDUCATION

The project has a senior high school named 'TANZANIA' after the State visit of H.E. the President of the United Republic of Tanzania and Madame Maria Nyerere, two junior high schools and eleven primary schools constructed by the project management itself while to supplement primary schooling eleven more primary schools (one for each village unit) have been constructed under special instructions of the President of the Republic of Indonesia to provide better educational opportunities to children of people living in outer islands of the country.

PUBLIC FACILITIES

Every village unit has it's own village unit office, community centre, security post, village market, postal unit, village cooperative unit, village unit godown and worship places for Muslims, Christians, Budhists and Hindus.

At the project centre there is a rural extention centre, a bank and main post office in addition to project management offices, workshops for vehicles and other heavy equipment alongwith fuel storage units.

SEED FARM AND NURSARY

CLOVE PLANTED AT SEED FARM

AGRICULTURE DEVELOPMENT

RUBBER

Under the project management 1 ha. out of each transmigrant family's total land holding of 5 ha. has been planted with rubber to provide regular income and employment thereby lowering the risk to the transmigrants of losses from failure in seasonal cropping.

Againts a total target of rubber plantation on 4,600 ha, up to end of September 1982; 4250 ha. has been planted and it is hoped that remaining 350 ha. will be planted by the end of coming planting season.

RUBBER PROCESSING

Rubber planted in first year of project operation is now ready for tapping and the project Management has established a special rubber Co'operative unit for collection of latex/cuplumps from transmigrants and it's onward sale on best possible available rates to nearly rubber processing factories.

The project Management is also actively following-up establishment of a rubber processing facility at the project site in co'operation with P.T.P. X.

LIVESTOCK DEVELOPMENT

VETERINARIANS TAKING CARE OF CATTLE

SEED FARM AND NURSERY

Two hundred hectare area has been developed for production of seed and planting material for food crops and transmigrant's house gardens while another 100 ha. typical of the project area and a future settlement area in nortwest of the project site is under use by the agency for Agricultural Research and Development (A.R.D.) through it's Central Research Institute for Agriculture (C.R.I.A.) for food crop research and demonstration purposes.

LIVESTOCK DEVELOPMENT

Under cattle distribution program 4974 heads of cattle have been distributed to transmigrants and every family now owns atleast one cattle.

Through well organised calf return program 1226 calfs were received by the project and redistributed to transmigrants and now remaining 241 calfs and incoming calfs are going to be distributed to transmigrant families being settled under Transmigration-III (Extension of Transmigration-I).

VILLAGE COOPERATIVES

DAILY ACTIVITY AT A VILLAGE COOPERATIVE UNIT

In addition to cattle supplied by the project now the transmigrants own 475 sheep/goats, 186 pigs, 19 water buffalos, 358 cows, 43,196 chickens and 548 ducks mostly brought up by themselves or purchased from each other.

PASTURE DEVELOPMENT

To feed the large number of cattle distributed and re-distributed under calf return program to transmigrant families communal pasture development was considered neccessary in addition to pasture development in the project area on individual basis by the transmigrants themselves.
At present communal pasture is covering an area of 800 hectors while at transit farm additional pasture is grown on 600 hectors which is sufficient to feed upto 5,600 cattle.

VILLAGE COOPERATIVES

Village cooperatives centers (K.U.D.) have been established in every unit of the project and they are assisting transmigrants in provision of basic neccessities of life, processing farm yields, storage and marketing of transmigrants agriculture produces, arranging credit from the bank thrugh BIMAS program, all on mutual help and cooperation basis.

SETTLERS INCOME

CASSAWA PRODUCED AT FOOD CROP LOT AROUND THE HOUSE

CULTURAL AND SOCIAL ACTIVITIES

The project is taking good care of social and cultural life of transmigrants. Sports and music instruments have been supplied to each Community Centre. Competetions are held from time to time between different units. Religius functions are held in complete harmony and in the best spirit of cooperation and Pancasila.

SETTLERS INCOME

Based on farm model used in Baturaja the World Bank appraisal expected net income of each transmigrant family after 2 years to be US $ 492 =Rp.204,180- (@ Rp. 415 = US $ one at the time of appraisal of the project in 1976). Survey by different agencies/teams in different units show following structure of settlers income.

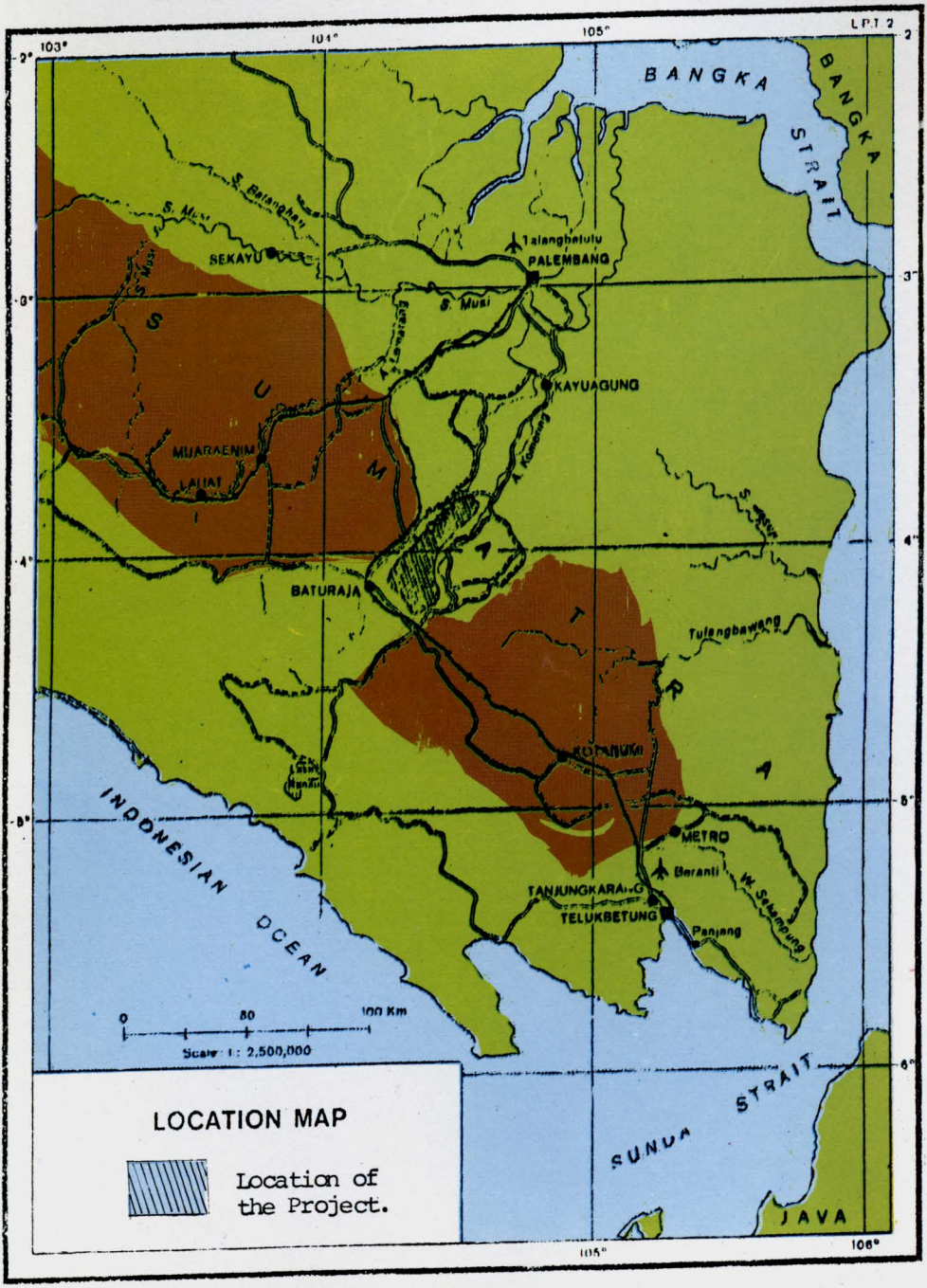
1977/78	225,000,-	Unit I
1978/79	237,000,-	Unit I & II
1979/80	324,000,-	Unit I, II & III
1980/81	427,417,-	Unit I to VII

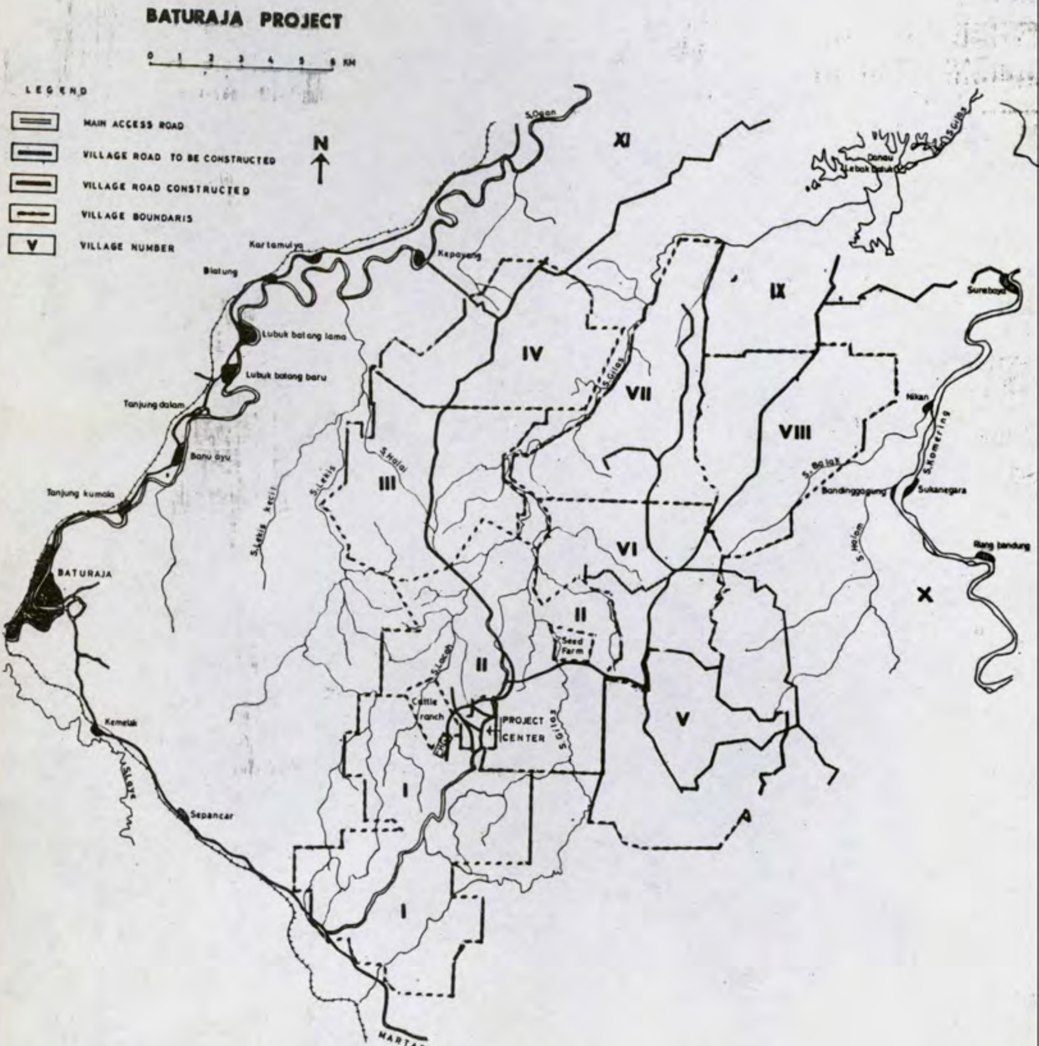
It is substantially higher from annual farm incomes in Java which are estimated at Rp. 110,000- = US $ 265 from where most of these transmigrants come.

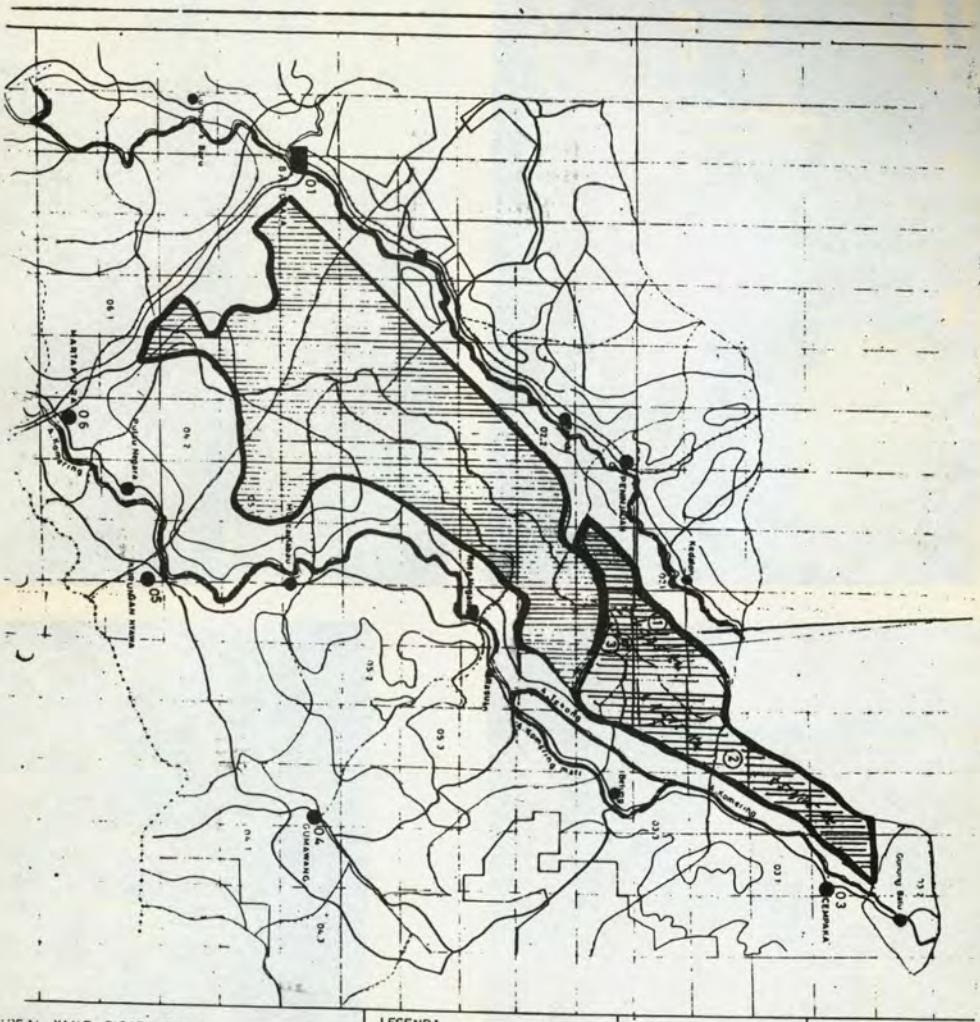

BIRMA
MUANGTHAI
VIETNAM
KHMER
LAUT CINA SELATAN
PHILIPINA
SAMUDERA PASIFIK
MALAYSIA
SELAT MALAKA
SINGAPURA
INDONESIA
P. SUMATERA
P. KALIMANTAN
P. SULAWESI
MALUKU
IRIAN JAYA
NUSA TENGGARA
SAMUDERA INDONESIA

Map 1.


SUMATERA
Scale 1: 8 340.000
N
BANDA ACEH
MEDAN
P. BARU
PADANG
JAMBI
PALEMBANG
BENGKULU
Baturaja


LP.T 2
103°
104°
105°
106°
2°
3°
4°
5°
6°
BANGKA
BANGKA STRAIT
S. Batanghari
S. Musi
SEKAYU
Talanghetulu
PALEMBANG
S. Musi
S U M A T R A
KAYUAGUNG
Komering Y.
MUARAENIM
LAHAT
S. Ogan
BATURAJA
Tulangbawang
KOTABUMI
INDONESIAN OCEAN
METRO
Baranti
W. Seputih
TANJUNGKARANG
TELUKBETUNG
Panjang
SUNDA STRAIT
JAVA
0
50
100 Km
Scale 1 : 2,500,000
LOCATION MAP
Location of the Project.


BATURAJA PROJECT
0 1 2 3 4 5 6 KM
LEGEND
MAIN ACCESS ROAD
VILLAGE ROAD TO BE CONSTRUCTED
VILLAGE ROAD CONSTRUCTED
VILLAGE BOUNDARIS
V
VILLAGE NUMBER
N
S.Ogan
XI
Kartamulya
Kepayang
Blatung
Lubuk batang lama
Lubuk batang baru
Tanjung dalam
Baru ayu
Tanjung kumala
BATURAJA
S.Lekis kecil
S.Lekis
S.Halai
III
IV
S.Gilas
VII
IX
VIII
Danau
Lebak Bakuk
Surabaya
Nikan
S.Komering
S.Balax
Bandinggagung
Sukanegara
Riang bandung
S.Halam
X
VI
II
Seed Farm
S.Lacah
Cattle ranch
PROJECT CENTER
V
I
Kemelak
Sepancar
MARTAPURA



REAL YANG DICADANGKAN

PROYEK TRANSMIGRASI BATURAJA-PENINJAUAN

(TRANS IBRD III)

KABUPATEN OGAN .KOMERING ULU

SUMATERA – SELATAN

LEGENDA

AREAL PROYEK TRANS BATURAJA (TRANS IBRD I)

AREAL YANG DI CADANGKAN UNTUK PROYEK TRANS BATURAJA PENINJAUAN (TRANS IBRD III)

1 KEC PENINJAUAN : 4 975 HA
2 KEC CEMPAKA : 10 000 HA
3 KEC BUAY MADANG : 350 HA
TOTAL : 15 225 HA

BATAS DESA
BATAS KECAMATAN
BATAS KABUPATEN
BATAS PROPINSI
SUNGAI

DISERAHKAN

BUPATI KDH TK.II OKU

(Hi M SALEH HASAN SH)

DISETUJUI / DISYAHKAN

GUBERNUR KDH TK I SUMATERA-SELATAN

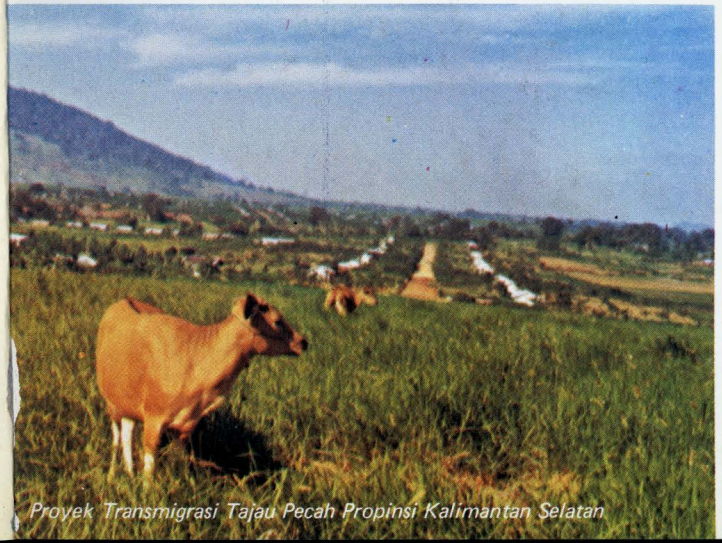
(Hi SAINAN SAGIMAN)

DIGAMBAR : Drs Slamet Sutanto

SKALA : 1 : 250.000

Proyek Transmigrasi Tajau Pecah Propinsi Kalimantan Selatan

Proyek Transmigrasi Tajau Pecah Propinsi Kalimantan Selatan



Proyek Transmigrasi Tajau Pecah Propinsi Kalimantan Selatan

Proyek Transmigrasi Tajau Pecah Propinsi Kalimantan Selatan

DIREKTORAT JENDERAL PERTANIAN TANAMAN PANGAN

DIREKTORAT PERLUASAN AREAL PERTANIAN

Jln. Taman Margasatwa No. 3 Pasarminggu Jakarta Selatan

Telp. 781278

3 Nopember 1982

Nomor : TP 730.82 345

Lampiran :

Perihal : Kegiatan Ditjen Pertanian Tanaman Pangan pada Proyek Transmigrasi II.

Kepada Yth.

Sdr. Sekretaris Menteri Muda Urusan Transmigrasi/Sub Koordinator Proyek Transmigrasi Bantuan Bank Dunia

di

J A K A R T A

Memperhatikan surat Saudara No. 0112/Subkorpro/X/1982 tanggal 22 Oktober 1982 perihal tersebut di atas, bersama ini kami sampaikan hal-hal sebagai berikut :

1. Input pertanian
   Anggaran untuk input pertanian akan diajukan dari APBN 100 %, jadi tidak memerlukan disbursment dari Bank Dunia, berlaku mulai Tahun Anggaran 1983/1984.
   Untuk DIP tahun-tahun anggaran sebelumnya (s/d 1982/1983) tetap berlaku sesuai ketentuan semula (karena sekarang tidak dapat diusulkan ABT).

2. Pengadaan bibit tanaman keras dan buah-buahan
   Berdasarkan surat Direktur Rehabilitasi dan Perluasan Perkebunan No. 399/Ee/X/1981 tanggal 9 Oktober 1981 maka Dinas Perkebunan Propinsi Jambi akan menyediakan bibit tanaman keras melalui pembibitan baru.
   Sedangkan bibit buah-buahan akan diadakan oleh Dinas Pertanian Tanaman Pangan Propinsi Jambi. Kebetulan di lokasi Kubang Ojo terdapat Kebun Bibit Hortikultura milik Dinas Pertanian Propinsi Jambi dan tersedia bibit buah - buahan dalam jumlah cukup banyak.

3. PPL dan PPS di Kubang Ujo
   Pada saat kunjungan Team World Bank, terdapat 2 PPL di Kubang Ujo, salah satu diantaranya wanita. Pada awal bulan Oktober 1982 PPL Wanita tersebut telah diganti dengan PPL pria bernama Sjarifuddin.
   PPS di Kubang Ujo sudah direkruit, bernama Ir. A. Sjamsu Alam, sementara ini bertempat tinggal di Bangko, sambil menunggu perlengkapan rumah Kubang Ujo.

4. Persiapan "Soil Conservation" di Singkut
   Anggaran yang tersedia dari Loan US $ 400.000 untuk 1.600 ha. PPS Ir. A. Sjamsu Alam dan PPM Singkut sudah diikut sertakan dalam Coaching Soil Conservation di Malang pada tanggal 4 - 9 Oktober 1982.
   Kegiatan Soil Conservation di Singkut akan dilaksanakan sebagai berikut :
   - Demonstration area ± 100 ha,
   - transmigran sendiri ± 1.500 ha.

   Draft rencana kegiatan dan pembiayaan Soil Conservation Singkut sudah ada, (terlampir), dengan catatan masih diperlukan pengkajian lagi.

Demikian, dan atas perhatian Saudara diucapkan terima kasih.-

A.n. DIREKTUR PERLUASAN AREAL PERTANIAN
Pemimpin Proyek Pembinaan Pertanian Tanaman Pangan Daerah Transmigrasi Pusat

Ir. Bambang Gunarto
NIP. 080013716

TEMBUSAN : Yth.

1. Bapak Direktur Perluasan Areal Pertanian.
2. Sdr. Ketua Team Inti (Ir. Djatijanto).
3. Sdr. Kepala Dinas Pertanian Tanaman Pangan Propinsi Dati I Jambi.

Lampiran

DRAFT KEGIATAN DAN ANGGARAN

SINGKUT SOIL CONSERVATION PROJECT

I. Demonstration area 100 ha

II. Massive program 1500 ha

Kegiatan	Rp. x 1000
1. Persiapan	6.000
- Rapat-rapat	
- Pemilihan lokasi	
2. Konstruksi lahan	148.000
- Pengukuran	
- Pemetaan dan lay out	
- Pembentukan gulud, teras, water ways, farm road, luban; kompos	
- Erosion control observation	
3. Penyuluhan	12.000
- kursus petugas	
- kursus petani	
- field farmer day/field meeting	
- penilaian prestasi kelompok tani	
4. Bahan/peralatan	120.000
- kapur	
- benih tanaman pupuk hijau	
- benih tanaman penguat teras	
- benih tanaman pangan	
- bibit tanaman keras	
- bibit tanaman buah-buahan	
- pupuk + pestisida	
- alat pertanian sederhana	
- ternak kambing + kandang	
- theodolith	
- roll meter/meter band	
- cat/paint	
- rapido pen	
- kertas kalkir	
- buku	
- alat pengukur hujan	
- kertas pelaporan	
5. Operasional	30.000
- perjalanan supervisi	
- gaji upah petugas	
J u m l a h	316.000

DEPARTEMEN PERTANIAN DIREKTORAT JENDERAL PERTANIAN TANAMAN PANGAN

November 1982

Dir.Jen. Pertanian Tanaman Pangan

PAE RMI

MEMORANDUM

Date 24 November 1982

To : Ms. Gloria Davis

From : David Butcher

Subject : Special Unit for World Bank assisted Transmigration Projects.

Please find attached a revised cost proposal for the special unit for W.B. assisted projects. (SUWBAP) as you requested. Please note the following in accordance with the discussion with Dr. Sayuti Hasibuan on 23-11-82.

1. Four professionals in each sub unit, including the Kepala, plus support staff.

2. The General Services Unit replaces the Secretariat and is directly attached to the ProSubKor. (see attached revised organogram).

3. The cost proposal is for four years only, i.e. the life span of Trans IV

4. The technical assistance proposal remains the same

5. The total cost of the assist has been reduced from Rp. 5.8 billion to Rp. 5.3 billion - Reimbursable foreign exchange is Rp. 2.75 billion.

6. Also attached are specifications for the computer equipment for the special unit.

7. Following Dr. Hasibuan's advice, the recruitment of staff for the unit will be carried out incrementally as the need arises.

8. The terms of reference/job descriptions for the sub units and general services unit (formerly Secretariate) still stand.

9. The SUWBAP will receive adequate funds in the budget.

DAPB/rm
24/11/82

FINAL
Nov 20, 1982

SUMMARY BUDGET PROPOSAL
(Million Rp.) 1)

	mid-1983	1984	1985	1986	mid-1987	Total	FX 2)	Reimbursable 3)
I. Project Sub-Coordinator, Assistants, and Secretariat.								
Staff Salaries	15.54	31.08	31.08	31.08	15.54	124.32		
Staff Honoraria	4.92	9.83	9.83	4.92	39.33			
Equipment and Vehicles	103.00	2.00	2.00	2.00	2.00	111.00	66.60	57.60
In-Country Travel	6.79	13.57	13.57	13.57	6.79	54.29		
Operational Expenses 4)	22.35	44.70	44.70	44.70	22.35	178.80		
Sub-Total I	153.60	101.18	101.18	101.18	51.60	507.74	66.60	57.60
II. Sub-Units								
Personnel Salaries	27.15	54.30	54.30	54.30	27.15	217.20	-	
Personnel Honoraria	8.41	16.82	16.82	16.82	8.41	67.28	-	
Equipment and Vehicles	515.00	10.00	10.00	10.00	10.00	555.00	333.00	288.00
In-Country Travel	33.93	67.86	67.86	67.86	33.93	271.44	-	
Operational Expenses	78.62	157.24	157.24	157.24	78.62	628.96	-	
Sub-Total II	663.11	306.22	306.22	306.22	158.11	1739.88	333.00	288.00
III. Technical Assistance to Special Unit								
Technical Assistance 5)	390.00	740.63	643.13	292.50	-	2066.26	2066.26	2066.26
Support Staff Salaries	3.12	6.24	6.24	3.12	-	18.72	-	
Support Staff Honoraria	1.26	2.52	2.52	2.52	- p p	7.56	-	
Vehicles and Equipment	149.00	2.00	2.00	2.0	-	155.00	93.00	42.00
In-Country Travel	22.14	44.20	44.20	22.14	-	132.84	-	
Operational Expenses	17.72	35.44	35.44	17.72	-	106.32	-	
Sub-Total III	587.24	831.11	733.61	338.74	-	2486.70	2159.68	2453.86
Totals I + II + III	1398.95	1238.51	1141.01	741.14	209.71	4734.32	2559.28	2453.86
Contingencies 6) - Physical	69.87	61.77	56.89	37.15	10.41	236.09	127.96	122.69
- Price - Local	65.66	48.60	48.60	44.17	19.94	226.97	-	-
FX	68.02	56.21	45.64	18.08	0.50	188.45	188.45	180.09
Total Contingencies	203.55	166.58	151.13	99.40	30.85	651.51	316.41	302.78
TOTAL COST	1602.50	1405.09	1292.14	895.54	240.56	5385.83	2875.69	2756.64

1) US$ 1.00 = Rp. 625
2) FX = 100% Technical Assistance, 60% equipment
3) Reimburseable expenses exclude vehicles
4) Office rent all components included under Sub-Cooordinator Project Budget.
5) Technical Assistance phased for 6 months-1983, 12 months-1984-85; 6 months-1986.
6) Contingencies based on World Bank'S Trans-IV Project Appraisal Report.

Note: Staff honoraria -
Class I - 6 staff
Class II - 24 staff
Class III - 59 staff

		mid-1983	1984	1985	1986	mid-1987	Total	FX	Reimburseable
I. Project Sub-Coordinator, Assistants, and Secretariat									
Staff Salaries									
Project Sub-Coordinator	1 @ Rp.350,000x12 mo/yr	2.10	4.20	4.20	4.20	2.10	16.80		
Assistants	5 @ Rp.200,000x12 mo/yr	6.00	12.00	12.00	12.00	6.00	48.00		
Sub-Total		8.10	16.20	16.20	16.20	8.10	64.80		
Chief of General Services Unit	1 @ Rp.100,000/mox12 mo/yr	0.60	1.20	1.20	1.20	0.60	4.80		
Reporting/Monitoring Staff	1 @ Rp.100,000/mox12 mo/yr	0.60	1.20	1.20	1.20	0.60	4.80		
Evaluation Staff!	1 @ Rp.100,000/mox12 mo/yr	0.60	1.20	1.20	1.20	0.60	4.80		
Finance Staff	1 @ Rp.100,000/mox12 mo/yr	0.60	1.20	1.20	1.20	0.60	4.80		
Sub-Total		2.40	4.80	4.80	4.80	2.40	19.20		
Support Staff (Secretaries, Clerks, Drivers) 14 staff x Rp.60,000/mo/staff x 12 mo/yr		5.04	10.08	10.08	10.08	10.08	40.32		
Total Staff Salaries		15.54	31.08	31.08	31.08	15.54	124.32		
Staff Honoraria									
Project Sub-Coordinator	Rp.60,000/mox12 mo/yr Class 1	0.36	0.72	0.72	0.72	0.36	2.88		
Assistants	Rp.60,000/mox12 mo/yr Class 1	1.80	3.60	3.60	3.60	1.80	14.40		
Sub-Total		2.16	4.32	4.32	4.32	2.16	17.28		
Chief of Gen.Services Unit	Rp.40,000/mox12 mo/yr Class 2	0.24	0.48	0.48	0.48	0.24	1.92		
Reporting/Monitoring staff	Rp.30,000/mox12 mo/yr Class 2	0.18	0.36	0.36	0.36	0.18	1.44		
Evaluation Staff	Rp.30,000/mox12 mo/yr Class 2	0.18	0.36	0.36	0.36	0.18	1.44		
Finance Staff	Rp.30,000/mox12 mo/yr Class 2	0.18	0.36	0.36	0.36	0.18	1.44		
Sub-Total		0.78	1.56	1.56	1.56	0.78	6.24		
Support Staff	14 Staff x Rp.23,500/staff/mo x 12 mo	1.98	3.95	3.95	3.95	1.98	15.81		
Total Staff Honoraria		4.92	9.83	9.83	9.83	4.92	39.33		
Equipment and Vehicles									
Office furniture (desks, chairs, tables, etc.)		5.00	0.50	0.50	0.50	0.50	7.00	4.20	4.20
Office equipment (typewriters, calculators, etc.)		8.00	1.50	1.50	1.50	1.50	14.00	8.40	8.40
Vehicles x 4-wheels	2 @ Rp.7,000,000/vehicle	14.00					14.00	8.40	
Vehicles x 2-wheels	1 @ Rp.1,000,000/vehicle	1.00					1.00	0.60	
Computer System		75.00					75.00	45.00	45.00
Sub-Total		103.00	2.00	2.00	2.00	2.00	111.00	66.60	57.60

	mid-1983	1984	1985	1986	mid-1987	Total	FX	Reimburseable
In-Country Travel								
Air Travel 3 trip/mo x Rp.200,000/trip x 12 mo.	3.60	7.20	7.20	7.20	3.60	28.80		
Per Diem 7 days/tripx3 trips/mo x Rp.21,000 x 12 mo.	2.65	5.29	5.29	5.29	2.65	21.17		
Ground Travel	0.54	1.08	1.08	1.08	0.54	4.32		
Sub-Total	6.79	13.57	13.57	13.57	6.79	54.29		
Operational Expenses								
Office rental	7.50	15.00	15.00	15.00	7.50	60.00		
Office supplies (papers, pens, etc.)	2.00	4.00	4.00	4.00	2.00	16.00		
Telephone, telex, mail	3.75	7.50	7.50	7.50	3.75	30.00		
Printing, translation	2.30	4.60	4.60	4.60	2.30	18.40		
Meetings, services	0.96	1.92	1.92	1.92	0.96	7.68		
Vehicle O & M	2.25	4.50	4.50	4.50	2.25	18.00		
Building O & M	1.09	2.18	2.18	2.18	1.09	8.72		
Computer System O & M	2.50	5.00	5.00	5.00	2.50	20.00		
Sub-Total	22.35	44.70	44.70	44.70	22.35	178.80		
TOTAL PROJECT SUB-COORDINATOR, ASSISTANTS AND SECRETARIAT	153.60	101.18	101.18	101.18	51.60	507.74	66.60	57.60

		mid-1983	1984	1985	1986	mid-1987	Total	FX	Reimburseable
II. Sub Units									
Staff Salaries									
Sub-Unit Heads	Rp.200,000/mo x 12 mo x 5 staff	6.00	12.00	12.00	12.00	6.00	48.00		
Development Staff	Rp.100,000/mo x 12 mo x 5 staff	3.00	6.00	6.00	6.00	3.00	24.00		
Planning Staff	Rp.100,000/mo x 12 mo x 5 staff	3.00	6.00	6.00	6.00	3.00	24.00		
Monitoring Staff	Rp. 75,000/mo x 12 mo x 10 staff	4.50	9.00	9.00	9.00	4.50	36.00		
Support Staff	35 staffxRp.45,000/mo/staff x 12 mo.	10.65	21.30	21.30	21.30	10.65	85.20		
	Sub-Total	27.15	54.30	54.30	54.30	27.15	217.20		
Staff Honoraria									
Sub-Unit Heads	Rp.40,000/mo x 12 mo x 5 Class 2	1.20	2.40	2.40	2.40	1.20	9.60		
Development Staff	Rp.30,000/mo x 12 mo x 5 Class 2	0.90	1.80	1.80	1.80	0.90	7.20		
Planning Staff	Rp.30,000/mo x 12 mo x 5 Class 2	0.90	1.80	1.80	1.80	0.90	7.20		
Monitoring Staff	Rp.30,000/mo x 12 mo x 5 Class 2	0.90	1.80	1.80	1.80	0.90	7.20		
Support Staff	35 staffxRp.21,500/mo/staff x 12 mo	4.51	9.02	9.02	9.02	4.51	36.08		
	Sub-Total	8.41	16.82	16.82	16.82	8.41	67.28		
Equipment and Vehicles									
Office furniture		25.00	2.50	2.50	2.50	2.50	35.00	21.00	21.00
Office equipment		40.00	7.50	7.50	7.50	7.50	70.00	42.00	42.00
Computer system Rp.75,000,000/system/sub-unitx 5 sub-unit		375.00					375.00	225.00	225.00
Vehicles x 4-wheels Rp7,000/000/veh.x2 sub-unitx5 sub-unit		70.00					70.00	42.00	
Vehicles x 2-wheels Rp.1,000,000/vehicle x 5 vehicles		5.00					5.00	3.00	
	Sub-Total	515.00	10.00	10.00	10.00	10.00	555.00	333.00	288.00
In-Country Travel									
Air Travel	3 trips/moxRp.200,000/trip x12 mo/sub-unitx5	18.00	36.00	36.00	36.00	18.00	144.00		
Ground Travel	3 trips/moxRp.30,000/trip x12mo/sub-unitx5	2.70	5.40	5.40	5.40	2.70	21.60		
Per Diem	3 trips/mo x 7days/trip x Rp.21,000/day x 12 mo/sub-unit x 5	13.23	26.46	26.46	26.46	13.23	105.84		
	Sub-Total	33.93	67.86	67.86	67.86	33.93	271.44		
Operational Expenses									
Office supplies		10.00	20.00	20.00	20.00	10.00	80.00		
Telephone, telex, mail		12.25	25.50	25.50	25.50	12.25	102.00		
Printing, translation		11.50	23.00	23.00	23.00	11.50	92.00		
Meetings, services		4.80	9.60	9.60	9.60	4.80	38.40		
Training		10.00	20.00	20.00	20.00	10.00	80.00		
Vehicle O & M		17.07	34.14	34.14	34.14	17.07	136.56		
Computer System O & M		12.50	25.00	25.00	25.00	12.50	100.00		
	Sub-Total	78.62	157.24	157.24	157.24	78.62	628.96		
TOTAL SUB-UNITS		663.11	306.22	306.22	306.22	158.11	1738.88	333.00	288.00

proposed
class I = 240
II 480
480
1680

35x12x4

posted for subunits
I = 18x12 = 216
II 40x12 = 480
III 30x12 = 360
IV 58x12 = 696

180

180

	mid-1983	1984	1985	1986	mid-1987	Total	FX	Reimburseable
III. Technical Assistance to Special Unit								
Technical Assistance - Expatriate	315.00	590.63	511.88	236.25		1653.76	1653.76	1653.76
Technical Assistance - National	75.00	150.00	131.25	56.25		412.50	412.50	412.50
Sub-Total	390.00	740.63	643.13	292.50		2066.26	2066.26	2066.26
Support Staff Salaries								
10 staff x Rp. 52,00/mo/staff x 12 mo.	3.12	6.24	6.24	3.12		18.72		
Support Staff Honoraria								
10 staff x Rp. 21,000/mo/staff x 12 mo.	1.26	2.52	2.52	1.26		7.56		
Vehicles and Equipment								
Vehicle x 4-wheels Rp.7,000,000/vehicle x 12	84.00					84.00	51.00	
Office furniture	40.00	1.50	1.50	1.50		43.50	26.10	26.10
Office equipment	25.00	0.50	0.50	0.50		26.50	15.90	15.90
Sub-Total	149.00	2.00	2.00	2.00		155.00	93.00	42.00
In-Country Travel								
Air Travel	3.60	7.20	7.20	3.60		21.60		
Ground Travel	0.54	1.08	1.08	0.54		3.24		
Per Diem	18.00	36.00	36.00	18.00		108.00		
Sub-Total	22.14	44.28	44.28	22.14		132.84		
Operational Expenses								
Office supplies	2.50	5.00	5.00	2.50		15.00		
Telex, telegram, mail	3.75	7.50	7.50	3.75		22.50		
Translation, printing	1.50	3.00	3.00	1.50		9.00		
Vehicle O & M	9.97	19.94	19.94	9.97		59.82		
Sub-Total	17.72	35.44	35.44	17.72		106.32		
TOTAL TECHNICAL ASSISTANCE;	583.24	831.11	733.61	338.74		2486.70	2159.76	2108.76

NO/pl
24.11.82

CAT: TECHNICAL ASSISTANCE TO SPECIAL UNIT; U=MM; PHYCON = 0.1
SUBCAT: TECHNICAL ASSISTANCE; SA=JMTTA;
EXPATRIATE; UC=6 500; Q = 36, 36, 36; FE = 1.0
EXPATRIATE; UC=4 500; Q = 54, 54, 54; FE = 1.0
NATIONAL; UC= 1500; Q = 84, 84, 84; FE = 0.2
SUBCAT: SUPPORT STAFF SALARIES AND HONORIA
SALARIES; UC = 52; Q = 60, 120, 120, 120; SA = JMTSAL
HONORARIA; UC = 21; Q = 60, 120, 120, 120; SA = JMTHON
SUBCAT: VEHICLES AND EQUIPMENT; SA = JMTEQV
VEHICLES; UC = 7000; Q=12; SA = GPV; FE = 0.5
OFFICE FURNITURE; UC = 1500; Q=20, 1, 1, 1
OFFICE EQUIPMENT; UC = 500; Q = 50, 1, 1, 1
SUBCAT; TRAVEL; SA = JMTTPD
AIRTRAVEL; U=LS; UC = 7200; Q = 1, 1, 1, 1; FE = 0.3
GROUND TRAVEL; U = LS; UC = 1080; Q = 1, 1, 1, 1; FE = 0.2
PERDIEM; U = LS; UC = 36000; Q = 1, 1, 1, 1

SUBCAT: OPERATING EXPENSES; U=LS; Q = 1, 1, 1, 1; SA = JMTOAM; FE = 0.2
OFFICE SUPPLIES; UC = 5000
TELEX, TELEGRAM, MAIL; UC = 7500
TRANSLATION, PRINTING; UC = 3000
VEHICLE O AND M; UC = 20000

CAT; OTHER EXPENDITURES
LIGHT PLANE RENTAL OPERATION AND MAINTENANCE; U=LS; UC = 6000; Q = 0, 1, 1, 1; SA = JMTTA; FE = 0.8
SPECIAL STUDIES; U = LS; UC = 6050; Q = 1, 1, 1; SA = JMTTA; FE = 0.8

	Initials	Date
Prepared By		
Approved By		

45-812 EYE-EASE
45-912 20/20 BUFF
NATIONAL Made in U.S.A.

OMIT EXISTING TABLE 308

Cost Table 308: PROGRAM COORDINATION; COMP = TA/MT; UCS = T; VS = M;

CAT: GENERAL SERVICES UNIT; U = mm; PHYCON = 0.1; FE = 0

✓ SUBCAT: SALARIES; SA = JMTSAL
PROJECT SUBCOORDINATOR; UC = 175; Q = 12, 12, 12, 12
ADVISORS; UC = 100; Q = 60, 60, 60, 60
CHIEF OF GSU AND UNIT HEADS; UC = 200; Q = 48, 48, 48, 48
DEVELOPMENT STAFF; UC = 100; Q = 24, 36, 36, 36
MONITORING STAFF; UC = 75; Q = 36, 48, 60, 60
SUPPORT STAFF; UC = 60; Q = 108; 144, 144, 144
✓ SUBCAT: HONORARIA; SA = JMTHON
PROJECT SUBCOORDINATOR; UC = 60; Q = 12, 12, 12, 12
ADVISERS; UC = 60; Q = 60, 60, 60, 60
CHIEF OF GSU AND UNIT HEADS; UC = 40; Q = 48, 48, 48, 48
DEVELOPMENT STAFF; UC = 30; Q = 24, 36, 36, 36
MONITORING STAFF; UC = 30; Q = 36, 48, 60, 60
SUPPORT STAFF; UC = 23.5; Q = 108, 144, 144, 144
✓ SUBCAT: EQUIPMENT AND VEHICLES; SA = JMTEQV; PHYCON = 0.5
OFFICE FURNITURE; U = LS; UC = 500; Q = 10, 1, 1, 1; FE = 0.2
OFFICE EQUIPMENT; U = LS; UC = 1500; Q = 4, 1, 1, 1; FE = 0.6
Vehicles; U = NO; UC = 7000; Q = 2; SA = GPV; FE = 0.5
MOTORCYCLES; U = NO; UC = 1000; Q = 1; SA = GPV; FE = 0.5
COMPUTER SYSTEM; U = NO; UC = 75000; Q = .2, .4, .4; FE = 1.0
SUBCAT: TRAVEL; SA = JMTTPD
AIRTRAVEL; U = NO; UC = 200; Q = 36, 36, 36, 36; FE = 0.3
PERDIEM; U = NO; UC = 21; Q = 36, 36, 36, 36
GROUND TRAVEL; U = NO; UC = 540; Q = 1, 2, 2, 2; FE = 0.2
SUBCAT: OPERATING EXPENDITURES; U = LS; Q = 1, 1, 1, 1; FE = .2; SA = JMTOAM
OFFICE RENTAL; UC = 15000
OFFICE SUPPLIES; UC = 4000
TELEPHONE, TELEX, MAIL; UC = 7500
PRINTING, TRANSLATION; UC = 4600
MEETINGS, SERVICE; UC = 1920
✓ VEHICLE O AND M; UC = 4500
BUILDING O AND M; UC = 2180
COMPUTER O AND M; UC = 5000

PR CON = NEW PR

PRICE CONTINGENCIES ALL; LOCAL = .12, .10, .10, .10
SUMMARY ACCOUNTS FOREIGN = .08, .075, .07, .06
VEHICLES AND EQUIPMENT
JMTEQV = JMT EQUIPMENT AND VEHICLES

SERVICES AND TECHNICAL ASSISTANCE
JMTSAL: JMT SALARIES; FE = 0
JMTHON: JMT HONORARIA; FE = 0
JMTTPD: JMT TRAVEL AND PER DIEM; FE = 0.3
JMTTA: JMT TECHNICAL ASSISTANCE; FE = 1.0

OPERATING COSTS
JMTOAM: JMT OPERATION AND MAINTENANCE; FE = 0.2

	Initials	Date
Prepared By		
Approved By		

Proposed Build Up of JMT Staff (Individuals)

		1	2	3	4	5
	A. General Advisory and Services Unit		1983	1984	1985	1986
3	Project Sub Coordinator	(1/2 time)	1	1	1	1
4	Advisors (5)	(1/2 time)	5	5	5	5
6	Chief General Services Unit		1	1	1	1
7	Reporting (Compiles Financial and Implementation Materials)					
8	Unit Head	(1)	1	1	1	1
9	Development Staff	(1)	1	1	1	1
10	Junior Professional	(3)	1	2	3	3
11	Support Staff	(5)	3	5	5	5
12	T. A.					
13	~~Implementation Monitoring~~					
14	~~Unit Head~~		~~1~~	~~1~~	~~1~~	~~1~~
15	~~Development Staff~~		~~1~~	~~1~~	~~1~~	~~1~~
16	~~Monitoring Staff~~		~~1~~	~~2~~	~~2~~	~~2~~
17	~~Support Staff~~		~~2~~	~~4~~	~~4~~	~~4~~
18	Technical Assistance					
19	Evaluation (Impact Monitoring)					
20	Unit Head		1	1	1	1
21	Development Staff		1	2	2	2
22	Support Staff		2	3	3	3
23	Technical Assistance					
24	Housekeeping					
25	Unit Head		1	1	1	1
26	Junior Professional		2	2	2	2
27	Support Staff		4	4	4	4
28	Subtotal:					
29	I General Advisory and Services Unit		26			
30	I Subcoordinator, Advisors, Chief		7	7	7	7
31	II Unit Heads		3	3	3	3
32	II Development Staff		2	3	3	3
33	III Monitoring / Jr. Prof		3	4	5	5
34	Support Staff		9	12	12	12
35	Technical Assist.					
36						
37	Total: Recommended Staff					
38	Senior Officials (Class I)		7	7	7	7 +
39	Unit Heads (Class II)		7	7	7	7
40	Development Staff (Class II)		8	13	13	13
41	Monitoring Staff (Class III)		8	11	12	12
42	Support Staff		23	20	20	20
43						
44						

6	7	8	9	10	11	12	13
Proposed Duty Station							
Jakarta					wfc 1/5/63		
"							
Jakarta					61 - 62		
Jakarta							

not here Omit ↓

Jakarta

General Advisory Unit	man-years RMI	Darra
I Senior Officials	24	24
II Unit Heads	16	16
II Development Staff		11
III Junior Prof	0	26
	40	77
Sub Units		
II Unit Heads	20	16
II Development Staff	40	36
III Junior Prof	40	26
	100	88
total	140	165

PLACE At end of tables

	Initials	Date
Prepared By		
Approved By		

45-813 EYE-EASE
45-913 20/20 BUFF
Made in U.S.A.

Proposed Build-Up of JMT Staff (cont.)

B. Sub Unit Staff	1983	1984	1985	1986	Possible Duty Station
Trans II					
Unit Head (1)	1	1	1	1	Jakarta
Development Staff (3)	3	3	3	3	One each, Jakarta, Jambi, Palumbang
Monitoring Staff (2)	2	2	2	2	Jakarta
Support Staff (5)	5	5	5	5	Jakarta (3), Jambi (1), Palumbang (1)
Technical Assistance					
Trans III					
Unit Head (1)	1	1	1	1	Jakarta
Development Staff (1)	1	1	1	1	Jakarta
Monitoring (1)	1	1	1	1	Jakarta
Support Staff (3)	3	3	3	3	Jakarta
Technical Assistance					
Trans IV					
Unit Head (1)	1	1	1	1	Jakarta or East Kalimantan
Development Staff (3)	1	3	3	3	Jakarta, Muara Wanewi, Samarinda
Monitoring (2)	1	2	2	2	Jakarta
Support Staff (5)	3	5	5	5	
Technical Assistance					

Swamps						
	Unit Head (1)	1	1	1	1	Palembang
	Development Staff (3)	1	3	3	3	Palembang (2) Jakarta (1)
	Monitoring (2)	1	2	2	2	Palembang (1) Jakarta (1)
	Support Staff (5)	3	5	5	5	Palembang (3) Jakarta (2)
	Technical Assistance					
trans V						
	Unit Head (1)			1	1	
	Development Staff (2)			2	2	South Sumatra
	Monitoring Staff			2	2	South Sumatra (1) Jakarta (1)
	Support Staff			5	5	South Sumatra (1) Jakarta (1)
	Technical Assistance					South Sumatra (3) Jakarta (2)
Subtotal:						
V Sub-Unit Staff Requirements						
II	Unit Heads	4	4	4	4	
II	Development Staff	6	10	10	10	
III	Monitoring Staff	5	7	7	7	
IV	Support Staff	14	18	18	18	
	T.A. - Expatriate					
	Local					
Total: (From Previous Page)						

Class I - Senior Officials
Class II - Mid-level professionals (unit heads, development)
Class III - Junior professional (monitoring staff)
Support Staff -

	Initials	Date
Prepared By		
Approved By		

COST TABLE 308 (CONT)

CAT: PROJECT TEAMS ; PHY CON = 0.1; FE = 0

SUBCAT: SALARIES ; U = mm; SA = JMTSAL
TEAM LEADERS; UC = 200; Q = 48, 48, 48, 48
DEVELOPMENT STAFF; UC = 100; Q = 72, 120, 120, 120
MONITORING STAFF; UC = 75; Q = 60, 84, 84, 84
SUPPORT STAFF; UC = 60; Q = 168, 216, 216, 216
SUBCAT: HONORIA; U = mm; SA = JMTHON
TEAM LEADERS; UC = 40; Q = 48, 48, 48, 48
DEVELOPMENT STAFF; UC = 30; Q = 72, 120, 120, 120
MONITORING STAFF; UC = 30; Q = 60, 84, 84, 84
SUPPORT STAFF; UC = 23.5; Q = 168, 216, 216, 216
SUBCAT: EQUIPMENT AND VEHICLES; U = LS; SA = JMTEQV; PHYCON = 0.5
OFFICE FURNITURE; UC = 2500; Q = 10, 1, 1, 1; FE = 0.2
OFFICE EQUIPMENT; UC = 7500; Q = 5, 1, 1, 1; FE = 0.6
COMPUTER SYSTEM SUBUNITS; UC = 75000; Q = 1, 2, 2; FE = 1.0
VEHICLES; UC = 7000; Q = 10; SA = GPV; FE = 0.5
MOTORCYCLES; UC = 1000; Q = 5; SA = GPV; FE = 0.5
SUBCAT: TRAVEL; SA = JMTTRD
AIRTRAVEL; U = NO; UC = 200; Q = 120, 180, 180, 180; FE = 0.3
GROUND TRAVEL; U = NO; UC = 30; Q = 120, 180, 180, 180; FE = 0.2
PERDIEM; U = NO; UC = 21; Q = 120, 180, 180, 180

SUBCAT; OPERATING EXPENSES; U = LS; Q = 1, 1, 1, 1; FE = 0.2; SA = JMTTOAM
OFFICE SUPPLIES; UC = 20000
TELEPHONE, TELEX, MAIL; UC = 25500
PRINTING AND TRANSLATION; UC = 23000
MEETINGS AND SERVICES; UC = 9600
TRAINING; UC = 20000
VEHICLE O AND M; UC = 34140
COMPUTER O AND M; UC = 25000

DRAFT

TERMS OF REFERENCE OF CONSULTANTS TO ASSIST IN STRENGTHENING THE SPECIAL UNIT FOR WORLD BANK ASSISTED TRANSMIGRATION PROJECTS

1. TEAM LEADER

1.1 The Team Leader will in consultation with the Project Sub Coordinator identify the needs for the cordination/management of each World Bank assisted project in the Transmigration sub sector, and will bring issues and matters arising to his notice.

1.2 He will assist each Sub Unit Chief to prepare a master plan for the various projects.

1.3 He will direct, supervise and coordinate the other consultants on his team, including any who may be outposted to the field.

1.4 He will be responsible for all project reports.

1.5 He will prepare a work programme for the consultants in consultation with the Sub Coordinator and his staff, to be approved by the World Bank.

1.6 He will monitor and control the work of other team members as necessary, to ensure each Sub Unit Chief obtains timely assistance as needed.

2. FINANCE AND BUDGET

2.1 He will design or modify existing financial monitoring systems so that standard monthly reports will be available on the financial status of each World Bank assisted project.

2.2 He will design procedures for standard summary reports monthly for inclusion in the JMT/Satdal report.

2.3 He will conduct training courses for the staff of the Sub Units, the Secretariat and Project Managers and Treasurers from the implementing agencies in Financial Monitoring, Monitoring of disbursement against World Bank Loans, and in procurement and disbursement procedures.

2.4 He will assist the staff of the Sub Units and the Secretariat in implementing the systems.

2.5 He will work closely with the computer/system analyst in the development of the system.

3 MONITORING AND EVALUATION

3.1 To design and/or modify existing systems to provide monthly information on :

i. physical progress of project implementation;

ii. progress in site identification, survey and settlement design, with special reference to Trans III;

iii. monitoring of transmigrants' welfare.

3.2 To assist in drawing up terms of reference for evaluation of World Bank assisted Transmigration Projects, and to give guidance on request in their implementation.

3.3 The consultant will work closely with the Computer/System Analyst in the development of the above systems, and will regularly liaise (keep in close touch) with the computer Unit of Bina Marga.

4. TRAINING SPECIALIST

4.1 To assist in designing courses in :

i. financial monitoring
ii. progress monitoring
iii. computer operation
iv. various levels of programme coordination
v. reporting

4.2 To generally support the other activities of the other consultants, acting as a facilitator in conveying cencepts and procedures to counterparts.

5. COMPUTER/SYSTEM SPECIALIST

5.1 To design and assist with the installation of the micro computer system in the offices of the Sub Units and the Secretariate.

5.2 To design systems and write programmes for providing reports in financial monitoring, progress monitoring of various types, monitoring of withdrawls and disbursements.

5.3 To teach staff to carry out data entry and to operate the computer.

5.4 To assist in the operation of systems concerned with the overall transmigration programme.

6. CIVIL ENGINEER

6.1 To advise Sub Unit Chiefs of civil works components of the various projects.

6.2 To identify potential and existing problems (preferably before they manifest themselves), and advise on steps for their correction or avoidance.

6.3 To check bid tender documents and contracts to ensure they are in accordance with SAR reports, Loan Agreements and GOI Annual Budgets.

6.4 To follow up on matters brought to light by the monitoring systems, and to advise on management steps to be taken for their correction.

7. AGRICULTURALIST

7.1 To advise Sub Unit Chief on agricultural aspects of the projects for which they are responsible.

7.2 To participate in the preparation of annual budgets.

7.3 To identify potential and existing problems, preferably before they manifest themselves, and advise on steps to be taken for their correction or avoidance.

7.4 To check bid tender documents and contracts to assure they are in accord with SAR reports, and loan agreements and GOI Annual budgets.

7.5 To follow up on matters brought to light by the monitoring systems, and to advise on management steps to be taken for their correction.

7.6 To assist Sub Unit Chiefs as requested.

8. UNSPECIFIED SHORT TIMERS

To be identified during the course of project implementation.

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DEPLOYMENT OF CONSULTANTS TO SPECIAL UNIT
FOR WORLD BANK ASSISTED TRANSMIGRATION PROJECTS

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1. The consultants will provide technical advisory services to the various staff of the Project Sub Coordinator, and in the field as requested.

2. The Team Leader and the other consultants seen as having an overall service and support function will be based in the Secretariate. These include Finance and Budget, Computer/ System Specialist, Monitoring and Evaluation and Training. However it is envisaged that 80% of their time will be spent with one or other of the Sub Units.

3. Civil Engineers and Agriculturalists will be attached to particular Sub Units as appropriate, and may be moved from one to another at the discretion of the Project Sub Coordinator and as different needs of each project change through time.

4. However it is envisaged that at least one Civil Engineer and one Agriculturalist would be assigned full time to Trans-IV (Kalimantan Timur) under the Sub Unit for that project.

5. Requests for services of any particular consultant by Sub Unit Chiefs will be made simultaneously to the Project Sub Coordinator and the Team Leader who will after consultation decide on the most appropriate use of consultants' time. This is considered essential to the interest of good management and optimum use of consultants.

DB/ru
12/11/82

PROPOSED TECHNICAL ASSISTANCE TO SPECIAL UNIT

POST	EXPATRIATE Post	EXPATRIATE m/m	INDONESIAN Post	INDONESIAN m/m
1. Team Leader	1	36		
2. Finance & Budget	1	36	1	36
3. Monitoring and Evaluation	1	36	1	36
4. Training Specialists	1	12	1	12
5. Computer/System Specialists	1	36	1	36
6. Civil Engineers	1	36	1	36
7. Agriculturalists	1	36	2	72
8. Unspecified Short Timers		24		24
TOTAL m/m		252		264
TOTAL COST	US $	2,646,000	US $	660,000
GRAND TOTAL	US $	3,306,000		

DB/ru
12/11/82

AIDE MEMOIRE

REVIEW SESSION ON OUTCOME OF RESEARCH ON CROPPING PATTERN, MONITORING AND EVALUATION IN TRANSMIGRATION AREAS HELD ON 29TH AND 30TH NOVEMBER 1982, AT CIPAYUNG, BOGOR.

OBJECTIVES :

The main purpose to call such a review session was to review the findings of research on cropping pattern by LP3-C.R.I.A and to discuss the working and recommendations of M.E.T - I.P.B before submission of their respective final reports based on research and studies by the two institutes in typical transmigration areas of Baturaja-Martapura (BATU-MARTA) in province of Southern Sumatera and Way Abung I & II in province of Lampung.

The research by LP3-C.R.I.A and study by M.E.T - I.P.B was carried out under frame-work and general agreements of cooperation between the Directorate General of Transmigration and Central Research Institute for Agriculture (C.R.I.A) and Institute Pertanian Bogor (I.P.B).

It is hoped that deliberations during the session and outcome of discussions would be beneficial to all participants for planning in their own fields and formulation of future policies by different dealing departments/ agencies for further improvement and development of transmigration programme during on-going five years national development programme (REPELITA III) and coming five year plans, in future.

PARTICIPATION

In addition to full scale teams with their chairman/leaders from C.R.I.A and M.E.T - I.P.B, the sessions on 29th and 30th November 1982 were attended by the concerned deparmental heads/representatives from Ministries of Manpower, Transmigration, Agriculture, Health, Agraria, Public works, Finance and Budget, BAPPENAS, BAPPEDA, Provincial dealing authorities/offices from Southern Sumatera and Lampung, The World Bank, U.N.D.P / F.A.O and the Senior Financial Analyst of D.G.T. Two daylong sessions were divided into two sub. sessions each day,in the morning and in the afternoon till evening. On first day ie. Monday, the 29th November, 1982 the morning session was chaired by the Director, Education and Training (P.L.P.T) D.G.T, while the second afternoon sub. session was presided over by the Head of Agriculture Department in the province of Lampung. On second day ie. Tuesday, the 30th November, 1982 two sub. sessions were presided over by the chairman BAPPEDA, Palembang and by the provincial Head of Department of Transmigration in the province of South Sumatera.

Main speakers in two sessions included -

- the Director General of Transmigration;
- the Project Director, Southern Sumatera and Lampung Transmigration and Rural Development Project (I.B.R.D. 1318/5-Transmigration-I);
- The Director, Central Reseach Institute for Agriculture, Bogor;
- The Chairman, M.E.T. - Institute Pertanian Bogor;
- The Incharge, field operations L.P3 - C.R.I.A;
- The leaders of Sub. teams, M.E.T - I.P.B;
- The leaders of Sub.teams, LP3 - C.R.I.A.

FINDINGS OF RESEARCH BY LP3 - CRIA.

AGRONOMY

With a view to increase the output, the productivity of upland soil which is typically podzolic in case of southern Sumatera Transmigration areas, it is considered imperative to apply soil improvement techniques including in-creased input of fertilizer especially phosphate, lime returning decaying plant material to soil and through other actions that would help conserve soil and water under-neath.

Efforts to improve soil condition would include the application of T.S.P fertilizer at the rate of 200 Kilograms per hectare and use of lime, application of which would depend on PH of the soil and type of food crop desired to be grown on such soil. In any case, upper limit of lime application would be two tons per hectare. The residual effect of lime ie. lime remaining active in the soil after each harvest when applied at the optimum rate ie. 2 tons per hectare would be sufficient to support five cropping seasons. For legumes smaller doses of 200 Kilograms per hectare is considered sufficient, if applied along plant rows at the time of sowing seed.

Multiple cropping system through-out the year in a cycle on continue basis in the following pattern is considered to be suitable for Batu-Marta and Way Abung transmigration areas as also for other areas of similar agro-chemical base and features of soil.

Corn + Padi Gogo + cassava + Legumes Kacang uci or kacang Tunggak or alternately corn + Legumes or

Corn + Sweet patatos or legumes or

Kacang Tunggak or Kacang Uci.

SOCIO - ECONOMICS

Adopting fore-going cropping pattern a typical transmigrant family of five members, to keep themselves just above the poverty line would require a minimum of 0.7 hectare of land holding. If entire farm work is going to be done manually using a hoe (cangkul) only, it would require 500 - 600 Mondays. Upto 30% (thirty percent) Labour can be saved by use of simple agriculture tools for ploughing, harrowing and weeding and by applying minimum tillage technique.

It was observed that at both sites of the project namely Batu-Marta and Way Abung farmers are fastly adopting the cropping pattern suggested by LP3 - C.R.I.A teams in the field and uptill now 64% (sixty four percent) at Batu-Marta and 20% (Twenty percent) at Way Abung of the total cultivated land is being cultivated according to these quidelines.

As a result, the farm income levels of farmers using cropping patterns suggested by LP3 - C.R.I.A at Baturaja are 1.3 times and at Way Abung 1.5 times in comparison to farm income levels of non-adopting farmers.

OUTSTANDING PROBLEMS

In case of undulating and sloping land further study and more research is required to decide cultivation methods to suit terraced fields and contoured land and actions to be taken to conserve such soil and water.

Research on package farming operations using models covering seasonal food crops, tree crop and animal growth to offer higher yield and better income to farmer/transmigrant and which is stable for longer period of time.

The tested (prototype) cropping pattern has since demonstrated its effetiveness and has encouraged quite a few groups of farmers to adopt the system and thus drive benefits from the same.

It is imperative now to launch a mass media drive and intrduce the program to all transmigrants/farmers in those areas and expedite transfer of technical knowledge from experts in the field to transmigrants/farmers.

In long run further improvement is required in Management of agricultural production support system such as -

A. Upland farm BIMAS programs.
B. Extension service activities.
C. Marketing etc.

RECOMMENDATIONS.

The following recommendations have been made to the central Research Institute for Agriculture (CRIA).

That CRIA-LP3 may prepare and publish a operations manual, easy to understand and to follow by the extensionists as well as transmigrants/ farmers, containing better farm techniques commonly applicable in most of the transmigration areas with same ecological features.
Mainpoints in preparing such manual may include -

a) Technological packet and method of implementation including guidance about use of rock phosphate and lime stone.

b) Cropping pattern and it's components.

c) Methods of soil tillage and it's variations (Minimum tillage).

d) Land development and measures to sustain soil productivity.

e) Cropping patterns depending on different levels of rain fall.

f) Fore-cost of output or expected levels of production.

g) Verifiable indicators such as levels of cost and the B/C ratio

h) Stages of areal development for farm operations and the use of land for various crops.

i) Several variations keeping in view the climatical changes including risk of draught.

j) Labour utilisation and introduction of new tools, draft cattle and mechanisation.

FINDINGS OF STUDY BY I.P.B - M.E.T.

1) The overall productivity of land belonging to the transmigrants is still low, thus reguiring increased measures by the application of farm operation technology which in turn will sustain the soil fertility, amongst others by application of "sengkedan" and tree crops. Good cooperation is needed in this case.

2) The average annual income of the farmer transmigrant is still below expectation (US $ 600).
Attempts to increase production and transmigrant's income must be supported by a marketing structure which would stimulate them to increase their production offorts.

3) Home gardens averaging 0.25 hectare are potential for intensive development during the first years of the transmigrant arrival at settlement site The raising of poultry is equally of high potential.

4) The total calorie intake is still below the standard average requirement of 1900 calories per day. However, compared to the average daily intake at their places of origin there has been progress already. Several groups of the transmigrants show indi cations of increased calories intake in the future.
The average daily protein intake already surpassed the average daily requirement of 39 gram, although quality-wise most of the consumed protein is derived from plant protein. Only a relatively small portion, approximately 5 gram daily, cames from animal protein.

5) Due to the fact that there is not always a positive correlation between increased production with increasing consumption,improve ment of the farmer transmigrant consumtion pattern requires inten sive extension efforts. Additionally, to obtain reference figures for the transmigrant basic needs of food, it was recommended that demographic data be consulted such as figures pertaining to infant and child death (in this respect the result of study by the Health Research Team, University of Indonesia, 1980, was referred to)

6) With reference to the space use at the Batu-Marta settlement area, where a linear settlement so well as a clustering settlement pattern exists, it was recommended that a more careful study be conducted to know which of the two, viewed from its various aspects, is more suitable.

Conclusions and recommendations concerning optimal size holding including the balance between food crops and tree crops/commercial crops should be more precisely determined. This way, further implementary steps from one development stage to the other could be adjusted accordingly.

OUTSTANDING ISSUES

1) There is a need for clear distinction among the conclusions drawn the recommended suggestions, bearing in mind the need for the successful completion of the project on the one hand and those which are more pertinent for the making of general policies.

2) The 1980 - 1981 research period was an abnormal period from the agricultural point (early rainfall), thus requiring special explanations for the results of research during that time.

3) Clarifications are needed concerning the selection of transmigrant samples so that the conclusions drawn are representative of the actual situation.

4) With reference to the efficiency of services institutions (government of private), further study is needed to determine which of the block plan design offers more support to the further development of transmigration areas.

5) The recommended optimal area for farm operations should be more precisely determined in accordance with the stages of transmigration area development.

6) The level of transmigrant family welfare is needed, while the data on food and nutrition need to be completed with health data others the mortality and birth rate.

7) Distinctions should be made between the groups of transmigrants which have settled at the new area for long periods as compared to those which belong to new arrivals. In this way the progress achieved in farm operation adaption can be clearly shown.

8) Efforts must be made to seek for suitable patterns of farming operations that tend to stimulate the use of more farmer family labor and of equal distribution among the farmer families. In this way the aim for a more developed food crops farming operations can be achieved more quickly.

9) It is imperative that the strategy to developed KUD according to its functional roles be elaborated more fully, including the implied supporting facilities needed by the KUD. In this way it would serve in assisting the increase of income from farming operations.

10) Research efforts with respect to finding the correct location, method of developing and the management of transmigration areas, must be done as early as possible in synchrony with the stages of planning the arrival of the transmigrants and the guidance services that have to be offered to the settlers.

RECOMMENDATIONS.

This is recommended to M.E.T - I.P.B to publish its' study findings in form of a booklet/brochure to serve as record and comprehensive gu guideline for further development of form operations and forming systems.

In proparing such guidelines consideration may be given to technical data collected by C.R.I.A - LP.3, B.P.P.M, P.T.P and other reliable sources.

The following points may be high - lighted.

a) Land area per family head
b) The development model, including the food crop component, estate farm, home yard or garden, animal production and fisheries.
c) The types of technological subsidy packet to be recommended.
d) The organizational and institutional model such as the KUD and the manpower resources in general.
e) Guidance to be given to the supperting services such as seed acquisition, extension, the marketing of ageicultural products etc.
f) The criteria to be used in making transmigrant selection.
g) The levels of income and the variations of expected farming operations.
i) The settlement model and space management.
j) The action research model based on the above mentioned aspects.

AGRICULTURAL RESEARCH SUPPORT TO TRANSMIGRATION

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AGRICULTURAL RESEARCH SUPPORT TO TRANSMIGRATION

1. Preface

In accordance with the terms of NAR II the AARD will undertake research related to development of land resources for transmigration and for development of the outer islands. This report reviews some of the consideration which have lead the research committee to chooce certain strategies of development and to select certain priorities for research. It also outlines the main components of the recommended research programme and considers certain issues with regard to their implementation. How much will be accomplieshed, and when, depends on the resources made available and how they are made available. It is intended to be reviewed every two years.

The report is intended for the Bank but also to provide an account of the research programme adapted for the planners in AARD and in the ministries directly participating in the transmigration programme.

2. Introduction

The transmigration program presents a significant opportunity for agricultural research to contribute to Indonesian economic and social development.

Because of its size and relative importance, the agricultural sector has been assigned a central role in achieving Repelita III objectives of improving the welfare of the population and of promoting a more balanced development of the regions.

Development of agriculture in the outer islands is key to pursuing this role. Practically all available land on Java is being utilized intensively. The scope for further yield increases on Java is limited. In contrast, large portions of land on the outer islands are yet to be opened to agriculture. Intensified production practices are being applied to only a small part of the area already devoted to agriculture.

Transmigration is the principle vehicle of regional economic development. It absorbs 5.7% of the development budget proposed for Repelita III, ranking eighth among 18 sectors. For 11 of the 18 provinces receiving transmigrants, the transmigration development budget is the largest single sectoral component; in 5 provinces, transmigration accounts for from 40% to over 50% of Central Govenment development expenditures. Although regional development of large agricultural estates, the Plan has adapted

a program which emphasizes smallholders. If proposed targets are reached, transmigration projects would benefit some 2.5 million or 1.7% of the nation's population directly. If the proposed targets are reached, the enhanced economic opportunities in the outer islands would create a "pull" attraction for the population of Java, thereby directly benefitting an even larger proportion of the population indirectly. Conversely, failure could deal a heavy blow to the concepts of smallholder participation in new land development since the transmigration program offers a means of marshalling both technology and management in support of smallholder progress. Therefore, high priority is attached to making the transmigration program succeed.

Transmigration projects are agriculturally-based. The project areas are geographically remote. Therefore, generation of income by which to improve welfare of the transmigrants must come from exploiting the natural resources, soils and climates, of these areas. Agriculture — food crops, estate and industrial crops, animal husbandry, fisheries, and forestry — is the major means of exploiting these resources.

Physical conditions on the outer islands are generally different from these on Java, from which most transmigrants come and about which most previous research on agriculture in Indonesia has been carried out. Instead of irrigation, transmigrants must utilize rainfall. Instead of deep, fertile volcanic soils, the soils of the outer islands are acid and of low natural fertility. The land is often undulating. i.e., sloping; lack of continuous ground cover can rapidly result in erosion and compaction or in takeover by alang-alang grass of low value for animal nutrition. Moreover there is a great variability in productive potential between agro-ecological zones and locally.

The IBRD review of transmigration in April 1980 indentified four priorities to improve future performance of the transmigration program: (a) developing agricultural packages suited to varying agroclimatic settings, management systems, and input possibilities; (b) reformulating procedures for physical planning, land development, and timber disposal; (c) improving effective use of resources allocated for transmigration; and (d) strengthening mechanisms of program coordination. The IBRD further states: "Farmers' welfare is based primarily on their access to the means of production. For this reason, an evaluation of farming systems for transmigration constitutes a major part of the sector review. The Bank concludes that a wide

variety of farming systems will be necessary and appropriate in the transmigration program ."

As a result of the implementation of the reorganization decreed in 1974, the subsequent development of program objectives by the respective commodity grouping, and substantial strengthening in terms both of staff and facilities, AARD is new prepared to respond to the challenge of acelerating agricultural production in the outer islands, with special emphasis on transmigration areas. The AARD can make significant contribution to the priorities identified the improve future efforts.

3. The Role of Research

In areas which have been farmed for many years, cultivators, over time, can be expected to develop and adapt agricultural technologies to exploit the agricultural resources available to them and, if their time frame is sufficiently long, can be expected to expand these resources. They experiment among commodities to determine those which best suit their needs and conditions. They select the best plants for seed for next year's crop and the best animals for breeding to increase their hards. They experiment with cultural practices. The farmers themselves play an active, although informal, research role.

However, the transmigration areas in the outer islands are geographically remote. Often few farmers are already cultivating the areas and those that are utilizing slash and burn techniques. The transmigrants are new to the project areas and their konwledges of agriculture applies to conditions quite different from those of the project areas. Furthermore, limited information has been communicated on recearch in other countries which can be applied directly to agriculture in the transmigration areas; the information that been communicated is largely confined to production of tree crops. The basic question still to be answered is "Can the acid, infertile soils of the outer islands be farmed economically on a continuous basis and, if so, how?".

Transmigration projects are agriculturally-based, and succes is to be evaluated in terms of improving individual welfare, regional development, and maintenance of the productivity of the land. The role of research is to identify promising opportunities for development; to determine, by experimentation, the best ways of exploiting these opportunities; and to do this in ways that communicate effectively with government planners, cooperating public and private organisation, and the farmers.

In physical terms, the opportunities are a combination of climate and terrain. Generally rainfall and temperature are kind to agriculture throughout the outer islands. Rainfall is generally abundant in total although seasonal distribution varies, permitting continuous cropping in some areas but only one crop or a perennial crop in other areas. The two most important soil groups in transmigration areas are redyellow podsolics in upland areas and peat soil in wetlands. The physical properties of the upland soils — depth, drainage, and density — are generally good, but the chemical properties — acidity and infertility — cause them to be labeled "problem" soils. Slope varies from flat to very steep. There is a wide range of natural vegetation throughout the areas. Much specific knowledge needs to be learned about agronomic potential of areas yet to be cleared, how best to clear the areas, and once they are cleared, how best to maintain or improve soil fertility, including minimizing compaction and retaining and improving topsoil.

A wide variety of options are available to exploit the opportunities. Most is known about tree crop production which mimics natural conditions, protects the ground from erosion, and some tree crops tolerate acid soils. Government policy places high priority on foodcrop production and some promising research is already underway to develop systems which give high production and continuous cropping. Research on animal husbandry and fisheries is beginning. The key problem of forest management, especially policy toward exploitation of production forests, needs to be addressed. There is little experience with systems which combine commodity grouping, e.g. food crops and tree crops. Applicable research in other countries, if it exist, is not communicated very effectively to researches in Indonesia. Farming systems to exploit specific conditions must result from local research.

However, no matter how good the scientists' understanding of potentials and alternative means of resource management, the task is incomplete until this knowledge is transferred to policy makers/planners, participating government agencies and private firms who must supply services, and, most importanlty, the farmers. The payoff of successful research is adoption of resulting agronomic recommendation by the farmer. In order to achieve successfull adoption, many parties, including the farmer, must be convinced that following such reccommendations will lead to improved, economic, production.

In the outer islands, crop yields are only a fraction of their potential. New areas can still be brought into

cultivation, and much currently cultivated areas can be cropped more intensiveky. However, substantial investment will be required to develop new lands; manufactore fertilizers, pestisides, and machines; generate technologies; and train people. In order to exploit these opportunities, the government must have the will and the commitment to pursue aggressive agricultural development policies, one of which should be to support research on a much larger scale than in the past.

4. Organization of Responsibilities for Transmigration

A rough count suggests that approximately 7 departments and 50 Directorates Genral are involved in some way in the transmigration program. Presidential Decree 26/78 designates an interministerial body BAKOPTRANS, chaired by the Minister of Manpower and Transmigration, to set general policy and coordinate the program and SANDALTRANS, composed of the participating Director Generals and chaired by the Junior Minister of Transmigration, to exercise management control.

In order to simplify identification of the main roles of the respective ministries, the following diagram may be helpful:

	road construction (PTPT)	migrant selection (DG of Transmigration)	research extension (Dept.of Agric.)
Site Selection	land development (PTPT)	Settlement	Production
	land alienation, land transfer (DG of Agraria)	housing community development (DG of Transmigration)	inputs, credits, marketing, pest control (Dept.of Agric.)

4.1. Site Selection - Identifying Opportunities

Site selection is important because regardless of what else can be done, beginning with a site with poor

opportunities greatly lowes the probability of development success.

Presidential decree 26/78 designates responsibility for site selection to BAKOPTRANS. However, TKTD has taken primary responsibility for making recommendations to BAKOPTRANS. TKTD is given responsibilities:

IV - 20 - c - i : To execute survey and research and planning of the regions, including topography mapping for the proposed settlement locations, for the purpose of preparing transmigration drafts plans and programs.

ii : Tp collect and process data and information from various Departments/Offices concerned with the potential of the proposed settlement locations for the purpose of preparing transmigration draft plans and programs.

iii : To prepare draft plans and programs on short-term, medium-term, and long-term transmigration settlement to be reviewed and docided by BAKOPTRANS.

The role of the Department of Agriculture is :

IV - 20 - d - i : To collect and process technical data on land fertility, land capability and hydrology, to recommend patterns of agriculture, to develop the proposed transmigration settlement regions, and to give recommendations for opening the lands to maintain the fertility.

ii : To develop information on the question of utilization of Forest areas which are overlapping with proposed Transmigration Project locations. Protected Forests, Nature Preserved Forests, and Tourism Forests should not be used as Transmigration settlement.

The striking feature throughout both upland and lowland areas is the degree of local variation in ecological conditions. Areas of moderate to high fertility are interpersed between areas with acid, flood, or drainage problems. Furthermore, even in relatively fertile areas, poor management practices can lead to rapid environmental degradation and land abandonment.

The units suitable for intensive upland crops-use tend to be small. Thus. accurate land suitability analysis prior to settlement is essential.

At the time of the IBRD Program Review, GOI projects were being done without feasibility studies and preliminary physical planning, and no mapping was underway which would lead to a pipeline of projects. The Bank also concluded that poor topographic mapping of Transmigration II had become an obstacle to project implementation there, and presumably at other places also. However, given the pressure to fulfill the numbers targets, it must be acknowledged that the BAKOPTRANS had done a hercic job in accomplishing what it had.

Since then, a time phasing of activities, with a four-year lead time has been agreed to, at least in principle, by BAKOPTRANS. This schedule, if implemented, could greatly improve the quality of site selection. Another innovation which should improve site selection would be to carry out surveys over a few large continuous areas, rather than numerous smaller scattered areas as at present, in order to make use of economies of scale by the few especially well qualified firms available for this task.

The Centre for Soil Research has provided both training in and mapping of soil and land characteristics for potential agricultural use for many years. For Indonesia, a general soil map has been prepared at 1:2,500,000, and for Java and Sumatera an exploratory soil map at 1: 1,000,000. Reconnaissance maps of priority areas — al of Java, Lampung, and South Sumatera and parts of North Sumatera, South Sulawesi and a few other parts — are available at 1:250,000. Sout-detailed soil and land capability maps are available for a few selected areas at 1:25,000 to 1:50,000.

The efficiency of the transmigration surveys could be greatly improved if soils information was taken into consideration early in the selection process when the main areas are being selected. For this reason it is proposed that the CSR should concentrate on systematic reconnaissance surveys which could be used as a basis for site selection. The following send-detailed surveys would then be likely to have more extensive areas to survey.

The CSR has been mapping sites for transmigration project selection and planning of approximately 150 Phase II sites. In 1981-82 it has been allocated 39,

of which it will do 7 itself and contract the remainder to universities. The demand for surveys will undoubtedly increase in the future, however, the universities may not be able to play as large a role in the future, and the quality of site selection will come under increasing scrutiny as development goals receive more emphasis. Therefore, it may be desirable to consider a change in roles for CSR in the future.

The CSR could continue to do a limited number of semi-detailed surveys for project site selection; this is considered essential to keep it's research activities in direct touch with practical application. However, as TKTD development of consertia of consultants improves, most of this acitivity might be shifted to contracts by Public Works.

Monitoring and quality control al all the sub-contracted surveys should be systematised in such a way that the standards established by the CSR are maintained. This might best be done by a quality control group established under SADALTRANS on which sufficient number of CSR staff would serve to provide an overall service for monitoring the semi-detailed surveys for transmigration.

Decisions on land suitability classification must be made with knowledge of recent advances in agriculture or agro-forestry, or the classification is immediately absolete. The CSR should continue to develop its land suitability classification and carry out research to improve the methods and criteria used and the reliability of the prodictions. Comparative analyses of previous site selection experience could provide valuable data for this research. Work could be co-ordinated with all the commodity programs within AARD, and with forestry research institutes.

In the event that the demands on expert personnel prove to be too numerous for the staff available, other solutions may need to be sought, such as technical assistance from bilateral or multilateral agencies, including FAO, to fill zome of the posts until such time as Indonesia can be trained.

Repelita III states that transmigration projects are to be undertaken within the context of regional development of larger areas. Therefore, AARD could also undertake research on the regional development potentials of these areas for research supporting transmigration. Research would be aimed at providing the data required for physical land use planning at the regional, watershed

level. It would include: (a) the position of the area considered for transmigration in the context of the watershed; (b) the area's potentials for development and constraints; (c) suitable tree-crops-based farming systems to be reccommended to the transmigrants; and (d) the necessary support system including markets which has to be developed. To study regional development, the research should be multi-disciplinary, involving many Centres of AARD; neverthelens in many cases single discipline research such as agronomic research or marketing research are equally important. The research should taks into consideration the sequences of transmigration. Although the immediate transmigration area will be the main target, the research would place it properly in the larger region, i.e. the watershed, and help to achieve its integration into its region and more extensive development.

4.2. Land Development

The choice of land clearing methods in a crusial step affecting the future productivity of the land.

Presidential Decree 26/78 designates responsility for land development to Public Works. Planning is by TKTD and Land clearing by PLPT. The roles of Public Works are:

IV - 20 - c - iv : To draft transmigration settlement space design.

v : To prepare and execute the opening of Transmigration settlement lands to comply with the plans and programs which have been stipulated by BAKOPTRANS.

vi : To prepare the construction of connecting roads, main roads, bridgesm piers, ditches, irrigation, and canals in the transmigration settlement project.

The roles of the Department of Agriculture are:

IV - 20 - d - i : .... to give reccommendations for opening the lands to maintains the fertility of the land.

vi : To conduct research on land, water, and environmental control and to take efforts to preserve the transmigration settlement region.

Improper land clearing procedures can permanently reduce the potential productivity of all components of the research base, and even repairable damage will increase project costs (e.g. return of bulldosed topsoil in Setiung). In past projects, failure to achieve production goals can be traced to accelerated developent schedules (e.g. Setiung), to failures in considering traditional uses and land claims (e.g. Rimbo Budeng), inadequate coordination of inputs and failure to complete infrastructure on schedule (various Lampung projects), and basic lack of understanding of ecological constraints (soil problems in swampland rice projects in both Sumatera and Kalimantan).

A substantial amount of research in other countries indicates that manual land clearing with chain saws is preferred to mechanical land clearing because of the fertilizer value of the ash, soil compection caused by bulldosing, and topsoil displacement common in mechanised land clearing. The Government, however, maintains a strong commitment to mechanical clearing to obtain land development at the speed and scale proposed. PLPT has taken steps to improve implementation including attempting to confine land clearing to the dry periods, better training of operators, and improving quality of supervision. In the future TKTD will carry its responsibility for design through land development to further ensure implementation. In view of this commitment, AARD proposes to

- Carefully monitor projects for both speed and quality; and
- Evaluate alternative methods of land clearing, including mixed heavy and hand held machincry.

The purpose of this research will be to gather information by which to recommed future land clearing methods.

4.3. Settlement

Migrant selection and construction of houses, mosques, schools and other aspects of settlement included under community development are designated to be responsibilities of the Directorate General of Transmigration. The Department of Agriculture has no direct role in this phase and, given the heavy thrust of responsibilities of the Departement of Agriculture in the other three phases, AARD does not propose to contribute directly to these aspects of transmigration projects although it would be willing to provide advice if requested.

4.4. Production - Exploiting Opportunities

Presidential Decree 26/78 designates most of the responsibility for this phase to the Department of Agriculture.

IV - 20 - d - iv : To execute the guidance and information, including the demonstration plots and demonstration farms cooperating with the institutions needed (Agriculture Technology Institute, Agriculture Information Institute, Seed Institute, and Seeds Garden with PPL, PPM, PPS, and other personnel).

vi : To conduct research on land, water, and environmental control and to take efforts to preserve the transmigration settlement region.

vii : To execute the supply of fertilizer, pesticides, food plants, seedlings, yard food (house yard and estates), cattle, fish seedlings, and production facilities and tools for transmigrants.

v : To guide farmers in eradicating plant insects and pests and in protecting cattle from disease in the transmigration settlement regions.

The Department of Trade and Cooperatives is given the following responsibilities :

IV - 20 - f - i : To facilitate the marketing of the transmigrants production.

ii : To facilitate the establishment of "BUUD"/"KUD" in the transmigration settlement regions.

Based on yield and income data, the general conclusions of the IBRD on farming systems and transmigrant welfare were as follows:

. Incomes of transmigrants with two hectares of wet rice in swamp reclamation areas appear to be sufficient to justify the present settlement strategy, if deep peats and acid sulfate soils can be avoided, and if drainage canals and other infrastructure can be provided at relatively low cost.

. Farming systems based primarily on food crops in rainfed areas, entail considerable risk and are therefore appropriate for only a small proportion of the sites to be settled. For this reason, alternative farm models for upland areas are needed.

. Based on recent experience and considering Indonesia's improved resource position, the need to increase transmigrant incomes, to make better use of available land (particularly that over 8% slope), to protect soils from erosion, and to provide attractive benefits for indigenous small holders all point to an increased role for tree crops in the transmigration program.

The farm size and farming system should be selected or adapted to suit the potential of each transmigration site and should be aimed at providing the settlers with an adequate and reasonably secure source of income. AARD will therefore embark on research on several fronts to develop production technologies.

(a) A soil fertility evaluation program. Many nutritional deficiencies such as potassium, phosphorus, magnesium, and micronutrients have become apparent. Through interpretation of soil surveys, areas with specific fertility constraints can be identified and soil fertility evaluation programs can provide answers et the site-specific level. A second aspect to investigate is need for lime in fertilizer recommendations. Excellent dolomitic limestone deposits near many of transmigration areas can be developed easily. Liming has generally not been practiced in Indonesia because of the neutralizing effect of flooding rice soils. But in upland soils it is essential as many of the soils have high Al saturation; even though upland rice and cassava are tolerant to aluminium, they are not tolerant at high levels. The term adequate fertilization deserves scrutiny. It tock five years of rearech in the Amazon by North Carolina State University to understand soil dynamion and fertilizer needs for continuous cropping. Monitoring the changes in soil chemical properties over time is crucial in developing the necessary fertilization rates for intensive systems.

(b) Farming systems research. Must be related to different agroclimatic conditions (primarily determined by soil, topography, elevation, and climate). The production potentials of individual commodities can be tested when necessary to determine what kinds of crops and animals can be grown (i.e., component technology). The crucial research in testing combination of crops, tress and animals as systems to develop the optimum farming practices.

The use of soils of humid tropical regions for perennial tree crop production is relatively well known. Several reasons account for the more advanced state of knowledge. There is a longer history of research by commercial plantations including rubber, oil palm, cacao, coconuts, bananas and other export crops. When tree crops are established, they mimic the rainforest they replaced with some degree of nutrient cycling. Sustained production of rubber and oil palm on Oxisols and Ultisols of Southeast Asia is widespread. These two plants are well adapted to these acid infertile soils, where well managed production systems are stable. Cacao is successful on the more fertile soils; this species, unlike rubber and oil palm, is very susceptible to aluminum toxisity. Profitable cacao plantations have been established throughout the humid tropics of Latin American on Alfisols under intensive management. The management of these three major perennial usually includes fertilization but at generally lower rates than those required for annual crop production because of the small proportion of plant nutrients removed by harvests, thereby allowing for a substantial portion of nutrient cycling to take place. In the humid tropical highlands arabica coffee and ten occupy similar positions. Both species are tolerant to soil acidity but normally require more intensive fertilization than the lowland humid tropical species. Coconuts grow quite well over large areas of the outer islands. Agroforestry, the combination of growing annual crops or pastures with trees, either simultaneously or in sequence, is an attractive alternative for the humid tropics. This subject is receiving increasing attention, but unfortunately very little hard data is available from the humid tropics. Research on tree and industrial crops such as rubber, oilpalm and coconuts has been carried out on the outer islands, although not specifically in transmigration projects.

Food crop systems research is progressing. CRIFE scientists have demonstrated that continuous cropping of the acid, infertile soils is technically possible and profitable under certain conditions. Crop rotations with rice have advantages over successive monocultures : the spread of pests and diseases is slowed. Also the rate of yield declines in unfertilized fields can be substantially lowered when upland rice is rotated with maize and legumes.

Research in fishery production has begun in two sites and research on pastures and in animal husbandry is being planned.

Future investigations could focus on developing integrated farming systems suitable for transmigration projects. The NES concept provides a very promising model for future development. Combination such as rice and fish production and rice and coconuts in wetlands areas are other promising possibilities.

(c) Research could be strengthened in several specific production problems which occur throghout transmigration areas including microdeficiencies of nutrients,pest control (especially wild pigs and rats) blast disease for rice, downy mildew disease for maize, and alang-alang control in pasture development.

(d) Commodity processing could be one of the major contributing factors to success of transmigration efforts. Numerous topics which could benefit from further research include processing cassava and processing coconuts directly to oil (bypassing copra).

(e) Some of the most significant environmental concerns will not be apparent until projects are well underway. Consequently, carefully designed monitoring programs and, as required, research activities could be implemented to follow changes over time.

In large part, this research will have to be carried out in Indonesia by AARD. The sources of technology transfer are generally limited. Experience with tree crops can be gained from other countries in Southeast Asia, notably Malaysia and, possibly, Brazil. However, there are a few sources of experience with food crops under similar conditions, which are widely communicated. The Philippines and ICLARM are beginning research on fisheries and animals but these efforts are young.

5. Alternative Strategies Considered

A strategy is the art of employing available or creatable resources (the approach) to achieve desired objectives. In this case, the resources are professional staff and physical respurces and the objective is increased agricultural development by smallholders in an environmentall sound manner. The prinsiple limiting factors are finances and especially, trained manpower. Therefore, priorities must be applied and alternatives idenfified. Ultimatoly what can be accomplished will depend upon the skill with which the program is planned and implemented and the resources which are made available to finance the implementation.

In his paper "Reorganizing Regular Agencies and Procedures" Arthur Mosher notes:

> Agricultural planning is a complicated task and few countries do it well. In some cases it is little more than a statement of general objectives and an allocation of funds with little or no specification of how the objectives are to be achieved. In others, it consists primarily of developing budgets for individual public agricultural agencies. But the allocation of funds should be only one, and it is not most important aspect of effective planning. Effective planning needs to embrace, in considerable detail, what is to be done within a particular time period, with adjustment of how much of each is to be done being conditioned by available resources of finance and technical manpower.

The success of the strategy depends on a correctly identified objective and can be judged by considering what the result of carrying out the strategy is compared with not doing so. Accordingly an outline of what the transmigration programme would be by 1990 will be described and then the alternative strategies which can be followed will be reviewed.

5.1. Agriculture in 1990 in the Outer Islands

(1). As a basis for all other developments a first essential in that the kinds of land and land use in the outer islands will be well known, as a result of survey and research, and that the information will be readily available to all who can use it. This will ensure that transmigration and orther land development projects are put on the most suitable land available. It will also enable management recommendations and technology transfer to be made with increased reliability. Agro-ecological zoning, reconnaissance soil survey, improved land suitability evaluation, study of farming systems are elements to achieve this.

(2). It is projected that tree crops, especially rubber, oil palm will cover a large part of the transmigration areas. They are tolerant of acid soils, protect the soil, have strong markets and

management and processing expertise developed in estates can be applied to small holder operations. Coconuts, bananas, cloves, cashew etc. will also expand in suitable locations.

(3). Transmigration will increasingly be directed to land reclaimed from alang-alang. In general the soils are no worse that the forest soils although the topsoil is degraded and the weeds dominate because of bad management. The unproductive alang-alang land can be brought back into production while presenting forest intact for timber production or for later agricultural development. Reclaiming alang-alang requires adequate inputs to destroy the grass, fertilisers, and attentive management. Research has taken place in Indonesia and other countries over many years and the methods to be employed are quite well known. However testing under typical transmigration conditions, and determination of the most economic methods for different situations is still necessary.

(4). The future of food crops is more difficult to predict. Rather high applications of fertilisers will be needed to obtain higher yields of rice, maize, legumes etc. Although it is not necessary to try to maximise yields by a high level of inputs, nevertheless even an intermediate level of inputs, aimed at getting 60-80% of the yield by minimum amounts of fertilizers and other inputs, may be beyond the possibilities of farmers in inassessible areas. For them, low input technology with few bought-in inputs to improve traditional farming methods is needed, including appropriate seeds, organic recycling, agroforestry techniques particularly for the home garden. Food self sufficiency is an admirable aim but may be difficult to achieve when farmers are confined to upland soils where returns from attention to tree crops may be higher than to growing low yielding food crops. However, trials to devise suitable cropping systems and management practices, to permit production of food crops as part of the farming system are an esential element in research for transmigration.

(5). Irrigation will play a greater part in the production of rice and other food crops in those areas where it can be installed, although relatively small. Research on soils, soil-water-crop relationships and field water management is essential if full benefit is to be obtained.

(6). The future of livestock could be promising, including in some areas where alang-alang could be fertilised and seeded, and managed to produce improved pastures. Fish production can likewise expand.

(7). The integration of the transmigrants into the regional framework of their new homes should be developing. To assist this process the needs of the region for infrastructure will need to be known and regional plans drawn up, for example for complete watersheds, to ensure a balanced growth.

Thus, although patterns will differ from area to area, the best projection is that tree crops will be the driving force for agricultural development of the outer islands. It is entirely possible that Indonesia could recapture its former role as the leading world rubber producer. Both world and domestic markets appear strong to encourage oilpalm and coconut production. Foodcrops production will depend on a number of economic and technical factors but, most probably, will be supplementary to tree crop production. Animal and fish production will expand if they can be integrated into systems with tree crops and food crops. Forestry, which is needed to provide ecological balance as well as firewood, will hold its own if vigilance is maintained. The development of farming systems suitable for many different circumstances is a research priority.

5.2. Objectives

The role of research is to identify promising opportunities for development; to determine, by experimentation, the best ways of exploiting these opportunities; and to do this in ways that communicate effectively with government planners, cooperating public and private organizations, and the farmers; to promote and guide development in a productive and environmentally responsible direction.

Objectives need to be clearly defined so that progress can be evaluated.

The technology development system must be good science. However that is not enough, it must also make an impact on agriculture. Therefore it must be complemented by institutional strength and policy decisions.

The initial incentive for the government to promote transmigration was to relieve pressure on overcrowded Java, on which two thirds of the population reside on less than one-tenth of the land area of the country. Realistic recent appraisals now view government sponsored transmigration as quick solutions to neither the population problems nor the answer to national food deficits, although in both areas, transmigration can help. Attention is therefore focusing more on the impact of transmigration on the lives of the migrants and on development of regions to which they move, exploiting the previously underutilized resources of these regions. In other words, the implicit objective of the government sponsored transmigration is shifting from an emphasis on numbers of people moved to an attention on performance of the move, that is, to improving the standard of living of the individuals and the country. This change in objectives has not yet been recognized by all the participating agencies.

Good research requires time and continuity. Research results in some areas, such as tree crops and some aspects of food crops, might be applicable to transmigration areas within a year or two, but at least a three to five year time period must be projected to expect results in most areas. Therefore any research planning must be programmed on a rolling basis, annual plans within at least 5 to 10 year time frame. Any evaluation of achievement of objectives should take into account the different time frames to reflect the sequences involved.

Transmigration areas are only a part of the total area of the outer islands. If full attention were devoted to responding to the transmigration challenge, it would consume the whole research capability for the outer islands, if not the country — to the possible long-term disadvantage of national development. Therefore, research support for transmigration should be planned in context of development of the outer islands — of which the transmigration is an important, but only one component. Limited staff and facilities should be programmed with the broader regional development implications explicitly in mind. Research support for transmigration can be viewed as an end but also as a means to a greater end, i.e., development of the outer islands to their full potential contribution to national development.

5.3. Approach

There is general agreement that production research should be carried out on experiment stations as well as on farmers' fields, the question is what should be done where. Interactions among certain production factors are large, others are relatively small, and interaction among still others are insignificant. It is only through experimentation carried out on farmers' fields at sites representative of the major differences in climate, soils, and management that one can expect to arrive at adequate recommendations for farmers for those components of technology whose optimal levels are sensitive to small differences in the production factors. On the other hand, generally, if experiment centers are available at sites with climatic conditions similar to those prevailing in many agricultural zones, those components of crop production technology whose interactions do not vary greatly can be studied effectively under these controlled conditions. Using these criteria, components of crop production technology can be designated as to whether they should be investigated on farmers' fields, experiment stations, or both.

The research system has responsibilities to provide varieties and practices which (1) now have high potential for higher productivity in farming systems under present conditions, and (2) would have high potential for high productivity in systems that might be introduced after the agricultural service institutions have improved to provide the farmer a higher resource base, i.e., the researchers should look to the present and to the future. In many cases the farmers, through their own identification and selection process, are using practices which are higher yielding under conditions which might be expected in the near future, more disease or insect resistant, or more tolerant of extreme weather conditions than those in the researchers' collections. The experiment stations can serve as collection points where these indigenous technologies as well as new technologies can be tested under controlled conditions, so that their relative advantages and disadvantages can be systematically compared.

Historically, the farmer has been the researcher, continuously testing new varieties and practices to discover combinations to best fit his needs within his environment. Therefore, it is logical to expect that the farmer should also contribute significantly to technology generation.

Selected farmers, carrying out practices which they choose to follow, including changes they introduce from one year to the next, should be monitored. Scientists could then encourage changes in the farmer's existing practices selectively, moving upward from the farmer's present practices. The farmer often carries out present practices for valid reasons under the environment within which he must operate. To change practices without also changing the environment (by which it means agroclimatic factors, sociological and cultural considerations, and the service organizations and government policies) may introduce significant risks against which the small farmer has little economic cushion. The farmer is, justifiably, cautious. Failure, for whatever reason, can jeopardize program credibility. Therefore, a step-by-step sequence that accepts the farmer's practices as valid under the existing environment and substitutes or adds (and tests) one or two new practices (including new varieties, if seemingly desirable) each season, at the same time learning from the farmer and developing mutual rapport as the process proceeds, is considered by many to be the likeliest to succeed by the third or fourth year of the effort. Under this approach, diffusion of workable new technologies occurs naturally; after observing results on other nearby farmer's fields, farmers decide which of the new alternatives available they wish to add and under what conditions. And researchers can learn from this process if they watch it attentively.

The transmigration areas provide good conditions for research on farmer's fields. Most of the transmigrants will be new to the area. Some have no farming background. They must be introduced to farming systems appropriate to their conditions. This implies a role for controlled experiments carried to the farm level. On the other hand, there will be some farmers already practicing agriculture in the area. They can be monitored profitably. Furthermore, the transmigrants should learn quickly and they increasingly can be sources of knowledge as they gain experience. Therefore, a combination of controlled experiments and monitoring of farmers' practices must be devised, the particular balance appropriate to each transmigration project being influenced by the particular situation in that project.

Experience has clearly demonstrated that if the end product of successful agricultural technology development is to be adoption by farmers, the farmer and the conditions under which he operates should be key variables

upon which agricultural research focuses. Technologies should be developed for conditions — often quite location-specific — under which the farmer oprates now well as for conditions under which he may be expected to operate in the future after service institutions change (which may bring his field or working environment closer to experiment stations conditions). This approach involves close interaction between experimentation carried out by researchers under controlled conditions and by farmers on their own fields. To an increasing extent the information needed for developing agricultural research systems that are farmer responsive in this sense is becoming available.

5.4. Manpower

Regardless of program, organization, or physical facilities, the most important component is people. Staff requirements can be projected for each of the main and substations, and for every transmigration project. The main stations will have comprehensive programs which will be multi-commodity and multi-disciplinary in nature. Therefore, each would be experted to have a professional staff — with training at M.Sc. degree or higher — of five to ten persons covering at least food and industrial tree crops including soils, agronomy, entomology, pathology, and economics. The substations would be subsequent testing locations for specific components or systems which might appear promising for the particular agroclimatic or economic conditions of the sub areas. Each substation would be experted to have a multi-commodity, multidisciplinary staff — with at least half holding M.Sc, degree or higher — of 3 to 5 professionals. Each of the transmigration projects would be expected to have at least one professional to monitor trials on farmers' fields.

Staff requirements can be filled from one of three sources: AARD staff, expatriates financed by foreign assistance grants and loans, and staff of cooperating agencies.

The main source of the professionals to staff research stations will have to be AARD staff presently being given graduate training abroad and within Indonesia and those staff who are scheduled for future training. Therefore a master plan would be devided to designate AARD staff responsibilities upon return from training. Future staff training would be geared to specific initial responsibilities.

Farm-level trials in transmigration project can be supervised by PPS' and PPL's from the extension staffs in cooperation with AARD staff. This relationship would accomplish two purposes: (1) it would extend the numbers of people available to carry out research and (2) by including extension personnel in the research process, it could facilitate the eventual diffusion of new technologies.

The final category manpower supply is external assistance. There are certain things that external assistance might do well, especially in providing technical expertise in specific problem areas or providing internship-like collaboration with newly-returning staff who have just completed advanced training, and now need to learn practical application of that training. Therefore, external technical assistance from the SARP, AARP, NAR-II, bilateral aid, and eventualy NAR-III should be programmed with this objective in mind.

5.5. Alternative Programmes

Research cannot be initiated in all proposed subcentres or all agro-ecological zones. Priorities must be set. One criteria is to concentrate on the provinces where large scale settlement will occur which are Jambi, Riau, S.Sumatra, S.E.Sulawesi, West, Central, East and South Kalimantan. A second is the most important commodities for the conditions of transmigration, that is rubber, oilpalm, maize, rice, cassava and home garden fruits & vegetables.

Priority can be given to (a) methods of land suittability classification (b) land clearing methods (c) land improvement (d) farming systems with greatest potential.

The locations for farming systems trials can be chosen to make the most use of existing facilities of universities or extension service seed gardens, or the station development components of grants and loans such as the Sumatra Agricultural Research Project and the Applied Agricultural Research Project.

Staff are to be assigned and new staff trained to be phased in as additional locations and programmes are implemented.

Communications with other country research programs and with international research institutes would be strengthened so that AARD can take more effective advantage of technologies developed under similar conditions which might be applicable to improving agricultural production in the outer islands.

This plan could be financed by budgetary appropriations, reallocations of existing external assistance, and new multilateral and bilateral assistance coordinated to achieve phased development. The government could expect to see some impact on food crops production within two to three years after implementation and on industrial/tree crop production within five to ten years after implementation. This, in turn, could be expected to create a "pull" to attract large numbers of spontaneous migrants in response to economic incentives. Thus government policies might be shifted from an emphasis on planned transmigration projects to encouraging spontaneous transmigration.

A second strategy would be to continue on the present course — that is development of physical facilities made available from the Sumatra Agricultural Research Project, the Applied Agricultural Research Project, and NAR-II — none of which is specifically focused on transmigration areas — and from government appropriations, which, because they are routed primarily through the Ministry of Transmigration and BAKOPTRANS, are not assured from year to year and therefore do not provide strong incentives to develop a sustained, productive research program, for the transmigration areas. The government in turn, could expect to see impact on food crop production and industrial/tree crop production which would be below potential, and possibly environmental deterioration due to erosion and encursion by alang-alang grass. Furthermore, it is possible that foreign assistance to support transmigration would decrease. The cost of following the present strategy would probably be high.

5.6. Organization

Some of the practices described in the suggested approach imply subtle, but nonetheless significant departures from traditional practices. For example, regional organization, which is implied in a system attempting to strengthen linkages with farmers, need not affect the strength of commodity research which must have top-level scientists able to respond to the needs of widely different conditions throughout the country. But it will affect the concept of who supports whom within the research program. Instead of considering that regional teams support commodity programs, commodity programs and resident, multidisciplinary production teams should mutually support each other to commodity and income objectives.

A regional organization also may infringe on the concept of commodity or disciplinary specialization which is traditional in many agricultural research organizations. If commodity programs or disciplinary groups are to respect the orientation of the regional teams, it is necessary

to maintain high levels of training of these researchers. But the impression which multidisciplinary work conveys in many parts of the world, i.e., work done by under-trained generalists who have little strength in any single discipline, must also be changed. A multidisciplinary team should be composed of people who are strong in their own fields, but who have enough confidence in their own work and enough respect for other fields that they do not feel the need to defend themselves from others, nor are they affaid to make contributions in fields other than their own.

Further, a strong research system, even over one with strong linkages to farmers, while important, is not enough to ensure accelerated agricultural development. To enable farmers to participate in the market economy, a number of requirements must be met simultaneously. First, productive and profitable combinations of technology must be available. Second, the farmer must be instructed in their use. Third, necessary inputs (seed, fertilizer, pesticides, vaccines, and feed supplements for animals) and credit must be available when and where the farmer needs them and at a price that allows a profit. Fourth, there must be markets for farm products so that the farmer can realize a profit if he wishes to sell. Related to his latter point is the need for governments to maintain incentive prices for farm products — or stated differently, to refrain from restricting prices to producers in the narrow interests of holding down urban food costs. If any of the four requirements is lacking farmers will not switch to more productive practices. Therefore the policy needs to encourage and support a total production program to ensure achievement of desired goals. This requires cooperation among many people and departments, within and outside of government. A successful organization must achieve this mutually supportive cooperation.

In summary, regardless of which strategy is adapted, the research program should be organized so that it has the following characteristics: a) programs respond to achievement of agreed objectives; b) mutually supportive work is carried out among staff within the research organization and with staff of related organizations; and c) signals for research planning and implementation should move from the bottom, i.e., the local level, up as well as from the top, i.e., Jakarta or Bogor, down.

5.7. Budget

Agricultural research and extension is not an inexpensive undertaking. On the other hand, economic payoffs to successful research systems can be high, fully as attractive as from investments in almost any other sector of the economy. Therefore, there should be a strong motivation for the government to provide financial support to the level necessary. Two aspects of budgeting are especially important: (a) continuity of support and (b) maintenance of recurrent costs to ecourage researchers to work on farmers fields and to co-operate with advisory agents on as many levels as possible.

6. Ongoing and Proposed Research

Taking into consideration the possible strategies and programmes mentioned above, certain priorities for research have been set. These can be classified under three main heads.

1. Screening of the land resources and site selection
2. Soil management
3. Farming system research

The component elements on projects within these main fields of effort are outlined below. Some indications are given of the status of funding for the projects, the adequacy of staffing, and other issues when they are relevant.

6.1. Land resources for agricultural developments

There are four elements proposed for research on site selection and characterization for agricultural development;

(a). Agro-ecological zoning of the whole of Indonesia using the methods and computer programmes developed by the FAO Agro-ecological zones project for use at country on regional level. The details of this project remain to be worked out by a consultant from the AEZ project, FAO, Rome. The expected cost is FAO Agro-ecological zones project for use at country on regional level. The details of this project remain to be worked out by a consultant from the AEZ project, FAO, Rome. The expected cost is of the order US $ 500,000 and the time span two years.

This project would be of direct use to transmigration site selection and planning on the macro scale for the best use of all the land in the country. It would also be useful for many other purpose such as population supporting capacity studies, crop production predictions, losses caused by soil degradation and other development problems.

Staff would be available for this project as a result of training in computer methods within CSR. The funding of this project is not arranged yet but GOI has expressed strong interest in such a project.

(b). Reconnaissance Soil mapping and land capability evaluation at a scale of 1:250,000 to delineate potential suitable regions for agricultural development.

This programme of systematic mapping would ensure that selection of transmigration sites will be based on soils information as well as other considerations. It may be expected that as a result a higher proportion of the land will prove suitable for settlement and economies of scale and development costs will be achieved.

It is expected that four teams will work on this producing some 4,000,000 ha of completed survey per year. Two teams are engaged on this work in 1982. The budget for 1983 should include provision for four teams. They are available provided that no further semi detailed surveys are undertaken by these teams. The funds for this work are partly available from the regular budget, but additional funding is required if the rate of progress is to be increased to 4,000,000 ha per year. This may come in part from Transmigration III. In order to plan and implement the surveys in the most economical way, an assured budget for several years is needed. For this reason AARD proposed to request a loan to cover a proportion of the costs of reconnaissance survey as well as other research.

(c). Land resources inventory in watershed regions. The watershed covering 250,000 to 400,000 ha is a suitable unit for studying the integration of transmigration areas into their natural region, and as a basis for integrated land use planning for rural development.

One soil survey team could be expected to complete one watershed per year at a scale of 1:100,000. A multi-disciplinary effort will be needed to plan the use of the land and the best farming systems for the various areas. Co-operation with agricultural advisers and with the farmers is needed to ensure that plans made correspond to the needs of the farmers.

One soil survey team can be made available for this work in 1983 provided that it is included in the budget.

(d). Semi-detailed soil mapping and land suitability evaluation at a scale 1:50,000. Only a few surveys will be carried out directly by the CSR for specific development purposes. Most of the surveys for transmigration will be sub-contracted. The role of the CSR will be to help monitor the implementation and quality control of the sub-contracted surveys. An improved institutional format is required to permit the AARD to play its part more fully in the monitoring of semi-detailed surveys. A task force

under SATDALTRANS appear to be one possible solution since that agency has overall responsibility for site selection for transmigration. In addition the CSR needs to continue its research on improved methods of evaluating land suitability for various crops and cropping systems in order to provide improved guidelines to the sub-contractors and improved production to the plamners.

Means of improving the quality control for the site selection for the Transmigration III seem to be essential. Very large sums of money are involved and the work will mostly be done by foreign contractors. Every effort should be made to increase the training element in these works so that the Indonesian capacity to carry out site selection is improved as well as obtaining the best possible standards of site selection.

A team from CSR is charged with the control of quality of the site selection surveys sub-contracted by the CSR. If the site selection for Transmigration III is to be subject to review and monitoring by increased inputs from CSR then the team would need to be strengthened to permit it to cover more extensive areas. Such increased activities would required additional funds as well as improved institutional arrangements. It has also been suggested that bilateral or multilateral assistance should be sought to strengthen the monitoring team. Futher discussion of this programme by all the agencies concerned seems to be essential in order to achieve an enhanced capability to improved the quality of site selection.

(e) Decentralized Stations. In order to carry out surveys more rapidly and efficiently it is good policy to establish stations for soil research on the outer islands. Two are already partially established, in West Sumatera and Sulawesi but still require building and equipment, and more permanent staff. As the stations gain in experience they will be able to provide specialist advice to agricultural advisers and planners based on the specific local knowledge which will be accummulated. Other stations are planned to follow, when staff are available, in Kalimantan, in Kupang which will be a station for the semi arid tropics, and in Eastern part of Indonesia (Irian Jaya and Maluku).

Funds for establishing the stations at Bukittinggi and Maros are included in NAR II. These stations have been supported by the UNDP/FAO project INS/78/006 with equipment and

supplies and with FAO Staff. The NAR II funds will permit the building of permanent laboratories, offices and other facilities. A nucleus of local staff have been appointed to these stations. Recruitment and training of local staff to be stationed at these and other sub-centres in the outer islands have been initiated. Additional funds will be needed to establish the other proposed stations and will be included in any request for a loan for research development.

6.2. Research on Soil Management

Four research projects have been proposed and details one given in Terms of Reference for Agricultural Research to Support Transmigration of January 1982 (AARD). These researches also be related to agro-ecological and particularly soil conditions so the results can be extrapolated with confidence.

(a). Development of alternative techniques for land clearing

Although clearing by chain saw is preferred because of lower cost and less harmful effect on soil degradation, the government is committed to clearing with heavy machines for the sake of speed. However trials of different methods are being arranged. The resultant effect on crops will be monitored on newly cleared land, and also on previously cleared land, where rehabilitation management has been introduced. This study is to be done is collaboration with USAID/W, Univ. of Hawaii and North Carolina State Univ. The best methods of managing land after clearing will be derived from other research work (see 6.4.).

(b). Applied research on alang-alang control

Control of alang-alang requires that the grass should be damaged by ploughing, or herbicides, then the soil fertility must be raised by application of fertilizers to enable other plants to dominate the alang-alang; finally the land must be intensively managed to keep down the alang-alang and encourage the competing plants. Various methods are possible including flooding for paddy rice where irrigation water is available, conversion to reforestation or planting of tree crops to shade out the alang-alang, intensive cultivation of annual crops with high fertilizer applications, and controlled heavy grazing on improved seeded pastures.

Trials will be conducted in two areas of Sumatera on 120-150 ha sites in the farmers fields. Control measures (manual, mechanical, chemical and biological) will be used in cropping systems based on rubber and coconuts but with intercropping of various food crops and leguminous forage crops for cattle. Measurements will be made not only of the growth and productivity of the environment, that is the enhancement of soil fertility, soil physical properties, erosion and run-off. The trials must continue for five or more years to see whether improvements be carefully studied, since this is the principle unknown.

Staff have been designated for this work, but are part-time. The implementation will depend on the provision of the necessary funds. The cost estimate including incentive payments, is US $ 668,000 of which about half is local currency. This is included in the proposal for TRANS III.

(c). Research on homegarden development in transmigration areas

An important part of the production on smallholdings comes from the small area, about a quarter hectare, which surrounds the house and can benefit from intensive management and applications of ashes and other household wastes. The area is important in the early days of settlement as a relatively secure source of food supply and at a later stage to provide variety in the diet and a certain amount of each crops for sale.

The aim of the research is to work out principles for optimal design of the homegarden adapted to the specific local agro-ecologic and socio-economic conditions. A main feature will be to study existing homegardens as a source of information on the solutions which have been adopted by long established and more recent transmigrants and the success which they have achieved in establishing profitable gardens. The whole framework of the farming system will be studied including sources of seeds and inputs, marketing channels, and perceived problems for homegarden improvement.

A second main activity will be action research on newly opened transmigration projects in Jambi and Kalimantan. In collaboration will be participating farmers, cropping systems will be selected and trial out. The results will be monitored as concerns soil fertility changes and requirements and the results from the various crop combinations. Evaluation of the trials will permit reliable recommendations to be made for other similar areas.

Staff have been designated on a part time basis for this work. Implementation depends on approval and provision of the budget, estimated at US $ 550,000 of which one third is local costs which is included in TRANS III proposal.

(d). Irrigation research. In view of the proposed increase in the use of supplementary irrigation on the upland soils of transmigration areas, it is proposed that research into soils conditions, soil-plant-water relationships, field water control and irrigation practices should be initiated. Little has been done in the outer island though the principles are well understood in Java. Details of research can be worked out in relationship to specific new upland irrigation projects.

6.3. Farming Systems Research in Priority Areas

One of the most important advances in transmigration research is to move away from commodity and sectoral studies in order to develop integrated farming systems adapted to the various agro-ecological zones. This involves studies of the cropping patterns & cropping systems and also of the socio-economic context of the complete farming system.

Work has been in progress on cropping systems research for several years carried out by the Bogor Research Institute for Food crops, with assistance from several agencies in particular IRRI and the Sumatera Agricultural Development Project. Future work will be able to build on the results achieved so far, and various improved integrated farming system can be proposed for adoption under different environmental and socio-economics conditions. Further research is still required on components research for upland cropping systems, and should be done on selected trial sites. Field testing of cropping or farming systems is to be done on farmers fields. A network of trial sites must be establised throughout the country in different agro-ecological zones. Thirteen primary sites are proposed, as reference sites, of which sites have priority in Sumatera, Sulawesi and Kalimantan. An expanded programme must be developed for bringing the results of this research to the attention of the farmers, and for ensuring that the inputs required for implementation of improved farming systems are available.

Two spesific Farming System Research projects are proposed for inclusion in the TRANS III budget; for Baturaja - Martapura and East Kalimantan.

(a). For Baturaja - Martapura farming systems should aim at integrating food crops, perennial crops and annuals into a stable farming system. As the landscape is undulating development must take care to prevent soil erosion. To produce a better income for the farmer inputs of selected seeds fertilizers and pesticides must be provided at the right time. To avoid labour requirements in excess of the available, systems must be devised to reduce labour requirements at land preparation, planting and harvesting.

In this away, by building on past experience, and adding new information from research on and fertilization upland crops, improved farming systems can be developed which can be developed and can be offered as alternative options for the farmers to select. The existing cropping systems team will continue the work with some additional expertise from soils, perennial crops, and animal husbandry experts of AARD. This work is in progress but an additional budget is required for its extension.

(b). For the acid infertile soils of East-Kalimantan the problem is likely to be that the farmers have difficulty in cultivating the whole of the land allocated and resources to perennial or food crops. The optimum allocation of the farmer's production resources is a problem for research. The objective of the study will be to develop component technologies and combine them into holistic farming systems.

The research will be conducted partly on trial stations at three sites in East Kalimantan, and partly on the farmers fields. Various land conditions are present such as flat hill top land, sloping land and steepland to be kept in forest. Components of the systems will be tested such as variety trials, fertilizer trials, land management practices, pest control, and animal husbandry and agro-forestry techniques. The complete systems will also be tested and devised according to the kinds of land which the farmer has.

From the results of these two projects additional projects for the other eleven primary trial sites can be proposed to develop farming systems suited to all the main agro-ecological zones being used for transmigration.

A similar approach has recently been proposed by the FAO programming mission which has prepared an outline of a project document for Agro-ecologicaly Oriented Integrated Farming Systems Development Network (FAO June 1982). This project is in two phases. First to identify and delineate

agro-ecological zones of the country, classify the agricultural suitability (as in 6.1 (a) above) and select operationally feasible pilot areas for pre-production operations. Integrated farming systems would be developed and tested. Plans for the expansion of the farming systems would be prepared including related industries, market infra-structures and suitable community level institutions and local and national support systems to ensure effective implomentation.

The second phase of the project would be the implementation of the expanded programme for integrated farming systems throughout the country with the implementation closely related to local agro-ecological and socio-economic conditions.

This project is still under consideration, it offers a ready made plan for the development of farming systems. Stages of development are suggested for a build-up of the project over 5 years.

6.4. Other Research Related to Transmigration

Other research is in progress on planned which will be of direct value for transmigration.

First is the existing UNDP/FAO project for improving land use in the outer islands. The stations established in Sumatera & Sulawesi have been mentioned above. Further assistance in establishing other stations is anticipated. The research on improved land suitability evaluation will pay off in the near future when the land Evaluation Computer System becomes fully operational and will be able to provide rapid guidance on suitability for various crops and predicted yields. They should improve the quality of the interpretation for transmigration.

A second important research effort is the study which is to be made with the North Carolina and Hawaii Universities (1981), to determine the inputs needed for sustained higher yielding crops on the acid infertile uplands soils. The strategy is to select crop and varieties which are best adopted to conditions with toxic levels of aluminium, low levels of phosphorus etc. Applications of lime, phosphatic and other fertilizers will be kept as low as possible while still achieving large gains in yield. By not trying to achieve maximum yields the amount of inputs can be very drastically reduced. This kind of intermediate input technology is not just less of the high level inputs but a different technology which must be researched. The level of inputs should be within

the possibilities of many transmigrants and other farmers, though many other may have to continue with the low input technology typical of traditional agriculture because of lack of access to the inputs or of marketable products to pay for them. The results of this work will be incorporated into the integrated farming systems as appropriate.

The IFDC will carry out studies on increasing the effectiveness of fertilizer use. The Benchmark Soils Project has also produced data on yields and responses to fertilizers a part of its activities.

The work of the FAO Fertilizer Programme (FAO/TF/INS/53 project) is also expected to produce basic data on recommended fertilizer application for various part of the country which will also be used in developing improved cropping systems.

7. Concluding Comments

Research to support transmigration, and at the same time to develop and make the best use of the land resources of the outer islands, is an essensial elements of agricultural development. A tremendous efforts is necessary because to stand still or make a small effort, is certainly to lose ground. The 17 million hectares of unproductive alang-alang grassland is a measure of the losses which have occurred from inadequate efforts of technology in the past. The outer islands are inevitably going to be developed because of population pressure. The basic issue whether they will be developed responsibly or not. Research can influence that development positively if it is given the sustained support that it requires.

The primary demonstration of committment must be professional and personal incentives, including adequate salaries, to attract and stimulate highly competent people to pursue a real promoting agricultural development. Organisation and program form important, but good people are the key to successful research as in any other activity. It is to provide effective government support that the AARD is endeavouring to establish role in providing those incentives.

The programme outlined above may seem small in relation to the geographical spread and range of research ideally required, but it would be unrealistic to plan a larger programme with the staff available. At issue may be the question of whether research should be slowed to the level which can

be accomplished by trained Indonesian government staff or whether the urgency of the need justifies special employment and contracts to obtain all the expertise needed. The Government Estate companies might contract work, such as operating a laboratory; private contractors can be employed, including the Universities; and if necessary could be contracted from overseas organisations as international agencies, bilateral technical assistance agencies and consulting firms.

Planning of the future research programme for the expansion of agricultural areas based on the development of appropriate integrated farming systems for the main agro-ecological zones, is still in progress. When the details are clearer and the staff required to carry out the programme have been identified, it will be necessary to establish an assured budget for AARD so that it can control the research to be done, plan ahead with security and plan its staffing requirements with accurracy.

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