

Report No. 12988

Indonesia Transmigration Program

A Review of Five Bank-Supported Projects

April 26, 1994

Operations Evaluation Department

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ABBREVIATIONS

DG Pankin	-	Directorate General of Settlement Preparation
DG Rahbin	-	Directorate General of Mobilization and Development
DGE	-	Directorate General of Estates
FELDA	-	Federal Land Development Agency (Malaysia)
FFB	-	fresh fruit bunches
GOI	-	Government of Indonesia
IUCN	-	International Union for Conservation of Nature
LAC	-	Latin America and the Caribbean Region
MNA	-	Middle East and North Africa Region
MOT	-	Ministry of Transmigration
NGO	-	Non-Governmental Organization
ODA	-	Official development assistance
OMS	-	Operational Manual Statement
OPN	-	Operations Policy Note
PCR	-	Project Completion Report
PIR	-	Domestically financed estate projects
PKK	-	Women's groups
PMU	-	Project Management Unit
REPELITA	-	Five-year Development Plan
RePPPProt	-	Regional Physical Planning Programme for Transmigration
SAR	-	Staff Appraisal Report
TGHK	-	Forest use by consensus maps

THE WORLD BANK
Washington, D.C. 20433
U.S.A.

Office of Director-General
Operations Evaluation

April 26, 1994

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

Subject: INDONESIA TRANSMIGRATION PROGRAM:
A REVIEW OF FIVE BANK-SUPPORTED PROJECTS

Attached is the report entitled Indonesia Transmigration Program: A Review of Five Bank-Supported Projects, prepared by the Operations Evaluation Department.

A handwritten signature in black ink, consisting of a stylized 'F' and 'A' with a flourish at the end.

Attachment

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**INDONESIA TRANSMIGRATION PROGRAM:
A REVIEW OF FIVE BANK-SUPPORTED PROJECTS**

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IBRD Maps 17019R, 13914R2, 16770R, 25649, 25689, 25114

**INDONESIA TRANSMIGRATION PROGRAM:
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PREFACE

This Review covers five of the seven Bank-supported projects for the Transmigration Program in Indonesia:

	<i>Project</i>	<i>US\$</i>	<i>Approved</i>	<i>Actual</i>	<i>Closing Date Implement. Delays</i>	<i>Cancelled</i>
Ln.1318	Transmigration I	30.0	07/15/76	04/13/83	17 months	0.02
Ln.1707 Cr.0919	Transmigration II	90.0 67.0	05/29/79	12/31/86	12 months	51.43
Ln.2248	Transmigration III	101.0	03/22/82	06/30/88	12 months	8.26
Ln.2288	Transmigration IV	63.5	05/24/83	03/31/91	39 months	24.87
Ln.1958	Swamps Reclamation I	22.0	03/19/81	12/31/87	12 months	3.87
		373.5				88.45

Some of these overlapping investment operations were also intended to support the Transmigration Program as a whole. In quantitative terms, however, Bank participation in the settlement program has been small: about 10 percent of total investments during the Third and Fourth Five-Year Plans (1979-84 and 1984-89) and less than 5 percent of the families settled during the same period. Thus this Review is not a study of the Transmigration Program.

Prepared by the Operations Evaluation Department (OED), this Review summarizes and distills the findings of the two audit reports¹ and an impact evaluation,² which altogether analyze the experience and impact of these five completed operations. The Review also draws on the proceedings of a workshop held in Jakarta in February 1994 (see Box in Chapter 5), which stimulated an exchange of views between those most interested in the Transmigration Program: government, the private sector and the NGOs.

This Review was prepared by Mrs. Kathryn McPhail, while Ms. Isabel Alegre provided administrative support.

ENDNOTES

- ¹ Performance Audit Report, OED Report No. 11431. December 30, 1992.
² Impact Evaluation on Indonesia, OED Report No. 12874. March 22, 1994.

EXECUTIVE SUMMARY

Introduction

1. The objectives of the Transmigration Program are to improve the living standards and employment opportunities of poor, landless families from the inner islands; alleviate population pressures; promote balanced population distribution and regional development; and increase agricultural production. The scope of the program increased significantly, beginning in 1979 under the Third Five-Year Plan (Repelita III), was scaled back starting in 1986, when government faced budgetary constraints, but is expected to receive almost 20 percent of the 1994-95 development budget.

The Projects

2. Bank support for the transmigration program was concentrated in the early expansionary years: five of seven projects were approved between 1976-83. All had resettlement and agricultural production components, combined with institution building objectives.

3. *Project implementation* was delayed in all projects by between 12-39 months due to poor interagency coordination, budgetary constraints and poor performance of contractors. Both Transmigration II and Swamps Reclamation I benefitted from a mid term review.

4. *At project completion*, the projects slightly exceeded the revised resettlement targets, while roads constructed under the four projects, and land clearing for the five projects, were slightly less than revised target. Slow progress in agricultural development resulted in the economic rates of return for all projects except Transmigration I to be lower than estimated. Actual costs of Transmigration I were slightly higher than appraisal; costs for the remaining four projects were, on average, 45 percent lower than anticipated.

5. The following sections summarize the principal findings in respect of the social, agricultural, economic, environmental and institutional impact of these five projects.

Incomes and Living Standards

6. Have settler incomes increased beyond subsistence levels? Income levels in 1992 for Transmigration I and III were higher than appraisal expectations. This was due to the settler ownership of tree crops, higher than expected rubber yields and a diversity of marketing arrangements. Incomes in the three projects were above the poverty line. This was a substantial achievement since the survey showed that settlers were formerly landless poor from Java and Bali.

7. Was sufficient household income generated from on-farm activities? Over two thirds of total incomes in Transmigration I were drawn from agriculture, the remainder was derived off-farm. On-farm earnings constituted about half for Transmigration II, reflecting the lower returns and unreliable earnings from annual crops, and less than 20 percent for Transmigration III, where rubber trees were just beginning to be tapped.

8. The survey demonstrated the impact of different income levels on housing which, after an

improved diet, was the most important household expenditure. In Transmigration II, 82 percent of settlers surveyed still lived in the modest wood house provided initially, while in Transmigration I, 55 percent had built new homes, to a higher standard. The possession of transport and durable consumer goods was significantly higher in Transmigration I than in Transmigration II and III.

Contribution of Women

9. The projects have had an effect on women's *reproductive role* with the much improved opportunities for education for female children.¹ A greater proportion of those who attended higher education were often girls. Women's *productive role* was generally underestimated. They made a substantial contribution to family incomes derived from both on- and off-farm activities; women's average off-farm income, as a share of men's average income, was 83 percent. Equally important was women's *community management role*. The transmigration sites have become living communities, most of which have grown continuously since establishment. In large part, the strength of these new communities was due to the women's efforts. All villages had active women's groups (PKK) which provided services, opportunities for savings and acted as a social safety net.

Settler Perceptions

10. Settlers in Transmigration I considered themselves to be economically independent and self-reliant. In Transmigration III, probably reflecting the fact that income from rubber was only beginning to come on-stream, only 50 percent felt sufficiently secure to rely on their own future resources. Fully 83-95 percent of transmigrants described themselves as very satisfied with their current situation. The great majority of settlers considered the schools to be a principal benefit, while provision of health services was also widely appreciated. Settlers ranked ownership of a house (and land) as the other principal benefit of being transmigrants.

Agricultural Technology

11. Was the two-stage land development strategy appropriate? At full development, progress in land development was significantly slower than projected both for the cleared area--which was to be planted to food crops and for the uncleared lands--intended for later development by the settlers to tree crops. Cropping intensities were lower than expected due to the reluctance by settlers to use scarce resources in annual crop production on podzolic soils. Project experience confirmed the recommendations of Bank technical staff who had originally proposed a relatively higher cost farm model, based on tree crops for all Bank-supported projects. The lesson has been learned.

12. The tree crop package has not only made an important contribution to poverty alleviation, but if developed well, can contribute to environmental protection. The *1992 World Development Report*² noted the growing evidence of the link between poverty reduction and environmental protection. The survey found that the considerable numbers of spontaneous settlers who moved to the transmigration sites were attracted by the employment opportunities arising from the increased incomes (rather than possibilities for land acquisition) and that their incomes were high.

Economic Impact

13. At or near full development, the economic rates of return for Transmigration I and III were

higher than estimated, due to the inclusion of off-farm income and higher than expected rubber yields due to intensive tapping.

Environmental Impact

14. Most Bank environmental guidelines were drafted after these projects were appraised. Often the Bank correctly identified the potential negative impact on the environment during appraisal--and proposed mitigatory measures. Yet there was only weak, or no, monitoring and follow-up of these environmental considerations during project implementation.

15. In respect of *deforestation*, there was no follow up by the forestry department in Transmigration II and IV. When viewed alone, it is likely that no single transmigration site, tree crop area, logging concession, or industrial timber plantation resulted in a loss of forest or biodiversity that had any great significance at national level. It is only when they are viewed in combination that their serious and unmitigable impacts can be appreciated. *Land clearing* was not carried out according to guidelines established at appraisal. OED was informed by one of the private companies planting oil palm in the project sites that land clearing practices have been improved. All projects suffered from destruction of crops by *pests*. While this was understandable during the earlier projects, later projects should have been more cognizant of this issue.

16. There was a major negative and probably irreversible impact on *indigenous peoples* particularly the Kubu Rimba who depend on the forest for their economic and spiritual livelihood. With the extensive forest clearing now underway in Transmigration II as part of the development of the uncleared areas to oil palm, the Kubu Rimba have been displaced.³ In 1984, they requested the Governor of Jambi province to allocate an area close to the Duabelas Hills as a conservation area, but no action has yet been taken.

Institutional Aspects

17. Institutional arrangements were changed from one project to another: wide distribution of responsibilities between line agencies; a single project authority; and overall coordination of line agencies by the then newly formed Ministry of Transmigration. Only the single project authority proved effective. Yet this approach was dropped after Transmigration I/III.

18. An implementation model where the local administration gradually assumes responsibility, adequately supported and supervised by a central authority (MOT) through a PMU could be considered. Greater degree of ownership at the local level may improve road maintenance, for example.

Next Steps

Implications for Government

19. Government has shown commendable prescience in redirecting the focus of the program institutionally--to include the private sector. This strategy builds on the strengths of the MOT--which has been successful in resettlement objectives and the strengths of the private sector--to develop lands efficiently and to provide the necessary marketing arrangements.

20. In the domain of environmental protection, however, government must maintain a central role. The Spatial Use Management Act, 1992, and subsequent regulations are commendable steps in ensuring that the impact of development projects at the regional level is taken into account.

Experience from these projects would suggest that action is still needed on protection of forests and land clearing practices. Regulations are not being effectively implemented. Another approach would be to provide incentives to the private sector to undertake land clearing in a sustainable fashion, and to the active village organizations to become involved in protection of forests. External funds should be made available to assist in the protection of the remaining forests.

21. Certain actions have yet to be taken:

- assist the Kubu in reestablishing their livelihood in a protected forest area;
- ensure that the Dayaks in East Kalimantan receive compensation for the lands acquired for the project;
- encourage the establishment of processing and marketing arrangements for hybrid coconut in East Kalimantan; and
- allocate the 20,000 ha of compensatory forest lands which were used for the development of Muara Wahau in Transmigration IV.

22. The following would strengthen accomplishments to date:

- arrange for women to receive extension advice;
- provide credit for small businesses for women in the transmigration sites; and
- ensure that the RePPP maps are freely available for regional development.

Implications for the Private Sector

23. Private companies should be given incentives to undertake land clearing according to established guidelines and be held accountable, including performance of subcontractors. For example, companies could be required to pay a "green tax" at contract signing, which would then be refunded when the company submits evidence that land clearing followed the guidelines.

Implications for Local Communities

24. Land clearing operations may be undertaken in a more sustainable fashion if settlers have land title to their individual plots. The survey showed that only 37 percent of households in Transmigration II had title to the land which is now being cleared for tree crop development, although a covenant in the loan agreement expected that settlers would receive land title within five years from arrival at the site (by 1990 at the latest). Similarly, thought needs to be given as to how local communities can become more involved in forest protection and management. The NGOs could play a useful role.

Implications for the Bank

25. Government commitment is critical to project success. Where there is a conflict between the technical recommendations of Bank staff and government objectives, focussed monitoring from an early stage would provide timely information, permit a mid-term review, and enable mid-course correction to be undertaken, if necessary. If this had been done for Transmigration II, then the lesson regarding the appropriate agricultural technology would have become apparent earlier.

26. A notable exception to the slow lesson learning process was Bank support for site selection and planning. A number of Bank settlement projects have highlighted the need for proper field investigations being undertaken in advance of settlement. The Bank moved quickly to provide support when the difficulties became apparent during implementation of Transmigration II. Nevertheless, the fact that monitoring and evaluation was either weak, or not implemented, in the five projects suggests greater attention to this issue.

27. There are two outstanding issues regarding environmental impact. The Bank should help the Government strengthen its *land clearing* and *forest protection* regulatory framework, and, where appropriate, prepare *regional environmental assessments* rather than project-specific environmental assessments.

28. Project experience, particularly in respect of the environmental impact, may result in calls for more, and more detailed, Bank guidelines. There is the danger that guidelines will become mechanical checklists, with little opportunity for the exercise of judgement. The guidelines cover the salient features. The priority, therefore, should be on how to strengthen project implementation to ensure that the adequate Bank and government guidelines which are already in place are actually applied.

ENDNOTES

¹ The benefits of educating women in terms of the impact on their reproductive and productive roles have been well documented in Bank research work.

² *World Development Report*. The World Bank. Oxford University Press. March 31, 1992.

³ Transmigration II was approved prior to OMS 2.34 (February 1982) which outlined Bank policies and procedures in respect of tribal peoples and OMS 2.33 (February 1980) which governed resettlement issues.

1. BACKGROUND

A. Introduction

1.1 Indonesia, the fourth most populous nation in the world, is faced with considerable regional disparity between land and population. Out of 180 million people, more than 100 million live on Java, an island with excellent soils. Nevertheless, there is also increased urbanization, small agricultural holdings, environmental degradation and increasing numbers of landless people. In contrast, the outer islands have more land, less dense population, a large portion of the natural resources and higher incomes in rural areas.

1.2 Transmigration, one of the largest land resettlement programs in the world, has been largely a response to this inequitable distribution of land and labor in Indonesia. Under the Transmigration Program, about 750,000 families, or over 3.6 million people have been resettled at government expense between 1903 and 1990 on the less populated outer islands, where they have received a house in a new village, two to three hectares of land and a subsistence and production package during the early settlement years. Most applicants for transmigration have been young and landless agricultural laborers and their families.

1.3 Between 1976 and 1993, the Bank supported the Transmigration Program through seven loans totalling US\$ 560.0 million equivalent. Five Bank-assisted projects consisted of transmigration schemes in the uplands of Sumatra and East Kalimantan, and two projects supported swamps reclamation in coastal lands of Sumatra. A third project: the Integrated Swamps Development is under preparation. The five Bank loans included in this Review were the first, second, third and fourth Transmigration projects and the first swamps reclamation operation.

B. Project Objectives

1.4 The five projects included resettlement and agricultural production components, combined with institution building objectives.

- Transmigration I, approved in 1976, was a pilot operation intended to test strategies for agriculture, social, and economic development of transmigration sites in upland areas. The loan provided US\$ 30.0 million for the settlement of 4,500 families at one site in Sumatra, with rehabilitation of an existing site where 12,000 families were already settled. Each family was to receive 5 ha, to be developed in two stages: the first by the project which included one hectare planted to rubber and the second by the settler himself at a later stage.

- Transmigration II, approved in 1979, with an estimated cost of US\$ 242.0 million equivalent, was to resettle about 30,000 families in four sites along the Trans-Sumatra highway. Each family was to receive a 3.5 ha annual crop farm to be developed in a similar two step process. The annual crop was expected to be largely food crops, to address the food security problem in Indonesia at the time.

- Transmigration III was approved in 1982 and aimed at resettling 2,000 families in the same location as Transmigration I, but on a smaller, 3.5 ha food crop and tree crop plot, also to be developed in two stages. The total cost was expected to be US\$ 187.3 million equivalent.
- Under Transmigration IV, approved in 1983, 6,000 families were to be resettled in a remote area of East Kalimantan for a total cost of US\$ 121.0 million equivalent. Each family was to receive a 3.25 ha food crop and tree crop (hybrid coconut) plot, to be planted around a government estate and a future oil processing plant.
- In Swamps I, approved in 1981, 3,200 families were to receive a 2.25 ha farm, to be developed in two stages for paddy and other crop production; project costs were estimated at US\$ 44.6 million equivalent.

The five projects included land clearing, construction of villages and related social and physical infrastructure, construction of settler houses, provision of agricultural services, tree planting (in Transmigration I, III and IV), and construction of a drainage system (Swamps I).

1.5 Assisting the government in its planning capability became a component of Transmigration II and was the major component of Transmigration III (65 percent of project costs). This consisted of identification, selection and planning of sites for further settlement of 300,000 families. Training, agricultural research and assistance for monitoring and evaluation were other institution building components of all projects.

C. Project Implementation

1.6 Project implementation was delayed in all projects due to poor interagency coordination, budgetary constraints, poor performance of contractors, and a variety of other reasons, specific to each project. In Transmigration I, implementation was affected by weak project management, procurement problems and poor contractor performance. In Transmigration II, detailed site investigations revealed a relative scarcity of flat lands for annual crop development, resulting in a 30 percent reduction of the resettlement target. In Transmigration III, rubber development was delayed by two years but the resettlement target was reached. The site selection component, after a slow start, completed plans for about 40 percent of families estimated at appraisal. Implementation of Transmigration IV, the only project situated in Kalimantan, was affected by land clearing difficulties, late arrival of settlers and repeated damage to standing crops from wild boar; the settlement objective in terms of families moved was very slightly less than planned and smallholder coconut planting exceeded appraisal targets. The planned first stage of the government estate was not implemented. No processing facility was built. In Swamps I, insufficient project preparation, soil problems and crop damages by wildlife gave rise to a special action program, including modification of the farm layout, land re-clearing and construction of fences.

D. Project Results at Completion

1.7 At project completion, in terms of physical achievements, the projects supported the resettlement of 34,553 sponsored families and 1,176 spontaneous families which, combined, constituted 101 percent of the revised targets or 76 percent of SAR estimates for sponsored settlement. Actual roads constructed under the four projects were 95 percent of revised targets or 108 percent of SAR projections, while land clearing (excluding reclearing) for the five projects was 91 percent and 76 percent, respectively. Slow progress in agricultural development resulted

in the economic rates of return for all projects except Transmigration I to be lower than had been estimated at appraisal (para 2.14). Actual costs of Transmigration I were very slightly higher than appraisal--due to delays in implementation; costs for the remaining four projects were, on average, 45 percent lower than anticipated due to reduction in scope and devaluation of the Rupiah against US\$.

E. Monitoring and Evaluation

1.8 Despite great expectations, monitoring and evaluation was either weak, or not implemented, in the five projects. This issue was given high priority at appraisal of the first project, the objective being not only to monitor the socioeconomic development but also to identify alternative strategies to encourage settler participation in the establishment of viable communities. This was described by the PCR as the weakest component. Design was over ambitious, implementation was delayed, there were funding shortages, while the limited results were descriptive, weak and not accurate. The audit considered that concentrated and decisive Bank intervention during supervision could have resolved these issues. It noted that this *lacuna* meant that it was not possible to draw firm conclusions as to what (i) the optimum level of public investment should be, or (ii) the minimum critical investment intensity for the sustainability of the new settlements.

1.9 In Transmigration II, despite a covenant to this effect, the monitoring and evaluation unit was not established and the systems developed by consultants to monitor financial and physical progress and to measure socio-economic impact were not instituted. By contrast, a management/monitoring system was established in Transmigration IV at the site/provincial/central level, but the system could not be implemented after the consultants' departure since the necessary interest and skills were not readily available.

1.10 An effort to strengthen environmental monitoring was tried in Transmigration III, but the audit found that the structural linkages were weak within GOI to utilize research and environmental findings. A study financed under this component made proposals for a low level early warning system for emerging environmental problems in transmigration areas. The proposals, however, were rather theoretical and very broad in scope. Appropriately in Swamps I, there was provision for both environmental and social monitoring to permit the respective impacts to be determined, but the component was not implemented.

1.11 Information on monitoring and evaluation of environmental effects in the PCRs was weak or missing (para. 4.25).

F. Main Conclusions of the PCRs

1.12 The PCRs presented the following conclusions and issues common to the five projects:

- (i) project preparation was uneven and, with the exception of Transmigration I and III, selection of sites was poor resulting in considerable implementation delays;
- (ii) procurement problems and poor performance of contractors were frequent in all projects;
- (iii) the standard upland annual crop development model proved inadequate, as it did not take into account the variety of sites and land conditions and their aptitude for production of specific crops; flexibility in farm models, including the development of tree crops in addition to food crops, would have been a preferable solution;

- (iv) food crop development, through the assumed well-managed system using adequate production inputs proved unrealistic and unsuited to the combination of poor quality soils, settler inexperience and inefficient extension services;
- (v) the second stage development, which was to be undertaken by settlers without government support, did not materialize as most settlers gave preference to off-farm employment rather than to land development;
- (vi) interagency coordination remained weak in the three projects where there was an absence of a strong project authority, responsible for all aspects of development. This had an adverse effect on project implementation; and
- (vii) access and connecting roads were poorly maintained, isolating many villages from the market in the rainy season and placing a heavy burden on local administrations.

G. Main Findings of the Audits

1.13 The audit of Transmigration I,¹ which was undertaken one year after loan closing, concluded that the settlement objectives had been reached, the health and education facilities supplied as planned and the remaining infrastructure built. The tree crop development was well executed and yield projections were revised upwards. For annual crops, the PAR doubted the PCR conclusion that under certain conditions sustained food crop production on red/yellow podzolic soils was feasible. It also questioned the replicability of the model with the relatively large farm size (5.0 ha), high level of technical support and the absence of cost recovery, even for the tree crop investment. The audit accepted the PCR's re-estimate of the economic rate of return as 17 percent.

1.14 With the benefit of the one to five year perspective since loan closing, the cluster audit² of the follow-on four projects concluded that all four projects had achieved their resettlement objectives despite the difficult natural conditions of the project areas. In all villages, schools and health centers were constructed and adequately staffed. The audit noted the stability of the settler population, the replacement of families who had dropped out by new immigrants, the fact that since project completion, the number of settlers had increased by between 5-20 percent due to spontaneous migration. The settlers themselves said that they considered their new life to be better than the opportunities available on the inner islands. Given the size, scope and logistical factors involved in relocation and resettlement, the audit concluded that this was a remarkable accomplishment. In East Kalimantan, indigenous people welcomed the arrival of the settlers, seeing this as providing improved access to physical and social infrastructure. The Dayak communities, however, had not received compensation for acquired lands, at the time of the audit in 1992.

1.15 Nevertheless, the planned agricultural development necessary to sustain the settlements in economic terms was deficient. The audit concluded that, as a result, three of the four projects were unsatisfactory. Settlers were not able to develop their land fully; cropping intensities and yields of annual crops were significantly lower than anticipated. Main reasons were shortages of family labor and low use of animal traction, inexperience of settlers combined with inefficiency of supporting services, preference given by settlers to off-farm employment, soil degradation, erosion and marketing difficulties. Tree crop development was satisfactory in Transmigration I and III, but not in Transmigration IV, where the coconut plantation had been partly destroyed by fires, and adversely affected by poor natural conditions and marketing difficulties.

1.16 The cluster audit also found that while the Bank had had some success in integrating environmental concerns into the site selection planning process, nevertheless, the four projects

had had a more severe impact on the environment than might have been the case if lessons from similar projects in land settlement had been applied and implemented. Many of the proposed mitigatory measures proved unrealistic or were not sufficiently monitored either by the Bank or government.

1.17 The audit of Transmigration I concluded that there were valuable lessons for future transmigration projects although inadequate monitoring hampered the evaluation. The audit also noted that the contribution of this particular project to the understanding of settlement was modest, since all the follow on projects were designed differently in an effort to address different problems or to bring new solutions. The more important lessons were:

- The key ingredient of the success of this pilot operation was flexibility, as demonstrated by the PMU and its ability to coordinate across agencies.
- Sustainability was enhanced by the tree crop component with prospects for good settler incomes in the medium term.
- The importance of involving settlers in site selection and land development--if this were more practiced this would improve overall settlement quality.

1.18 The cluster audit concluded that there was a need for certain immediate actions:

- early development of coconut processing and marketing facilities in Transmigration IV;
- acceleration of the process of granting land titles to settlers in Transmigration IV;
- the importance of a wildlife/forest expert for site selection, planning and development;
- since sponsored settlement, if successful, attracts a large number of spontaneous migrants, the need to identify, gazette and protect necessary conservation areas to avoid encroachment on adjacent forests; and
- the 20,000 ha of compensatory forest lands for the development of the Muara Wahau site in Transmigration IV should be gazetted as quickly as possible.

ENDNOTES

¹ Performance Audit Report, OED Report No. 5157. June 25, 1984.

² Performance Audit Report, OED Report No. 11431. December 30, 1992.

2. SOCIAL AND ECONOMIC OUTCOME

2.1 The Indonesian Transmigration Program has been, and continues to be, controversial within the Bank and the international community. Supporters think that despite its flaws, the Program has succeeded in settling millions of people in a safe and orderly fashion, thus alleviating pressures on land in Java and other inner islands and contributing significantly to the development of the outer islands. Opponents argue that considerable resources have been wasted in settling people, who have not been able to move beyond subsistence level, with extensive damage to the environment, including destruction of rain forest and wildlife, loss of topsoils and deracination of tribal people. This Chapter reviews the social and economic impact, the technical package and institutional development strategies which underpin these outcomes are explored in Chapter 3, while environmental issues are treated in Chapter 4.

SOCIAL IMPACT

A. Incomes

2.2 Have settler incomes increased beyond subsistence levels? Data are available from a specially commissioned socioeconomic survey undertaken as part of the impact evaluation¹ for the first three Bank-supported projects. Figure 2.1 shows that income levels in 1992 were above the poverty line and higher than SAR expectations:

- In Transmigration I, where tree crops were at full development when the survey was undertaken in 1992, the average annual income for 5,000 *sponsored families* was US\$ 1,620, ranging between US\$1,490 - 2,065. In the follow on Transmigration III where tapping of rubber trees had just begun in 1992, prospects for similar income among the 2,000 sponsored families were good.
- Average income for the 19,000 *sponsored families* in Transmigration II, which provided annual crops only, was US\$614 ranging between US\$430 - 820. While this was above 1992 poverty level of US\$460² it was below self sufficiency level of US\$690.³
- Average income of the *spontaneous settlers* ranged from US\$715 in Transmigration II, to US\$1,066 in Transmigration I and US\$1,221 in Transmigration III. Spontaneous transmigrants primarily settled in Transmigration I and III, where they constituted over 30 percent of households and were attracted by employment opportunities rather than land.

2.3 The ownership of tree crops provided by the project explained the higher incomes in Transmigration I, and will do so in the future in Transmigration III. Settlers also benefitted from higher than expected yields of rubber and a diversity of marketing arrangements.

2.4 The Transmigration Program has also been criticized for not generating sufficient incomes from on-farm activities--families being forced to seek off-farm employment. The survey found that

over two thirds of total incomes in Transmigration I were drawn from agriculture, the remainder was derived off-farm. Figure 2.2 highlights the contribution of tree crops. On-farm earnings constituted about half for Transmigration II, and to less than 20 percent for Transmigration III. This was also reflected in employment data. Off-farm employment was less important in Transmigration I, where 42 percent of respondents had income from non-farm sources, than in the more recent Transmigration III, where the rubber trees were not mature and 97 percent of transmigrants were employed off-farm. Off-farm employment was important for over two thirds of families in Transmigration II, reflecting the lower returns and unreliable earnings from annual crops. Transmigrants' sources of income differed considerably from SAR projections. The SARs for all three projects expected that either tree crops or annual crops would comprise almost all household incomes.



Improved settler houses--Transmigration II (Photograph 1).

2.5 An interesting finding from the impact evaluation, and one which was not expected at approval, was the diversity of off-farm incomes. In addition to pensions, which were important in Transmigration I and at one site in Transmigration II only, the 1992-93 survey identified ten significant sources of off-farm income, which ranged from sustainable activities such as small businesses to non-sustainable activities such as gold prospecting and income from forests. The most important, in value terms, were wage labor in estate crops (Transmigration I and III), trading (Transmigration I and II), and woodworking/crafts (Transmigration II and III).

B. Living Standards

2.6 A striking finding was that these transmigration sites had become living communities, most of which continued to grow continuously since establishment. In 1989, the latest data which were available, the 6,500 sponsored families in Transmigration I and III had grown to 7,960 families, while 3,619 spontaneous families had moved into these communities. At impact evaluation in 1993, many of the resettlement sites, particularly in Transmigration I, were thriving villages with a broad range of commercial activities as well as social and cultural entertainment. Where rubber was the principal

Figure 2.1: Average Family Income & Poverty Level (RP m)

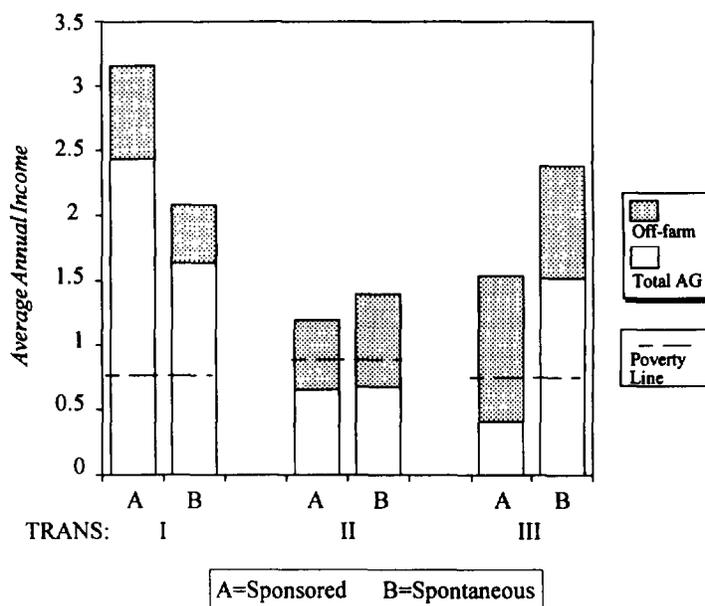


Table 2.1: Percentage of Families Owning Durable Goods

	<i>Transmigration I</i>	<i>Transmigration II</i>	<i>Transmigration III</i>
Cars	4	0	0
Motorcycles	30	6	8
Bicycles	81	61	60
TVs	45	6	23
Radios	68	50	58
Sewing Machines	12	5	13

Source: Socioeconomic Survey, 1992-93.

crop, growth occurred after commencement of substantial cash income from rubber. In Transmigration II, the more modest growth was primarily related to the absence of a strong commercial crop base to generate savings.

2.7 The survey demonstrated the impact of different income levels on housing standards which, after an improved diet, was the most important household expenditure. In Transmigration II, 82 percent of settlers surveyed still lived in the modest wood house provided initially, while in Transmigration I, 55 percent had built new homes, a substantial proportion of which were of brick, with tile roofs and glass windows (**Photograph 1**). Some had two storeys.

2.8 The possession of transport and durable consumer goods was significantly higher in Transmigration I than in Transmigration II and III. Expenditures on consumption goods reflected both the relative incomes and the age of the sites. Table 2.1 shows that in Transmigration I, the oldest and most wealthy, 45 percent of the families surveyed had a TV, 81 percent had a bicycle and 68 percent a radio. In comparison in Transmigration II, six percent had a TV, 70 percent a bicycle and 49 percent a radio. Within Transmigration II, in the oldest site, Kubang Ujo, 10 percent had a TV, all families had a bicycle and 70 percent a radio.

C. Women

2.9 Table 2.2 analyses the projects' impact on women as well as their contribution to project sustainability, principally through development of viable transmigration communities in the new sites.

2.10 The projects supplied much improved opportunities for education among both male and female children. All children attended primary school, thereafter attendance depended on the distance to secondary schools, labor constraints within the family and sufficient funds for school fees. Few children pursued higher education, but a higher proportion of these were often girls, especially if boys had off-farm employment opportunities or were engaged in rubber tapping. The benefits of educating women in terms of the impact on their reproductive and productive roles have been well documented in Bank research work.⁴

2.11 The 1992-93 survey showed that the role of women was generally underestimated particularly in regard to: on- and off-farm labor contribution, barter and exchange of goods and the development of small businesses. Previously most women were landless, with only seasonal work. In Sumatra, however, of the women surveyed, 25 percent worked on-farm, 26 percent worked off-farm, this particularly in the tree crop development, while over half were active in

small businesses. Women reported that they were happy to work together with their husbands taking an active role as providers of the family.

2.12 As a result of these increased productive activities, women made a substantial contribution to family incomes derived from both on- and off-farm activities. In the households surveyed, for those women who were working, their contribution was significant. Women's average incomes as a share of men's average incomes was 83 percent. Principal activities undertaken by women were home industries, handcrafts, trading, wages from working in estate crops. Overall, women's average income from all off-farm activities was Rp 438,348 (US\$214) compared to men's average off-farm income--Rp 531,307 (US\$259).

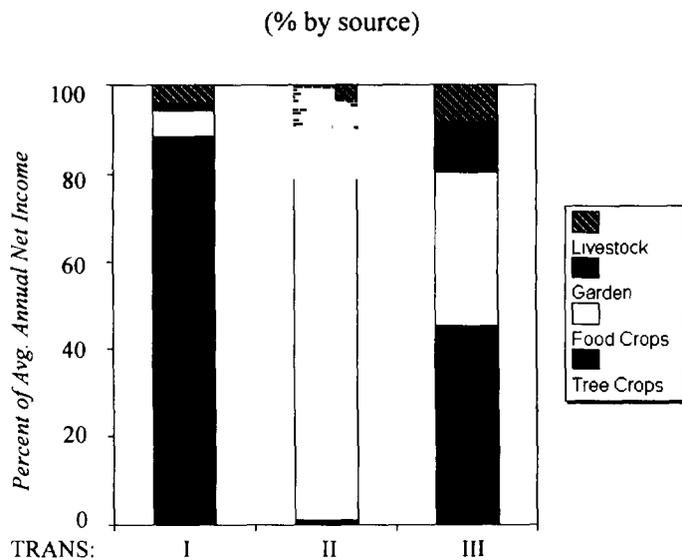
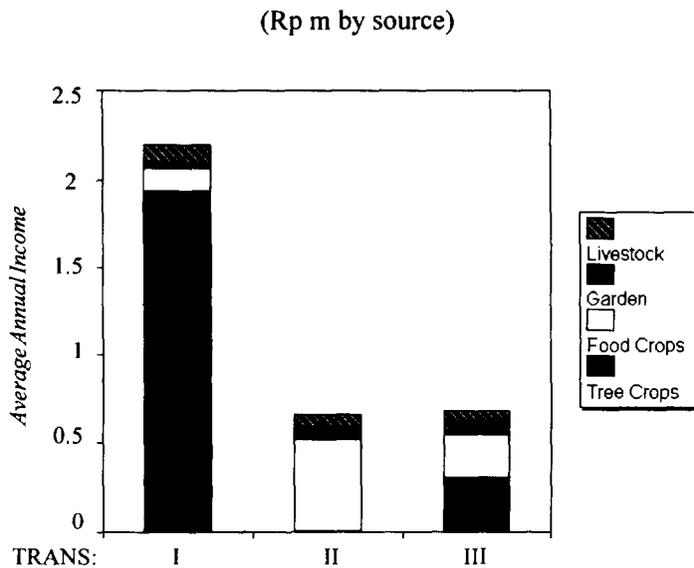
2.13 An equally important role was women's contribution to community management. The field investigations showed that these relatively new communities in Sumatra were viable and strongly rooted. Settlers, having overcome the initial period, which for many was very difficult, had no intention of returning to Java or Bali. Most families continued to visit friends and relatives there but were happy to return to their homes in Sumatra. In part, the strength of these new communities was due to the women's efforts. All villages had active women's groups (PKK) which provided services, opportunities for savings and acted as a social safety net (**Photograph 2**). Women's support for each other was strong as many lacked the extended families they would have had in Java.

Table 2.2: Gender Roles

	<i>Responsibilities</i>	<i>Women</i>	<i>Men</i>	<i>Impacts Due to Transmigration</i>
A. REPRODUCTIVE ROLE	Child bearing Domestic tasks Care and maintenance of workforce and future workforce	✓		✓
B. PRODUCTIVE ROLE	Work done for cash or kind Market and subsistence production (cash, use or exchange value)	✓	✓	✓
C. COMMUNITY MANAGING ROLE	Provision and maintenance of scarce resources . health care . education . childminding . entertainment Voluntary unpaid work	✓		✓
D. COMMUNITY POLITICS ROLE	Community level organizing at the formal political level paid directly or indirectly through status or power	Minor Role	✓	✓

Definitions from Caroline Moser. Gender Planning and Development: Theory, Practice and Training. 1993.

Figure 2.2: Distribution by Average Agricultural Income



ECONOMIC IMPACT

2.14 The economic rates of return (ERRs) were recalculated in 1993 for Transmigration I, II and III⁵ using the same assumptions as those in the PCRs but having the advantage of more recent data on yields, prices, production, area cultivated, and off-farm income as derived from the 1992-93 survey. ERRs of the Transmigration IV and Swamps I projects, were re-estimated by the audit in 1992. The results are in Table 2.3.

2.15 The revised rate of return was 19 percent for Transmigration I. The difference between the SAR estimates at full development and the revised PCR estimates⁶ was due to including off-farm income in the impact re-estimates. Excluding off-farm income, the ERR was 15 percent, only slightly lower than the PCR forecast. This difference was accounted for by the lower levels of income from food crops and livestock than estimated in the PCR.

2.16 The 25 percent re-estimated ERR for Transmigration III was considerably higher than both SAR and PCR forecasts. This was similarly due to the inclusion of off-farm income (without off-farm income, the ERR was 19 percent). Another factor was that the additional rubber was planted earlier than previously estimated⁷ while intensive tapping was also assumed. The analysis was not very sensitive to variations in costs. The major uncertainty concerned rubber tapping intensity and timing of planting additional rubber trees which greatly affected yields.

2.17 The ERRs of the Swamps I and Transmigration IV projects were re-estimated by the audit to be marginal. The lower re-estimates when compared to either the PCR or the SAR were due to the fact that: in Swamps I, the area under cultivation per family was only 0.9 ha instead of the 2.25 ha anticipated at appraisal, while in Transmigration IV there were cost overruns, delayed benefits, reduced yields of coconut, and low price of copra. The impact evaluation recalculated the ERR for Transmigration II to be about 0--less than the PCR estimate--the small difference between the two was due to the higher actual agricultural costs.

2.18 The economic analysis as applied does not attempt to capture all the costs and benefits of transmigration to society. Most importantly, the benefits of reducing population pressure on

Table 2.3: Economic Rates of Return

	<i>SAR</i>	<i>PCR</i>	<i>Audit/Impact</i>
Transmigration I	11.5	16.6	19
Transmigration II	12.0	2.7	0
Transmigration III	14.0	11.3	25
Transmigration IV			
· Muara Wahau	11.5	6.0	Marginal
· Sangkulirang	11.0	4.5	
Swamps Reclamation I	13.0	6.0	Marginal

Java and the environmental costs have not been quantified and included in the analysis. At best the economic analysis serves to illustrate economic viability of different models for transmigration. Of the five Bank supported transmigration projects audited so far (Transmigration I, II, III, IV, and Swamps I), only the two projects based on rubber production have proven economically viable.

D. Lessons

2.19 Several lessons can be drawn:

- All socioeconomic surveys undertaken by OED for its impact evaluations have shown that a principal objective of almost all farmers is to secure a *guaranteed* income. Levels of income are less important than the security. Thus the assumption that settlers would be content with annual crops--which are inherently risky in these soils and in rainfed conditions, was contrary to farmers' priorities;
 - even a 1 ha plot of tree crops, if properly developed, will provide sufficient income to permit repayment of development costs, or self-financing of new tree crop development and can generate employment opportunities for business activities;
 - given women's contribution to agricultural activities, it is important that women also receive extension advice--this could be channelled through the extensive network of PKKs; and
 - credit and loans need to be supplied to women to develop further small businesses. All the settlement sites have tremendous opportunities for the development of such enterprises; and
- both the private companies and NGOs should work with the women as well as for them.



Ibu Dibyo, second from left, with members of PKK of Kuaming Kuning I (Photograph 2).

ENDNOTES

¹ The survey interviewed settlers benefitting from the tree crop/annual crop package in Transmigration I and III as well as those with the annual crop package only in Transmigration II.

² Equivalent to 320 kg of milled rice.

³ Rice equivalent 480 kg.

⁴ See particularly, Paul Schultz: Women and Development - Objectives Frameworks and Policy Implications. Working Paper WPS0200. 1989.

⁵ For the calculation of rubber yields the impact evaluation took into account a gradual increase in the farmers' investment in rubber plantation as they start harvesting the early crops, as well as an increase in the intensity of rubber tapping which was noted in the PCRs and in the survey for both Transmigration I and III. Accordingly, the active life of the rubber trees was assumed to be only 15 years, with four years of intense tapping at the rate of 2.47 tons/ha per year.

⁶ The higher than forecast ERRs was due to the expectation that both yields and prices of rubber would be higher than estimated at appraisal.

⁷ There was some uncertainty about the magnitude of farmers' own investment in additional rubber and about rubber maintenance and harvesting costs; the latter has been assumed similar to costs in Transmigration I where more reliable data were available.

3. FACTORS EXPLAINING OUTCOME

3.1 The good incomes of settlers in Transmigration I and III--as well as the lower incomes in Transmigration II--were due to the agricultural technology adopted and the institutional strategy employed. These issues are explored below.

A. Agriculture Technology

(i) Size of farm

3.2 Both the cluster audit and the impact evaluation found that settlers were unable to develop their full plot on their own (Figure 3.1). In 1992, progress in land development was significantly slower than projected by the PCRs. In all the projects, cropping intensities were lower than expected. Lahan I--which was cleared by the project and was to be planted to food crops--was not fully utilized by the settlers; and Lahan II--which was to be developed by the settler to tree crops at a later stage--with a few exceptions, was not developed at all. Because of some progress in double cropping, combined with the unexpected and increasing planting of rubber and fruit trees by the settlers, cropping intensities have slightly increased in Lahan I since project completion but remained on average less than half appraisal expectations. Of note was the remarkable progress in the southwestern, and less swampy, part of Swamps I since project completion, contrasting with the north-eastern area, which had been partly abandoned by the settlers due to oxidation and thus extreme soil acidification, as a result of poor soil and water management. Yields of rainfed paddy and other food crops were also significantly lower than projected in all projects, with the exception of maize.

(ii) Annual crop model

3.3 During the preparation of the Transmigration II and Swamps I projects, the proposed high input annual crop farm model was criticized by Bank agriculturists and soil specialists who recommended a development approach based on tree crops, preferably rubber. This was due to the environmental conditions prevailing at most project sites--which were more suitable to inexperienced farmers--as well as to the typical humid tropical soils--which by their nature are of relatively low fertility and acid by circumstance. Many Bank staff also questioned the validity of the proposed two-stage development, arguing that settlers would probably not be able to develop the second plot, Lahan II, on their own.

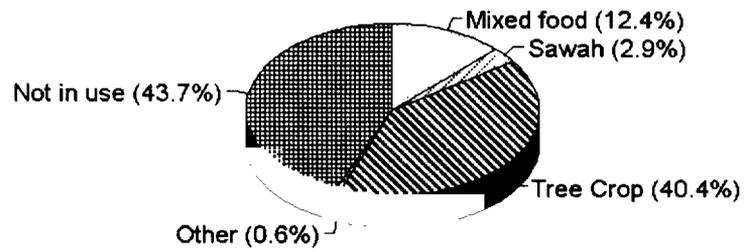
3.4 Nevertheless, Bank managers rejected the objections of their own professional staff with tropical crop management experience on the grounds that the Transmigration Program was to be a low cost operation, incompatible with tree crop development. The cropping pattern was based on a high input/high output model with sharp labor peaks, requiring sophisticated management and timing. The cropping intensity was assumed to be 2.0.

3.5 The technical specialists were proved correct. The lesson has been learned, in that the food crop model was changed in the mid eighties. Nevertheless, with an effective monitoring system, the lesson learning process could probably have been faster (para 3.15).

Figure 3.1: Land Utilization

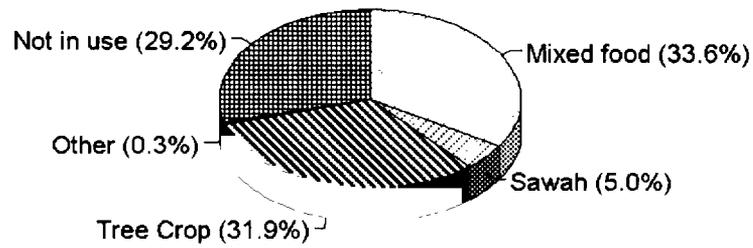
TRANS I

Total land available: 5,1 ha



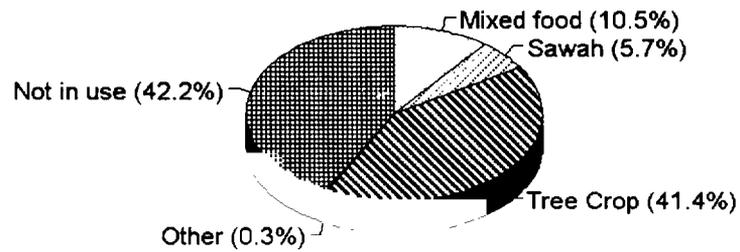
TRANS II

Total land available: 3,6 ha



TRANS III

Total land available: 3,7 ha



3.6 In practice, the mixed cropping system never developed as intended because of a multitude of constraints: poor soil conditions, pests, inadequate access to markets, shortage of capital, and poor extension service. The result was a low input agricultural system with limited subsistence annual crops and slow expansion into tree crops (fruit and rubber) as resources allowed and reliance on off-farm employment for cash income. The appraisal expectations for food crops in Transmigration II and III were highly unrealistic, if not faulty. At impact evaluation, most of the sites in Transmigration II were not sustainable with this mode of production.

(iii) Tree crop model

3.7 At impact evaluation, the tree crops model in Transmigration I and III was sustainable, the sites were located on the best soils and mostly undisputed land in the given area. Input, skills and technology for rubber cultivation were available, and distances to the main markets for both rubber and other crops were relatively short. A recent and positive development in Transmigration II in the post-project completion period is the intervention of private companies which had started planting to tree crops (oil palm) all project lands left uncultivated by the settlers in three of the five sites; plans are under discussion for the remaining sites. Construction of processing and marketing facilities in Transmigration II was also underway. The tree crop model in Transmigration IV was not sustainable due to the lack of processing and marketing facilities. Unfortunately, the private sector had not showed much interest in this. In Swamps I, the difficulties in managing a large part of the soils at the site placed the sustainability of production in these areas in doubt. Nevertheless, in the swamp areas, there were some positive developments since project completion both in terms of research results and their demonstration/ extension results in farmers' fields. These could lead to higher production levels and with a more diversified cropping pattern than originally anticipated at appraisal.

B. Institutional Aspects

3.8 From the outset, institutional problems plagued the Transmigration Program. During the third Five Year Plan (1979-84), four ministries and fifty-three different government or provincial agencies were involved in program implementation, without adequate coordination mechanisms. Institutional arrangements were changed from one project to another: wide distribution of responsibilities between line agencies in Transmigration II and Swamps I; a single project authority for implementing Transmigration I and the Baturaja component of Transmigration III; and overall coordination of line agencies by the newly formed Ministry of Transmigration under Transmigration IV. In all projects except Transmigration I and III, the decision making process was weak and time-consuming; interagency coordination was poor during project implementation. The worst case was Transmigration II where as many as 12 Directorates of four Ministries assisted by 6,000 staffmonths of consultants, were involved in project implementation without adequate coordination. In Transmigration IV, coordination was somewhat better under the newly established Ministry of Transmigration, but, even then, it had no real authority over the line agencies, resulting in poor timing of land clearing, construction of houses and arrival of settlers.

3.9 The absence of a strong and integrated institution with the interests of the settlers as a major concern, proved even more crucial after loan closing, as illustrated by the situation in Transmigration IV, at the time of the audit in 1992. There, the distribution of responsibilities between a large number of agencies meant that not a single person or institution was actually responsible for the project as a whole. Another example of poor coordination after loan closing included the arrangements with the private sector for the development of Lahan II. These arrangements were made largely by one agency of the Ministry of Agriculture. At impact evaluation, project settlers had not yet been informed of these arrangements.

3.10 In contrast with the weak and changing institutional systems of these Bank-supported projects, the effectiveness of FELDA in Malaysia and the Mahaweli Authority in Sri Lanka has demonstrated that settlement projects have a better chance of success if they are implemented by a stable and strong autonomous agency, with a clearly identified plan and strategy. FELDA's experience has also shown that the conditionality attached to land ownership is a key incentive in settlement projects, as it encourages settlers to accept discipline and gives government leverage to develop an orderly settlement system. These two ingredients of success have been missing in the Transmigration development strategy. One reason given by some Bank staff for not recommending the FELDA or Mahaweli institutional approach was that the large size and distribution of the Transmigration Program in Indonesia would result in a huge and unmanageable institution and the relative importance of the transmigration budget in provincial development. In fact, FELDA has remained a relatively small agency because of its concentration on tree crops and, therefore, most of its investments have been contracted to the private sector, a solution which has been implemented by the Indonesian Government since the budgetary problems in 1987.¹

3.11 The impact evaluation offers the opportunity to assess the longer term effects of the different institutional arrangements for implementation. After administrative responsibilities were transferred to local authorities--which was the case in about fifty percent of the villages surveyed--the evaluation did not discern any difference in terms of quality of operations and maintenance between the PMU approach and the line implementation arrangements.

3.12 Local (district level) authorities were seldom involved in planning or implementation of what, in many places, amounted to a 50 percent increase in population and infrastructure. As a consequence the local authorities were ill prepared to manage integration of the new "implanted" society at project completion.

C. Lessons

3.13 Several lessons can be drawn:

- although tree crops were used in the farm models of Transmigration I, III and IV, the farming system continued to be partly based on the high input annual crop model despite its obvious failure in the two early projects. In Transmigration IV, the Bank was unable to convince government of the need to organize coconut processing facilities, thus creating insurmountable marketing problems for the project settlers. In retrospect, the Bank-supported projects have been an example of poor technical decisions on the part of the Bank, due to the insufficient preparation and attention given by Bank managers to Bank technical advice and a lack of internal consultation.
- Transmigration I and III were criticized as being high cost operations. While settlement costs per family, varying from US\$ 5,100 (Transmigration II) to US\$ 13,000 (Transmigration III) were lower than those of tree crop Bank-supported projects in Malaysia (about US\$ 20,000), the costs per developed hectare (US\$ 5,000 on average) were about the same, because part of the project area was not developed at all. Another low cost alternative would have been a smaller farm of about 2.0 ha (the size of farm which most settlers in non-Bank-supported projects receive), of which 0.5 ha would be to food crops and 1.5 to tree crops; this would have provided a better chance to increase settler incomes than the recommended 3.5 ha food crop farm model to be developed in two phases.
- the necessary building of local capacity, both quantitatively and qualitatively, cannot take place simultaneously with the building of the new transmigration society, as long

as resource flows bypass the District (Kabupaten) administration. An implementation model where the local administration gradually assumes responsibility, adequately supported and supervised by a central authority (MOT) through a PMU should be considered.²

D. Lesson Learning Process

3.14 It is widely recognized that government commitment is critical to project success. Where there is a conflict between the technical recommendations of Bank staff and government objectives, if the management decision is to proceed with the project, then focused monitoring is essential from an early stage in order to provide timely information to be able to determine what is the appropriate strategy. This implies a mid-term review, and that the project has sufficient flexibility to enable mid-course correction to be undertaken, if necessary. If this had been done for Transmigration II, then the lesson would have become apparent earlier than was the case. Such monitoring would, therefore, help both the Bank and government to learn the lessons and thereby improve the quality of the investment operation.

3.15 Similarly, the Bank needs to review its own process of lesson learning across regions. During the past twenty years the Bank has supported more than fifty Government-sponsored land settlement projects in the Africa, Asia, LAC and MNA Regions. The Ejido Program in Mexico (3.9 million families) and Transmigration in Indonesia (750,000 families) have been the most important land settlement activities supported by the Bank. A large number of OED audits and impact evaluations--as well as a special study³ covering 34 projects--have been issued by OED during the past ten years.

3.16 Regarding agricultural development, Bank experience has shown that project success has been closely related to the introduction of production systems designed to raise the net incomes of the beneficiaries. Out of eight projects classified "very successful" by the OED land settlement study, four were tree crop-oriented (Malaysia and Papua New Guinea), two included high value annual crops (Sri Lanka and Peru) and two were livestock projects (Ethiopia and Colombia). Conversely, projects which promoted traditional food crops (Atlantico in Colombia, Panuco in Mexico) were generally not economically viable and failed to move settlers beyond the subsistence level; in most cases, settlers resisted the proposed production model and preferred off-farm employment to land development.

3.17 Institutional arrangements in land settlement projects have been reviewed in depth in a number of OED documents, which have concluded that well managed and adequately staffed statutory authorities with overall responsibility for settlement and development, including crop processing and product marketing (FELDA in Malaysia, Mahaweli Authority in Sri Lanka) have been more successful during the early stages of the development process than independent line agencies responsible for their respective functions which often encounter severe coordination problems. The first Transmigration Bank-assisted project was efficiently implemented by a single project authority. Despite the audit finding that this had been a key element explaining the success of the project and the PCR recommendation that this system be retained at least for the larger schemes, this approach was not continued.

3.18 As most land settlement projects were located in remote and undeveloped areas the likelihood of poor natural conditions was high. Soils were generally of poor quality and water resources were sparse. This highlights an important lesson for settlement projects: the importance of proper field investigations being undertaken in advance of settlement. OED findings have been that a majority of the Bank-assisted settlement projects were characterized

by serious or moderate environmental problems, including soil erosion, pollution and land degradation associated with inadequate farming systems. The OED land settlement study has also concluded that environment problems are often exacerbated when spontaneous settlers outnumber government-sponsored settlers.

ENDNOTES

¹ Bank-supported projects in Papua New Guinea are also a successful example of a joint venture with a leading oil palm company.

² A decentralized (provincial) implementation model was suggested for Transmigration II, but rejected as too complex.

³ The Experience of the World Bank with Government-sponsored Land Settlement. OED Report No. 5625. May 1, 1985.

4. ENVIRONMENT

4.1 This Chapter reviews the positive contribution which the Bank made to integrating environmental concerns into the site selection planning process, a component which was developed once the difficulties in finding the suitable sites became apparent in Transmigration II. It then reviews the impact of these five projects on deforestation, land clearing, pests, suitability of the agricultural packages and indigenous peoples. Finally, the Chapter reviews Bank processes associated with these projects and lessons for Bank operational guidelines.

A. Institutional Strengthening

4.2 Prior to the first Transmigration project in 1976, the Bank shied away from supporting projects with the potential for substantial negative environmental effects. Beginning in the mid seventies, however, the policy changed. Through its involvement in such projects, the Bank thought it would be able to provide technical assistance and institutional strengthening where necessary, in order to mitigate severe environmental damage.

4.3 At impact evaluation, the Bank can claim considerable success in developing a reliable information base to strengthen site selection for the Transmigration program overall. This began under Transmigration II when the difficulty of finding suitable sites first became apparent and was continued under Transmigration III and V. The Bank pursued the correct strategy and supplied considerable resources to this effort. Site selection and planning supported under these three projects comprised three parts:

- Phase I: *aerial photography and base mapping* for regional development maps at a scale of 1/250,000, described as the RePPPProT maps.
- Phase II: *settlement planning studies*--site screening and evaluation to a scale of 1/50,000.
- Phase III: *feasibility studies* to a scale of 1/20,000.

4.4 The RePPPProT (Phase I) maps were successfully compiled. They gave Indonesia its first country-wide resource/land use/development potential maps, collating a large quantity of information from many departments. What was much less successful, however, was the application of the RePPPProT maps to the site selection pro-



Land clearing in Kuaming Kuning (Photograph 3).

cess. There was insufficient integration of the information gathered into the subsequent planning process of the Phase II and III studies, in part because responsibility for RePPPProT was based in a directorate far removed from the program units responsible for implementation.

4.5 Nevertheless, as a result of the site selection studies, a large number of sites were rejected for resettlement. Reasons included land suitability problems--flooding, drainage, deep peat, steep slopes, poor soils, or located in production forest.

4.6 The extent to which the completed Phase III plans can be seen to be useful is examined in two ways. First, the extent to which the sites were actually settled and second, how the planning process assisted in subsequent policy formulation. Over 23,000 families (79 percent) of the 30,000 families for whom site settlement plans were prepared under Transmigration II were settled as of February 1992. For Transmigration III, up till the same period, only 12,150 families (6 percent) had been settled of the 214,926 families for whom plans had been prepared. This was due to the reduction in new site development following budget restrictions in 1986, recognition that the food crop model had substantial social, economic and environmental costs and subsequent classification of settlement sites as production or protection forest.

4.7 The input into policy formulation was most evident in respect of Irian Jaya, where about 40 percent of families were expected to be settled. During preparation of the Phase III studies the potential impact of transmigration on indigenous peoples became clear. This, together with government budget cuts and criticism from NGOs, resulted in the strategy being scaled back.

4.8 The site selection and planning component constituted about 44 percent (or US\$ 61.4 million) of the revised project costs for Transmigration II and 65 percent (or US\$ 117.0 million) of project costs for Transmigration III, while Transmigration V was exclusively devoted to this, with actual project costs of US\$ 122.3 million.

B. Environmental Impact

4.9 Five principal themes are reviewed: deforestation; land clearing; pests; sustainability of the agricultural technical packages; and impact on indigenous peoples.

(i) Deforestation

4.10 Some considered attempts have been made in the last few years to place numbers on the level of deforestation caused by different agents, but the data available are so poor that the reliability of any estimate is low. The impact of spontaneous transmigrants on the remaining forests are cause for concern since they undermine government policies on sustainable development, permanent forest estates, and conservation.

4.11 A 1986 report¹ found that the impact of Bank-supported projects on deforestation in Indonesia was small. In almost all provinces, land allocated to sponsored transmigration was less than 10 percent of the defined conversion forest and less than one percent of the total forest area. About 30 percent of the land prepared for transmigration settlements had been forested (including logged-over forest). However, in 1986 not all the allocated forest had actually been cleared, and the land cleared for the access roads and developments along them were not included in the figures. Also, in terms of conservation, the aggregated figures disguised the fact that certain forest types, such as those on shallow peat soils, had suffered a loss much greater than 10 percent.

4.12 When viewed alone, it is likely that no single transmigration site, tree crop area, logging

concession, or industrial timber plantation resulted in a loss of forest or bio-diversity that had any great significance at national level. It is only when they are viewed in combination that their serious and unmitigable impacts can be appreciated. Unfortunately, under legislation in force at the time these projects were prepared and implemented, there was no provision to consider the cumulative impact of development projects, which should have been the primary issue when conversion of Sumatra's lowland forests was concerned. Beginning in 1992, this is now a requirement. The Spatial Use Management Act, 1992, is based upon the following principles:

- the utilisation of space for all interests in an integrated, effective and efficient, harmonious, balanced and sustainable way, and
- openness, justice, equality and legal protection.

While implementing regulations for this Act have not yet been agreed upon, the new regulations² for environmental impact assessments (AMDALs) in Indonesia require that impacts be viewed on a regional basis. Although this development is too late for Sumatra's lowlands, it should be commended. The cumulative impact of investment projects is an important issue, but this has not yet been adopted in many Bank-supported projects. A 1993 Bank report³ noted that although regional environmental assessments were an alternative to project-specific environmental assessments, few had been undertaken.

4.13 There are national guidelines in Indonesia for the protection of forests. These guidelines establish criteria by which each province should allocate forest areas within its boundaries, on the basis of objective criteria which have been established: access, rainfall, topography and soil types. Forest areas are classified according to: conservation (to preserve bio-diversity); protection (to protect hydrological functions); and limited production forest, regular production forest and conversion forest. Nevertheless, the maps (TGHK) which form the basis for this classification are inadequate from an environmental viewpoint. They are not sufficiently detailed and accurate to draw boundaries between different forest categories. Indeed, one of the major contributions of the RePPPProT studies was defining the changes in forest status that were necessary if the Government's criteria for land use designation were to be applied properly. New spatial planning maps are being drawn up by each province to replace the TGHK and to be in line with the Spatial Use Management Act. These are based upon the RePPPProT studies.

4.14 Another issue of concern is how to protect remaining blocks of forest. As indicated in Map IBRD 25114, in 1993 some of the conservation areas and other parts of the recommended permanent forest estate were already devoid of forest and attrition from the forest edge and from around enclaves continues unabated. The cumulative impact of clearing forests on surrounding forest needs to be recognized--this even for secondary or logged over forest. The latter is still of significant ecological importance.

(ii) Land clearing

4.15 Land clearing was not carried out according to guidelines established at appraisal.⁴ Slopes over 8 percent had been cleared, trees were bulldozed into waterways, erosion measures along contours were not undertaken, the opportunity to introduce settlers to a range of forest products was lost and no attempt was made to harvest the commercial timber left partly burned in the fields. The impact evaluation found that these practices were continuing (see **Photographs 3 and 4**). Land clearing is now being done by the private sector. OED was informed by one of the private companies planting oil palm in the project sites that land clearing practices have been improved and **Photograph 5** documents this. **Photograph 6** shows the impact of poor site



Quarz sand in Kuaming Kuning in recently cleared area (Photograph 4).



Current land clearing operations and cover planting in Kubang Ujo (Photograph 5).

preparation, together with poor land management for annual crops.

4.16 Government regulations in general are appropriate and adequate, but there appears to be little or no capacity to enforce the rules. Another approach would be to provide incentives to the private sector to undertake land clearing properly, since it is government's intention that all the lands currently undeveloped should be done so under the aegis of private rather than public companies.

(iii) Pests

4.17 Lesson learning was slow. All projects suffered from destruction of food crops or tree crops by wild pig, rat, tapir and, in Transmigration IV, monkey; in Transmigration IV, 3,100 ha of coconut development required rehabilitation/replanting. While this was understandable during the earlier projects (although pest attack has been prevalent before the Transmigration Program) later projects should have been more cognizant of this issue and information made available to new settlers as to how to deal with this problem. The fact that this was still a problem at full development of the projects demonstrates that dissemination of lessons/practices need improvement.

(iii) Sustainability of the agricultural technical packages

4.18 At impact evaluation, the relatively high erosion rates in Transmigration II showed the unsuitability of the annual crop

model, unless practices were used such as were found in Kubang Ujo. Topography was suitable. Farmers had adopted a cropping pattern of peanut/cassava/soya which suited the soils. There was no use of, or need for, herbicides since land clearing had been done in a manner which avoided *alang alang* (grass) infestation. Farmers were using organic manure and were terracing lands. In general, however, the tree crops model is the only sustainable package and this lesson has been learned.

(v) Impact on indigenous people: The Kubu

4.19 There has been a major negative and probably irreversible impact on the Kubu in three transmigration sites in Transmigration II: Kuaming Kuning, Hitam Ulu and Kubang Ujo. This fell most severely on about 670 members of the Kubu Rimba (people of the forest), or 10 percent

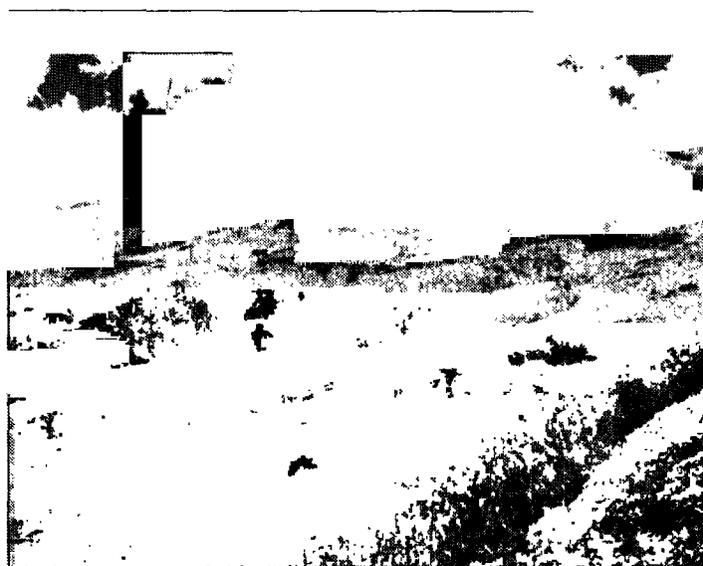
of the entire existing tribe. Three villages of Kubu Dalam (people of the interior) were also affected, but the impact was less severe since these people had already become sedentary cultivators. The Kubu Rimba depend on the forest for their livelihood, collecting rattan, natural rubber, fruits and honey in exchange for utensils, salt and tobacco with villagers living along the river banks (see **Photograph 7**). The forest also contains the remains of ancestors, who are individually and collectively venerated, as well as sacred trees which are linked to individuals of the tribe. With the extensive forest clearing which is now underway as part of the development of the Lahan II to oil palm, the Kubu Rimba have been displaced. Some have sought shelter in the Duabelas Hills, others have found employment opportunities in collecting forest products, still others are subsisting in small enclaves between transmigration sites and rubber plantings belonging to local smallholders.

4.20 The Kubu Rimba are adaptable, many had begun planting rubber trees in the late 1970s in an effort to secure outside recognition of their lands, but the scale and pace of deforestation has proved difficult to adapt to. In 1984, they requested the Governor of Jambi province to allocate an area close to the Duabelas Hills as a conservation area. This was agreed to by the Governor, but no action has yet been taken.

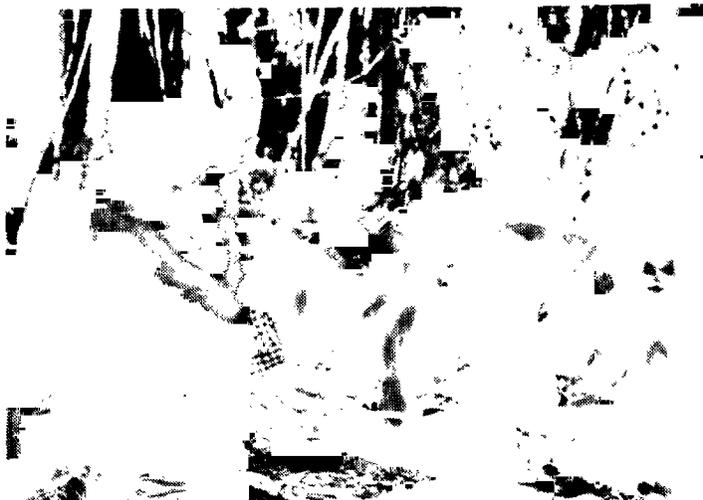
C. Bank Processes

4.21 The cluster audit reviewed how Bank processes--of appraisal, supervision and completion reporting--treated environmental issues. It found that many issues were identified at appraisal--the potential for soil erosion, possibility of declining soil fertility, need for protection against pests and disease, possible adverse effects on wildlife and deforestation, impact on indigenous peoples, the need to strengthen capacity for management of natural resources. Frequently, however, the participants (the Bank, government or settlers themselves) did not follow or follow-up on the mitigatory measures proposed during implementation.

4.22 A few issues were not treated in depth at appraisal. Only Transmigration II discussed the potential project impact on the wildlife populations; this was not reflected in the staffing requirements for the technical advisory group involved in the planning of site selection. This aspect is inter-linked with the questions raised regarding deforestation--forest loss can be trouble free only if there is a regional perspective and it is part of a wider strategy. The adverse impact--in terms of reduction of wildlife populations--



Soil erosion in Kuaming Kuning (Photograph 6).



Indigenous Kubu Rimba (Photograph 7).

of forest clearing has been noted in other land settlement projects⁵ and is a central theme of the OPN 11.02 on Wildlands, dated June 2, 1986.

D. Bank Guidelines

4.23 Most of the Bank's environmental guidelines were drafted after these four projects had been appraised. To what extent does project experience confirm or otherwise the substance of subsequent Bank operational guidelines on the environment?

4.24 In general, Bank guidelines are appropriate. In these projects, deforestation was treated in a narrow context with little attention given to either spatial or temporal settings. For example, the Staff Appraisal Report for Transmigration II expected the Forestry Department to advise on the zoning of the remaining forest surrounding the sites. There was no mention of the Forestry Department in the PCR; the audit found that this had not been done. The major weakness, which was evident in other projects, was the lack of 'contextualization' or an area/regional perspective. Will useless forest islands be formed? How will the loss of forest affect other areas and their wildlife? What protection measures are in place to conserve the remaining forests from spontaneous settlers? OMS 2.36 issued in May 1984, requires projects to be considered in their total setting and with respect to the ability of the authorities concerned to manage the environment. Another example, Transmigration IV, was sited close to a proposed reserve--the Sangkulirang Limestone Forest Nature reserve. This is the most extensive area of limestone on the island of Borneo and harbors habitats not represented anywhere else in Kalimantan. The proposed reserve was regarded as Priority A by IUCN (1986), a Key Reserve by ODA (RePPPProT), and a proposed National Park (World Bank 1990). OMS 2.36 states that the Bank will not finance projects which would significantly modify natural areas designated by international conventions as national parks.

4.25 Guidelines are useful, however, only if they are implemented. The audit noted the following shortfalls:

- Care was given at appraisal of Transmigration IV to ensure that OMS 2.34 on Tribal Peoples was followed--although some families have not yet been compensated for the loss of communal lands, in general, the Dayak community appreciate the arrival of the settlers.
- The Wildlands policy (OPN 11.02) provides for compensatory measures when lending results in adverse impacts. In Transmigration IV, compensatory forests were agreed upon at appraisal to replace the 20,000 ha of forests which were cleared but, despite Bank urging, the necessary reclassification by the Ministry of Forests has still not been undertaken.
- Reporting on environmental issues in the PCRs was insufficient. OMS 2.36 required that the PCRs describe 'the results of the environmental measures provided in the project and comment on their appropriateness, costs, adequacy and administration and any problems arising or changes made in the course of the project. None of the PCRs have conformed to this guideline.

E. Conclusion

4.26 Most of the Bank's guidelines on the environment were drafted after these projects were appraised, thus it is not reasonable to judge project impact on the environment in terms of standards

which were not in effect at that time. In very many cases, however, the Bank correctly identified the potential negative impact on the environment during appraisal--and proposed mitigatory measures. Yet the audit and impact evaluation reports showed clearly that there was only weak, or no, follow-up of these environmental considerations during project implementation. To a great extent, therefore, the environmental damage which has occurred was not as a result of ignorance but rather more from inattention, poor follow up and lack of accountability during project implementation. The Portfolio Management Task Force on Effective Implementation highlighted the need for closer attention to implementation processes. This Review concludes that there are two key issues which are deserving of high priority in this regard: protection of existing forests and land clearing practices. Both are subject to adequate government/Bank guidelines. More thought needs to be given as to how these can be properly implemented. One solution may be to provide incentives: to private companies, which are currently primarily responsible for land clearing; and to local communities, which need to have a much greater role in protection of forest areas.

4.27 There is need for better dissemination of information/lessons learned. The RePPPOT maps should be used for site selection and they should be freely accessible to all parties interested in regional development. Lessons on how to deal with pests in resettlement sites should be widely circulated. There is unfinished business: the impact on the indigenous peoples needs close follow-up both by government and the Bank.

4.28 The negative impact of these Bank-supported projects on the environment may result in calls for more, and more detailed, Bank guidelines. There is the danger that guidelines will become mechanical checklists, with little opportunity for the exercise of judgement or experience. The guidelines cover the salient features. The priority, therefore, should be on how to strengthen project implementation to ensure that the adequate Bank and government guidelines which are already in place are actually applied.

ENDNOTES

- ¹ The Transmigration Program in Perspective - Indonesia. Report No.10929. World Bank. July 1988.
- ² Government Regulation No. 51, 1993.
- ³ Annual Review of Environmental Assessment, 1992 Sec M93-212 dated February 25, 1993.
- ⁴ These requirements were not attached to the loan agreement as conditions.
- ⁵ Impact Evaluation Report: Malaysia - First, Second and Third Jengka Triangle Projects (Loans 0533, 0672 and 0885-MA). OED Report No.5988. December 1985.

5. FUTURE PROSPECTS

A. Country Assistance Strategy

5.1 The most recent Country Assistance Strategy for Indonesia was discussed by the Bank's Executive Directors on April 12, 1994. Bank management outlined six key objectives in support of Indonesia's development strategy: continuation of a stable macroeconomic policy; the central role of private sector development and competitiveness; the goal of poverty reduction--with particular emphasis given to social impact, gender and participation issues; improved public sector management and institution building for environmental management.

5.2 The findings of this Review show that these Bank-supported projects have made a significant contribution to many of these elements:

- At full development, settlers' incomes were *above the poverty level*, in some cases significantly so, while prospects for others were good with the planned private sector development (para 5.5). This was a substantial achievement since the survey showed that settlers were formerly landless poor from Java and Bali. Settlers in Transmigration I considered themselves to be economically independent and self-reliant. In Transmigration III, probably reflecting the fact that income from rubber was only beginning to come on-stream, only 50 percent felt sufficiently secure to rely on their own future resources. Fully 83-95 percent of transmigrants described themselves as very satisfied with their current situation.
- The settlement sites provided settlers with much increased opportunities for *human resource development*. The great majority of settlers considered the schools to be a principal benefit, not only were education facilities more plentiful, but school fees were lower than in Java or Bali and thus parents could afford to keep their children in school longer. All female children benefitted from the improved access to education. Women made an important contribution to the viability and sustainability of the new communities. The provision of health services was also widely appreciated.
- improved social *infrastructure* was also a reason for satisfaction--settlers ranked ownership of a house (and land) as the other principal benefit of being transmigrants. Many have improved their homes significantly over time. A common theme throughout the audit and impact evaluation reports, however, was the poor quality of road maintenance. This not only affects marketing prospects but could also be a disincentive to further private sector involvement.
- involvement of the private sector is well established (para 5.11).
- *protection of the environment* is an area where considerable strengthening needs to take place--as was outlined in Chapter 4.

B. Future Directions of Ministry of Transmigration

5.3 Similarly the Ministry of Transmigration sees several of these components as integral to its future directions. The 1986 review by the Bank of the Transmigration Program identified the major problems confronting the program and made recommendations for improvement. This and the experience in ongoing projects were used to expand the dialogue between the Bank and the Government on future transmigration investment. As part of this dialogue, in September 1987, the Minister of MOT issued a revised policy statement which addressed most of the issues raised, including (i) the importance of developing a sustainable economic production base for each settlement--new and existing; (ii) greater integration of the settlements in the regional development structure; (iii) improved cost effectiveness, including the involvement of the private sector; (iv) rational land use at sites and avoidance of inappropriate production systems; (v) protection of the human and physical environment; and (vi) improved settler selection and transfer procedures. These policies were reflected in the improved orientation of the program which has been evident in recent years in the approach to site selection, production models, private sector involvement, and attention to existing settlements experiencing economic difficulties.



Access road to Kuaming Kuning (Photograph 8).

5.4 Government's current thinking regarding the Transmigration Program underscores its contribution to regional development. This is demonstrated in both institutional and budgetary changes: whereas under Repelita V (1989-94), MOT was allied with the Ministry of Manpower, beginning with Repelita VI (1994-99), MOT will also be responsible for Regional Development. The objective is to provide successful growth centers which are financially and economically viable, both in the sites which have been developed as well as new settlement sites. To this end, the President announced in his speech on the budget for 1994-95¹ that the largest line item in the development budget would be reserved for the Ministry of Regional Development and Transmigration. The Ministry will receive RP 34.2 trillion or almost 20% of the total development budget for Repelita VI.

C. Private Sector Development

5.5 A central part of this strategy is the involvement of the private sector. While a return to a single project authority appears desirable for sponsored settlement, institutional arrangements would be considerably simplified by contractual arrangements between MOT, which has proved its capability in resettlement, and private companies, which are willing and able to develop nucleus estates if land ownership can be guaranteed. Selection of companies on the basis of their technical, managerial and marketing capabilities would be essential. Under these simplified arrangements, the role of other Government agencies, hence the need for coordination during implementation would be minimal.

5.6 To date, response from the private sector has been slow, largely because of the high rates of interest on commercial lending which these companies have to bear as well as lack, or poor quality, of infrastructure, particularly on more remote transmigration sites. Attractive fiscal incentives and monetary policies will require decisions by other government agencies.

5.7 The strategy, however, is sound. The private company is responsible for land clearing, planting and maintenance of the entire estate until maturity of oil palms, approximately 4 years after planting. At maturity, the smallholder plots--normally 2 ha, are transferred to the transmigrants. The transfer entails site inspection by the Directorate General of Estate Crops (DGE) in the Ministry of Agriculture, the commercial bank, the private company and the transmigrants. If the plot is not developed to standards previously established by DGE, the transfer is in abeyance until the agreed standards are reached; costs during this period being borne by the company. The private company is also contracted by DGE to establish an oil processing plant of commensurate capacity.

5.8 In respect of financing, the company receives a 4 year, 16 percent loan from a state bank. Standard unit costs of development/ha are set annually by DGE. In 1993, the total cost of development of one ha was set by DGE at Rp 4.6 million, including accrued interest. Once the plot is handed over to the transmigrant, the loan is transferred to the transmigrant, who pays a 12 percent p.a. interest to be repaid over 9 years. The experience from Transmigration I and III--where farmers received the tree crop lot on a grant, not a loan, basis--shows that the returns from tree crops provide sufficient capacity to repay some portion of the development costs of tree crop planting. Normally the costs of agricultural support services, social infrastructure and roads is not recovered directly from project beneficiaries.

5.9 After transfer, the responsibility for crop maintenance and harvest rest with the farmers, the only obligation of the private company is to purchase the fresh fruit bunches (FFB) at the prices fixed by DGE. Furthermore, the company is obliged to purchase all the harvested FFB provided quality standards are met. The price to the transmigrant is based on a standard formula set by the DGE and adjusted every 3 months. Payment is made to the commercial bank which deducts 30 percent for loan repayment and releases the remaining 70 percent to the farmer.

5.10 The system has sufficient checks and balances built to avoid exploitation of the farmers, while the system ensures that the private company has an incentive to establish and maintain the plot satisfactorily and that the transmigrant receives a well developed plot.

5.11 During Repelita VI, approximately 150,000 transmigrant families are expected to benefit from development of their lands to oil palm. As of December 1993, a total of 349,000 ha has been developed to oil palm by private companies. Of this private sector development, 245,000 ha was on smallholder lands, while 104,000 ha was developed to nucleus estates. The final proportion as between the smallholder and the nucleus estates is expected to be 4:1. The 4:1 ratio is set so that the processing plant will be dependent on smallholders to supply raw materials.

D. Future Demand

5.12 During the next five years, MOT expects that 350,000 families will be supported in their move to the Outer Islands, a further 250,000 additional spontaneous families are expected to participate. Over time, the need for poor, landless families in Java to migrate to the Outer Islands in search of improved incomes and living standards is likely to fall. A recent report, based upon time series data² over a twenty five year period and drawn from 35 villages³ throughout Java, provides insight into changes which have taken place in rural Java:

Box 5.1: DISSEMINATION AND FOLLOW-UP

A workshop was held in Jakarta on February 3, 1994 to discuss the main findings of the impact evaluation report and to stimulate an exchange of views between those most interested in the Transmigration program: government, the private sector and the NGOs. The workshop was chaired by the Division Chief of Agricultural Operations, EA3. It was well attended with over 40 participants.

There were five separate presentations by four OED speakers, which covered the following topics:

- OED perspective, rationale for the impact evaluation and the method applied;
- the socio-economic survey design and execution;
- key technical and social findings their implications for Government, the private sector and NGOs;
- contribution of, and impact on, women; and
- key environmental issues and impact.

The following discussion was opened by the Secretary-General, Ministry of Transmigration, who stated that the report was objective, comprehensive and informative. The Secretary-General accepted the critique of the Transmigration Program--both for the food crop model (which has now been abandoned) and for the environmental effects--expressing concern about soil degradation, and stated that contractors with poor land clearing practices would be blacklisted. The Secretary-General acknowledged that the Kubu problem is serious; this is the responsibility of the Social Welfare Development.

Subsequent discussions provided plenty of opportunity for an exchange of views between the NGOs, the private sector and government. Key issues discussed were: the as yet unlearned lesson regarding land clearing practices--guidelines are adequate but are not enforced; the impact on local peoples and on the Kubu; whether the lessons from these projects are valid for other sites in outer islands; what opportunities were there for the transfer of evaluation skills to Indonesians; the inadequacy of the ERR calculation for taking into account the positive effects of the transmigration program in Java; and how to involve the local administration during implementation.

Follow-up

A report on the scope and extent of the impact on the Kubu, was commissioned by EA3AG following an OED mission in February/March 1993. The report, which was done by a consultant familiar with the Kubu and their language, was completed in July, 1993 and was passed on to the appropriate GOI authorities for action. The Bank is discussing options for the Kubu with concerned GOI agencies, regional governments and NGOs, and is prepared to finance follow-up actions under future projects concerned with forestry conservation and natural resource management.

· most landless, rural, families now have at least one person working outside the village in full time employment;

· whereas rural poverty was widespread 25 years ago, poverty is now primarily found among older people with no children and single women headed households; and

· large infrastructure projects have made a significant contribution to rural development in Java.

5.13 The study found that in 1993 there is a growing agricultural labor shortage and the workforce is aging. Although there has been an increasing number of landless due to rising land

prices, there are plenty of employment opportunities off-farm and there is expected to be a decline in the agricultural workforce in future. The survey also found that these trends will result in the most unsuitable lands--steep slopes--being taken out of production, while at the same time, the potential for agribusiness at the village level is high.

E. Conclusion

5.14 Lesson learning was not systematic, as it might have been if monitoring and evaluation had been implemented as planned, and if the Bank had been more cognizant of its significant experience in land settlement. Lessons have been learned, but many, particularly in respect of the environment, remain to be learned. Where the lesson learning has taken place, the outcome is satisfactory.

- Incomes are above expectations and where this is not the case the prospects for increased earnings by transmigrants in partnership with the private sector are good. If the increase in off-farm employment opportunities on Java will result in a decline in the flow of potential transmigrants, there will similarly need to be higher income opportunities in the Outer Islands to ensure that families there are stable and that their children have sufficient financial opportunities to obtain employment in the Outer Islands without all migrating back to Java.
- These new institutional arrangements are appropriate on a wider level. The Ministry of Transmigration has proved its ability to relocate a large number of people, while the private sector has equally demonstrated a better capacity for producing, processing and marketing agricultural products. Joint public-private sector cooperation for smallholder development, based on clear contractual arrangements defining rights and responsibilities of all participants, will undoubtedly be beneficial to all parties and will contribute towards alleviating a number of past technical and institutional constraints of the Transmigration Program.
- The Bank has had some success in integrating environmental concerns into the planning process, but it is by no means clear how the guidelines--of both the Bank and the government--will be implemented. This is a priority issue. The current emphasis by MOT on regional development could provide the basis for implementing one of the conclusions of this report: the need for careful analysis of the cumulative impacts of loss of forests and the importance of treating issues on a regional basis.

ENDNOTES

¹ Delivered on January 6, 1994 to the House of the People's Representatives.

² A New Approach to Rural Development in Java: Twenty Five Years of Village Studies. W. Collier, K. Santoso, Soentero, R. Wibowo - PT INTERSYS Kelola Maju. Report GOI-UNDP-ILO/NS/90/035. June 1993.

³ The villages were selected at random and represent coastal, lowland and upland conditions.

Comments Received from Private Company
PT KRESNA DUTA AGORINDO



PT KRESNA DUTA AGROINDO

O/Ref.: 002/WB/02/94

February 7, 1994

Mr. Graham Donaldson
Chief Agriculture and Human Development Division
Operations Evaluation Department
The World Bank
1818 H Street, N.W.
Washington, D.C. 20433
U.S.A.

By Fax & Courier

Dear Mr. Donaldson,

Re: Impact Evaluation on INDONESIA
Transmigration I (Ln. 1318-IND)
Transmigration II (Ln. 1707/Cr. 0919-IND)
Transmigration III (Ln. 2248 - IND)

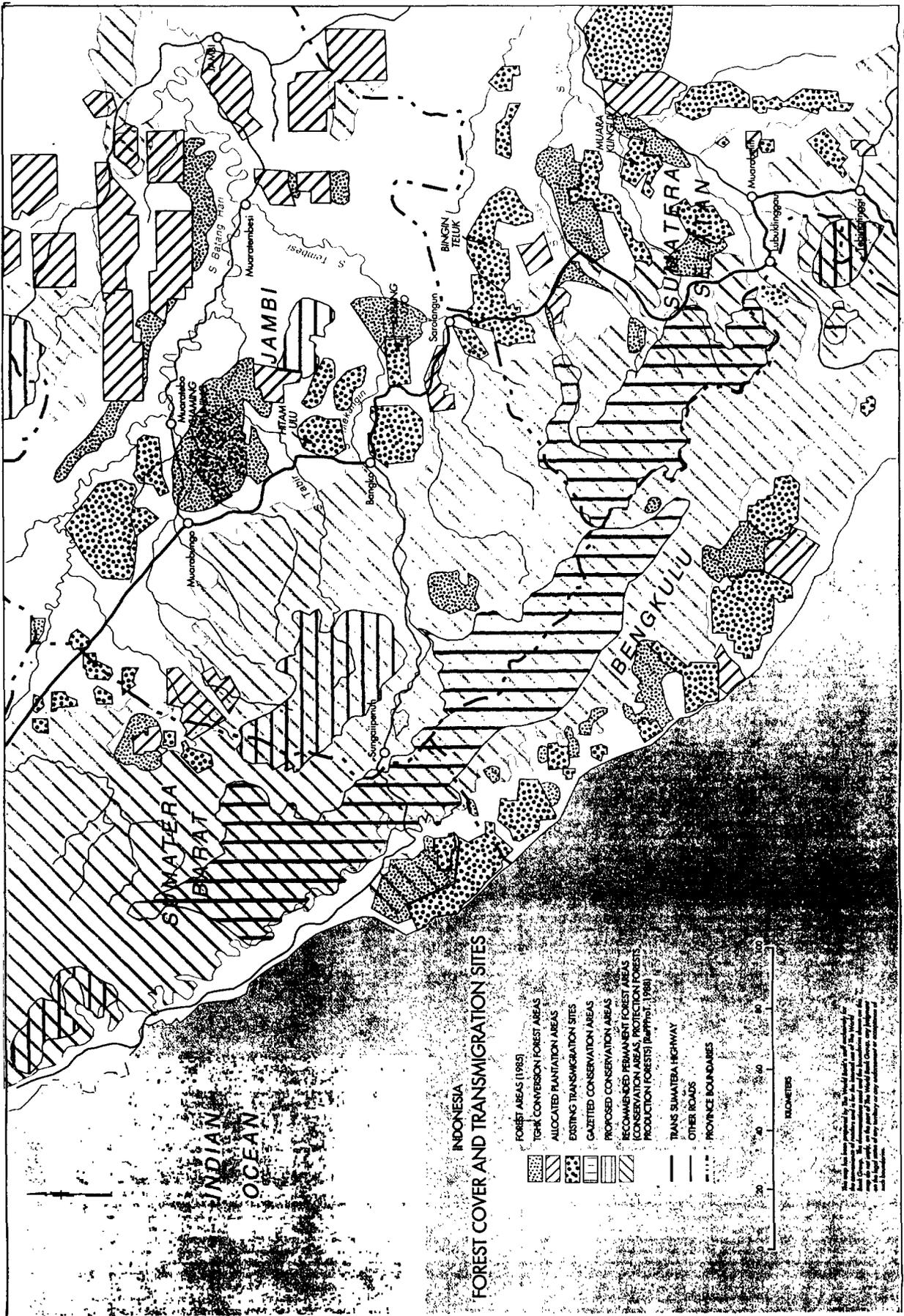
I refer to my letter of January 20, 1994 in which I undertook to supplement our preliminary comments on the Impact Evaluation Report on Kubang Ujo (Transmigration II) with a further review to reach you before February 11.

I am sure you do not wish to be burdened with undue detail and with this in mind the supplementary report in question is largely limited to a few photographs which portray representative conditions existing in Kubang Ujo at the time of our assumption of responsibility for the Management of the project, and those which obtain presently. These, I think, will convey more readily than a prepared text, an indication of the progress being made and in which we take some pride. Our additional comments and the photographs will be couriered to you today.

We are firmly of the opinion that this project is now well on the road to a successful outcome. Needless to say, we would welcome a follow-up visit by officers from your Operations Evaluation Department should they wish to make one.

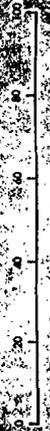
Yours sincerely,

Tan Siarw Liang
Chief Executive Officer

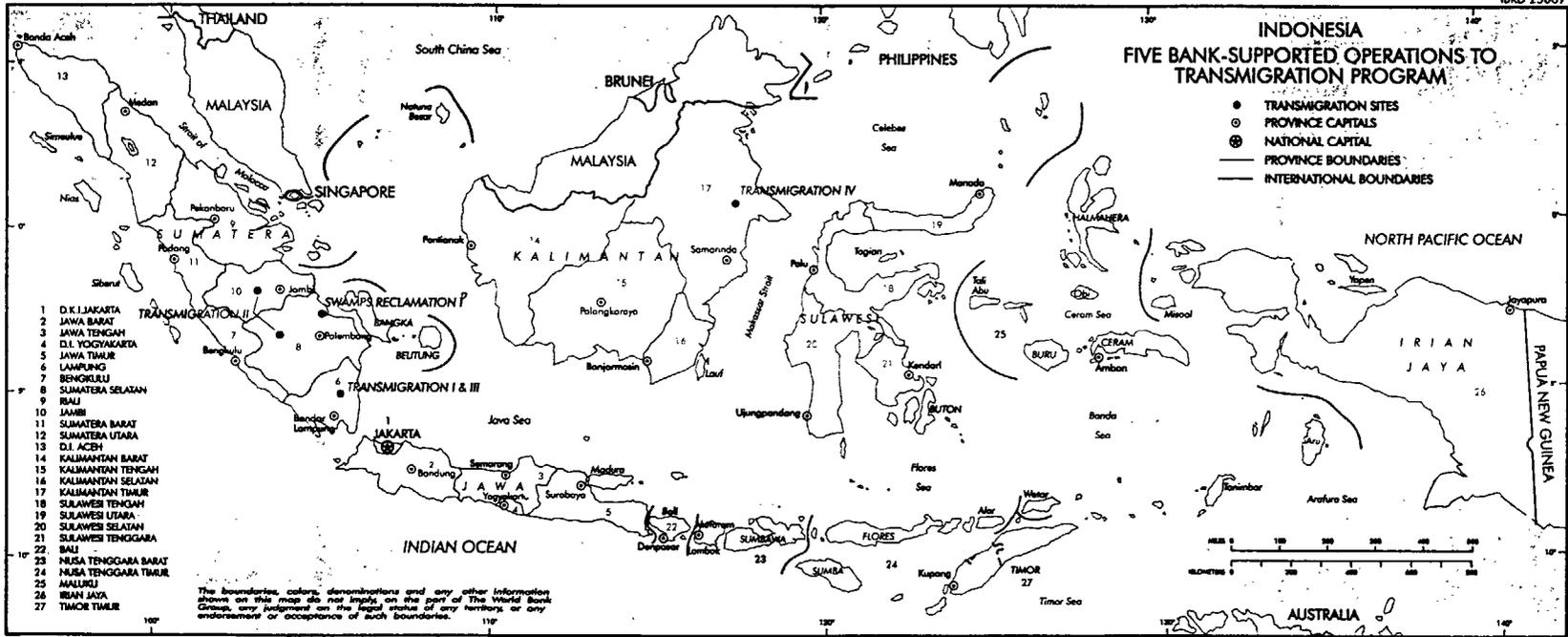


INDONESIA
FOREST COVER AND TRANSMIGRATION SITES

- FOREST AREAS (1985)
- TERRITORY CONVERSION FOREST AREAS
- ALLOCATED PLANTATION AREAS
- EXISTING TRANSMIGRATION SITES
- GAZETTED CONSERVATION AREAS
- PROPOSED CONSERVATION AREAS
- RECOMMENDED PERMANENT FOREST AREAS (CONSERVATION AREAS, PROTECTION FORESTS, PRODUCTION FORESTS) (Mapsheet: 1981)
- TRANS SUMATRA HIGHWAY
- OTHER ROADS
- PROVINCE BOUNDARIES



This map is based on the 1:500,000 scale map of Indonesia, published by the Indonesian Government, and the 1:250,000 scale map of Sumatra, published by the Indonesian Government. The boundaries shown on this map are for information only and do not constitute an official boundary for any administrative or political purpose.



The boundaries, colors, denominations and any other information shown on this map do not imply on the part of The World Bank Group, any judgment on the legal status of any territory or any endorsement or acceptance of such boundaries.

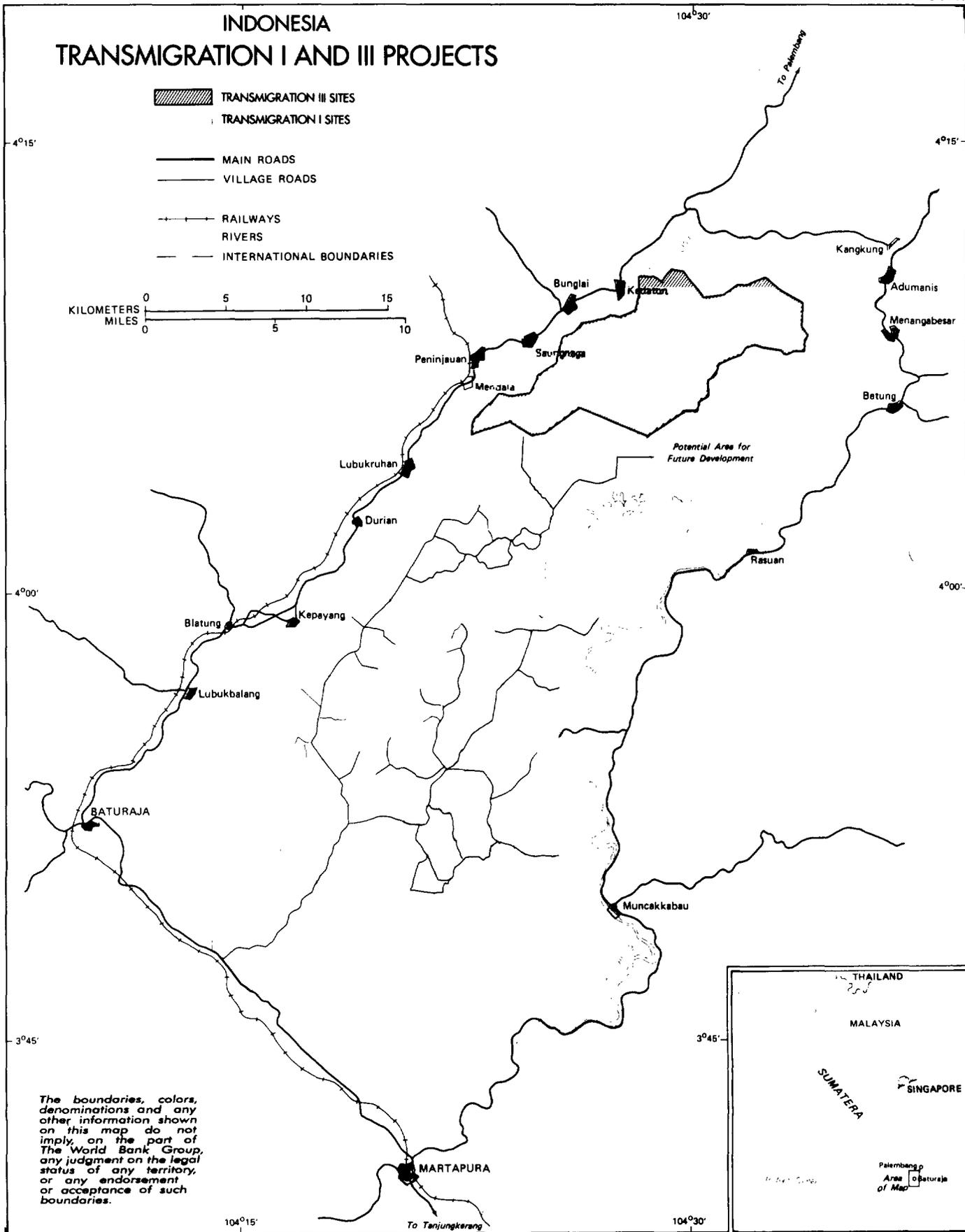


INDONESIA TRANSMIGRATION I AND III PROJECTS

 TRANSMIGRATION III SITES
 TRANSMIGRATION I SITES

 MAIN ROADS
 VILLAGE ROADS
 RAILWAYS
 RIVERS
 INTERNATIONAL BOUNDARIES

KILOMETERS 0 5 10 15
 MILES 0 5 10



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