

The Ecologist

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BANKING ON DISASTER

Indonesia's Transmigration Programme



SURVIVAL INTERNATIONAL
FOR THE RIGHTS OF THREATENED TRIBAL PEOPLES

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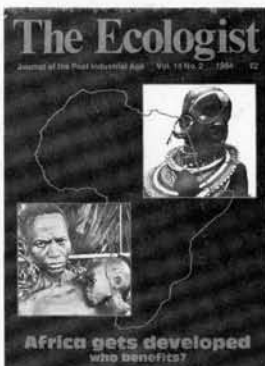
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Open Letter to Mr Clausen, Retiring President of the World Bank, and Mr Conable, President Elect

Dear Mr Clausen and Mr Conable,

We are writing to you to express our grave concerns regarding the World Bank's continued funding of the Transmigration Programme in Indonesia.

The programme, which involves the mass movement of millions of landless poor from the central Indonesian islands of Java, Madura, Bali and Lombok to the less densely populated outer islands, has been promoted as a humanitarian exercise with the primary goal of improving living standards. The promotion of regional development through the provision of the necessary manpower to the outer islands and the strengthening of national unity through increasing ethnic integration are also given as objectives of the programme.

Yet evidence continues to accumulate that even the major humanitarian rationalisations for the programme are flawed. The widespread failure of Transmigration sites and the increasing numbers of settlers engaged in 'second round flows' testify to this. (See pp 71-77).

Tropical Rainforest Destruction and Transmigration

Of particular concern to us is the impact that this project is having on the forests and peoples of the outer islands. Transmigration, as it is presently being carried out, is leading to the permanent and effectively irreversible destruction of vast areas of tropical forest. Over 3.3 million hectares of tropical forest will be destroyed by Transmigration during the present Five-Year Plan. In addition, the destabilised populations from unsuccessful sites are causing further widespread environmental damage, as the settlers abandon their failed sites and lay waste the surrounding vegetation. Moreover, as the recent Forest Review, carried out by three Indonesian Government Departments and the International Institute for Environment and Development, has emphasised, even where sites are successful, serious environmental problems arise, since these areas serve to draw less fortunate settlers to them, placing an unsustainable burden on the fragile tropical forest environment. (See pp 77-89).

Current rates of deforestation in Indonesia have become a cause of global concern, estimates placing the overall rate of forest loss at over one million hectares per year. Transmigration exacts a major part of this terrible toll. We would draw your attention to the conclusion of the Forest Review team, where they state that:

"Given the current objectives and operational procedures of the Transmigration Programme, the Team considers Transmigration as the single sectoral activity with the greatest potential to advance forest destruction—often to no constructive result. Whether a 'success' or 'failure' by present standards, Transmigration, as currently managed can only have negative implications for forest resources."

Such a conclusion makes clear that the Transmigration Programme is entirely incompatible with the World Bank's own environmental policy guidelines, where the Bank states that it:

"9a. Endeavours to ensure that each project affecting renewable natural resources (e.g. as sink for residue or as a resource for raw material) does not exceed the regenerative capacities of the environment;

9b. Will not finance projects that cause severe or irreversible environmental deterioration, including species extinctions without mitigatory measures acceptable to the Bank..."

Transmigration and Tribal Peoples

Transmigration takes as its starting point the assumption that the outer islands are "underpopulated" and "underdeveloped". Yet, in fact, these areas are the traditional homelands of a large number of viable and vigorous societies which have developed sophisticated systems of resource use subtly adapted to their prevailing environmental circumstances. Transmigration, by alienating these peoples from their traditional lands and forcing them to participate in development projects, many of which are environmentally and economically inappropriate, is destroying the very basis of their ways of life.

As you will be aware, Indonesian law, while ostensibly recognising traditional (*adat*) land rights, com

pletely subordinates these rights to State interests. Special legislation relating to Transmigration further weakens these rights. For example, Clause 17 of the Basic Forestry Act, Clarification Act No 2823 of 1967, states:

"The rights of traditional law communities may not be allowed to stand in the way of the establishment of Transmigration sites."

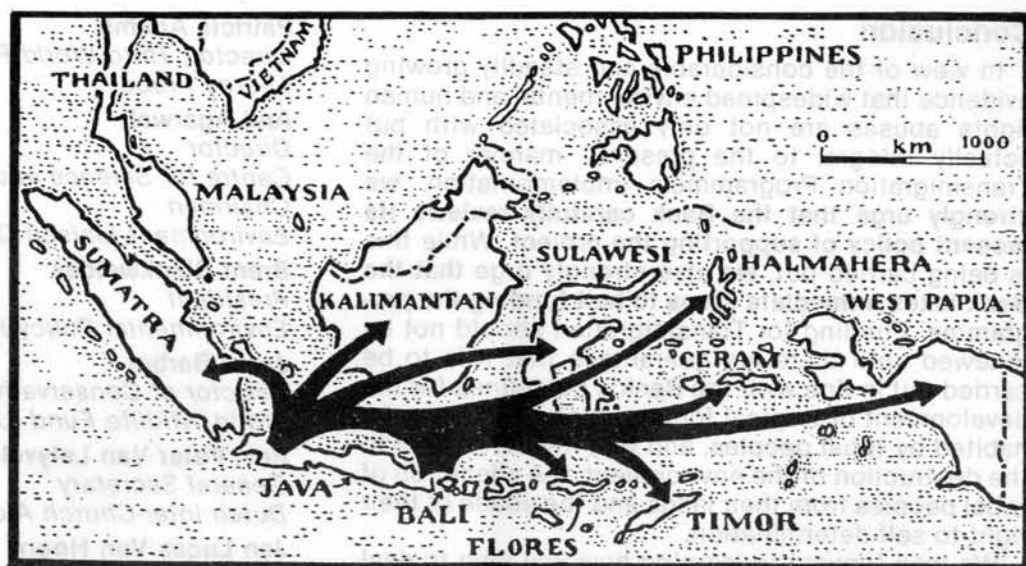
The effect of these and other laws is to deny the land rights of tribal peoples practising non-sedentary forms of land use. Compensation payable to these people is limited to payment for the destruction of their standing crops and buildings *but not for loss of their hunting, gathering and fishing territories*. Instead of respecting the rights of tribal peoples to their traditional lands and resources, government policy obliges these peoples to abandon their traditional ways of life, leaving them with no alternative but to integrate into Transmigration settlements where they find themselves outnumbered by outsiders and despised for their "primitive" customs. In many provinces, Transmigration is leading tribal peoples to become a minority on their own lands.

The dispossession that is an inevitable part of Transmigration is causing an escalation in inter-ethnic tensions. Particularly in West Papua (Irian Jaya), tribals, who have resisted the takeover of their lands, have been accused of being members of proscribed secessionist movements and have been subjected to security operations by the Indonesian armed forces. These actions are leading to a bloody escalation of the conflict between tribal peoples and the military. In West Papua, which, with a total population of 1.2 million, has been designated to receive about 685,000 settlers in the next five years, there have been widespread reports of human rights abuse associated with the programme.

One of the most worrying and evident expressions of the problems Transmigration is causing is the continuing exodus of tribal people from West Papua into neighbouring Papua New Guinea. According to the United Nations High Commission for Refugees, there are presently 10,500 refugees in camps all along the border, including about 500 new arrivals in the last few months. Successive reports from those in direct communication with the refugees have noted that land alienation, resulting primarily from the Transmigration programme, has been a major cause for their flight. Refugees report the bombing of villages, indiscriminate shooting, imprisonment, torture, rape, the burning of settlements and the killing and stealing of livestock.

Taken together, these facts make it abundantly clear that Transmigration as it is being implemented is directly contravening the terms of the World Bank's guidelines for the development of tribal areas.

Moreover, it is clear that these violations of human



The Transmigration programme involves the mass movement of millions of landless poor from the central Indonesian islands of Java, Madura, Bali and Lombok to the less densely populated out islands.

rights are not just the result of the poor planning and implementation at the local level but are inherent in the legislation and policy of the programme. The ethnocidal intent of Transmigration was made abundantly clear at the special seminar on Transmigration hosted by the Minister of Transmigration, Martono, on March 20 1985 where he stated:

"On 28 October 1928, a youth congress was held concluding that we are one nation, the Indonesian nation; we have one native country, Indonesia; one language, the Indonesian language. By way of Transmigration, we will try to realise what has been pledged, to integrate all the ethnic groups into one nation, the Indonesian nation . . . The different ethnic groups will in the long run disappear because of integration . . . and there will be one kind of man . . ."

The Bank, in its policy guidelines, has explicitly rejected such integrationist policies towards tribal peoples instead insisting on an "intermediate policy" which "allows the retention of a large measure of tribal autonomy and cultural choice". This has nowhere been provided for in the Transmigration Programme.

Transmigration and "National Security"

The Indonesian Government has stated that Transmigration is considered of great importance as an exercise in promoting "national security". As General Murdani, the Commander-in-Chief of the Indonesian Armed Forces made clear in March 1985, Transmigration is considered to be:

"The only programme in the economic field that must quite categorically be tied in with defence and security considerations . . . The preparation of sites and the removal of obstacles to land availability need to be given special focus because the choice of locations is related to the concept of territorial management . . ."

In West Papua, these concerns are manifested in the Government's plans to settle a "cordon sanitaire" of militarised (*saptamarga*) settlements along the border. In November 1985, the Minister of Transmigration, Martono, announced that Transmigration was to be given priority in border areas.

Conclusion

In view of the considerable and steadily growing evidence that widespread environmental and human rights abuses are not only associated with but actually integral to the present manner of the Transmigration Programme's implementation, **we strongly urge that the Bank carefully reviews its present policy of supporting the project.** While this is being carried out, **we also strongly urge that the Bank takes immediate steps to halt funding the programme.** Funding for Transmigration should not be renewed until there are guarantees that it is to be carried out in line with the Bank's guidelines for the development of tropical forest regions and areas inhabited by tribal peoples, and that it will not lead to the destruction of the environment, the alienation of tribal peoples from their lands and the abuse of their right to self-determination.

We look forward to learning how you plan to deal with this matter.

Yours sincerely

Robin Hanbury-Tenison

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Register your Protest

Send the postcard at the front of this issue to the World Bank.



Logging concessions have been made without regard to traditional land rights. Mechanised clear-felling of forests is now usual in preparing sites for Transmigration settlements, despite the damage done to fragile forest soils.

PHOTO: SURVIVAL INTERNATIONAL

Banking on Disaster: International Support for Transmigration

by
Marcus Colchester, Survival International

Indonesia's massive Transmigration Programme is singularly failing to achieve its stated aims of reducing population pressure in Java and increasing local living standards. Yet, by June 1985, Western Governments had collectively poured nearly \$800 million into the programme. A further \$750 million is "in the pipeline". Confidential documents leaked to Survival International reveal that the Dutch Government (a major backer) is worried about the implications of the scheme for human rights and the environment. Publicly, however, the Dutch Government is saying nothing. Why is the West knowingly throwing away good money after bad? The answer lies in Indonesia's strategic position and natural wealth.

"Clearly, the Bank accepts that entire tribes of human beings must not be sacrificed to the goal of economic development." World Bank 1982¹

Transmigration, the mass movement of the landless poor from Indonesia's overpopulated central islands of Java, Lombok, Bali and Madura to the less densely populated outer islands, is the largest colonisation programme in history. With over 3.6 million people moved by 1984 and the government now planning the movement of a further 65 million in the next twenty

years, the programme dwarfs the controversial and widely criticised programmes for the colonisation of Amazonia, with which it has been compared and with which it shares many problems.

Like the Amazonian programmes, Transmigration receives massive financial backing from international agencies and western governments. Millions of dollars of international 'aid' have been spent promoting a programme that ecologists have described as a 'disaster'. As Charles Secrett of Friends of the Earth notes in this issue (pp 77), the programme is leading to the permanent destruction of millions of hectares of undisturbed tropical rainforest, with a corresponding huge loss of irreplaceable genetic diversity and potential resources.

Transmigration is being carried out with scant regard for its shattering effects on the tribal minorities

Marcus Colchester is Projects Officer with Survival International a human rights organisation that defends the rights of threatened tribal peoples to survival, self-determination and the use and ownership of their traditional lands. He is editor of the Survival International Annual Review and other SI publications. His previous research has focused on the social ecology and land rights of tribal peoples in Amazonia and India.



PHOTO: ODA

Transmigration is destroying millions of hectares of forest. Many settlers are ill-prepared for agriculture on the poor forest soils they find at the sites.

who stand in its path. As the programme has been extended into the most remote parts of the Indonesian archipelago, whole tribes have been uprooted, torn from the lands on which they have lived for millennia and resettled in government-built "unit dwellings" to conform to the national goals of "progress" and "development". Compensation, payable to the tribals for the loss of their lands, has been denied. Where the locals have resisted what they see as no less than the invasion of their ancestral territories, the security forces have been called in to crush any opposition.

As previous waves of "transmigrants" have filled all the available lands on the more accessible and fertile lands in Sumatra and Sulawesi, the more remote provinces of Kalimantan (Borneo) and Irian Jaya (West Papua) have been targeted for settlement. In West Papua, Transmigration has fuelled a growing conflict between nationalist Papuans struggling for self-determination and the Indonesian armed forces. Local resistance to the takeover of traditional lands has been met with brutal violence by the Indonesian military, causing a flood of over 10,000 West Papuans to flee their lands and seek refuge in neighbouring Papua New Guinea.

Two papers in this issue expose how Transmigration, far from being a humanitarian exercise, is really a political programme designed to extend government control over the peripheral islands through the elimination of ethnic diversity. Transmigration has become one of government's key means for assimilating tribal people and taking over their

lands, in the interests of national development and national security. Special emphasis has been given to the army's involvement in the selection of Transmigration sites: significantly, militarised Transmigration settlements, colonised by ex-army personnel or by actual military detachments, have been created along the borders.

Controversial since its inception, Transmigration has now become associated with such a catalogue of human and environmental abuse that the continued support provided to the programme by western nations seems almost incomprehensible. Yet foreign aid for the programme continues to pour in. Nearly US \$800 million dollars had been provided by June 1985 and a further US \$750 million of support is in the 'pipeline'. Recent calculations indicate that up to one third of the costs of Transmigration are being borne by overseas agencies, a figure that will surely rise if (as seems likely) the Indonesian Government cuts its budget for Transmigration due to its falling oil revenues.

This article examines how the international agencies have tried to justify their support for Transmigration, and reveals that the publicly stated rationale for their involvement does not stand up to even a cursory analysis. Behind the rhetoric, the crude geopolitical reality of western support for Indonesian nationalism is exposed.

Unmasking the Bank

On June 11 1985, the World Bank announced its fifth major loan to the Transmigration programme, bringing its total financial commitment to the scheme to well over half a billion dollars.²

The project, it claimed, would contribute to the overall goals of Transmigration; namely to reduce the rate of population growth on Java; to encourage the underused labour force in Java to take advantage of underused land of the "Outer Islands"; and to create 200,000 new jobs a year. The project would also, it claimed, reduce soil exhaustion and erosion in the most densely populated areas of Java and would cut costly public investments in soil conservation and urban services.³

However, as the articles below reveal, many of these claims are empty. The demographic justification for Transmigration to which the Bank clings, has been discounted even by the Indonesians themselves. At a confidential seminar on Transmigration, hosted by the Minister of Transmigration in March 1985 for the Inter-Governmental Group on Indonesia (IGGI), a ministerial aide remarked:

"Demographically, transmigration of people from Java does not mean very much, because the rate of growth on this island is big . . . It is evident that demographically the target of transmigration is not important. The documentation which has been distributed to you, Your Excellencies, and the other invitees, shows that for 150 years the relocation of people from Java has no effective meaning."⁴

This analysis has been confirmed by Koentjaraningrat, the foremost sociologist in Indonesia. Referring to Transmigration, he has noted:

"It is obvious that resettlement is actual, not the real solution to Java's problem".⁵ In fact, far from alleviating the overall population problem in Indonesia, Transmigration may actually be aggravating it, because of the typically higher birthrate among migrant families.⁶

Apart from the fact that the natural population increase within Java has far outpaced the population "loss" achieved through Transmigration, the population on Java has also been growing for other reasons. As R.M. Sundrum notes:

"While we are worrying about weaknesses in the Indonesia migration process, I have been looking at the statistics on it. I think the 1971 census of Indonesia gives us a very interesting piece of information—that while the government was scratching its head and we were busy criticising the government, saying that it was not doing enough to move people out of Java, there was going on very quietly this spontaneous migration of about the same magnitude in the opposite direction, all heading for Jakarta."⁷

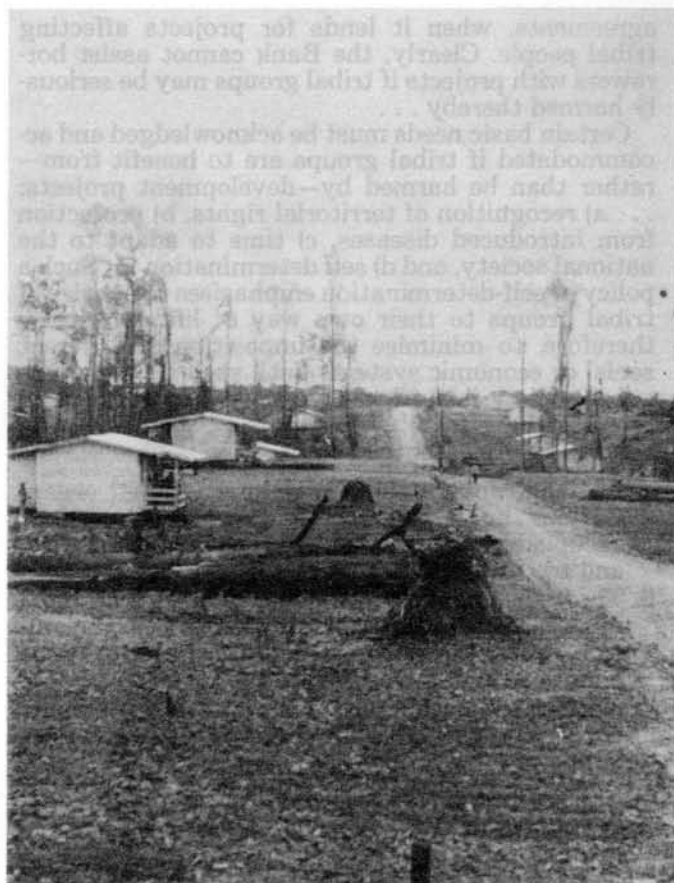
The "pull" exerted by Jakarta is not surprising. As Mariël Otten notes in this issue (pp 71), far from solving the economic problems of the "poorest of the poor", Transmigration has actually reduced the living standards of many migrants. The United Nations Development Programme (UNDP) has noted the widespread failure of Transmigration sites. Even the Bank admits in its internal documents that only sites receiving "second stage agricultural development" are economically justified.⁸ A recent study reveals that the percentage of landless farmers on Java increased from 3.2 per cent to 14.9 per cent between 1973 and 1980, with the percentage of farmers owning less than 0.5 hectares rising from 45.7 per cent to 63 per cent. According to the study, Transmigration actually *accelerated* both trends. The reason is that those transmigrants who own small pieces of land are selling their fields to landlords before leaving Java or dividing them up among any of their own heirs who opt to stay behind.⁹

Ultimately, the Bank's arguments for Transmigration are reduced to its claims that it will boost employment figures. Yet, with Transmigration costs absorbing over 6 per cent of the national budget (it costs over US \$7000 to relocate each family, and the costs are still soaring upwards), critics insist that there must be less expensive means of creating jobs, which do not require the destruction of vast areas of tropical rainforest and the ways of life of the people inhabiting them.

Tribal Peoples and the World Bank

In early 1985, the Bank received hundreds of letters from people all around the world expressing their dismay that the Transmigration programme was jeopardising the futures of the tribal peoples of Indonesia. For its part, the Bank noted "how steps are taken so that (tribal people) benefit from development schemes under the Transmigration programme".¹¹

Just what these benefits are, however, remains unrevealed. In the early 1980s, after the World Bank



Migrants from the overpopulated central islands of Java and Madura are provided with basic housing, seeds, fertilisers, tools and pesticides and expected to fend for themselves. Very few Transmigration sites have proved economically viable.

came under sustained criticism for the effects of its projects on the tribal peoples in the Philippines and Brazilian Amazonia,¹² it published comprehensive guidelines for the implementation of Bank projects in tribal areas. Admitting that the Bank had, in the past, often ignored the existence of tribal peoples in the implementation of its projects, the Bank clearly spelled out the importance of elaborating a special 'tribal component' in any future schemes.

The new guidelines note at the outset that:

"Bank policy is aimed at facilitating development in a way that . . . preserves the identity (of tribal groups), as well as their individual and collective rights".

The guidelines state unequivocally that:

"The Bank will assist projects within areas used or occupied by tribal peoples only if it is satisfied that best efforts have been made to obtain the voluntary, full and conscionable agreement of the tribal people . . . and that project design and implementation strategy are appropriate to meet the special needs and wishes of such peoples . . . The Bank will not support projects on tribal lands, or that will affect tribal lands, unless the tribal society is in agreement with the objectives of the project, as they affect the tribe, and unless it is assured that the borrower has the capability of implementing effective measures to safeguard tribal populations and their lands against any harmful side-effects resulting from the project . . . The Bank, as an affiliate of the United Nations, should prudently be assured that those borrowers who are signatory to the UN charter are complying with the spirit of the United Nations charter, international covenants, treaties, and

agreements, when it lends for projects affecting tribal people. Clearly, the Bank cannot assist borrowers with projects if tribal groups may be seriously harmed thereby . . .

Certain basic needs must be acknowledged and accommodated if tribal groups are to benefit from—rather than be harmed by—development projects: . . . a) recognition of territorial rights, b) protection from introduced diseases, c) time to adapt to the national society, and d) self determination . . . Such a policy of self-determination emphasises the choice of tribal groups to their own way of life and seeks, therefore, to minimise the imposition of different social or economic systems until such a time as the tribal society is sufficiently robust and resilient to tolerate the effects of change . . . The following conditions are essential . . . :

- a. National governments and international organisations must support rights to land used or occupied by tribal people, to their ethnic identity, and to cultural autonomy.
- b. The tribe must be provided with interim safeguards that enable it to deal with unwelcome outside influences on its own land until the tribe adapts sufficiently.
- c. Neither the nation nor the non-tribal neighbours should compete with the tribal society on its own lands for its resources."¹²

As the articles in this issue make clear, *almost none of these measures have been adopted in the case of Transmigration*. According to recent press statements issued after an official Australian delegation had visited West Papua, as much as 98 per cent of the native population do not even want to be part of Indonesia, let alone give up their lands to Javanese migrants.¹³

A "tribal component" to the Bank's involvement in the programme does not exist; on the contrary, as the Minister of Transmigration himself has admitted in confidence to members of the IGGI, far from respecting the cultural identity of local peoples, an intended result of Transmigration is that "the different ethnic groups will in the long run disappear."¹⁴

Perhaps worst of all, the Bank is ignoring the crucial "operational steps for the project cycle" carefully elaborated to ensure that the Bank's policy guidelines are incorporated effectively into its projects. Attention to the special needs of tribal peoples affected by the Transmigration projects has been omitted until the penultimate phase of the project cycle and, even then, important routines have been neglected.¹⁵

When Survival International challenged the Bank that its support for the Transmigration programme was in clear violation of its guidelines for the development of tribal areas, and asked a series of detailed questions about how it planned to resolve this problem, the Bank merely replied that its funding was largely directed towards

"planning studies to select suitable settlement sites (which) include an assessment of local populations, their traditions and needs, and existing land use patterns."

The Bank furthermore claimed that it was "currently reviewing with the Indonesian authorities arrangements for protecting the well being of local peoples." The results of this review process were never made

public, despite repeated requests for further information. Subsequent letters from the Bank have failed to indicate that any special measures have been taken by the Bank to ensure that land rights issues are correctly addressed. On the contrary, the Bank's replies have only alluded to some of the modifications adopted by the Indonesian Government in its procedures for selecting settlement sites. As we shall see (pp 105), the new procedures are still far from adequate.

In a more recent letter, the Bank concluded by remarking that it believes that

"the interests of tribal people are better served through collaborative effort to address the issues in pragmatic fashion than would be the case if the Bank were not involved and committed to finding constructive solutions."¹⁶

But just how committed *is* the Bank to finding solutions? Lamentably, there is ample evidence that the Bank's protestations are merely more of the same insubstantial rhetoric for which it has become notorious.¹⁷ Anthropologists contracted as consultants for the World Bank to carry out site evaluations in West Papua have not even been made aware of the existence of the Bank's guidelines for the development of tribal areas. Others have reported the frustration of finding their recommendations over-ruled, usually by Indonesian officials more concerned about security matters and with keeping up to the targets set by central government than by the actual success of individual sites.

The Bank's guidelines state that:

"Land rights . . . are vital to the economic, social and psychological well-being of individual tribal members, as well as for the maintenance of the group's cultural stability. Those national government's that are signatory to the UN charter and require Bank assistance can be guided by the UN Declaration of Human Rights, 1948 (Annexes 3 and 4) on tribal issues and land title . . . Communal title, or group tenure, may need legislative innovation on the part of a nation; such innovations are neither unknown nor especially difficult. The Bank can discuss tribal policies with governments, which would act to implement agreed policies."¹⁸

The rhetoric sounds fine, but the reality is less reassuring. In fact, the Bank has taken no steps to ensure that changes are made in Indonesian legislation to accord with these guidelines. No provisions have been written into the loan agreements to guarantee respect for the right of tribal peoples to their traditional lands.

A Bowdlerized Report

A look at those sections of the Bank's *draft Staff Appraisal Report* dealing with the programme's impact on tribal peoples, when compared with the Bank's *final* version of the report, reveals how shallow is the Bank's real commitment to human rights. In the draft, a Bank consultant has made sensible and what could be far-reaching recommendations for the implementation of the Transmigration programme in tribal areas, particularly Irian Jaya, where, the consultant notes, the people "may be unaware of their own rights



PHOTO: ROEL BURGER

A Dani homestead in West Papua. Mr Martono (*inset*), the Minister of Transmigration, has admitted in private that an intended result of Transmigration is that different ethnic groups will in the long run disappear.

and interests or are unable to represent them effectively".¹⁹

The draft continues:

"5.09 Bank policy on this matter is explicit. The Bank will not assist development projects that encroach on occupied lands unless safeguards are provided for the local people. Nondisruptive acculturation is necessarily a slow process, and projects affecting tribal people must provide the time and conditions for such acculturation. Projects affecting less acculturated people are required to include:

- a. The recognition, demarcation and protection of areas containing the resources required to sustain their traditional means of livelihood.
- b. Appropriate social services, including protection against new diseases and maintenance of health.
- c. Maintenance, to the extent desired by the local people, of their cultural integrity.
- d. A forum for the participation of local people in decisions affecting them and provision for adjudication and redress of grievances.

5.10 The proposed project which entails advanced planning offers the opportunity to further develop those standards and procedures which will benefit local populations. The consultant and institutional arrangements to insure this are . . . summarised below.

5.11 Specifically, the project would include the following features to protect the rights of local people. First, consultant terms-of-references (TORs) for Phase II studies would require that local populations and existing farming systems would be described and attitudes towards compensation and/or resettlement assessed. Using the preferred farming system, suitable land could be allocated to meet the requirements of the local population. The resource evaluation studies under Phase II would then be oriented to selecting the appropriate farming system which would extend over the remaining suitable land in the area.

5.12 Second, TORs at the Phase II level would require an assessment of the need for other benefits including health services, roads, schools, extension and possible resettlement, and preliminary recommendations on the type of benefits to be provided to local people would be presented in the consultant's report. The TORs would also recognise that many traditional cultivators are poorly prepared to do labour intensive agriculture on one or two hectares and must ensure that adequate provisions are made to protect the subsistence of shifting cultivators and to ensure that their settlement within transmigration sites is gradual and voluntary. It is expected that there would be more than a few local volunteers wishing to settle in transmigration sites in most provinces, but particularly in Irian Jaya, where the majority of people have different farming practices and cultural traditions, site planning in the near future is expected to be based on parallel development."

In sharp contrast to this draft, the final version, which is classified as 'For Official Use Only', reads very differently:

"5.09 In order to overcome these concerns it is GOI's (the Government of Indonesia's) policy to:

- a. Develop Transmigration settlements only when satisfied that they are technically, socially, economically and environmentally viable according to extensive studies carried out under the project.
- b. Include on a voluntary basis the local people living in and around the proposed settlement areas to raise their living standards to the same level as that of the transmigrants.
- c. Give equal access to economic and social infrastructure and services to all sponsored and local transmigrants.
- d. Discuss and agree on compensation arrangements with local people in the event that any land to be developed for transmigration involves customary land rights.

"Transmigration is now associated with such a catalogue of abuses that the continued support of western nations seems almost incomprehensible."

- e. Formalise the release of land rights and compensation arrangements through standardised procedures to be implemented by the provincial and district Land Allocation Committees.

5.10 Perhaps one of the most sensitive issues in new settlement areas centres on the release of customary land use rights and the estimates of equitable compensation for local users. A recent Presidential Decree (No 59/1984) formally delegates the coordination of the Transmigration programme, through the Minister of Transmigration to the Governors and their provincial staff. Under this new decree the Governors will, among other things, be responsible for ensuring that conflicting claims on the land are resolved in order to reduce the present high rate of settlement site rejection.

5.11 GOI has in the past, under Transmigration II and III Projects, and will continue, under the proposed project, to reject sites for which agreements cannot be reached with local users or when the number of local people is such that the creation of transmigration settlement would create serious conflicting land claims. For example, in Irian Jaya, the sites proposed under the project are located in the sparsely populated lowlands which have less land rights problems than in the highlands where the bulk of the indigenous population lives.

5.12 The proposed project, which entails advanced planning, offers the opportunity to further develop those standards and procedures which will benefit transmigrants and local populations."²⁰

Reference to the Bank's policy has vanished to be replaced by a whitewash resumé of the Indonesian Government's policy. Gone are the guarantees on respect for land adequate to sustain the tribal peoples' traditional economies: gone the special measures to protect the local populations against new diseases: gone the provisions for the maintenance of cultural integrity: gone the forum for the participation of local peoples and the means for the adjudication and redress of their grievances.

How are we to account for this shameless piece of backsliding? Only the Bank staff themselves know the answer, unless the pencilled remarks in Indonesian, made in the margin of the draft, provide us with a clue.

Unaccountable aid

Like all Bank projects, the Bank's support for Transmigration depends on the agreement of the Directors representing the national governments which contribute to the Bank. Decisions on whether or not to support projects are voted on at meetings of the Elected and Appointed Directors. Votes are apportioned according to the individual countries contributions to Bank finances, the guiding vote being held

by the US with 19 per cent. Thus, although it is Bank staff who formulate Bank policy and projects, ultimate responsibility rests with the member governments.

Yet national governments are notoriously unwilling to acknowledge either the role they play in directing Bank projects, or their attendant responsibilities.²² An oft-repeated excuse is that individually, member states have little control over the Bank, since their separate contributions to the Bank's overall finances are small. Britain has typically resorted to secrecy to avoid having to defend its voting record publicly. In conversation with Survival International staff, officials of the British Overseas Development Administration (ODA) have stated that information about the voting positions adopted by individual countries is confidential to the Bank. In fact, this is not true. The US Government actually publishes its voting position on every single project financed by the Multilateral Development Banks to which it contributes funds.²³

Some governments have gone even further than this. The Netherlands Government, challenged by Survival International about its support for Transmigration through multilateral lending institutions (such as the World Bank, the EEC, and the United Nations) replied baldly that

"The involvement of multilateral organisations in the Transmigration programme on their own budget is a matter for which the Netherlands cannot be held responsible."²⁴

Such a reply can only be described as scandalous considering that the Netherlands Government not only hosts and chairs the meetings of the IGGI, where the allocation of 'aid' for Indonesia from the western nations is discussed annually, but also acts as spokesperson for the IGGI as a whole.²⁵

In fact, in response to an earlier letter from Survival International, which posed detailed questions about the procedures by which tribal peoples were compensated for the loss of their lands to Transmigration, the Netherlands Government replied with the single sentence:

"With reference to your letter dated 26 February 1985, I am writing to inform you that, contrary to your information, the Netherlands Government is not involved in Transmigration projects in Indonesia."

In reality, the Netherlands Government has been closely involved in Transmigration, not only through its participation in policy decisions on the allocation of aid and through multilateral lending and grants, but also bilaterally. On a bilateral basis alone, the Netherlands Government has provided 29.6 million Dutch guilder (DG) to upgrade Transmigration settlements in Bengkulu and to provide "technical aid" to the project.²⁶ A further 3.0 million DG has been allocated for the construction of a road and for building three bridges for the Kuro Tidor Transmigration project. Also linked with Transmigration and resettlement are the Rawa Sragu Swamp Reclamation project in Lampung (costing 44.9 million DG) and the Pompenigan Irrigation project in Luwu, South Sulawesi (costing 30.8 million DG).²⁷ On top of this, the Netherlands Government has a substantial interest in Euroconsult, the Dutch consultancy firm which is

playing a major role in undertaking site selection studies for the programme, including studies in West Papua.

Holland: Supporting the Unsupportable

The reasons why the Netherlands Government is so anxious to disguise its considerable involvement in Transmigration are not hard to find. Opposition parties within the Netherlands are strongly critical of Indonesian policies towards West Papua in general and of Transmigration in particular. Moreover, the Netherlands Government's own evaluations of the schemes have been far from reassuring. A policy paper, produced by the Dutch Government in 1985, demonstrates quite clearly that officials are seriously concerned about the economic viability of the Indonesian Government's present policy of promoting remote "enclave" Transmigration sites.²⁸

Such settlements, says the policy paper, "cannot realistically be expected to stimulate prosperous farming communities" without being substantially subsidised in both transport and marketing "for many years to come".²⁹ On the contrary, "in terms of benefits related to costs, a contiguous and moving frontier is clearly preferable to a dispersed land settlement effort".³⁰

The Indonesian choice of the "enclave" model is explicitly recognised as being linked to "geostrategic considerations".³¹ A later internal report notes quite clearly that, with the renewed emphasis on national security,

"it is no coincidence, nor incomprehensible, why it is the alleged underpopulated peripheral and boundary regions that are mentioned as attractive locations for Transmigration on a large scale."³²

Moreover, Parliamentary discussion has revealed that the Netherlands Ministry of Foreign Affairs is concerned that Transmigration is leading to discrimination against West Papuans. The Minister for Overseas Development has even gone so far as to state that she considers that the present targets for the region are "exaggerated" if the World Bank's requirements are to be met.³³ Recognising the fact that present economic development programmes in West Papua are creating increasing disparities between the indigenous and settler populations, her own preference is for small-scale projects aimed at promoting local development initiatives.³⁴

A special report on West Papua submitted to the Dutch Parliament in March 1985 notes that development in the region is frequently being imposed with little involvement from the local peoples, who moreover have difficulty understanding the imposed administrative structures which clash with traditional social organisation.³⁵ The same report notes that although Indonesian Government plans for phased development in West Papua exist, which take into consideration the special needs and cultures of the local peoples, these have not yet been enacted. The report notes the great importance that the Indonesian Government attaches to uniformity in governing, and its reluctance to allow modifications on a regional and local level.

International Support for Transmigration

World Bank	millions
Transmigration 1	30.0 US
Transmigration 2	79.0 US
Transmigration 3	101.0 US
Transmigration 4	63.5 US
Transmigration 5	160.0 US
Swamp Reclamation 1	22.0 US
Swamp Reclamation 2	65.0 US
Transmigration Sector Review	--
Smallholder Nucleus Estates	--
World Food Programme	
South-East Sumatra	3.5 US
Rehabilitation and Development, Sumatra	5.3 US
Transmigration and Settlement in Luwu and Sumatra	3.9 US
Agricultural Development in South Sumatra	3.7 US
Rural Development in three provinces of Sumatra	2.4 US
Regional Development, South Sumatra/South-East Sulawesi	32.9 US
Regional Development, Riau	20.8 US
Regional Development, Kalimantan and Sumatra	33.0 US
United Nations Development Programme	
Planning and Development of Transmigration	1.7 US
Operational Support	2.2 US
Transmigration Management Development and Monitoring	1.5 US
Co-ordination of Technical Co-operation	0.4 US
Training support	1.1 US
Planning Support in Monitoring and Evaluation	--
1985-1989 commitments to Monitoring/Women/Livestock	2.0 US
Food and Agriculture Organisation	
Community Action for Women	--
Transmigration Assistance	0.2 US
South-east Sulawesi Project	
Asian Development Bank	34.3 US
Islamic Development Bank	10.0 US
European Economic Community	5.0 US
West Germany	
East Kalimantan Transmigration Area Development	73.0 DM
USAID	
Luwu Area Transmigration Development Project	15.0 US
Netherlands	
Bengkulu Transmigration Area Development	29.6 DG
Kuro Tidor Transmigration Bengkulu	3.0 DG
France	
Central Kalimantan Transmigration Area Development	1.5 US
United Kingdom	
Land Resources Development Centre consultancy*	--
NGOs	
Konrad Adenauer Stiftung, West Kalimantan Project	1.8 DM
Catholic Relief Services, Food Assistance Programme	4.1 US
Norad Study, Assistance to Riau	0.5 US

* The UK Government's bilateral assistance to the Transmigration programme is limited to the provision of consultancy services by the Land Resources Development Centre. The costs incurred by the LRDC are borne ultimately, by the World Bank.

Source: Survival International

Referring specifically to the government-sponsored Transmigration programme, the same report is far from complimentary. It notes that consultants are under great pressure to "deliver" the amounts of land needed to meet the ambitious targets set by central government. It raises the question about the suitability of the soils for settled agriculture, and notes that major problems exist in the preparation of sites and in linking them to markets. Migrants are insufficiently trained in agriculture. The result of all this is an accelerated drift to the towns and cities which is having a "disruptive effect on society". Newcomers are out-competing locals in the market sector. The compensation paid to the locals is limited and is made only for trees and crops (not for land). Increasing contradictions between locals and settlers are exaggerating inter-ethnic tensions, which, while not political in themselves, "could be translated politically".

The 1985 IGGI Meeting

The misgivings of donor governments about Transmigration, coupled with growing international concern at some of the grosser shortcomings of the Transmigration programme, prompted the IGGI conference of 1984 to request the Indonesian Government to hold a special seminar on Transmigration before its next meeting. The Indonesian Government agreed to this, on condition that the discussion was kept confidential, but the minutes of the meeting have been subsequently leaked and provide some illuminating insights into the programme.³⁶

The seminar, which took place in March 1985, was attended by representatives of all the major western members of the IGGI, and included personnel from the multilateral and UN agencies. At the seminar, the Indonesian Government provided summary documentation setting out the aims and objectives of the programme and the implementation procedures. Time was also set aside as an open forum for questioning and debate.

In neither the presentations nor the discussion was there any serious consideration of the rights of local people. On the contrary, the Minister of Transmigration made abundantly clear the integrationist—and effectively ethnocidal—intent of the programme. No consideration whatsoever was given to the environmental costs of Transmigration. Although Dutch officials expressed grave concern about the Transmigration programme in internal memoranda to the Netherlands Government, not one of them voiced their doubts in public at the seminar.³⁷

Despite this, the Netherlands Government subsequently tried to allay Survival International's concerns about the impact of Transmigration on local peoples by asserting that, at the seminar itself,

"it was apparent that the authorities are aware of the difficulties which Transmigration causes and hope to prevent them through policy adjustments."³⁸

From the above, it should be clear how the Bank and its backers are not 'coming clean' about Transmigration. Despite being aware of some of the programme's shortcomings, despite holding real concerns about its economic and social viability, and despite



Cleared jungle in Kalimantan. Only public protest can now stop this tragic misdirection of 'aid'.

having serious misgivings about the political advisability of the manner of its implementation, the funding agencies have been chary of airing their views (except behind closed doors), opting instead to withhold information about the programme from the general public.

The Geopolitics of Transmigration

"Whoever is Lord of Malacca has his hands on the throat of Venice."

The western governments claim that their 'aid' is being directed to Transmigration because it is a humanitarian exercise in development and nation building. Yet critics of the programme assert that such statements disguise the western nations' underlying motives for supporting the Indonesian Government in its attempt to extend its control over the peripheral islands of the archipelago. According to such an analysis, the *real* reasons for the West supporting the programme are to be found at another level—a level where macro-economic and geopolitical strategic considerations are allowed to over-ride humanitarian concerns.

Indonesia, the world's fifth largest nation has, for centuries, been a crucially important player in the great game of international trade and power-broking. Even since the Second World War, the country has been considered the 'lynchpin' of America's control of SE Asia. As President Richard Nixon noted in his 1967 paper, *Asia after Vietnam*:

"With its 100 million people and its 3,000 mile arc of islands, containing the region's richest hoard of natural resources, Indonesia constitutes the greatest prize in the South East Asia region."³⁹

Western government thinking about Indonesia, led by the United States, centres on the geopolitical imperatives of maintaining South-East Asia within the western sphere of influence, open to the 'Free World's' demands for trade and cheap natural resources, and untainted by communist control. This view was succinctly expressed by Eisenhower, with reference to the West's role in the war in Indochina:

"Now let us assume that we lose Indochina. If Indochina goes, several things happen right away. The Malay peninsula, the last little bit of land hanging on down there, would be scarcely defensible. The tin and tungsten we so greatly value from that area would cease coming, but all India would be out-flanked.

Burma would be in no position for defence . . . All of that position around there is very ominous to the United States, because finally if we lost all that, how would the free world hold the rich empire of Indonesia?

So you see, somewhere along the line, this must be blocked and it must be blocked now, and that is what we are trying to do.

So when the US votes \$400 million to help that war, we are not voting for a give-away programme. We are voting for the cheapest way that we can prevent something that would be of a most terrible significance to the United States of America, our security, our power and ability to *get certain things we need* from the riches of the Indonesian territory and from Southeast Asia."⁴⁰

The geopolitical significance of Indonesia to the

West has only increased since the Vietnam debacle. With Vietnam, Laos and Kampuchea gone and the Philippines looking decidedly shaky, the spectre of the US Navy losing access to the Indian Ocean, the flanking threat on Australia and the overriding fear of the West losing access to Indonesia's resources have become increasingly real.

The cynical manner with which the West has been prepared to sacrifice the interests of the people of the Indonesian archipelago to economic and political self-interest has been made most plain by the West's complicity in Indonesia's annexation, first of West Papua in the 1960s and then of East Timor in the 1970s.

In the early 1960s, the Dutch, who had retained West Papua after losing all the rest of their colonies in the East Indies, came under sustained pressure from the United States to hand the area over to the Indonesians. Appealing to President Kennedy, the Dutch ambassador in Washington argued that the Dutch had a moral obligation to the Papuans . . . just as the Americans had for West Berlin. Whereupon the President replied:

"That's an entirely different matter . . . (In West Berlin) there are some two and a quarter million inhabitants . . . those Papuans of yours are some 700,000 and living in the Stone Age".

Internal memos from the period reveal how the Kennedy administration went out of its way to persuade the Australian Government that

"A pro-Bloc, if not communist, Indonesia is an infinitely greater threat to them, and us, than Indo possession of a few thousand square miles of cannibal land".⁴¹

Nor has Western support for the excesses of Indonesian nationalism decreased since the military-backed regime of General Suharto opened the country to foreign capital investment and reduced the threat of a communist Indonesia. On the contrary, the complicity of the West in the invasion of East Timor in 1975 is now common knowledge.⁴² Since then, the same governments have not only refused to vote at the UN condemning Indonesia's annexation of East Timor (where an estimated one third of the population has died in defence of their right to self-determination), but have also stepped up their arms sales to Indonesia, dispelling the last shreds of doubt about western intentions in the region.

It is in this context that western support for Transmigration and the promotion of Indonesian national security and national development must be understood. The tragic reality is that, within the present global economic and political framework, it is hard for the West *not* to support Indonesian nationalism, of which Transmigration has become a central part, despite its undemocratic and repressive nature. The tribal peoples of the archipelago, and the forests they inhabit, are pawns in a game where the knights and castles of international economic interest are arms sales to Suharto's armed forces, the gold and copper of Mount Ertsberg in West Papua and the oil reserves under the East Timor Straits. With such glittering prizes, the fate of a few hundred thousand tribal people counts for little.

It is no accident of history that one of the principal architect's of the Vietnam war and the President of the World Bank, who first promoted the Bank's support for Transmigration, are one and the same man: Robert S. McNamara.

Conclusion

The West's commitment to supporting Transmigration can only be sustained so long as the general public remains ignorant of the real nature of the programme. It is for this reason that Western governments have been reluctant to speak openly about it, relying on the general public's lack of knowledge about their involvement in the programme. In this, they have been helped by the general obscurity relating to Indonesian affairs. Indonesia, in spite of being the fifth most populous country in the world,

remains poorly understood and is little referred to in the international media.

This special issue of *The Ecologist* has been prepared with the specific aim of bringing the issue of international support for Transmigration to the attention of the general public. As the following articles substantiate, Transmigration is leading to the irreversible destruction of huge areas of rainforest, the alienation of tribal peoples from their lands and the denial of their internationally recognised right to self-determination. Yet the programme is being supported by the tax payments of the general public in the donor countries.

With Western governments cynically committed to continuing their support for the programme, only public protest can now stop this tragic misdirection of 'aid'.

Notes

1. World Bank, *Tribal Peoples and Economic Development: Human Ecologic Consideration*, 1982, p 15.
2. Bank funding for Transmigration since 1974 has consisted of four Transmigration projects, two Swamp Reclamation projects, the Transmigration Sector Review and support for the Nucleus Estates and Smallholder (PIR) projects.
3. World Bank, press release, June 13, 1985. No 85/98.
4. Proceedings of the Meeting between the Department of Transmigration and the IGGI, Jakarta, March 20, 1985.
5. Koentjaraningrat, *Javanese Culture*, Oxford University Press, 1985, p 9.
6. This quote and the following one have been taken from an earlier and longer draft of the article by Mariel Otten in this issue. G.W.Jones, 'The Transmigration Programme and Development Planning' in Robin J. Pryor (ed.) *Migration and Development in South East Asia*, Oxford University Press, Kuala Lumpur, 1979, pp 212-221.
7. R.M. Sundrum cited in G.W. Jones and H.V. Richter (eds) *Population Resettlement Programmes in South East Asia*, Canberra, 1982, p 149.
8. World Bank, Report on Indonesia, 1985, p 121. Narinder Aggarwala, 'Moving millions of people to sparsely populated areas: the case of Indonesia', *The Courier*, March-April, 1984, p 75.
9. *Inside Indonesia*, No 6, December 1985, p 26.
10. Most of the letters were sent in response to Survival International's Urgent Action Bulletin UAB/PAP/2/MAY/1985, reproduced in *The Ecologist* Vol 15, No 5/6 pp 300-301. Pressure had also been exerted on the Bank from the Minority Rights Group NY and as a result of an ACFOA briefing paper, May 1985, *Transmigration in Indonesia*.
11. The controversies had surrounded the Chico Dams Projects in the Philippines and the Polonoroeste programme in Brazil, see back issues of the *Survival International Review*. See also, *The Ecologist's* special issues on the World Bank, as advertised in this issue, Nos 1/2 and Nos 5/6, 1985.
12. World Bank, *op. cit.* (supra note 1).
13. *Financial Review* (Australia), February 4, 1986; *Niugini News*, (PNG), February 4, 1986.
14. Minister Martono, Minister of Transmigration, cited in *Proceedings of DOT/IGGI Meeting*, *op. cit.* (supra note 4), p 41.
15. Project cycles have five phases: 1) sector analysis; 2) project identification; 3) project preparation; 4) appraisal; 5) negotiation.
16. *Transmigration in Indonesia: Correspondence with the World Bank* (28 pp booklet, £1.50 inc. despatch, available from Survival International).
17. Teresa Hayter and Catharine Watson, *Aid: Rhetoric and Reality*, Pluto Press, London, 1984. Marcus Colchester, 'Anthropology and Development', *Survival International Review* 44, 1985, pp 141-145. See also previous issues of *The Ecologist*, notably Vol 15, Nos 1/2 and Nos 5/6.

18. World Bank, *op. cit.* (supra note 1) p 19.
19. World Bank, *Staff Appraisal Report, Transmigration V Project, draft*, April 1985, p 34.
20. World Bank, *Staff Appraisal Report, Transmigration V Project*, May 1985, pp 38-9.
21. The UK Government's bilateral assistance to the Transmigration programme is limited to the provision of consultancy services by the Land Resources Development Centre. The costs incurred by the LRDC are borne, ultimately, by the World Bank.
22. Patricia Adams, 'The World Bank: a law unto itself', *The Ecologist* 15, (5/6), 1985, pp220-1.
23. This information is published in *International Finance*, a bulletin of the US National Advisory Council on International Monetary and Financial Policies.
24. Copies of the full correspondence between Survival International and the Netherlands Ministry of Foreign Affairs are available from Survival International as a 16pp booklet, £1.00 inc. despatch, *Transmigration in Indonesia: Correspondence with the Netherlands Government*.
25. See, for example, *Proceedings of the DOT/IGGI Meeting*, *op. cit.* (supra note 4).
26. See Correspondence, *op. cit.* (supra note 24).
27. Ministry of Foreign Affairs, *Projektlijst September 1984*, Gravenhage, 1984, pp 26-32: H.G.T. van Raay, *Transmigration: Some Implementation Options Examined*, Institute of Social Studies Advisory Service, Jakarta, March 1985, p 1.
28. van Raay, *op. cit.* (supra note 27), p 2-3.
29. van Raay, *op. cit.* (supra note 27), p 2.
30. van Raay, *op. cit.* (supra note 27), p 4.
31. van Raay, *op. cit.* (supra note 27), p 3.
32. H.G.T. van Raay, *Transmigration Seminar, Jakarta Maart, 1985*, Institute for Social Studies Advisory Service, Den Haag, April 1985.
33. *Nederlands Dagblad*, 2 March 1985.
34. Letter from the Minister of Foreign Affairs to the Chairman of the Permanent Committee for Development Cooperation Second Chamber of the Dutch Parliament, 15 March 1985.
35. *Rapport Missie Naar Irian Jaya, December 1984*, Ministerie van Buitenlandse Zaken, Gravenhage, submitted accompanying letter, *op. cit.* (supra note 34).
36. *Proceedings of the DOT/IGGI Meeting*, *op. cit.* (supra note 4).
37. van Raay, *op. cit.* (supra notes 24 and 29).
38. *op. cit.* (supra note 21).
39. Richard Nixon, 'Asia after Vietnam', *Foreign Affairs*, 1967, cited in Julie Southwood and Patrick Flanagan, *Indonesia: Law, Propaganda and Terror*, Zed Books, London, 1967, p 17.
40. President Eisenhower, 4 August 1953, Governors' Conference, cited in Southwood and Flanagan, *op. cit.* (supra note 39), p 19, (emphasis added).
41. Robin Osborne, *Indonesia's Secret War*, Allen and Unwin, Sydney 1985, pp 26-7.
42. Carmel Budiardjo and Liem Soei Liong, *The War Against East Timor*, Zed Books, London, 1985.

'Transmigrasi': From Poverty to Bare Subsistence

By Mariël Otten, Komitee Indonesië

According to the Indonesian Government, Transmigration aims "first and foremost" to improve the living standards of settlers. In reality, many migrants have been reduced to penury. Not only must they contend with uncleared land, often of poor quality, but also with inappropriately-designed housing and a lack of basic facilities. The government is now changing its policy of giving settlers land to grow food crops. Instead it is encouraging plantations growing cash-crops for export. Transmigrants will provide the labour force.

With a population of 165 million people, Indonesia is the fifth most populous country in the world. Over the past few decades, the rate of population growth has been rising steadily and now stands at around two to three per cent a year. Over 60 per cent of the population lives on the islands of Java and Madura which account for less than seven per cent of the total land area. Densities on Java average 700 people per square kilometre, compared with 63 people/km² in Sumatra, 21 in Kalimantan and three in West Papua.¹

According to the government, both high and low population densities are detrimental to development—high densities because they lead to overcrowding, unemployment, the fragmentation of land holdings, overcultivation and deforestation; and low densities because they lead to an "under-exploitation" of the country's resources. Transmigration (which, in theory, will "spread" the country's population more evenly through the islands of the archipelago) is thus seen as critical to national development.

To date, the emphasis has been on moving as many people as quickly and as cheaply as possible. Nonetheless, the costs of resettlement have risen apace—from an average of US \$5,720 per family during the Third Five-Year Plan period to US\$7,000 per family during the Fourth. The 1984-1989 Transmigration budget has been raised to US\$ 3.5 billion.

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Little Demographic Impact

Already vast numbers have shifted from Java to the outer islands. The "target" figures issued by the government under successive Five-Year Plans (*Pelitas*) are indicative: 45,000 families under the First *Pelita*; 250,000 (later reduced to 100,000) under the Second; 500,000 under the Third; and 750,000 families under the current Plan. Not that these targets have always been met. According to Martono, only 129,027 families were moved in *Pelitas* I and II. In *Pelita* III, however, the target was exceeded, with over 500,000 being resettled.²

Despite that exodus, the demographic impact of Transmigration on Java has been minor. The official figures have to be taken with a grain of salt, but, assuming that they are correct, the 500,000 Javanese who are now being moved every year account for only 25 per cent of the island's natural population increase—some two million people per year. Taking into account the natural increase of the migrant families themselves (who tend to respond to resettlement with a high fertility rate) transmigration has in fact stimulated population growth.³ Meanwhile the demographic impact on the "Outer Islands" has been severe. The settlement of migrants has led to the ecological carrying capacity of the land being exceeded in many areas.

Raising Living Standards

The Transmigration programme has its roots in the 'Kolonisatie'

policy of the Dutch Colonial Government. The Dutch viewed a large part of the population of Java as constituting "surplus people". It was argued that resettling this "surplus" elsewhere would improve social and economic conditions on the island by relieving the pressure on land. The same argument is now being used by the present regime. Recently, Mr Martono, Minister for Transmigration, announced that at least twenty million people would have to be moved from Java if living standards on the island were to be improved.⁴

Likewise, the World Bank justifies its backing for the programme by pointing to its projected economic benefits:

"Transmigration has the potential to reap substantial benefits. It can provide employment and land ownership to some of the poorest members of the labour force in Java. It also brings under-utilized land into intensive cultivation, raises agricultural production and contributes more broadly to economic development in the Outer Islands."⁵

Benefiting the Migrants?

Today, few outside government seriously believe that Transmigration will solve Java's problems of unemployment and landlessness. Instead of stressing the "population" motive for the programme, officials now accentuate its claimed economic benefits for the transmigrants themselves. Transmigration, it is argued, gives hope to Java's landless poor by offering them a once-in-a-lifetime chance to obtain a plot of land which they can

call their own. Indeed, Martono is explicit that the *primary* aim of the programme is to improve "the living standards of the settlers themselves and indirectly of the inhabitants of both the districts of origin and the newly developed districts of settlement."⁶

So much for the rhetoric, what of the reality? Here is what one analyst has to say: "Since most of those resettled by the government were either landless labourers or had only very small plots of land in their areas of origin, it was simply taken for granted that transmigrants would become better off after resettlement."⁷ She goes on to comment:

"Observers suggest that the main aim is not so much to enable settlers to pull themselves out of the cycle of poverty as to continue their lives at subsistence level, growing only subsistence/basic food crops."⁸

Broken Promises

On paper, the resettlement scheme looks fine. Under the scheme transmigrants are promised 0.25 hectares with a house, plus one hectare of cleared arable land, ready for cultivation. The amount of land allocated to each family is assumed to be the maximum a family can cultivate without the help of draught animals or traction power. According to Martono, it can provide enough food to subsist on "if it is properly cultivated."⁹

In the first few months, transmigrants are supposed to receive food aid and agricultural inputs. After a period of consolidation, they receive (again, on paper) an additional one hectare for the cultivation of cash crops.

The reality, however, is very different. The problems confronting the migrants have proved manifold—many of them due to the Jakarta-inspired drive to keep expenditure low and to implement the programme as fast as possible:

- Many resettlement sites are located in relatively 'empty' remote areas. Because of the lack of uninhabited land suitable for agriculture, most of the locations chosen are tropical rain-forests. The forests have been cleared by private contractors or subcontractors whose only concern is to

A Catalogue of Failures

Sensitivity about failed Transmigration projects is such that transmigrants returning home are likely to be accorded "special treatment". Parliamentarians on a field trip through West Java last year discovered that a number of returned families had been placed in custody "to prevent them spreading negative reports and reduce the enthusiasm of others to transmigrate".

The following reports (taken from only a few Jakarta papers) are indicative of the problems now being experienced at Transmigration sites. Access to regional papers would certainly have provided a much wider variety of reports:

- *Sinar Harapan*, 28 August 1983. More than 11,000 transmigrants were facing starvation in the Subulussalam site, South Aceh. Their land was too peaty to produce most types of food. Anything they did manage to grow was consumed by rats and boars. They moved from Java in 1981 and 1982 and have experienced nothing but difficulties since then. A team of regional Assembly members who came upon these unfortunate transmigrants during an inspection trip to the area, reported that fifty-eight people had died "in pathetic circumstances" because when the land was handed over to them, it had not been properly cleared. The transmigrants had been driven to raiding government food stores while site officials stood by, not daring to intervene. "Moving transmigrants like this without proper preparations is nothing short of murder," said one Assembly member. "Surely, as human beings, they deserve to be treated better than this."

- *Sinar Harapan*, 26 June 1984. 4,720 transmigrants from Central and East Java in the Jagong-Jaget site in Central Aceh are in dire straits because their crops have all been devoured by rats and wild boars. On top of that, they live in a state of constant fear because their

site is surrounded by tigers and elephants. A local Assembly member had returned from an inspection trip, alarmed by what he found.

To add to their troubles, he said, the 29-km road from the site to the nearest town was impassable by motorised vehicles and difficult even to walk along. The lack of food was not due to infertile land but to the encroachment of wild animals which had been deprived of their habitat as a result of the scheme. Many families had left the site in search of work in nearby towns. "If nothing is done to help them, the site will soon be completely deserted."

- *Merdeka*, 20 July 1984. Transmigrants in West Aceh were reported to be leaving their site in droves because the land they had settled was infertile. Some youngsters had made their way to Banda Aceh looking for jobs; they feared that others would soon follow, making the job situation even more difficult. Whole families who could afford it had decided to return home to Java.

- *Merdeka*, 23 July 1984. Dozens of transmigrant families in South Sulawesi angrily surrounded the Public Works Minister on a tour of the region to tell him of their difficult living conditions. For two years running, their harvest had been destroyed by rats, wild boars and insects. "Isn't there an agricultural expert around to advise you?" asked the minister. "There used to be one, but we haven't seen him for ages," came the reply.

- *Sinar Harapan*, 2 August 1984. A local Transmigration official in East Kalimantan expressed "amazement" when a report came in of a serious food shortage among transmigrants in Kutai district. "One of my staff was there only two weeks ago and reported that things weren't too bad even though he admitted the harvest had failed." But since then, the Kutai district chief had arrived to report that the food situation was

complete the job as quickly and as profitably as possible. In many cases, only the commercially attractive trees have been felled, with large tree stumps being left behind. The transmigrants, who are moved in as soon as possible (often long before site preparation is completed), have not been able to finish the land clearance operations themselves because they do not have the money, time or machinery to do the job.¹⁰

- The heavy machinery used by the contractors has damaged the soil.

- On arrival, many settlers found that the houses which they had been promised were not built or were of low quality. The Department of Public Works persists in supplying "standard" houses which are singularly unsuited to local conditions.

- The resettlement sites lack roads and other infrastructural developments. As a result, in the exceptional cases where settlers have managed to produce a surplus, they have been unable to market it because transport was not available.¹¹



A transmigrant from Java surveys her new home, a newly-cleared site near Rimbo-Bujung, Sumatra. The newspapers are full of tales of families returning home to Java. The government admits to 2,000 people having left their new homes during the period of the 3rd Five-Year Plan. Sixty Transmigration sites are in need of "rehabilitation".

PHOTO: JEROME RICARDOU

"grave". The most seriously affected were 1,200 families who had been at the Jonggon site for two years and who had not yet produced a single harvest.

● *Merdeka*, 21 August 1984. Four hundred out of a thousand Transmigrant families have abandoned two sites located 65kms west of Kendari, capital of Southeast Sulawesi, because they were prevented by forestry officials from exploiting commercially the timber felled from second-round land allocated to them. They had no other way of making a living.

Some families had drifted into Kendari in search of jobs; others had managed to scrape together enough money to return home to Java or Bali.

● *Jakarta Post*, 2 May 1985. Two resettlement sites set up in North Aceh to accommodate families whose land was taken over for a fertiliser plant and a natural gas plant were almost completely deserted after four years. Only 66 of 400 families in one site now remained, while in another site

(which had accommodated 1,000 families), only 12 families were left. Although promised two hectares each, the families had only ever received a quarter of a hectare which is not enough for bare subsistence. Those who remained tried to eke out a living crushing rocks. "The two villages provide an example of how badly the resettlement programme has been carried out. The inhabitants used to live in peace even under poor circumstances... Attracted by the prospect of a better life, they were ready to give up their ricefields and houses for the benefit of the industries. But now they again were made to live uncertain lives with bleak futures."

● *Kompas*, 25 August 1985. "Javanese are sent to Kalimantan for a better life," said one village head, "but many end up like chickens cooped up, without being given any food." The Transmigration area located in West Kalimantan was now home for about 2,000 families, but how could they sell their produce as the nearest market was one day's walk away?

● *Kompas*, 12 August 1985. Most transmigrants at Salor II site in Merauke region, Irian Jaya (West Papua) have abandoned the site to find work on construction sites in Merauke town. They moved into the region in phases starting 1981 but have never been able to produce any food because the aluminium values in the soil poison crops as soon as the roots reach below the topsoil.

In Sorong, in the western part of Irian Jaya, Transmigrant families brought in since 1981 have still not received the full amount of land promised to them by the authorities. Some have not received any land at all and have made their way to Sorong in search of work. An official admitted that 447 families had taken this course of action. Others tried to raise enough money to return home to Java. An inhabitant in Sorong said a transmigrant family had offered him one of their children for Rp 150,000 so that the rest of the family could go home.

Carmel Budiardjo

● Irrigation and drainage works have not kept pace with the growth of settlements. Transmigrants in the Way Seputih site in Southern Sumatra for example had to wait *fourteen years* for irrigation and drainage canals to be built.¹² Elsewhere, the lack of drainage has led to one settlement being flooded; other settlements look like deserts owing to the lack of water.

Unseemly Haste

Such is the haste with which

migrants are dispatched to their new "houses" that Transmigration has been described as the "plan-as-you-proceed" programme. In 1984, the Environment Minister, Emil Salim, compared it to

"sailing on a boat that is still under construction. Some of the passengers are nailing down the timber, others are ladling out water, while yet others are still trying to decide where the boat is supposed to be going."¹³

On many sites, settler families can

only survive if they take on outside work. In Sumatra, tapioca plants provide the major source of employment: in Kalimantan, it is the logging industry. A great many migrants in the Dendang I site in Jambi, for instance, were forced to take jobs at a nearby factory to compensate for the low quality of their allotted lands. The local authorities were said to be "disturbed" because of the withdrawal of "productive" labour from the agricultural sector¹⁴.

Left behind to cultivate the garden as well as the farming plots, while the men and some of the older children are out working for wages, the women settlers have had to bear a disproportionate amount of the agricultural and household work. This at a time when resettlement has already weakened the position of women by undermining their traditional networks, and by the loss of the additional job possibilities open to them in Java¹⁵.

"Remigrasi"

One consequence of the programme's poor implementation is that many transmigrants have simply upped sticks and returned home to Java. Indeed the Indonesian newspapers are filled with reports of transmigrants leaving or threatening to leave their sites. The incidence of "Remigrasi" is particularly high in camps where food hand-outs were delayed (or did not arrive at all) and where the possibility of outside work is small or non-existent. The government has officially admitted that 2,000 families left "their new homes" during *Pelita III*. This figure is too low. It is also admitted that some 60 Transmigration sites are in need of "rehabilitation".

The World Bank has warned of the consequences of "Remigrasi":

"If living conditions and incomes do not match the needs or expectations of transmigrants, there is a possibility of significant second round flows of either the original transmigrants or, after a period, their children. This could involve either a reflow back to Java or to urban centres in the Outer Islands. Either could be destabilising for the labour market."¹⁶

A Bankrupt Policy

The World Bank has acknowledged that the present 'farm crop model'—in which migrants are given enough land to subsist on—is bankrupt:

"A dryland model consisting of an initial 1.0ha of dryland crops and no 'secondary development' (cattle, wetland rice or tree crops) results in low economic rates of return which can approach zero, due largely to higher investments in infrastructure required in remote or isolated areas. One may conclude that this model should be avoided in new Transmigration

sites unless followed by secondary development."¹⁷

Significantly, an economist who studied the programme for the World Bank has come to the conclusion that:

"None of the settlements had returns anything like what the World Bank said would be the minimum feasible in its economic justification for the programme."¹⁸

At the end of the Third Five-Year Plan, it is clear that the present settlement policy has been a disastrous failure. By promoting the same pattern of subsistence agriculture found in Java, the government is simply recreating the self-

"Transmigration is changing its focus from an ineffective 'welfare' policy to a generalised exploitation of migrants".

J.P. Perez-Sainz, FAO researcher, 1978

same set of problems from which the transmigrants were supposed to have been rescued. The result is what many observers have described as "the transfer of Javanese poverty".

Poverty, however, has become a reality for more than just the transmigrants. The indigenous population of the "Outer Islands" have also been sucked into the abyss.

Blaming the Transmigrants

Although the myth of the "happy transmigrant family" has now been exposed, the government refuses to acknowledge that it is the Transmigration programme itself which is at fault. Instead it blames the transmigrants for the failures of the programme. They are accused of expecting to be "spoon-fed", of not being prepared to work hard, or of leaving their new homes once their entitlement to free food aid expires. After describing all the shortcomings at the Mamosaloto site in Central Sulawesi (noticeably the lack of an irrigation and drainage

system) one reporter quotes a local Transmigration official as saying:

"It is true that all the facilities in the Mamosaloto project have not been completed yet, but the transmigrants should be patient and work hard, not just sit idle and be spoon-fed."¹⁹

'Spontaneous' Migration

The "spoonfed" myth has helped counteract the adverse publicity that returning migrants in Java have attracted. It has also been used to justify cheaper forms of migration. Under the heading, "No more spoon-fed transmigrants please", the *Jakarta Post* reported that Sumatra, Kalimantan and parts of Sulawesi were to be closed to government-funded Transmigration:

"Only those migrants who leave at their own expense will be accepted because they pose no financial burden to the government. Transmigrants who leave at their own expense have proven to be more steadfast in overcoming problems and facing challenges. Unlike the state-sponsored migrants, the spontaneous migrants are less troublesome and more determined to make a decent living."²⁰

In several studies, it has been concluded that "spontaneous" migrants have been more successful than government-sponsored transmigrants (known as '*transmigran umum*' or "general transmigrants").²¹ As a result, the World Bank would like to see "general" transmigration replaced by "spontaneous" migration.

It should be understood, however, that "spontaneous transmigrants" are not what the name suggests at all. As Kartomo Wirosohardjo, Director of the Demographic Institute of the University of Indonesia, points out:

"We have to make a distinction between transmigration and migration. In Indonesia, people tend to think that what we term migration means transmigration. Transmigration is a special kind of migration—a government-sponsored migration. Then what they call general transmigrants are those supported fully by the government, whereas "spontaneous transmigrants" are not just people who move by themselves but rather those who move within the framework of the law and are provided land by the government

but nothing more. Migrants from Java to the outer islands who just come to buy land there are not termed transmigrants . . . What some observers term "spontaneous transmigrants" are not transmigrants as normally understood in Indonesia. They are 'uncontrolled migrants' ".²²

In supporting "spontaneous transmigrants", the government hopes to stimulate Transmigration while keeping control of the migration process. In addition "spontaneous Transmigration" has the advantage of cutting settlement costs. It is clear also that the government sees "spontaneous transmigrants" providing the labour force for the cash-crop plantations it is now setting up.

Crops for Export

In 1984, in a major policy shift, Martono announced that the government intended to concentrate on setting up cash-crop "estates" rather than on giving out land to settlers for subsistence agriculture. Those settlers who are still able to grow their own food (and, in many areas, the soil is now so impoverished that growing rice is impossible) will have to fend for themselves, regardless of whether they have good harvests or bad. The Transmigration programme will now direct its energies towards investing in sites for exploitation by state-run or privately-owned plantation companies.²³

Several factors account for this policy shift. Firstly, Indonesia desperately needs to compensate for the loss of earnings from oil exports, due to the falling price of oil. Secondly, the government is bent on stimulating private investment in Transmigration, as well as in other sectors of the economy. And, lastly, the attainment of self-sufficiency in rice (*berswasembada*) has made food-crop sites less attractive.²⁴

In linking the PIR (*Perkebunan Inti Rakyat* or "Nucleus Estates and Smallholders") system to the Transmigration programme, the government no longer needs to provide full assistance to transmigrants. Instead of settlers being independent farmers, they become "smallholders" on estates owned by the state or by private planters.

The government has undertaken to pay for setting up the new settlements—for surveying and clearing the land, constructing housing, piping in water and so on. This has left private investors with responsibility only for the cost of planting the crops and providing technical assistance and inputs. Ultimately, even this investment will be reimbursed by the state banks. The peasant smallholders, however, are granted no such indulgences. Instead, they are forced to sell their produce to the companies at a fixed price.²⁵ Among the private investors who are benefiting from this highly profitable arrangement are the powerful Liem Sioe Liong and Astra groups, both closely linked to the Suharto family.

Indonesia desperately needs to compensate for its falling oil revenues. New Transmigration sites will now primarily be used to grow cash crops for export.

The government clearly hopes that "spontaneous transmigrants" and private investors will bear the lion's share of settlement costs. The development towards estate and smallholder production was predicted in 1978 by FAO-researcher Perez-Sainz. He went on to comment:

"What remains clear is that whatever will be the new course to be followed by Transmigration, the outcome will be the total or partial proletarianisation of transmigrants. In this sense, Transmigration is being structured clearly as a state intervention in favour and support of capital, mobilising relative surplus-labour from Java, implying the further exploitation of migrants. *Therefore Transmigration is changing its focus from an ineffective 'welfare' policy to a generalised exploitation of migrants.*"²⁶

That comment has proved all too prophetic.

Blind to Criticism

The government intends to settle 137,000 families in West Papua and another 328,000 families in Kalimantan during the Fourth Five-Year Plan period. It justifies the massive flow of migrants into these two regions in terms of a lack of suitable sites elsewhere, and argues strongly in favour of the potential of border regions for settlement, not only in terms of their natural resources but also for "national integration and security" goals, (see Budiardjo in this issue).

In March 1985, Martono's Department held a Transmigration Seminar in Jakarta to explain the programme to the ambassadors of the member-states of the Inter-Governmental Group on Indonesia (IGGI) and representatives of international agencies, as part of the regime's counter-offensive against growing international criticism of the programme. The verbatim report of the Seminar includes no critical remarks by the foreign representatives present but in a lengthy unpublished comment prepared shortly afterwards, Professor Van Raay who attended the Seminar as advisor to the Dutch ambassador raised some basic problems that question the advisability of pressing ahead with Transmigration in remote areas like Kalimantan and West Papua.

"It must be remembered that few areas in the national periphery constitute genuine virgin territory. Generally, a rather localised life prevails, characterised by extensive land needs, by substantive entitlements to the areas's resources, by low standards of needs and wants, by slight economic differentiation, and by deficient external linkages. This has important implications for the planning of Transmigration projects. Transmigration will only contribute to development if attention to the newcomers to be settled in the years to come is matched by concern for the indigenous population and the 'cultural shock' that is likely to occur. If the former category were to absorb the greater part of resources, the present low level of development might be replaced by another equally critical problem, i.e., a disparity of development along ethnic lines. Such lack of integration would be the most serious. In case tensions arise,

prospects for development may be jeopardised for many years to come. This may be true to an extent that even the attainment of national goals and aspirations may be complicated, and 'trouble spots' might be created quite incompatible with the geostrategic considerations which may have co-determined the decision to select such border areas for Transmigration".²⁷

Whatever the status of these and other critical comments contained in Van Raay's report (which has been discussed by the Parliamentary Commission in Development Co-operation), neither the Indonesian

Government nor the World Bank intend to heed them:

"When the quantified and nonquantified benefits for Transmigration in these remote areas are considered together, one may conclude that the Transmigration programme for these areas is fully consistent with the national development priorities held by the government and supported by the World Bank."²⁸

The fate of the landless people moved away from Java and the quality of the sites where they are dumped are apparently not among the government's "development priorities". Newspaper reports on

the implementation of the Transmigration programme since the beginning of the Fourth Five-Year Plan reveal that things have not improved.

Conclusion

Transmigration has singularly failed to achieve its stated aim of raising the living standards of both migrants and those they leave behind in Java. Instead, it has reduced many migrants to penury. It is time that the programme was halted—and the sooner, the better.

Acknowledgement

This article summarises part of the results of a general study on Transmigration to be published later this year by the International Work Group for Indigenous Affairs (IWGIA, Fiolstraede 10, DK-1171 Copenhagen K, Denmark).

Notes and References

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and *Growth in Indonesia*, Jakarta, August 1984, pIV. Apart from the figure for the total population (1985), the figures are drawn from the 1980 census.

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3. G.W. Jones, 'The Transmigration Programme and Development Planning' in Robin J. Pryor (ed) *Migration and Development in South-East Asia*, Oxford University Press, Kuala Lumpur, 1979, pp 212-221.
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8. Ibid, p45.
9. Martono, *op. cit.* (note 1) p40.
10. M. Oey, *op. cit.* (note 7), p42.
11. Harun Zain, formerly Minister for Transmigration, did not mince his words on this point. In an interview with NRC Handelsblad (9 June 1982), he said that transmigrants were sent into the jungle and if they produced a surplus, they could not market it.
12. S. Tjondronegoro, 'Transmigration Problems Affecting Population Mobility in South Sumatra' in Jones and Richter, *op. cit.* (note 7) p54.
13. *Sinar Harapan*, 21 February 1984.
14. *Suara Karya*, 20 December 1984.
15. The Inter-NGO Meeting on IGGI Matters (INGI) in Amsterdam in June 1985 recommended in its Aide Memoire that the IGGI should devote special attention to women transmigrants because "they lost their former job opportunities in Java, Bali and Lombok and usually became the immediate victims of crop failures and other constraints".
16. World Bank, *op. cit.* (note 5) p18.
17. This quote is from the draft version (dated 3 April 1985) of the World Bank's *Transmigration Project V Project*. The final version, dated 16 May 1985, is substantially different. There is no reference to the "dryland food crop model". The words, "one may conclude that this model should be avoided in new transmigration sites unless followed by secondary development" have

been deleted, and the following sentence added: "GOI recognises this danger, and regards this first stage development as an interim settlement stage to be followed by a second stage development." (page 37)

18. *New Scientist*, 17 May 1984.
19. *Jakarta Post*, 20 January 1984.
20. *Jakarta Post*, 15 January 1985.
21. Explaining why spontaneous transmigrants in South Kalimantan were relatively successful, Guinness writes: "The reasons were firstly that in many cases they had people to whom they could move, either friends, acquaintances or relatives who were already established. These were able to give the movers jobs or employment for a period when they were still working out what to do, where to live and how the system worked. The second thing was that because they were landless when they arrived, they had to negotiate with the local villagers for land, and many of them began their years of settlement there by working full-time for local villagers. So their relations with local villagers became very good. Third, they experimented much more widely with crops because they were not required to plant a particular crop or given particular seeds. They did their own experimentation." Jones and Richter, *op. cit.* (note 7) p158 ff.
22. Kartomo Wiroshardjo, in Jones and Richter, *op. cit.* (note 7) p163.
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THE NEW ECONOMIC AGENDA

Ed. Mary Inglis and Sandra Kramer

Practitioners from both the conventional and alternative fields of economics reflect on some of the trends shaping the emerging economic landscape of the 80s and 90s. Jonathon Porritt, Charles Handy, Manfred Max-Neef, José Lutzenberger, Barrie Sherman, Guy Dauncey and others cover topics such as the changing role of work, the transformative potential in the current unemployment crisis, the political impact of the new economics, personal attitudes towards lack and prosperity, the human factor in business and successful community-based initiatives.

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The Environmental Impact of Transmigration



PHOTO: JOHN PAYNE/ICCE

Burned and cleared forest. By supporting the Transmigration programme, the international aid agencies are assisting in the destruction of 270,000 hectares of primary rainforest every year by initial clearance alone.

By Charles Secrett, Friends of the Earth

Eighty per cent of the Transmigration sites to be set up during Indonesia's current Five-Year Plan will be hacked out of untouched jungle. The result will be the overall loss of at least 3.3 million hectares of some of the richest rainforest in the world. By supporting such destruction, the World Bank is breaking its own environmental and economic guidelines. Alternatives exist—and the Bank should promote them. Otherwise, it should withdraw funding entirely.

Indonesia's Transmigration Programme means very different things to different people. As "the most ambitious colonisation scheme in the world"¹, it has provoked strong reactions. In the 1950s, President Sukarno called Transmigration "a matter of life and death for the Indonesian people". Nicholas Guppy, a close student of tropical rainforests for more than 35 years, has likened its environmental impact to "waging the equivalent of thermo-nuclear war".² The World Bank believes that Transmigration

has had "several beneficial effects on the country's economy" and has "played more than its due share in promoting employment and social welfare among the Indonesian people".³

The Bank's assertions align closely with the dominant thinking of the Indonesian Government, which presents Transmigration as essential to effective nation building. Yet, even internally, the government's policy has been strongly criticised. The most recent and comprehensive review of Indonesian forest policies, carried out jointly by three Indonesian Government Departments (Forestry; Population, Environment and Development; and the Interior) and the International Institute of Environment and Development

came to the unusually outspoken conclusion that:

"Given the current objectives and operational procedures of the Transmigration Programme, the Team considers Transmigration as the single sectoral activity with the greatest potential to advance forest destruction—often to no constructive result. Whether a 'success' or 'failure' by present standards, Transmigration, as currently managed, can only have negative implications for forest resources."⁴

Tropical Moist Forests

The biological richness of tropical moist forests is legendary. Covering some 9 million square kilometres, they are estimated to contain at least 40 per cent of all wild species.⁵

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According to the U.S. National Academy of Sciences (NAS), a "typical" four square mile patch of rainforest contains up to 1,500 species of flowering plants, 750 species of tree, 125 of mammals, 400 of birds, 100 of reptiles, 60 of amphibians and 150 of butterflies.⁶

This extraordinary diversity of life is generally due to a combination of the great age of the forests (over 100 million years) and their relatively continuous hot, moist climate. In most cases the soil of tropical moist forests is poor, although areas like the volcanic regions of South-east Asia and the floodplains of the Amazon and Congo river basins are exceptions.

The high species diversity and almost sterile soils have obvious implications for their conversion to other uses. High diversity has led to low species density, and complex species inter-dependency. The clearance of even relatively small areas of forest can swiftly lead to species extinction.⁷ The nutrient-deficient soils mean that recolonisation of abandoned, formerly forested land is difficult; because nearly all the available nutrients are locked up in surface vegetation, few nutrients remain after a site has been cleared. Any planned conversion must acknowledge these ecological constraints.⁸

Estimates of the extent of tropical deforestation, and explanations as to its causes, vary. The two best documented studies are a 1982 FAO/UNEP study, which concluded that 7.4 million hectares (ha) of tropical forests were totally cleared every year during the late 1970s; and a NAS estimate⁹, carried out by Dr Norman Myers, which put the figure at 22 million ha. cleared and

biologically degraded every year over the same period*.

On the basis that some 200,000 square kilometres (sq kms) of rainforest are cleared or degraded annually**, Myers calculated that:

- At least 45,000 sq kms of primary forest are lost every year to commercial logging. This land is often reoccupied by landless cultivators and permanently degraded;
- Fuelwood gatherers use some 25,000 sq kms;
- Cattle ranchers, confined to Latin America, destroy 20,000 sq kms;
- And landless "slash-and-burn" cultivators are responsible for the loss of 160,000 sq kms.¹¹

"The programme as it is presently implemented does not support the sustainable development of Indonesia's forest lands, or, for that matter, the settlements themselves."

*Report of Forest Review Team,
Government of Indonesia / IIED.*

It is widely accepted that increased cutting has led to the loss of as much as half of all tropical forests since 1950.¹² The FAO predict that almost one-fifth of the remaining tropical moist forests will have gone by the end of the century; others believe as much as two-thirds will disappear.¹³ The effects of such widespread clearance on wild species is unknown, but many hundreds of thousands will certainly become extinct as a result. It is conceivable that the eventual total may be as high as one in five of all life forms.

Indonesia's Forests: A Wealth of Species

It is in this light that Indonesia's remarkable tropical moist forests, and the environmental impact of its Transmigration Programme, must be seen, for they are vitally important both as a global and as a national resource. They are second only to Brazil's in extent, and constitute nearly ten per cent of the

world's remaining rainforests. Dr Robert Goodland, of the World Bank's Office of Environmental Affairs, has called the Indonesian Archipelago "one of the biologically most significant areas of the world".¹⁴

Its 13,667 islands rise from the sea at the conjunction of two continental land masses, Asia and Australasia. Bali, Java, Kalimantan and Sumatra form part of the Sunda Shelf and generally harbour species types related to Asia. The eastern isles, including West Papua, lie on the Sahul Shelf and are characterised by Australasian species. Wallace's Line broadly distinguishes the two, although the chain of islands has also provided:

"a selective screen for biota island-hopping from both north and south and meeting under equatorial conditions. This conjunction of environmental conditions, unique in the world, (has) created the world's richest assemblage of species, many of which still remain unknown to science".¹⁵

Not suprisingly, Indonesia has one of the world's highest rates of endemic species. Of its 500 mammals, 100 are found nowhere else; and it harbours 1,480 (16 per cent) of all bird species (9,000), almost one quarter of which are endemic.¹⁶ The difference in species composition between separate island chains is also marked. For instance, the Maluku group supports 450 bird species, including 89 endemics; 80 mammals, 14 of which are endemic; and at least 25 endemic species of butterfly.¹⁷ The World Wildlife Fund (WWF) and the International Union for the Conservation of Nature (IUCN) have identified Indonesia as one of their priority areas, recognising 30 mammals (13 of which are endemic) as threatened, together with 14 birds (3 endemic) and 19 reptiles (1 endemic), quite apart from marine turtles. Endangered mammals include the orang utan, proboscis monkey, Sumatran and Javan rhinos, Sumatran elephant and tiger, and clouded leopard. The wealth of Indonesia's wildlife is contained in its tropical moist forests, and it is here that its most critical environmental problems occur. In recent years, Indonesia's

* The apparent vast discrepancy between those two sets of figures is narrowed to almost nothing if corrections are made for the different forest types studied and for differences in the definition of "deforestation" and "forest conversion".¹⁰ Thus, environmentalists argue that "converted" rainforest should be counted as forest "lost", since the genetic diversity of tropical moist forest can be severely upset by conversion to other uses even if a modicum of tree cover remains.

** This is reckoned to be a conservative estimate as it does not include clearance for mining, roads, plantation agriculture or large-scale projects like hydroelectric dams.



PHOTO: WWF/TONY WHITTEN

Young Kloss Gibbon (left) and Orang Utan (right). The wealth of Indonesia's wildlife lives in her tropical moist forests. Some 30 species of mammal (13 of which are endemic) are classified as 'threatened' by the IUCN and World Wildlife Fund.



PHOTO: WWF

forests have become the centre of international attention because of their valuable genetic resources and because they are rapidly disappearing. Officially, tropical forests cover 140 million hectares (59 per cent) of the total land area. They are broadly categorised in three types:

- The tropical rainforest of Sumatra, Kalimantan and West Papua (of which the most productive for industrial timbers are the valuable dipterocarps of Sumatra and Kalimantan);
- The monsoon forests of Java and other Inner Islands;
- And the dry forests of Nusa Tenggara.¹⁸

Agricultural expansion, illegal and improper commercial logging operations and road building, usually carried out in the name of development, are the main causes of forest destruction.

Rainforest Destruction in Indonesia

The last comprehensive survey of the country's forests was completed by the Forest Service in 1950. Consequently, the exact status of much of the forest area is unclear. (The present Forestry Department is carrying out a new survey, but the results will not be known for 5-10 years.) The lack of the most rudimentary vegetation data inevitably causes immense problems in carrying out efficient and sustainable development programmes. But even in simple statistical terms, the price paid for such ignorance is glaringly obvious.

The Ecologist, Vol. 16, No. 2/3, 1986

In 1950, it was estimated that 76.6 per cent (148.3 million ha) of the forest estate was rainforest, with an additional 7.2 per cent (13.9 million ha) as secondary or tidal forest.¹⁹ Current estimates (1981) show forest covering some 113 million ha, of which 72.8 per cent is rainforest with another 23.5 per cent split between secondary and swamp forest.²⁰ *A comparison of these figures gives a total reduction of forest area over this thirty year period of some 49 million ha, implying a loss on average of more than one million ha of forest annually.*

FAO estimated an annual loss of 550,000 ha between 1976-1980. Current estimates of deforestation, meaning the conversion of primary rainforest to alternative uses, vary from 0.6 to 1.5 million ha per year.²¹ Overall, the Department of Forestry estimates that some 43 million ha of Indonesia's forest lands are in need of urgent rehabilitation; 23 million ha consist of secondary forestry growth while 20 million ha are degraded scrub or *Imperata* grassland (*alang alang*).²²

By 1984, the excessive use of forest resources, including over-cutting and inappropriate farming practices, had resulted in 8.6 million ha being officially classified as "critical land"—that is, land which is so degraded that it is generally unable to sustain even subsistence agriculture or to fulfil normal soil functions such as absorbing water.²³

Sulawesi has suffered the greatest proportion (30.5 per cent) of its land area reduced to a "critical" condition, while Sumatra contains the largest total area of "critical land" (2.3 million ha) of any of the major islands. In the past, both islands have borne the brunt of resettlement under the Transmigration Programme.

Indonesian Law and Forestry Policy

The above catalogue of destruction fits uneasily with the Indonesian Government's repeated

public recognition of the value of integrating conservation and development—and, indeed, with Indonesian law. Article 33 of the Constitution succinctly summarises Indonesia's regard for her forests and other natural resources:

"Land and water and the natural riches therein shall be controlled by the State and shall be made use of for the greatest welfare of the people."²⁴

The principles underpinning the development of natural resources, which are implemented through the Five-Year Development Plans, set out to integrate conservation and rational exploitation:

"Rational use of Indonesia's natural resources is necessary in the execution of development. Exploitation of these natural resources should not destroy environmental living conditions and should be executed by an overall policy which takes into account the needs of future generations."²⁵

Indonesia's 1982 *Basic Environmental Law, Act No 4*, states that forests are the best way of maintaining harmony between man and the environment. Consequently: "Everyone is obliged to preserve the environment and prevent as well as intervene against damage and pollution."

Finally, this concern for the environment is promoted by the Indonesian Government at an international level. At the Third World National Parks Congress held in Bali in 1982, Indonesia was influential in shaping what has

become known as the Bali Declaration. It notes that:

"As species are lost and the ecosystem is degraded . . . (the earth's) capacity (to sustain life) is rapidly reduced because of rising population, excessive consumption and misuse of natural resources, careless development and failure to establish an appropriate economic order among peoples and among States. The benefits of nature and living resources that will be enjoyed by future generations will be determined by the decisions of today. Ours may be the last generation able to choose large natural areas to protect."

As a practical expression of its belief in conservation, the Indonesian Government plans to establish 25 per cent of its land area as National Parks, Reserves, Conservation Forests or some other form of protective designation.

From an environmental point of view, the two most difficult problems confronting the government are how to accommodate the population explosion of the already overcrowded Inner Islands without further degrading the environment there; and, secondly, how to guide development in the Outer Islands in such a way as to exploit sustainably their rich natural resources, while still protecting their extensive unspoiled ecosystems (which really means rainforests).

The government insists that planned and unplanned migration is the solution. But growing populations, ecological fragility and the inability of the migrants (who are unfamiliar with the ways of the forest) to farm appropriately will inevitably lead to more and more land being taken, simply to keep them alive. *This land can only come from the rainforests.*

Breaching IUCN Guidelines

The primary reasons for protecting tropical forests include: Safeguarding watersheds and protecting vulnerable soils; conserving nature and wild genetic resources; maintaining a productive forest estate; and preventing possible adverse climatic effects resulting from deforestation. Many ecologists doubt whether it is possible to combine these priorities with development programmes.²⁶

However, bowing before economic imperatives, the IUCN has drawn up ecological guidelines for development in tropical rainforests.²⁷ They state that for agriculture and plantation forestry, the main prerequisites are a knowledge of the climate and soil. Not only should soils be surveyed according to their potential for agriculture, but survey findings should be implemented by crop trials before large areas of forests are given over for food production. If the trial results are discouraging, land should be left unmodified or as managed forest. The guidelines also emphasise that "any action contrary to the inherent capability of the land should be resisted".²⁸

Other imperatives include taking steps to protect steep or unstable slopes, since their disturbance leads to soil erosion or to the accelerated run-off of water. As far as possible, systems of agriculture should be favoured that do not rely heavily on the import of energy and fertiliser. Finally, when traditional shifting agriculture is in harmony with the environment, it should be allowed to continue. In general, the IUCN conclude that:

"Every effort should be made to intensify production on fertile soils or to raise the status of areas which have already been cleared, before deciding to open up new areas of forest to agriculture."²⁹

Indonesia's Transmigration Programme repeatedly breaches these guidelines. By doing so, it compounds the main causes of forest degradation, namely: the allocation of land for unsuitable purposes; the invasion of unspoiled forests by shifting cultivators (of all types); and the over-use and mismanagement of forest resources. The programme directly threatens the biological and productive integrity of Indonesia's rainforests. In 1979, President Suharto recognised this inescapable fact when he banned by decree the clearing of rainforests for Transmigration, and immediately cancelled six proposed settlement schemes. But times change. In the current Five-Year Plan period (1984-1989), 80 per cent of Transmigration sites are to be established in primary (that is, untouched) forest.³⁰ If this programme is carried

out, it will result in the loss of at least 3.3 million ha of forest.

The repeated failure of many (not all) Transmigration settlements is due to the inadequacies of government policy and persistent technical blunders, which planning authorities refuse to correct. *In as far as the Transmigration Programme relies on foreign development assistance, primarily from the World Bank, the blame for the environmental and human degradation it causes must be shared by the external aid agencies.*

Knowledgeable observers have accurately summarised what happens on the ground. Describing the effect of planned settlement in tropical forests, Duncan Poore notes in a report written for IIED:

"The resettlement of over half the 250,000 families moved from Java has been a failure due to poor soil, flooding, or soil damage caused by mechanical land clearance. New agriculture can only succeed for sure where survey, method of land clearance, agricultural system and later management are all appropriate and continuance is assured. These conditions are rarely met."³¹

Jack Westoby, formerly Senior Director in FAO's Department of Forestry, commented in a review of Indonesia's current *Long Term National Forestry Plan* (1985) that the Plan:

"... accepts Transmigration targets which, in the light of experience to date, seem unlikely to result in successful and durable settlement. That is to say, the necessary pre-controls will not have been carried out, and the necessary support systems will not be in place. Thus the consequences will be similar to those which have attended past schemes, i.e. continuing unregulated excursions into the forest and a further extension of the area of degraded forest in need of rehabilitation."³²

Analysing the environmental impact of the 3rd Five-Year Plan—which proposed moving 500,000 families (2.5 million people) to about 250 Transmigration sites mainly in Sumatra, Kalimantan and Sulawesi between 1979 and 1984—Robert Goodland of the World Bank reported similar problems. In particular he noted that poorly conceived and hastily implemented settlement plans had

led to the loss of valuable nutrients and the exposure of impoverished sub-soils, thus making fertilisers less effective. Mechanised clearance had also caused the compaction of soils.³³

The Failure of Transmigration

Superficially it is hard to understand why moving people from one part of a country to another should create such tremendous difficulties as long as any such scheme respects certain obvious ecological parameters. The trouble has been that political dogma and arbitrary resettlement targets have blinded Indonesian and foreign aid agency planners, causing them to sow the seeds of their own programme's failure. The programme's negative impact on sensitive forest ecosystems in the Outer Isles has accelerated as the settlement targets have escalated.³⁴ The 4th Five-Year Plan involves increasing the 1983 population of West Papua by 52 per cent, Central Kalimantan by 46 per cent, East Kalimantan by 31 per cent, and West Kalimantan by 12 per cent. The pressures on these provinces' forest resources will multiply accordingly.³⁵

Many regions are already experiencing severe problems. Until recently, the areas around Samarinda and Balikpapan in the southern part of East Kalimantan have absorbed most of that province's Transmigration quotas. Now, as part of a project funded by the World Bank, transmigrants are being moved into virgin forest areas around Muara Wahau and Sangkulirang further north. Eventually 60,000 transmigrants are expected to be resettled there. According to local reports, Muara Wahau and Sangkulirang were chosen as the "least unsuitable" sites for Transmigration in the generally swampy area.³⁶

Hopefully these settlers will not experience the same problems as the 80,000 transmigrants who were moved between 1980 and 1982 into the Air Sugihan swamp forests between the rivers Suleh and Sugihan in South Sumatra. The poor soil conditions led to crop failures, the settlement sites lacked potable water and the migrants suffered a



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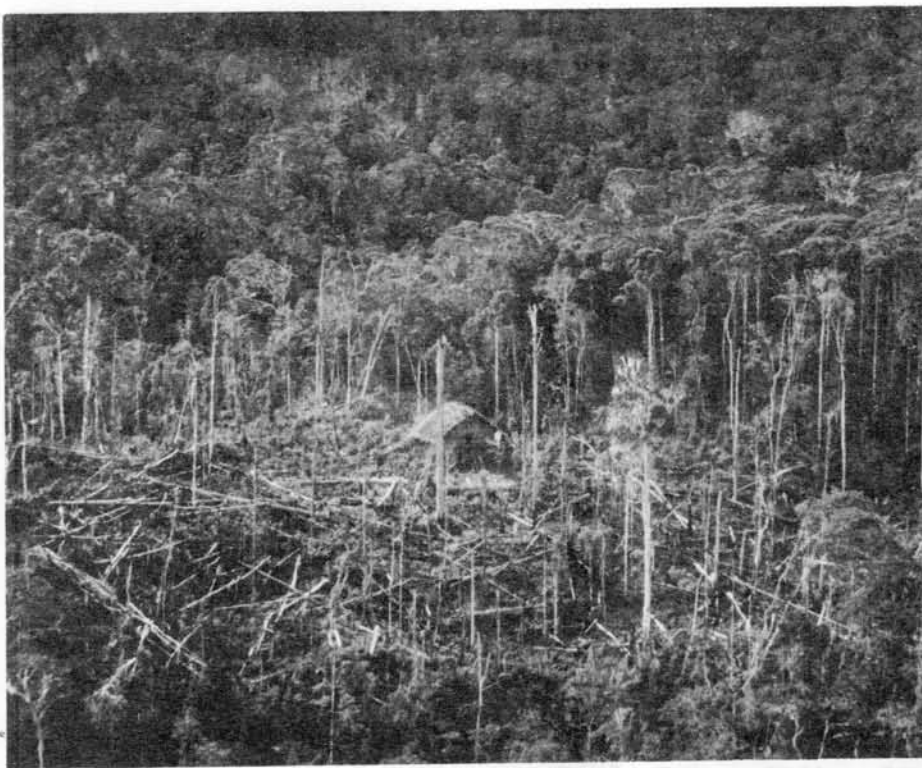


PHOTO: WWF/IRON G PETOCZ

Slash and Burn cultivation in Irian Jaya. After generations of experience, traditional slash and burn (or swidden) cultivators understand the natural tolerances of the forest ecosystem. Consequently, unlike transmigrants, they avoid soil erosion, extensive and permanent forest clearance and failed crops.

cholera epidemic.³⁷ Air Sugihan sites 1, 2, 3, 4 and 6 are now officially classified as failures by the Transmigration Department.³⁸ In complete contrast, the local indigenous people had sustainable systems of agriculture, exploiting the peaty soils and forests of the swamps without damaging them. Their model example was ignored by resettlement authorities.

Lampung, the site of Indonesia's first Transmigration project in 1905 in southern Sumatra, has a population of 4.6 million. Eighty per cent are migrants or descendants of migrants. Caufield reports that the settlers:

"have devastated Lampung. They have cut nearly all its forests, and in many areas repeated burnings have made the damage irreversible".³⁹

Colonisation has moved from the relatively good soils on the flatlands, up the hillsides and into neighbouring swamp forests, in the process helping loggers to degrade the Bukit Barisan watershed, which irrigates the fertile lowland plains. With the catchment area almost treeless, flash floods, soil erosion and the siltation of Lake Jepara, a major source of irrigation, have all occurred. An additional problem

experienced in Lampung in the Way Kembang Wildlife Reserve and at Air Sugihan, is a conflict between the needs of migrating elephant herds and the transmigrants. Confined to patches of remnant forest, the elephants frequently damage crops and homes in search of food. Extensive areas of Sumatra and Sulawesi, formerly heavily forested and virtually uninhabited, are now reported as being as crowded and devoid of trees as parts of Java.⁴⁰

These examples graphically illustrate a point emphasised throughout the Forest Review, namely that:

"The Transmigration Programme provides the basis for a much greater destruction of the tropical forest than the settlement figures indicate. The amount of land converted for farm plots for the government sponsored transmigrant settlers is, in fact, the *minimum* amount lost from the forest estate" (emphasis added).⁴¹

As this has been calculated at 3.3 million ha for the 4th Five-Year Plan period, the eventual environmental costs are indeed high. The knock-on effects include exacerbating the damage caused by shifting cultivator groups; the expanded road networks (the Department of Transmigration alone plans on building 12,000km of roads); and

threatening the viability of Indonesia's Production and Protection Forests. Confused, and often conflicting, departmental and national policies and technical deficiencies (such as inappropriate farm models, inadequate mapping, and poorly conceived land classification) compound this sorry state of affairs.

Competing Pressures

At the most fundamental level, the disappointing results of the Transmigration Programme are rooted in the Indonesian Government's determination to impose a certain model of national development for social and political reasons. This has had profound implications for government departments competing for land in particular areas. Thus, in an effort to accommodate the needs of Transmigration, the Forestry Department has altered its classification criteria, which were initially based on environmental considerations, to allow more land to be brought into the Programme.⁴²

The Forestry Department has divided Indonesia's forest estate into distinct categories with different functions. Of the country's 143,000 sq kms of forest, 49,000 sq kms have been designated Protection and Conservation areas (for nature conservation purposes and the protection of watersheds); 64,000 sq kms have become Production Forests (considered suitable for selective extraction and logging); and 33,000 sq kms have been designated Conversion Forest (supposedly areas where the forest can be safely cleared for agriculture and Transmigration).

Because the Transmigration Department invariably sets over-ambitious settlement targets, insists on clearing extensive areas for settlements (between 15,000 and 20,000 ha/site) and rigidly sticks to a prescribed farm model, there is simply not enough land in the Conversion Forests either suitable or available. The Department therefore argues that other forests, usually Production Forests, must be made available, and so *the opportunity to use the forests rationally diminishes, while the likelihood of unnecessary degradation increases.*

The reclassification of Production Forests to Conversion Forests has had several unfortunate consequences:

- Firstly, for the classification criteria to work, it is essential that the classification types match what is on the ground. All too often this is not the case. The reclassified system fails to indicate clearly either the type or quality of local forest vegetation and, thus, where the most appropriate forests for different land uses are situated;

- Secondly, potentially highly productive forest can be, and is diverted to agricultural purposes, with no guarantee that the Conversion Forest (which becomes reclassified as Production Forest) is suitable for timber production, or that the soils of the former Production Forest are suitable for the prescribed agricultural systems.⁴³ Moreover, swapping already classified lands causes increased fragmentation of the Production Forests. The Forest Review Team likened the scattering of Transmigration settlements throughout both Production and Conversion Forests to a "bush fire which may eventually destroy the entire forest", for these settlements in turn serve as focal points for further colonisation and forest destruction⁴⁴;

- Thirdly, because of the Government's overriding commitment to the programme, agencies like the Ministry of Transmigration continue to press for additional land outside previously agreed boundaries.⁴⁵

- A final threat arises from the Transmigration Department's averred goal of making transmigrants self-sufficient in food, even though the soils at settlement sites may not be capable of sustaining low-input rainfed annual food cropping where prescribed by the Programme.⁴⁶

Central Kalimantan:

A Case History in Failure

The confusion caused by these impositions, the inadequate planning base for Transmigration settlements, and the Transmigration Department's generally inflexible choice of a standard farm model for different land types—all of which increase the likelihood of settlement failure and environmental degradation—has been neatly illustrated by one of the only

publicly available physical evaluation reviews commissioned by the Department.⁴⁷ The review—of Transmigration programmes in Central Kalimantan—was carried out by the Land Resources Development Centre (UK) and BAKOSURTANAL (Co-ordinating Agency for National Survey and Mapping). It highlights the major problem with the imposed development strategy by clearly showing how the technical criteria and environmental considerations upon which it is supposedly based were not applied in practice in Central Kalimantan.

The study exposes many faults in previous Transmigration operations. Site boundaries were often derived from unreliable base maps, so that land classifications (for instance, for Production and Conservation Forest) did not necessarily match actual land resources.⁴⁸ The most important deficiency, however, lay in the soil data used to assess the fertiliser requirements of major crops on the most common soils. It emerged that the extended crop trials needed to measure the soils' fertility had never been carried out.⁴⁹ The aluminium values recorded in many common soils (tropudults and palendults) are toxic to many of the recommended arable crops.⁵⁰

The failure of some rainfed Transmigration wetland schemes in the Pemuang, Mendawi/Katingan, Sebangau and Kahayan River basins, where water supply and the improvement of soil quality are inadequate, caused 2,500 migrant families to be relocated for a second time in 1985.⁵¹ The standard liming and fertiliser package supplied to transmigrants in the Interior Hills and Plains was found to be inadequate to the task of providing acceptable crop yields in a settled farming system. By contrast, indigenous farmers, who use no fertilisers and who cultivate steep slopes and soils of low natural fertility, practice a sustainable system of shifting agriculture with a cultivation cycle of 7-15 years or more.⁵²

The glaring mistakes in forest classification have led to inappropriate land use on a massive scale. Over half a million hectares of low-land development projects were

located in forests judged unsuitable for the forms of Transmigration development under consideration.⁵³ Although the study concluded that only about 75,000 hectares in Central Kalimantan were suitable and available for establishing three appropriately-modelled Transmigration sites, government targets project the clearance of nearly *seventeen times* as much forest from 1979-1989.⁵⁴ Despite this evidence, new Transmigration settlements (part-funded by the World Bank) continue to be established in the province.

Extrapolating from the Kalimantan study, one can arrive at some idea of how inappropriate many on-going Transmigration schemes must be. Any one, or a combination of several, of these basic errors in mapping, farm model choice and land classification can cause settlement failure and/or avoidable forest degradation, or other environmental damage. Of particular concern for wildlife conservation is the overlap of potential settlement lands and non-forest areas with Nature Reserves or proposed Reserve Extensions (536,000 ha of potential tree crop lands were included in such extensions). The main justification for these reserves is to spread as wide a net as possible to protect the greatest variety of species. Successful conservation means accurately identifying the areas of greatest biological diversity before classification—something which cannot be done in the very short time (three months) during which World Bank site survey teams prepare their recommendations.

Shifting Cultivators and Deforestation

The Forest Review Team leave little doubt about the direct and indirect threats posed by Transmigration to the rainforests of the Outer Islands. The tragic irony is that in practice it does not matter whether a scheme succeeds or fails to meet the settlers' needs, for the forest will be degraded either way. The only difference is the nature of the agent of destruction. *Transmigration, in effect, traps forest conservation efforts in an unavoid-*

"The impact of the Transmigration Programme on forests and forest land is very significant, perhaps more so than almost any other sector. To begin with, Transmigration takes most of its land area from land classified as forest land, and more than three-quarters of this has been from the primary rainforest. However, as a result of the generally poor soils in the Outer Islands and the farm model chosen, the dry land agriculture prescribed for settlers is often not successful. If this is the case, the settlers may clear more of the neighbouring forest land to begin afresh, thus establishing a pattern of shifting cultivation. If the farm family remains on its assigned plot but finds that its yields are inadequate, the settler may resort to illegal harvesting of forest products to supplement his income. If agriculture is successful, on the other hand, more transmigrants will be attracted to the area with similar disastrous results for the forest. Such settlement expansion, without planning and supervision, presents the very real threat that the most productive forest will be converted to agriculture, and eventually grassland when the soil is exhausted. At the same time, already large areas of secondary forest and unproductive grassland increase in the absence of substantial rehabilitation and reclamation activities."⁵⁵

This cycle of abuse is prevalent throughout most of the larger Outer Islands (with the exception of West Papua to date), as relatives and friends join successful migrants and failed migrants attempt shifting cultivation.

In 1982, the UNDP/FAO compiled a list of Indonesia's most important wildlife sites⁵⁶. On the Outer Isles, 202 were considered at risk from agricultural clearance, shifting cultivation and Transmigration settlement. In Tarakang (NW Kalimantan), the slash and burn rotation taken up by migrants from failed settlements has been shortened from a sustainable 15 years to less than four years, as more and more people have crowded in.

Shifting Cultivators vs "Shifted" Cultivators

The Government lays great stress

on preventing forest destruction by shifting cultivators. The Long-Term National Forestry Plan states that "new efforts will be made to control shifting cultivation (by) one million families" in the 4th and 5th Five-Year Plan periods (1979-1989).⁵⁷ The Department of Forestry estimates that 10 per cent of the total forest areas in Kalimantan, Sulawesi and Nusa Tenggara is affected by 723,000 families practising shifting cultivation.⁵⁸ But in order to control forest destruction, it is necessary to identify accurately who is causing the problem and why, and to differentiate between the traditional rotation cropping practised by indigenous people, and newcomers who are forced into the forest to try and clear virgin lands to survive.

The newcomers may be "wild settlers", either local people, immigrants or even wealthier sections of the community who are driven by land hunger or the pioneer spirit to attempt to colonise the forest. The Review Team believe such settlers are causing "great damage to the forest".⁵⁹ Or the newcomers are displaced transmigrants whose programmes have failed.

Because they do not know from experience how to farm the forests sustainably, newcomers invariably use slash-and-burn methods which exceed natural constraints, and cropping techniques which the generally poor forest soils of the Outer Islands cannot support. The only course open is to move into new forest zones, and repeat the process.

Cycles like these cause extensive damage. The Forest Review Team note that shifting cultivators clear an estimated 4-500,000 ha of forest annually compared to the 2-300,000 ha of first stage clearance carried out by the Transmigration Department every year.⁶⁰ But neither the Review Team nor other qualified observers believe that indigenous people are to blame for this destruction;

"It is very doubtful whether there are one million families of *genuine* shifting cultivators in Indonesia. The probability is that a significant proportion of the families it is proposed to resettle are in fact *shifted* cultivators, the unfortunate victims of Transmigration which has misfired,

and small farmers who have been dispossessed" (our emphasis).⁶¹

Although calculating the exact numbers of "shifted" cultivators is difficult, even official evidence supports this view. Recently, Martono, the Minister for Transmigration, has been quoted as saying that 10 per cent of all settlements have failed.⁶² And a list (which must be taken as a minimum), published by the Transmigration Department of the least successful migration projects up until 1983, identified 229,831 people at risk due to the failure of thirty-seven settlements.⁶³

The problems caused by shifting agriculture would be partially solved if "wild settlers" were adequately supported, thereby leaving the traditional shifting cultivators with sufficient land. The mass resettlement of *all* shifting cultivators (as the Indonesian Government is currently doing) is no solution whatsoever.

It fails to recognise that, after generations of experience, indigenous peoples understand the natural tolerances of forest ecosystems. They modify their farm-forestry, usually by ensuring an extended fallow period, choosing suitable cropping patterns, and by clearing relatively small forest patches at a time, to allow natural regeneration without exhausting soil fertility. Consequently, unlike the newcomers, they avoid soil erosion, extensive and permanent forest clearance and failed crops. These people naturally follow the IUCN's guidelines from experience.

Is a Sustainable Programme Possible?

In trying to evaluate the overall costs and benefits of Transmigration, the Forestry Review Team posed the following question:

"Is Transmigration achieving real and lasting benefits for the nation or providing only temporary relief for Java and sowing the seeds of widespread environmental degradation and forest destruction in the Outer Islands?"⁶⁴

In answering that question, the Team agreed that:

- Transmigration settlements acted as causal agents in the

widespread destruction of Indonesia's rainforests;

- The Transmigration Programme interfered with the forests' provision of raw materials for forest industries;
- Forest land was being used unsuitably for the non-sustainable development of Transmigration farm models;
- Insufficient areas were rejected as unsuitable for settlements;
- And methods of land clearance and settlement design were inappropriate.

They concluded that "the Programme as it presently is implemented does not support the sustainable development of Indonesia's forest lands, or, for that matter, the settlements themselves."⁶⁵

There is no doubt that Indonesia's Transmigration Programme is destroying irreplaceable rainforests. It *should* (in theory) be possible to restructure the Programme to lessen its destructive impact by following environmental rather than political priorities, rejecting high input and energy intensive arable crop models, settling in grassland areas, improving land-use classifications, and so on. The problem is that the Indonesian Government has other priorities which override environmental concerns. Thus, despite the recent recognition that land suitable for food production is far more limited than was previously believed and the change of emphasis in 1984 toward tree crop models,⁶⁶ the programme seems to be changing little in practice. The planned colonisation of West Papua's rainforests, the least developed or studied of all the major Outer Island forests, would seem to support this conclusion.

At present 80 per cent of West Papua is in its natural, undisturbed state. It contains the richest concentration of wild species in Indonesia, including one third of the country's known plants and animals, of which half are endemic. The government has proposed that over 40 per cent of West Papua will eventually be protected, although few areas have yet been demarcated. It must be noted that, so far, the government has acted to protect gazetted areas from Transmigration; settlements have been cancelled in Wasaur, N. Salawati

island and Kumbe-Merauke Strict Nature Reserves and the Mamaberamo-Fogo National Park.

But this is rarely enough to guarantee the integrity of a reserve. For example, 108,000 hectares of land around Kumbe-Merauke have been earmarked for settlement. Should they be developed, the reserve will be virtually surrounded. As their populations grow, or the settlements fail, incursions for hunting and collecting of rare species, timber felling and land clearance inevitably become more frequent.

There are many other supposedly protected areas in West Papua threatened in this way, including:

- Danau-Bian an important wetland site near Merauke, at risk from irrigation schemes;
- Wasaur Wildlife Reserve, also near Merauke;
- The Arfak Mountain Strict Nature Reserve on the Bird's Head Peninsula, from settlements established at Oransbari;
- And the Cyclops Mountain Strict Nature Reserve from the expansion of settlements around Jayapura, Abepura and Sentani.⁶⁷

It is simply not enough to exclude settlements from Reserves. The incremental effect of expanding populations must be taken into account, which Transmigration planning does not do. This is particularly important in the Outer Islands, where population growth rates are often 50-100 per cent higher than those on Java, despite poorer soils. Given the Transmigration Programme as it stands, and the almost pristine diversity of West Papua's rainforests with their poor soils and many unique wild species, it is deplorable for the World Bank and numerous other aid agencies to continue funding settled developments.

Bank Aid for Transmigration

Between 1972 and 1985, the Department of Transmigration received US\$637 million of foreign aid (two-thirds from the World Bank) for "activities which contribute significantly to the destruction of forests as a result of the establishment of poorly planned agricultural settlements".⁶⁸

The Forest Review Team characterised this development aid as

"directly and indirectly both the primary agent for destruction of the tropical rainforest in Indonesia, for instance, through the Transmigration and road construction programmes, as well as a primary supporter of forest development through reforestation and watershed rehabilitation programmes."⁶⁹

Foreign aid is, in effect, taking with one hand what it gives with the other. By supporting the Transmigration Programme, external aid agencies are assisting in the annual destruction of 270,000 ha of primary rainforests through initial land clearance and conversion into dryland (i.e. usually inappropriate) agriculture.⁷⁰ On the other hand, almost three-quarters of all donor funding to forestry has been for watershed rehabilitation—often to promote bench terraces, which are expensive, time consuming and very vulnerable if neglected.

Although this has resulted in the World Bank helping to fund the Demoga-Bane National Park as part of an irrigation project, the overall impact of such policies has been negative. For taken in conjunction with aid for Transmigration, an "unfortunate cycle of destruction and rehabilitation is becoming institutionalised".⁷¹ It would be far more appropriate to stop funding destructive projects, and channel aid resources toward economically viable and environmentally sustainable production and protection systems. These could include developing new farm models, based on mixed cropping and agroforestry, for the Outer Islands, and funding National Parks.

For its part, the World Bank asserts that its major involvement in Transmigration since 1974 has "contributed substantially to improvements in the Programme".⁷² It is difficult to accept this statement. During this period, the Transmigration Programme has accelerated tenfold, and the environmental havoc it has caused to Indonesia's rainforests has been well-documented. The Bank frequently asserts in correspondence that if it were to withdraw funding,

A Leaked Memo

DATE March 30, 1984
 TO Files
 FROM Luis de Azcarate, Director, CPD
 EXTENSION 60121
 SUBJECT Minutes of the Operational Policy Subcommittee Meeting of March 9, 1984
 Present: Members: Messrs. Stern (Chairman), Baneth, Baum, Dherse, Goldberg, Que, Hopper, Husain, Kirmani, Knox, Lerda, Picciotto, Wood.
 Others: Messrs. Churchill, Cohen, Dunkerley, Kopp, J. Lee, Pratt, Thobani.

II. Environmental Aspects of Bank Work

6. In reviewing the OMS, which codified the work that has been underway for over a decade, Mr. Stern asked whether Bank staff know that they have a responsibility to consider environmental issues on every project, whether they do so, and whether management looks at these issues. The view was that, as a matter of routine, environmental issues are not considered, but that they are taken into account in specific instances when environmental consequences are pointed out by the Bank's environment advisor, the press, or special interest groups in host countries. The role of the environment advisor and his staff was therefore useful in calling attention to environmental problems in projects and providing for appropriate corrective measures.

7. The issue of economic and sector work on environmental issues was considered next. Except for some work on forestation and watershed management, the Bank has not played an active role in environmental policy. It was thought important to initiate ESW in this area. However, since the Bank does not have the capacity to conduct sector work on environmental issues on a routine basis, it was expected to play a reactive role depending on the acuteness of the problem. Countries experiencing severe environmental constraints to their development should initially be selected. Project work could help enlarge the dialogue on environmental and natural resource issues. It was agreed that the section on ESW in the OMS (para. 18) should reflect the decision to undertake ESW on environmental issues on a selective basis depending on the acuteness of their constraints to present and future development.

cc and cleared with: Mr. Stern

MThobani/gw/bnd

The above is a faithful reproduction of a World Bank memorandum written in 1984. The Bank's assurances that the environmental consequences of its projects are given full consideration prior to implementation are revealed to be simply eyewash.

and therefore its inside influence, things would be much worse. It is hard to imagine how they could be.

A closer look at the Bank's *Transmigration V Staff Appraisal Report* is worrying. In its review of previous Draft Five-Year Plans, there is virtually no recognition of any of the past environmental, agricultural or human failures so carefully analysed by the Forest Review Team. The Bank concentrates solely on projecting the benefits of Transmigration, such as:

- Improved productivity in existing settlements;
- The reduction in annual population growth on Java;
- The possible creation of 200,000 new jobs per year if the 4th Five-Year Plan's target of moving 750,000 families is met;
- Improved education and health services to transmigrant families;
- And increased regional development.

For some sites, these rationalisations of Transmigration may be valid, but they do not tell the whole

story. Why are the numerous failed settlements—admitted even by the Department of Transmigration itself—not taken into account? One assertion is particularly disturbing. Under the section 'Criteria for Site Selection', the Bank states:

"Sites which cannot ensure sustained agriculture because of poor soils and topography or involve a high social or environmental risk are systematically rejected."⁷³

This is simply not true, as past settlement failures plaintively testify. In correspondence, the Bank's Chief of Public Affairs has stated that "the government has decided not to use some prospective settlement sites on the basis of environmental and social considerations, even when the sites appeared suitable in other respects". The US Alternate Executive Director to the Bank claims "almost half" are ruled out on these grounds.⁷⁴ In other words, "over half" to "most" sites are *not* rejected even if they involve a high social or environmental risk.

The Bank's own environmental policies require that it:

"9a) Endeavour to ensure that each project affecting renewable natural resources (e.g. as a sink for residues or as a source of raw material) does not exceed the regenerative capacities of the environment (for example forestry projects should prevent over-cutting and agricultural projects should prevent unsustainable rates of soil erosion).

9b) Will not finance projects that cause severe or irreversible environmental deterioration, including species extinctions without mitigatory measures acceptable to the Bank."⁷⁵

These conditions appear unequivocal. Yet they are entirely incompatible with the known environmental consequences of Transmigration.

Britain's Overseas Development Agency, and officials at the World Bank, have acknowledged in discussions with Friends of the Earth that detailed species surveys are not carried out prior to site selection. Until they are, it is impossible for the Bank to meet the requirements of 9(b), and ensure that species-rich ecosystems are not destroyed. If that is the case, neither the Bank nor its member governments should be financing Transmigration schemes. Ecologists working in West Papua have said privately that it will be at least a decade before comprehensive surveys can be completed.

In the section of its environmental policy guidelines entitled 'Economic and Sector Work', the Bank states that:

"It seeks to avoid unnecessary and, particularly, irreversible damage to the natural resource base upon which development depends. In particular, short-term development gains must often be balanced against the creation of longer term environmental or resource impairment. Where appropriate, country economical sector work should assess the ability of environmental systems and the natural resource base to sustain present and proposed patterns of economic development."⁷⁶

The cost-benefit analysis summarised in the *Staff Appraisal Report* makes no attempt to do this. The economic and environmental costs of clearing rainforests—the loss of irreplaceable genetic resources; timber and other forest product revenue forgone; the risk of increased soil erosion, and hydro-

logic disturbance—are completely ignored. The only unquantifiable benefits taken into account are the social values of “providing land to the landless, increased food security and improved regional development”.⁷⁷ These are highly questionable assumptions, based on the optimistic premise that Transmigration will succeed in regions where it has regularly failed in the past and looks likely to fail in the future.

In the sole paragraph which directly assesses the environmental effects of Transmigration, the report boldly asserts that the project

“has the potential to provide enormous environmental benefits in both the sending and receiving areas” (our emphasis).

The Bank assumes that the programme will reduce over-cultivation in environmentally vulnerable areas on over-crowded Java and Bali, and that careful site selection will prevent inappropriate sites and farm systems from being developed in Kalimantan and West Papua. This is inconceivable, unless the Bank really begins rejecting all environmentally and socially unacceptable sites, and not just a proportion.

The argument that Java's few unspoilt forests will be saved by Transmigration is unconvincing, although it is frequently deployed by the Bank.⁷⁸ It is a ghost which should be laid to rest. During the 4th Five-Year Plan period, Java's population is expected to grow by some 9.1 million people. The most optimistic projections for resettlement involve moving roughly 500,000 people each year (in most years Transmigration movements do not approach the birth rate on the central islands). If implemented in conjunction with other measures like birth control, it is possible that population levels on Java could stabilise, which in turn may help reduce pressure on critical watersheds. But there will continue to be many farmers in Java and Bali with very small holdings, who will continue to look for new land. Given the destructive nature of the activities already occurring in the uplands, only a large decrease in the population of the watersheds will prevent their progressive deterioration. Furthermore, as the Forestry Review Team point out, a policy of

population stabilisation through Transmigration, requires that resettlement continues at current projected levels into the indefinite future!⁷⁹ With suitable sites already in short supply in the Outer Islands the only places for these people to go are the rainforests. Eventually they will disappear. Instead of solving the problem of environmental degradation in Java, the Bank is merely helping to export it elsewhere.

A more rational approach has been suggested by the Department of Agriculture. The Department calculates that food production on Java alone can be doubled. As one of the main justifications for Transmigration is national self-sufficiency in food, increasing agricultural output on already farmed land seems a reasonable alternative to clearing more rainforests. Java already grows three-fifths of the nation's food. The lack of water in many poorer areas is one of the major stumbling blocks to increasing production. By controlling siltation,

improving watershed management and increasing irrigation, the Department believes that “agricultural productivity may be able to keep pace easily with population growth”.⁸⁰ Combining this approach with the restoration of Indonesia's 43 million hectares of degraded land would make future agricultural settlement of the Outer Island's rainforests redundant.

The inescapable fact is that, by supporting Transmigration, the World Bank is breaking its own economic and environmental policies. Alternatives exist, and the Bank should promote them. Otherwise it should withdraw funding entirely.

Conclusion

The Forestry Review Team were convinced that the planned opening up of the forests by the Transmigration Programme, as it is currently managed, may lead to the eventual destruction of five times the area of forest initially cleared.⁸¹ The only way Transmigration can be

“In funding Transmigration, the World Bank is in breach of its own environmental policy.”



Detailed species surveys are not carried out prior to site selection. Until they are it is impossible for the World Bank to meet the requirements of its own environmental policy, and ensure that species-rich ecosystems are not destroyed.

PHOTO: WWF/ALAN COMPOST

made to work without destroying the environment is to follow explicitly the IUCN guidelines for agricultural development in tropical forests. This will inevitably mean developing appropriate farm models, accepting much lower resettlement targets, revising the criteria by which sites are selected, and stopping settlements which are

not self-supporting on an environmentally sustainable basis.

A far better solution would be to forget about trying to establish agricultural communities in the rainforest, and instead turn to the vast areas of already degraded land that exists throughout Indonesia. At the very least, external aid agencies like the World Bank, or the

member nations of the Inter Governmental Group on Indonesia, should stop supporting settlement proposals which do not recognise these limitations. Unfortunately, the wider political and economic designs of the Indonesian Government and the donor nations make it extremely unlikely that these commonsense recommendations will be followed.

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Unity and Diversity

Indonesian Policy towards tribal peoples

by Marcus Colchester, Survival International

Indonesia is intent on "developing" the country's "isolated and alien" tribal groups. To that end, thousands of tribals have been forcibly resettled under the Transmigration programme. The overt aim is to raise their living standards and incorporate them into mainstream Indonesian society. For the tribals, the programme means nothing less than alienation, poverty and cultural death.

"On 28 October 1928, a youth congress was held concluding that we are one nation, the Indonesian nation; we have one native country, Indonesia; one language, the Indonesian language. By way of Transmigration, we will try to realize what has been pledged, to integrate all the ethnic groups into one nation, the Indonesian nation... The different ethnic groups will in the long run disappear because of integration... and... there will be one kind of man..."

Martono, Minister for Transmigration, March 20, 1985.¹

Ethnically, Indonesia is one of the most diverse countries in the world. With a total population of over 162 million people, scattered over an island arc over 3,200 kilometres long, the country contains, according to one estimate, over three hundred different ethnic groups speaking more than two hundred and fifty distinct languages.²

This ethnic diversity—and the difficulties that it poses to national unification—can be said to be one of the most pressing problems facing the Indonesian Government. Ever since 1949, the Indonesian State, born in the ashes of the Dutch Empire of the East Indies, has had to struggle to maintain unity. Secessionist and separatist move-

ments have, with varying degrees of vigour and commitment, erupted in Kalimantan, Aceh, Sulawesi and the Moluccas. In West Papua a bitter and unequal struggle for independence has been waged ever since it was annexed by Indonesia, with the connivance of the United Nations, in 1963. Meanwhile, in East Timor, invaded by the Indonesian armed forces in late 1975, one of the most savage and little known wars of the modern era continues to evade the attention of the world's press.³

Rejecting all political processes that might accommodate these demands for regional autonomy through the devolution of power from the centre to the Outer Islands, the Indonesian State has, since its inception, pursued policies of forcibly assimilating and integrating the ethnic "minorities" into a united Nation State. Despite its professed intent to create a multi-ethnic republic, under the slogan '*Bhinneka Tunggal Ika*' (officially translated as meaning "Unity in Diversity") a real commitment to cultural pluralism does not exist in Indonesia, and local claims for minor degrees of regional or even cultural autonomy are often interpreted by the authorities as being fundamentally anti-Indonesian.

Government programmes of economic development and 'Indonesianisation'—of which Transmigration is but one, albeit important, part

—have extended the outreach of the national economy and administration into the more remote parts of the archipelago. The impact of these assimilationist policies on areas predominantly inhabited by tribal peoples has been dramatic.

Tribal Peoples: The Government's Attitude

The policies of the Indonesian Government towards the tribal peoples of the archipelago are articulated within a conceptual framework that is both restrictive and rigid. Officially, rural communities throughout Indonesia are classified into one of four, hierarchically ordered categories. The three main categories are those of the *swadaya* (traditional) villages, *swakarya* (transitional) villages and *swasembada* (developed) villages. These correspond to the expected stages of development through which rural communities are to progress uniformly as they move towards true integration into an advanced and modern Indonesian nation. However, the government also recognises a fourth and prior class of rural community, consisting what are termed 'pre-villages':

"Their characteristics are that the population is composed of a group under a single head or clan and are outside government administration".⁴

The populations that make up the 'pre-villages', and a small proportion

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PHOTO: DAVID KEW

The traditionally long hair of the Mentawai is now rarely seen. Most tribal peoples on Siberut have been forcibly shorn of their hair to conform to national standards.

of those that are now accepted as belonging to 'traditional' villages, are classified by the government as *suku suku terasing* (isolated and alien peoples) or occasionally as *suku suku terbelakang* (isolated and backward peoples).

Peoples are defined as falling under this rubric according to their "societal groupings, which because of the social cultural system, have their own specific process of development, so that as a consequence their mode of life and living takes place in a simple way, isolated and dispersedly, and with less ability to perform adequately their social function".⁵

According to an explanatory

memorandum which accompanied the 1979-1984 Five-Year Plan, the identifying characteristics of the *suku suku terasing* can be enumerated as follows:

1. Many of these people subsist partly by hunting, fishing and by gathering forest products. Their rudimentary economies employ extremely simple nomadic farming practices and equipment. These farming techniques are devastating the environment and pose dangers to maintaining ecological equilibrium.

2. Contrary to the State philosophy of *Panca Sila*, the five principles, the first of which is belief in one Almighty God, these peoples have animistic religious practices.

3. Their social systems are unstructured, in which people live in small scattered and dispersed groups, isolated from the mainstream of religious, ideological, political, economic, social and cultural life. They distrust anything coming from the outside.

4. These peoples, depending as they do on the resources of their natural environment, are nomadic and therefore it is impossible for the government to extend to them administrative and other services.

5. These peoples are generally minimally clothed, covering only their vital parts.

6. The diet of these peoples is inadequate.

7. Their dwellings are merely places which provide shelter and a place to sleep. They are far below the norms and requirements that have been established for healthy secure and pleasurable human dwellings.

8. The health conditions of these peoples are far below generally accepted norms for healthy living.

9. Formal education is unknown. Most of these people are illiterate.

10. The art and culture of these people has merely achieved a very primitive level and their dances are still predominantly magico-religious in character.

11. Their economies are centred on a system of barter. Monetary exchanges are still largely unknown.

12. Most of these people remain ignorant of the existence of the government or of the concepts of the Indonesian Nation and State. They have no sense of their duties as citizens of the State.

13. These peoples have no capacity or ability to withstand external and internal political threats. In the context of the State doctrine of total people's defence, these isolated communities constitute weak groups and regions within the total system of defence.*

14. These people are not yet in a position to enjoy the fruits of national development. Moreover they are not contributing anything to the progress of the Nation and State".⁶

The actual peoples who fall within the embrace of this category of *suku suku terasing* have not been the subjects of an accurate census by central government. Successive government estimates have in-

* For a discussion of the Indonesian Government's defence policy and its relationship to Transmigration, see the article by Carmel Budiardjo in this issue.

creased over the years from a low figure of 200,000 in the early 1970s to a more recent (though still conservative) 1.5 million. In fact, the actual number of people who fall into this category almost certainly exceeds 1.5 million and may well exceed 2 million people. In West Papua alone, an estimated 800,000 of the area's total population of 1.2 million people are classified as *suku suku terasing*, while the government figure of 250,000 for Kalimantan is almost certainly on the low side. Distributed in the mountainous and remote interiors of nearly all the major islands, as well as predominating on a number of the smaller ones, these peoples are found throughout the archipelago of 13,677 islands which make up the present day State of Indonesia.

Government Policy:

Shortly after independence, initiatives were taken to bring tribal groups more into line with the mainstream of Indonesian social and cultural life, and also to prevent possible separatist movements. The government's rationalisation for this programme was that tribal groups had actually strayed away from the main course of cultural development and that they ought to be brought back into it. By the 1960s, especially after the beginning of the Five-Year Plans in 1968/9, an important change had taken place in the basic formulation of government policy. Tribal peoples were no longer thought of as a number of differing cultures, but were rather classified according to their overriding common cultural pattern—that is, by their alleged “primitive” nature. All cultural differences were considered unimportant compared with their shared “primitiveness”.⁷

No special legal provisions have been made to accommodate the social and cultural differences of these peoples. All members of the isolated groups are nominally citizens of Indonesia, and are thus subject to the basic provisions of the 1945 Constitution. Also pertinent is the law on the Basic Stipulation of Social Welfare (No. 6 of 1974), which, *inter alia*, imposes on the State the obligation to handle the “problem” of tribal groups.

“Torn out of the social and cultural fabric that has given their lives meaning for thousands of years the tribal peoples of Indonesia are being forced to become part of the vast depoliticised peasantry that makes up the body of the nation.”

Presidential Decree No. 45 of 1974 allocates this task to the Department of Social Affairs. A special office known as the *Pembinaan Kesejahteraan Masyarakat Terasing* (PKMT)—has been set up within the Department and charged with “developing” the country's “isolated and alien peoples”. PKMT policy is formulated within the evolutionist framework of social categories outlined above:

“The Indonesian Government has been and is of the resolve to transform the societal status of said isolated communities, so that these communities will become normal communities, as well-developed as, and on a par with, the rest of Indonesian society . . . Direct activities of development . . . are also initiated in various forms, affecting all aspects of life, such as programmes in human resource development, religion, the material culture, societal life and dwellings.”⁸

The government is quite clear as to the extent that such goals of social change are to be imposed from outside or are to be achieved according to the rhythm and demands of the peoples themselves:

“The problem is no longer one for the isolated groups themselves to tackle, or for the Department of Social Affairs alone, but a social one at the government and national levels . . . It is called a national problem because it involves national and humanitarian prestige. The fact that there are still isolated and remote peoples, developing at too slow a pace, can affect a nation's prestige and the dignity of man in that country. Therefore the problem must be tackled.”⁹

And again:

“The aims of efforts to develop these peoples are as follows: ideally to bring about a way of life on a level with other groups as soon as possible; operationally in the short term, to dispose of all elements of isolation and remoteness. Then, when these groups are no longer isolated physically to

concentrate on their deficiencies by opening continuous communications and nurturing a change in mental attitudes towards the achievement of set aims. Finally, in the long term, to include isolated peoples in the process of growth towards a society of self-help and self-support and one blessed with prosperity by God.”¹⁰

The final objective of the development programme is to integrate the ‘alien and isolated communities’ into the national body and to foment, by raising them from the pre-village level, “the realisation of village society”.¹¹ When that process is completed the village is handed over to the local government.

To achieve this end, the PKMT has also set out more specific goals, which are:

1. Developing a state of monotheistic religion based on belief in one Almighty God, by eliminating animistic traits.
2. Developing their awareness and understanding of State and Government, as well as nurturing the members' participation in programmes of national development.
3. Raising their capacity for rational and dynamic thinking and their horizons of rational thinking as well as developing creative capabilities in order to make them less dependent on their natural environment.
4. Increasing the ability to produce more in the agricultural and non-agricultural sectors, and thereby acquiring the ability to adequately meet their own living needs.
5. Developing and nurturing aesthetic concepts and values in the arts and culture in order to develop their ability to express themselves, and to produce works of art and culture, in tune with the values of Indonesian society.
6. Developing their capacity for social interaction, outside local boundaries, thereby eliminating tribal views and ways of thinking.
7. Developing ways of life, based on mutual help and organised in sufficiently large social units, to facilitate programmes of community development.

8. Guiding and inducing the members of isolated communities to settle in an area with government administration and with permanent orderly sources of income."¹²

The Politics of Ethnocide

The policies of the Indonesian Government towards rural areas in general and tribal areas in particular, are characterised by a two-fold strategy: *first*, to suppress all local political initiatives, and institutions; and *second* to impose a nationwide, hierarchical political organisation. Where traditional leaders exist, their authority has been promoted and extended by integrating them into the fiscal administration.¹³ Contrarily, local democratic and egalitarian institutions and ceremonies are suppressed.

This strategy is in line both with the government's overall policy of stifling political opposition and with its development objectives.¹⁴ The political centralisation of tribal community life and its incorporation into the government administration is of particular importance if the government is to succeed in imposing its plans to relocate tribal peoples and to take over their lands for development purposes. Such plans are frustrated by the non-hierarchical and egalitarian nature of many tribal societies, and the resulting need to deal with each member of the tribe *individually*, rather than with their representatives.

The policy of eliminating traditional horizontal political groupings is rationalised according to the notion that tribal communities practice "primitive communalism" (or "primitive communism"). Such systems of mutual sharing and reciprocity, it is argued, sap progressive initiatives towards surplus production, since hard-working individuals must share the fruits of their labours with the less energetic majority.¹⁵

As Michael Dove points out, on the basis of his studies among the Kantu of Kalimantan, the government's policy is, in fact, based on a misrepresentation of these institutions:

"The democratic (not

communal) character of these societies does not rob their members of the economic incentive to surplus production, but it does give those who have succeeded in producing a surplus the incentive to share it (typically on a reciprocal, loan, or sale, but *not* gift basis) with those who have not succeeded. The incentive to do so is the assurance that others will do the same when the tables are turned. This system of social security shields all the members of the society from total economic failure and starvation, and, as a result, there is less surplus production flowing out of the society than if some of its members were allowed to starve."¹⁶

Tribal Economics: Protecting the Environment

The low regard with which tribal peoples are held by the politically more powerful Javanese is nowhere more obvious than in the scorn that is heaped upon their economic organisation. In particular, the slash and burn (swidden) agriculture known as *ladang* in Indonesia, which is practised by a large proportion of the tribal peoples, is the subject of much derision. As Dove has remarked:

"Contemporary Javanese uniformly speak of the agricultural system (of irrigated rice cultivation) as more productive, more rational, and in general better for the nation and national development than swidden agriculture. The swidden-based system of agriculture is regarded not merely as less good than the system of irrigated rice cultivation but explicitly as something bad—irrational, destructive, and uncontrollable."¹⁷

These views, though widely held, are quite erroneous. They wholly ignore the specific social and environmental conditions of the tribal peoples themselves. Far from being inefficient and destructive systems of resource use, traditional tribal economies are subtly adapted to their particular circumstances.¹⁸ Unlike the fertile central islands of Indonesia, which have rich soils derived from recent volcanic activity, many of the outer islands are covered by more typical tropical forest soils, low in nutrients and

unable to sustain permanent agriculture without massive and uneconomic inputs. The oft-cited low population density of the outer islands (as low as three people per square kilometre in West Papua), is not so much an expression of the primitiveness and inefficiency of agriculture in these places as an indication of their poor soils.

The Indonesian Government's intense prejudice against tribal systems of land use is based on the twin suppositions that these systems are unproductive and environmentally destructive. But, while it is true that the extensive land use system of the tribals gives a low return in terms of crop yields *per unit area*, swidden agriculture, as practised in Kalimantan, provides returns on *labour* which are between 88 and 276 per cent greater than the return on irrigated rice cultivation.¹⁹

Moreover, the low labour inputs required by swidden agriculture frees labour for other economic and social activities—such as hunting, fishing, gathering, rubber tapping, or rattan collection—on both a regular and seasonal basis. Such activities serve to spread the populations' load on the environment, making possible the generation of an economic surplus without an intensification of the swidden process itself.

Another common myth concerning tribal peoples is that they are "nomadic", unattached to particular areas and instead aimlessly perambulating about the bush in a continuous search for new resources. In fact, there is a close attachment between tribal peoples and their lands, (see pp 99). Their mobility is strictly limited to the areas with which they are familiar and to which they have traditional rights. In fact, *the only truly nomadic rural peoples in Indonesia are the displaced and landless peasantry from the central islands*, many of whom have moved to the outer islands either as "spontaneous" or as "funded" transmigrants. These shifted cultivators have become a major threat to the environment (see Charles Secrett's article in this issue, p 77).

According to Dove:

"The Javanese idealisation of intensive rice cultivation . . . is

based on a cultural myth, one important consequence of which is to rationalise and sustain the political and economic pre-eminence of their culture and government".²⁰

Arguing that "there is a fundamental and pervasive difference between the government's view of these lands and people and the cultivators' own view of themselves and their lands"²¹, Dove suggests that the government does not perceive the reality because it suits its own interests not to do so. The official view "rationalises and supports policies for administering the land and people of the Outer Islands that are less in the interests of those people than in the interests of central government".²² Dove goes on to argue:

"Intensive wet-rice cultivation, because it is a function of the high population density and maximises returns on land and capital, is suited to the extraction of part of the agricultural product by a central government, whereas extensive dry rice cultivation is not so suited, since it is a function of low population density and maximises returns to labour or people."²³

Furthermore, as Dove points out, the present government's negative view of traditional swidden echoes the policies of the Dutch colonial authorities who characterised swidden agriculture as the "robber economy" not "because it robbed from either its practitioners or the environment but because it was not readily subject to exaction by the central government".²⁴

The government's policies towards traditional systems of land use, far from being motivated by a genuine concern for the future of tribal peoples, are, in fact, based on self-interest. As Dove makes clear, the present government's economic policies towards "isolated and alien peoples" are merely a continuation of the same policies as those pursued by the ancient Javanese kingdoms and the Dutch colonial regime. Throughout Indonesia's history, central governments have promoted and enforced intensive systems of production that are easily managed by their fiscal administration, while denigrating and destroying the self-sufficient and extensive economies

of tribal peoples because they are not so readily exploited.

Resettlement

Resettlement is the lynchpin of the government's programme to restructure the social and economic organisation of tribal peoples according to "rational" and "modern" principles.²⁵ Dispersed tribal communities are first moved from their traditional lands and dwellings, and then congregated in larger settlements linked to the national administration by roads. Frequently, these relocations are carried out forcibly, against the will of the people involved.

Resettlement is creating serious problems, not just for the people themselves but also for the officials administering the projects. Many resettlement schemes have been outright failures in purely economic terms, not least because of the severe social problems which have resulted from the over-hasty and unthinking manner of their enforcement.

The sheer scale of these relocation programmes can be judged from the latest figures available on the government's planned resettlement programme in West Papua. As from 1986, it is planned to resettle 13,000 heads of family every year. At that rate, all 800,000 tribal people in West Papua will be sedentarised within the next 12 years, by this programme alone.²⁶

The extensive land-use practices of Indonesia's tribal peoples have brought them into direct conflict with the government over a whole range of development projects—from lumbering and agro-forestry schemes to the building of hydro-electric dams, mining and Transmigration. Many of these projects are not being implemented by the PKMT but by other government departments.

For this reason, the "problem" of tribal peoples is no longer being handled exclusively by the PKMT. In particular, the Department of Agriculture is resettling tribal peoples in order to facilitate its policy of "developing" forest areas. The policy consists of granting massive concessions for extensive logging operations, whilst setting

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aside other areas as "Conservation Zones".

The explicit objectives of the Department's resettlement programme are:

1. To prevent shifting cultivation;
2. To prevent the loss of valuable timber through non-commercial logging;
3. To prevent disturbances of the hydrological system and decrease the dangers of erosion;
4. To prevent fires and increase fertility;
5. To employ people as unskilled labour in the logging industry;
6. To increase the standard of living;
7. To increase the standard of education;
8. To facilitate the development of the area.

Whereas the Department of Social Affairs has designed its resettlement programme with the goal of "improving" the "social function" of tribal communities, the Department of Agriculture is carrying out resettlement as an end in itself. The programmes are financed with some of the profits taken from the logging industries. Immediately after the construction of the new villages, the communities are handed over to the local government.²⁷

A third department intimately involved in resettling tribal peoples is the Department of Transmigration. A substantial proportion of the settlers included in the Department's ambitious settlement targets are local people who have been taken from their original communities and integrated into the newly created settlements.

These so-called "local transmigrants" constitute ten per cent of the overall numbers contemplated for Transmigration—though, in some areas, the percentage is higher. In West Papua, for example, the figure has been increased to twenty-five per cent of the total, suggesting that the government plans to resettle about 170,000 West Papuans as "local transmigrants" over the next five years. These figures do not include the West Papuans to be resettled under the Department of Home Affairs' programme.²⁸

Apart from causing severe conflicts over land rights (see pp 99), resettlement has proved socially and economically catastrophic for the

tribal communities involved. Many communities have faced the double indignity of having their lands taken over for the creation of Transmigration sites and then finding themselves forcibly resettled back on their own lands, where they find themselves a minority despised for their "primitive" customs, such as eating sago and pigs.

Like the Transmigration programme itself, the government's policy of resettling tribal peoples to promote their integration into the national economy and administration is not new. Speaking of West Papua, Van Baal and his colleagues note:

"The resettlement of semi-nomadic Irianese or Irianese occupying small, isolated rural settlements in larger local communities has a long history. It began with the introduction of schools. Long before World War II, the Missions were already endeavouring to persuade people living in scattered hamlets to co-reside in larger communities, which would accommodate a sufficient number of children for filling a school, a policy strongly supported by the colonial government. Many new villages sprang up this way, and with them quite a number of unforeseen difficulties arose. The semi-nomadic way of life and preference for living in small isolated hamlets more often than not have a solid foundation in the people's subsistence economy and in the distribution of sago groves and coconut gardens between descent groups. People prefer to live in the immediate vicinity of their gardens and sometimes feel compelled to seasonal shifts of residence. The effect of this on school attendance is, of course, adverse. A satisfactory solution can only be provided by a change in local people's economy. Consequently, the Indonesian Government is trying to resettle so-called *suku suku asing* (isolated communities) with the likewise nationwide programme for community development."²⁹

Conditions in the Camps

In fact, the widespread relocation of tribal peoples has run into more serious problems than mere schooling difficulties. Resettlement has disrupted the traditional equilibrium between the local peoples and their environment. As a result, the

new "communities" have experienced major economic problems.

By intensifying demands on the local, natural resources, the new communities have frequently caused severe environmental degradation. Slash and burn agriculture, while entirely suitable for mobile and dispersed communities whose traditional lands remain uninvaded, can become environmentally destructive once the peoples are shifted and concentrated. Similarly, hunting, fishing and gathering by the sedentarised and enlarged groups can cause the local elimination of species basic to the traditional economy and diet.

As a consequence, many resettled communities have experienced a marked decline in nutritional standards. Ill-health has also been exacerbated by the introduction into previously isolated communities of non-indigenous diseases. In addition, some resettlement projects have moved people from relatively disease-free areas into malarial zones. Alarming rises in intestinal disorders due to the infestation of soils with parasitic eggs and larvae in the vicinity of the new settlements further contribute to the decline in health.³⁰

Behind the Rhetoric

The professed aim of the government's resettlement programme is to assist tribal peoples to increase their self-sufficiency. In many areas, however, tribal peoples are being forcibly resettled to serve as a labour force for plantations producing cash-crops. Indeed, in West Papua, a major emphasis of the Transmigration and resettlement programmes is the promotion of the national Smallholder Nuclear Estates (PIR) Programme. The PIR programme is an attempt by the government to boost its exports of cash crops, and hence to reduce its dependence on oil revenues.*

Two recent studies undertaken by the Irian Jaya Community Development Foundation, have revealed some of the serious problems associated with PIR schemes. In both the projects examined—one in

*For further discussion of the PIR programme, see Mariel Otten's article in this issue (pp 75) and Marcus Colchester (pp 108).

Manokwari and the other in Arso—the implementation of the PIR programme has induced severe economic problems in some previously self-sufficient areas. Inadequate funding of land clearance has led to low-yields for participating smallholders. Moreover the induced land shortage has led to nutritional problems and even to the death by starvation of small children. Those who work are paid the equivalent of only one US dollar per day, a sum insufficient to provide even the elementary needs of the labourers and their families.³¹

In Sulawesi and Kalimantan, tribals are also being resettled through their incorporation into the Transmigration programme. There are an estimated 225,000 shifting cultivators in Southeast Sulawesi alone, many of whom are being “slipped” into the government’s PIR plantation projects, as part of the government programme of *transmigrasi sisipan*. The aim is to “improve the standard of living” of the tribals, although, in fact, the cash cropping scheme has run into major marketing problems because the government-built roads are in an appalling state of disrepair. Many of those resettled on these estates have been unable to participate in agricultural activities for months, for lack of supplies, while established smallholders have watched their produce pile up because of the transport difficulties.³²

Inappropriate Housing

Congruent with the steps being taken to curtail local systems of barter and exchange, and in line with the overall commitment to eliminating “primitive communalism”, a major feature of the government’s resettlement programme is to furnish the tribals with new housing. Such housing is made of non-local materials which are provided initially by the government, but which can subsequently be repaired with materials only available through the cash economy. The houses are designed according to a model of social organisation that conflicts directly with traditional social structures.

All the housing provided by the government—in which the settlers



PHOTO: DAVID KEW



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Implementation of government policy has meant the total destruction of traditional housing. Traditional long houses such as this Mentawai ‘uma’ (top) have been proscribed. In the 1950s many Mentawai were resettled into large villages but were encouraged to build standardised housing from forest products according to traditional techniques (middle). Today resettlement dwellings are made of ‘modern’ materials. The villagers complain that they lack even basic amenities, (such as a place to cook!) (bottom)

are obliged to reside—is designed for nuclear families. Tribals used to living in villages with communal dwellings have thus been subjected to particularly harsh measures. As the Dayaks of Kalimantan are all too aware, the burning of traditional long-houses has long formed part of government policy.³³ Such houses are considered to be unhygienic and uncivilised. Government officials also allege that housing so many people under one roof encourages promiscuity, low morals and sex orgies.

By contrast, the cheap dwellings of planks and corrugated iron with which the long-houses are replaced supposedly conform to the demands of modern and moral living. In fact, such modern dwellings frequently provide less effective protection against the elements and against insect-borne diseases than the traditional houses.³⁴ They have also massively disrupted traditional social organisation.

Religious Intolerance

The inherent contradiction between the Indonesian State's *professed* commitment to a multi-ethnic State and its *de facto* and overriding policy commitment to unification and standardisation is nowhere more apparent than in the religious sphere. In line with the doctrine of *Panca Sila*, Section 1 of Article 29 of the Indonesian Constitution states that religious practice "shall be based upon belief in One, Supreme God". Contrarily, according to Section 2, "the State shall guarantee the freedom of the people to profess and exercise their own religion".

What this has meant in local and practical terms is that the State has only tolerated (and even then not without restrictions and problems) peoples practising the major world religions of Islam, Catholicism, Protestant Christianity and Buddhism. Indeed, it was only in 1962 that the practice of Balinese Hinduism was publicly acknowledged to be in line with *Panca Sila* and the Constitution. For tribal peoples, practising a multiplicity of traditional religions, which are neither theistic nor considered valid, no such special dispensations have been made.



PHOTO: DAVID KEW

Traditional Healers are proscribed by government policy, since their practises are based on animistic beliefs.

The State's intolerance of tribal religions is expressed in local communities by a ban on traditional curing practices and by the proscription of certain rituals and ceremonies. For example, among the Kantu of Kalimantan, provincial authorities have banned the practice of traditional marriage ceremonies, on the grounds that the generous exchanges of goods associated with these rituals are extravagant and irrational.³⁵ The effects of these proscriptions have been to erode the authority of leaders and practitioners; to undermine traditional belief systems; and to create a sense of cultural inferiority among the peoples themselves.

The government's overt policy is to replace the tribal peoples' traditional belief systems with variants of monotheism. This partly accounts for the vigorous promotion they offer to foreign missionary organisations. In areas which are still "under-developed" and lack basic government's infrastructures, these mission organisations play an important part in furthering national integrationist policies. Kalimantan and West Papua are two areas where missionary activity is unusually intense. West Papua alone has some fourteen different missionary organisations operating in the area, including Protestant institutions such as the Summer Institute of Linguistics and the New Tribes Mission.

Both organisations are internationally notorious for their ethnocidal programmes of forced conversion.³⁶

Education and Ethnocide

Re-education of tribal peoples thus forms an essential part of government programmes in tribal areas. Such educational programmes are reminiscent of the nationalistic educational programmes imposed on indigenous peoples in Latin America. Unlike Latin America however, there have been no initiatives towards bilingual education programmes, in local languages, designed to validate the childrens' sense of ethnic identity. Many observers of the situation in Indonesia have pointed out the irrelevance of most of the State-provided education for the tribal children, which, while effectively alienating them from their own culture, is of little practical value to them. In fact, the very purpose of this schooling is "to sever the younger generation from the old traditions that were held responsible for their static way of life".³⁷

Coupled with this formal education programme, the government also engages in ethnocentric propaganda campaigns, which include the posting of large cartoons portraying unclothed, environmentally destructive swidden agriculturalists, making a transition to clothed rice cultivators, living in unit dwellings and honouring the Indonesian flag.

In some areas, vigorous campaigns have been attempted to try to force tribal peoples to effect such a transition in a very few years. The best known example was the so-called 'Operation Penis-Sheath' (*operasi koteka*), carried out among the Dani of the West Papuan highlands in the mid-1970s. The naked Dani were forcibly clothed and their hair shorn. Those who resisted met with violence and repression by the police; many were imprisoned in squalid conditions. Children were forcibly taken away to schools against their will, and the Dani were forced into constructing bridges and houses they would never use. Many of the missionaries complained that the people were being forced to wear clothes without being provided with the means to wash them. Skin in-

fections became a major problem.³⁸

The consequences of this kind of cultural pressure has been the destruction of self-respect and sense of personal value. Finding their traditions devalued and discouraged has engendered a growing sense of personal alienation. Where this has not led to resistance, it has caused a breakdown of the traditional social order and increasing anomie, leading to drunkenness, prostitution and cultural collapse.

Conclusion

The full implications of the Transmigration programme for the tribal peoples of Indonesia cannot be properly understood without placing the enterprise within its broader social and political context. In studying the negative impact of the Transmigration programme on tribal peoples, it is immediately clear that the programme is entirely consonant with the government's overall policy regarding tribal peoples; indeed, it is fast becoming one of the principal means by which it is being implemented.

The form of this overall policy has been moulded by the nature of the development of Javanese civilisation, and by the manner with which the Dutch colonial regime extended the already established Javanese model of cultural and economic

domination over the archipelago as a whole. Moreover, more recent initiatives towards nation building and economic development—far from operating in opposition to the pre-colonial and colonial relations between 'marginal' peoples and central government—have only intensified and extended their exploitative and assimilationist nature.

The imposition of the government's policies (which have been designed to favour its own interests rather than those of the tribal minorities themselves), is leading to the destruction of tribal communities, the elimination of their ways of life and their replacement by an educational and economic system over which they have almost no control. For the peoples involved, this process of cultural annihilation and assimilation, where not actively resisted, is having a profoundly disturbing and disorienting effect. Torn out of the social and cultural fabric that has given their lives meaning for thousands of years, the tribal peoples of Indonesia are being forced to become part of the vast depoliticised peasantry that makes up the body of the nation. As the Transmigration programme is stepped up into the last isolated parts of the archipelago, this tragic process of deliberate ethnocide is escalating correspondingly.

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9. Achmedi, 'Isolated Ethnic Groups in Indonesia', *Indonesia* 16, 1972, p20.
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13. cf Michael Dove, 'The Agroecological Mythology of the Javanese and the Political Economy of Indonesia', *Indonesia* 39, 1985, p30.
14. As Suter (*op cit* note 3, p8) notes: "Indonesia's ruling elite has been energetic in its attempts to, in effect, depoliticise the nation. It abhors public dissent. The government, acting on the policy that

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PHOTO: A KENTIE

Members of the Free Papua Movement (OPM) near Wissel Lakes. Tribal Papuans are engaged in an unequal struggle with the Indonesian security forces in defence of their lands and their right to self-determination.

The Struggle for Land Tribal Peoples in the Face of the Transmigration Programme

by

Marcus Colchester, Survival International

For the landless poor of Java, Madura and Bali, Transmigration offers the promise of land and hope in the place of growing squalor and impoverishment at home. But the land on which they are being resettled, far from being empty and undeveloped, as the government claims, is in fact the ancestral territory of numerous minority ethnic groups. Under Indonesian law, these tribal peoples have only limited rights to their land: they are effectively dispossessed. As a result, conflict over land has become widespread. Only a radical restructuring of the Transmigration Programme or fundamental changes in Indonesian law can solve the problem.

From the tribal peoples' point of view, Transmigration is no less than an invasion programme. In alienating them from their traditional lands, it is not only undermining their economies, but jeopardising their entire cultural identity, which is built up on the relation between their society and its lands. Contrarily, the Indonesian Government views the tribal peoples' resistance to Transmigration and resettlement as both unreasonable and unpatriotic and, even, as an overt expression of resistance to authority.

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In areas such as West Papua, where conflict between the government and the local peoples already has a long history, resistance to land expropriation is equated by the government with terrorism. Denied the political or legal means to contest the takeover of their lands, the tribal peoples have faced a bitter choice. Either they must give way to the government (and thus betray their own cultural values, and ultimately their own identities); or they must take up arms in defence of their homelands and engage in an unequal struggle against the armed might of the government's security forces. Conflicts between the tribal peoples and the government have become bloody and protracted. Yet, whether they

take up arms or not, the traditional ties between the people and their lands are disrupted, making normal life impossible.

As the Transmigration programme gathers momentum and extends into the remoter parts of Kalimantan and West Papua, these conflicts can only intensify. Especially in West Papua, where the cultural and racial differences between the government (and the transmigrants) and the local peoples are even more marked than elsewhere in the archipelago, Transmigration is fast becoming the single most important cause of conflict. Only a radical restructuring of the programme or fundamental changes in Indonesian law can solve this problem.

Traditional forms of land tenure

To speak in general terms about the traditional relations between the tribal peoples in Indonesia and their environment is not an easy task. Even in the western parts of the archipelago, where there are many shared linguistic and cultural traits, generalising about tribal systems of land tenure is of doubtful value. However, the two different regions which are now the primary targets for Transmigration—namely, Kalimantan and West Papua—show a sufficient degree of internal homogeneity for some general statements to be useful.

Based on his own extensive review of the literature relating to systems of land tenure in Kalimantan (Borneo), Joseph Weinstock of Cornell University notes:

"Village territoriality is a concept universal to swidden communities of the island. Under customary law, use of land within the recognised territory of the village was restricted to members of the community. An outsider could only use land within the village territory provided he received prior permission from the village headman".¹

These rights extend far beyond the areas actually used for swidden agriculture; they include the areas of swamp and virgin forest which are used for hunting, collecting wild produce, and as a reserve for future swidden sites.² Traditional ownership rights thus extend to embrace the majority of the island, which was divided up into more or less clearly defined areas linked to specific communities, within which individuals established temporary rights to their cultivated plots.

As Michael Dove has noted:

"This pattern of land use and ownership is associated with . . . both the desire and the ability to conserve the productivity of the land—which means conserving the forest cover. Measures taken to ensure its conservation and forestall any threat to grassland succession include not clearing very young forest for swiddens, not cropping swiddens in rice two or more years in a row, and planting trees and bushes (e.g. durian, coffee, candlenut) on newly fallowed swiddens".³

West Papua

In West Papua, which both

racially and culturally forms part of Melanesia rather than Indonesia, systems of land tenure are markedly distinct and much more complex. Speaking about Melanesia as a whole, it is true to say that *the relationship between tribal peoples and their lands is fundamental to the entire structure of their societies*. As Brookfield and Hart note:

"The foundation of any group's identity is ultimately in the land which the group 'owns' and uses. Whether exercised or not, rights in land are the basis of personal status and security".⁴

The particular manner in which this fundamental relationship is expressed varies greatly from one society to the next and is, in large measure, a function of the differences in the environment.

"In the newspeak of Indonesian officialdom, dispossession has become development."

Native economies in Papua range from extremely mobile groups practising hunting, gathering and fishing, with little or no permanent cultivation, to near sedentary groups with sophisticated systems of rotational agriculture.

Along the coasts of Papua much of the land is either swamp forest or consists of areas prone to seasonal flooding. Here foraging, supplemented by the cultivation of sago palms, is widely practised. Inland, even on dry ground, much of the soil is typically poor and shifting agriculture is the optimum mode of land use—usually supplemented by the raising of pigs, an important source of protein for the majority of Papuans.⁵ Only in the highlands, where the temperate climate has allowed far richer soils to develop, is intensive cultivation, usually of sweet potatoes, possible.

Population density in the highlands is high, as much as 170 people per square kilometre (km²) in West Papua and reaching 100 (locally 154) per km² among the Chimbu in the Central Highlands of Papua New Guinea.⁶ In contrast, in the

lowlands, densities of less than one person per km² are not uncommon, the overall density in West Papua being some three per km² according to the World Bank.⁷

No Unclaimed Lands

Notwithstanding the low population density in the lowlands, the idea that there are vast areas of unclaimed lands available for settlers is completely false. Speaking of the swamp dwelling sago cultivators on Frederik Hendrik island in western West Papua, L.M. Serpenti has noted:

"It would be quite wrong to believe that the big stretches of swamp between the villages belong to no-one in particular. On the contrary, they are precisely divided among the villages".⁸

To the north in Biak-Numfor the same is true, where moreover "all pieces of land have proper names".⁹ Similarly, among the Papuans of the Trans-fly:

"Even where land is never used it still comes nominally under tribal ownership . . . the whole countryside is divided into greater and lesser areas, all of which are named".¹⁰

Again, among the Garia:

"All land is said to be owned. Each of the small strips, larger blocks and huge tracts into which the whole territory is divided, not only bears the name of a cognatic stock but also has its human proprietor or proprietors".¹¹

Speaking of Papua New Guinea as a whole, Weinstock and Vergara have noted:

"The man-land ratio of . . . 6.5 persons/km² would suggest that vast tracts of land are unoccupied and therefore unowned. This impression is incorrect. In fact, every hectare of land in this country has an owner or claimant".¹²

In fact, it is possible to find examples of the idea that *all* land is owned, throughout Melanesia as a whole.¹³

Nevertheless, the degree to which these land rights are exerted and enforced does vary within the region, and not just in proportion to the density of the population. In the Sepik River where the groups' economies depend more on trade than actual land use, land rights are tenuous and of relatively little

importance. This is largely because the area is so swampy that even foraging is unproductive. For these waterborne people, fishing rights and rights to trade fish for the garden products of their neighbours are all important, and land rights, while held in common by clan members, are nominal.¹⁴ Yet these people are clearly somewhat exceptional. In other very wet areas, as among the Mimika of the south coast of West Papua, where the conditions are not quite so unfavourable for foraging, rights to sago groves and water rights over the river systems are well defined and enforced.¹⁵

In contrast, in the highlands, land rights are extremely closely controlled and in many areas are much more highly individualised. Especially among the densely settled sweet potato cultivators of the high valleys, land conflict is common and the "struggle for land" a fundamental feature of community life.¹⁶

Individual Rights, Community Rights

The way in which these rights to land are invested in the individual and the group varies considerably among the Papuans. Because land rights and the social order are so closely interdependent, it is impossible to speak of one without the other, yet the huge variety of social formations makes generalisation extremely difficult.

Reduced to a generally valid minimum, it is usually the case that Papuans distinguish land rights at two different levels. At the private level, the individual has limited ownership rights to the lands (and in places, the trees) that he cultivates. Such ownership rights may be closely bounded and defined so that it might be more accurate to say that the individual only has the right of *usufruct* to these properties.

In contradistinction to these goods (which are essentially the products of an individual's labour—his "shadow" as the Siane put it¹⁷) all other lands and the lands over which an individual exercises private rights, are also subject to close control at the collective level:

"An individual's rights mesh . . . into those of the group to which he belongs. Behind and around the individual title is a continuing group title, to used and unused land alike, and individual rights are validated by their membership of a group".¹⁸

Most commonly, but by no means universally, such groups in Melanesia are patrilineal descent groups, defined by shared descent through the male line. As among the Mae Enga, "genealogies serve as charters that validate the rights of descent groups to patrimonial land".¹⁹ Individuals obtain rights to cultivate their plots through membership of the group and frequently are denied the right to

"To the Papuans, their land belongs to the ancestors of the group and to the group's descendants."

transfer the private rights they obtain within the group land to others, especially where these others are not of the same group. The individuals' rights to dispose of his property are thus strictly limited and land frequently reverts back to the group during fallow periods.²⁰

In West Papua, native concepts of land ownership have been translated with some subtlety into Bahasa Indonesia. Overall rights to land, known generically as *hak ulayat*, are categorised as *hak milik* (held by the tribe (*suku*) or clan (*keret*), which approximate to full ownership rights) and *hak pakai* (held by the local lineage or individual, which approximate to rights of usufruct to forest resources, garden sites etc).²¹

Commonly it is through consensus among group members, or through the offices of spokesmen and leaders, that decisions about the disposal of land are made. Yet even those who represent the group to which the land belongs do not have the right to alienate the land from the group. On the contrary, *communally held land is effectively inalienable and held by the group in perpetuity.*

Holding Land in Trust

In fact, to say that land *belongs* to or is *owned* by the group is somewhat misleading. It is much closer to the truth to say that the individuals of the group hold their land in trust. To the Papuans, their land belongs to the ancestors of the group and to the group's descendants, whom the Asmat call 'our children who are still in the soil'. For example, among the Siane it is believed that

"The ancestors made these goods (the land) at the beginning of time . . . and their descendants must be handed these goods in unimpaired condition in the future."²²

In many Papuan societies there are myths which link particular social groups to their first ancestor and to the land. Nor are these spiritual ties to land considered only in terms of the past. The present ties between the group and the land are perceived in terms of spirits who dwell on the land, guard it against invasion and help with its cultivation. These spirits are the ghosts of the dead who, as among the Garia,

"are regarded as the true guardians of patrilineage land, only delegating their authority to the full members, their representatives on earth".²³

Much of traditional Papuan life is bound up with ceremonies that, in effect, perpetuate the ties between the living and the dead: between those who are using the land and those who own it.²⁴ In many groups, specific parts of the clan land are considered especially sacred and inviolable. For example among the Garia, there are sacred groves which are considered to be the abode of the spirit ancestors, who dwell there for two generations before they disappear as flying foxes.²⁵

The ties between society and their land are thus basic to the structure and functioning of Papuan societies. As Paula Brown points out:

"A group symbolises its unity and existence by the place names of its territory. The territory is the source of the individual's livelihood, his security and his welfare . . . the lifelong association with a territory makes every part of the locale a reminder of the past, a force for continuity".²⁶

Land Conflicts and Social Structure

With such strong ties to their lands, it is no surprise that the defence of land rights is such a major preoccupation of Papuan life. Indeed, land disputes are a source of conflict throughout Melanesia,²⁷ and encroachment on land always generates the most powerful of emotions.²⁸ Of the Mae Enga, Meggitt has noted: "One cannot overestimate the intensity of an Enga man's attachment to his patrimonial land".²⁹ He cites an Enga man sentenced to prison in a recent land dispute saying:

"You can put me in jail many times, you can kill me, cut off my head if you will, but my body will walk back to that land. It is ours".³⁰

In fact, land conflict and territorial defence are basic to the structure of Melanesian societies. For example, of land disputes among the Garia, Lawrence has stated that:

"There is no other field of social action in which the patrilineage emerges as a distinct unit".³¹

Fighting over land mobilises group sentiment and support and leads to the assertion of group autonomy and identity.³² Thus, whereas on the one hand it is the social system which defines an individual's rights to land, it is land use and the defence of land that affirms and expresses the social order.

Today, as these tribal peoples come under increasing pressure from the outside world through the (often enforced) imposition of foreign ideas and values, the traditionally close links between their societies and their lands are being broken. This is not just the result of land invasion; many other factors which are integral to community life have also been devalued and destroyed. In Biak, for example, the social fragmentation and anomie resulting from mission education and employment outside the traditional economies is leading many of the younger generation to take no interest in land matters.³³ Nor is it just the younger generations who have lost their ties with their lands. Among the Marind-Anim, the Dutch colonial proscription of traditional ceremonies has eroded

The Rape of West Papua

The recent escalation of Transmigration into the strife-torn province of Irian Jaya has revealed with brutal clarity the military significance of the programme. Transmigration is being promoted in the province as an integral part of the Government's effort to integrate forcibly a recalcitrant people into the national order, in blatant defiance of their internationally recognised rights to their lands and to self-determination.

The three and a half million Papuans are racially Melanesians, speaking over a thousand distinct but related languages. As culturally diverse as they are linguistically, they inhabit the swamps, forests and steep highlands that make up the land once known as New Guinea, that is today divided into Irian Jaya (West Papua) and Papua New Guinea (PNG). The population in the western half is estimated at 1.2 million of whom about 800,000 are traditional inhabitants of the islands, the remainder being more recent arrivals. The West Papuans remain some of the most isolated and traditional tribal peoples in the world, with a strong loyalty to their ancestral ways of life that found vigorous expression during the colonial era in the revitalisation movements known as 'cargo cults'.

Partition: the colonial legacy

The Dutch included West Papua into their expanding empire in the 19th Century, and, in 1848, concluded an agreement with Germany and Britain carving the island up into three parts. As a consequence of the World Wars, the two eastern parts passed into Australian mandate. The western half was retained by the Netherlands as its last remaining colony in the East Indies, while the Republic of Indonesia grew into being in the turmoil following the Japanese withdrawal. Dutch attempts to develop West Papua, negligible in the pre-war era, when it had been claimed merely as a buffer against territorial encroachment, were hardly more effective in the post-war era. The Dutch did little more than found a few coastal towns and allow some oil prospecting.

Betrayal at the United Nations

Growing pressure at the United Nations for the decolonisation of the Third World, linked to pressure from economic interest groups, both transnationally and in the US and Indonesia, forced the Netherlands to cede West Papua to the UN in 1962.

The UN, in turn, passed the area into Indonesian hands in 1963, "on the understanding there would be a plebiscite by 1969 to test West Irian opinion". The 1969 "Act of Free Choice", which followed six years of blatant oppression, was notorious as a complete and tragic farce in which only 1,025 carefully selected Papuans actually had a vote. Their unanimous vote in favour of assimilation into Indonesia was ratified by the UN

General Assembly. Having rested control of the area from one colonial regime, the UN had promptly handed it over to another.

The Plunder of Resources

The vast untapped resources of West Papua were among the primary reasons that it was annexed by Indonesia. The region has now become Indonesia's sixth most profitable province. It produces substantial exports of oil, timber, gold, copper and other minerals. There is a flourishing trade in shrimps and in (fast-disappearing) crocodile skins. Large areas of tribal land are being taken over as oil-palm plantations.

Logging is now taking a terrible toll of West Papua's forests. Vast areas of the lowlands have been leased out in concessions. Worse still, in order to encourage the timber trade, the normal controls governing the issue of logging rights have been lifted. Companies operating in West Papua blatantly ignore the human and legal rights of the local people and, more often than not, avoid paying them compensation for the damage caused to their environment. In many areas local people have been passed over in the selection of labour, while in others they are paid criminally low wages to destroy their own forests. Complaints about labour conditions have been met with violence, and men seeking union protection have quickly found themselves out of work altogether.

One area most sorely disrupted by logging is Asmat on the south coast. Predominantly covered by seasonally flooded forests, the region is the homeland of sago-cultivating and hunting and gathering tribes who have become world famous for their intricate wood carvings. Today, many of the Asmat people have been forcibly relocated to the coast where they are forced to labour for the timber companies, often being held in a system of debt-slavery and paid only with shag tobacco and cheap clothing.

Nationalism and Rebellion

Although the Papuan nationalist movement preceded Indonesia's UN-endorsed annexation of West Papua, it was not until after this that the Organisation for an Independent Papua (the *Organisasi Papua Merdeka*—OPM) became a serious force in West Papuan politics. In spite of being declared illegal in 1963, separatist resistance to Indonesian domination has grown as fast as Indonesian plans to 'develop' West Papua. Religiously, culturally and racially distinct from the darker-skinned Papuans, Indonesians have regarded the inhabitants of their "26th Province" with ill-disguised contempt. Continuing attempts to "Indonesianise" the Papuans, by forcing them to abandon their traditions and adopt the "civilised" practices of the new colonists have only fuelled the conflict. In some areas, the programmes of forced integration and

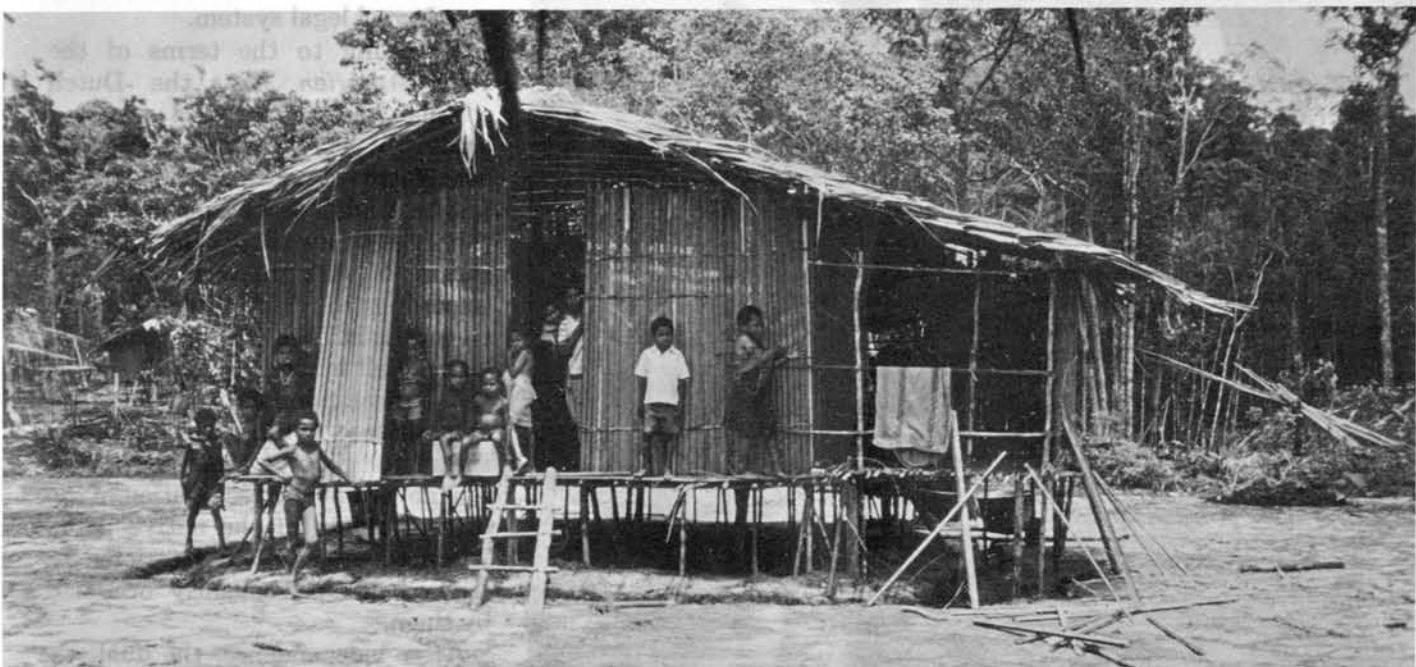


PHOTO: GARTH NETTHEIM/RAPPORT

Over 10,000 West Papuans have sought refuge in Papua New Guinea since February 1984. Land rights abuse has been the major cause for them abandoning their homelands.

assimilation into Indonesian national society have been fiercely resisted by the West Papuans: denied all forms of normal political expression, some have taken up arms.

Indonesia's Secret War

Armed resistance to Indonesian control of West Papua commenced in 1965, when Melanesians of the Arfak clan attacked the Indonesian Army Barracks at Manokwari. Since that time, the guerrilla struggle between tribal peoples, often armed only with traditional weapons, and the Indonesian army has continued. Armed uprisings by tribal warriors against the excesses of the administration have been met with indiscriminate and brutal repression.

These rebellions have gone largely unreported by the world's press. Yet enough information has emerged to reveal that the conflicts have been widespread, affecting large areas in nearly all parts of the province. Rebellion rocked the central highlands, especially in the Wissel Lakes region, in the months preceding the "Act of Free Choice". Indonesian troops crushed the rebellion through the use of air power, including indiscriminate strafing of villages. Similar tactics were used to crush the revolt of the Dani of the Balim Valley in 1977 following the imposition of "Operasi Koteka". When the tribals surrounded the administrative centre, the Indonesians responded with "strafing support from helis". Indonesian attempts to fly in special paracommandos were foiled by the planting of heavy stakes in the airstrips, so the Army resorted to aerial bombardment.

The growing unrest has caused Indonesia to attempt another solution to the problem; to quell local separatist feelings by sheer force of numbers, by colonising their lands with more loyal

subjects brought from the over-populated central islands.

Transmigration as Rural "Pacification"

Officially-sponsored Transmigration into West Papua commenced in 1966, even before the "Act of Free Choice". But the initial numbers were small, because of the logistical problems of transferring the migrants such long distances to an area almost totally lacking the necessary back-up facilities to make "modern" settlement viable. By 1984, the total number of transmigrants settled on the island numbered over 80,000. West Papua has now become the principal area for settling transmigrants after Kalimantan. Present government plans include the settlement of about 685,000 people in West Papua between 1984 and 1989. World Bank statistics reveal that West Papuans will become a minority in their own country by 1995.

The security aspect of Transmigration is especially evident in West Papua where military authorities have made plain the importance of using Transmigration settlements for strategic purposes. This was spelled out in a recent book about the province written by the former eastern region territorial commander. Stressing that Transmigration was "very important for development everywhere", Lt-Gen. Kahpi said this was "especially the case in strategic areas, like border zones . . . former soldiers positioned in such areas are very important to create a 'buffer zone' and all such transmigrants would have the function of guarding against crossers of the Indonesia-PNG border, thus acting like a 'security belt' in the border district".

Refugees

The escalating conflict between

nationalist Papuans and the Indonesian armed forces has caused a steady stream of refugees to leave West Papua. By 1979, an estimated 10,000 West Papuans had crossed into Papua New Guinea. Since early 1984, the situation in West Papua has deteriorated, causing a further flood of refugees to abandon their homelands and seek refuge in Papua New Guinea. According to the United Nations High Commission for Refugees, there are presently 10,500 of these more recent refugees in camps all along the border, including about 500 new arrivals in the last few months.

Successive reports from those in direct communication with the refugees have noted that land alienation, resulting primarily from the Transmigration programme, has been a major cause for their flight. Refugees report the bombing of villages, indiscriminate shooting, imprisonment, torture, rape, the burning of settlements and the killing and stealing of livestock.

Not all those reaching PNG are just from the border region. Some refugees spent up to five weeks trekking to reach the frontier. Many of the fugitives have suffered severely on the way and some have even died while on trek, according to a recent account.

Describing the situation in the refugee camps in the Kiunga area in PNG, Bishop Gerard Deschamps, recently noted that many refugees still fear for their lives. He has described how many are seized by panic and flee into the forests surrounding the camps at the mere sight of unidentified helicopters. According to the Bishop: "Every day the refugees are still haunted with memories of the cruelties of which they were the victims shortly before their flight . . . forced repatriation would in fact mean their death from starvation in the forests, where these refugees would undoubtedly try to hide from the Indonesian army".

Marcus Colchester

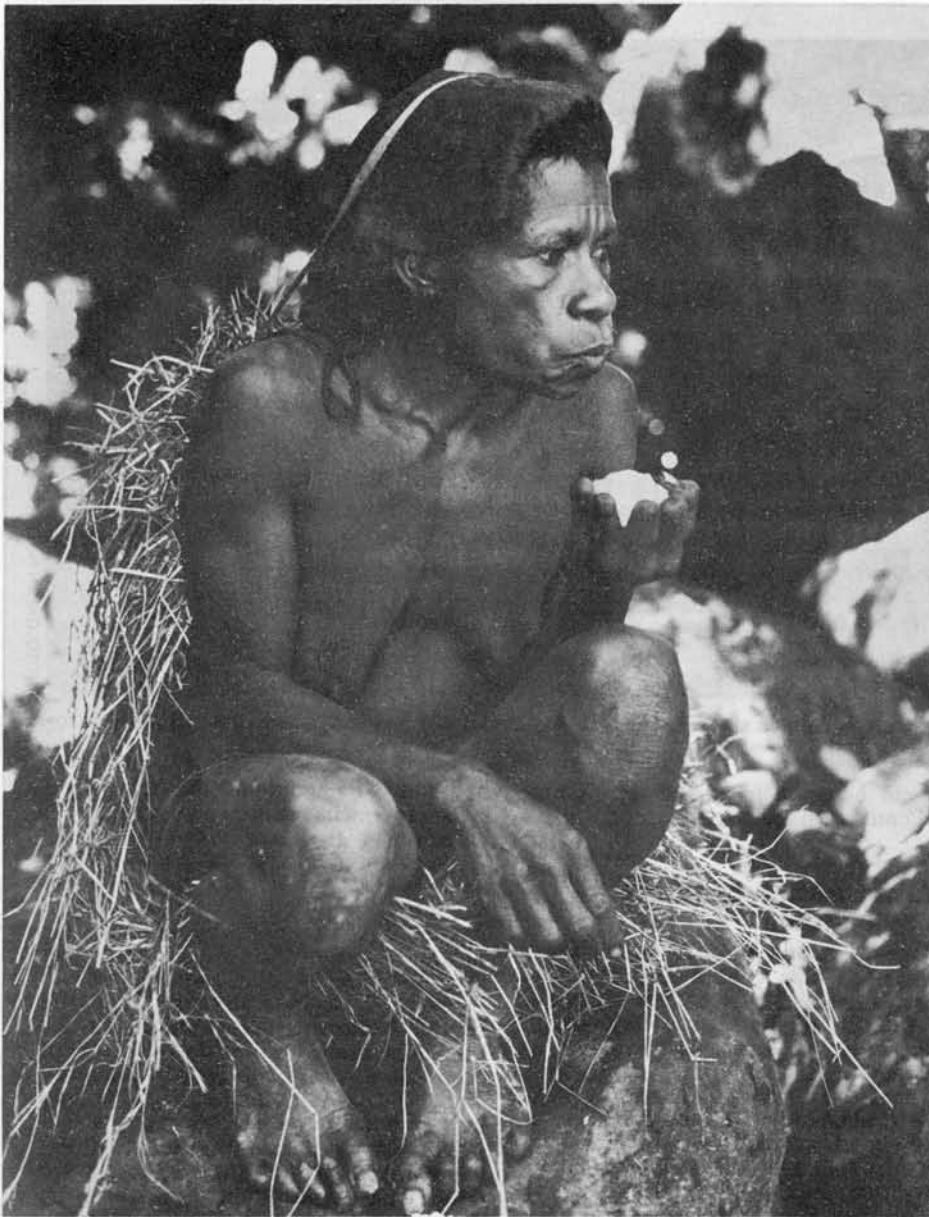


PHOTO: ROBIN HANBURY-TENISON/SURVIVAL INTERNATIONAL

A Dani woman. Papuan peoples have strong ties to their traditional lands. One Enga man sentenced to prison in a recent dispute is quoted as saying: "You can put me in jail many times, you can kill me, cut off my head if you will, but my body will walk back to that land. It is ours."

the position of the leaders whose authority was affirmed through their coordination of rituals. Since these individuals were also the guardians of corporately held lands, the erosion of their authority resulted in much confusion about land ownership, leading to a corresponding breakdown of the social structure.³⁴

As Lawrence points out:

"Ultimately, . . . religion is of vital importance to land tenure, for it validates the system. On the one hand, fear of retribution from the spirits of the dead induces respect both for personal and patrilineal land rights, and rationalises the complex of relationships which they promote. On the other hand, ritual beliefs and practices justify traditional agricultural techniques and set in

motion the system of land use by coordinating the activities of . . . fellow cultivators".³⁵

Dispossession by Law

The history of land rights legislation in Indonesia is complicated by the fact that the Indonesian State inherited from the Dutch a dual system of legislation, whereby formal law of the European model was imposed on the traditional (*adat*) laws of the archipelago *without completely replacing them*. Dutch legislation—which distinguished between Europeans, natives and foreign orientals—divided the archipelago into 17 law areas, according to perceived socio-cultural criteria.³⁶ The

eventual aim was to codify *adat* law as a formal legal system.

According to the terms of the 1870 *Agrarian Act*, the Dutch colonial regime declared swidden lands to be "waste lands" and henceforth they were classified as "State lands" to be disposed of as the State saw fit.³⁷ Despite the terms of Article 5 of the Act (according to which "the Governor General shall see that no grants of lands shall infringe on the rights of the native population"), the Act dispossessed swidden cultivators of the major part of their territories. The government's recognition of the private rights of the native population to the soil was restricted to those lands permanently occupied by them.³⁸

After independence, the dualistic legal system was retained, the only major change in land legislation being Article 33 of the 1945 Constitution, section 2 of which states:

"Branches of production which are important to the State and which affect the life of most people, shall be controlled by the State".

Section 3 states:

"Land and water and the natural riches therein shall be controlled by the State as the highest authority to manage their utilisation for the maximum well-being of the whole people".

The dualism of the legislation regarding land tenure was abolished in 1960, when the formalised western laws relating to land ownership were replaced by rules based upon *adat* law. However, far from being an effective recognition of traditional land rights, the Basic Agrarian Law has, if anything, increased the insecurity of tribal peoples in Indonesia. Law No 5 of 1960 Basic Agrarian Law, lays down the principle that:

"The agrarian law, prevailing over the land and water and air space is the *adat* law, as far as it is not adversary to the interests of the nation and State, which are based on national unity, together with Indonesian socialism and the stipulation formulated in this law and other legislative products one and another with due regard to the elements based on religious law" (emphasis added).

As Weinstock has noted:

"From a legal standpoint, the Basic Agrarian Law is a master-

piece of legislation in that it appears to protect and preserve the traditional *adat* system of land tenure while being couched in sufficiently vague terminology enabling the government to do as it pleases".³⁹

Weinstock notes, in particular, the provisions of Articles 3 and 14, which limit tribal peoples' security to their lands. The terms of Article 3 of the Law have been summarised by the Department of Social Affairs as implying that:

"... said isolated communities of autochthonous peoples have a legal title over the land, that is needed for their living. Such a right of ownership over land, that prevails in said communities, is recognised and legalised by the Government of the Republic of Indonesia, but its implementation should take place in such a way as is in accordance with national and State interests".⁴⁰

Coupled with Article 14, which states that the government "... shall draw up a general plan concerning reservation, appropriation and use of earth, water and air space and the natural riches therein—for the needs of the State ...", the government need only claim the welfare of the State to justify any of its actions.⁴¹

According to the Agrarian Law, rights to land can only be secured if it is proved that the land has a *hasil* or "yield". Swidden cultivators thus only have rights to the plots currently under cultivation and *not to land under fallow*—even though such land is crucial to the agricultural cycle.⁴² Moreover, use rights to any loosely demarcated parcel of land held by a number of related individuals are not recognised by the Agrarian Law.⁴³

In sum, Indonesian legislation does not provide land security to tribal peoples practising extensive systems of land use. The Law only provides legal security to registered (titled) property and, in line with Dutch colonial law, the right of ownership is considered null if the land is lying in fallow.⁴⁴

Further Erosion of Tribal Rights

The land rights of tribal peoples have been even further eroded by the Basic Forestry Law of 1967,

article 17 of which states:

"Implementation of community rights, customary law and its members and individual rights ... should not hinder the fulfilment of aims referred to in this law".

Further to this Article 6 of Government Regulation No 21 of 1970 stipulates:

"1. Rights of customary law communities and its members to extract forest products on the basis of customary laws still in effect, shall be arranged in a proper order so as not to interfere with implementation of forest utilisation.

3. For reasons of public safety, in an area where logging operations are being conducted within the scope of forest utilisation, the implementation of community rights to extract forest products shall be suspended."⁴⁵

State authorised logging operations have had a massively destructive effect on tribal peoples and their forests, as a result of this legislation and due to changes in forestry policy which occurred when Indonesia was opened up to foreign investment in 1967.⁴⁶

Because Transmigration, like commercial logging, is considered to be in the interests of the Nation and the State, and thus takes priority over local land claims, it poses a major threat to tribal peoples. In fact, land conflict has characterised Transmigration since its inception, leading to minor modifications in the process of implementation but without substantially changing local peoples' legal land rights.

The extreme insecurity of tribal peoples in the face of the Transmigration programme is made explicitly clear according to the terms of the Basic Forestry Act: Clarification Act No 2823 of 1967, Clause 17 of which states:

"The rights of traditional-law communities may not be allowed to stand in the way of the establishment of Transmigration settlements".⁴⁷

Compensation Inadequate

The legal procedures governing land acquisition and the payment of compensation associated with Transmigration are set out in the Department of Home Affairs' Decree No 15 (1975). The Decree establishes the need for a Land Ac-

quisition Committee, whose responsibilities involve defining the areas of Transmigration sites; making inventories of the trees and buildings on the land; and ensuring compensation is paid to the owners accordingly. However, such compensation is only payable for fixed goods and standing crops and for lands to which individuals have registered title.

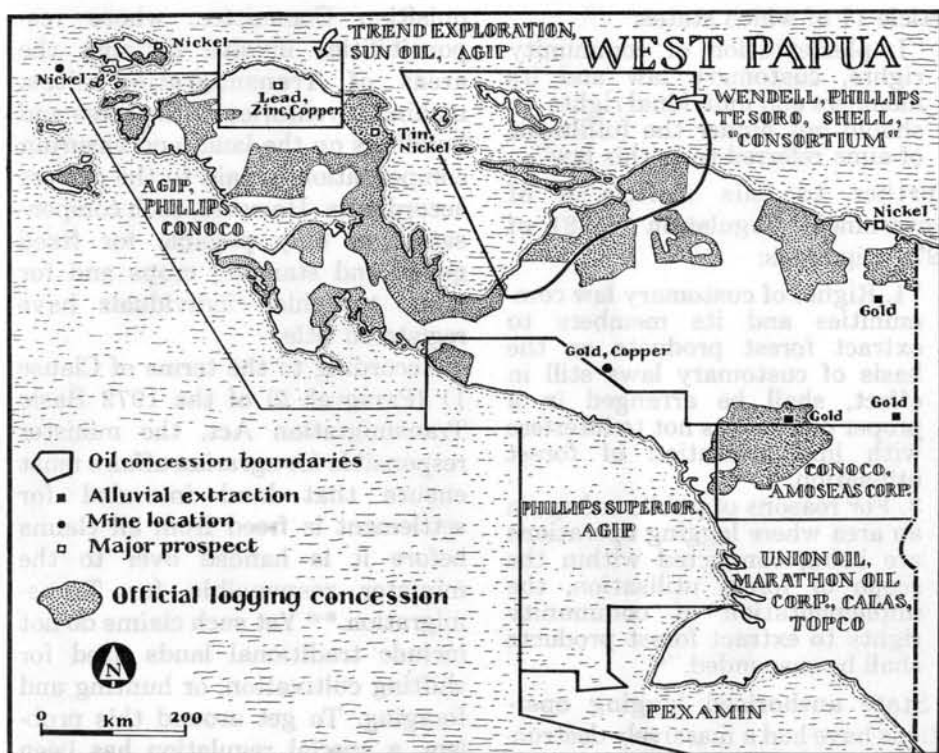
According to the terms of Clause 11 (Paragraph 2) of the 1972 Basic Transmigration Act, the minister responsible for agrarian affairs must ensure that land intended for settlement is freed from all claims before it is handed over to the minister responsible for Transmigration.⁴⁸ Yet such claims do not include traditional lands used for shifting cultivation, or hunting and foraging. To get around this problem, a special regulation has been made (INPRES No 1 of 1976) where it is recommended that, in cases where disputes over land rights are engendered by the Transmigration process, local peoples should be compensated for the loss of their lands by being incorporated into the scheme as "local transmigrants", under a programme known as APPDT.⁴⁹

Local peoples are selected for local Transmigration by officials working at district (*kabupaten*) level:

- If their land is located in or across the border of Transmigration areas;
- If they own less than 0.25 hectares of land;
- Or if they practice shifting cultivation.⁵⁰

In 1984, Presidential Decree 59/84 delegated the co-ordination of Transmigration to provincial governors and their staff, giving the local authorities responsibility for ensuring that conflicting land claims are resolved. This decree has been presented, by the World Bank, as an important change in the way Transmigration is implemented. However, far from benefiting the local peoples, this process of delegation has merely removed the problem of resolving local land claims from the concerns of central government planners, who can thus set regional targets that ignore the

* The Act reinforces earlier legislation under the 1961 Joint Ministerial Decision No. SK 404/KA 1961, No. 114.



Map 1. West Papua: The Plunder of Resources

(Sources: *Kabar dari Kampung*, 1984, 1/2; Tapol, *Obliteration of a People*, 1983; Petorc and Raspado, *Conservation and Development in Irian Jaya*, 1984.)

issue of local peoples' land rights.

Moreover, in the continuing absence of effective national legislation recognising the rights of tribal peoples to their traditional lands, the Decree does nothing to improve local claims to land: One reason is that provincial governors are not locally elected but appointed; they are therefore answerable, not to the local people, but to central government.

Provincial governments and their district and sub-district administrators (*bupatis* and *camats*) are, in fact, the most effective instruments for imposing the central government's will on the local population. The interior ministry and its network of provincial, district and local administration is the most heavily militarised part of the State bureaucracy outside the Armed Forces. Certificates of land availability for Transmigration are sent up through the hierarchy by *camats* claiming to speak on behalf of local inhabitants. Such undertakings are generally obtained under pressure and are frequently challenged at a later stage by the dispossessed tribal people.⁵¹

In effect then, government legislation and the regulations guiding Transmigration provide no land

security to tribal peoples. When their lands are expropriated for the clearance of settlement sites, compensation is only payable for standing crops and buildings, and for registered plots under permanent cultivation.

The tribal peoples have no legal grounds for appeal. On the contrary, the government rationalises the dispossession resulting from Transmigration as actually benefiting local people. In line with its pejorative view of tribal culture, the government holds that the incorporation of tribal peoples into the Transmigration programme is part of the process of development.

For example, in West Kalimantan, where Transmigration to the border region was stepped up in the late 1970s, the local Dayaks were obliged to move from their traditional lands, which local officials claimed were "not used". The Javanese head of the provincial Transmigration office said the programme could only be beneficial to the Dayaks because they would be able "to learn from the Javanese".⁵²

Such ethnocentric judgements are not confined to the more junior Transmigration officials. Referring to Kalimantan, Minister Martono himself noted in March 1985:

"Efforts are being made to have the Dayak people of the hinterland enjoy the development of the country. Transmigration has been introduced in the area to develop the Dayak ethnic group".⁵³

In the newspeak of Indonesian officialdom, dispossession has become development.

Land Invasion

In West Papua, government moves to place transmigrants on tribal lands commenced even before the local people had had the opportunity to vote (in 1969) on whether they wanted to become part of Indonesia or not. The first announcement of plans to move transmigrants to West Papua was made in 1963, when a target of 400,000 settlers was mentioned. By February 1966, the first transmigrants began to arrive, alienating the traditional occupants from their lands. By the early 1970s evictions of local peoples by trickery and at gunpoint to make way for transmigrants had already become the established practice. West Papuan nationalists note that:

"The land crisis came to a head in 1974, after which it became impossible for Papuans to negotiate land matters with the government".

By the end of 1984, 24 major Transmigration sites had been established in West Papua, alienating a total of 700,000 hectares of land from their traditional owners.⁵⁴

As the evictions accelerated, so the resistance of tribal peoples increased. West Papuans have become convinced that Transmigration has a broadly strategic and security intent, and is being promoted by the Indonesian Government primarily as a means of controlling the local population. In 1981, the Indonesian armed forces, engaging in "Operation Clean Sweep", an attempt to quell local dissent, used the slogan "Let the rats run into the jungle so the chickens can breed in the coop", as a reference to their role in securing the land for Transmigration.⁵⁵

The reluctance of the Papuans to relinquish their lands to the settlers has been matched by the government's reluctance to pay compensation to the traditional owners.

PHOTO: ANDY MARTIN/SURVIVAL INTERNATIONAL

"In many instances financial compensation was promised but never given, with the result that those who felt themselves deceived retaliated against the transmigrants".⁵⁶

The major problems that unsettled land claims pose to Transmigration have also been noted by an Indonesian research team from Yogyakarta University, which recently visited West Papua. In all, they noted, 186,700 hectares of what they referred to as "hunting land" had been taken over for Transmigration in seven areas. This, they said, had led to economic problems for the tribals, "as they cannot be expected to become farmers in the space of one year". The team noted the paramount importance of settling the problem of compensation immediately "in order to dispel any resentment among the local people".⁵⁷

Land Lost to Industry

The government's failure to compensate Papuans for land taken over for Transmigration is just one example of a more general phenomenon. Already, the government has granted massive concessions to foreign and national companies for oil prospecting, logging operations and mining (see Maps). Serious conflict with the oil companies was noted as early as 1973, when the operations of the Continental Oil Company moved onto Papuan sago groves. One oil company man was killed by Papuans defending their lands.⁵⁸ Nor has the pattern of expropriation changed in recent years. Observers have noted that compensation was not paid to the local people during the recent seismic surveys carried out by Royal Dutch Shell in the Sarmi area, nor have payments yet been made for land permanently taken over for drilling purposes.⁵⁹

The most notorious mining project in West Papua is the vast copper mine of the Freeport Inc. consortium on Mt. Erstberg, which has directly dispossessed the Amungme tribe of 10,000 hectares of their traditional lands, including sacred sites. Minimal compensation was paid.⁶⁰ As one tribal elder noted:

"It is like having a coconut tree growing in our garden. The coconuts grow but fall in places far

from home. The only things that fall in our gardens are the leaves and other rubbish which despoils our land".⁶¹

When the tribals resisted by attacking the mining installations and blowing up the 110 km. pipeline which funnels gold, silver and copper slurry from the mine down to the coast, the military responded by launching indiscriminate air attacks on Amungme villages, using American supplied OV-10 Bronco aircraft. Repeated ground attacks and mortaring were also reported and the Amungme were forcibly relocated from their despoiled mountain homeland to the coast where, deprived of amenities, they have suffered starvation, epidemics and cultural collapse.

Meanwhile the settlement of Tembagapura, built on Amungme land to serve the mine, has become a luxury town. Schools, hospitals, supermarkets and cinemas cater for the needs of expatriate and Indonesian miners, and fresh vegetables are flown in regularly from the coast. The local peoples, however, are forbidden to enter the area; hunger has become a problem for many of those who lost their farming lands to the company. Some have even become beggars, foraging

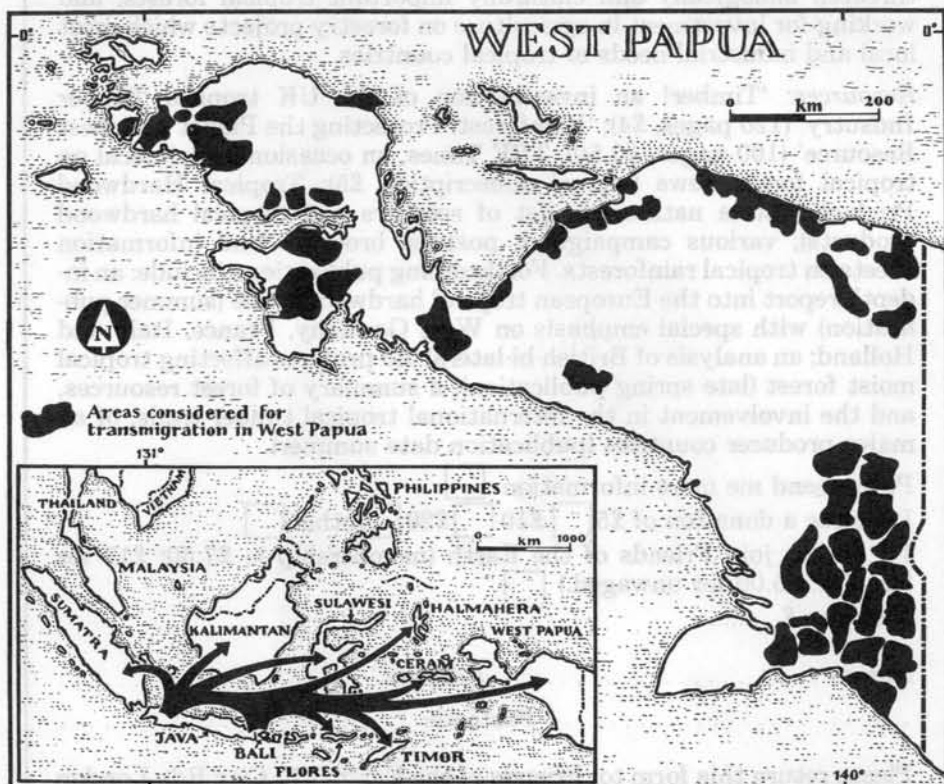
in the waste dumps outside the mining town.⁶²

The Abuse of Human Rights

Although the Indonesian press is rarely able to report in detail on the conflicts in such a politically sensitive area as West Papua, persistent accounts continue to emerge from the region of serious land rights abuse. Transmigration settlements have been concentrated along the border region and in the more fertile lowland areas such as the Genyem valley (see Map 2). An observer has noted:

"The Genyem transmigration settlement at Nimboran . . . is stunning in size . . . Endless rows of neat wooden houses are set in the middle of fields of rice sown among giant logs of felled timber . . . Do the Melanesian people share in the economic benefits of these new realities? No. The Melanesian villages are settled in new locations away from their land".⁶³

In late 1983, three members of the Traditional Land Rights Defence Committee of Nimboran were reported to have been shot dead at a public execution for resisting the takeover of their lands. According to one account attendance at the executions was obligatory and led to



Map 2. The Invasion of West Papua

(Source: *Kabar dari kampung*, 1985, 3/4).

widespread disturbances.⁶⁴ Indeed human rights violations have become so frequent in West Papua that the widely respected Jakarta-based Association for Legal Aid Institutes (LBH) has stated that West Papua is the worst area for human rights abuse in Indonesia.⁶⁵

The Transmigration sites near Nimboran have since become model sites regularly shown off to visitors. A member of a recent Indonesian parliamentary mission to the sites noted:

"I heard complaints from the native inhabitants. They feel they have been driven out. Such

feelings need to be eliminated because if they persist, things could develop further and could even be turned into a political issue by groups that disagree with the government's programme".

The same report quoted Paulus, head of the Benyum tribe, whose land has been occupied by the Nimboran II site, as saying: "To this day we have not received any of the compensation which the government promised for our land". A spokesman for the project management said that local inhabitants included under the

APPD T quota did not wish to settle with the transmigrants. They were apt to leave the site "and return to their old ways, shifting around, showing little interest in tilling the land". One Papuan still on the site said, "We feel like foreigners here".⁶⁶

A few days earlier, the Indonesian press reported the Transmigration Minister, Martono, vehemently denying that Transmigration violates tribal and cultural rights or infringes human rights.⁶⁷

Recent research by the Irian Jaya Community Development Foundation has confirmed that land rights problems continue to plague the Transmigration programme in West Papua. Reporting on the results of the Foundation's research to the Indonesian Academy of Sciences in Jakarta, the director stated:

"The Transmigration authorities do not comprehend the Irianese attitude towards land. They simply take the view that everyone's need for land is the same, two hectares per family".⁶⁸

Although the Foundation has been careful not to criticise directly the government's general approach to development in West Papua, it describes many instances of the detrimental effects of official policy and extensive abuses by Indonesian officials.

The general problem faced by West Papuans because of Transmigration and development are summed up by the Foundation as follows:

- Increasing losses of tribal lands;
- Depletion of natural food sources;
- Rapid change of life-style;
- Unfair advantages for transmigrants in barter economy;
- Domination of the best employment opportunities by spontaneous transmigrants;
- Increased military presence, owing to escalating ethnic tensions.

Plantations and the Expropriation of Land

Because of the high failure rate of the standard Farm Model of Transmigration, and in line with the government's new emphasis on plantation schemes, recent Transmigration sites in West Papua have



Friends of the Earth International is campaigning against tropical deforestation in over 30 countries (including Malaysia, Brazil and Papua New Guinea) and promoting the sustainable management, and where necessary the complete protection, of tropical forests. We are actively encouraging the establishment of the International Tropical Timber Organisation and persuading the tropical hardwood to adopt a Code of Conduct which would ensure that all tropical wood supplies originated from ecologically sustainable concessions. We are campaigning against multi-lateral and bi-lateral aid programmes which threaten biologically and culturally important tropical forests, and working for investment in agriculture on forestry projects which meet local and industrial needs of tropical countries.

Resources: 'Timber! an investigation of the UK tropical Timber Industry' (120 pages, £4); 'Rainforest: Protecting the Planet's Richest Resource' (100 pages, £3.50); TRF Times, an occasional periodical on tropical forest news (annual subscription £5); Tropical Hardwood Product List (a nationwide list of retailers and tropical hardwood products); various campaigning posters, brooches and information sheets on tropical rainforests. Forthcoming publications include: an in-depth report into the European tropical hardwood trade (summer publication) with special emphasis on West Germany, France, Italy and Holland; an analysis of British bi-lateral aid projects affecting tropical moist forest (late spring publication); a summary of forest resources, and the involvement in the international tropical timber trade, of all major producer countries (publication date summer).

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been incorporated into the Smallholder Nucleus Estate Programme (PIR). The Foundation carried out two detailed studies of how this programme is being implemented in West Papua. In both cases estates of oil palm plantations are being set up and run by PTP 2, one of the National Plantation Companies (PTP). The company has a monopoly on buying smallholders' harvests and co-ordinates land clearance and the development of facilities.

In both areas, land has been alienated from the indigenous populations, causing them multiple problems. In particular the Foundation noted:

- Applicants for the PIR projects must be deemed "suitable", but no provisions have been made for those local people who are not accepted for the programme and yet whose lands have been expropriated by the projects;
- Insufficient land remains in the hands of the local tribal peoples to allow them to practise their traditional system of shifting agriculture. Yet experience shows this to be the only viable system of food production in the area;
- Local peoples do not like to move to land which is not traditionally their own. Moreover the expropriated land cannot be bought or sold, only rented.

In sum, the creation of these estates is completely at odds with Papuan systems of land tenure, causing confusion and distress among the West Papuans and placing them in conflict with transmigrants.

Moreover, because PIR is a national programme, the villagers have no right to demand compensation for the loss of their lands. Even where compensation has been agreed, it is often inadequate and there are instances of it not being paid.

The Foundation noted a number of instances where the programme has been implemented without consultation with the local people. On other occasions, local demands have been ignored or suppressed. Where local people have expressed an unwillingness to participate in the programme, they have been forced to do so by the security forces.

Finally, the enforcement of the programme has led to an escalation

in inter-ethnic tension. PTP 2 has denied responsibility for the grievances its activities have caused on the grounds that it was invited to develop the area by the government. Meanwhile local government officials accuse those not wishing to surrender their rights of being sympathetic to the OPM (*Organisasi Papua Merdeka*—the Movement for an Independent Papua), an organisation that was proscribed by the Indonesians in the 1960s. Fear of being branded OPM and fear of the security forces are cited by the Foundation as frequent factors in the West Papuan's reluctant acquiescence to the PIR programme.⁶⁹

Resistance to Transmigration

The result has been growing resistance to Transmigration by local peoples, a resistance that has not been limited to West Papua. In West Kalimantan, the local Dayak have reacted to the takeover of their traditional lands with violence. The area was closed to visitors and tourism as a result, but popular resistance to Transmigration continues. In 1984, some twenty transmigrants from Madura were killed in bloody clashes over land.⁷⁰

Resistance to Transmigration has also been reported from Sumatra and Sulawesi. Land conflict has obliged countless transmigrants to abandon their settlements in Southeast Sulawesi.⁷¹ Last year, press accounts revealed that starving transmigrants, unable to subsist on their plots in the Donggala region of Central Sulawesi, had been stealing livestock and fruits from the locals, provoking an angry response and leading to the death of one migrant. In revenge, the settlers burnt down 27 houses belonging to the local people, creating fears among officials that a mass battle might develop.⁷² Since then, the army has moved in to quell the disturbances.

Unresolved land conflicts have also plagued the World Bank funded PIR rubber and palm-oil project in the Pasir District of East Kalimantan. Four years after it was launched, the project has reached complete stagnation because the local people have refused to give up their lands to the project, and are

unpersuaded that the project will really benefit them. The project's managers have complained about the local people's insistence on living near the road or in their original habitats—behaviour which officials consider intolerable because the project design has already established which land is to be used for homesteads and which for crops.⁷³

As the Transmigration programme is stepped up these problems can only intensify.

Conclusion

The vastly different perception of land held by tribal peoples and outsiders, combined with a government programme that sets a priority on the rapid takeover of tribal areas and their 'development' along lines imposed from the centre, rather than decided upon by their traditional inhabitants, is thus a ready-made source of conflict. In West Papua, where recent history has made the local people intensely resentful of the Indonesian presence, such conflict has taken on the form of a guerilla war (see Box, p 103).

The conflict is over values, not just compensation. For the Papuan, land is a sacred good, held in trust by the living both for the dead and for those yet to be. For the invaders of their territories, however, land is merely a commodity, a material good to be given and exchanged like any other. As the Papuans come to lose touch with what was once sacred and begin to devalue themselves, their links with their lands will change. Yet, so strong and fundamental are these ties that they may resist these changes for a long time to come. Their resistance to Transmigration, which they perceive as an invasion, is at once a defence of their lands and a defence of what is sacred to them: a defence of their very identity.

"It is almost a spiritual war against the material world. The Melanesian is still largely a spiritual being, and thinks of worldly things as not as important as spiritual things and elements. Should his way of thinking be reversed, so that he values worldly things more?"⁷⁴

Notes

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14. Deborah B. Gewertz, *Sepik River Societies: a historical ethnography of the Chambri and their neighbours*. Yale University Press, New Haven, 1983, pp 206, 228-9.
15. J. Pouwer, 'Mimika Land Tenure', In Ploeg *op. cit.* (note 9), pp 24-33.
16. Leopold Pospisil, 1963, *The Kapauku Papuans of West New Guinea*. Holt, Rinehart and Winston, New York, 1963. Brookfield and Brown *op. cit.* (note 6), pp 38-42. Brookfield and Hart *op. cit.* (note 4), pp 218; J.V. de Bruyn, 'Ekagi Land Tenure', In Ploeg *op. cit.* (note 9), pp 13-23; Paula Brown, *The Chimbu: a study of change in the New Guinea Highlands*. Routledge and Kegan Paul, London, 1973, and, 1978, *Highland Peoples of New Guinea*, Cambridge University Press, Cambridge, p 109. M. Meggitt, *Blood is Their Argument*. Mayfield Publishing Company, Palo Alto, 1977. Heider *op. cit.* (note 6).
17. R.F. Salisbury, *From Stone to Steel: the Economic Consequences of a Technological Change in New Guinea*. Cambridge University Press, London, 1962, p 61.
18. Brookfield and Hart *op. cit.* (note 4), p 227.
19. Meggitt *op. cit.* (note 16), p 57.
20. William C. Clarke, *Place and People: an Ecology of a New Guinean Community*. University of Californian Press, Berkeley, 1971, p 61.
21. Bahasa Indonesia is a Malay language which has been the *lingua franca* in West Papua for many decades.
22. Salisbury *op. cit.* (note 17), p 66.
23. Hogbin and Lawrence, *op. cit.* (note 13), p 116.
24. Rappaport *op. cit.* (note 5). Clarke *op. cit.* (note 20), p 27. Heider *op. cit.* (note 6).
25. Hogbin and Lawrence, *op. cit.* (note 13), p 116; See also Pouwer, *op. cit.* (note 15), Heider, *op. cit.* (note 6).
26. Brown, *op. cit.* (note 16), p 131.
27. Brookfield and Hart, *op. cit.* (note 4), p 219, p 418.
28. cf Hogbin and Lawrence, *op. cit.* (note 13) p 107.
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31. Hogbin and Lawrence, *op. cit.* (note 13), p 114.
32. Brookfield and Hart, *op. cit.* (note 4), p 418; Meggitt *op. cit.* (note 16), p 11.
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39. Weinstock, *ibid.*, p 95.
40. Department of Social Affairs, written statement made 24 October 1975, p 11.
41. Weinstock, *op. cit.* (note 1), p 98.
42. Weinstock and Vergara, *op. cit.* (note 2), p 14.
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50. UNDP, *ibid.*, p 4.
51. Both in correspondence with Survival International and in its Staff Appraisal Report for the Transmigration V Project, the World Bank has cited Presidential Decree 59/84 as marking an important advance in incorporating the consideration of local peoples' land rights in the process of site selection. These claims are hollow and ignore the realities of the political process in Indonesia.
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The Politics of Transmigration

by
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During the Dutch colonial era, Java was the centre-piece of the Dutch East Indies empire, the base from which the surrounding islands were brought under Dutch suzerainty by force of arms. The Dutch, who first started Transmigration, publicised the programme as a means of giving impoverished Javanese peasants a new start in life. In reality, Transmigration served primarily to supply cheap labour to foreign-owned plantations in the newly subjugated territories. Today, all the talk about Transmigration's laudable social and economic objectives is equally misleading. The real rationale for the scheme is political. The project enjoys the active support of the military because it allows the Army to impose its doctrine of 'Territorial Management'. In effect, Transmigration is being used as a means of enforcing Jakarta's will throughout the Indonesian archipelago.

Transmigration has been the subject of numerous academic studies in Indonesia, many of them critical of the scheme.¹ Many press reports are equally alarming. However hard the government tries to win support for the programme, it is obvious to most observers that the economic justifications for the project are becoming threadbare. Yet despite all the criticism, the programme continues to swallow up huge financial resources while wreaking havoc on the environment, to say nothing of the fate inflicted on the millions of tribal people who are being swept into oblivion.

In all the public discourse about Transmigration, there is one officially-proclaimed objective that is never discussed; namely, "the strengthening of national defence and security".² The reason for this blindspot is not hard to find: The strategic designs of the regime are matters for military leaders alone to publicise and explain in as far as it is in their interest to do so. Yet it is this objective above all which explains why the programme is not likely to be abandoned, however damaging it may be. Transmigration is integral to the goal of nation-building, which involves not only the assimilation of all ethnic groups into a single Indonesian identity but the imposition of Java's hegemony over the entire archipelago.

Transmigration Under the Dutch

Indonesia is a highly centralised state composed of many thousands of islands, the largest of which are Sumatra, Java, Kalimantan (Borneo), Sulawesi and West Papua. Under Dutch rule, it was in Java that the necessary infrastructure for expanding Dutch commercial interests was located, the processing factories, plantations, railways, and export-import and insurance companies. It was in Java too that the Dutch

allowed an educational system to grow and where the first tertiary educational institutions were established. Growth in the "outer" islands was limited to the establishment of rubber, coffee and tobacco plantations set up in various parts of Sumatra, and the oil installations in Sumatra and Kalimantan.

But the populations of these "territories beyond the seas"³ were not prepared to abandon their traditional way of life for the rigours and meagre earnings of plantation life. Nor were they part of a well-structured feudal system such as existed in Java; hence, they could not be made to work. Thus Javanese peasants were dispatched under the colonisation programme launched nearly a century ago to work as contract coolie labour, becoming Indonesia's first generation of "Transmigrants". From the very start, Transmigration had the effect of drawing the archipelago into the orbit of the Dutch East Indies economy, while pacifying parts of the empire as yet beyond the reach of the Dutch colonial administration. Peasants from the centre were used as the unwitting victims of combined feudal and colonial exploitation to further this design.

Colonisation after Indonesian Independence

The creation of an independent Indonesian state after the Second World War did not redress the imbalance between Java and its periphery. The nationalist leaders who assumed state power after the proclamation of independence in 1945 were mostly Javanese or non-Javanese intellectuals who had been educated at Dutch schools in Java or in Holland. The framework of their nationalist political vision fitted comfortably into the Dutch framework of ruling a far-flung state based on Java, albeit from the opposite vantage point of expelling the Dutch and themselves taking control of the same territory. With hardly any exceptions, they insisted that all the territories which the Dutch had conquered by force of arms should become part of the new republic.⁴

This is not to say that the unitary and centralised republican state came into being without conflict.

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Both before and after the transfer of sovereignty in 1949, regional rebellions against the central government broke out in many parts of the archipelago, including Aceh in North Sumatra, South Sulawesi and the Moluccas, but the republican army based on Java succeeded in gaining the upper hand every time. Regionalism became a lost cause, resisted by civilian politicians and military leaders alike.

Colonisation was one of the first of the pre-war programmes to be resumed by the republican government which as early as 1949 announced a programme for the transmigration of 48 million people from Java over a 35-year period. The target of this grandiose scheme was later reduced to two million people every five years. Even this more modest scheme never had the remotest chance of being implemented—but this did not dampen President Sukarno's enthusiasm for Transmigration which he described as a "vehicle for nation-building through assimilation and ethnic integration".⁵ The ideology of 'nation-building' and 'national unity' expounded by Indonesia's first president was taken up even more zealously by his successor, General Suharto who seized power in 1965. Under military rule, the colonisation of the "outer" territories took on a new urgency, *with the difference that Suharto has enjoyed the unstinting financial support of the western powers.*

Transmigration and the Spread of Military Rule

It may come as a surprise that a programme ostensibly designed for the attainment of economic and social objectives is also required to promote national defence. At the outset, it should be explained that "defence" policy in Indonesia has little to do with defending the state against foreign invaders. It is fundamentally a policy designed to ensure that the local population supports whatever national or local programmes the Army has decided to pursue "in the name of the people".

The Army is a territorial force whose command structure reaches down to the smallest social unit, the village (*desa*) in the countryside and the neighbourhood association (*rukun tetangga*) in the cities and towns. Its "defence" doctrine is compacted into one of those acronyms much favoured by the military, "*Sishankamrata*" which stands for "System of Defence and Security of the Entire People" (*Sistem Pertahanan dan Keamanan Rakyat Semesta*). "Unpopulated" areas or areas populated by "nomads" or "culturally inferior" people simply do not lend themselves to such a defence system.

The Army defines the regional task of its vast network of territorial units as "territorial management" (*pembinaan teritorial*). This is inseparably linked with "area (i.e. territorial) management" (*pembinaan wilayah*),⁶ which is the responsibility of the civil administration where many posts are also held by active or retired military officers.

Two documents setting out the Army's attitude to Transmigration and the resettlement of remote populations have come into TAPOL's hands, both written by (then) Brigadier-General Sembiring Meliala when

he was commander of the Cendrawasih/XVII Regional Military Command in Irian Jaya (West Papua). The first, produced in January 1983, is entitled, *The Transmigration Programme in Irian Jaya must be handled in a special way in order to help resolve the security problem.*⁷ The second, dated April 1984, is entitled *The Basic Pattern of Territorial Management specific to Irian Jaya, employing the method of Community Development Centres.*⁸ They both spell out the fundamentals of the Army's policy of "territorial management" and make it clear why the Army attaches such importance to Transmigration.

"Territorial management," writes Brig-Gen Sembiring, must be "implemented by the entire state apparatus and the whole of society, with the Armed Forces as the core executor." The objective of "territorial management" is:

"To manage the potentials of the area including the geographical and demographic factors and the ideological-political-social-cultural-military conditions, in order to create regional strength as the invincible arena, instrument, and condition of struggle for implementing the defence-security task by means of the security approach."⁹

Moreover, this system must be implemented "in its totality, throughout the length and breadth of the country."¹⁰ Sembiring does not omit to point to its particular applicability to Irian Jaya, the Indonesian province that not only borders on Papua New Guinea,¹¹ but which also has the additional "troublesome factor" of a "separatist" movement.¹² To clinch his argument about the importance he attaches to the potential defence and security role played by Transmigrants, Sembiring quotes General Suharto who said in 1975,

"... What we need is a system which enables (the Armed Forces) to discover speedily the place and nature of disturbances that arise. In this connection, the ability of the people to protect the security of their own surroundings and prepare these surroundings for purposes of effective defence must be the primary force in coping with such dangers."¹³

Regional development (and hence Transmigration) is required, according to this doctrine, primarily in order to beef up the regional and national "defence" objectives of the Army. "Before the government sets about constructing the physical infrastructure (of development), it must first prepare the population of Irian Jaya to be capable of utilising this physical infrastructure".¹⁴ This process of preparation involves primarily the colonisation of the territory by Transmigrants from Java and the relocation of the native inhabitants into a network of "centres for community development".

The Army's Attitude to Indigenous Groups

Sembiring's document on Transmigration is laced with complaints about the "backwardness" of the Irianese. They are "simple-minded", "vastly different from their compatriots from Java", "backward in agriculture, craftsmanship and motivation for attaining a better life" and "not yet ready" for development. It is "extremely difficult for the government apparatus to

fathom and assimilate (*menghayati*) their special customs and traditions".¹⁵ Moreover, "consciousness about defending the state and about being members of a state are still lacking" while the "programme for people's defence training is not yet proceeding as it should". All this makes the "backward" Irianese "prone to incitement by the separatists".¹⁶ Moreover, the commander of the Cendrawasih Divisional Command laments the fact that "the government apparatus is not dominant enough in the interior in comparison with traditional and tribal heads and missionaries".¹⁷

Sembiring who now holds a senior position in the Army general staff does not believe that the inhabitants of his former military fiefdom should be allowed to mingle with their "compatriots" from Java in the Transmigration sites because they are "so far behind". Rather, in contrast with official Transmigration guidelines, he advocates a two-pronged resettlement policy for West Papuans. In areas where local inhabitants have been robbed of their ancestral lands and are therefore "compensated" by becoming part of the APPDT* resettlement quota, they should not be allowed to live on the sites for newcomers but should be settled in sites of their own nearby or left in their own villages, which would then be treated as "local Transmigration sites".

In other parts of the territory where people live in remote and inaccessible homesteads (unlikely ever to become Transmigration sites), they should be relocated into community development centres where they will be more easily accessible to administrative control. Sembiring has elaborated a programme for the relocation of remote tribal people which could take anything from five to eight years to complete. After eighteen months devoted to selecting and preparing the relocation sites, the tribal people from the interior will be "invited" to participate in the programme (a process which could take three to six months), followed by six months "guidance and instruction" about their new agricultural pursuits, and another two to five years during which they will be given "instruction on living as communities, on how to educate their children, on religion, and so on".¹⁸ Major-General Busiri Suryowinoto who was governor of Irian Jaya for two years from 1981 complained that the local people "have not yet reached the stage where they are capable of submitting to orders."¹⁹ Sembiring's community development centres are evidently designed to change all that.

The relocation programme elaborated by Sembiring is not limited to West Papua. His document gives us an insight into the programme being implemented by the Department for Social Affairs in other parts of the archipelago among so-called "isolated and alien tribes" (*suku-suku terasing*) in Kalimantan, Sulawesi and North Sumatra.

By carpeting the entire province of West Papua and other "under-populated" regions with Javanese Transmigration sites, local Transmigration sites and



PHOTO: KOMPAS

General Murdani, Commander of the Armed Forces, leads a contingent of troops on an assignment to open up a Transmigration site in South Sulawesi.

community development centres, it will then be possible for the Army to practise "territorial management" down through the hierarchy of military command posts, the *kodims* (district military commands), *koramils* (sub-district military commands) and *babinsas* (village guidance NCOs) in charge of putting Sishankamrata into practice. Governable colonies of people will make "total people's defence" a reality and provide the justification for military presence everywhere.

Transmigration as a 'cordon sanitaire'

Colonisation of the border regions of Indonesia has an explicit strategic objective. Transmigration Minister Martono was surprisingly frank on the subject at a meeting of Transmigration officials in September 1985:

"Preparations are under way for a programme of Transmigration sites based on the *Saptamarga* Model, for application in trouble-spots . . . such as Natuna Island in Riau, the islands off the west coast of Sumatra, East Timor and the border region of West Sumatra. The largest area for emplacement of sites of this model is Irian Jaya where 13 sub-districts will be affected."²⁰

Moreover, he said, the settlement of Transmigrants in all sensitive or uninhabited regions bordering on foreign countries is to be given priority.

The *Saptamarga* model is named after the 'Seven Vows' which all members of the Armed Forces are required to take as their pledge of allegiance to the Armed Forces. A *Saptamarga* site is populated by active or retired members of the Armed Forces. In

● Alokasi Pemukiman Penduduk Daerah Transmigrasi or Resettlement Allocation for Inhabitants of a Transmigration Region.

some sites not formally designated as Saptamarga sites, members of the Armed Forces are assigned to mingle with the ordinary Transmigrants. While speaking about these plans, Minister Martono gave the impression that the link between such sites and defence and security operations was "still under discussion". In fact, Saptamarga Transmigration sites have been in existence in the northern section of the border with Papua New Guinea for some time, effectively guarding both an area where OPM activity is widespread (see Box, p 103) and a popular route for political dissidents wishing to flee the country. This is also the area where a "resettlement location" has been set up for West Papuans who fled the country in 1984 and who were subsequently repatriated. They are now being held under "special guidance".²¹

The "cordon sanitaire" motive is very much in the minds of officials in charge of Indonesia's resettlement policy. Take for example the programme to relocate 18,500 "alien and isolated tribal families" during the course of the present Five-Year Plan. The Secretary-General of the Department for Social Affairs linked this relocation programme to government intentions to "deploy the people as 'security belts' (original English) supporting social defence (sic) in Indonesia's border territories".²²

The Strategic Importance of Site Location

General Benny Murdani, the Commander-in-Chief of the Indonesian Armed Forces is quite frank about the importance which the country's military rulers attach to Transmigration. He describes it as "the only programme in the economic field that must quite categorically be tied in with defence and security considerations". The preparation of sites and the removal of obstacles to land availability need to be given special focus, he said, because "the choice of locations is related to the concept of territorial management in the regions". This is why the Armed Forces "must be involved at the earliest possible stage in selecting the sites".²³

Soon after this statement, several key appointments were made in the central military and civilian bureaucracy. Meliala Sembiring, now a major-general, was appointed Inspector-General for Territorial People's Resistance at the Army General Staff, a newly created post where his theories on "public order" and social control can be given more general application. Then, Major-General C.I. Santosa, a close associate of Murdani's, and, like Sembiring, a former commander of Irian Jaya, was appointed Secretary-General of the Transmigration Department. Both men have also done military service in East Timor, giving them experience in the use of mass relocation schemes as a major counter-insurgency tactic.

In October 1985, President Suharto issued an instruction to the Army to become involved in the choice and preparation of Transmigration sites.²⁴ Suharto has long been known to have an obsessional interest in Transmigration. His personal interest in the project has for many years been such that no official has dared oppose it. The new instruction is clearly



NELL TRAINED, SIR!

Despite the Indonesian Army waging brutal wars against tribal communities in East Timor and West Papua, Britain has become a major supplier of arms to Indonesia, including Hawk jets. The UK Government claims that these jets are used for "training purposes only". In early 1986, the Indonesian Armed Forces announced that two Hawk ground attack squadrons were operational.

intended to give the Army a direct role in the project.

The first major Transmigration site which the Army was involved in preparing was in a remote part of South Sulawesi. In a highly publicised ceremony, which took place in early 1986, General Murdani, accompanied by the Army chief of staff, his deputy, the regional military commander and many other leading military figures, marched at the head of a large contingent of troops to begin clearing 750 hectares of land. The troops have been assigned to build 500 housing units and to construct roads and bridges, working on the project for a whole year.²⁵ The military commander of Sulawesi, Major-General Nana Narundana, who was appointed in late 1985, is in charge of this operation. He was a classmate of Sembiring's at the National Military Academy and produced a document several years ago during his tour of duty in Aceh on "territorial management in support of regional development".²⁶ Narundana is widely acknowledged to have directed the Army's pacification efforts against a movement in Aceh proclaiming the right to Acehnese independence. The Santosa-Sembiring-Narundana appointments point to a move at the highest level of the Army to use experienced practitioners of "territorial management" to consolidate control over those who live in the "territories of the periphery".

Army decision-making on site location could also strengthen the position of the military where different

arms of the bureaucracy are in dispute over control of a piece of land. Land claimed for Transmigration is often disputed by the forestry department, for example, or there may be pressure to override advice from specialised agencies warning that the land is unsuitable for cultivation. From now on, it is likely that whatever the conflicting claims, the Army's word will prevail if it considers the site strategically important for territorial management or border security.

Transmigration in East Timor

The control of the local population is at the heart of the Indonesian Army's strategy in its war against the people of East Timor. This former Portuguese colony which borders on Indonesian West Timor was invaded by Indonesia in December 1975, nine days after Fretilin, the Revolutionary Front for an Independent East Timor, proclaimed the country independent. Fretilin had been in command of the territory following the sudden departure of the Portuguese colonial administration in August 1975 during a brief civil war between Fretilin and the right-wing Union for a Democratic Timor (UDT). Despite their superiority in troops and equipment, the Indonesian forces were unable for two years to gain control of the mountainous interior where the vast majority of East Timorese had taken refuge. In 1977, by then equipped with OV-10 Broncos and A4-Skyhawks from the US, Indonesia launched a campaign of encirclement and annihilation, relying primarily on aerial bombardment. This caused huge casualties and forced the vast majority of people down into the coastal plains. Wracked by starvation and disease, an estimated 200,000 people—about one-third of the pre-invasion population—had lost their lives by the end of 1979. Although organised armed resistance was crushed during the two-year Indonesian offensive, Fretilin was able to remuster its forces and continues to wage mobile guerrilla warfare to this day.

By the end of 1979, several hundred thousand Timorese had been rounded up and forced into dozens of strategic encampments, called *pemukiman* or settlements by the Indonesians but despised by the Timorese as concentration camps. Security regulations are strict; inhabitants are prohibited from moving in and out without special permission, even to grow food, and land use is restricted to areas very close to camp boundaries. The population of East Timor was thus uprooted and relocated as the result of a protracted military campaign to destroy armed resistance. The East Timorese, like other people living on the periphery of the Indonesian state, are mostly shifting cultivators who used to live in isolated and remote mountain hamlets.

The violent dispossession of ancestral land rights in East Timor is the most extreme example of military intentions towards "isolated and alien tribes" throughout the archipelago. Many military strategists gained experience of the relocation of "backward" people during tours of duty in East Timor. The strategy and tactics of social control in East Timor were revealed in a collection of secret Indonesian Army manuals smuggled out of the country in 1983.²⁷ Not-

withstanding repeated tactical changes, territorial management has failed to stifle resistance, not only in the mountainous interior where Fretilin guerrillas freely roam but also in the heavily-guarded camps.

With war still raging and territorial management being used as an instrument of war, there is less need for large-scale transmigration in East Timor. But transmigration on a more limited scale is being used to transform the more successfully pacified parts of the country into large-scale rice farms and cash-crop estates, while preventing the East Timorese from resuming their normal agricultural pursuits. The Indonesians are contemptuous of East Timor's "backward" farmers and claim that expanding rice production is the result of "the improved farming skills of the people", made possible by the influx of "model" farmers from Bali. Balinese farmers have been brought over as Transmigrants since 1982, and located in several new villages together with East Timorese "translocals" who have been uprooted from their own villages. Many of these "model" farmers turned out to be nothing of the sort. Recently, when journalists interviewed young Balinese Transmigrants, they were told that they were not farmers at all but high school graduates who thought they could get jobs as businessmen or civil servants in East Timor.²⁸

Transmigration in East Timor is producing two quite distinct types of settlements. The Timorese in the resettlement camps live under tight military control and have been deliberately bypassed by Indonesian-style development. On the other hand, there are a few settlements known as "villages of potential" (*desa potensial*) being set up with irrigated rice fields and plantations. Two examples are Tunubibi in Bobonaro district and Beco in Kovalima district both of which are frequently spotlighted in the Indonesian press. Founded in 1982, Tunubibi has a population of 50 Balinese families and 50 "translocals". Thanks to sizeable government investment, Tunubibi uses solar energy for its electricity and fresh-water supplies, and has equipment for producing bio-gas and other hi-tech facilities.

These *desa potensial* are part of a larger strategy aimed at destroying the traditional village-based cultures of the Timorese. Instead, the villagers are to be incorporated into the market economy whilst East Timor itself is to be transformed into one vast plantation, producing cash-crops. Ir Hadiono, a Javanese who heads the East Timor office of the Department of Agriculture, recently told foreign journalists that East Timor's 14,600 square kilometres will be transformed into a neatly arranged "cottage garden", with 15 per cent of the land given over to producing vegetables, 9 per cent set aside for pasturing, 10 per cent for tree-crop plantations, 24 per cent for commercial forests, 10 per cent for irrigated-rice production and the remainder for non-agricultural uses.²⁹ This will enable Jakarta to control a potentially huge agricultural surplus, while leaving the vast majority of Timorese to wither away in resettlement camps with little land to cultivate and subjected to gross restrictions on their freedom of movement.

Military Revitalisation of a Flagging Project

The Army's well publicised intrusion into the Transmigration programme in 1985 came at a time when officials who have been running the programme for years were expressing alarm at the failure of so many sites (see pp 72).

Transmigration Minister Martono is now giving the impression that his department will no longer pursue quantitative targets but concentrate instead on upgrading conditions at existing sites. He is even reported as saying that his department will not go ahead with the establishment of new sites.³⁰ When surveying the results of the Third Five-Year Plan which ended in April 1984, the Minister confessed that 67 out of the 800 sites established since 1969 were in need of major reconstruction.³¹ Eighteen months later he admitted that 16 sites had to be closed down because "they were not fit for human habitation".³² Not long afterwards, the Department's Secretary-General, C.I. Santosa, listed a host of reasons why sites intended for peasant agriculture are no longer proving viable, and admitted that the Department is now having to rethink many aspects of the programme.

In the midst of misgiving and crisis, the Armed Forces have given the programme a powerful boost by demonstrating their unreserved support. If Martono talks about halting the establishment of new sites within days of Murdani's demonstrative participation in new site clearance, does it mean that new site preparation is to become largely the responsibility of the Armed Forces, not the Transmigration Department? Whatever the answer to this crucial question, the security component of the programme is now becoming more prominent as compared with its social and economic objectives.

And where does this leave the World Bank whose officials have spewed out so many millions of words to justify Transmigration, claiming that they need to be in there, making sure the programme performs well? We do at least know from the substantial redrafting of key Bank documents that takes place to accommodate Indonesian Government sensitivities (see "Banking on Disaster" in this issue), that some Bank officials have serious reservations about present and future objectives. The Bank itself admits that, even after the completion of three Five-Year Plans and well into the Fourth, "an overall assessment of the Transmigration programme is not feasible" because "detailed evaluations" that have apparently been undertaken by the Indonesian authorities are not available.³³ This gives the impression of a juggernaut hurtling towards some unknown destination with no-one pausing to consider the consequences.

The World Bank should be challenged to explain its attitude towards the strategic implications of Transmigration. It is hardly likely to be a coincidence that at a time when the Armed Forces have begun to be directly involved in site-location decisions, the World Bank's fifth loan to the programme—the biggest to date—should be concentrated almost entirely on aerial mapping and the location of new sites. To ignore the role being played by the Army in the implementation of the programme is simply naive. The politics of

Transmigration are firmly based in the pursuit of military power. They must be incorporated into any serious analysis of the programme.

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8. Sukarno, *Transmigration is a Matter of Life and Death for Nation Building*, Department of Information, Jakarta, 1964.
9. "Territorial" has the same meaning as 'wilayah'. It is just an add-on English word used in military circles to provide an extra term for the same thing.
10. Hereinafter referred to as the 'TM Paper'.
11. Hereinafter referred to as the 'CDC Paper'.
12. *CDC Paper*, op. cit. (supra note 8) p 5.
13. *ibid*: 5.
14. *ibid*: 11.
15. *ibid*: 15.
16. *ibid*: 7.
17. *ibid*: 21.
18. *TM Paper*, op. cit. (supra note 7), p 5.
19. *ibid*: 6-7.
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21. *CDC Paper*, op. cit. (supra note 8), p 38, and Appendix A. The diagram in Appendix A is reproduced in *TAPOL Bulletin*, No. 65, September 1984, p 10.
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A Call for Action

Survival International and **Tapol** are launching a world-wide campaign to halt international funding of Transmigration.

We need your help to make this campaign a success.

Transmigration

- is directly contrary to the World Bank's policies for the development of tribal areas and tropical forests,
- is leading to the permanent destruction of millions of hectares of tropical forest,
- is alienating thousands of tribal peoples from their traditional lands,
- is jeopardising the chance of tribal peoples surviving as meaningful societies,
- is condemning tribal peoples to become minorities on their own lands.

What you can do

- Protest at this misuse of public monies by writing to the World Bank and other funding agencies. Demand that funding is withdrawn until the programme is radically restructured and rescaled to abide by humanitarian principles. Insist that funding for the programme should not be renewed until there are guarantees that it will not lead to the destruction of tropical forests and the alienation of tribal peoples from their traditional lands and the abuse of their internationally recognised right to self-determination.
- Make sure that the Director of the World Bank responsible for your own country's voting position on Bank projects knows that you are opposed to Transmigration. (*See below for the names of the Directors*).
- Lobby political representatives in your own country.
- Raise the matter with your Euro-MP if your own country is a member of the European Community.
- Draw the issue to the attention of the media including your local press.
- Tell other members of the general public about your concerns.
- Join the international campaigning network. Contact Survival International and Tapol.

Lobbying Addresses:

A.W. Clausen
President
The World Bank
1818 H Street NW
Washington DC 20433
USA

Mr Martono
Minister for Transmigration
Jalan Letjen Haryono MT
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James B. Burnham (USA)
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Reinhard Munzberg (FRG)
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Fawzi Hamad Al-Sultan (Gulf States)
Frank Potter (Canada, Caribbean countries)
Jacques de Groote (Belgium, Austria, Hungary, Lux, Turkey)
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Leonor Filardo de Gonzalez (Central America, Spain, Surinam, Venezuela)
Xu Naijiong (China)
Mario Draghi (Italy, Greece, Malta, Portugal)
Ronald H. Dean (Australia, Korea, New Zealand, Melanesia)
Ferdinand van Dam (Netherlands, Israel, Cyprus, Romania, Yugoslavia)
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Phaichir Uathavikul (SE Asia, Fiji, Nepal)
E. Gutierrez-Castro (Brazil, Colombia, Ecuador, Haiti, Philippines, Dom. Rep)
Astere Girukwigomba (part of sub-Saharan Africa, Seychelles, Trinidad)
M. Benachenhou (Afghanistan, Algeria, Ghana, Libya, Morocco, Tunisia, Yemen)
Nicephore Soglo (part of sub-Saharan Africa, Mauritius)
Kenneth Coates (Argentina, Bolivia, Chile, Paraguay, Peru, Uruguay)

Hazardous Wastes

Poisoning the Lower Great Lakes The Failure of US Environmental Legislation

by Ross Hume Hall

Eight million tons of highly toxic waste—including one ton of dioxin—lie buried beneath the city of Niagara Falls, on the US/Canada border. At least two dumps (both owned by Occidental Chemical Co.) are leaking into Niagara River, a source of drinking water for six million people. Legal efforts to force the company to clean up the dumps and stop the leakage have come to nought. The failure lies partly in US environmental legislation.

Over the past 15 years, the US Government has enacted an impressive body of laws to protect the environment from degradation. But are the laws working? To obtain a conviction, litigants must provide proof of a direct, causal link between a given source of pollution and evidence of specific damage to the environment or to an individual's health. The narrow focus of the law is being exploited by polluters, who simply point to other sources of pollution as possible causes of the damage. Indeed, by failing to address the ecological and political realities of pollution, US environmental legislation often ends up protecting the polluter rather than the environment. This reversal of intent is nowhere more blatant than in those laws enacted to deal with chemical waste dumps.

For decades, the US chemical industry (like industry elsewhere) has dumped its toxic wastes into the environment, unimpeded by government regulations. The result is a legacy of leaking chemical dumps dotted throughout the country.

One of the largest concentrations of chemical waste—a staggering 8 million tons in all—is distributed among 215 dump sites in the City of Niagara Falls, New York. This is the story of what happened (or, more correctly, what failed to happen) when the US Government took one company to court in order to force it to clean up its wastes. It is also the story of how Canadian citizens (who are directly affected by pollution from two of the company's dumps) were excluded from entering the case.

The Hyde Park Dump

Hyde Park slopes gently towards the edge of Niagara Gorge, a 15 acre grassy mound, the height of a two storey building. Benign in appearance and name—Hyde Park—the mound covers the world's largest

waste deposit of dioxin, enough to poison every human in North America. That is only the start. The mound, located five kilometres (kms) downstream from the city's famous falls, also contains 80,000 tons of lindane, mirex, polychlorinated hydrocarbons and waste nerve poisons, all toxic, all virtually indestructible by biological processes. The Hyde Park chemical dump sits on the edge of Niagara Gorge, a sheer drop of 120 metres into Niagara River. Its lethal contents are oozing steadily down through the porous bedrock into the river, the source of drinking water for six million people, of whom four and a half million are Canadian. Neither the owner of the Hyde Park dump, Occidental Chemical Co, nor New York State, nor the United States Federal Government is doing anything about the seepage, their inaction defended by United States environmental laws.

In 1979, the United States Environmental Protection Agency (EPA) launched two lawsuits against Occidental Chemical Co which, on the surface, were intended to force the chemical company to undertake—in the legal phrase—"remedial action". A coalition of environmental groups from Niagara Falls and Canada, uncertain of EPA's resolve, struggled within the United States court system to become party to the suits. Six years, several hundred thousand dollars of citizen's money, and many person-years of volunteer time later, the struggle collapsed. Judge John Curtin, United States District Court for the Niagara region, rejected any plan for clean up of Hyde Park and other dumps now leaking into the Niagara River.

Judge Curtin said in defence of his decision, "My job is to interpret the law". What kind of law is it that does not admit evidence of reduced photosynthetic capacity of phytoplankton or of toxic seagull eggs caused by chemicals from these leaking dumps? In fact, what law demands is actual proof of a direct link between human harm and the specific chemicals leaking from the Occidental dumps. But I am getting ahead of my story. Let me give you some background to what is now creeping sterilisation of a large chunk of the North American ecosystem.

Ross Hume Hall is Chairman of the Board of Directors of Pollution Probe Foundation, Toronto, Ontario, one of the Canadian citizen groups that attempted to enter the court case against Occidental Chemical Co. He is a professor in the Department of Biochemistry, McMaster University, Hamilton, Ontario, L8N 3Z5, where he researches environmental toxicity.

Niagara's Chemical Companies

Occidental Chemical Co, formerly known as Hooker Chemical Co, is one of several chemical industries linked to Niagara Falls, because of the cheap power available from the falls. The 20 million visitors who come to Niagara every year, attracted by the wonder of the falls, probably do not notice the chemical reactors and towers of these industries, visible through the mist of the falls. It is the second largest concentration of chemical industry in the United States.

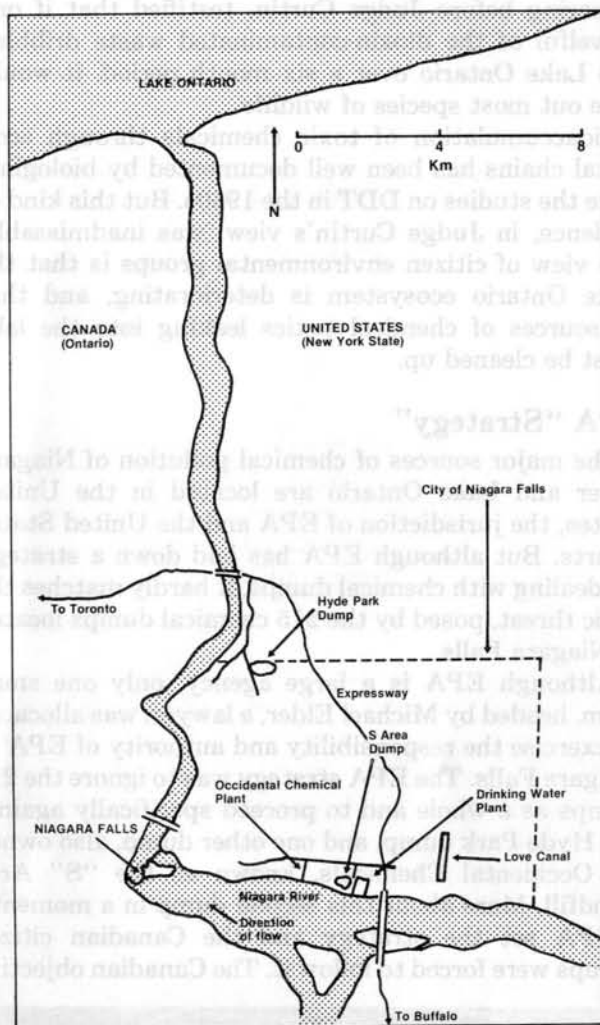
Occidental Chemical Co has a large chemical plant spread along the bank of the Niagara River, about two kms above the falls. It specialises in the production of chlorinated chemicals. The manufacturing operations generate tens of thousands of tons of bottom residues from the chemical reactors and unusable by-products, all chlorinated and difficult to dispose. In the 1940s, Occidental Chemicals began to dump its wastes in a nearby empty canal, called Love Canal. Having filled the canal by 1953 with 40,000 tons of wastes, the company covered the canal with a thin layer of clay and sold it for *one dollar* to the city of Niagara Falls. (The city subsequently built a school on the site). Occidental Chemicals then moved its dumping operations to the Hyde Park site, about 5 kms below the falls, where it continued dumping toxics until 1975.

That the Hyde Park site is only about 800 metres from the Niagara River and that the chemicals might seep into the river, never seemed to bother officials of Occidental Chemicals. The site was convenient, a short drive from the plant. But what was convenient for Occidental may not be so convenient to the six million people who each drink on average two litres per day of Lake Ontario. Niagara River provides about 85 per cent of Lake Ontario water. This lake, which straddles the United States/Canadian border for some 320 kms, contains enough fresh water to provide the entire human population of the world with drinking water for 130 years. Its volume of water is so great that if all 80,000 tons of Hyde Park chemicals were evenly distributed in the lake, most could not be detected by chemical analysis. Should there be any alarm?

Biomagnification of Wastes

In the early 1970s, Douglas Hallett, a wildlife biologist with the Canadian Department of Environment, started to investigate why a herring gull colony in eastern Lake Ontario had suffered an 80 per cent drop in reproductive success. The adult birds seemed healthy enough; Hallett suspected that the birds were accumulating some form of chemical poison from their food. The poison turned out to be 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin, known as TCDD or just dioxin.

Dioxin is a stable, chlorinated organic chemical that accumulates in the body fat of any organism; consequently, it is passed from insects to little fish to larger fish, on up the food chain to the herring gulls at the top. The accumulated concentration of dioxin is high enough to damage the delicate biological processes necessary for an egg to hatch. Although the concentration of dioxin in the eggs seems trivial, about 60



Detailed map of the Niagara Falls area, showing the location of the Hyde Park and "S" Area chemical waste dumps. The Niagara River forms the international boundary between Canada and the United States.

parts per trillion, even that minute amount is sufficient to harm the herring gull and many other species including humans.

The power of a biological system to concentrate a toxic chemical is awesome. Hallett and his colleagues calculated that just three ounces (80 grams) of dioxin in Lake Ontario would have been sufficient to affect the herring gulls.

When Hallett did his initial studies on the herring gulls in the early 1970s the source of dioxin was due to direct discharge from chemical plants in Niagara Falls. These discharges were stopped and for the next few years the amount of dioxin found in herring gull eggs declined steadily. But beginning in 1980, the decline levelled off, suggesting a new source of dioxin. Hallett and his colleagues in the Department of Environment, strongly suspect Hyde Park dump as well as other dumps.

From data supplied by Occidental Chemical, these scientists estimated that the Hyde Park dump contains one ton of dioxin—the largest single mass of dioxin in the world. To put that amount into perspective, consider that the total amount of dioxin—an inevitable contaminant of the defoliant, Agent Orange—sprayed over Vietnam during the entire Vietnamese war amounted to 60 kilograms. Hallett, at

a hearing before Judge Curtin, testified that if one shovelful of the dioxin-contaminated waste dribbled into Lake Ontario over a six month period, it would wipe out most species of wildlife.

Bioaccumulation of toxic chemicals through ecological chains has been well documented by biologists since the studies on DDT in the 1960s. But this kind of evidence, in Judge Curtin's view, was inadmissible. The view of citizen environmental groups is that the Lake Ontario ecosystem is deteriorating, and that all sources of chemical toxics leaking into the lake must be cleaned up.

EPA "Strategy"

The major sources of chemical pollution of Niagara River and Lake Ontario are located in the United States, the jurisdiction of EPA and the United States Courts. But although EPA has laid down a strategy for dealing with chemical dumps, it hardly matches the toxic threat, posed by the 215 chemical dumps located in Niagara Falls.

Although EPA is a large agency, only one small team, headed by Michael Elder, a lawyer, was allocated to exercise the responsibility and authority of EPA at Niagara Falls. The EPA strategy was to ignore the 215 dumps as a whole and to proceed specifically against the Hyde Park dump, and one other dump, also owned by Occidental Chemicals, known as the "S" Area Landfill. More about this second dump in a moment.

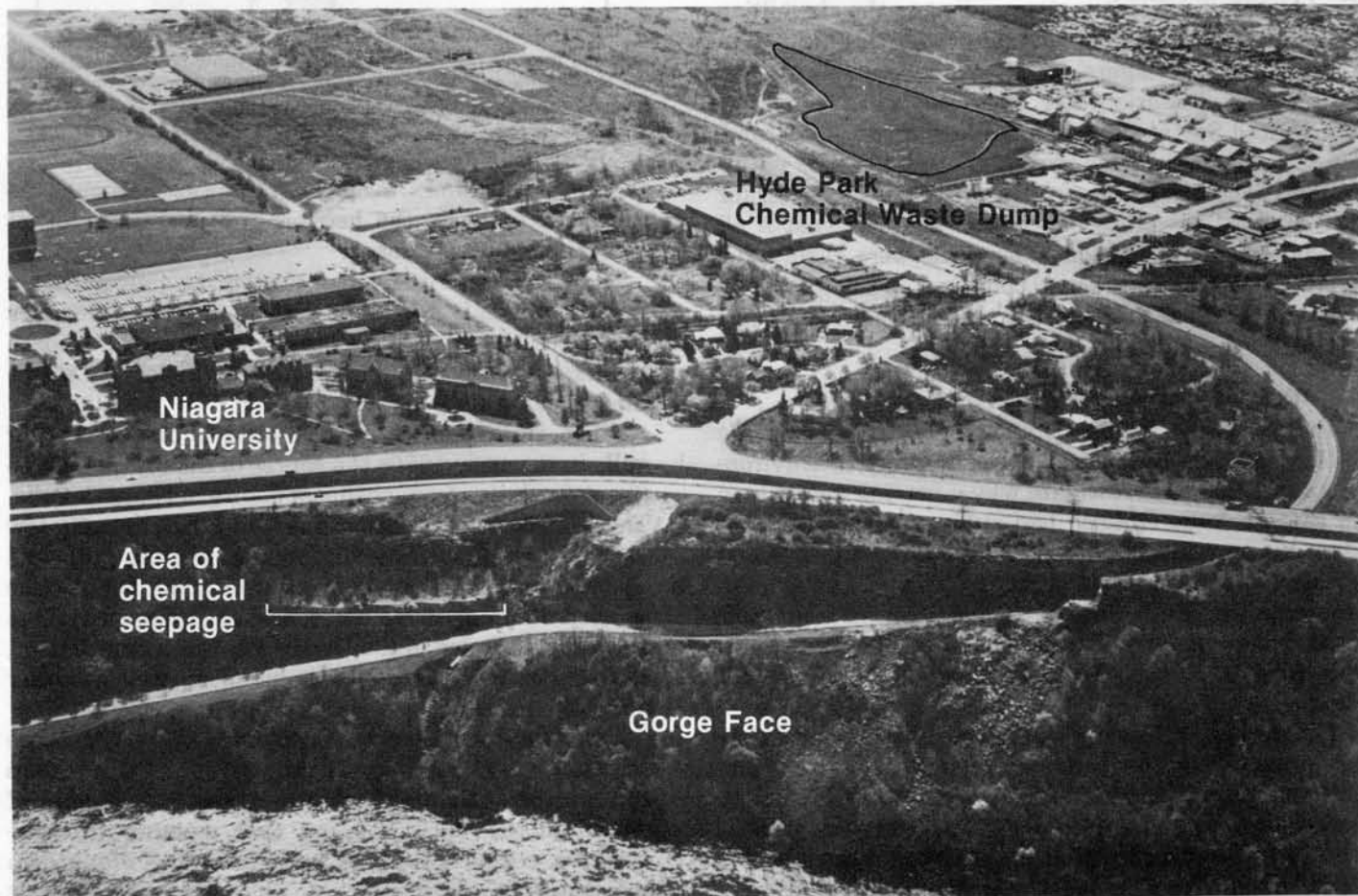
EPA set the strategy and the Canadian citizen groups were forced to follow it. The Canadian objective

was to obtain a complete clean up of both Hyde Park and the "S" Area Landfill, by excavating the chemicals and incinerating them at high temperature in a rotary kiln. In the opinion of consulting engineers, the technology would work at the Niagara dumps. EPA, however, had no intention of pressing for this degree of clean up, only for containment of the leaks—a technically impossible strategy in view of the citizen groups. These groups felt, therefore, that they had to gain access to the court proceedings in order to convince Judge Curtin of the necessity for removal of the chemicals. Only Curtin had the power to force Occidental Chemicals to destroy the chemicals.

Bloody Run Creek

The way the law is structured, it is necessary to link evidence of harm or the potential for harm *directly* with the cause. EPA believed that it could establish such a link with the Hyde Park dump, not with people deriving their drinking water from Lake Ontario, but with residents living near the dump.

In 1978 the Niagara County Health Department had determined that poisonous chemicals from the Hyde Park dump were leaking into Bloody Run Creek (named after an Indian massacre of white settlers in 1763) that drains the dump. The creek meanders for some 1000 metres past small businesses and homes, then dribbles down the rock face of the gorge into the Niagara River. The Health Department and EPA hoped that revelation of leaking chemicals would spur Occidental Chemicals to take remedial action. But



The Niagara Gorge, six kilometres below the falls (looking west). The Hyde Park Chemical Waste Dump appears as a grassy park (arrowed). Its chemicals are seeping into the rock beneath and then out of the rock face of the gorge.

PHOTO: THE STANDARD (ST CATHERINES, ONTARIO)

apart from capping the dump with clay and grass, the company refused to act further.

Michael Elder then launched a suit against Occidental Chemicals which came before Judge Curtin. Under Curtin's guidance, EPA and Occidental Chemicals negotiated a settlement in 1982 that ordered the chemical company to construct a drainage ditch around the dump site and collect the run-off.

Hyde Park Leaks

Canadian environmentalists, who had followed the case closely, were horrified because, in their view, the agreed remedial construction would not stop the dump from leaking straight into Niagara River.

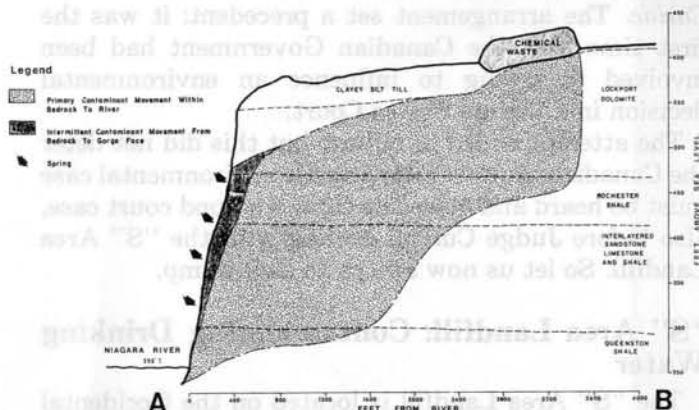
Here a word about local geology is necessary. The rock formation that creates the Niagara escarpment and gives rise to Niagara Falls, is layered horizontally like a sponge cake. The top layer is covered with 1-10 feet of soil. Occidental Chemicals constructed Hyde Park dump by scraping back the soil and then dumped the chemicals directly on top of the rock. The shale-like rock is deeply fissured. Ground water seeps through it like water through a sponge, all headed for Niagara River and Lake Ontario.

Grant Anderson, a Canadian geologist and specialist on ground water flow, was contracted by the Canadian Department of Environment to study available information about water flow through the rock under the Hyde Park site. He concluded that the chemicals would migrate from the bottom of the Hyde Park dump into the rock and then flow towards the Niagara River. Anderson made his prediction in 1981. His analysis was downplayed by geologists hired by Occidental Chemicals, and ignored by Judge Curtin. Today his prediction is coming true. New York state officials have detected a steady stream of water from the rock face of the gorge, contaminated with 2,4,5-T the herbicide component of Agent Orange. Hyde Park contains 2,4,5-T and the trichlorophenol used to make it. When these chemicals are found, dioxin is generally present.

Occidental Chemicals contended that the Hyde Park chemicals would not leak into the rock strata, and therefore it was necessary to collect only water moving horizontally through the soil above the rock surface. The company's remedial plan, accepted by EPA and approved by Judge Curtin, calls for building a wall around the dump to contain the surface run-off water. It can be done very cheaply. But the most serious leakage is drainage from the bottom of the dump. The company's plan does nothing about the bottom—for good reason: it would be expensive.

The Canadian Case

Ironically, while doing his analysis, Anderson came across a 1980 Occidental Chemical study which showed that chemicals from the dump had already penetrated about 20 metres down into the rock. Documentation of this study apparently was not used in arriving at the settlement. Judge Curtin did permit Grant Anderson, Douglas Hallett, other Canadian scientists and concerned citizen groups to appear before him as *Amici Curiae* (friends of the court) to



Geology of the Hyde Park—Bloody Run Area

A schematic diagram of the geology beneath the Hyde Park Chemical Waste Dump. The diagram, prepared by Gartner Lee Associates, shows how chemicals can migrate from the unprotected base of the dump, through the bed rock and into the river.

comment about the EPA—Occidental settlement. This meant that they could present evidence but not have full access to court records, and they could not appeal against any decision the Judge made.

The Canadian position was straightforward. There are 80,000 tons of highly toxic chemicals in the dump that are beginning to slip through the rock strata into Niagara River. The amounts leaking into the river are a threat to the health and well-being of four million Canadians who drink water coming from this source.

The Canadian case was based on extensive studies, carried out by Canadian government scientists, of water flow and mixing in Lake Ontario, movement of toxic chemicals in the water and bottom sediments, and analysis of Niagara dumps and their underlying rock structure. The picture that emerges from all this evidence, although not able to predict exact detail, clearly points to what Andrew Brandt, Ontario Minister of the Environment, called "environmental devastation of world proportions." The urgency in the Canadian position was prompted by the realisation that within a decade it could be too late to reverse the downward migration of Hyde Park chemicals.

Judge Curtin accepted the view of Occidental Chemicals' geologists that Hyde Park chemicals are not migrating into the rock. He dismissed the evidence of current and future ecological damage as irrelevant to the case. He refused to modify the EPA-Occidental Chemicals settlement, calling for only containment of surface run-off.

Government Studies

The role of the Canadian Federal Government in the Hyde Park case deserves comment. The government's position was that the chemicals in Hyde Park, as well as those of all the Niagara Falls dumps, should be dug up and disposed of in a safe manner. But the government chose not to enter directly into the Hyde Park court case, a United States jurisdiction. Instead it put political pressure on EPA through diplomatic channels and established a liaison with Canadian and Niagara Falls citizen groups. The Federal Department of Environment provided in-depth technical backup for the

citizen groups who had entered the court case as *Amici Curiae*. The arrangement set a precedent: it was the first time that the Canadian Government had been involved in trying to influence an environmental decision in a United States Court.

The attempt ended in failure, but this did not deter the Canadian groups. They felt the environmental case must be heard and vowed to enter a second court case, also before Judge Curtin, dealing with the "S" Area Landfill. So let us now switch to that dump.

"S" Area Landfill: Contaminating Drinking Water

The "S" Area Landfill is located on the Occidental Chemical's plant site, between the chemical reactors and the river's edge (the dump is about 50 metres from the water). Occidental Chemicals has been dumping its toxic wastes into this site since 1961, but outside of company officials, its existence was unknown. Public knowledge about the dump came about only because of a bizarre incident.

The city of Niagara Falls built its water treatment plant next to the Occidental Chemical's plant. Water is sucked in from the Niagara River through a long tunnel that runs under the river through bedrock. In the 1970s, engineers noted a decreased flow of intake water, and finally in 1978, sent a team of scuba divers down into the tunnel to investigate. The divers found that a heavy sticky rubble had broken into the tunnel and partially blocked the water flow. They brought some of the rubble to the surface. It reeked of chemicals. The divers were alarmed to find that where the rubble had splattered their wet suits, great holes started to appear. Later, chemical analysis showed that the rubble contained the same mix of chlorinated chemical wastes found in the Hyde Park dump.

Officials of the city and Occidental Chemicals at first denied that chemicals were leaching into city water. Donald O'Hara, city manager publicly said that he was satisfied the drinking water was "totally safe". It was not until after prodding from New York State investigators and EPA officials that Occidental Chemicals revealed the existence of the "S" Area dump. If toxic chemicals were infiltrating the city water intake, they were clearly spreading through the rock strata and reaching Niagara River.

"S" Area Court Case

EPA sued Occidental Chemicals in 1979 to force the company to undertake remedial action. The case was set aside, however, while Michael Elder and his team pursued the Hyde Park case. When Elder turned his attention back to the "S" Area dump, Canadian environmentalists petitioned Judge Curtin to be allowed to enter the case—the technical term is *intervenor status*. The Canadian groups felt that the EPA had not been aggressive enough in the Hyde Park suit, and they did not want a repeat—but that is exactly what happened.

When the "S" Area court case started in 1982, the citizen groups believed that they had a chance to influence Judge Curtin. *Intervenor status* unlike *Amicus Curiae*, provides direct access to all court documents

and an opportunity to cross-examine EPA and Occidental Chemical witnesses. And most critical, such status gives the right to appeal against Judge Curtin's decision—that is, move the case to a higher and possibly more sympathetic court.

To gain *intervenor status*, the citizen groups had to prove to Judge Curtin that they were qualified and that they represented a valid interest. The groups prepared a technical and legal case that, in the words of one EPA official, was more thorough and better thought-out than the EPA's. Although mindful of the broad implications of environmental contamination, the citizen groups had to play by court rules. They had to prove:

- That the identified chemicals in "S" Area Landfill were toxic to humans as shown by laboratory tests in mice and rats;
- That the "S" Area chemicals were leaking into Niagara River and thence Lake Ontario;
- That members of the citizen groups drank Lake Ontario water and therefore were personally harmed by chemicals originating from "S" Area.

Occidental's Case

It was no secret that the citizen groups, if granted *intervenor status*, would press for a court decision to remove and destroy the "S" Area chemicals—a procedure that could cost 100 million dollars. Occidental Chemicals fought the citizen's petition.

Dr Andrew Sivak, a toxicologist with Arthur D. Little Inc, was one of the many experts hired by Occidental Chemicals to undermine the citizens' petition. Sivak noted that the "S" Area Landfill was only one of the 215 active and inactive waste disposal sites in the area. In addition, some 19 municipal and industrial waste pipes discharged chemicals into the Niagara River. How then, asked Sivak, could the citizen groups suggest that they were being harmed directly by "S" Area chemicals, when the water could be contaminated from all these other sources?

Sivak went on to hammer the uncertainties of proving toxic effects in humans. He agreed that many of the chemicals in the dump were toxic—in doses *much higher* than those obtained from drinking contaminated Niagara River or Lake Ontario water. He assured Judge Curtin that, "there are exposure levels that do not result in detectable biological responses". Sivak based this statement on model experiments done in the laboratory, and he cited his authority: "Toxicological principles and the body of toxicological and pharmacological experience."

The Limits of Toxicology

Let us look at Sivak's "authority" more closely. The traditional science of toxicology is a laboratory science. It tests a single chemical in laboratory rats and mice and other short-lived animals. It is expensive, time-consuming work, and few chemicals have been subjected to all known toxicological tests. Most, at best, have been tested in only one or two animal systems. But the main feature of laboratory toxicology that weakens its usefulness, is the fact that toxicologists test chemicals one at a time. This experience is far removed from the reality of the environment where

people and wildlife are exposed to a mix of thousands of chemicals. The toxic effects of a mixture cannot be predicted from data about single chemicals. Sivak's narrow "authority", based on laboratory experiments, is far removed from the ecological reality of exposure to multiple chemicals and bioaccumulation.

Judge Curtin, however, remained unimpressed with the ecological argument. He ruled that the citizen groups had not proven that they were in any way effected by "S" Area chemicals. He rejected their plea for *intervenor status*. He approved a settlement between EPA and Occidental Chemicals that involves building a containment wall around the dump site—above bedrock. The settlement ignores the real possibility that the chemicals of the dump will gradually slide through the bedrock and dribble into the river for the next several generations of Canadian citizens.

No Public Accountability

The "S" Area Settlement, like the Hyde Park one, blocks any possibility of federal, state or municipal governments from suing Occidental Chemicals in the future. The cost to the company is relatively small, about \$15 million for Hyde Park and \$35 million for "S" Area, spread over that 35 year period, Occidental Chemicals had predicted sales of \$50,000 million.

It is hard to detect any sense of public accountability in the position of Occidental Chemicals, although Armand Hammer, chairman of Occidental Petroleum, the company which owns Occidental Chemicals, apparently has some sensitivity towards the cancer problem. He announced in 1982 that he would pay any scientist who finds a cure for cancer one million dollars. Whether or not the fact his company has dumped about 45 kilograms of chemicals, including cancer-causing ones, for every man, woman and child in the Niagara-Lake Ontario region, influenced Hammer's decision, we do not know. The fact is, Occidental Chemicals has exploited every weakness in environmental laws to avoid cleaning up its own waste.

Environmental Legislation: Too Narrow a Focus

One of the principal weaknesses of environmental law is that it fails to acknowledge ecological processes. Toxic chemicals, for instance, transfer easily through all domains of the environment, earth, water and air. Yet environmental legislation compartmentalises these domains as if the world consisted only of water, or earth, or air, rather than an integrated mix. Judge Curtin applied a law that dealt exclusively with earth.

So there the matter rests. Eight million tons of toxic chemical waste is subsiding into bedrock—within 5-10 years most of it will be impossible to retrieve. The Niagara River, Lake Ontario and St Lawrence ecosystem is already deteriorating because of chemical contamination. The photosynthetic mechanism of phytoplankton is being poisoned. These organisms are the start of the ecosystems' food chain. Fifty per cent of Lake Ontario's white suckers have papillomas or liver tumours. Twenty-five per cent of adult male lake trout have misshapen testes and a lowered testoster-

one level. Young Canadian mothers are carrying an increasing amount of DDT and PCB's in their breast milk—currently about one ppm in the fat. And the list goes on. The only protective action yet taken by Canadian and United States Governments has been to warn citizens not to eat fish caught in Lake Ontario.

The narrow focus of current environmental laws allows companies, such as Occidental Chemicals—if they choose—to flout the broader implication of ecological devastation (to claim that they adhere to the law by building drainage ditches, which incidentally have yet to be built). The narrow focus also allows the bureaucratic agency in charge—in this case the EPA—to claim that it is carrying out its duty by negotiating remedial action for three dumps (the two described in this article and Love Canal) over a six year period. They have yet to do anything about the other 212 dumps in the area.

Conclusion

EPA has failed to arrive at an overall strategy for dealing with the eight million tons now buried beneath Niagara City. Nor has the Agency a strategy for dealing with the waste currently being produced by Occidental and other companies, much of that waste is still dumped (many of the 215 dumps are currently being expanded) or discharged directly into the Niagara River, although some of it is now being incinerated. The lack of an overall strategy both to reduce the generation of toxic waste to zero, and to destroy the legacy of eight million tons, effectively abandons the Lake Ontario/St Lawrence ecosystem to declining viability.

I foresee no immediate resolution to the problem. The legal basis for an integrated approach to environmental contamination requires new legislation, but environmental law-making has reached an impasse. Environmental groups in both Canada and the United States understand the need for laws that cover the integrated processes of the environment but lack the political strength to force such legislation past the coalitions of polluting industries. Such industries understandably, prefer the current narrow focus of environmental law.

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PHOTO: JOHN MADELEY

Tobacco in Bungoma, Kenya. Most of the tobacco in Kenya is grown on land near the equator. Hillsides in the region have been stripped of trees.

Tobacco: A Ruinous Crop

By John Madeley

Growing tobacco carries heavy environmental costs. Tobacco not only takes up land which could be used to grow food crops, it also destroys the fertility of the soil. The chief cost, however, lies in the sheer volume of wood that is burnt to fuel tobacco curing barns. The trees from at least 1.2 million hectares (and possibly 5 million hectares) are being lost every year.

"When you in the West think of tobacco, you think of smoking and the damage it does to your health. When we in the Third World think of tobacco, we think of the damage it is doing to our land."

That statement was made by an official of the Mahaweli Rural Development Project in Sri Lanka. He was speaking as a result of his own experience with the Ceylon Tobacco Company—a subsidiary of the giant British American Tobacco (BAT) combine. The company had encouraged people to cut trees from the hills overlooking the Mahaweli river in Kandy and plant themselves a half hectare of tobacco. When the time came for the tobacco to be cured—that is, made fit for cigarette production—still more trees had to be cut down for the curing barns.

Many of the once thickly wooded hills of the Mahaweli valley around Kandy now stand almost bare—a grim testimony to the destruction caused by tobacco growing. The area has nearly 100 inches of rain a year, and the trees on the slopes used to hold that rain and release it slowly into the river. Now when the rains come, soil and sediment are ripped away from the unguarded slopes and washed down into the river bed.

From there the silt flows on, through the British funded Victoria Dam, to irrigate land some 60 miles away, on which people are being resettled. But already there are fears that silt could seriously clog up the canals of the area and cause considerable problems for the resettlers.

A Small Farmers' Crop

Tobacco is grown in over a hundred developing countries and the damage it is causing in Sri Lanka is not unusual. Across Asia, Africa and Latin America, tobacco is causing enormous and insufficiently recognised damage to the environment.

Most tobacco is grown by small farmers who are on contract to a large national tobacco company, which itself is likely to be a subsidiary of one of the world's seven giant multinational tobacco firms. Around 52 per cent of harvested tobacco leaf is used in the country where it is grown. Raw tobacco exports account for 1.5 per cent of total world agricultural exports, and some countries have become heavily dependent for export earnings on the crop. Malawi, for example, earns 55 per cent of its foreign exchange from tobacco.

But there is a cost. Whilst tobacco may cause death and a shorter life for smokers, its production entails heavy costs, which are only just beginning to be quan-

John Madeley is editor of the journal *International Agricultural Development*. He also writes for *The Observer*, *The Guardian* and other newspapers, and broadcasts on the BBC's *World Service North-South* on economic and ecological issues.

tified. The chief cost is the sheer amount of wood that is needed to cure the crop—and the scandal is worldwide.

"In the central black soil belt of Andhra Pradesh" wrote Praful Bidwal in *The Times of India*, "one can hardly see a tree taller than five feet. In Gunter district, the first in India to grow Virginia tobacco, about 200,000 hectares of land that were once fallows or cultivable fallows and pastures are now no more than a horrifying barren waste where nothing may grow. The process is being replicated in the northern and southern districts . . . the devastation continues relentlessly¹."

Further north, just across the Indian-Nepali border, the tiny village of Madhubassa snuggles at the foot of the Himalayas. The people here know much about the damage that tobacco can cause. In the 1960s, a cigarette factory was built nearby with Soviet aid money. "It is horrifying to see the number of trees that have to be cut down to cure tobacco", said a church missionary who works in the village.

Madhubassa lies between two rivers and because the slopes of the Himalayas are being stripped of trees—not only, but partly because of the demands of the cigarette factory—there has been a considerable increase in flash flooding in recent years. These floods are now eating away the banks of the river and the village is being slowly squeezed. If the process continues it may be forced out of existence—partly by the world's smokers.

At nightfall the villagers, some 150 of them, gather together in a circle. They exchange their experiences of the day and sing songs, one of which includes the verse:

Madhubassa is the name of our village
It lies between two strong rivers
That eat into our land
Who is going to hear us?
Who is going to hear us?

Destroying the Land

The world needs to hear them and others like them. The tobacco industry is getting away with murder, not only of people through smoking but because the environmental effects of growing and curing tobacco are damaging the base of people's existence. There is evidence that the giant tobacco companies are becoming nervous of the bad publicity that the environmental side of their operations would give them—in addition to the bad publicity they already have because of the health risks of smoking.

Huge tobacco companies are moving around the world, destroying the land and base of existence for local people. Not surprisingly they fear that when people wake up to what is happening, another nail will have been driven into the coffin being prepared for their obnoxious industry.

Across Africa and Latin America, as well as Asia, forests are being axed for the curing barns. Most of the wood comes from open forest or woodland but closed forest too is threatened. In his book *The Smoke Ring* Peter Taylor recalls a conversation with a tobacco

farmer in Santa Cruz, Brazil. "A young boy was feeding a huge pile of wood into a blazing furnace which was curing a recently harvested crop of tobacco inside the barn . . . I asked where the wood came from as there were not many trees around. I was told that the farmer bought it at cost price from the company, as all the wood in the area had been used up long ago. There were once forests around the farms but they had been cut down for fuel, mainly to cure tobacco."²

In semi-arid areas the loss of trees is particularly devastating, affecting both land and rainfall. In the tobacco regions of Kenya, for example, most of which are in semi-arid land close to the equator, hillsides that once grew trees now stand denuded. A small farmer in the district of Meru told me "I have lived here all my life and this area used to be thick with trees. Now after another five years of tobacco, there won't be any trees left." With open forest going, the companies have their eyes on closed forest. BAT (Kenya) Ltd is understood to be seeking government permission to fell trees from the Mount Kenya forest.

Depleting Soil Nutrients

Food output is directly threatened by tobacco. In Meru district people say that rainfall has declined since tobacco was introduced fifteen years ago. Trees that once protected good food growing land have now gone, thus putting that land's ability to produce food in jeopardy. Tobacco thrives in semi-arid land; its production inevitably means that land has less protection against the march of the desert. Where tobacco is grown the spread of the desert is more likely.

Tobacco takes up land that could itself grow food. And it leaves behind a legacy turning land on which it has been grown into land which is unfit for food production. Tobacco depletes soil nutrients at a much faster rate than many other crops, thus rapidly decreasing the life of the soil³ (see fig. 1). In one Third World country this is seen by the continuous roving around of the national tobacco company. It persuades farmers in one region to grow tobacco, supplies them with inputs and buys their crop—for as long as their soil is fertile and there are trees in locality. When fertility and trees go, the company slinks off, like latter day bandits, to con farmers in another area.

Depletion of Soil Nutrients by Tobacco and Other Crops (loss in kg/ha)

Harvest of one ton per ha	Nitrogen N	Phosphorus P ₂ O ₅	Potassium K ₂ O
Tobacco	24.4	14.4	46.4
Coffee	15.0	2.5	19.5
Maize	9.8	1.9	6.7
Cassava	2.2	0.4	1.9

Source: R. Goodland, C. Watson and G. Ledec, *Environmental Management in Tropical Agriculture*, Westview, Press, Colorado, 1984.

Trees for Curing

Trees, soil, and the output of food for local people are all damaged by a crop that goes on to damage people's health. Just under six million tonnes of tobacco were grown worldwide in 1984. (At the end of 1984 world stocks of tobacco were around seven million tonnes—a massive fourteen months supply—far larger than other agricultural raw commodities.) About 2.5 million tonnes of this output was 'flue' cured with wood, that is, cured in barns, or flues, with wood providing the heat to remove moisture from the leaf.

Some tobacco is cured in the sun, some in barns that use coal and other energy. In nearly all developing countries, the sun is hot enough to remove moisture from the leaf. It is dried in barns simply because of flavour considerations. Flue cured tobacco has a better flavour, so it is claimed.

In the developing world, tobacco is normally grown by individual farmers on half hectare plots, and the curing is done on the farmer's own premises. After harvesting, the tobacco leaf is strung together and hung in the barn; wood is constantly fed into the rear of the barn and heat circulates around it for seven to ten days. During this time the temperature is maintained at about 95 degrees fahrenheit.

Most of the wood needed for the curing barns comes from open forest, woodland, shrubland and savannah. A small amount comes from specially grown woodlots, which tobacco companies have urged farmers to grow. According to a study of peasant tobacco farming in Tanzania, by J. Boesen and A.T. Mohele, the wood from between two to three hectares of land is needed to cure one tonne of tobacco. Taking the lower figure, the curing of 2.5 million tonnes to tobacco would seem therefore to require the wood from five million hectares of land—every year. Some estimates are lower.

Robert Goodland, Catherine Watson and George Ledec calculate that about 55 cubic metres of stacked wood are needed to cure each tonne of the 2.5 million tonnes of tobacco that are flue cured each year. From this figure they say "it is reasonable to conclude that worldwide the equivalent of some 1.2 million hectares of open forest is stripped of wood for tobacco curing."³

The trees of between 1.2 million to 5 million hectares of land are therefore being taken each year simply to throw into tobacco curing barns. This means that tobacco makes probably the largest single demand on trees than any other use, apart from wood for cooking by rural people. A former Kenyan Minister of Natural Resources confirmed that this was the position in Kenya—even though the country is a modest producer of tobacco.

There is also evidence that some wood for the curing barns is now coming from protected forests and being transported to tobacco farmers. The *Global 2000* Report to the US President says that the world's protected forests are "disappearing at the rate of some 18-20 million hectares a year".⁴ As noted above Mount Kenya forest is under threat. As trees continue to disappear from open forest and woodland, so the tobacco companies will plead with governments that they can only continue their operations, provide jobs and pay

taxes if they are allowed to axe protected forest for the curing barns. Protected forest areas are therefore likely to come under increasing pressure.

Replanting

In a 1982 report on leaf tobacco, that took a generally glowing view of the crop, the Economist Intelligence Unit said that deforestation caused by the demands of the curing barns is an "anxiety with serious ecological overtones, unless a replanting programme can be effectively implemented".⁵

Only the companies would deny that tobacco is damaging environments, but if they replant trees to replace the ones they are causing to be axed, then at least some criticism of their activities would be offset. The companies are well aware of this and are now making a great deal of noise about replanting. A great deal less is actually being done. BAT (Kenya) Ltd, for example, claims that it tells farmers that if they want to grow tobacco, they must plant 1,000 eucalyptus trees a year for three consecutive years so that they have their own supply of trees. But not all tobacco farmers in Kenya, and even extension workers, know about it. An agricultural extension officer in Meru District, who works with tobacco farmers, had never heard of the tree planting scheme. One government minister, asking privately about the scheme, thought it was a joke.

"BAT are shouting around about massive tree planting operations," said a former employee of the company, "but this is nothing more than an outrageous attempt to veil the whole problem. There can be no argument that trees in the tobacco producing areas are being felled willy-nilly and that in the not too distant future there won't be any left at all."

Most farmers do not have enough land to grow the number of trees the companies say they require. To plant 3,000 eucalyptus trees requires 2.5 hectares of



A wood-fed tobacco curing barn, Kenya.

land—an area *five times larger* than is needed for the tobacco itself. The average Kenyan farmer who grows tobacco only has four ha of land; if he is to grow enough food for his family and for the market he cannot afford to set aside 2.5 ha for trees. And many farmers are not very interested in planting seedlings that will not become trees for five years.

Some Kenyan farmers have made a bold attempt to plant the required trees—but the survival rate for seedlings has turned out to be very low, with up to 90 per cent dying, often because water is scarce in the dry areas where tobacco thrives. In view of the way that tobacco exhausts the soil, as already noted, and the way that tobacco companies move on and ditch farmers, seedlings may mature too late anyway. Unwanted acres of eucalyptus have little to commend them.

One tobacco grower in northern Kenya said that in his view BAT's reforestation plans are "going very badly". There is little evidence that plans in other countries are faring any better. Yet even though replanting is more myth than substance, there is some being done—which means that land in developing countries, which ten years ago was growing food, is now tied up with eucalyptus trees.

Alternatives for Curing Barns

Attempts are being made to develop curing barns that use less fuelwood. India, Tanzania and Kenya are among countries where 'improved' barns are being tried, but these have yet to prove themselves. Several Kenyan farmers who have tested them say they offer no savings over existing models. A more promising alternative is the development of a solar curing unit.

In 1976 a Kenyan company, NECON, developed a solar curing barn, the Solakura, which allows tobacco to be cured with solar heat. The unit uses a very small amount of wood—about ten per cent of the amount now used. It would mean that Kenya loses just over a million rather than twelve million trees a year, because of the demands of tobacco. The Solakura makes use of a small one horsepower engine which drives a fan to circulate the warm air—which could be driven by methane gas from animal dung, so making petrol unnecessary.

Following tests, a BAT official said that "a good cure can be obtained from the Solakura using very little wood". Despite this however, and the benefits to the environment of solar rather than wood curing, the company decided not to go ahead, as tobacco farmers would, it claimed, find it difficult to afford the new units. It did not seem prepared to help with that cost. The United Nations Industrial Development Organisation is now working on the development of solar curing units.

Effect of Deforestation

In the meantime the tobacco industry continues with its heavy demand for trees. The consequences of this are many sided. It puts additional pressure on a

"Tobacco thrives in semi-arid land; its production inevitably means that land has less protection against the march of the desert. Where tobacco is grown, the spread of the desert is more likely."

country's trees, over and above the demand for normal, socially useful purposes. In Kenya, according to the country's Green Belt Movement, at the present rate of depletion Kenya will have no trees left by the year 2000. The country is in danger of being turned into a desert; tobacco is not helping.

Tobacco's demand for trees hits the poor of a country in a number of ways. In 1977 Dr Mostafa Tolba, Executive Director of the UN Environmental Programme warned that the shortage of firewood was rapidly becoming the poor person's energy crisis. The poor depend on wood for cooking and because of the demands of the tobacco industry many people in tobacco growing areas have to spend longer searching for fuelwood. Tobacco competes with the poor—and has the money to beat them.

When for example BAT (Kenya) Ltd approached Meru district council about reforesting a hill, the offer was financially attractive enough for them to accept. The hill is now growing trees that are destined for the curing barns; it could have been used to grow trees for local people to use for cooking.

Starvation and Ill-health

Tobacco takes up 0.3 per cent of the world's arable land, and millions are going hungry because land that could grow food is given over instead to growing both tobacco and trees for the curing barns. Where there is tobacco there is likely to be more hunger than there should be.

Also because tobacco companies advertise heavily, poor families can be persuaded to spend money on cigarettes rather than food. One detailed study in Bangladesh shows how.

The study looks at the extent to which cigarette smoking causes a reduction in the money that the poorest sixteen per cent of families spend on food and other essentials; it finds that children of these poorest families are especially vulnerable if their parents smoke. These families spend over two-thirds of their income on food; after the purchase of other essentials such as clothing and health care, there is no money in reserve.

Should parents of these households be persuaded to smoke five cigarettes a day, then their children can have substantially less food. The findings suggest that the cost of these cigarettes leads to a deficit in a child's food intake of about 8,000 calories and 150g of protein a month—nearly a quarter of the maintenance energy requirements. Reductions of food intake of this order would *halve* the prospects of survival for some 18,000 children.

Bangladesh has a population of about 95 million; the developing world as a whole has almost 3,000 million people. If figures on the nutrition-mediated effects of smoking are much the same in other developing countries, then worldwide the number of children whose survival is threatened when their parents smoke just a few cigarettes a day is over half a million. Smoking, by eating into the family budget, reduces the nutritional status of children, and consequently their chances of survival.

A further threat caused by tobacco is that numerous pesticides have to be applied to the crop. Pests love tobacco. An internal document of one giant tobacco company tells farmers about the different pesticides they must apply at the varying times of the planting and growing season. In a space of three months, the farmers are advised to make *sixteen* applications of pesticide to their tobacco—from five weeks before to eight weeks after sowing. The damage that such persistent applications cause to land, nearby rivers and village water supplies has yet to be thoroughly assessed. But many of the pesticides that tobacco demands are toxic, some are carcinogenic. Research could uncover considerable damage to both environment and health.

Another long-term consideration, pointed out in UN Food and Agriculture Organisation's magazine *Ceres* is tobacco's destabilising effects on the structure of agriculture as a whole. "It is true that tobacco now provides employment for many small farmers and tenants," says Dr R. Masironi, who coordinates the World Health Organisation's smoking and health programme; "but sooner or later the wave of mechanisation that has swept across United States' tobacco farms will also reach the Third World".

Displacement from the Land

Dr Masironi goes on to point out that as agribusiness takes over so "the small farmer and tenant will find themselves jobless and will be forced to sell the land that provided food for their ancestors for generations. They will join the great trek to the urban centres adding millions of hungry people to the swelling populations of the shanty towns."

The tens of thousands of small farmers across the Third World, who have been persuaded to grow tobacco, are therefore highly vulnerable. The tobacco company can drop them because their soil and trees have gone or because mechanisation is to be introduced. But tobacco producing countries are also vulnerable. The massive world stocks of tobacco, which now exist, are causing a decline in the world price of the crop. This is now twenty per cent less in real terms than it was in 1982.

They are vulnerable too because they do not have effective control over the tobacco firms. The world's seven large tobacco firms not only control most of the world's tobacco industry, their detailed knowledge puts them in a position of considerable power over national governments. They tend to know more than officials at the Ministry of Agriculture. So ministers in developing countries too often serve as mouthpieces

for a tobacco firm; they are simply being hoodwinked without knowing it.

Countries grow tobacco to earn foreign exchange and give farmers an additional crop. Tobacco has been thought a paying proposition. Recent studies suggest that this is an illusion.

Research by W.E. Forbes and M.E. Thompson of the University of Waterloo in Canada has delved into the costs and benefits of the country's tobacco industry. The research refutes the idea that tobacco is beneficial. Forbes and Thompson calculate that Canada's annual benefits from tobacco amount to \$3 billion. They calculate that costs—including physicians' services, hospital bills, drugs and administrative services come to \$2.4 billion. To this another \$1.5 billion can be added, for the loss of productivity caused by smoking related disease. Even without taking environment costs into consideration, the tobacco industry causes Canada a loss of almost \$1 billion.

In addition to the cost of treating smoking related disease, Goodland, Watson and Ledec have examined costs such as deforestation and the fuelwood crisis, soil degradation, the use of pesticides and the economic vulnerability of tobacco. They conclude "the damage to public health and the environment in the long term appears substantially to outweigh the benefits".

Loans from Development Banks

For Third World farmers the biggest argument against tobacco is that it increasingly looks like a crop that does not pay. One investigation in Kenya found that tobacco farmers earned less than £150 a year from their plots, which was only about two thirds of what coffee farmers were earning from similar sized plots. And the Economist Intelligence Unit reported that a hectare of land in developing countries produces only 1,340 kilos of tobacco and that, at current costs, yields of less than 2,000 kilos per hectare are probably uneconomic. Peasants, it says, might soon start counting the cost of their own and their family's labour that goes into producing the crop.

Third World farmers may be getting wise about tobacco—and as word spreads so the companies will find their persuasive ways less appealing—but are the world's aid organisations getting wise to what's happening? Despite the increased evidence that tobacco is not a paying proposition, some of the world's leading aid organisations have continued to finance tobacco production, thus helping to persuade farmers to grow the crop.

For many years it has been the policy of the World Bank and the Commonwealth Development Corporation, both of which receive money from Britain's aid budget, to finance tobacco projects in the Third World. The World Bank has helped a wide range of countries to increase their output of tobacco. Between 1974 and 1982 the bank and its soft loan arm, the International Development Association, made loans of over \$600 million for rural development projects which included tobacco. Recipient countries included Malawi, Swaziland, Tanzania, Brazil, Paraguay, the Philippines, Pakistan, Tunisia and the Yemen.

Not satisfied with endangering the health of millions of lives through promotion of lung cancer and heart diseases, CAMEL cigarettes have now declared a "battle against nature". Since 1980, the "Camel Trophy" supposedly the "world's greatest off road motor event" has managed to rip through the rainforests of Borneo, Brazil, Sumatra and Papua New Guinea. This year Northern Australia is being attacked in the name of sport by these "Men With Guts of Steel" (their words, not ours). The whole event will cover 3,165 km across Australia, through her last remaining patches of rainforests in this "battle of man and machine against nature."

The battle consists of trying to drive V8 landrovers through the world's great areas of wilderness. All done in the "pioneering spirit that epitomises adventure", the vehicles will reek havoc on the delicate ecosystems they plunder through.

The rally was to have passed through the Okavango swamps of Botswana in Southern Africa but the government rightly pulled out of the agreement when it was realised how much damage to the swamps the rally would do. The fact that the organisers in their promotional literature described this large part of Botswana as "1,500 km of untamed hell" probably did not go down too well with the government.

The areas they have so far been through—the areas where they intend to rally in future—must be protected from this blatant lack of respect for the world's natural heritage. To suggest that the trophy will earn the respective countries a bit of revenue is utterly ridiculous considering the hardsell techniques tobacco companies use in the developing world, and the subsequent profits they make.

If Camel cigarettes really want a challenge in the world's rainforest why don't they do the same journey on foot "armed" with only a sheath knife. They might even learn something about the rainforest or would this be too strenuous for our wheezing adventurers in the tobacco industry?

Send letters and cables of protest to Camel. The address of Camel headquarters is: **CAMEL CIGARETTES, R.J. Reynolds, PO Box 2959, Winston-Salem, NC 27102, USA.**

Contact: Asia-Pacific People's Environment Network (Appen), c/o Sahabat Alam Malaysia, 37, Lorong Birch, 10250 Penang, West Malaysia.

The Commonwealth Development Corporation has loaned money to Malawi and Zambia for tobacco schemes. A spokesman confirmed that it would still be the policy of the Corporation to finance tobacco projects, because the crop was considered of economic importance in some countries. Even the International Fund for Agricultural Development, a body with a strong record of concern for the poorest, is financing a scheme in Malawi part of which is to help the development of tobacco.

Stop growing Tobacco

This type of aid should be ended. But there are other key questions—should western tobacco companies be allowed to damage the environments and the lives of people in the Third World in the way that is now happening? Also, can smokers justify the damage to the land of the Third World that the habit causes?

On a worldwide scale the introduction of solar units to cure tobacco could save as much as nine-tenths of the trees that are axed each year for all purposes, meaning that millions of fertile land would continue to be protected by trees and that food could be produced on land that now grows trees for the curing barns. But although solar curing units are preferable to wood, the best option would be the phasing out of tobacco altogether.

There are alternatives for land which now grows tobacco. These include cereals, pulses, bananas, coconuts, pineapple and vegetables. But if farmers are to be persuaded to switch to the alternatives they will

need paying for their crops in the timely way that tobacco companies normally pay them—usually without delay.

There is tension between Ministries of Agriculture and Health in tobacco growing countries, with agriculture being uncertain of how a switch from tobacco might best be handled. But a long standing rift between the FAO and the World Health Organisation now appears less marked. Whereas in July 1983, at the time of the fifth World Conference on Smoking and Health, in Winnipeg, the FAO was stressing the benefits of tobacco, its September/October 1984 edition of *Ceres* carries the Forbes/Thompson research which shows that growing tobacco is an economically poor crop. As the facts become known so policy will change.

Tobacco has long been known as a killer to the people who smoke it. As a killer of land it has its own grim record. Enough is known about the many-sided damaging effects of the tobacco industry to quicken the process, without delay, of burning through its flimsy edifice. It deserves no future.

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Britain's Polluted Drinking Water

Many water sources in Britain fail to meet the standards laid down in the European Commission's recent *Directive on the Quality of Water Intended for Human Consumption*.

Until 18 July 1985, Britain did not have any defined, quantitative standards for drinking water quality. From the early Waterworks Acts of the 1840s, through the First and Second Public Health Acts of 1848 and 1936 to the Water Act of 1973 which brought into being ten Regional Water Authorities in England and Wales, the only legal stipulation was that drinking water should be 'wholesome'—that is not prejudicial to health. It is now thought that the term 'wholesome' was originally coined by a public agitator, John Wright in a memorandum written in 1828.¹

In 1980, however, the European Commission notified member states of its intention to introduce a new Directive controlling water quality.² All EEC governments were given five years to meet standards based on 62 water quality parameters from Aluminium to Vanadium. The Directive provides "Guide Levels" (GLs) and "Maximum Admissible Concentrations" (MACs) for each parameter. For nitrates, the GL was set at 25mg per litre, whilst the MAC was set at 50mg per litre.

5 million People Affected

Despite the five year preparatory period, 5 million people in Britain still receive drinking water which falls outside the standards set out in the legislation. To overcome this, the

agency responsible for implementation, the Department of the Environment (DoE) intends to grant some 350 exemptions or *derogations* to specific water sources. They are permitted to do this under Article 9 of the Directive provided that the source does not constitute a 'public health hazard'. Derogations are specifically not permitted for toxic or microbiological contaminants (these include heavy metals, polycyclic aromatic hydrocarbons, viruses and so on).

Where water sources fail to meet the EEC standards on toxic or microbiological grounds, the DoE must apply to the European Commission for a delay and attach a programme of work expected to rectify the contamination within a defined period. Delays are allowed under Article 20 provided that the affected populations are geographically limited. The DoE has applied for a four year delay on lead and a ten year delay on all small private supplies. The geographical delineation in the latter case is the British Isles!

Presently, nearly all of the relevant information concerning drinking water quality resides with the Regional Water Authorities and Statutory Water Companies in England and Wales, the Regional Councils in Scotland, and the NI DoE in Northern Ireland. However, under the provisions of the Control of Pollution Act Part II, it will be difficult to deny this information to the public, and it is suggested that individuals and organisations concerned for the quality of public water supplies seek information on relatively specific topics.

Pesticides

Under direct instructions from Ministers, the DoE has asked Water Authorities effectively to ignore contamination of the public water supplies by pesticides. The interesting justification for this is that there are too many different types of pesticides in Britain to apply a simple standard! The few Authorities which actually analyse for pesticides may continue to do so, but those Authorities and other water suppliers (the vast majority in fact) which do not look for pesticides may continue in ignorance. There are no specific moves to stop using water sources known to be contaminated with excessive concentrations of pesticides which are "quite common" in drinking waters at or about the 0.05µg per litre level. Examples include Atrazine and Simazine. When it is considered that only 12-40 per cent of all pesticides are detectable at levels below 1.0µg per litre, the extent of the problem becomes obvious.

Lead

Lead water piping was considered to be a health hazard as long ago as 1845 in Boston, USA.³ Lead is a neuro-toxin which has been demonstrated to depress the intelligence of children living in areas with high levels of lead in drinking water. Lead in water is likely to be the greatest source of high blood lead levels in many parts of the UK.⁴ It is likely that lead solder (used in plumbing) will finally be banned by new model water by-laws soon to be released by the DoE. But there are still hundreds

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of thousands of homes in Britain where lead solubility is a major problem. It is extremely unlikely that the necessary investment for treatment works and removal of lead piping (£3,000 million—£1,000 million) will be committed by 1989—that is, in time to comply with the time-scale of the delay which has been sought.

Nitrates

Although the European Commission set a Maximum Admissible Concentration of 50mg per litre (presumably on grounds of public health), the British Government has elected to:

- 1) Allow water suppliers to average their results over 3 month periods to help them meet the MAC;
- 2) Relax the standard to 80mg per litre because their medical advisers cannot detect a health risk from nitrate levels up to 100mg per litre.

Nitrates are of concern to more than 900,000 consumers supplied by 52 water supplies in Lincolnshire, Norfolk, Cambridgeshire, Staffordshire and other areas in Yorkshire, Anglian and Severn Trent Water Authority Regions. Because of the accelerating nature of a problem caused by the excessive use of nitrate-based fertilisers on dry, arable lands, the contamination is guaranteed to get worse. It has often been described as a chemical 'time-bomb' by water scientists. By relaxing the standard for nitrates, the DoE has postponed having to spend an estimated £200 million.

Aluminium

Because, like nitrates, aluminium is not classified as a "toxic" contaminant, derogations are available from the DoE.⁵ Aluminium is normally present due to its use in water treatment. However, exemptions are only allowed under Article 9 on the grounds of exceptional geographical or meteorological conditions, not waterworks practice. A similar problem arises for

Table 1 Parameters which are expected to cause most problems for water planners in Britain.

DIRECTIVE PARAMETER NUMBER	SUBSTANCE	MAXIMUM ADMISSIBLE CONCENTRATION
15	Aluminium	0.2mg/l
20	Nitrate	50.0mg/l
21	Nitrite	0.1mg/l
32	Organochlorines	100.0µg/l
51	Lead	50.0µg/l
55	Pesticides	0.1µg/l
		(single substances)
		0.5µg/l
		(total substances)

iron, and it is a debatable point if nitrate contamination is due to "the nature and structure of the ground".

Other problems which are expected to cause major headaches for Britain's water planners trying to meet European standards in the future include nitrites, organochlorine compounds⁶ and human enteric viruses. Table 1 gives a summary of the most problematic Maximum Admissible Concentrations stipulated by the EC directive.

Lack of Funds

But we should not be too quick to condemn the Department of the Environment or the Regional Water Authorities (RWAs) for apparently side-stepping important portions of the drinking water legislation. Several RWAs have made substantial efforts to meet the standards in the Directive. The Thames Water Authority has a policy of eliminating all of its sources presently subject to derogation or delay or else improve them to match the standards.

It is well known that the entire water industry is underfunded by at least £100 million per

annum. Water Authorities are subject to arbitrary and damaging external financing limits (EFLs) in order not to increase the Public Sector Borrowing Requirement (PSBR). Thus it is unfair to blame the DoE and the Water Authorities for failing to meet standards; the criticism would be better aimed at those who set the investment limits.

David Wheeler

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Books

Is Science compatible with a 'Love of Life'?

Biophilia: The human bond with other species by E.O. Wilson, Harvard University Press, Cambridge, Mass., 1984, 157pp £12.00

Having attended several of E.O. Wilson's lectures at Harvard, I know that this man is no ordinary scientist. He is a brilliant and dynamic lecturer, who enjoys nothing more than acting out in front of his audience the three aggressive stages of response of the Rhesus monkey, culminating in attack. Or demonstrating, on the podium, the navigational and reproductive peculiarities of certain species of ant. His is passionate about science, and this passion is nowhere more evident than in his latest and most personal book, *Biophilia: The human bond with other species*.

Wilson is most famous for his controversial theory of sociobiology, in his own definition, "the systematic study of the biological basis of all social behaviour." Every single social attribute of humankind from aggression to altruism, is meant to have an evolutionary explanation for why it has survived through natural selection, how it has been shaped and preserved in our genetic structure.

There is no need to be well-versed in sociobiological theory to read this new book. It will help, though, to remember that Wilson considers sociobiology to be a "new synthesis" (as a challenge to the "modern synthesis" paradigm of neo-Darwinism so central to mainstream biology today). The fault with this statement is that it reveals sociobiology to be merely another attempt to view the world from the all-seeing eye of a single discipline—in this case evolutionary biology. Wilson takes his own specialised branch of knowledge and imagines that it knows all.

The scientific method of viewing the universe through a narrow-band, single colour filter naturally leads one to see things a single way.

Biophilia suffers from this flaw as well, even though it is a much more modest attempt at presenting a personal philosophy and a defense of the essential value of life itself to our own species. It is not this value itself that is misguided, only the way it is presented.

The term "biophilia" literally means "love of life". Wilson wants to show that this is a fundamental (and hence, naturally selected and adaptive) characteristic of the human species, thereby providing "scientific evidence" for the need for a biological and conservation ethic. This is an admirable aim. It is only his method of argument that can be objectional: "Modern biology has provided a genuinely new way of looking at the world that is *incidentally congenial* to the inner direction of biophilia. In other words, instinct is in this rare instance aligned with reason." Herein lies the crux—any "new synthesis" must be more than incidentally congenial towards this end. It should be *centered* about love of life; not rarely aligned with instinct, but based on instinct and its development and understanding.

The double nature of excellent conclusions and twisted logic pervades in the book. The direction it moves in is a positive one, but there are many obstacles along the route it has chosen to follow.

Wilson seems to be reluctant to apply the emotionally loaded word "love" to his definition of biophilia, preferring instead "focus on life" or "affiliate with life". Clearly he wishes to avoid any form of sentimentality which might be considered "unscientific". And, whatever else one might want to call him, Wilson is, above all, a scientist. As this book is the most personal of any he has written to date, we can trace his own personal evolution to discover what this means and how he became this way. The story is a fascinating one: It begins with a small-town boy growing up in a land where traditional values are still upheld—the American Deep South. And with this tradition comes the spreading of the myths that there are strange and terrifying creatures to be found in the nearby woods and swamps. "It is a wonderful thing to grow up in southern towns where animal fables are taken half seriously, breathing into the adolescent mind a sense of the unusual and the possibility that something extraordinary

might be found within a day's walk of where you live."

As if to preserve this belief, the young E.O. went searching after giant snakes and colonies of insects, learning to feel far more comfortable with them than with human company. "It helped at the outset that I was an only child with indulgent parents . . . and our neighbours were equally tolerant of eccentric kids." And it is this fixation on fantasy and apparently strange subjects that leads to the development of the scientific mind in our society. We encourage this type of alienation. It is considered productive, even if most of us do not understand its substance or its fascination. Note, though, that it began in myth, or the very fact that myths were disintegrating: fearful stories that all secretly wished were true.

The little boy grew up to be the reknown zoologist and entomologist, travelling to remote wild lands of the Earth in search of new and strange creatures to classify and whisk back to museums in Cambridge, Massachusetts and other repositories of learning. Wilson recounts his travels in elegant prose, as he passes through tribal villages whose inhabitants he feels nothing in common with, to wild species he feels he understands as long as he knows their latin names. Sometimes he is taken to question whether humanity's development has "gone too far", but before he can burden his mind too much with moral obligations, he scoops up a handful of soil and realises that "this unprepossessing lump contains more order and richness of structure and history than all the lifeless planets of the universe. It could take almost forever to explore." In mere wonder and scientific fascination he tends to lose sight of exactly what it is he has devoted his life to.

And perhaps the most revealing statement of this is as follows: "People often ask me whether I see any human qualities in an ant colony, any form of behaviour that even remotely mimics human thoughts and feeling . . . The answer is that I open an ant colony as I would the back of a Swiss watch. I am enchanted by the intricacy of its parts and the clean, thrumming precision. But I never see the colony as anything more than an organic machine." This analogy is the inherent contradiction of mainstream science today—the one fallacy that has led to do much error in our handling of the world—that the machine is some kind of organic unit that evolved out

of nature itself. It is this same philosophy that exposes the danger in Wilson's notion of biophilia; he has the audacity to say the "mechanophilia, the love of machines, is but a special case of biophilia." Man is supposed to love machines because they are "quasi-alive". Wilson forgets that man loves machines because they are completely subservient, do what they are told, and make life ostensibly so much easier.

So Wilson's biophilia is actually an evolutionary justification for the machine age. It begins, he says, with the hunter instinct. Now that society has made this instinct somewhat redundant the "naturalist's trance" remains an adaptive quality—"We stay alert and alive in the vanished forests of the world." The naturalist is the "civilised hunter." But when does the naturalist become the scientist? Wilson fails to make a distinction. Is it when he begins to see insect nervous systems as "wiring diagrams?" Is it when he decides to sample the otherwise inaccessible upper reaches of the rainforest canopy by spraying insecticides and catching the fallen life forms on plastic sheets spread across the ground? Is it when the love of a subject becomes an obsession to tear it apart into tiny pieces? When the results of one's labours end up in specialised journals that are read by only a handful of people around the world? No, Wilson does not explicitly state the demarcation, but our "instincts" can sense it.

But let us examine how he defends science. Wilson's comparisons between science and the arts/humanities are illuminating towards this end. He begins by stating that the "two cultures" postulated by C.P. Snow must be linked or "the relation between man and the living world will remain problematic." Though Wilson emphatically denies that any "Noble Savage" ever existed, he returns once again to the primitivist metaphor to explain his understanding of the distinction: "Humanists are the shamans of the intellectual tribe, wise men who interpret knowledge and transmit the folklore, rituals, and sacred texts. Scientists are the scouts and hunters." Little distinction is made between arts and humanities. From here he proceeds to identify art with individualism—artists see the single person as the "potential seat of human greatness," inventing special cases immediately while scientists seek general natural laws. The artist "does not press on towards . . . self-dissolution within the big picture. All his skills are aimed at the instant

transference of image and control of emotions of others . . . The world of interest is the mind, not the physical universe on which mental process feeds. The first tensile measures (of art and science are) the same, but the two then diverge, the poet inward and the scientist outward into separate existences."

Contrast this with the *inward* nature of Wilson's own escape to the detailed world of Linnean description of living objects. It may feign objectivism, but it is certainly a withdrawal from the world of human interaction and the lifeworld of ecosystems that includes other species. How can one say one is dealing with the "greater" world if one is publishing research results that only a handful of sentient beings can or want to understand? Similarly, the artist may communicate personal vision, but he does so to reach and possibly transform a great number of people. He does not work for selfish reasons alone, nor to "control others" or achieve individual fame. Nevertheless, it is this last point that Wilson seems particularly "jealous" of: "No one rewards the scientist for what he knows," he laments. What of government funded research contracts, nearly complete funding of education, tenured university positions that give tremendous time for research, high paying consulting jobs in the private sector? After cautioning against romantic views of nature being indifferent to the digitising actions of scientists, Wilson turns right back and creates a romantic view of the struggling scientist as "civilised hunter, brother to the prospector and treasure seeker", a wandering loner in quest of greater truths.

But even in such flights of fancy, Wilson always has a machine-like explanation in mind: "Mathematics and beauty are devices by which human beings get through life with the limited intellectual capacity inherited by the species. Like a discerning palate and sexual appetite, these aesthetic contrivances give pleasure. Put in more mechanistic terms, they play upon the circuitry of the brain's limbic system in such a way that ultimately promotes survival and reproduction." So there must be a rational answer to every question.

In fact, Wilson is far more successful on the more nebulous topic of how science and art are similar. Here we find a few true insights towards a synthesis: "The role of science, like that of art, is to blend exact imagery with more distant meaning . . . The essence of art, no less than of science,

is synecdoche; a carefully chosen part serves for the whole." (Quite a contrast to the all-knowing claims expressed elsewhere.) "Picasso defined art as the lie that helps us to see the truth. The aphorism fits both art and science, since each in its own way seeks power through elegance . . . The innovator searches for comparisons that no one else has made . . . *They must be true* (italics Wilson): The same can be said of outstanding achievements in (science) and the arts".

These are all useful comments on the methods of human understanding. Too bad they are only "incidentally congenial" to his main argument that upholds specialisation and separation of modes of human inquiry: "The fiery circle of disciplines will be closed if science looks at the inward journey of the artist's mind, making art and culture the objects of study in the biological mode, and if the artist and critic are informed of the workings of the mind and the natural world as illuminated by the scientific method." In fact, this cross-fertilisation (to borrow a scientific term) is the only way that innovation and synthesis can emerge, and the real limitations of the disciplines be recognised. It is far more productive than a scientist simply saying that art is the result of natural selection. By concluding his chapter on science vs. art with such a statement, Wilson effectively argues for the acceptance and continuation of C.P. Snow's division, and he uses this separation to romanticise and glorify science while denigrating art into an inward, selfish pursuit, ignoring its real social and interactive roles in shaping society. The fact that such roles for science are generally far more distant from most individuals while exerting far more control on their lives is indeed worth considering, but Wilson shies from it.

The final topic Wilson leads up to is the need for an ethic of conservation in answer to both the instinct of biophilia and the scientific need to know ever more. He rightly believes we must be always aware of long-term disadvantages of any short-term gain, as well as developing a sense of responsibility towards the future as well as to life itself. Thus cutting rainforests for economic reasons is "like burning a Renaissance painting to cook dinner." The natural world has a priceless value in itself, and must be preserved for this alone. Yet when addressing the question of what it is that we really owe our remote descendants, Wilson suggests "nothing. Obligations simply lose

their meaning across centuries. But what do we owe ourselves? Everything. If human existence has any verifiable meaning, it is that our passions and toil are enabling mechanisms to continue that existence unbroken . . . It is for ourselves that we think into the distant future." By bringing such a responsibility close to home, it is possible that a greater number of people will be convinced of its importance. This is valuable. But as usual, Wilson takes his mechanistic reasoning too far and then states that "people will conserve land and species fiercely only if they foresee a material gain for themselves, their kin, and their tribe." If this materialism is truth then it is a sad thing. It is, though, a summary of Wilson's suggestion for a bio-ethic—"The drive toward perpetual expansion—or personal freedom—is basic to the human spirit. But to sustain it we need the most delicate, knowing stewardship of the living world that can be devised." Wilson advocates the nearly impossible co-existence of progress and management of nature. But in his world view, competition rather than co-existence is the norm, and he would doubtless enjoy watching these incompatibilities battle against each other so the fittest may win. No wonder he asks, at the end "Is it possible that humanity will love life enough to save it?" The answer is NO, if humanity is allowed to become as distant from nature as Wilson's expansionism would encourage. What is needed is more interaction, more breaking down of barriers, not the view of the world situation from the standpoint of one specialisation at the exclusion of the others, but a breakdown of the concept (and imagined need) of specialisation itself.

The fault of Wilson's book is the blurring of the situation so that things became so much simpler and clearer than they actually are. Wilson's intentions are in the right place: it is likely that a restructuring of science so that it is based on love of life would present quite a challenge to our present definitions of knowledge and the sacred. But a science that reaches this conclusion only as an "incidental consequence" of its opportunistic instincts must have started in the wrong place, even if it is now beginning to get the right idea.

David Rothenberg

The Future of Oil

WORLD OIL: COPING WITH THE DANGER OF SUCCESS by Christopher Flavin, July 1985, World Watch Papers No 66. £2.00 available from Worthyvale Manor, Camelford, Cornwall PL32 9TT. UK.

With Christopher Flavin's clear account of the role of oil in world energy use the Worldwatch Institute has once again maintained its high standard of analysis. As Flavin points out, oil is the world's most important fuel, about \$3 billion worth of oil products being used every day, yet when it comes to forecasting the future, energy planners and forecasters have almost invariably got it wrong. In the late 1970s, when oil production was at its peak of 66 billion barrels a day, and the spot price was at times as high as \$40 a barrel, they assumed World oil production would continue to rise, to at least 90 million barrels a day, and that the price would top \$50 a barrel. Well, the price of oil has tumbled, production is down to some 58 million barrels a day, and the world is in the throes of an oil glut. Nor has the availability of cheaper oil led to a resurgence of the world economy.

Where then did the analysts go wrong? As usual they made the simple mistake of extrapolating from past trends without fully appreciating the uniqueness of the first decades following World War 2, and they also expected developing countries, with two thirds of the world's population, to make great strides in catching up with the developed industrialised world. Although industrial development has undoubtedly taken place in the Third World it has not had the desired effect. On the contrary, in addition to an unprecedented ravaging of the environment, it has led to shanty town misery and poverty on a scale that has never before been seen among humanity.

The rapid increases in the price of oil during the 1970s had several major consequences. Primarily they led to unsurmountable payment of balance problems among many developing countries and, to attempts being made to reduce dependence on oil imports. Improved energy efficiency, particularly in the industrialised world, played its part in reducing demand for oil, as did the use of alternative energy sources, in particular coal and natural gas and to some extent nuclear power to replace oil burnt in power stations. But the price increases, brought about through the OPEC cartel and shakily maintained through the actions of Saudi Arabia, provided a spur for the

development of more costly oil fields, such as those in the North Sea. And it is in the development of those other crude oil resources and in their rapid exploitation that Christopher Flavin sees a situation arising of some importance for the future.

The accelerated search for oil outside the Middle East has had its rewards, the North Sea reserves being one and the more extensive discoveries in Mexico another. Yet that search has confirmed that probably as much as 56 per cent of the world's proven oil reserves and 23 per cent of estimated undiscovered reserves are in the Middle East. "Rising production of non-OPEC oil has added 5 million barrels per day to the world oil supply and played a major role in the oil glut," says Flavin. "But, despite this recent boost the long term oil outlook remains dominated by Middle Eastern members of OPEC who have 56 per cent of the world's oil. In fact, recent shifts in world oil markets have some rather disturbing long term implications: the rate of depletion of the world's most abundant oil resources has slowed, while depletion of some of the scarcest and most strategically important reserves has accelerated," and he points out that, at the 1984 extraction rate, US proven oil reserves will last only nine years, whereas Saudi Arabia's oil reserves will last about 100 years.

Despite the obvious dangers of such a situation, the US Department of Energy, the International Energy Agency and oil companies alike continue to project a growth in world oil consumption of as much as 10 per cent by 1990, as well as higher prices. They appear to be heedless of the crisis that would be generated worldwide should oil production fall increasingly into the hands of a single bloc of countries in the Middle East.

Because of the glut of fossil fuels on the market, and the tumbling of prices the commitment to both energy conservation and to alternative renewable energy sources has faded somewhat. "The challenge," says Flavin, "is to sustain the positive momentum that has developed in recent years, and amid conditions that cry out for complacency, prepare for a time when oil will be prohibitively expensive throughout most of the world."

Flavin clearly sees technological developments, combined with a determination to push through an energy conservation policy as offering the best solution to developed and developing countries alike. Thus he is

not critical of the process of development *per se*, just its inefficiencies and its subjection to the manipulation of the market, and he remarks "the enormous strides away from oil dependence in the past decade provide much reason for optimism."

But how big are those strides? And can we really expect our ecosystem to continue to support the onslaughts made upon it through the use of automobiles and other energy guzzling devices, however efficient thermodynamically we have made them? But whether one agrees with Flavin's conclusions and hopes, his *World-watch Paper* contains excellent material supported by highly relevant graphs and tables and is to be recommended.

Peter Bunyard

A Warning to Women

THE BITTER PILL by Dr Ellen Grant.
Elm Tree Books, £7.95.

Some twenty years have gone by since the pill first began to be widely used in the UK and now that we have arrived at the second generation of pill takers, Dr Grant is concerned that in their eagerness to gain sexual freedom, women are sacrificing their health and that of their unborn children. She warns that once a woman has taken the pill she may have permanently damaged her body.

Dr Grant who has been associated with research into oral contraceptives since 1961, points out that susceptibility to every known illness is increased by the pill and she explains how it is that women who both smoke and are on the pill are particularly at risk. She is convinced that steroids, (and the pill is a steroid) increase the chances of giving birth to damaged babies and gives evidence to show how dangerous it is to tamper with the delicately balanced hormones of the body. Above all she wants women to know the true facts linking the pill with cancer, pointing out that there has been an alarming increase of cases especially in young girls between the ages of fifteen and twenty-four.

Young girls are particularly vulnerable and Dr Grant believes they should be alerted to the risks they are taking which may affect their chances of having normal healthy families. She brings much evidence to show the long term effects of taking the pill and offers sound advice to those seeking alternatives. The book has been carefully written covering all

aspects of the pill and revealing many disturbing medical facts which are frequently never fully explained by those prescribing it.

Libby Day

The Atmosphere and Life

CHEMISTRY OF ATMOSPHERES
by Richard Wayne. Clarendon Press,
Oxford 1985, 360pp, £14.95 (Paper-
back) £30.00 (Hardback).

The continued existence of life on the earth is intimately linked with the composition and stability of our atmosphere. Besides providing essential oxygen for higher life forms and CO₂ for photosynthesis, the atmosphere acts as a shield against ultra-violet radiation and as a thermal blanket, helping to maintain an equable surface temperature. Most of the components of this tenuous envelope of gas are transient with turnover times of less than ten thousand years and yet the atmospheric composition has remained sufficiently stable over hundreds of millions of years for the continued evolution and development of terrestrial life. In the longer term, equable temperatures have been maintained for thousands of millions of years despite an increase of some 25 per cent in the radiant energy received from the sun. It is consequently surprising that the study of atmospheric chemistry is a relatively young science. Its development has been spurred on by the increasing impact of man's activities. On the credit side, the development of rocket technology and remote sensing techniques have provided much new information about the chemistry of the upper layers of the atmosphere. The exploration of the planets has also resulted in a broader perspective against which to view our own uniquely oxidising atmosphere. On the debit side, increasing industrialisation has begun to influence atmospheric chemistry on a global scale, providing both a serious cause for concern and a stimulus for further research.

This beautifully written book seeks to present a picture of our current knowledge of the chemistry of the earth and the other planets from the perspective of physical chemistry. As such, it contains much technical detail for the specialist reader but it is also liberally sprinkled with clear commentaries on the implications of the scientific findings. Each chapter is provided with a critically selected and well organised, annotated bibliography which enables the reader to dig more deeply into the scientific literature where necessary. Another

feature of the presentation is the imaginative use of charts and figures to present complicated concepts in a clear and easily assimilated form.

The first three chapters constitute an introduction by summarising in turn: The chemical composition of the atmosphere; the fundamentals of atmospheric physics; and the importance of solar energy in triggering photochemical reactions in the atmosphere. The latter chapter provides an interesting first insight into the problems of modelling complex systems subject to physical and chemical variation.

The next three chapters consider in turn the stratosphere (at altitudes of 40-60 kilometres), the troposphere (at altitudes of 1-17km) and the ionosphere (at altitudes greater than 70km). They deal primarily with aspects of the earth's atmospheric chemistry that are most directly affected by man's activities.

Discussion of the stratosphere is concerned predominantly with high energy photochemistry and the production and consumption of ozone. The range of topics covered is impressive. The intricate cycle of chemical reactions is influenced by a variety of natural phenomena, including the intensity and variability of radiation and of particle storms from the sun, the influx of material from ablating meteorites, the regular transport of components from the troposphere, and episodic injections of material from volcanic eruptions such as those experienced recently from Mount St Helens and El Chichon. Man has punctuated this complex pattern of events by sporadic nuclear tests and by the gradual build up of a variety of compounds which either trickle through from the troposphere or are directly injected by high flying supersonic aircraft or by the increasingly regular space shuttle flights. From a simplistic point of view, one might expect ozone concentrations to be reduced by reaction with nitrous oxide released from agricultural fertilisers, by bromoform released from soil fumigants, by chlorocarbons released from aerosol packs, by chlorine released from the space shuttle, by chloroform and carbon tetrachloride released from a variety of industrial processes and by nitrogen oxides and hydrocarbons released from supersonic aircraft. In fact, the net effect of some of those interactions is to accelerate the production of ozone. It is difficult to discern a trend in the observed stratospheric ozone concentrations and models used to predict the overall effects are notoriously fickle.

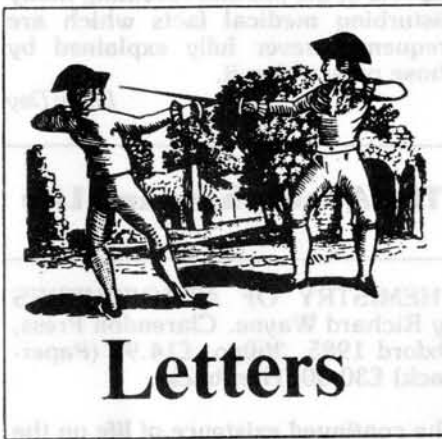
The chapter on the troposphere focuses on the chemistry of the hydroxyl radical and the way in which the resulting chain reactions are associated with the production of acid

rain, of the thick 'pea-soup' London fogs of the 1950s and of the highly irritating clear air or photochemical smogs experienced in Los Angeles. The problems of unravelling and modelling the processes at work in the troposphere are far more difficult than those experienced in the stratosphere. The resulting problems are well illustrated by an interesting discussion of the impact of control measures on the persistent Los Angeles smogs. The clean up of exhausts using catalytic scrubbers and 'lean-burn' techniques to remove carbon monoxide and hydrocarbons were only partially successful because corresponding controls on the production of nitrogen oxides were difficult to apply. The imposition of a lower speed limit and an increase in the emphasis on public transport would appear to provide a more lasting solution to the problem. This section is completed by a chapter on the ionosphere which presents a clear picture of the properties of the Heaviside and Appleton layers and their importance in telecommunications. This leads nicely on to a section dealing with the extra-terrestrial planets and the evolution of atmospheres.

This final section is concerned largely with the surprisingly detailed information that has become available in the last decade on the chemistry of planetary atmospheres. The first chapter of this section deals with the photochemically induced luminescence (the 'airglow') which was the main tool for analysing planetary atmospheres prior to the development of deep space probes. The results obtained from the various US and Soviet space probes to the planets are discussed in the second chapter. The most dramatic finding to arise from these studies is that the earth's atmosphere can in no way be considered as a simple interpolation between the atmospheres of our nearest neighbours, Mars and Venus. The earth's atmosphere bears the distinct signature of biological processes and the final chapter of the book considers the implications of biological involvement in the evolution and stability of the earth's atmosphere. However there is relatively little quantitative discussion of the processes controlling atmospheric composition and this is probably the weakest aspect of the book.

All in all, this is a well considered, clearly presented and interesting book. If you are interested in the problems associated with atmospheric pollution or just curious about the scientific background to many current controversies you should persuade your library to purchase this book.

Michael Whitfield



Letters

David Abram: The Perceptual Implications of Gaia

Dear Sir,

I wish to make some comments on David Abram's excellent article.

1. If we look at Kant rather than Descartes we have the view that time and space are categories of our perception, not properties of the external world ('Critique of Pure Reason'—Transcendental Aesthetic). Thus, if we accept this view, we do not know the outside world, only our representation of it in the space-time categories we add to our perceptions as we receive impressions of them.

2. "Lovelock is underscoring the fact that neither humanity nor any other species we know can exist outside the incredibly complex Terrain metabolism of which our bodies and minds are an internal expression." If we reflect on this extremely interesting statement the conclusion is that the external corresponds in some way to, possibly is a projection of, the internal psychological world. Thus subjective and objective are one and the same.

3. I would add something on the teachings of Gurdjieff about man's place in the Gaian reality. Having castigated men as 'bi-ped destroyers of nature's good' he then, as elucidated by Bennett, demonstrated that one of man's key functions is stewardship of the natural world on which we depend and of which we are a part. There may be those who would find these teachings of interest to the idea of Gaia. Are we perhaps nature's or Gaia's brain-cells entrusted with the role of stewardship?

Yours faithfully,
Ian G. Duncan
Aberdeen, Scotland

Star Wars and Ozone

Dear Sir,

Does any Ecologist reader know of an expert on the ozone layer of the upper atmosphere, in particular how it is affected by water vapour from large rockets? I'm trying to get data on how Star Wars will affect the ecosphere in putting the necessary weaponry into space. I gather that to date the main problem is fluorocarbons which are causing an enlargement in the "ozone hole" over Antarctica, so that more UV is coming through.

I've heard it said that the large Saturn booster rockets caused holes of hundreds of miles in the 'F-layer' of the upper atmosphere and damage to the ozone layer; and that the scale on which Star Wars is envisaged would produce far larger damage. This has been brought to the world's attention by the explosion of half a million gallons of fuel by the last space shuttle.

If ozone loss is proceeding faster than expected, and, further, if sea levels rise due to melting of Arctic/Antarctic ice from UV radiation, then one would have a sound ecological argument against SDI.

Yours faithfully,
Nick Kollerstrom
SANA Star Wars Study Group
Worplesdon, Surrey.

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RADIOACTIVE WASTE MANAGEMENT Summer School from 28-31 July 1986 at the Cothorne Hotel, W. Sussex. Details from Miss Helen Raquet, IBC Technical Services Ltd. Bath House, 3rd Floor, 56 Holborn Viaduct, London EC1A 2EX.

International Symposium on ECOLOGY AND MANAGEMENT OF WETLANDS. June 16-20, 1986, Charleston, South Carolina. Details from International Society of Anaerobiosis, 2730 Savannah Highway, Charleston, South Carolina 29407, USA.

SHORT RESIDENTIAL COURSES at the Centre for Alternative Technology, Llywngwern Quarry, Machynlleth, Powys, Wales. Ask for detailed programme.

OIL POLLUTION CONTROL COURSE. 19-24 October 1986. Contact Caroline Little, Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR, UK.

THE GREAT BRITISH BIKE RIDE from Land's End to John O'Groats. Saturday, 26.7. to Saturday 16.8. For details write to Bike Events, PO Box 75, Bath, BA1 1BX, Avon.

OIL INDUSTRY NURSES SYMPOSIUM, 24, 25, 26 September 1986 at Newnham College, Cambridge, UK. Details from Caroline Little, Institute of Petroleum, 61 New Cavendish Street, London W1M 8AR.

COUNCIL FOR NATIONAL PARKS celebrates 50 years with an Exhibition at the London Ecology Centre, Covent Garden from 6-27 May daily except Sundays and is holding a one-day Conference on the Second Leisure Revolution on 20 May. Further information from CNP, 45 Shelton St., London WC2H 9HJ.

MIND, BODY, SPIRIT FESTIVAL will be held in Bristol at the Exhibition Centre on 18 and 19 October 1986. Enquiries to: New Life Designs Ltd, Suite 301, London House, Old Court Place, London W8 4PF. Tel: 01-938 3788.

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Name: (Block letters please)

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Resources, Books, Documents, Slide Shows and Films

General

A Pattern of Peoples (Robin Hanbury-Tenison, Angus & Robertson, London, 1975). Describes the author's journey among the tribal peoples of Indonesia's Outer Islands. Available from Survival International £4.95 inc. despatch.

The Tribal Peoples of Indonesia, Survival International Supplement. Educational pack summarising the present plight of the tribal peoples in Indonesia. 8pp including pictures and maps. Available from SI, 80p inc. despatch.

Survival International News. A lively newsletter which reports on the global problems confronting tribal peoples and the activities of Survival International. Available to members (for membership details, see inside).

Survival International Review. Published annually in book form, the Review provides detailed analyses of the contemporary situation of tribal peoples.

TAPOL Bulletin. A highly informative bi-monthly newsletter which focuses on death squads, political prisoners and other abuses in Indonesia, East Timor and West Papua. Available from Tapol £7.50/year.

The Ecologist. Vol 15, Nos 1/2 and 5/6, 1985, £4 each. Two special issues devoted to unmasking the World Bank's development policy. They argue that the Bank is responsible for causing poverty and malnutrition on a global scale.

West Papua

West Papua: The Obliteration of a People (Tapol, London, 1984, 2nd edition, £3.50 inc. despatch). Traces the history of West Papua from the ending of Dutch rule through the political manipulations of the 1960s into the present era of Indonesian domination. The first issue sold out in a matter of months; this is probably the most comprehensive overview of the situation in West Papua available.

Indonesia's Secret War (Robin Osborne, Allen and Unwin, 1985). A journalist who has worked in PNG and West Papua for many years, Osborne details the West Papuans' struggle for independence from their betrayal by the United Nations until the present day.

West Irian, East Timor and Indonesia (Minority Rights Groups, London, 1979). Now rather dated, gives a useful summary of Indonesia's annexation of its '26th and 27th provinces'.

The Lost World of Irian Jaya (Robert Mitton, Oxford University Press, Melbourne, 1985, £28.50).

East Timor

The War against East Timor (Carmel Budiardjo and Liem Soei Liong, Zed Books, London, 1985. Available from Tapol, £5.25 inc. despatch).

East Timor: Violations of Human Rights (Amnesty International, London, 1985, £2.00).

East Timor and the Shaming of the West (Alexander George, Tapol, London, 1985. £1.20 inc. despatch).

East Timor: Nationalism and Colonialism (Jill Jolliffe, University of Queensland Press, 1978).

An Act of Genocide: Indonesia's Invasion of East Timor (Tapol, London, 1979. £2.00 inc. despatch).

East Timor, Indonesia and the Western Democracies (IWGIA Document No. 40, Copenhagen, 1980).

East Timor: The Struggle Continues (IWGIA Document No 50, Copenhagen, 1984).

Timor Link (A Newsletter of CIIR, 22 Coleman Fields, London N1 7AF, UK).

Slide Show

Military Rule and Human Rights in Indonesia, West Papua and East Timor (Tapol, London, 1984). Available for hire from Survival International, for sale from Tapol £12.50 for solidarity groups, £25 for institutions, not including despatch. Incorporating 71 colour and black and white pictures with accompanying text.

Film

The Sakkudei (*Disappearing World*, Granada TV, 1974, directed by John Sheppard, colour, 16mm, 52 mins). About the tribal Sakkudei of Siberut off west Sumatra. The film contrasts the traditional way of life with the situation in the villages settled on the coast, where missionaries, money, the police and logging companies have imposed change. Available for hire from Survival International (UK only).

Groups

Survival International was established in 1969 to work for the rights of threatened tribal peoples to survival, self-determination and the use and ownership of their traditional lands. A non-denominational charity, it has consultative status as an NGO at the UN and EEC. Genocidal attacks on the Indians of Brazil provided the initial focus for SI's work. The organisation is now active on issues throughout South America and in all other continents. SI supports projects in health, education and land rights; co-ordinates a campaign network in over 50 countries; and publishes extensively on the problems confronting tribal peoples.

TAPOL was set up in 1973 to disseminate information about human rights violations in Indonesia, focusing then primarily on political prisoners (the word 'tapol' means political prisoner). It has since extended its campaigning to cover all aspects of human rights abuse by the Indonesian military regime, and campaigns vigorously against Indonesian military aggression and genocidal abuse in East Timor and West Papua. Its two-monthly *TAPOL Bulletin* has a world-wide distribution, and is the only English-language periodical which provides comprehensive information about human rights abuse perpetrated by the Indonesian regime.

Addresses

Survival International
International Secretariat
29 Craven Street
London WC2 5NT, UK
Tel: 01-839-3267.

Survival International (France)
16 Rue Littré
75016 Paris
France
Tel: 45-49-40-18.

Survival International (USA)
2121 Decatur Place NW
Washington DC 20008, USA
Tel: 202-265-1077.

Tapol
The British Campaign for the
Defence of Human Rights and
Political Prisoners in Indonesia
8a Treport St
London SW18, UK
Tel: 01-874-3262.

Friends of the Earth (UK)
377 City Road
London EC1, UK
Tel: 01-837-0731

IWGIA Fiolstraede 10,
DK-1171 Copenhagen K,
Denmark.