
BUGIS SETTLERS IN EAST KALIMANTAN'S KUTAI NATIONAL PARK

**THEIR PAST AND PRESENT
AND SOME POSSIBILITIES FOR THEIR FUTURE**

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PREFACE

This report presents detailed results of human ecology-anthropological research in a very specific place, with a specific ethnic group, and deals with a context which a particular national government sees as a specific “problem”. This would seem to make it an unlikely candidate for publication by CIFOR, an institution mandated and dedicated to research which is of widespread public benefit.

In fact, there is no such anomaly, and CIFOR is pleased to be able to widely distribute the results of this research.

This work deals with a specific instance of a very general, widespread issue – how to determine a balance between the interests of conservation and protection of biologically significant forests and the developmental well-being and financial interests of the forests’ residents (whether they indigenous or immigrants). The “Yellowstone model” of national parks in which no people are permitted to reside, reflects a view that local use is incompatible with conservation, and hence current residents must be evicted from any National Park – an issue that has been very divisive even within IUCN, for example. If relocation is indeed the strategy that governments choose, under what circumstances would current park residents leave voluntarily, and where might they go, and what future livelihoods might they pursue?

Related to this is the very general, recurring question of (as the authors explain) “what makes people change – or not change – their residence and their occupation?” A common context in which we find ourselves asking this question is when considering the impacts of industrial development outside forests on people’s choices of livelihood, employment and residence; choices that significantly impact upon their use of forests, particularly when those forests are legally classified as “Protected Areas”.

This research report is very important as an example of method – of how to find out what is really going on; how it comes to a comprehensive understanding of the context in which decisions are being made; and how to utilise prior information where appropriate, but yet break away from stereotypes and “conventional wisdoms” when they clearly are not in accordance with the facts of the particular case. For

example, the generalisation from the World Bank's Environment Division (cited on page 23) that a strategy of swapping land for land "leads to 'far superior' results in 'most situations' of involuntary settlement" may be so in the case of large dams, but is not universally valid – as this case study demonstrates convincingly. Similarly it indicates how misleading it can be to assume that all the occupants of National Parks are poor, almost destitute and willing to relocate to any alternate farmlands, or that they do not have prior knowledge of (and strategies pertaining to) relocation compensation schemes.

Although many elements of the "People in Protected Areas" dilemma may seem (superficially) very similar, part of the international significance of this study is in reminding us that it is essential to investigate the specific details of the particular case in order to develop useful, practical and efficient solutions.

Jeffrey A. Sayer
Director General

BUGIS SETTLERS IN EAST KALIMANTAN'S KUTAI NATIONAL PARK

THEIR PAST AND PRESENT AND SOME POSSIBILITIES FOR THEIR FUTURE

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Introduction

East Kalimantan's Kutai National Park now consists of 198,629 hectares of lowland rainforest and was first established as a "protected area" in 1936. Kutai is important for the conservation not only of plant and animal species but also of water resources for major industries and rapidly growing coastal communities adjacent to the park. The largest of these communities, Bontang, estimated to have more than 80,000 people, is said to have been a fishing village of about 7,000 people before industrial development began in the 1970s.

The park includes some previously logged or mined tracts and a number of settlements. This report is concerned with the people of Teluk Pandan, Selimpus/Kandolo and Sangkimah, settlements of Bugis farmers and fishers within the national park's boundaries (see Figure 1). For the sake of planning long-term park management (which is to be integrated with development planning for the region as a whole), provincial and regional governmental bodies and park authorities favour moving the people in these settlements out of the park to obviate the need to deal with such problems as controlling the size of enclave populations, keeping their use of land within permanently fixed boundaries, and making sure that they do not engage in logging, hunting and other prohibited activities. A practical problem

ensuing from this official position is how to relocate the people both effectively and equitably. The corresponding research problem is finding out enough about the people, their present condition, activities and aspirations, and their past history to be able to make realistic recommendations concerning relocation and to assess it as an alternative to maintaining the *status quo* with respect to forest settlements. This is the research problem that UNESCO's Kutai National Park Management Support Project asked us to address. Because of its interest in how industrial development affects forest use and management, CIFOR joined UNESCO in sponsoring our research.

The major part of our three months of socio-economic and historical research was centred on settlers in (or from) Teluk Pandan and, accordingly, this report is also focused on them, although comparisons with other Bugis settlers both inside and outside the national park are presented as well. Teluk Pandan is the largest of the park settlements included in the research. According to July 1996 census data, it has a population of 969 distributed among 184 households. Teluk Pandan's three hamlet heads (*kepala dusun*) and their assistants had been instructed by government officials to collect these data in preparation for Indonesia's presidential election in 1997 (see Table 1 for these Teluk Pandan data and for data similarly collected from Selimpus/Kandolo and Sangkimah).

Table 1. July 1996 census

Settlement	Inhabitants			Households
	Male	Female	Total	
Teluk Pandan	498	471	969	184
Selimpus	193	159	352	80
Sangkimah	251	188	439	90

Sources: Hamlet Heads of Teluk Pandan, Selimpus and Sangkimah

Reconnaissance trips to Teluk Pandan, Selimpus/Kandolo and Sangkimah were made by Vayda and Sahur and then, on 21 May 1996, Sahur set up residence in Teluk Pandan for seven weeks. He devoted this time first to overcoming people's distrust of outsiders (generally regarded as "agents" of the national park) and then main-

ly to participant observation, informal interviewing, and systematic interviewing of either randomly or purposively selected informants about specific questions arising in the course of the research. Subsequently he engaged in the same kind of activities for two weeks in Selimpus/Kandolo and one week in Sangkimah. Because of their ignorance of the Bugis language and the people's heightened suspicions about outsiders who, unlike Sahur, are not themselves Bugis, Vayda and Arief Toengkagie, the Kutai National Park counterpart in the project, were limited in their ability to conduct fieldwork among the people in the park. Accordingly their research consisted mainly of collecting statistical and historical data on certain events (such as construction of roads and industrial plants) involving or affecting Bugis settlers in the national park and on other events (such as past relocations of Bugis farmers in East Kalimantan) which might indicate possibilities for relocating the national park settlers. This research was conducted in Bontang and in Samarinda, which, situated 120 km south of Bontang, is the capital of the province of East Kalimantan.

Especially in Teluk Pandan, the apprehensiveness towards outsiders and suspicions about their national park connections are probably a result of past experience with national park consultants and investigators; past confrontations with national park officers, who, in a few cases, arrested Teluk Pandan residents for illegal tree-cutting; and a few Teluk Pandan residents' continuing recourse to activities which they know to be prohibited – for example, maintaining a single deer-trap and cutting (and sometimes selling) wood from the forest for house repairs, house-building and firewood. Apparently the threat of national park sanctions and possibly also the few arrests have had a deterrent effect so that, with the exception of a single person to be discussed later, Teluk Pandan residents no longer clear forest for agriculture or for brackish-water shrimp and fish ponds. They claim to have stopped such clearance soon after the national park ban on it became known in the mid-1980s, following the gazetting of what had been the Kutai Wildlife Reserve as a national park in 1984. However, as will be noted later, such banned activities as the clearance of land for brackish-water ponds have recently resumed in one of the other settlements, Sangkimah. National park officers have thus far made no arrests either in that settlement or in Selimpus although, about five years ago, a warning was issued to two Selimpus men when they were found to be cutting mangroves for the purpose of brackish-water pond construction. The men heeded the warning.

Vayda and Sahur spent their weekend days (and sometimes nights) in jointly and intensively reviewing and analysing the material collected and then, for the next week's work, either formulating new questions or identifying those requiring further elucidation. They were joined in these activities for at least one or two hours each weekend by Toengkagie, whose other national park duties and responsibilities kept him from devoting more time to the project. Toengkagie and Vayda, either singly or jointly, also conducted interviews with government officials and with Bugis migrants in settlements outside the national park – for example, in the relocation area referred to in the next section. In descriptions of research decisions and activities, the first person plural is used in the rest of this report to refer to what the three investigators did either separately or together.

The methods used for data collection were also reviewed and refined each weekend; they varied, as a rule, with the questions being asked, who was asking them, and the situations in which they were being asked. On the whole, we used the approach advocated in Vayda's recent publication (1996a) on methods and explanations in social science and human ecology, i.e., we were guided in our collection and analysis of data by the goal of showing causal connections among events or answering why-questions about them. Our decisions about which events to focus on were made on the basis of our judgements of the potential value of knowledge about the causal histories of those events for the purpose of making realistic recommendations concerning relocation of Bugis settlers from Kutai National Park. Examples of events about which we asked why-questions (in other words, the events whose causal antecedents we tried to discover) are:

- the movement of particular individuals and/or groups from Bugis homelands in South Sulawesi to the Bontang area;
- their movement into the national park to open forested land for agriculture;
- their cessation of such forest clearance in Teluk Pandan;
- the switch of many Teluk Pandan farmers from rice cultivation to other economic activities in 1990;
- the farmers' rejection of particular proposals for relocation from the national park;
- the recent clearance of mangroves and construction of nine hectares of brackish-water fish and shrimp ponds in Sangkimah; and

- the removal of Bugis farmers from another protected forest area in East Kalimantan.

These events are described in the following sections of this report, as are other, antecedent or concurrent events about which we sought data because of their possible causal connections to the first-noted events. Some of the more specific research techniques that we used, such as our methods for choosing respondents to answer specific questions, are mentioned in the course of the presentation of our findings in the sections that follow.

SOME TELUK PANDAN FINDINGS

Amenability to Relocation

A question that the UNESCO project asked us expressly to consider is the extent to which the government's proposed relocation site of 10,000 ha of logged-over forest, accessible by means of old timber roads beginning 24 km south of Bontang along the road to Samarinda, would be attractive to settlers. In the research proposal originally submitted to UNESCO (Vayda 1996b), it was suggested that amenability to relocation may vary significantly within the Kutai National Park settlements. However, we found no Teluk Pandan residents at all with any interest in moving to the so-called "km 24" site if that would require accepting such stipulations as have been proposed, i.e., land allocations of only 2.25 ha per family; no absentee ownership of land; and no title to land prior to three years of government monitoring of performance (see, for example, Fakultas Pertanian Universitas Mulawarman 1991: 96-104; PT Pupuk Kalimantan Timur 1993). Such stipulations are not unusual in projects designed by Indonesia's Department of Transmigration for stereotypical peasant households, assumed to be eking out their livelihoods from meagre plots of land and therefore apt to regard 2.25 ha as a bonanza. Indeed, some of our Teluk Pandan informants, in dismissing the idea of moving to the km 24 site, said that it is a place for Javanese transmigrants (whom they disdain) and not for people like themselves. Some, cognisant of the recent relocation of a prostitutes' complex from downtown Bontang to the area, said also that it is a place for prostitutes.

Initially the lack of interest in the proposed relocation was found among all 22 of the male Teluk Pandan heads of households who have made the religious pilgrimage, or *hajj*, to Mecca. Since these *hajji* all have considerably more than 2.25 ha of land in Teluk Pandan – in the case of one 43-year old man, 28 ha, including orange groves with an estimated 2,600 trees, cocoa plantations and 7 ha of rice-fields – and, in 17 of the 22 cases, have houses not only in Teluk Pandan but also in Bontang (including some houses valued at between Rp 60,000,000 and Rp 90,000,000, or between US\$25,530

and \$38,300), this lack of interest did not surprise us. However, we subsequently found the same disinterest among all 30 men who constitute a random sample (16%) of Teluk Pandan's 184 heads of households. This sample includes 9 men with 2 ha or less of land. Since, however, each of these 9 men has at least one hectare of his own land, we decided that it would be useful to have a sample likely to include landless men. Accordingly we next surveyed the men who are sharecropping rice-fields. There are 27 such men in Teluk Pandan. Although even most of these men turned out to have farmland of their own – between 1 and 2.75 ha each on which they are growing oranges and/or cocoa – there also are three landless men. It was found that not one of the 27 sharecroppers, interviewed individually by Sahur, is interested in relocating to km 24. This finding can be understood if we refer to other questions for which we have found answers.

The Pull of Industry and the Pull of the Forest

In the proposal submitted to UNESCO (Vayda 1996b), it was stated that the questions for research are seen as “questions about what makes people change – or not change – their residence and occupations”, and it was argued that the history of such changes can help us to predict their responses to new opportunities, such as those for relocation. Accordingly we devoted substantial research time to obtaining informants' oral histories of why they initially moved from South Sulawesi to the Bontang area and, subsequently, from one place to another within that area.

Part of this research effort was directed specifically to seeking evidence for assertions prominently made by some other consultants, namely, that many Bugis settlers in the national park were originally attracted to Bontang by the prospect of jobs in the town's growing industrial sector and that they encroached and settled in the national park's forests only after failing to find industrial employment (Petocz *et al.* 1990: iv, 12). These assertions contributed to CIFOR's interest in our proposal; it was hoped that the research would show generalisable interrelations or interactions between industrial development and forest encroachments or destruction. However, the oral histories collected in Teluk Pandan provide little support for the assertions. Instead they indicate that the Bugis who pioneered Teluk Pandan settlement in the mid-1960s had moved from the Bone district of

South Sulawesi to the Bontang area in the 1950s and early 1960s for mainly the same reasons that made many other Bugis move to other places in the same period (including southern Sumatra, as described in Lineton 1975a, 1975b, and Vayda 1980, and the vicinity of Samarinda in East Kalimantan, as described in Vayda and Sahur 1985). That is to say, they moved to escape the economic and military disruptions associated with Kahar Muzakar's Islamic rebellion in South Sulawesi and to take advantage of advice received from relatives or friends about one or another location where forested land could be profitably converted to farmland.

For eleven couples and their children, who were among the Teluk Pandan pioneers, their first settlement in the Bontang area was in 1956 at Sikattub, now the site of a housing complex for the state-owned fertiliser company, PT Pupuk Kalimantan Timur (Pupuk Kaltim). After farming and fishing there for about eleven years and being joined by another Bone Bugis couple from Samarinda and at least fifteen other couples directly from Bone, they moved, beginning in 1967, to Teluk Pandan because of conflict between them and another early settler (related to some of the pioneers) who had become Sikattub hamlet's head and was keeping for himself, instead of distributing among the people, a growing herd of free-ranging cattle which were increasingly damaging the pioneers' swiddens (*ladang*) and fields of wet rice (*sawah*). By the time that Bontang's two present major industries first arrived – the Badak Liquefied Natural Gas factory in 1974 and Pupuk Kaltim in the late 1970s – Teluk Pandan, with its fertile flood plain for growing rice (see Wirawan 1985: 64), was already a well-established and growing agricultural and fishing community within what was then the Kutai Wildlife Reserve. Much of the present population is, in fact, said by some informants to be a result of natural increase from the population of pioneers in the late 1960s, although there have also been later migrants who, in many cases, have been the pioneers' relatives. From our random sample of 30 household heads, 11 had settled in Teluk Pandan in the 1960s, 10 in the 1970s, 7 in the 1980s, and one was born to pioneer settlers in 1972. Only four of the migrants had sought work in the town of Bontang before they moved to Teluk Pandan.

But if we found no substantiation for assertions about “endless waves of encroachment” in the national park by immigrants attracted to Bontang by its industries (Petocz *et al.* 1990: iv), is it possible that the industries, by hiring workers from settlements like Teluk Pandan,

have in fact contributed to reducing the impact that the settlements have on the park? The Teluk Pandan data we were able to obtain to answer this question are limited. Of the 30 men in the random sample, 5 (16.7%) had work experience – 2 as drivers, 2 in road construction, and 1 in building construction – with Pupuk Kaltim and/or PT Badak, ranging from eight months to almost three years. None in the random sample had tried and failed to obtain a job with either company, but we found two other Teluk Pandan men who had. They both attributed their failure to their lack of education and the purported preference of the particular company, Pupuk Kaltim, for Javanese employees and its discrimination against Bugis. Such discrimination is attributed by other Teluk Pandan residents to the stereotype of Bugis as irascible (*cepat marah*). In any event, most of the jobs offered by the companies to those who, like most Teluk Pandan residents, have had no education beyond primary school, is temporary and associated with the construction of new plants or new roads. Thus, Pupuk Kaltim, whose permanent payroll staff has remained fairly steadily around 2,500 for the last ten years, had only 289 temporary workers at the end of 1987 but the number had jumped to 2,161 by the end of 1988 and to a peak of 2,549 by the end of 1990 in connection with new construction. Earlier major Pupuk Kaltim construction occurred for 32-36 month periods in 1979-82 and 1982-84 when the first and second Pupuk Kaltim plants were being built, but the company has no available records on the numbers of temporary workers hired during these periods. As for PT Badak, its peak force of temporary workers during major construction periods in the past was (according to data provided to us by the company): 5,747 men in 1974-77; 7,304 men in 1980-83; 4,300 men in 1987-89; and 4,396 men in 1991-93. For new construction that has already begun, the number of temporary workers is expected to reach more than 4,000.

But even if only a few of Teluk Pandan's present residents have sought or found employment with Bontang's two big companies, there is one very important way in which Pupuk Kaltim has affected the people of Teluk Pandan, their land-use strategies, their aspirations, and their amenability to relocation. Overlooked by previous consultants and investigators using rapid appraisal and standard survey methods and pre-set questionnaires (e.g., Petocz *et al.* 1990; Pusat Studi Lingkungan Universitas Mulawarman 1993; Yayasan Dharma Wana Lestari Universitas Mulawarman 1996), this is discussed in the next section.

Compensation for Land

As Pupuk Kaltim, now Indonesia's largest fertiliser factory, has been expanding and diversifying, it has needed more land. In three separate years, 1978, 1984 and 1990, it has paid compensation to those with claims to land it was taking over, and, as discussed in a later section, negotiations are currently in progress concerning an additional 100 ha in the hamlet of Guntung, which is close to the projected site for a fourth Pupuk Kaltim plant. The first three sets of payments were for land in Sikattub, and Teluk Pandan residents, basing their claims on having been the pioneers who converted forest there to farmland before moving to Teluk Pandan, were among the recipients of payments in 1978, 1984 and 1990. Our data from Teluk Pandan informants about compensation has been corroborated and amplified by data we have obtained from Pupuk Kaltim on all the recipients of the 1984 and 1990 payments, but the file on 1978 payments could not be found. Of the 136 Sikattub plots for which, according to the Pupuk Kaltim files, compensation was paid in 1984, there are 56 (41%) whose owners we have identified as being from Teluk Pandan. And of the 290 Sikattub plots for which, according to the files, compensation was paid in 1990, there are 75 (25.9%) whose owners we have identified as being from Teluk Pandan. All the amounts paid that year (but not in the earlier years) are also available from the files, indicating that the average compensation received per plot for the 75 plots was Rp 2,015,923 and that the two Teluk Pandan residents whose compensation was greatest received much larger total amounts; one received Rp 23,632,363 for seven plots and another received Rp 39,135,635 for nine plots. The 1984 and 1990 data allow us to say that at least 48 Teluk Pandan residents (more than 25% of its household heads) have received compensation from Pupuk Kaltim at least once; if the 1978 data were available, we would know definitely whether the total number ever receiving compensation is higher than 48. That it may not be the case, is suggested by the fact that all 18 of the Teluk Pandan residents who told us they received compensation in 1978 were also later compensation recipients.

Teluk Pandan residents' amenability to relocation has been affected in various ways by Pupuk Kaltim's compensation payments. One way has been through the use of the payments to effect certain land-use and occupational changes. The conversion of a portion of the Teluk Pandan rice fields to mandarin orange groves in 1990 was one of these

changes. Before that year, there was some income from cocoa, which many Teluk Pandan farmers had inter-planted with bananas during the 1980s. However, a main source of income for Teluk Pandan residents before 1990 still was the sale of rice produced in their *sawah* and taken by boat to Bontang traders. We do not have very reliable estimates of the total area in *sawah* in Teluk Pandan before 1990, but we were told that 5 ha was the extent of *sawah* which, as a rule, each of the pioneering families of the 1960s had made from previously forested land and that the total *sawah* area before 1990 was at least 200 ha, an estimate that corresponds to our own on the basis of seeing the extent of Teluk Pandan land said to have been formerly *sawah*. The land now remaining in *sawah*, estimated by us and our informants to be about 40 ha, is being used to produce rice either directly for consumption in Teluk Pandan or for sale in Teluk Pandan to local consumers rather than for sale in Bontang. Of the 67 ha estimated to be in orange groves at present (see Table 2), only 37 ha have been converted from *sawah* but, significantly, 24 of the 38 men who received compensation in 1990 for land in Sikattub took part in the conversion of *sawah* to orange groves that year. The two men who had initiated the conversion and then carried it out on the largest scale – involving a total of seven hectares – were among the compensation recipients. These men told us that, at the time of the conversion, they were looking ahead also to the completion of a road through the park – the Bontang-Sangatta road – for conveying their oranges to markets in Samarinda and Balikpapan. The start of work on the road was, in fact, at just about the same time as the beginning of the conversion of their rice fields. Later, after the stretch of the road passing through Teluk Pandan was completed, more of the rice fields were either converted to orange groves or banana and cocoa plantations or simply left in fallow (see Table 2) because, according to our informants, the road, lying just above the old rice fields, was diverting into the Teluk Pandan Creek a good part of the runoff on which the farmers' rain-fed *sawah* agriculture had formerly depended. (The creek is, in fact, said by informants to be flooding more frequently since completion of the road.) The experience of compensation provided a further impetus to converting *sawah* to orange or cocoa plantations insofar as it led some of the compensation recipients with coconut and jackfruit trees on their Sikattub land to the realisation that, in case of being forced from the national park, more compensation would be received for each plot if it had fruit trees or other perennial crops rather than being used only for rice.

Table 2. Possible compensation for Teluk Pandan land and tree crops (thousands of rupiah)

No	Land Category	Compen- sation per Tree	Trees per ha	Area, ha	Compen- sation per ha	Total Compen- sation
1	Sawah in use	-	-	40	12 500	500 000
2	Sawah not in use	-	-	139	800	111 200
3	Ponds in use	-	-	20	47 500	950 000
4	Disused ponds			17	2 000	34 000
5	Orange groves	25	800	67	20 000	1 340 000
6	Second-growth <i>kebun</i> land			80	800	64 000
7	Cocoa plantations			337		
	a. Cocoa trees	4	600		2 400	808 800
	b. Coconut trees	28	50		1 400	471 800
	c. Banana trees	2.5	50		125	42 125
	d. Jackfruit trees	25	32		800	269 400
	Total			700		4 591 325

Some of the orange entrepreneurs are said to be now netting as much as Rp 45,000,000 annually from only their oranges, as well as having income from other crops like cocoa and bananas. Some obtain income also from other enterprises like operating taxis in Bontang, running motorised fishing boats out of Teluk Pandan, and sending fishing teams out to their offshore fishing platforms (*bagang*). As noted earlier, it is no surprise that these men, some of whom spend more time in Bontang than in Teluk Pandan, are not taken with the idea of being relocated to 2.25 ha sites at km 24 – an area which, incidentally, is at least 30 km by road from the sea and is said to be different from Teluk Pandan also in having no suitable soil for orange-growing. (As Wirawan [1985: 64] suggested some time ago in recommending the maintenance of Teluk Pandan as an enclave within the national park, the fertility of its soils may not be readily matched by those at possible relocation sites. Comparative analyses of soil samples from Teluk Pandan and any sites proposed for relocation would be good to have.)

Another way in which Pupuk Kaltim's compensation payments have affected Teluk Pandan residents' amenability to relocation has been through providing a model to those who have not yet benefited directly from compensation. Extensive interviews were carried out with the 27 *sawah* sharecroppers and with the poorer men in our 30-man random sample in order to test their knowledge of compensation. They did not know such details as how much was received, but they did know who bought taxis with compensation money, who built houses in Bontang with it, and who used it for making the *hajj* to Mecca. They also knew that compensation is not only per unit of land but also per tree in the case of perennial crops. In line with such knowledge, they told us they are working to obtain more land of their own, which they will plant in oranges and cocoa and which will then be their net (*jaring*) for catching compensation.

Indeed, in addition to acquiring land by means of such sharecropping arrangements as are described in the next section, poorer Teluk Pandan men can hope to obtain more land by buying it with the pay that they receive, often from relatives (see the next section), for performing various temporary but recurrent jobs. These include: preparing the mounds on which orange trees are to be planted; planting orange and cocoa trees; spraying orange groves with pesticide; transporting harvested fruit from plantations to the roadside for trucks to pick up; clearing farmland overgrown with secondary vegetation; tilling *sawah* with mattocks before planting; and harvesting rice from *sawah*. The daily pay for these jobs ranges approximately from Rp 5,000 to Rp 12,000 (above East Kalimantan's official minimum daily wage of Rp 4,600, or US\$1.95, in 1996).

How adequate is such pay for land purchases? Plots of land called *petak* in Indonesian and *benrang* in Bugis, usually ranging in size between 0.15 and 0.25 ha (but sometimes larger) and without crops planted on them, are said to be currently selling in Teluk Pandan for between Rp 200,000 and Rp 400,000, depending on such factors as proximity to the road and settlements and the height of undesirable second-growth vegetation on the land. Actually, when sales are made of larger areas of land and are, unlike most *petak* sales, recorded in registers maintained by the hamlet heads, the price per hectare is usually considerably less (see below). Although we have seen a few sales receipts, unfortunately we have no adequate sample of *petak* sales to be able to say that the smaller land units do indeed sell at substantially higher rates than those for larger areas. Taking into account this

uncertainty, we can still say that the wages from about one month's work, *or else from considerably less than one month's work*, enable a worker to buy a small plot for himself. Indeed, 11 of our sample of 33 men, comprising the 24 *sawah* sharecroppers with land of their own and the 9 men in the random sample who have only 2 ha or less of land, told us that part of their land was purchased with money they had earned as temporary labourers in Teluk Pandan. At present, 19 of the sharecroppers and 7 of the 9 men from the random sample are already growing oranges on their land. Cocoa is being grown by all 33 men, i.e., both by those who are also growing oranges and by those who are not. We have visited all of their plots and found the orange trees, all planted recently, to be well tended but some of the older cocoa trees seemed, to our inexperienced eyes, to be diseased.

In the next section, we will discuss various patron-client arrangements that also enable younger and/or poorer persons to earn income and sometimes acquire land of their own in Teluk Pandan, as well as in similar Bugis rural communities elsewhere. Ties to a patron as factors working against amenability to relocation to km 24 will be noted as well.

Patrons and Clients

Important in South-east Asian societies in general (Scott and Kerkvliet 1977), patron-client ties have been described as a "key element" (*unsur kunci*) in Bugis and Makassar society in particular (Pelras n.d., cited in Acciaioli 1989: 170). Characterising the ties as serving to "assure those below that they will be provided with life's basic necessities, including access to land, while providing those above with a supply of followers necessary both as material capital (e.g. as field labourers) utilised for economic endeavours and symbolic capital (e.g. as entourage) displayed on festive occasions", anthropologist Acciaioli (1989: 170-179, citing other anthropologists, especially Mattulada n.d.) notes that Bugis use of such leader-follower relations, while declining in political and military contexts in the twentieth century, has persisted in economic contexts. Thus many Bugis entrepreneurs still act not so much as employers dealing with wage-earners in modern capitalist businesses but rather as the heads of traditional families, helping their workers cover, for example, medical or other emergency expenses and some of the expenses of meeting ceremonial obligations.

In a number of the illustrations given by Acciaioli, the above characterisation applies to contemporary relations between Bugis entrepreneurs and non-relatives working for them. The characterisation can be expected to apply all the more in the case of Teluk Pandan enterprises insofar as those regularly working for others in Teluk Pandan appear to be mostly their poorer and/or younger relatives. A preference for having relatives as workers was explicitly stated by some of the Teluk Pandan entrepreneurs, who invoked the following Bugis saying in support of the practice: “If you have a relative work for you, you are blind in only one eye; with a non-relative, you are blind in both” (cf. Lineton 1975a: 188, who studied Bugis communities in Jambi and South Sulawesi, on the preference for kin as helpers in farming). Of the 27 *sawah* sharecroppers that we interviewed, only one was found not to be related to the *sawah* owner. In 22 of the cases, the relationship is quite close, being that of a brother in one case and that of a nephew, brother-in-law or first cousin in 21 cases. The one person sharecropping a non-relative’s *sawah* does have relatives in Teluk Pandan, but they have no *sawah*. He and the *sawah* owner are from the same village in Bone, and he is one of only five *sawah* sharecroppers who co-reside with the *sawah* owners. While the very limited time available for our research precluded systematic and detailed studies of what Acciaioli (1989: 211) refers to as “the role of kinship in enterprise”, our impressions accord in general with the conclusions that he reached about that role from his study of a Bugis migrant community at Lake Lindu in Central Sulawesi, namely, that kinship may be said “to constitute a primary, though not an exclusive, channel of recruitment to structures of co-operation and dependence and to induce a greater degree of loyalty from those bound in these relations” (Acciaioli 1989: 213).

Teluk Pandan’s present *sawah* sharecroppers are working under arrangements whereby they are due to receive either three-fourths (*bagi empat*) or one-third (*bagi tiga*) of the harvest, depending on whether they or the *sawah* owners pay for fertiliser and pesticide and take care of preparing seedbeds and transplanting from them. As noted previously, the rice now produced in Teluk Pandan is for consumption by its residents. However, the following practice is reported by those who say they are now producing rice only for subsistence: if, after a new harvest, rice is still left from the previous year’s harvest, the old rice is taken to Bontang for sale. (The rice is a 6-month variety, grown once a year.) Significantly, sharecropping is said to be

possible with respect to the shrimp and milkfish being grown in brackish-water ponds and also with respect to commercially valuable perennial crops in Teluk Pandan. Each pond labourer, responsible for guarding and maintaining a pond of approximately 0.25 ha and feeding the fish and shrimp in it, may receive about Rp 400,000 every four months as his quarter share of the net proceeds from the quarterly harvest, which may comprise almost 40 kg of tiger shrimp and approximately 1000 kg of milkfish.

As for the perennial crops, informants told us that there are times when someone who has established a plantation no longer wants to work it himself and therefore gives it to someone else to work; in such cases, either one-third of the trees is allocated to the worker to harvest for his own share or else he gets one-third of the total proceeds from all the trees. Either arrangement is called *bagi tiga* (“one-third share”). The fact that Ruf *et al.* (1995: 353-355) report that, in a pioneering cocoa-growing area of South-east Sulawesi, Bugis sharecroppers receive only a one-fourth or one-fifth share from their plantation-owning relatives is probably a reflection of the Sulawesi area’s high cocoa yields (averaging about 1500 kg/ha per annum in land newly cleared of primary forest) in comparison with Teluk Pandan yields (averaging only 950 kg/ha). The difference in yields means that the actual crop received as a share and the value of it are roughly the same per hectare for Sulawesi and Teluk Pandan workers. This supports the suggestion of Ruf *et al.* (1995: 355) that share proportions are adjusted to provide owners the benefit of high yields and to give workers only what are reasonable returns in terms of local or regional wage standards. Consistent with this and also with other observations made by Acciaioli (1989: 212), Ruf *et al.* (1995: 355) and us is a point worth making explicit here: Favouring relatives as workers does not entail treating them differently than unrelated workers would be treated by Bugis patrons or entrepreneurs in such economic matters as the workers’ shares of the crop or, when an entrepreneur’s fishing boat is used, their shares of the catch. This, however, seems not to be a concern of the workers. From their standpoint, the important issue may simply be that they can depend on their patron relatives for work.

Another scenario reported to us in Teluk Pandan is that of landowners giving overgrown, former *sawah* to others, usually relatives, to plant on a 50-50 share (*bagi dua*) basis. What is to be planted is negotiated between the owner and the worker. If, for example, oranges are the crop, the worker provides all the labour (including preparing the

planting mounds and then planting the trees), while the owner provides the trees (purchased from a nursery) and pesticide; then, when the trees have begun to yield, the land is divided into two and the worker then not only gets the crop from his half but becomes owner of that half.

There is another possible outcome from the 50-50 arrangement. Before the trees have begun to yield but after they have grown sufficiently to show that they will survive and indeed yield, the worker, needing money for some urgent or immediate purpose, may ask the owner to buy his half of the trees back from him. Current prices for orange trees in Teluk Pandan range from Rp 5,000 for trees less than one year old to Rp 40,000 for trees at least four years old. Our informants had no special name for this buy-back practice and described it simply as compensation for past labour (*ganti kerja*).

Regrettably we do not have an adequate sample of cases of sharecropping of orange groves and/or cocoa plantations to say how common such sharecropping is. Some limited data do, however, indicate that it serves at least to some extent as a mechanism whereby successful, entrepreneurial farmers make available to dependants – presumably relatives as a rule – opportunities to gain not only income in return for labour in the short run but also land with perennial crops producing income over an extended period. Thus, part of their own land on which they were growing oranges and/or cocoa had been obtained by means of the 50-50 arrangement by 5 of the 24 land-owning *sawah* sharecroppers and by means of purchase with income from *bagi tiga* by 6 of the 9 smallest landholders in our random sample. Moreover, all 27 of the *sawah* sharecroppers that we interviewed and all 9 of the smallest landholders in our random sample did tell us that they regularly depended on a particular patron or entrepreneur (usually referred to as “boss”) for work. Accordingly we made these 36 men our sample for asking what they would do if they had to leave the national park and if their patrons refused to be relocated to km 24. More specifically, we asked whether they would choose to follow their patrons elsewhere or to obtain land of their own at km 24. All said that they would follow their patrons.

Willingness to Move in Return Only for Compensation

Not wanting to move to km 24 does not mean that Teluk Pandan residents do not want to move out of the national park at all. On the contrary, previous experience of compensation or simply the knowledge

of it has, as already suggested in the section on “Compensation for Land”, made many residents eager to move, provided that what they call “fair compensation” would be paid to them in cash for whatever land and perennial crops they would leave behind. When we asked what constitutes fair compensation, we were told that they are the rates followed by Pupuk Kaltim in making compensation payments. Accordingly we sought to determine those amounts and learned from the company that their currently used rates are the official rates set for Kutai District in 1993 (Bupati...Kutai 1993). These rates are higher than current land prices in Teluk Pandan, and any firm expectation of fairly imminent removal from the park could contribute to an inflation of land prices (see below).

In order to make some rough calculations of the total compensation that Teluk Pandan residents might be entitled to if these rates were to be used, we next obtained from Teluk Pandan’s three hamlet heads and selected farmers the rough estimates (not based on any careful measurement) of Teluk Pandan’s total present area in each of the following seven categories of land cleared of forest: (1) *sawah* in use; (2) *sawah* not in use; (3) brackish-water ponds (*tambak*) in use; (4) ponds fallen into disuse; (5) land planted in oranges; (6) land now in second-growth vegetation (*belukar*) but suitable for plantations (*kebun*) of oranges and/or cocoa; and (7) land inter-planted in cocoa and other tree crops (see Table 2). Since categories 3, 4, and 6 are either not covered clearly or else not covered at all by the lists that we obtained of the official Kutai District rates, we used the lowest prices for which land in these categories is currently selling in Teluk Pandan: Rp 47,500,000/ha for category 3, which is a rate corresponding to what Pupuk Kaltim is, according to the land negotiator referred to in the next section, offering as compensation for *tambak* in Guntung; Rp 2,000,000/ha for category 4, also corresponding to Pupuk Kaltim’s offers in Guntung; and Rp 800,000/ha for category 6. In the case of categories 5 and 7, compensation would be paid according to the number of trees per unit of land and the condition of the trees. Accordingly, for these categories, we accepted Teluk Pandan farmers’ estimates of the number of trees: the main orange-growers agreed on 800 as the number of trees per hectare (exceeding by more than 100 trees the highest densities noted by Ashari [1992: 137] for mandarin orange orchards), while the average of estimates given by cocoa-growers is 600 trees per hectare (much lower than the densities reported by Ruf *et al.* [1995: 349] from Bugis family smallholdings

in Sulawesi and by Wood [1985: 145-147] from plantations in West Africa, Colombia and elsewhere).

For orange tree compensation, we used the rate of Rp 25,000 per tree, applicable, according to the official lists, to trees that are bearing but have not yet reached full production. For the cocoa trees, which vary in age mostly between five and fifteen years in Teluk Pandan, we used the rate of Rp 3,950 per tree, which is an average of the official rates paid for “productive” trees and those declining in productivity. Since cocoa is always inter-planted with other tree crops such as coconuts, bananas and jackfruit in Teluk Pandan (as in the national park’s other Bugis settlements), we used, as a rule, averages of farmers’ estimates of the numbers of these trees per hectare in what, for convenience, we are designating as cocoa plantations. In the case of jackfruit (*nangka*) trees, the estimate is based both on our visual inspection and on the farmers’ description of their practice of using the trees as boundary markers and therefore planting eight of them at the corners and between the corners of each plot before planting other tree crops in it; we conservatively assumed only four plots per hectare for the purpose of this estimation. In the case of bananas, official compensation is paid per single parent plant and its followers and, accordingly, our estimates refer to the number of such combinations. We regarded all of the estimated non-cocoa trees in cocoa plantations as being in the “productive” category for purposes of compensation.

The result of our calculations, as indicated in Table 2, is that, if the rates and possibly quite inaccurate estimates that we have specified are used, the total amount that would have to be paid as “fair compensation” to Teluk Pandan residents is Rp 4,591,325,000 or US\$1,953,755. That this may be a conservative figure is suggested by Wirawan’s (1985: 63) estimate, based on interpretation and measurements from 1982 aerial photographs, that Teluk Pandan’s cleared land amounts to 1,570 ha, which is more than double our estimate here of 700 ha eligible for compensation. If we extrapolate from the average area of 7.87 ha per household in our random sample of 30 Teluk Pandan households (see Table 3) to the total cleared land held by all 184 of Teluk Pandan’s households, the area of 1,448 ha that we obtain is again more than double the estimate of 700 ha that we are using here. The discrepancy makes clear that any follow-up to our research on these matters should include careful counts of trees and measurements of plots, along with interpretation and measurements from new or, at least, more recent aerial photographs or satellite images.

Table 3. Teluk Pandan landholders (random sample)

No	Age	Landholdings in hectares			
		Cleared	Bought	Inherited	Total
1	55	6	9		15
2	33	3	-		3
3	35	3	2		5
4	33	4	6		10
5	31	3	5		8
6	61	5	6		11
7	54	6	2		8
8	29	-	4		4
9	40	2	2		4
10	24	-	-	4	4
11	30	-	2		2
12	31	-	-	5	5
13	50	4	20		24
14	51	5	17		22
15	65	2	2		4
16	43	5	23		28
17	33	4	3		7
18	43	5	4		9
19	30	2	-		2
20	35	2	-		2
21	35	2	-		2
22	37	-	1		1
23	37	2	-		2
24	54	4	9		13
25	27	-	1		1
26	37	-	2		2
27	32	-	1		1
28	51	4	8		12
29	32	2	4		6
30	63	19	-		19
Mean	40.37				7.87
Median	36				5
SD	11.53				7.31

Regrettably, our project time was insufficient for us to be able to make such counts, measurements and interpretations ourselves.

Lest it be thought that the idea of moving from the national park on receipt of fair compensation is simply a product of the experience or knowledge of compensation for land-pioneering in Sikattub, it should be noted that neither the idea of moving on when there are manifest advantages in doing so, nor the idea of compensation for land, is a novelty in Bugis culture. Elsewhere, Vayda (1996a: 5, 21-22) has discussed adventurousness and mobility as values or ideals which, along with a belief in opportunities beyond one's village of residence, are known to be widely held and long persisting among Bugis. Indeed there were Bugis migrating on their own, roving the seas of South-east Asia, and setting up or joining trading and cash-crop farming colonies (which were often impermanent) long before either the Dutch colonial or the Indonesian governments had official transmigration programmes for resettling people from the over-crowded islands of Java and Bali to Indonesia's so-called Outer Islands (see Lineton 1975b, Vayda 1980, and, for citations onwards from the sixteenth century concerning Bugis people's "audacious entrepreneurial and martial exploits abroad", Acciaioli 1989: 11-16, 41-59).

As for compensation for land, it should be understood that the fact that Pupuk Kaltim made payments of this to those who had "opened" or first cleared the land in Sikattub accords well with Bugis conceptions about making payments when taking over already cleared land. The payments may be regarded as compensation to the land-openers for their past labour and/or expenses in clearing the land rather than being regarded strictly as payments for the purchase of the land. This conception of compensation for land clearance has been reported from other places where Bugis have been pioneers in settling forested land (e.g., Vayda and Sahur 1985: 101 on pepper-farming areas south of Samarinda; Acciaioli 1989: 161, 167 [note 17] on Lindu in Central Sulawesi) and is, in the minds of at least some of our informants, at the basis of the Teluk Pandan land sales previously referred to. According to these informants, when "buying" local land, they are paying what is called *ganti rugi merintis* in Indonesian and *passelle ma'bela* in Bugis, i.e., compensation for the pioneering labour whereby that land was cleared of forest. If a particular plot of land undergoes subsequent transfers, the payments made by later buyers to earlier ones may still be thought of as the compensation that has to be paid whenever cleared land is taken over. However, as in the

case of conventional land markets, laws of supply and demand operate, so that the payments made when land is transferred in Teluk Pandan have risen in recent years because of the virtual cessation of new land clearance. Thus, it is said that, just before this cessation in the mid-1980s, a hectare of forested land could be cleared with hired labour, consisting usually of groups of 5-7 men working for one or two weeks, for between Rp 130,000 and Rp 150,000, but, according to the hamlet heads' records of land sales for the last three years (1994-96), Rp 500,000 per hectare was the lowest rate at which unplanted *kebun* land in second-growth vegetation was bought. Eight sales of such land in 1994-96 are noted in the hamlet heads' registers, and the average per hectare price for these sales is Rp 590,000. These are sales for which certificates, signed by the buyer, seller, two witnesses, and the hamlet head, are issued with the evident approval of government officials in the town of Sangatta just north of the national park – even if not with the approval of park authorities who do not regard land within the park boundaries as subject to sale.

Where would Teluk Pandan residents move if they were to receive “fair compensation”? A number of those who already have houses in Bontang said they would become full-time Bontang residents and would start new businesses, like retail stores, in the town. Some without Bontang houses said the same. One man said that he would return to Sulawesi to buy *sawah* if he receives enough money. The orange grower with 2,600 trees, possibly the richest man in Teluk Pandan but with a distaste for urban life, said he would look for and buy good land elsewhere in East Kalimantan, away from national parks and protected forests. All of these respondents said they would expect to be able to provide jobs to any poorer relatives or other “clients” who are working for them now in Teluk Pandan and would want to work for them in new locations outside the national park.

A question beyond the scope of our research is whether cash compensation of the indicated magnitude should or can be approved and financed by governmental bodies and international agencies like the World Bank. The findings that have been presented thus far constitute no absolute argument in favour of such cash compensation, but they do argue for giving to it at least as much consideration in the Teluk Pandan case as to the “land for land” strategy, notwithstanding that the latter, according to the World Bank's Environment Department (1994: 4/16-17), leads to “far superior” results in “most situations” of involuntary resettlement.

Effects of Compensation Expectations on Buying and Using Land

Some consultants (e.g., Petocz *et al.* 1990: 12; Formulation Mission 1991: 20) and other observers, possibly seeing Teluk Pandan plots in which second-growth vegetation was more evident than crops, have suggested that Bugis settlers in the national park, presumably including those in Teluk Pandan, have been hacking plots out of the forest as a matter of land speculation. Indeed the first question put to us in the “work assignment” in the contract from UNESCO is the following: “How common is land speculating, that is, people minimally planting on a plot of land, hoping that it will be excised from the Park and that they can sell it?” The kind of activity indicated by the question would of course be quite congruent with being willing to move out of the park in return for compensation. In Teluk Pandan, however, we found no evidence of any activity that can be unequivocally construed in this way.

A motivation for some of Teluk Pandan’s orange-growing pioneers may, as previously suggested, have been their realisation that higher compensation is paid for land with fruit trees or other perennial crops on it than for land without them. Moreover, they told us that they are aware that the orange trees may no longer yield within 15 years of planting because, as they understand it, the orange trees get old. (Actually, mandarin orange trees in South-east Asia sometimes have to be given up sooner than 15 years after planting – sometimes as soon as 8 years – because of having been hit by greening and virus diseases that undermine their tolerance of root rot [Ashari 1992: 137-138; cf. Samson 1986: 120-129].) None of this, however, means that the men are not serious about orange growing as an income-generating enterprise apart from whatever added compensation it may bring to them in case they have to leave the national park. Indeed the grower who has 2,600 trees had to invest a total of Rp 8,450,000 in just buying the orange plants (from a Samarinda nursery for Rp 2,000 per plant), preparing planting mounds for them (Rp 1,000 per mound), and then having them planted (Rp 250 per plant). The additional land that he has bought in Teluk Pandan to accommodate his trees includes purchases of eight separate plots from 1991 to 1995 at a total cost of Rp 6,750,000. Teluk Pandan’s other main orange grower, with a total of more than 2,000 trees at present, has also bought more land for orange groves in the last few years, including four plots purchased for a total of Rp 5,180,000. Besides these initial costs, others are recur-

rent after planting and include costs for labour and pesticides. That the growers have been making substantial investments while expecting income from the trees for no more than thirteen years (i.e., from the third to the fifteenth year after planting) is congruent with the even shorter periods for which entrepreneurial Bugis farmers elsewhere have invested, e.g., the approximately eight-year periods for which the pepper growers whom we studied in 1980 expected profitable yields from their plantations (Vayda and Sahur 1985).

Teluk Pandan's two main orange growers, along with several other Teluk Pandan men, have, in fact, made speculative investments in land elsewhere, namely, in and around the hamlet of Guntung which has, for some years, been expected to be where Pupuk Kaltim would next expand and pay compensation. The land that the grower with 2,600 orange trees has at present in the Guntung area amounts to 23 ha, the last 2 ha having been acquired as recently as February or March of 1996. Nobody in Guntung was willing to sell any more land by the time of our visit in June. When bought by Teluk Pandan investors during the last few years for between Rp 200 and Rp 350 per square metre from Kutai people who had originally cleared the forest from it, the Guntung land was covered with second growth. However, some of the Teluk Pandan speculators are clearing the plots they have bought and are planning to plant some jackfruit, mangoes and other fruit trees – none of them, unlike orange trees, requiring regular management – in order to enhance the compensation value of the land. Pupuk Kaltim began negotiations in 1996 for one-third of the 300 ha of the Guntung land to be taken over and has offered compensation of Rp 4,500 per square metre, but the Teluk Pandan speculators, among others, are holding out for more. Negotiations for them are being handled by a Guntung man, the local Kutai people's so-called *kepala padang* ("land chief" or "field chief"), who was interviewed by us and claims to have been traditionally in charge of land distribution as well as being the negotiator for present-day land deals. The Teluk Pandan speculators have agreed to give him 2.5% of whatever compensation they receive.

As mentioned earlier, we found that even the Teluk Pandan men who have relatively little land and have planted only a few orange trees seem to be taking good care of those trees. There is, however, one 63-year old man whose activities in Teluk Pandan itself, rather than in some other place like Guntung, at first might seem to constitute the kind of land speculation to which both other consultants and our UNESCO contract have referred. Lest too much be inferred from

his case about the occurrence of speculative activities in Teluk Pandan, it may be useful to give some details and some possible interpretations of his activities. One of his distinctions is that he is the one man in Teluk Pandan known to us to have continued to the present time to clear primary forest purportedly for agricultural use. He has, in fact, boasted to us that he is the only man strong enough and brave enough to do this in defiance of the national park officers. Since he is one of those who have received some, but not much Pupuk Kaltim compensation for land cleared at Sikattub (where he had gone from his job as a pedicab driver in Samarinda), it is not unreasonable to presume that he is trying to put himself in line for receiving more substantial compensation in case of having to leave the national park.

There may, however, be something else going on here. What he has actually been doing for almost ten years is an idiosyncratic, minimal version of clearing land from logged-over, primary forest. Specifically, he has been going off regularly to the forest to mark off plots ranging in approximate size between 0.15 and 0.25 ha (the *petak* previously referred to), and he has then cut the trees within strips 0.5 to 1 m wide along only the borders of the plots. After finishing the cutting of the border strips, he has been putting ironwood stakes along them – usually four stakes in the corners of each plot and four between the corners – to signify that the land has been cleared by him and is now his to dispose of, notwithstanding that all the land except for the cleared borders is still in primary forest. He claims already to have 33 ha of such plots, and we have seen three of them. He has offered them for sale to Teluk Pandan visitors and residents for Rp 100,000 to 125,000 each, but there appear to have been no takers yet. The residents who have talked to us about his land-clearing activities regard them as odd. Some have suggested also that the activities are intended to show his prowess and contribute to his intimidating image (*menunjukkan kehebatan*), which he has already used to attain a position of some authority in Teluk Pandan despite his illiteracy and lowly origins.

This interpretation of his activities is congruent with the association between land-opening prowess in particular and high status in other frontier regions settled by Bugis (Lineton 1975b: 194; Acciaioli 1989: 55) and suggests that the man's unorthodox land clearing may be a perversion of something done as much to gain status as to gain compensation for land (cf. Vayda and Sahur 1985: 101 on achieving status by means of allocating land, sometimes already cleared and sometimes not, in a Bugis pepper-farming frontier area in East Kalimantan).

COMPARISONS

Selimpus

Selimpus is a continuous settlement sometimes designated by the names of Selimpus and Kandolo for its two parts. For convenience, we will refer to it here simply as Selimpus. Less than 10 km by road from Teluk Pandan, its population of only 352 (distributed among 80 households) is much smaller than Teluk Pandan's 969 and its soil, described by Wirawan (1985: 62) as "poor sandy soil which can not support food crops", is much poorer. Moreover, unlike the Teluk Pandan pioneers, the Bugis migrants from Bone who settled Selimpus in the mid-1970s did not have the good fortune to have previously been the clearers of land for which Pupuk Kaltim would eventually pay compensation. In the case of Selimpus, the history of settlement is, however, relevant in its own way to our seeing possibilities for relocation, and more will be said about this shortly.

First, however, it must be noted that the people of Selimpus seem to be just as opposed as those in Teluk Pandan to relocation to km 24. All those whom we have interviewed on the subject, including the 28 men who constitute a random sample (35%) of Selimpus's 80 household heads, said they do not want to move to the site. As in Teluk Pandan, informants in Selimpus gave as reasons for their opposition the reportedly poor quality of the soil at km 24 and the presence of Javanese transmigrants and prostitutes. Also the same as in Teluk Pandan were professions by all of our poorer informants in Selimpus that, if given a choice between obtaining land for themselves at km 24 or following their patrons to work somewhere else outside the national park, they would opt for the latter. And, like our Teluk Pandan informants, all the Selimpus informants said they would be ready to move somewhere out of the national park if "fair compensation" were to be paid to them in cash for whatever land and perennial crops they would leave behind. When we asked what constitutes fair compensation, they referred to the compensation payments previously made to Teluk Pandan residents by Pupuk Kaltim and they said that the rates followed by the company in making compensation payments are "fair". Accordingly we used the same methods and assumptions

in Selimpus as in Teluk Pandan to make some rough calculations of the total compensation that Selimpus residents might be entitled to if these rates were to be used.

According to these calculations, as indicated in Table 4, the total amount of cleared Selimpus land eligible for compensation is 275 ha and the total amount that would have to be paid as “fair compensation” to Selimpus residents is Rp 1,271,650,000 or US\$541,128. That this too, like our Teluk Pandan estimate, may be conservative is suggested by Wirawan’s (1985: 63) estimate, based on interpretation and measurements from 1982 aerial photographs, that Selimpus’s cleared land amounts to 1,130 ha, which is approximately four times our estimate of 275 ha eligible for compensation. If, however, we extrapolate from the average area of 3.81 ha per household in our random sample of 28 Selimpus households (see Table 5) to the total cleared land held by all 80 of Selimpus’s households, the area of 305 ha that we obtain is much closer to the estimate of 275 ha obtained from our rough calculations than to Wirawan’s estimate from 1982 aerial photographs.

Table 4. Possible compensation for Selimpus land and tree crops (thousands of rupiah)

No	Land Category	Compen- sation per tree (Rp)	Trees per ha	Area, ha	Compen- sation per ha (Rp)	Total Compen- sation (Rp)
1	Sawah in use	-	-	30	12 500	375 000
2	Sawah not in use	-	-	51	2 000	102 000
3	Ponds in use	-	-	-	-	-
4	Disused ponds	-	-	-	-	-
5	Orange groves	25	800	10	20 000	200 000
6	Second-growth <i>kebun</i> land	-	-	70	800	56 000
7	Cocoa plantations			114		
	a. Cocoa trees	4	600		2 400	273 600
	b. Coconut trees	28	50		1 400	159 600
	c. Banana trees	2.5	50		125	14 250
	d. Jackfruit trees	25	32		800	91 200
Total				275		1 271 650

The discrepancy again underscores the need for actual counts of trees and measurements of plots.

There is, however, a significant possibility that Selimpus residents would settle for much less than even our conservative estimate of fair compensation for them. The possibility is raised by the fact that many

Table 5. Selimpus landholders (random sample)

No	Age	Landholdings in hectares			
		Cleared	Bought	Inherited	Total
1	38	-	0.5	-	0.5
2	39	2	2.22	-	4.22
3	29	-	-	3	3
4	42	-	2	-	2
5	37	2	-	-	2
6	45	5.03	-	-	5.03
7	35	-	2	-	2
8	61	3.15	-	-	3.15
9	50	-	2	-	2
10	42	-	2	-	2
11	48	4	2	-	6
12	50	4	1	-	5
13	24	-	-	3	3
14	35	4	1	-	5
15	37	4	1	-	5
16	47	-	3	-	3
17	25	2	-	-	2
18	27	-	-	2.5	2.5
19	47	3.5	-	-	3.5
20	52	2	-	-	2
21	44	-	2.5	-	2.5
22	37	-	0.5	-	0.5
23	36	-	2.5	-	2.5
24	38	2.15	2	-	4.15
25	45	-	1	-	1
26	31	2	1.5	-	3.5
27	40	4	-	-	4
28	37	21.5	4	-	25.5
Mean	39.93				3.81
Median	38.5				3
SD	8.57				4.48

of them, and most notably their hamlet head whom we shall refer to here as Andi M., told us that they need the compensation money in order to be able to afford to move, under Andi M.'s leadership, to South-east Sulawesi and to buy land there for growing cocoa. Andi M. himself told us that he does not want to die in Selimpus and that, although he already has the resources for moving himself and his family to South-east Sulawesi, he has to wait for compensation payments to be made so that all the other Selimpus residents, whom he regards as his followers, would have the resources for making the move as well. When we asked him how much money would be needed, he gave us the following estimates of the costs per person of travel from Bontang to Kendari in South-east Sulawesi:

Bontang-Pare Pare (boat)	Rp 30,000
Pare Pare-Bone (overland)	7,000
Bone-Kendari (ferry)	17,000
Food & shelter en route for 6 days, including overnight in Pare Pare and Bone	75,000
TOTAL	Rp 129,000

Multiplying the per person total of Rp 129,000 by the Selimpus population of 352, we get **Rp 45,408,000**. To this, only the cost of buying land in South-east Sulawesi must, according to Andi M., be added in order to effect the relocation from Selimpus. He said the land would be in secondary forest but with good soil (cf. Ruf *et al.* 1995: 353 on the fertility of some South-east Sulawesi soils for cocoa-growing). He gave us the following estimate on the basis of information received from relatives who had moved from Selimpus to South-east Sulawesi:

Plots of 50 x 150 m (0.75 ha) per family Rp 1,750,000

Multiplying this by the 80 families or households in Selimpus, we get **Rp 140,000,000** as the cost of land for all of them in South-east Sulawesi. Adding to this the cost of their travel from Selimpus to South-east Sulawesi, we obtain the grand total of **Rp 185,408,000**, or only US\$78,897, as the direct cost of moving the Selimpus people to where they say they want to go. When talking to us, Andi M. was confident that all the people would follow him to South-east Sulawesi if the necessary funds for travel and land were to be made available. In order to understand the reasons for this confidence and in order to begin to evaluate whether or not it is misplaced, we must consider

both the history of settlement in Selimpus and those elements of Bugis culture whereby Andi M. could take upon himself a special and important role in that history.

Andi M. first heard of Selimpus from Teluk Pandan visitors to Bone. At the time, the only settlers in Selimpus were three families, who had moved there in 1974 from a pepper-growing area near Muara Badak (a coastal town 20 km north of the mouth of the Mahakam River), and four single men, who had come there in late 1974 and in 1975 after hearing in Bone about opportunities in the Bontang area. After clearing forest from the land, these pioneers had first planted rice for subsistence, then planted bananas and coconuts and, finally, cocoa underneath the tree crops (cf. Vayda and Sahur 1985: 599 on the land-opening strategy used in general by Bugis in frontier areas). Like most subsequent settlers in Selimpus, the pioneers came originally from Bone but from a different sub-district, Kecamatan Awampone, to the one where most Teluk Pandan people originated (Kecamatan Mattiro Bajo).

When Andi M. heard about Selimpus, he was a young noble attending secondary school in Awampone. In 1977, at the age of 17, he brought together 80 other young, but low-ranking, men from his Awampone hamlet and organised them for migration to Selimpus for the purpose of opening up land for cocoa plantations. According to his own account, he chartered a boat for Rp 760,000 from the Bone port of Bajoe to the Bontang area and he bought two tons of rice in Bone to feed the men en route and in Selimpus while they were getting settled. To cover these costs, he asked each man to contribute Rp 12,500. (In 1977, according to statistics for Kabupaten Kutai, rice was selling for Rp 141.04/kg and US\$1=Rp 415.17; so Andi M. was disposing of the equivalent of US\$2,408.65 that he had collected from his followers.)

In Selimpus, the newcomers were divided into two 40-man groups to clear forest collectively. After the clearance, the land was divided into two-hectare strips, with each strip being allocated to one man and his family. (43 of the 80 men were already married when the migration occurred, but they did not bring their wives to join them in Selimpus until at least seven months had gone by, the first rice harvest had occurred, and the men had enough money to pay for the wives' boat passages; one group of wives was joined in passage by ten more single men as migrants to Selimpus.) The men first planted rice, then coconuts, bananas, breadfruit, cassava and cocoa in their two-hectare strips.

After getting settled, Andi M. sent word back to Bone to his older brother, whom we shall refer to here as Andi F. In 1978, Andi F. arrived with 67 additional young men from Awampone (but from different hamlets and from a different village to the first group), brought under the same arrangements as the original 80. From the 67, another 40-man group was formed to clear another 80 ha of forest, while the 27 other men brought by Andi F. opened land on their own. After about a year, Andi F. himself, evidently regarding Selimpus as basically his younger brother's enterprise, returned to Bone. From the time of arrival in Selimpus, Andi M. was regarded as the leader of the settlement, at first called *kepala suku* (tribal head) and then, after the national park was gazetted in 1984, *kepala dusun* (hamlet head). The people of Selimpus still address him as *Puang*, a term traditionally used by lower-ranking Bugis to address their noble patrons. "Andi" itself as part of a name was traditionally reserved for aristocrats among Bugis.

When we first met Andi M. as a 37-year old hamlet head, he told us that young men leading people, as he had, to other lands accords with Bugis aristocratic tradition. But he also told us that the tradition is now in decline as education and other modern-day skills are more important. In the Bugis migrant community that Acciaioli studied at Lake Lindu in Central Sulawesi, there was another Andi – to be referred to here as Andi A. – who had led a group of migrants to a new place. But Acciaioli (1989: 134-135) notes that many of these migrants quickly drifted away from Andi A. and that, although still addressed as *Puang*, he did not have the perquisites formerly inhering in the title. Indeed, attempts made by him "to control the decisions of others were seen as acting arrogantly (*takabboro*' or *sombong*) or in a 'swollen' (*maboro*) fashion rather than as the condescending guidance expected from a noble".

Questions that must be addressed then are whether Andi M. can indeed be relied on to be speaking for the Selimpus people in general and whether, notwithstanding any professions made to us, they would indeed follow him to South-east Sulawesi or elsewhere. Having had less than two weeks in the field in Selimpus (as compared with Acciaioli's more than a year at Lindu), we cannot be sure. Andi M. seemed to us to be indeed acting with gracious concern for others in Selimpus, but it is also true that many of his original followers had left by the time of our research. We do not have detailed historical information on why they left, although it does seem to us that some of the departures could not have been avoided even in more tradi-

tional times. For example, more than half of the people are said to have left when the prolonged drought of 1982-83 occurred and fires swept over their plantations. Indeed, Wirawan's report (1985: 62-63) refers to only 37 families remaining in Selimpus after the fires. Andi M. told us that those who left went to look for employment in Bontang, Muara Badak, Samarinda, Sangatta, Balikpapan and even South Sulawesi, and that only those who did not find good enough work drifted back beginning in 1985. Others among those who originally came in the 1970s left because of the poor quality of the soil. In fact, Andi M. acknowledged to us that much of the income of those that remained, including that which enabled 13 of Selimpus's present 80 household heads to become *haji*, came from cutting wood and taking it by boat for sale in Bontang and Sangatta rather than from producing and selling cocoa and other perennial crops. Andi M. told us also that the four chainsaws that he and his brother had brought from Sulawesi for clearing forest for cocoa plantations were put to use in woodcutting as soon as the income to be obtained from that activity was recognised. Before the wildlife reserve became a national park in the mid-1980s, the chainsaws sometimes were also rented to others for woodcutting. However, at present, there is said to be woodcutting only on a small scale and for local sales of wood rather than for sales outside Selimpus.

Hardly any additional data bearing on Andi M's position and his professed ability to lead the Selimpus people out of the national park could be found in the limited time that we had for our research. Nevertheless, two recommendations are worth making at this point. One is that there should be follow-up research concerning the matters discussed here. The other is that, depending on the outcome of such research, consideration should be given to working closely with Andi M. as a means of effecting the relocation of the Selimpus people at relatively low cost and in accord with both their preferred sites for relocation and some of their known ways of organising themselves when moving to new places.

Sangkimah

Our time for research in Sangkimah – less than a week – was even shorter than in Selimpus. Nevertheless, the research led to some interesting findings, indicative of differences between the settlements in their amenability to relocation. Sangkimah is the northernmost of the

three communities that we studied in the national park (see Figure 1). Its present population is 439. Not being accessible by 4-wheel drive vehicles or, except in the dry season, by motorcycles, it is most easily reached by boat. A likely factor in the relative poverty to be discussed shortly is Sangkimah's being too far from roads suitable for truck transport of produce to urban markets. Congruent with this is the fact that no oranges are being grown in Sangkimah, although Wirawan (1985: 64) has described its flood-plain soil as comparable to that of Teluk Pandan in fertility.

Perhaps most striking of our findings is the fact that, when we interviewed all 20 men who constitute a random sample (22%) of Sangkimah's 90 heads of households, we found that 7 out of the 8 men in their 20s or 30s in that sample said they would move to an official relocation site if it had good enough soil. At the same time, none of the men in their 40s or older in the sample wanted to be relocated. More will be said about these findings shortly.

First, however, it may be noted that the younger and older men agreed on wanting compensation for their land and crops. They made no issue about having to be compensated at the same rate as Pupuk Kaltim pays. Nevertheless, for the purpose of comparison, in Sangkimah we used the same methods and assumptions as in Teluk Pandan and Selimpus to make some rough calculations of the total compensation that Sangkimah residents might be entitled to if the compensation rates were to be those used by Pupuk Kaltim.

According to these calculations, as indicated in Table 6, the total amount of cleared Sangkimah land eligible for compensation is 301 ha and the total amount that would have to be paid as "fair compensation" to Sangkimah residents is Rp 1,939,525,000 or US\$825,330. That this too, like our Teluk Pandan and Selimpus estimates, may be conservative is suggested by Wirawan's (1985: 63) estimate, based on interpretation and measurements from 1982 aerial photographs, that Sangkimah's cleared land amounts to 1,120 ha, which is 3.7 times our estimate here of 301 ha eligible for compensation. If, however, we extrapolate from the average area of 4.53 ha per household in our random sample of 20 Sangkimah households (see Table 7) to the total cleared land held by all 90 of Sangkimah's households, the area of 408 ha that we obtain is closer to the estimate of 301 ha obtained from our rough calculations than to Wirawan's estimate from 1982 aerial photographs. As stated previously, we need to use more precise methods if we want to resolve the discrepancies.

Table 6. Possible compensation for Sangkimah land and tree crops (thousands of rupiah)

No	Land Category	Compen- sation per tree (Rp)	Trees per ha	Area, ha	Compen- sation per ha (Rp)	Total Compen- sation (Rp)
1	Sawah in use	-	-	33	12 500	396 000
2	Sawah not in use	-	-	100	2 000	200 000
3	Ponds in use	-	-	19	47 500	902 000
4	Disused ponds	-	-	4	2 000	8 000
5	Orange groves	-	-	-	-	-
6	Second-growth <i>kebun</i> land			64	800	51 200
7	Cocoa plantations			81		
	a. Cocoa trees	4	600		2 400	194 000
	b. Coconut trees	28	50		1 400	113 400
	c. Banana trees	2.5	50		125	10 125
	d. Jackfruit trees	25	32		800	64 800
Total				301		1 939 525

Why might men in Sangkimah be less concerned than those in Teluk Pandan and Selimpus about the compensation rate used and why should so many of the younger men in Sangkimah, unlike those in the two other Bugis settlements, be amenable to moving to an official relocation site? In answer to these questions, we are able at this point to present only speculations or, at best, hypotheses supported by some data but requiring more for their validation.

Two points may be significant. The first is that there seem to be fewer economic opportunities in Sangkimah itself than in Teluk Pandan and, accordingly, the people seem to be poorer. The second is that, although the first point may apply also to Selimpus in comparison with Teluk Pandan, we found in Sangkimah no suggestion of anything like the solidarity professed by Andi M. and others in Selimpus about waiting for “fair compensation” to enable people to move *en masse* to a place of their choice.

With respect to the second point, it must be noted that there was nobody like Andi M. in Sangkimah’s settlement history. The first

Table 7. Sangkimah landholders (random sample)

No	Age	Landholdings in hectares			Total
		Cleared	Bought	Inherited	
1	65	5.5	1	-	6.5
2	47	5	-	-	5
3	37	-	-	2	2
4	70	5.5	2	-	7.5
5	48	4	3	-	7
6	65	3.5	-	-	3.5
7	47	4	-	-	4
8	56	1.5	-	-	1.5
9	35	-	-	1.5	1.5
10	32	-	-	3	3
11	56	3	2	-	5
12	36	-	1	5	6
13	61	4	1	-	5
14	29	3	1.5	4.5	9
15	56	1.5	-	-	1.5
16	30	-	1	4	5
17	51	4	-	4	8
18	61	5	-	-	5
19	63	3	-	-	3
20	35	-	1.5	-	1.5
Mean	49.00				4.53
Median	49.5				5
SD	13.28				2.33

Bugis settlers of Sangkimah, comprising a group of fewer than 10, arrived in 1924 from the Segeri sub-district of South Sulawesi's Pangkep district. At that time, the present site of Sangkimah was mostly in primary forest, but there were some indigenous shifting cultivators in the vicinity. Some inter-marriage between these people and the Bugis pioneers occurred and helped the latter to gain access to land previously cleared by the shifting cultivators. For some years, the pioneers likewise practised shifting cultivation. However, when

many new migrants from Segeri came between 1954 and 1960 as a result of the economic and military disruptions associated with Kahar Muzakar's Islamic rebellion in South Sulawesi and when some of these newcomers appropriated old swidden sites for their own use, the old established settlers joined the new ones in planting coconuts, coffee, jackfruit and bananas in swidden fallows in order to secure rights to the land. *Sawah* were made too. The final influx of Bugis migrants, all from Segeri, was in 1960, when 15 families arrived in a group in February, then 14 more families in June, 8 more in September and, finally, one more in November. That the present-day people of Sangkimah seem much less oriented towards South Sulawesi than do those of either Selimpus or Teluk Pandan is no doubt related to Sangkimah's being the oldest of the three Bugis settlements and the one to which migration from Bugis homelands in South Sulawesi ceased least recently.

With respect to the first of the points made above, various possible indications of relative poverty and the lack of economic opportunities may be noted. For example, the percentage of household heads who are *haji* is much lower in Sangkimah (5 out of 90, or only 5.5%) than in either Teluk Pandan (22 out of 184, or 12%) or Selimpus (13 out of 80, or 16%); the standard cost of making the *haj* from Indonesia is, at present, almost Rp 8,000,000.

Another possible indication is the markedly skewed sex ratio in Sangkimah, with males comprising 57% of the population (251 out of 439), compared with 55% in possibly also poor Selimpus (193 out of 352) and only 51% in probably much better-off Teluk Pandan (498 out of 969). The contrast especially with Teluk Pandan may reflect problems of Sangkimah men in obtaining wives because of the high cost of Bugis weddings (costing between one and two million rupiah in Teluk Pandan in 1996). Regrettably this is one of those hypotheses that we cannot test adequately with the data available to us.

Another indication is that people are increasingly either permanently leaving Sangkimah or else seeking temporary work elsewhere. Some say that this is happening because rice yields in Sangkimah have been declining as a result of soil and water pollution caused by oil and coal company operations north-west of the settlement (cf. Pusat Studi Lingkungan 1993: 94-95), but it is not clear whether this has actually occurred or, if it has, just how it has occurred. In any case, Sangkimah's 1987 population was 587 (Formulation Mission 1991: 21) compared to 439 at present – a 25% decline. Some who

have left have even done so by joining government-sponsored transmigration programmes, the most recent being a programme to relocate people to a site in Berau district, north of the national park. At least two or three Sangkimah families are said to have joined this programme in 1995. As for temporary employment outside Sangkimah, many men commute daily to Sangatta to engage in construction work, involving either house building or coal-company (Kaltim Prima Coal) operations. One-way commuting time between Sangkimah and the Sangatta workplaces is one hour by bicycle and two hours on foot. Workers told us that wages are Rp 3,000 per day (8 a.m. to 6 p.m.) for ordinary labourers and Rp 6,000 per day for the work supervisors, some of whom are also from Sangkimah. Possibly food is provided in addition to these wages. In any event, the daily wages are less than those that we have previously indicated as being paid to temporary labourers in Teluk Pandan (see above, p. 14).

About 1990, some Sangkimah men began also to stay in Bontang during the week to work in construction and similar jobs (for the same wages as indicated above) and then to return home to Sangkimah for the weekend (see Formulation Mission 1991: 20). Men making these weekly trips either walk to catch the Sangatta-Bontang bus at a cost of Rp 3,750 per person or else go by motorised boat at a cost of Rp 5,000 per person. The bus ride takes one hour, while the boat ride takes two. The boat, owned by one of Teluk Pandan's entrepreneurs, is sometimes chartered for the trip to Bontang at a cost of Rp 30,750. It carries up to 10 passengers. While in Bontang, the Sangkimah workers sleep at the construction sites where they work or else at friends' houses.

Some young Sangkimah men are prepared to go much further afield than Bontang for work. This is indicated by the fact that about a dozen of them told us that they would like to go to Irian, just as one of their friends had done two years previously. What this man said about Irian in a recent letter to his father made migration there attractive to his friends.

Certain recent events of concern to the staff of Kutai National Park and other conservationists may also be regarded as possible indications of relative poverty and the lack of economic opportunities in Sangkimah. These events were the clearance of mangroves and construction of nine hectares of brackish-water fish and shrimp ponds in Sangkimah in 1995-96. We learned in Sangkimah that the instigators of these events were three separate Bugis entrepreneurs, two of them originally from Segeri. Two of these entrepreneurs run stores,

one in downtown Bontang and the other in Lok Tuan, a largely Bugis community near Bontang. The third man is a seller of construction materials in Bontang. Apparently the three realised that cheaper land and labour in Sangkimah would enable them to become *tambak* owners there for substantially less money than in Bontang itself. Although Sangkimah men had constructed 14 ha of *tambak* (10 ha being still in use) beginning in 1970, they knew of national park opposition to the mangrove destruction called for by *tambak* and they constructed no new ones from 1979 until the first of the outside entrepreneurs arrived in 1995 with a proposal for 4 ha of new *tambak*. He and the other two men, who came in 1996, all followed the same procedures: consulting Sangkimah's *tambak* pioneers about land suitable for ponds; meeting with the landowners and the hamlet head to arrange to purchase the land; and then recruiting workers to clear the land and construct the *tambak*. We were told that four men are able to construct the embankments for a one-hectare *tambak* in about 15 days. The following are the estimates we were given of the costs that the entrepreneurs had to bear per ha of *tambak*:

Land purchase	Rp 500,000
Land clearance	500,000
Constructing embankments, at the rate of Rp 2,500 per metre of length	25,000,000
Channel construction	500,000
Drainage of embankment-enclosed area and application of Tiodang pesticide to rid area of predators of fish fry	30,000
Application of lime (<i>kapur</i>) to increase soil pH levels	62,000
Application of fertiliser (urea, TSP)	220,000
TOTAL	Rp 26,812,000

For the purpose of comparing costs, we talked with a Bugis *tambak* manager in Bontang and learned about some differences. For example, the price of land suitable for *tambak* in the Bontang Kuala section of Bontang is Rp 1,500,000, i.e., three times the Sangkimah price. And embankments, which are made higher and wider than in Sangkimah, cost Rp 15,000 per metre length-wise along the embankments. These differences alone bring the cost of preparing *tambak* to Rp 152,812,000 per ha, i.e., 5.7 times as high as in Sangkimah.

The availability of cheap labour after construction of the *tambak* may be a further attraction of Sangkimah to entrepreneurs. As in the case of Teluk Pandan *tambak*, there is one labourer per 0.25 ha in Sangkimah. In both places, the work involves mainly guarding the *tambak*, feeding the fish and making *tambak* repairs. However, workers in Sangkimah receive only a one-fifth share (*bagi lima*) of the proceeds rather than the quarter share (*bagi empat*) received by workers in Teluk Pandan. The difference may be significant. Let us assume that a one-hectare *tambak* is stocked with 2,000 milkfish (*bandeng*) at a cost of Rp 250,000 and 4,000 tiger shrimp at a cost of Rp 300,000 and that the cost of fish food for four months is Rp 200,000. If the loss of fish and shrimp before harvest at the end of four months is 25%, the harvest may yield 1,000 kg of milkfish, worth Rp 3,500,000, and 150 kg of shrimp, worth Rp 3,750,000. Deducting from the gross proceeds the cost of stocking the pond and buying the fish food would leave each worker's share after four months of labour at Rp 406,250 under the *bagi empat* arrangement but at only Rp 325,000 under the *bagi lima* arrangement. Even greater is the difference between the *bagi lima* share and what is earned by a *tambak* worker in four months in Bontang where, instead of receiving shares, workers are paid a daily wage of Rp 4,500 (including Rp 1,500 for food). For four months (122 days), these wages amount to Rp 549,000. But, despite the greater income earned by *tambak* workers elsewhere, the Sangkimah workers with whom we talked seemed glad to have their jobs.

Some of the men who had been recruited to construct the nine hectares of *tambak* in Sangkimah in 1995-96 told us that there may be more construction (with antecedent mangrove destruction) in the future and that they will be "careful" about the construction because of national park opposition. Such possibilities, along with Sangkimah young men's indicated amenability to relocation, argue for acting fairly quickly in the Sangkimah case to find suitable places outside the national park for at least the younger people to move to. While we did not specifically ask whether the older people would join the younger ones if the latter were to make definite decisions to move, this too is a possibility to be considered.

Bugis Settlers Relocated to km 24

Hearing that some Bugis settlers had been relocated to km 24 from the protected forest (*hutan lindung*) lying between Bontang and the

Santan River to the south, we decided to devote at least two days to interviews with the settlers. At the time, we had tentatively identified certain factors, such as relative wealth, substantial entrepreneurial success and patron-client ties, which were making people in Teluk Pandan and/or Selimpus unreceptive to relocation. So our aim was to test the validity of these identifications by trying to ascertain whether the same factors were present or absent among those who had relocated. We were initially encouraged in this aim by receiving from the head of the farmers' group (*Tani Karya Terpadu*) at km 24 a list of 20 Bugis families that had moved from the protected forest to a part of the relocation site accessible via an old timber road at km 29. However, when we visited this location, we were told that 19 of the 20 families had returned to the protected forest and were growing bananas and other crops there. We were told that this was partly because of problems with the environment – poor soil and crop-destroying wild pigs – in the relocation site and partly because of conflict with another farmers' group whose members were making claims to the land without having registered, as the group of 20 had, with the farmers' group at km 24.

The one Bugis family remaining from the 20 was interviewed. We learned that the man and his wife, now in their forties, had been growing pepper south of Samarinda (see the next section) when the great drought of 1982-83 occurred and fire destroyed their plantations. Because of this event, they and their children moved to Bontang in 1983, where the wife had relatives working as healers (*dukun*). Knowing nobody else in the Bontang area and aiming to start new plantations, they moved into the protected forest and, from 1983 to 1992, stayed there, clearing land and growing bananas and other crops. They said they moved to km 29 in 1992 because of harassment by national park officers in the protected forest. They are growing a considerable variety of crops at present and, to make ends meet, are receiving financial help from a son who works in construction in Samarinda and from the husband's younger brother, now working as a security guard for Pupuk Kaltim in Bontang.

In addition to this Bugis family, two others interviewed at either km 29 or km 24 had spent time in the protected forest, without ever having been officially relocated from there. The husband in one of these families, still only 38 years old, first moved from Bulukumba in South Sulawesi to East Kalimantan in 1975. For two years, he was an unsuccessful clove planter near Balikpapan, then worked as a labourer

on a truck for three years. From then until 1992, he was either unemployed or did construction work in and around Bontang. It was during this last period that he moved temporarily to the protected forest and cleared land for a single day before he was caught by national park officers and told to stop. He moved to km 29 in 1992 on the advice of a Javanese friend and now has 1.15 ha planted with various tree crops (coconuts, coffee, cocoa, jackfruit, oranges), as well as bananas, chilli, tomatoes and corn. He also has a water buffalo that he uses for transporting logs and gets paid Rp 6,000 per day for this. This may be his main economic activity. A number of Bugis spontaneous migrants from South Sulawesi were found to be also engaged in one way or another in timber exploitation at km 24 or km 29, although they had come originally to start cocoa plantations. These migrants were finding such activities as cutting trees with rented chainsaws and preparing planks from them for sale at Rp 150,000 per cubic metre to be more lucrative. (Illegally cut wood is said to be selling in Bontang at present for between Rp 250,000 and Rp 275,000, while certified, legally cut wood costs Rp 350,000 per cubic metre.) We found other Bugis spontaneous migrants who, disappointed in the condition of the bananas and cocoa that they have planted, have turned for their livelihood to quarrying rocks for house- and road-building.

We talked with one other Bugis man who has lived in the protected forest near Bontang. Until 1992, when he was 38 years old, he was making a living by taking eggs produced in Sidrap in South Sulawesi to sell in Ujung Pandang. In mid-1992, he moved to Balikpapan, where he had relatives. For four months, he sold vegetables there, but business was disappointing. Having relatives in Bontang too, he moved there, staying at a divorced woman's house and selling vegetables in downtown Bontang for three months. When the woman demanded that he marry her, he fled with a Butonese friend to the protected forest, where they stayed at the house of a man from Lombok. After about three months there, they were warned by national park officers to desist from cutting trees. Hearing about the km 24 site, he then joined the farmers' group there and obtained one hectare of second-growth land and planted cocoa trees on it. Eventually he rented and then bought more land, which he has used particularly for growing chilli and vegetables. He has been harvesting 20 kg of chilli ten times a year and selling it for Rp 2,500/kg; so he has been getting Rp 500,000 per year from the chilli alone. He also has found a good wife and has built a good house at km 24. He is, he says, a happy man!

Only limited inferences are possible from the few interviews that have been presented here. Certainly they do not provide a systematic, rigorous or statistically adequate test of the validity of our identification of factors making people in Teluk Pandan and/or Selimpus unreceptive to relocation. It may nevertheless be worth noting that none of the factors mentioned at the beginning of this section – relative wealth, substantial entrepreneurial success or patron-client ties – noticeably influenced the decisions and events that led those we interviewed to km 24. (In the case of the last informant, success came after rather than before he moved to km 24.) This absence of the factors in these cases is congruent with our claim that, in other cases, they work against amenability to relocation to sites like km 24.

Bugis Settlers Relocated from Bukit Soeharto

In 1980, some of our research among Bugis pepper farmers was conducted less than 15 km from Bukit Soeharto, an area mid-way between Samarinda and Balikpapan and traversed by the main Samarinda-Balikpapan road. At the time, Bukit Soeharto had been designated a protected area and there already was concern about some Bugis migrants who were living within its boundaries and clearing forest and growing pepper. Subsequently the area was enlarged to approximately 75,000 ha (stated “definitively” to be 74,350 ha in 1991 [Departemen Kehutanan ... Kalimantan Timur 1992: 1]) and concern grew. Writing in July 1990 as WWF consultants on Kutai National Park planning, exactly ten years after our research, Petocz *et al.* (1990: 19), noted that a “frequently cited...model for moving the settlements from Kutai National Park” was the “translocation programme recently initiated in the Bukit Suharto Nature Reserve” [officially called a *Taman Hutan Raya*, or Great Forest Park]. However, they also noted the following:

Yet, from the time a strategy was developed for the Bukit Suharto reserve, some eight years passed before the first settlers were actually moved out of the reserve. A great number of people still occupy the Bukit Suharto reserve and the process of relocating the remainder is far from complete.

When we returned to East Kalimantan in 1996, we heard that the process had, in fact, been mostly achieved some years earlier and we

further heard indirectly from some of the implementing officials that it went smoothly. This was a challenge to our emerging conclusions about the unwillingness of Teluk Pandan residents to be relocated to km 24. Accordingly we decided to devote some limited time to obtaining additional information about the relocation from Bukit Soeharto, with a view to both explaining its alleged success and seeing whether it might indeed constitute a model for relocation of settlers from Kutai National Park.

Unfortunately, because of time constraints and the reticence of some of those that we spoke with, we were able at first to obtain only sketchy information from government offices in Samarinda and from four Bugis farmers who were relocated from Bukit Soeharto and from another Bugis man who, as a landless agricultural worker not entitled to relocation benefits, moved on his own from Bukit Soeharto, first further north along the Balikpapan-Samarinda road and eventually to the Bontang area. But even if we are unable to vouch for the complete accuracy of the account that follows, it is worth presenting in the hope that it will encourage anyone following up our research to elicit better and more detailed information.

At first, we thought that an important difference between the Bukit Soeharto situation at the time of relocation and the present Teluk Pandan situation may be with respect to farmers' expectations about maintaining profitable yields from already planted perennial crops and from the land on which they are grown. For the Teluk Pandan case, it should be recalled that orange trees, a main source of income, were first planted in 1990 and are – perhaps too optimistically (see Ashari 1992: 137-138) – expected by the growers to continue to yield until the year 2005, i.e., fifteen years after planting. The growers also expect that, when the trees stop yielding, the relatively fertile land in which they have been growing will be quickly usable again. And cocoa trees which, in Teluk Pandan, date partly from the mid-1970s but mostly from no earlier than the mid-1980s, are known to continue to yield well for decades if not unduly affected by pests or diseases (cf. Lass 1985: 210-211). By contrast, Bukit Soeharto farmers expected that yields from their pepper plantations would decline approximately ten years after planting, to the point that they would soon have to be abandoned (cf. Vayda and Sahur 1985: 94). According to our informants this was, in fact, the condition that most of the Bukit Soeharto pepper plantations had reached by the time of relocation. The youngest pepper plants at that time were seven years

old, but most were between ten and fifteen years of age. This supports some conclusions reached in our earlier study of Bugis pepper farmers near Bukit Soeharto, namely, that the “time they planned to stay in one place was not definite for any longer than the perennials planted there would yield profitably” and that their readiness to move varies with the age of their pepper plantations (Vayda and Sahur 1985: 94, 109). However, we had also stated the following in a report on our earlier research (Vayda and Sahur 1985: 106):

The use of fertilizer may make it easier for old pepper areas to be reused, as is done in Sarawak, where much pepper is planted in *alang-alang* (*Imperata cylindrica*) grassland that had been the site of plantations twenty or thirty years earlier. But for the Bugis migrants who chose to stay in East Kalimantan, including those who had been in the province since the early 1950s, land with primary or logged-over forest, which could be burned to add nutrient-rich ash to the soil, had always been available when old plantations were to be abandoned and new ones begun. Planting in *alang-alang* is an option that no Bugis pepper farmers seem yet to have considered.

When first interviewed, the Bukit Soeharto farmers told us that, at the time of relocation, no more forested land suitable for starting new pepper plantations without the use of fertiliser was available anywhere near where they were living on the east side of the Balikpapan-Samarinda road. However, we subsequently learned that there was such land on the west side of the road and that at least some of the farmers were already planning, before the relocation occurred, to move there. In light of this, we had to seek further explanation of the alleged success of the relocation, which was relocation to an *alang-alang* site at Sungai Merdeka (see below).

Subsequent accounts by our Bugis informants about certain events leading up to the relocation may be relevant. According to these accounts, government officials came to Bukit Soeharto some time before the relocation and held a meeting in which a local leader (a deputy hamlet head or *wakil dusun*) and some of the people were told that they had to move. The leader then went to houses of the farmers and asked whether they were ready to move. About a month before the relocation began, more than thirty soldiers with guns, presumably a platoon, marched in Bukit Soeharto, first along the main

Samarinda-Balikpapan road and then past the Bugis farmers' houses on the side roads. Referring to these events, an official in the East Kalimantan governor's office told us that it was just a day of training for the soldiers, but one of our Bugis informants referred to it as a "show of force" (*mempamerkan kekuatan*) and said that it was the first time it had occurred during all his years at Bukit Soeharto. After the day of training, the local leader again made the rounds of the farmers' houses and found that a consensus had formed in favour of moving, whereas many had previously been non-committal. Because the leader now owns a motor scooter, a good house and a roadside eating-place (*warung*) in a Bugis settlement north of Bukit Soeharto, some of the Bugis farmers believe he was paid by the government for his co-operation.

The actual relocation continued for an extended period, with some 500 families being moved, under government supervision, to a location at Sungai Merdeka, 28 km north of Balikpapan. On his moving day, each family head had to sign an agreement about leaving Bukit Soeharto and about the facilities and other benefits to be received at the relocation site, which was evidently intended, both by the government and the farmers, to be used for a continuation of pepper-farming. However, by the time of our interviews in July 1996, approximately 200 of the original 500 families were reported to have left Sungai Merdeka because they had not received some promised benefits (e.g., rice allotments, 36 square-metre rather than 12 square-metre houses, and enough pepper plants and ironwood support stakes for starting plantations on the 1.5 ha of land allocated to each family) and/or not finding the area well suited to pepper-growing. Some of these 200 families have simply abandoned their Sungai Merdeka land, while others have sold it for Rp 200,000 - 250,000 per ha to Indonesian Chinese businessmen who are using the land for factory-style chicken production and other enterprises. Those who have left include some who have gone back to Sulawesi and others who have remained in East Kalimantan and have joined Bugis communities near Bukit Soeharto and in Samarinda and Muara Badak. We learned also of ten men who have returned to Bukit Soeharto to clear forest for pepper plantations far enough from the road to be likely to escape detection by forestry officials or the police. For the time being, however, these men are maintaining residence in Sungai Merdeka, where members of their households are raising chickens and tending such crops as cassava, bananas, green beans and chilli. Others among the remaining

300 families are growing these crops as well, and only one family is successfully growing pepper. The family has 1,500 three year-old pepper plants and, being relatively wealthy, is using fertiliser.

The foregoing is the story as told by Bugis informants to Sahur. We sought confirmation from official sources and found it, at least partially, in a document from the Department of Forestry in Samarinda (Departemen Kehutanan ... Kalimantan Timur 1992). According to this document (pp. 2, 12), Bukit Soeharto's inhabitants and their land were "inventoried" in 1988, and it was found that there were 697 families and a plantation area of 1,500 ha, of which 53% or 792.65 ha was in production and that, for various reasons, the families had no interest in the official plan for their relocation to Sungai Merdeka. Further, according to the document (p. 8), an official agreement was reached on 22 February 1990 that Bukit Soeharto could be used for military training. While the document does not state that training began soon after this date, it does state (p. 2) that the removal of people from Bukit Soeharto began on 26 March 1990, when 50 families were relocated. This chronology is compatible with that indicated by our Bugis informants who told us that soldiers first marched through their settlements about a month before relocation began. According to the document (p. 2), more people were relocated on 12 June and 4 July 1990 and on 31 January 1991 so that, by the last date, the relocation of a total of 500 families had been reached. What made the people more amenable to relocation by these dates than they had been in 1988 is not explicitly considered in the document.

CONCLUDING REMARKS

Various recommendations have been made in the preceding sections, and some of them will be noted again here. One recommendation that cannot be emphasised enough is that there should be further studies. The three months that we had both for conducting our studies and writing this report is inadequate time for giving sure answers to many of the questions that we have raised, especially when some of the questions ultimately call for the kinds of careful measurement of landholdings and counts of trees that we had neither the time nor training to perform.

However, it should still be clear that, by avoiding the standard survey and rapid appraisal methods and pre-set questionnaires used by previous consultants and investigators and by insisting instead on being guided in our collection and analysis of data by the goal of showing causal connections among events or answering why-questions about them, we were able to begin to answer key questions for national park management planning – such questions as why Teluk Pandan and Selimpus people reject proposals for their government-sponsored relocation to particular sites, while younger Sangkimah people do not reject them and Bukit Soeharto people did reject them at one time and not at another time. When we ourselves have not been satisfied with the answers that we could find in the limited time that we had, we have indicated our dissatisfaction and have called for further studies. This is so, for example, with respect to our suggestions about the effects of relative poverty in Sangkimah. Better and more data are needed both to establish that poverty as a fact and to show whether the causes of it lie significantly in oil and coal company pollution of Sangkimah land and water (as alleged by the Sangkimah people), in Sangkimah's distance from roads suitable for truck transport of such produce as oranges to urban markets, and/or in other factors still to be ascertained.

When our methods have led to answers with which we have been satisfied, we have used them as a basis for making recommendations. Examples are our recommendations against relocating Teluk Pandan people to 2.25 ha sites at km 24 and in favour of considering the alter-

native of cash compensation without relocation to a particular site. These recommendations are made on the basis of our findings about how decisions about economic activities are causally connected to such past events as receiving compensation payments and establishing patron-client ties. Sometimes when our answers to questions have been more tentative (because of inadequate time for obtaining more data), we have nevertheless used the answers for making recommendations, but the recommendations are more tentative too. A case in point is our suggestion for giving consideration to working closely with the “noble patron” in Selimpus as a means of effecting the relocation of him and his people at relatively low cost and in accord with both their preferred sites for relocation in Sulawesi and some of their known ways of organising themselves when moving to new places. It should be recalled that, in the section on Selimpus, this recommendation was preceded by a call for more thorough studies of the patron’s influence and effectiveness as a leader, both in the past and at present.

As noted earlier, part of our research effort was directed specifically to seeking evidence for assertions prominently made by some other consultants, namely, that many Bugis settlers in the national park were originally attracted to Bontang by the prospect of jobs in the town’s growing industrial sector and that they encroached and settled in the national park’s forests only after failing to find industrial employment (Petocz *et al.* 1990: iv, 12). We did find a few such settlers, but we found more who had come for other reasons, including those that made many Bugis move to other places in the 1950s and 1960s, i.e., to escape the economic and military disruptions associated with Kahar Muzakar’s Islamic rebellion in South Sulawesi and to take advantage of advice received from relatives or friends about one or another location where forested land could be profitably converted to farmland. As has been argued elsewhere (Vayda 1995, 1996a), general knowledge or hypotheses can be useful guides for seeking the causal antecedents of events, but often we can know little in advance about which general knowledge or hypotheses will pertain to the cases at hand. Just as we have found a few cases in accord with the general hypothesis that loss of urban/industrial employment leads to forest destruction, we have found other cases in accord with the general hypothesis that urban/industrial employment relieves pressure on forests. Indeed, if the latter is a process now taking place in Sangkimah, it parallels such processes in other places at other times (see, for example, Rudel 1995: 502 on reforestation as a result of land

abandonment by urban-oriented children of small farmers in the Tennessee Valley in the USA).

Similarly, consider the implicit hypothesis favoured by many relocation planners, i.e., that forest settlers are poor peasants, driven to the forests by desperation and therefore likely to welcome 2.25 ha of land at a relocation site. Possibly this does apply to a few settlers who are growing bananas in the protected forest south of Bontang. But certainly it does not apply to Teluk Pandan's entrepreneurs, with their hectares and hectares of orange groves, cocoa plantations and brackish-water fish-ponds, as well as, in some cases, their second houses in Bontang, their taxi fleets, their motorised fishing boats, and their land speculations outside Teluk Pandan.

The fact that all the settlers we studied are Bugis is of course relevant, and our antecedent knowledge of Bugis history and culture helped us greatly in making causal connections among events in the course of our field work. But, here again, we could not know in advance just what parts of our knowledge would pertain to the cases at hand. Thus, the patron-client ties described by other anthropologists as a "key element" (*unsur kunci*) in Bugis society were found by us to be important factors for understanding resistance to relocation in Teluk Pandan and Selimpus but not to be significant factors in Sangkimah – and not to have had much influence on the lives of our Bugis informants at km 24. Even when our antecedent knowledge did seem initially to account for some events, it could later turn out that it was accounting only partially. This is illustrated by our attempt to explain Bugis relocation from Bukit Soeharto by citing our own generalisations, based on an earlier study, that the time Bugis farmers plan to stay in one place is not definite for any longer than the perennials planted there would yield profitably and that the farmers' readiness to move varies with the age of their plantations. As indicated in the section on Bukit Soeharto, this was, at best, only a part of the story, and identifying the factors responsible for the success of the relocation required data on specific historical events – like the use of Bukit Soeharto for military training – not rooted in either Bugis culture or previously known Bugis history.

In short then, we are arguing here, much as we have argued elsewhere (Vayda 1996a), for applying general knowledge in studies such as ours but also for keeping an open mind about what general knowledge is applied as we go about the business of empirically answering questions about why things have occurred.

REFERENCES CITED

- Acciaioli, G.L. 1989. Searching for Good Fortune: The Making of a Bugis Shore Community at Lake Lindu, Central Sulawesi. Ph.D. dissertation, Australian National University.
- Ashari, S. 1992. *Citrus reticulata* Blanco. In E.W.M. Verheij and R.E. Coronel (eds), *Plant Resources of South-East Asia 2: Edible Fruits and Nuts*, pp. 135-138. PROSEA (Plant Resources of South-East Asia), Bogor.
- Bupati...Kutai. 1993. Harga Dasar Ganti Rugi Tanah dan Tanam Tumbuh dalam Wilayah Kabupaten Daerah Tingkat II Kutai. Keputusan Bupati ... No. 0803.
- Departemen Kehutanan Propinsi Kalimantan Timur. 1992. *Pembangunan Taman Hutan Raya Bukit Soeharto*. Departemen Kehutanan, Samarinda.
- Fakultas Pertanian Universitas Mulawarman. 1991. "*Project Proposal*": *Pengembangan Perkebunan Rakyat Wilayah Bontang dengan Pola PIR-Lokal oleh PT Pupuk Kalimantan Timur (Persero) sebagai Bapak Angkat*. Faculty of Agriculture, Mulawarman University, Samarinda.
- Formulation Mission. 1991. *Kutai National Park Developmental Plan 1992-1996, Operating Plan 1992, Framework for Management*. Directorate General of Forest Protection and Nature Conservation, Ministry of Forestry, Jakarta.
- Lass, R.A. 1985. Replanting and rehabilitation of old cocoa farms. In: G.A.R. Wood and R.A. Lass (eds), *Cocoa*. 4th ed., pp. 210-233. Longman, Essex.
- Lineton, J. 1975a. An Indonesian Society and Its Universe: A Study of the Bugis of South Sulawesi (Celebes) and Their Role within a Wider Social and Economic System. Ph.D. dissertation, School of Oriental and African Studies, University of London.

- Lineton, J. 1975b. Pasompe' Ugi': Bugis migrants and wanderers. *Archipel* 10: 173-201.
- Mattulada. n.d. Traditional management among Bugis-Macassar entrepreneurs in South Sulawesi. Unpublished paper presented at a conference on "South Sulawesi: Trade, Society and Belief," sponsored by the Koninklijk Instituut voor Taal-, Land- en Volkenkunde, Leiden, 2-6 November, 1987.
- PT Pupuk Kalimantan Timur. 1993. *Pengembangan Perkebunan Rakyat Pola PIR-Lokal oleh Pemerintah Daerah Tingkat II Kabupaten Kutai Bekerjasama dengan PT Pupuk Kalimantan Timur sebagai Bapak Angkat*. PT Pupuk Kalimantan Timur, Bontang, and Faculty of Agriculture, Mulawarman University, Samarinda.
- Pelras, C. n.d. Hubungan patron-klien dalam masyarakat Bugis dan Makassar. Unpublished paper presented at the Social Science Research Council Conference on South Sulawesi, Melbourne, 1981.
- Petocz, R., N. Wirawan and K. MacKinnon. 1990. *The Kutai National Park Planning for Action*. World Wide Fund for Nature (WWF), Jakarta.
- Pusat Studi Lingkungan Universitas Mulawarman. 1993. *Studi Sosial Antropologi Masyarakat Pemukim dan Penggarap dalam Taman Nasional Kutai*. Mulawarman University and Department of Forestry, Samarinda.
- Rudel, T.K. 1995. Did TVA make a difference? An organizational dilemma and reforestation in the Southern Appalachians. *Society and Natural Resources* 8: 493-508.
- Ruf, F., Jamaluddin, Yoddang and W. Ardbby. 1995. The "spectacular" efficiency of cocoa smallholders in Sulawesi: Why? Until when? In: F. Ruf and P.S. Siswoputranto (eds), *Cocoa Cycles: The Economics of Cocoa Supply*, pp. 339-375. Woodhead Publishing, Cambridge, England.
- Samson, J.A. 1986. *Tropical Fruits*, 2nd ed. Longman, Essex.
- Scott, J.C. and B.J. Kerkvliet. 1977. How traditional rural patrons lose legitimacy: a theory with special reference to Southeast Asia. In: S.W. Schmidt, L. Guasti, C. Lande and J.C. Scott (eds), *Friends, Followers, and Factions: A Reader in Political Clientism*, pp. 439-458. University of California Press, Berkeley.

- Vayda, A.P. 1980. Buginese colonization of Sumatra's coastal swamplands and its significance for development planning. In: E.C.F. Bird and A. Soegiarto (eds), *Proceedings of the Jakarta Workshop on Coastal Resources Management*, pp. 80-87. United Nations University, Tokyo.
- Vayda, A.P. 1995. Failures of explanation in Darwinian ecological anthropology: Part II. *Philosophy of the Social Sciences* 25: 360-375.
- Vayda, A.P. 1996a. *Methods and Explanations in the Study of Human Actions and Their Environmental Effects*. CIFOR/WWF Special Publication. Center for International Forestry Research (CIFOR), Bogor.
- Vayda, A.P. 1996b. A proposal for socio-economic and historical research concerning settlers in Kutai National Park. Submitted to UNESCO, Jakarta. Typescript.
- Vayda, A.P. and A. Sahur. 1985. Forest clearing and pepper farming by Bugis migrants in East Kalimantan: antecedents and impact. *Indonesia* 39: 93-110.
- Wirawan, N. 1985. *Kutai National Park Management Plan 1985 - 1990*. World Wildlife Fund (WWF), Bogor.
- Wood, G.A.R. 1985. Establishment. In: G.A.R. Wood and R.A. Lass (eds), *Cocoa*. 4th ed., pp. 119-165. Longman, Essex.
- World Bank Environment Department. 1994. *Resettlement and Development: The Bankwide Review of Projects Involving Involuntary Resettlement 1986-1993*. World Bank, Washington, DC.
- Yayasan Dharma Wana Lestari Universitas Mulawarman. 1996. *Upaya Penanganan Permasalahan Perambah Hutan di Propinsi Kalimantan Timur (Taman Nasional Kutai) dan Kalimantan Selatan (Sungai Pinang)*. Mulawarman University and Department of Transmigration, Samarinda.

SUMMARY

What policies should be adopted regarding enclave populations in national parks and other protected areas and how should the policies be implemented? These questions are important for protected areas throughout the world. Andrew P. Vayda and Ahmad Sahur report here on socio-economic and historical research that they conducted in the rapidly industrialising Indonesian province of East Kalimantan to help deal with such questions. They use their findings to make practical recommendations about relocating Bugis farmers and fishers from East Kalimantan's Kutai National Park and to assess relocation as an alternative to maintaining the *status quo* with respect to settlements within the Park's lowland rainforest. In addition, their findings are used to challenge some widely held generalisations about the impoverished condition of forest settlers, the preferability of land to only cash to those who might be resettled, and the inter-relations between urban/industrial employment and forest destruction.

The report is methodologically interesting as well. It shows how data collection and analysis may be guided by the goal of obtaining causal histories of events (including such events as forest-clearing in particular places at particular times and past changes in work and residence by settlers in the National Park). It shows how data collection and analysis, thus guided, may lead to significant research findings not obtained by investigators using rapid appraisal and standard survey methods and pre-set questionnaires. Also featured in the report are some methodological reflections on the value and limitations of applying general knowledge and cultural information, and on the need for information about particular historical events, in studies like Vayda and Sahur's.

In their research in and around Kutai National Park in 1996, Vayda and Sahur were resuming a collaboration begun in East Kalimantan sixteen years earlier. Andrew P. Vayda is Professor of Anthropology and Ecology at Rutgers University in New Brunswick, New Jersey, USA, and was, at the time of the research reported here, a Distinguished Visiting Scholar at CIFOR. Ahmad Sahur lectures in anthropology at Hasanuddin University, Ujung Pandang, South Sulawesi, Indonesia, and serves there also as an assistant dean.