

# RHETORIC, PRACTICE AND INCENTIVE IN THE FACE OF THE CHANGING TIMES

## A CASE STUDY IN NUAULU ATTITUDES TO CONSERVATION AND DEFORESTATION

*Roy Ellen*

### Note

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### Introduction

Part of the mythology of late twentieth century environmentalism is that certain 'traditional' peoples are uniquely adapted in ways which ensure that their material and spiritual resources are held in balance. Such peoples are usually assumed to be in some vague sense - though by no means exclusively - gatherers and hunters, practitioners of animistic 'natural' religions, remote and resistant to change. This is recognisably only the latest of a long and ignoble pedigree of views which perpetuate a pernicious dichotomy, which however much some have tried to disguise it, unmistakably reproduces the notion of a *primitive*, exotic Other. It is a view which Edmund Leach described with characteristic forthrightness - in responding to Theodore Roszak's claim [Roszak 1971] that it was Vico's - as 'sentimental rubbish' [Leach 1971:166].

Such beliefs persist, in the minds of neo-pagans in Highgate, amongst ordinary thinking folk, in the Academy as well as outside it. Why this should be the case is a question addressed in other contributions to this volume; and whether or not the protagonists themselves have such beliefs and whether those beliefs have regulatory consequences is now the subject of a burgeoning literature [e.g. Brightman 1987, Callicot 1982, Hames 1987, Hughes 1983, Martin, 1978]. In an earlier piece [Ellen, 1986] I have tried briefly to explain why it should be that the myth of primitive environmental wisdom should have such tenacity. I concluded that it does so because some peoples certainly do have ideologies and cosmologies which stress environmental harmony, because at particular times anthropologists and others have appeared to describe populations which have something approaching an ecologically self-sustaining economy, and because many find it attractive to use the concept of adaptation to explain why societies should have achieved such an apparently favourable accommodation. None of this makes sense, however, except in relation to the recognition that such an illusion serves an important ideological purpose in modern or post-modern society. It is also not to deny that many peoples, among them those ironically on the receiving-end of Western expertise and aid, have an impressive accumulation of practical knowledge which is largely ignored by a development industry driven by macro-political goals.

In this paper I examine Nuaulu attitudes to a rainforest environment as these are reflected in their use of it over a 25 year period, and especially in their reactions to commercial logging and changes wrought by Indonesian government transmigration policy in the nineteen-eighties. My main focus is on how the Nuaulu reconcile a new ecological and political order which happens to

work for the present to their advantage, or at least to the advantage of some of them, with a 'traditional' set of beliefs which are underpinned by an entirely different set of cultural assumptions. Existing shared knowledge of how nature *works*, of how in different contexts it interacts with and contrasts with that shared abstraction which we call 'culture', presently co-exist with views which challenge this consensus, views brought about and sustained by wholesale transformation of the rainforest and the apparent possibility that humans can extract from the environment at levels previously non-comprehensible. The *rhetoric* of which I speak in the title is in the form of public and semi-public utterances and pronouncements which address directly or indirectly the changes, adjustments and values implicit in Nuaulu representations and utilisation of nature. The *practices* refer to both the routine daily patterns of subsistence and social interaction, and the *incentive* to those changes in their environment which they perceive - or are persuaded to believe - offer new opportunities.

I begin by stating briefly the history of Nuaulu settlement between 1850 and 1970, and summarising the position on land tenure as it existed between 1970 and 1980. I go on to examine the consequences of logging, local spontaneous immigration, government-controlled transmigration and new patterns of Nuaulu extraction in the Ruatan valley to which these led. I conclude by noting the effects of recent changes on forest extraction, in the light of Nuaulu conceptualisation of forest and in relation to theories of the degradation of the commons.

### **A brief history of Nuaulu land tenure, 1850-1980**

The Nuaulu consisted in 1970 of a group of 12-13 semi-autonomous clans with an overall population of 496, located in Amahai sub-district on the island of Seram (map 1). Seram is part of the *kabupaten* of Maluku Tengah (the Central Moluccas), with an administrative centre at Masohi, and with the capital of the modern Indonesian province of Maluku in Ambon.

[MAP 1 ABOUT HERE]

I mention these details now, not as mere background, but because they feature in significant ways in the narrative which subsequently unfolds.

In 1970 the Nuaulu inhabited four hamlets, grouped into three administrative units within the *desa* of Sepa. Subsistence, then as now, was obtained largely through the extraction of palm sago, swiddening, hunting and gathering. By 1981 the population had grown to 747, and by 1990 to about 1256 (table 1)<sup>1</sup>.

Table 1. Nuaulu population growth in relation sub-district population, 1971-1990

Census Year	Rohua Nuaulu (desa)	Total Sepa (kecamatan)	Total Amahai
1971	180	496	2667
1973	196	544	18538
1975	207	575	
1978	2507	22477	

1979 25207  
1980 30820  
1981 269 747 31023  
1983 3307 35306  
1986 268+ 744 5976  
1988 6081  
1990 452 1256

*Note* For the basis of figures listed in columns 2 and 3 see footnote 1. The Sepa figure for 1971 (based on 1970 data) was provided by the Kantor Sensus dan Statistik, Dati II, Maluku Tengah, Masohi. The remaining sources are: Amahai 1971 [Kantor Sensus dan Statistik Propinsi Maluku, 1972]; Amahai 1978, Sepa 1978 [Kantor Sensus dan Statistik propinsi Maluku, 1980]; Amahai 1979, 1981, 1983, Sepa 1983 [Kantor Kecamatan Amahai, 1983]; Amahai 1980 [Angka Sensus Propinsi Maluku, 1980]; Sepa 1986, 1988 [unpublished figures in Kantor Camat, Amahai, 1990].

What presaged this increase in population by a factor of 2.5 over a period of just two decades, and what consequences followed from it will be discussed later, but for the Nuauulu themselves the single most important accompanying development has been the rapid growth in cutting forest for agricultural land along the Nua-Ruatan watercourse, and even more potently symbolic, the re-establishment of settlements in this same area after a lapse of (in some cases) up to one hundred years, through migration from sites in the vicinity of Sepa on the southern seaboard (map 1). Nuauulu speakers have inhabited the villages around Sepa, though not always permanently, for a period of almost 100 years, having moved from various clan homelands in the highlands along the southern watershed of the east-west spine of the island. The recent movement back to the Nua-Ruatan area is thus seen by many of the protagonists as a concrete manifestation of those assertions of belief punctuating Nuauulu historical accounts (but occasionally extremely explicit), that the sojourn on the coast is no more than a temporary interlude. It would be incorrect to view this as some kind of fulfillment of prophecy, as in Nuauulu terms (and perhaps also in the terms of the peoples who surround them), it has always been taken for granted that there is an intrinsic connection between certain areas of origin and the very definition of Nuauulu ethnicity, and assumed by some to be wholly unremarkable that they would one day return. Unlike their ethnographer, who has admittedly tended to view such assertions with patronising scepticism, it also suggests that the Nuauulu have yet to adopt a modernist version of history in which progress, coastalisation, villagisation and development are all indicators of some inevitable trajectory towards a vaguely understood omega point. The same developments have also underlined the enduring importance of clan ritual and political autonomy, for when people began to re-cultivate and move back to the interior valleys it was not the decision of entire villages or of particular persons, but of individual clans.

Until the last two decades of the nineteenth century, the Nuauulu were located in highland settlements, though with a long history of intermittent relations with Sepa and other coastal domains [Ellen 1988:118]. Nuauulu society comprised geographically and politically autonomous patriclans, associated mythologically with a place of origin [see Ellen 1978: 14, map 3]. Swiddens, sago resources, groves of useful trees and hunting areas of the same clan were together, not separated by the resources of other clans, or even the land of other hamlets or cultural groups. In the short term land was identified with the living individuals and domestic

groups who used it; and, simultaneously, in the longer term was deemed to belong to deceased predecessors and unborn descendants. In other words, it was conceptually a-temporal. Within the last 100 years, however, the Nuaulu have been moving from the highlands and settling in the vicinity and under the putative authority of the Muslim polity of Sepa. The reason for resettlement - although this term implies a degree of physical coercion not entirely apparent from the evidence - were various and not altogether clear. The movement began prior to full Dutch control of the area in the nineteenth century, but was intensified by colonial intervention. It had important implications for the social relations of land use which I have described elsewhere [Ellen, 1977], a description which represents what we might regard as the 'traditional' and normative arrangements as they existed in 1970. But of course, and perhaps for as long as the Nuaulu had been resident on the coast, other changes had been taking place which were part of the present reality in the early seventies, and which have subsequently become even more important. These changes can be grouped under five headings: the creation of multi-clan settlements, cash-cropping, land scarcity, sale of land, and market individualism. Here I shall limit myself to a few remarks on the last two.

In the early seventies sale of land was still a relatively new concept. During 20 months of fieldwork in 1970-71 and in 1973, I recorded only one transaction in the entire Nuaulu area, to a person from Sepa. No one could remember a Nuaulu ever having acquired land from Sepa since the first gift of land made by raja Kamari Kaihatu Tihurua around 1870, which established the physical villages of Watane, Aihisuru, Bunara and Hahuwalan; and only one other instance of sale of land in Rohua could be recalled. However, in 1968 Merpati Sonawe of Watane had bought some garden land from Sepa for 9000 Indonesian rupiahs, and during February 1970, Utapina Kamama of Bunara bought some land from Sepa as a means of obtaining some level ground for a coconut grove. But despite the rarity of actual sale, the concept was well-established by 1970, as was the possibility of land becoming a truly exchangeable commodity. Alienation of land to non-Nuaulu obviously limits the amount of land available, and particularly threatens that which is more valuable. Land transferred within the sphere of interclan prestations is never entirely lost, as access to land may come through women marrying into the clan. Land sold to outsiders is lost forever from the pool of Nuaulu land resources; finally and irrevocably transformed into a commodity. But sale of land is not merely a material loss, it is also a denial of the value of traditional exchanges: a complete negation of the continuity and context of social relationships.

Then there is market individualism. As the Nuaulu experience it, the market is all about deals transacted between individuals, though individuals may sometimes represent groups. When an individual sells land (which is usually held by a clan) he sells it to an individual who will be able to dispose of it as he wishes; when a Nuaulu buys land it is bought for that individual or his heirs and successors, and is not absorbed into clan land. In this way an ideology of individual land-holding establishes itself, and although we presently find the simultaneous existence of 'adat' (customary) rules and market rules, which privilege group and individual respectively, inevitably the ideology of individualism has come to impose itself on the customary sector, especially with respect to the growing of cash-crops by individuals, the value of which does not circulate according to customary rules but according to supply and demand. Overall, individualism with respect to land is the cumulative ideological product of structural shifts resulting from resettlement, confrontation, and participation in a new political and economic order. In this

sense, it is possible to identify contradictions between the 'rights' of individual and those of the clan. But it is clear that similar attitudes antedate such changes, in the sense that although the land was ultimately clan land, the individual was responsible for day-to-day decisions regarding use. Here the community of interest of the clan and of the individual are identical.

Thus, land tenure up until 1980 was a product of internal structural changes (the emergence of the principle of locality, and the fragmentation of clan land), and the partial assimilation of an external ideology of land relations already present on the coast. When I published my first account of Nuaulu land tenure in 1977 the interpretation assumed a modernist, 'progressivist' movement from mountain to coast, traditional to modern, resource to commodity. It was difficult to think of such shifts as anything but inevitable, permanent and ineluctable; perhaps in much the same way as many modelled post-war social democracy or the demise of capitalism. Few of us could imagine a situation in which history might appear to 'unwind' or 'run in reverse'. But by the early nineteen-eighties the situation in south Seram, and Indonesian government policy at several levels, was providing the conditions by which this became possible. In particular, logging and other forms of commercial forest extraction increased in the Amahai sub-district, there was an influx of migrants into the Sepa area, and the Nua-Ruatan valley was opened-up to transmigrants. The consequences of all of this for the Nuaulu were, paradoxically, both to vindicate their enduring identity and rights with respect to a large geographical area and at the same time to radically undermine their conception of forest.

### **The effects of logging and immigration**

Commercial logging had been recommended by Dutch administrators for the Amahai sub-district as early as 1856, and some extraction took place during the colonial period [Ellen 1985: 584]. After independence logging was very limited until the seventies. Apart from local uses, it was restricted to arrangements with Ambonese Chinese and other small businessmen to cut 'meranti', or requests from government bureaucrats or agencies for timber and rattan. In some cases administrators acted in their official capacity, in other cases their status was used as a means of obtaining personal access to resources which could then be sold on the private market at a profit. Such requests often involved the Nuaulu, who were hired as guides, porters and labourers, either commissioned directly to provide particular quantities of timber (for which they were paid in cash, or kind), or required to provide materials for police or army barrack rooms or other government building works as a duty to the state. These latter requests continue to be much resented by the Nuaulu, and there have been occasions when there has been a shortfall in agreed payments, when payments have failed to materialise altogether and when local officials have financially benefitted from Nuaulu labour given free in good faith to the state. This has not encouraged Nuaulu to participate further in such activities. Nuaulu have also served as guides for government surveys (e.g. in connection with the establishment of the Manusela National Park) and in oil prospecting. I mention these things, not so much because they have had a significant physical effect on the forest, but because they mark the beginning of a new set of attitudes to forest. These arise from the recognition that there is a demand for forest resources on a scale far beyond the experience and comprehension of most ordinary Nuaulu, and that new means of transforming forest circumnavigate and thus deny the relevance of pre-existing conceptualisations of forest and those ways in which it is rendered socially useful to humans through the mediation of clans and ancestors.

In recent years new technology, particularly the chainsaw, has had a decisive impact on forest clearance. Large trees which were once left standing are now cut, while the efficiency of clearance has increased immeasurably. It has also brought with it logging for export on a quite unprecedented scale. Between 1969-70 and 1978-79 it expanded dramatically [Ellen, 1985], averaging around one million cubic meters a year for the Moluccas as a whole, and representing overall a ninefold increase during the seventies. All of this has brought only marginal benefits to the Nuauulu: a little short-term employment as labourers and guides and access to some new technology. The Nuauulu can now take advantage of discarded cut timber, the deserted buildings and rubbish of logging camps. Ironically, the driving of causeways through the forest has opened-up new areas to hunters and foragers, while the gaps in the forest are used for driving game. As more open patches appeared in the forest, following timber extraction, and its associated activities, or following the expansion of plantation crops, regrowth grasses and young saplings have attracted deer, so improving short-term hunting prospects.

The long-term reality is that this itself threatens to destroy the very fauna on which the Nuauulu depend. The damage done by mechanized logging is well-documented from elsewhere, and although Moluccan timber extraction is only 3-4 percent of total Indonesian production its ecological and sociological impact is disproportionate given the small size of the forest areas involved. Extensive logging, combined with increased clearance through swiddening, transmigration, government plantations and road-building, seems likely to destroy much of the lowland rainforest of Seram. In contrast to former patterns of timber extraction, typified by a gradual denudation of primary forest and the selective (but not exhaustive) extraction of a variety of species to cater for a wide range of essentially local uses, modern methods involve either the selective extraction of just a few species to exhaustion, or the total destruction of forest in a short period to cater for a narrow range of non-local uses. Additionally (and crucially), the control of the system is becoming increasingly remote. Decisions regarding the location and level of extraction are made by agencies of central government (sometimes pursuing contradictory aims and interests), and within them by individuals and committees at the highest echelons. None of this makes for sensitive responses to changing conditions on the ground.

We must now turn to immigration. The littoral of southern Seram between Elpaputih Bay and the eastern boundary of the Amahai sub-district is not new to incomers [Collins, 1980; Collins, 1984]. But apart from the movements of the Nuauulu themselves in the latter part of the nineteenth century, the population situation appears to have remained fairly stable between 1700 and 1960. There has been the immigration of a few Chinese and Buginese traders, but these have hardly amounted to much; and some re-settlement from Ambon-Lease, internal relocations (Yalahatan, Rutah), and of course some growth at the administrative post at Amahai. From 1960 onwards there was a steady influx of Butonese from southeast Sulawesi, and with the extension of the road from Amahai, there was a dramatic increase in Butonese settlers in particular. There has been some intermarriage with Nuauulu, some conversion to Islam, but most importantly both Sepa and Nuauulu have sold considerable amounts of land to these incomers. This has put greater pressure on remaining Nuauulu land in the Sepa area.

### **The transmigration programme and resettlement along the Nua-Ruatan valley**

In the early nineteen-eighties the Indonesian government began to open-up the valleys of the Ruatan and Nua rivers for resettlement (see map 1). This was only part of a wider programme with implications for the island of Seram, but so far the national programme of transmigration has not directly involved the sub-district of Amahai<sup>2</sup>. The south Seram developments have been organised by the provincial government with the principal intention of alleviating land shortage on the Ambonese islands, resettling victims of natural disasters, and as a means of relocating groups from the poorly-connected and seismically unstable periphery to areas which are better connected and resourced. The first official (as opposed to independent or spontaneous) settlement of this kind in South Seram was at Letwaru in 1964, and comprised some 60 households from Serua. By 1976, the Ruatan valley some two kilometers up-river from Makariki was beginning to receive its first official settlers (50 households in 1976, and the same again in 1977). In 1979 the government moved in a massive 1,175 households into the Wai Pia area, and in 1982 another 90-150 households [Kantor Statistik Kabupaten Maluku Tengah, 1983:115]. However, the most spectacular project, if not the largest in terms of actual numbers, was the wholesale removal of the sub-district of Teon, Nila and Serua (a small group of islands some 300 kilometers to the south) to the Wai Siru area on the Nua, which in 1983 (just before resettlement) had a population of 6421 [Kantor Statistik Kabupaten Maluku Tengah, 1983:24].

By 1986 the government had improved access to the lower Ruatan valley by pushing through a semi-metalled road and by building vital bridges, and had provided some housing and schools. The Ruatan now comprises an ethnically diverse ribbon development as far as the Nua, settlements being indicated in terms of the number of kilometers distant from Masohi. Thus Kilo 5 is occupied by Selayor Bugis, while elsewhere there are Javanese, Bandanese, Saparuan; people from Sepa at Kilo 8, Kei-islanders and Tanimbarese at Kilo 9, and now Nuaulu at Kilo 9 and beyond.

From the point of view of the government, the movement of large numbers of people into the area required clarifying the existing position with regard to land rights. It is widely acknowledged by the inhabitants of the Amahai sub-district that the ownership of forest land over about 'five kilometers' from the coast rests with the Nuaulu by virtue of their prior historic occupation of this area, and that permission must first be sought from them if others wish to cut it. This is a recent convention, and really means five kilometers from the mouth of a particular river. I suspect that formerly no such clear-cut distinction existed between Nuaulu and coastal land, except the assertion that Nuaulu claims began in the headwaters of the smaller rivers emptying into the Banda Sea. The five kilometer convention has, however, important practical consequences when much pressure exists on land. This is, naturally, something which the Nuaulu themselves assert, although until recently it has been a matter of little practical consequence. Nuaulu claim to 'own' all forest from Manusela in the east to the Tala river and the sacred mystical mountain of Nunusaku in the west, and across the spine of the island as far as the north coast, placing much emphasis on the distribution of sago reserves. Evidence for acknowledgement of the Nuaulu claim lies in oral histories, in claims to original clan territories, in the historical linguistic reconstructions which back this up [Collins 1980, Collins 1984], in the evidence of very recent in-migration of non-Seramese and in the relocation of different groups within the sub-district. Whether the Nuaulu had exclusive use of this area before the time they moved to the coast is unclear, perhaps even, doubtful, and in certain interpretations both Nuaulu and Sepa have joint rights at the Ruatan-Nua confluence. But what is important is that it is now

*assumed* to have been the case by Nuaulu and Non-Nuaulu alike, and that this has resulted in Nuaulu being granted legal title, in the modern sense, to what I conservatively estimate to be some 1670 square kilometers<sup>3</sup> of land, with inland limits which are conveniently coterminous with the present boundaries of the Amahai sub-district. Thus, Indonesian government policy has influenced Nuaulu constructions of their ethnic, social and land-holding status.

There is another sense in which government policy has worked to the advantage of contemporary Nuaulu. The Nuaulu, along with other interior Seramese peoples, have for many years been recognised by the government as 'orang terasing', the original inhabitants of a region. In practice, definitions of who was and who was not 'terasing' has not always been obvious, but in the Nuaulu case their religion and the attitudes of those around them was clearly critical. Elsewhere, location in the mountains is what is important. But however the classification arose it is one which has had policy consequences. Generically, 'orang terasing' are assumed to be undeveloped, often primitive, and therefore eligible for grants and projects emanating from the department of social affairs. Such assistance, of course, is not always in the real interest of those who are supposed to benefit, while often the material consequences are not worth the bureaucratic fiddle-faddle. But in the present case, being 'terasing' has clearly affected the governments decision to recognise Nuaulu as the sole owners of the greater part of central Seram.

From the time of first settlement at Sepa, Nuaulu retained an interest in the Nua-Ruatan basin, which they regarded as their own. It was an area regularly visited for hunting, contained long-deserted garden plots from which fruits of now mature trees and the naturally propagated successors to such trees could be regularly harvested, and provided ready access to the main source of sago, Somau. It was the location of many Nuaulu sacred sites and of the old hamlets themselves, of ancient and not so ancient clan spirits and ghosts, indeed the spirits of individuals who are still remembered and who feature in genealogies of the living. More recently, Nuaulu interest has been exacerbated by shortages of accessible land in the Sepa area and by conflict with Sepa and Tamilouw over land.

In the early nineteen eighties Nuaulu from the hamlets of Watane and Aihisuru began to travel to Somau by a new route, to cut sago, clear land for clove trees and protect their property (particularly sago palms) against incursions from newly-arriving transmigrants. They were now able to take advantage of the easy though circuitous route via Amahai, Masohi and Makariki, upgraded to a metalled road with regular (though seasonally disturbed) transport. The old overland walking route to Somau took five hours, the more circuitous journey by truck (approximately 50 kilometers) takes half the time. Although many continue to commute backwards and forwards between the Sepa villages and the new settlements, in 1983 permanent settlers began to arrive. The site allocated to the Nuaulu was south of the track at Kilo 9, a settlement which has come to be known officially as Simalouw. By 1990 Simalouw comprised 100 households, government housing and a school. Of these, 56 were originally Nuaulu, the remainder consisting of Protestant and Catholic Kei islanders, and Tanimbarese. The Nuaulu inhabitants have their separate area which now comprises 20 households, of people who once lived at Watane: the clans Sonawe-ainakahata, Penisa and Kamama. Only the **kapitane** Penisa currently remains in Watane, where he must stay until the **suane** (ritual house), the first post of which he planted, comes to the end of its natural life. As for individual clan ritual houses, those of Penisa and Kamama were rebuilt at Simalouw between 1985 and 1990. Inhabitants of Rohua

and the other remaining villages around Sepa also maintain houses at Simalouw, but only occupy them from time to time.

The population of Aihisuru (Matoke-hanaie and Sonawe-ainakahata) had also first moved to Simalouw, but in 1985 moved to Tahena Ukuna at Kilo 12. The ostensible reason for this was to avoid the severe seasonal flooding which is a problem in lower parts of the Ruatan valley, such as Kilo 9, but it was also to maintain that isolation from non-Nuaulu which these clans feel their ritual requires, and which was effectively maintained at their previous hilltop site at Aihisuru. Moreover, the higher in the mountains they reside, the nearer they are to ancestral settlements - and this also is a matter of some importance.

Those Nuaulu who have re-located in the new settlements seem to derive considerable comfort from having achieved a kind of homecoming, and certainly this is reflected in the satisfaction it is said to have afforded the ancestors. But when all is said and done it has been the material benefits which have been critical: travel time to main sago forests has been dramatically cut, the festering problems over land with Sepa have been eliminated, there is as much easily accessible land at the new sites as they need for the foreseeable future, and hunting returns are greater. Although coconut palms and clove trees are still young, the important thing (as Merpati Sonawe explained to me) is to think about the grandchildren. Those who have remained behind are largely in Hahuwalan, Bunara and Rohua. In Rohua and Hahuwalan, at least, the land issue with Sepa does not appear so critical, they perceive the advantages of being on the coast and there are internal political reasons for not moving permanently to Simalouw.

This brings us to the final (and perhaps most significant) consequence of the opening-up of the Ruatan valley for settlement, namely the sale of land by Nuaulu on a previously unprecedented scale. This has taken two forms: the granting of land to the government in exchange for houses and other facilities, and private sale to independent migrant settlers. In addition, the opening-up of land along the Ruatan for their own purposes has allowed Nuaulu to sell land in the more crowded vicinity of Sepa, most of which has gone to Sepa itself and to incoming Butonese. Although Nuaulu attitudes to land are being increasingly molded by a market model, individual transactions involve a customary element. Thus, in 1990 during my visit to Simalouw, Merpati was engaged in setting-out the terms of a sale for some new settlers at Kilo 7 for approval by the local District Officer. The asking 'price' on this occasion was: five **piruna hatu** (lit. 'stone plates'; that is old porcelain, though not necessarily oriental in origin), five meters of red cloth and 10,000 rupiahs for each household head. This is a global payment to the Nuaulu negotiated on their behalf by Merpati at the time of my visit. But the vagueness of the boundary between Nuaulu and non-Nuaulu land, especially along the lower Ruatan where the 'five kilometer' rule seems to break-down, has resulted in litigation. One case involved Nuaulu re-selling land to some people from Makariki which they had previously granted to the government under the arrangement referred to above. A second case involved land which Nuaulu had sold to settlers but which was claimed by Makariki. The case was settled in favour of the Nuaulu at the Masohi court, although in 1990 Makariki appealed against the decision and the case is still before a higher court. The legal difficulty here arises, at least in part, from the absence of any written and codified customary law which the courts can refer to.

### **The effects of recent changes on forest extraction**

We are now in a position to examine the effects which the events of modern Nuauulu history have had on the lowland rainforest of Seram, and on Nuauulu conceptualisation of their relations with it. It is clear that the consequences of extraction for the Nuauulu in the decades 1970-1980 and 1980-1990 have been markedly different.

On the basis of detailed ecological and ethnobotanical data [Ellen, 1978:81-83, 212-219; Ellen 1985:560-563, 568-577], we can make certain generalisations about the impact of Nuauulu subsistence practices for the period up to 1980. In terms of the geography of disturbance, most interaction during this period took place within a fairly short radius of each village, in secondary or denuded forest. Only during hunting, and on expeditions to collect rattan, resin and some other products, is it necessary to exceed the boundaries of the most distant gardens on a routine basis [Ellen, 1975; Ellen, 1985:566-67]. Swiddens were, and continue to be, usually cut from secondary forest (typically bamboo scrub) within a four kilometer radius of the settlement, and although the percentage of garden land cut from primary forest is high by comparative southeast Asian standards, official estimates of forest destroyed due to traditional swiddening are grossly overstated. Low population densities have ensured that little land has succeeded to grassland climax, and fires seldom get out of hand to the extent that they cause obvious and non-recoverable environmental damage. For the most part, timber cutting has been intermittent, patchy and economical; some wood is cut without killing trees, whilst the greatest volume of firewood continues to come from non-timber producing trees. There are, of course, examples of waste: some trees are felled in order to obtain only their bark, or while engaged in hunting arboreal mammals, to create space for the performance of other activities, to provide clear-views for animal drives; living wood is preferred to fallen stands, large trunks are left to rot in swiddens, and a restricted technology means that certain methods of reducing logs are extravagant. Though not uniformly ecologically efficient, and while it is true that the effects of 'traditional' modes of rainforest extraction have sometimes been underestimated, a low population density, the forest vastness, and low rates of extraction have ensured that the techniques used minimize forest damage, including gratuitous destruction.

The historical movement of the Nuauulu to the coast (1870 onwards) had the twin effects of preserving patches of interior forest which might otherwise have been transformed, and of marginally intensifying the cutting of coastal forest, where they were in competition with pre-existing populations. However, Nuauulu have continued to extract from highland areas, even from old village sites, for a period in excess of 100 years, frequently travelling as far as the Nua-Ruatan confluence. The opening-up of this area for settlement by the government, and the provision of various useful infrastructures, is therefore seen by many Nuauulu as no more than an opportunity to resume a higher rate of extraction in areas which have always been important, but which are now much more accessible.

Since 1980, forest has been transformed on a qualitatively different scale. The continuing growth in the Nuauulu population and the increase in cash-cropping have placed greater demands on resources, and this has been exacerbated by in-migration and un-controlled commercial logging. With the opening-up of the Nua-Ruatan area, Nuauulu can afford to sell land in large quantities without it threatening - in their perception at least - their own subsistence base.

### **Nuauulu conceptualisations of forest**

Changes in the pattern and intensity of extraction bear some relation to how the Nuauulu conceptualise forest, and on the face of it we might expect to be able to identify an emergent but fundamental shift in the way forest has been viewed over the last two decades. We can infer Nuauulu conceptualisation of forest and attitudes towards it from systematic ethnobiological data, subsistence practices, notions of land tenure, general statements about forest, rules relating to the extraction of resources and sanctions consequent upon their infringement, indirectly from myths, stories, taboos, and so on. From these we can distill five general characteristics which, taken together, embody the most important aspects of Nuauulu conceptual engagement with 'forest'.

*Forest is a complex categorical construction* . Although uncut forest is recognised as a single entity (**wesie**), it contrasts in different ways with other land types depending on context. It may contrast with **wasi** (owned land, which may sometimes display very mature forest growth), emphasising a jural distinction; with **nisi** (garden land), emphasising human physical interference; or with **niane** (village), emphasising landforms: empty as opposed to well-timbered space, inhabited (dwelt) as opposed to uninhabited space, untamed as opposed to tamed space, all with various symbolic associations and practical consequences for Nuauulu consumers. Although there are no Nuauulu words for either 'nature' or 'culture', it is in the various and aggregated senses of **wesie** that the Nuauulu come closest to having such a term, and from which the existence of an abstract covert notion of 'nature' can reasonably be inferred [see e.g. Valeri 1990].

*Forest is not homogeneous* . **Wesie** is a complex category in another sense. Despite the generic label it is anything but uniform or empty in the way the Nuauulu perceive, understand and respond to it. It is more like a mosaic of resources, and a dense network of particular places each having different material values. In this first sense it is much like the modern scientific modelling of rainforest as a continuous aggregation of different biotopes and patches, varying according to stages in growth cycles, underlying geology, altitude, geography and natural contingency: old village sites, sago swamp, *Agathis* patches, bamboo scrub, hills, riverbeds, neglected swiddens, caves and so on. 78 percent of the 272 forest trees named by Nuauulu have particular human uses, and it is through their uses that they are apprehended.

*There is an inner connection between history, identity and forest*. The values with which Nuauulu invest forest are multi-faceted and differential, simultaneously materially useful and culturally meaningful. And in the same way that the material uses to which forest is put must be understood in specific and local terms, so too the social implications. While our conception of environment is something which is 'opposed' to people, or some kind of medium in which we dwell, and which is therefore bounded, the Nuauulu conception of environment is not as a space in which they hang, but much more like a series of fixed points to which particular clans and individuals are connected. These points are objects in an unbounded landscape linked to their appearance in myths; use of land is at every turn inseparable from specific sacred knowledge, sometimes mutually contradictory and obscure, though never absent. But Nuauulu are moving from a model stressing age-old certainties and continuities, to one which stresses discontinuity, transformation, linearity, inhabited four-dimensional space, and which most importantly gives recognition to the extent to which humans can overcome previously uncontrollable natural forces. In the Nuauulu case this is largely being achieved through market mechanisms and the approaching of carrying capacity.

*Forest is a moral construction* . The undeniable effect of merging practical usefulness, mythic knowledge and identity in the construction of the category **wesie** is to give it a moral dimension. That is, there are right and wrong ways in which to engage with forest which arise in part from the specific social histories of parts of it, but also from its intrinsic mystical properties. Forest is unpredictable, dangerous and untamed, and various attempts are made to control it. This is reflected in the inferential symbolic opposition between 'nature' and 'culture' evident in most ritual, in the specific rituals conducted prior to cultivating forest, in the charms which are used to protect travellers in the forest, in the prohibitions on certain behaviours and utterances while in the forest, in the correct ritual disposal of its products.

It is in the context of this that we must understand the ritual restrictions on harvesting forest products at particular times. But none of this prevents gratuitous destruction of wayside saplings or the felling of entire trees in order to capture one arboreal marsupial, and is certainly insufficient to support elaborate feedback models of ritually controlled conservation [Ellen 1985: 563-566]. It is palpable that if there is sufficient pecuniary motive, land and resources can be disposed of despite the existence of **sasi**, displeasure on the part of the 'Lord of the land', or the ancestors. The irregularity of such transactions is partly moderated by appropriate ritual payment, as we have seen for recent land transfers. It is understood that in the eyes of the ancestors this may be insufficient compensation, and that at a later date those who have engaged in the transaction may suffer because of it. But these sanctions are only partially effective, and many feel able to live with the vague threat for short-term gain, and take other appropriate particular measures retrospectively, as they become necessary. There is no reason to believe that such attitudes in themselves are particularly new, but their invocation with respect to massive land alienation is.

### **Of commons and conservation**

It is difficult to find any unambiguous Nuaulu ethic which might reinforce mechanisms for forest conservation. Garrett Hardin in *The tragedy of the commons* argues that resources owned collectively will eventually be destroyed as no one individual is motivated to take overall responsibility [Hardin 1968; see also McCay and Acheson (eds.), 1987]. But if the Hardin argument applies it does so in a qualified and somewhat modified sense. To begin with, although common land ownership and claims to territory have hitherto existed as a theoretical condition for the Nuaulu, in practice most of the land theoretically available has not been in practice accessible, partly because low indigenous population levels have resulted in little general pressure on resources, and partly because abstract assertions of general Nuaulu territoriality have been less important than the claims of individual clans, and because of uncertainty as to the actual boundaries between Nuaulu and non-Nuaulu land. If, however, we follow Brightman [1987: 134] and recast the situation 'as one of loss of boundaries and the inability to control incursions' it begins to make sense. The government encourage Nuaulu clearance, land sale and resettlement; indeed they have facilitated all this by redefining (or confirming) the boundaries of Nuaulu land in new ways which work to their advantage. Now that the Nuaulu have exclusive tenure and can use the apparatus of the market and the law to enforce such claims, they feel free to alienate in ways formerly impossible culturally. The opening-up of the Ruatan has brought in some thousands of transmigrants, presenting opportunities for Nuaulu land sale along the Ruatan itself, but also along the south coast as more Ruatan land is used by the Nuaulu themselves.

Moreover, these areas are now very accessible. So, it is less - in Brightman's words - a 'tragedy of the commons' than a 'tragedy of invasion'. Apart from the very idea of land alienation to outsiders, there is nothing in Nuaulu beliefs which might have led them to anticipate the future and which might have placed a check on such developments; it is not a question of ignorance, of absence of knowledge of ecological process, so much as hard-headed pragmatism.

It is not short-termism which is replacing a conscious commitment to preserving longer term cycles, but the emergence of a view in which long- and short-term mean something, combined with deliberate revision of the received version of Nuaulu-forest relations to accord with recent developments. The existence hitherto of a non-temporal, non-linear, space-time conception of environment in which cycles are sensitively recognised and their local effects and causes noted sufficiently accurately to permit inferential reasoning with a range of practical benefits, does not necessarily provide the means or incentives to understand the consequences of long-term ecological change and its implications, or to see it as having any relevance to day-to-day decisions about hunting, gathering or cutting forest. Indeed, despite a recognition that resources in particular places can become scarce or even completely exhausted, it is barely conceivable that sago, pigs, timber and rainforest could become limited goods on Seram, or even in their small part of it, in any absolute or foreseeable sense. Recent Nuaulu experience of logging and deforestation following massive in-migration only serves to confirm this, and ironically permits the uneasy co-existence between traditional views of forest and emergent - exchange-based - views. This is a frequent response to the early stages of ecological change in pioneer zones throughout the tropical rainforest belt, but it is not one which has received much attention in the popular press, which is understandably more absorbed with the heroic and harrowing struggles of Yanomami and Penan against earth-moving equipment or immigrant ranchers, stories which lend credence to the primitive ecological wisdom model, and which so many in the post-industrial West wish to believe.

## **Endnotes**

*Acknowledgements* The fieldwork on which this paper is based was conducted under the auspices of the Indonesian Academy of Sciences in 1969-71, 1973, 1975, 1981, 1986 and 1990; a period of 24 months all told working in the Nuaulu area. Most information on matters related here was obtained in the Nuaulu settlements around Sepa, including much useful data on the situation in the new villages along the Ruatan. Additionally, in 1990, I benefitted greatly from a short visit to Simalouw at Kilo 9, and from conversations with Merpati Sonawe, and with F.P. Resmol of the Kantor Pengadilan Negeri in Masohi. To both these particular thanks are due, without forgetting the unfailing kindness and cooperation of old friends in Rohua and Sepa.

1. In table 1, columnm 1 provides the years during which I conducted my own

initial census and subsequent updates. The 1970 census was complete and reliable, but on subsequent visits I have only updated census data for Rohua. Even here the figures must be understood as provisional and errors may occur due to under-reporting of infant mortality in particular, the common practice of name-changing and shifts in residence between villages. The Rohua figures are designed to include all ethnic Nuaulu, including Christian and Muslim converts who remain in the village, any non-Nuaulu spouses, and their joint offspring. They do not include other in-migrants. In 1971 the population of Rohua was 36 percent of the Nuaulu total and I have assumed for the purpose of calculating the total figures for 1973 through to 1990 that this has continued to be approximately the case. There are no separate official statistics for ethnic Nuaulu, and occasionally available figures for animists in the sub-district as a whole have to be treated with extreme caution; electoral figures available for 1986 refer only to adults and do not discriminate between Nuaulu and non-Nuaulu. The sources for population figures at desa and kecamatan level are explained in the note following table 1.

2. The Moluccas was first incorporated into the national transmigration programme ('Transmigrasi umum/nasional') as early as 1954, but Seram did not effectively feature in this until the second half of the seventies, with the arrival of 400 families in the Kairatu area. The greatest expansion took place between 1982 and 1989, with 25,953 migrants from Java and other parts of the Moluccas settling in special zones created at Pasahari (north Seram), Kao, Wasile, Ekor and Banggai [Kantor Statistik Kabupaten Maluku Tengah, 1984: 114; Kantor Statistik Provinsi Maluku, 1989:155].

3. The official land area of Amahai sub-district is 2,070.28, and the shoreline in excess of 80 kilometers. The figure provided is obtained if we multiply the length of coastline by the 5 kilometers accepted by Nuaulu and government alike as that distance from the coast beyond which all land must be regarded as the legal entitlement of the Nuaulu. This appears to include part of the Manusela National Park, a forest reserve of some 186,000 hectares and in which settlement is officially prohibited.

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