LAND TENURE CONVERSION IN THE NORTHERN DISTRICT
OF PAPUA

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Foreword

This paper is concerned with an experiment initiated in 1964 in the Northern District of Papua in which land previously held under customary tenure has been converted to registered individual title in accordance with the Land (Tenure Conversion) Ordinance 1963. Three main aspects of conversion were examined:

(i) the motivations and expectations of the people at one of the first conversion schemes, Ombi-Tara;

(ii) the effects of conversion on productivity, land use, residence patterns, work organisation, and social life at Ombi-Tara;

(iii) the cost to the government per acre and per block (i.e. farm) of tenure conversion in the Northern District.

Much of the data on the costs of conversion was collected from official files. Where recorded information was not available, estimates based on interviews were used. The body of the Ombi-Tara data as set out in Chapters 3 and 4 was gained from personal interviews carried out between 9 January and 11 February 1966. During these periods my assistants and I lived in the single men's house in Ombi village.

All males over the age of fifteen resident at Ombi-Tara were interviewed with the exception of one old man. In addition we interviewed two 'outsiders' who have applied for blocks in the Ombi-Tara scheme. One is a man of the main clan at Ombi (Mumu) who now lives in a neighbouring village but intends to move to Ombi soon. The other is a Papuan Agricultural Assistant who is stationed at Ombi but whose home village is near Cape Killerton about forty miles away. Interviews were conducted in the local language through interpreters.

Interviewing has serious defects. The answers one gets can only be as good as the questions asked. Although we followed up all answers with probes and long, informal discussions, talking is a poor substitute for rigorous and sustained observation over a period of years. The only justification for using this method is that time was short, and that this paper is intended only as an exploratory attempt to examine the operation of the 1963 land tenure conversion legislation in the only district where it has so far been applied.
I am indebted to the New Guinea Research Unit of the Australian National University for generous financial assistance. I wish to thank the Chief Commissioner of Land Titles (Mr D.J. Kelliher) and members of the Commission in Popondetta and Port Moresby; officers of the Department of Agriculture, Stock and Fisheries in Popondetta, and of the Department of District Administration in Popondetta, who discussed various aspects of the project and assisted me in every possible way; Mr Cromwell Bureu, Mr Russell Clarke and Mr Napier Boraba who helped greatly by interpreting both Orokaiva language and culture; Mrs Yvonne McMahon who typed a manuscript which was at times barely legible; and the Ombi-Tara villagers whose warmth, hospitality and enthusiastic co-operation made our stay so enjoyable. Helpful comments on an earlier draft were made by Dr R.G. Crocombe, Mr E.K. Fisk, Mr G.R. Hogbin, Dr R.T. Shand, Mrs S. Faircloth and Mr W. Standish. I am particularly grateful to Dr R.G. Crocombe, Executive Officer of the New Guinea Research Unit, for his advice and encouragement at all stages of the project.
Chapter 1

Introductory

The first legislation aimed at encouraging Papuans to engage in cash cropping was introduced in 1894 by Lieutenant-Governor MacGregor six years after the beginning of the British administration in Papua. Nevertheless, policy was mainly directed towards the promotion of European enterprise until after the 1914-18 war, when the difficulty of attracting European settlers to Papua caused a shift towards promotion of indigenous agricultural development. At first communal cash crop gardens were promoted but as the disadvantages of this system became known, emphasis shifted to encouraging each family to cultivate an area of cash crops separately. Cheetham (1962:68) states that this policy was clearly established by 1956.

An ad hoc committee was established in November 1956 to consider the conversion of land from customary tenure to individual freehold title. The committee submitted its report in 1957 and followed a period of research and discussion, culminating in the policy statement on land tenure in the House of Representatives on 7 April 1960 in which the Minister said:

(1) The ultimate objective was to introduce a single system of land holding regulated by the central Government by statute, administered by the Department of Lands of the central Government, and providing for secure individual registered titles after the pattern of the Australian system.

(2) Only the central Government...may issue and register land titles.

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1 On the history of official policy on agricultural development see Crocombe 1964a.
3 Land under 'customary tenure' includes 97 per cent of the total area of Papua-New Guinea. The Administration has purchased 2.5 per cent of the total area, and non-indigenes have freehold title over 0.5 per cent.
(3) Land subject to native custom remains subject to native custom only until it is taken out of custom either by acquisition by the Administration or by a process, to be provided for by ordinance of the Territory, of conversion of title to an individual registered title. (Hasluck 1960:1021.)

Five bills embodying the new land policy were passed by the Legislative Council in 1962-63. The most significant of these from the point of view of the individualisation of tenure were the Land Titles Commission Ordinance 1962 under which the old Native Lands Commission was replaced by the Land Titles Commission, and the Land (Tenure Conversion) Ordinance 1963 which sets out the procedures to be followed in tenure conversion (see Appendix A). The Land (Tenure Conversion) Ordinance 1963 was brought into operation on 3 December 1964. It embodied safeguards against fragmentation in that no land which is less in either area or frontage than a certain minimum may be registered, and no more than six persons may be registered as joint tenants or tenants in common of any interest in land.

The five current ordinances relating to land allow village people holding land under customary tenure three alternatives. First, they may continued to hold the land under customary tenure. Second, where a group has undisputed control of a piece of land and desires a more formal recognition of its rights it may secure title under native custom by having the land registered as communally owned under the Lands Registration (Communally Owned Land) Ordinance 1962. Third, individuals or groups of not more than six persons may apply to convert land previously held under customary tenure to individual registered title in accordance with the Land (Tenure Conversion) Ordinance 1963. This action may only be taken with the approval of all those holding customary rights in the land to be converted, and where all clearly understand that the land is being placed outside the jurisdiction of traditional custom.

Land tenure

Among the Orokaiva there are no land rights at the tribal level. Each tribe is divided into a number of clans, each of which is further composed of a number of sub-clans, which are usually dispersed over the tribal territory. Each sub-clan holds rights to specific areas of land. Within the sub-clan rights are held by individuals and groups of individuals.

Thus the traditional Orokaiva system was not one of 'communal tenure' and individuals as well as groups held rights to land. ¹

¹ Ironically, it appears that by registering areas of land as communally owned under the Lands Registration (Communally Owned Land) Ordinance 1962 the Administration is introducing communal holding of land where it did not exist previously.
This has been documented by recent research carried out in three Orokaiva areas: at Inonda by Crocombe and Hogbin (1963:28), among the Yega by Dakeyne (1965), and at Sivepe by Rimoldi (1966:95).

Under the traditional Orokaiva tenure system most individuals have rights to several pieces of land scattered throughout the area claimed by the clan. Thus an individual often has to walk some distance from one food garden to another and he may have only a small area of land on each plot. These facts were significant in determining the attitudes of the Ombi-Tara people to tenure conversion (see Chapter 3).

An individual is considered to have a presumptive right to clear bush behind his plot in order to extend his planting, without consulting other members of the clan.

Clearing of bushland is often a community affair, with the lineage and sometimes the whole sub-clan co-operating, but planting is organised by individual households, with some reciprocal assistance from other households for specific tasks at irregular intervals.

Land use

The Orokaiva grow their crops using a system of bush fallow rotation - sometimes called shifting cultivation - which is common in many tropical areas. Newton (1960:81) describes it as a system under which land is cleared and cropped for two or three years, after which the cultivator allows it to revert to natural vegetation cover and shifts to a new garden. He may abandon land because depletion and erosion cause declining yields, but in many instances he does so because less labour is involved in clearing new land than in using old gardens where weed and pest species are established. Brookfield and Brown (1963:166) suggest that in the absence of fertilisers, capital equipment and improved techniques of agricultural production, no successful alternative to bush fallow rotation has yet been found for tropical agriculture.

Residence patterns

The Orokaiva live in villages but each nuclear family usually occupies a separate house. In pre-contact times villages were large, probably because clan members clustered together for mutual protection (Williams 1928:155). However, in 1928 Williams noted a growing tendency for small groups to form independent settlements. Families sometimes lived 'for weeks at a time in their garden houses...no small distance from the permanent village.... Some families...settle permanently on the site of their distant gardens' (Williams 1928:129). The present fairly large village appears to be a relatively recent return to the pre-contact pattern.

1 Native Regulation No. 90 of 1922 stated: 'The practice of people abandoning their old homes in settled villages and scattering
Post-war tenure innovations in the Northern District

The Higaturu Local Government Council land registration scheme, begun in 1956, was one of the earliest attempts to rationalise tenure in the Northern District and to increase agricultural productivity. Under this scheme all lands on which cash crops were being planted were to be registered by the Council after a survey by chain and compass. The individual in whose name the land was registered could transfer it or nominate heirs to it without reference to the clan or any other group. The scheme was superseded by the tenure conversion legislation of 1962-63.1

A second post-war tenure innovation in the Northern District was the Yega agricultural scheme2 under which in 1960 a group of villagers agreed to set aside a portion of uncultivated land for use by individual members of the group. External boundaries were agreed upon and individual blocks were marked out and plotted. The 1962-63 land legislation has enabled persons holding title under native custom to convert to individual registered title in accordance with the Land (Tenure Conversion) Ordinance 1963 and on 16 December 1965 fifty-six applicants from Yega were granted individual titles to blocks averaging ten acres in area (Smith 1965).

No conversions were made under the 1962-63 legislation until late 1964. Following a recommendation from the Land Development Board it was decided that conversion under the new legislation should be confined in the first instance to the Northern District in order to test and refine procedures. Applications for conversion were being received at a rate of over one hundred per month in the Northern District during 1965. At the end of December 1965, thirty-four tenure conversion schemes3 were under way in the Northern District, covering 1,725 blocks (i.e. farms) and 33,566 acres. By 10 February 1966 Land Titles Commission hearings had been completed for five schemes, covering 219 blocks and 4,328 acres.4

1 (continued)

themselves in small groups over the face of the country is growing in the land.' Feinberg (1956) suggests that the tendency to spread in this way is common in recently contacted societies.

1 For details of the Higaturu Council registration scheme see Crocombe and Hogbin 1963:89-96.

2 For a detailed discussion of the Yega scheme see Dakeyne 1965.

3 Each of which comprised up to sixty or more blocks (each of which would become one farm).

4 In addition, 120 blocks (3,148 acres) had been formally surveyed; 269 blocks (2,960 acres) were awaiting survey; and 596 blocks (12,570 acres) were awaiting investigation by officers of the Department of Agriculture.
Planting of cash crops on converted blocks has proceeded steadily. The forty blockholders at Ombi-Tara planted an average of three acres of high-yielding rubber each in the first fourteen months. At Barisari fifty-six blockholders have planted an average of two acres of coconuts in fourteen months and this was expected to increase to four acres by the end of 1966 (Williams 1966:6). Blockholders at New Warisota have planted an average of three acres of cocoa after eighteen months. By contrast, fifty-seven farmers at the Yega scheme have averaged slightly less than one acre of cocoa planted in more than three years.

A rough attempt was made to estimate the value of the time, materials and services expended on the conversion schemes in the Popondetta area. This worked out at approximately $0.72 per acre or $1.42 per block. This suggests that the growth of conversion throughout Papua-New Guinea on a sufficient scale to have a significant economic and social impact will depend, inter alia, on the development, with experience, of less costly technical and administrative procedures.

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1 See Appendix A.
Chapter 2

The Ombi-Tara conversion scheme

Two Orokaiva villages, Ombi (also known as Ombisusu) and Tara combined in the Ombi-Tara conversion scheme which was among the first to be promoted in the Northern District under the Land (Tenure Conversion) Ordinance 1963.¹

Ombi and Tara contain two clans, Mumu and Kuei. The Mumu clan is concentrated in Ombi village and the Kuei in Tara. However, Ombi has three Kuei households and Tara has one Mumu.

At the time of our stay 178 people were living at Ombi-Tara. There were twenty households in Ombi, nine in Tara, and six on the converted blocks, close to the access road running between Ombi and Tara (see the conversion plan on p.12).

Thirty-five of the forty-one resident adult males had applied or wished to apply for converted blocks; the remaining six were old men who said that they were too old to apply for blocks. Four of them had sons who had applied.

Cash cropping experience of the Ombi-Tara people

The Ombi-Tara people’s experience with cash crops began when they planted some bush rubber seedlings after the first world war. They were encouraged by the Administration under Native Regulation No.121 (Native Regulation Ordinance 1908-30).² Although the trees were neglected for some years they continued to grow, demonstrating the suitability of the area for rubber (Mann 1954:35). After some time, villagers began tapping the trees and selling the latex to a local planter.

In mid 1964 the Department of Agriculture suggested that the Ombi-Tara people should process their own latex with hand rollers and coagulating pans at first supplied by the Agriculture Department,

¹ On the Ombi-Tara environment see Appendix B.
² On village planting of bush rubber in what was then the Kokoda District see Rimoldi 1966:86-93.
and later to be provided by the people themselves. This idea was taken up by the villagers and the first bush rubber processed at Ombi-Tara was purchased by the Department of Agriculture on 5 June 1964.

An Agricultural Assistant was stationed full time at Ombi-Tara and he helps to grade, weigh and bale the rubber. The baled rubber is purchased monthly by an Agricultural Officer who drives to Ombi-Tara from Popondetta. It is marketed in Australia through the Papuan Rubber Pool.

Tapping is organised on a rotation system, with one man tapping the bush rubber stand each month, producing between 70 and 200 lb of Ribbed Smoked Sheet, and earning between $12 and $34, depending of his diligence and the price of rubber.

In mid 1964 the villagers built a smoke house, a machine house and a baling house, all of local materials, for the equipment on loan from the Department of Agriculture. The baling press was provided on permanent loan by a local planter.

On 27 October 1964 an Ombi-Tara Village Savings Account was opened at a bank in Popondetta with the sum of $227.50. During the following year money was paid in at irregular intervals at an average rate of about $14 per month.

On 12 February 1965 the Ombi-Tara people paid $177.72 for their own rollers and coagulating pans which they now use for processing, leaving the Department of Agriculture free to transfer its equipment to another recently initiated scheme. Extra coagulating pans were bought for $91.20 on 16 October 1965, leaving a balance of $117.84 in the village account.

No deposits were made between October 1965 and the end of January 1966 because of the need to save money to pay the Local Government Council tax ($5 per man) and the Mission jubilee contribution ($2 per householder).

While the bush rubber processing project appears to have been a success, almost every other attempt made by the Ombi-Tara people at planting cash crops has failed. They participated in a communal rice growing project in 1950, encouraged by the Anglican Mission, but it was a failure, as were similar projects in other parts of the district. Later in the 1950s a communal cocoa plantation of some 400 trees was established with Administration encouragement. Disputes over the organisation of work and the distribution of proceeds caused the abandonment of the project shortly afterwards.  

1 During our stay all rubber processed at Ombi-Tara was graded Ribbed Smoked Sheet No.2.

2 On the communal rice and cocoa experiments in the Northern District see Crocombe 1964a:29-33.
Individual planting of cocoa was tried next, with twenty-one people planting between 20 and 1,300 trees each. The average plantation size per person was 318 trees. Pests and later the sharp fall in world cocoa prices discouraged maintenance and most of the cocoa trees have now been abandoned.¹ Ten people have each planted between 200 and 560 coffee trees with moderate success. In view of this history of setbacks and discouragements there is added significance in the enthusiasm of the Ombi-Tara people for tenure conversion.

Origins of conversion

An Ombi man named Charles was instrumental in persuading the people of the merits of conversion. He had attended the local mission school for two years and, after a year as a medical orderly at Saiho hospital, worked for eighteen months on a rubber plantation at Sogeri. Next he worked in Rabaul with two other Ombi men for an oil company. At the end of his eighteen months' contract the company returned him to Ombi. He had intended to return to Rabaul to take up a $24 a week job he had been offered as a taxi driver but was elected Local Government Councillor at Ombi-Tara and held that position for seven years until 1963. He has worked for eight months as a cook at the nearby Sangara ex-servicemen's plantations, and had intended to apply for one of the Papuan resettlement blocks at Sangara before he heard of the possibility of establishing a tenure conversion scheme at Ombi-Tara. He planted 1,300 cocoa trees, 400 coffee trees and 300 bush rubber trees before conversion was introduced, and had planted 661 of the new high yielding rubber seedlings up to November 1965, well above the village average.² He has been employed full time since October 1965 on road maintenance work near Ombi.

Conversion at Ombi-Tara began with a visit by a resourceful Agricultural Officer (Mr D. Birmingham) in mid 1963. Noticing Charles planting some bush rubber seedlings the officer asked whether he might not prefer to plant some of the higher yielding Malayan rubber seedlings which the Department of Agriculture would supply at low cost. Charles agreed and recommended other villagers to do likewise. The Ombi-Tara people agreed and a rubber nursery was established close to Ombi village soon afterwards by the

¹ The Ombi-Tara people's experience with cocoa demonstrates that a sharp decrease in world commodity prices can affect progress in developing countries not only by causing earnings of foreign exchange to fall, but also by so disheartening village producers that they cease production altogether.

² See p.32.
Department of Agriculture. Clonal seedlings for the nursery were obtained from Malaya and from the Agriculture Department's experimental stations at Itikinumu and Bisianumu. Villagers can buy seedlings at 1 cent per stump.

While the seedlings were growing, several meetings were held in the two villages to discuss how the rubber should be planted. The suggestion of a communal plantation received little support, which is not surprising in view of the recent failure of the communal cocoa experiment. At these meetings the Agricultural Officer suggested that each man might plant some of the new high yielding rubber on his own land. He was supported in this by Charles and eventually the people asked for individual blocks of land. There appears to have been no opposition.

The history of conversion at Ombi-Tara admirably illustrates Fisk's contention (1964:159) that the personality and character of the administrators, officials, missionaries and other members of the advanced sector involved are often as important to the success of a planned programme of intervention in a subsistence economy as the composition of the programme itself. Although the Agricultural Officer has since left the country he is warmly remembered by the Ombi-Tara people. It is a tribute to his understanding and tact that most of the villagers consider conversion was their own idea.

The significant role played by Charles in gaining the approval of the Ombi-Tara people demonstrates the value when introducing innovations in a rural community of working through an influential member of that community. After studying the introduction of changes in techniques in a Victorian country area, Emery and Oeser concluded (1958:52-3) 'No matter how highly regarded he may be the District Agricultural Officer remains, sociologically speaking, an outsider' and has much greater effect if he works through a local leader. These findings are extremely relevant in Papua-New Guinea where the sociological gap between Agricultural Officer and farmer is far greater than in Victoria.

The new land system

The new land tenure arrangements were worked out by the villagers and the Agricultural Officer during late 1963 and early 1964. It was decided that 800 acres of the total area claimed by the two clans should be converted into forty blocks of twenty acres (see the conversion plan on p.12). Most of the 800 acres was formerly covered with bush and appears to be of relatively uniform agricultural potential.

The unconverted land outside the scheme has not yet been surveyed and estimates of its area vary from 2,000 to 4,500 acres. All rights to land held by individuals before conversion have been
abolished by agreement of the two Ombi-Tara clans,\(^1\) including both rights to the 800 acres which have been converted and to land remaining outside the scheme.

Each twenty acre block is now held under individual registered title by one man, the blockholder. No rights are held in any block by the clans or other entities.

Lands held by members of the Mumu and Kuei clans are still separate, and a large tree stump continues to mark the boundary between them. However, while individuals formerly had some rights in clan land held under customary tenure the land outside the conversion scheme is now held communally by agreement of clan members.\(^2\) The clan leader has control of the unconverted land and his approval must be gained by anyone wishing to cultivate it.

However, each man is considered by the villagers to have the presumptive right to clear the bush on unconverted land behind his block in order to extend his planting as far as the clan boundary. He may do so without consulting the clan leader, and regardless of who held rights to the land under the old system. This right is not recognised in law, and appears to be derived from traditional practice. A similar presumptive right of extension at the rear of one's block was agreed upon by the Yega villagers (Dakeyne 1965:136).

**The conversion process.**

The Department of Agriculture carried out a preliminary survey of the land to be converted in July and August 1964, clearing bush from what was to be the access road and along the boundaries of the blocks. During December 1964 and January 1965 field staff of the Land Titles Commission, assisted by Department of Agriculture personnel, completed the surveying and marked all corners with cement and wooden pegs.

Thirty-five applications for blocks had been formally lodged up to 9 February 1966 when the Land Titles Commission conducted its hearing. No objections were raised so unless there is an appeal within ninety days, individual title in fee simple would be granted to each of the thirty-five on 9 May 1966.\(^3\) Eight more men wished to apply in the near future. Since only forty blocks were marked out, three of these eight men intended to apply for blocks as yet unsurveyed.

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\(^1\) See p.27 ff for some problems raised.

\(^2\) In law it is regarded as being held under 'customary tenure'.

\(^3\) There were no appeals. Titles had not been issued at the beginning of November 1966, but it was expected that they would be issued soon.
**Allocation of blocks**

The principles applied by the Ombi-Tara people in the allocation of blocks are not clear, but it appears that men tried to get blocks on land in which they formerly held rights. It seems that no single person controlled the allocation of blocks but that each person claimed the block he desired. We were told that two people claiming a single block settled the problem themselves without reference to a third party.

As far as possible men claimed blocks on land recognised as belonging to their own clan; thus the three men of Kuei clan at Ombi got blocks furthest from Ombi village, about two miles away. One man of Mumu clan was given a block on Kuei land, reportedly because of a shortage of Mumu land. The Kuei clan leader said he was very happy to give him a block on his clan's land because 'we are doing a new thing and we want to be friendly with each other and not fight as we sometimes did before'.

The forty-three blockholders include thirty-five men resident in Ombi and Tara villages; two men each from Ombi and Tara who were absent working for wages; a man of Mumu clan who lives in a neighbouring village but intends to move to Ombi in the near future; two Anglican Mission staff, one a Bishop due to transfer soon from Samara to Popondetta, the other a priest stationed at Sasembata, about three hours' walk from Ombi; and the Papuan Agricultural Assistant who is stationed full time at Ombi-Tara. None of the last three people has kin ties with any person at Ombi-Tara.

**Clearing and planting blocks**

Blockholders began clearing the portion of their blocks nearest the access road soon after the preliminary survey of July-August 1964. For clearing the villagers worked in several groups, with each group spending one or two days on the block of each of its members. The first one year old G.G.I. (Malayan) rubber stumps from the Department of Agriculture nursery were planted in late September 1964. Planting was done by individual householders and their families, with only occasional help from kinsmen. It is traditional Orokaiva practice for clearing of bush to be undertaken by groups of kinsmen but for planting to be carried out at the level of the individual household.

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1 'Blockholder' is used for convenience throughout the rest of this paper to refer to the forty-three people who have applied, or intend to apply for blocks.

2 It is not clear for what purposes these two blocks will be used.
Planting continued steadily till by 1 November 1965 over 13,000 seedlings had been planted. Thirty-two people had planted 300 or more seedlings and five had planted more than 600. A further 19,000 two and three months old seedlings were in the rubber nursery on 20 January 1966.
Chapter 3

Motivations and expectations of the Ombi-Tara people

Desire for improved standards of living

The Ombi-Tara people aspire to what they consider to be a European way of life. They consider that by planting a new crop, rubber, under a new land system they may be able at last to realise their aspirations. The first response of 90 per cent of the blockholders interviewed to the question 'Why did you get a block?' was 'to get money'.

In any formal or informal discussion concerning the reasons for wanting to grow cash crops or for being in favour of tenure conversion, the same points were mentioned repeatedly - the desire for a European house with an iron roof, clothing and food from the store. Some more ambitious men suggested that they hoped to establish trade stores or workshops, to buy vehicles, or less specifically, 'to start a business like Europeans'. At least 20 per cent of the villagers appear to consider the change from planting cocoa, coffee or food crops to planting rubber to be as significant as the innovation of conversion. The villagers hope that rubber will produce substantially greater returns than they were receiving from their cocoa plantations.

1 The methods of obtaining information are described on pp.1-2.
2 These replies tend to support Epstein's finding (1965:191) in New Britain that villagers often wish to copy not only European consumption patterns but European productive activities as well.
3 Most people had had some prior experience with rubber, either through the Ombi-Tara bush rubber stands or the Sangara rubber plantations, but few had planted rubber as a cash crop.
4 As Brookfield has pointed out (1958:24): 'It is quite wrong to suppose that the economic factor can be disregarded in native development. Native tolerated of low returns is greater only in degree than that of established European plantations.'
Security of tenure

It is often suggested that the main benefit from tenure conversion is the provision of security of tenure for villagers who wish to plant cash crops. The Ombi-Tara people, however, did not consider security of tenure as a major benefit of conversion. They explained that each man had previously held individual rights to land which were sufficiently secure for him to plant cocoa and coffee. A man could plant such cash crops without consulting the clan leader or other members of his clan, and without others disputing ownership of the crop or distribution of the proceeds. Fourteen people did mention that conversion and the introduction of cement and wooden corner pegs would help to prevent disputes; but they felt the disputes to have been caused by the previous small size of individual plots which sometimes made it difficult for a man to extend his planting (because he would be encroaching on another's land); and to vagueness of boundary lines. Some also referred to the need to clearly mark out land boundaries to forestall potential encroachment by persons from outside Ombi-Tara.¹

Consolidation of holdings

Most Ombi-Tara people saw consolidation of their previously scattered holdings as the main benefit from tenure conversion.² Many people drew finger diagrams on the ground to explain how conversion led to consolidation. Under the traditional tenure system cash cropping involved long walks from village to food gardens and to cash crops.³ Consolidation not only reduces walking time, but also allows an individual to undertake large-scale planting in a single area. He was previously unable to do this because of the small amount of land he held in each plot, and in some cases because of the small total amount of land to which he

¹ In contrast to the Ombi-Tara situation Crocombe and Hogbin (1963: 72-80) found in another Orokaiva village that lack of security of tenure was a factor discouraging certain individuals from planting cash crops.

² Mentioned by thirty of the thirty-seven blockholders interviewed, including the four most influential people – Charles, the two clan leaders and the Local Government Councillor. These people should be distinguished from the 20 per cent or so mentioned earlier for whom the innovation of conversion was less significant than the change to planting rubber.

³ Waddell (1966: 7) found in another Orokaiva village that time spent travelling to and from places of activity was about 15 per cent of the total time devoted to that activity.
had rights. Conversion has caused a redistribution of land rights, with some people losing and others gaining land. Several men who claimed they had less land after conversion than before said that twenty acres was ample for their needs and that they were pleased to give up some land to help their co-villagers.

There are indications that conversion at Ombi-Tara has facilitated co-operation between villagers who are planting cash crops. Previously any man who wished to plant cash crops had to work with little assistance, often in a relatively inaccessible area. Since conversion has been introduced, the new road gives easy access to all blocks and people are more easily able to help one another.

Paradoxically, conversion to individual holding of land appears to have strengthened intervillage, interclan and interpersonal co-operation and to have fostered a community spirit. Intervillage co-operation is demonstrated by the establishment of a joint Ombi-Tara bank account to purchase equipment for the bush rubber processing unit, and by joint discussions on the nature of the new tenure system. Interclan co-operation is seen in the leader of the Kuei clan granting permission for the allocation of a block on Kuei land to a man of Mumu clan. Interpersonal co-operation is illustrated by the apparent willingness of large landholders to give up all previously held land rights without receiving any compensation, in order to enable all to take part equally in the scheme.

The Ombi-Tara people are pleased and flattered that many people visit and inspect the blocks. They heard that Ombi-Tara was mentioned on the radio and are happy that others ('people all over Papua-New Guinea') should know of their experiment. When two Australian friends of mine paid a short visit to Ombi they were asked with expectant pride if they had heard of the Ombi-Tara scheme in Australia. The leader of the Mumu clan said, 'We want Ombi-Tara to have a big name like England, Japan, Hong Kong, Rabaul and Lae'.

Publicity and information
Most Ombi-Tara people (82 per cent) said that they first heard of the possibility of converting land to holding under individual title after the visit of the Agricultural Officer in late 1963. No one reported hearing first about conversion through Local Government Councils, from the Anglican Mission, on the radio or through

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1 The then District Agricultural Officer considered consolidation of fragmented holdings to be one of the main benefits that would emerge at Yega, the first tenure conversion scheme in the Northern District (Belfield 1962:1-2).
the Yega tenure conversion scheme. An influential minority (18 per cent), which included Charles, both clan leaders and the custodian of the savings account, said that they had first heard of blocks through the Sangara ex-servicemen's resettlement (not conversion) scheme which is about twenty miles from Ombi.

Many of the Ombi-Tara people had at some time worked at Sangara clearing bush, planting seedlings or tapping rubber trees. Six of the seven men who said they had first heard of individual blocks from Sangara had worked there as had ten of the fifteen men who mentioned Sangara in answer to the more specific question 'have you heard of any other scheme where there are individual blocks?' (Nine people mentioned Yega in response to this question.)

Moreover, the European ex-servicemen at Sangara live a life which many Ombi-Tara people find attractive. Several people suggested that they would like to employ labourers and work less hard themselves, 'like the Europeans at Sangara'.

Four people reported that Administration and/or mission personnel had warned them that if they did not use their land 'properly', people from other places might come and take it. Russia, Japan, Indonesia and Hanuabada were the places mentioned. I am unable to determine how much weight the Ombi-Tara people placed on this factor in their decision to implement tenure conversion.

After two or three successful conversion schemes were introduced, the demand for tenure conversion spread rapidly throughout the Northern District. In February 1966 the District Commissioner wrote (Williams 1966:5): 'Far from having to sell the idea we have been somewhat embarrassed by the number of requests which have been received.'

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1 Similar experience has been reported from Kenya (see Healy 1961:77).
Since conversion the blockholders have each planted an average of three and a half acres of high yielding rubber and some have cleared a further two or three acres in preparation for further planting.

Most households are interplanting their food crops with the rubber seedlings as they say it saves time and effort if all crops are on one plot instead of scattered as before conversion. Thirteen people reported that they have food crops growing on unconverted land outside their blocks. Six of these had blocks about twenty-five minutes' walk from the village, and have planted some food on clan land closer to home. Three of the others said that they intended to transfer their food crops on to the blocks shortly. Three people reported that they have coffee trees which were planted before conversion growing outside the block.

The Ombi-Tara people intend to keep the clan land outside the converted area for use by future generations or by members of the present generation who wish to expand their holdings.

Residence patterns

Those people whose blocks are closest to the village have tended to remain in the village. Those with more distant blocks have either abandoned their village houses and moved to the blocks - six families have done this - or planted some food crops on clan land close to the village to avoid having to walk long distances to get food.\footnote{Dakeyne (1965:136) notes that the Yega people moved on to their blocks soon after the Yega conversion scheme began.}

The traditional Orokaiva custom of living in single family households has been maintained, with only four of the thirty-five households at Ombi-Tara containing more than one family. In three
of these four households one of the resident families intends to build or is building a house into which it will move shortly.

Many who have remained in their village have erected temporary shelters on their blocks in which they spend one or two nights at a time. None of the Tara people has left the village, but no one has to walk more than ten minutes to reach his block.

Five of the six men who have moved with their families on to the blocks are living in two hamlets. In the first settlement, about twenty-five minutes' walk from Ombi village, two men have built houses on their own blocks on either side of the access road. In addition, they have built a 'meeting house' in which passers-by can sit and chat, and a latrine. One is the son of the other's mother's brother.

In the second settlement, about forty-five minutes' walk from Ombi, three households are situated on one block. The three households belong to the blockholder, his sister's son (who holds an adjacent block) and his father's brother (who is not a blockholder).

The sixth man to have moved from the village claimed that one of the old men at Ombi was destroying his taro by practising sorcery, and moved to his block, ten minutes' walk from the village, to protect it.

Apart from this last man those who have moved to the blocks are living in small kinship groups rather than as individual farmers each on his own block. In addition, each of the block residents spent a considerable amount of time in Ombi village during our stay, particularly while gambling during the weekends. One brought his family to Ombi after his wife had a baby and stayed for a few days in the house of a kinsman.

Although only six men have moved to the blocks, another twenty said they would like to do so in order to be able to work on their rubber away from the distractions of village life, like Council and mission work. Most of these people said that they were 'not allowed' to move. Some said it was Administration policy that people should stay in their villages and quoted particular officers (from two different departments) who had told them not to leave the village. Some said that they were not allowed to move to the blocks until they had a 'licence' (possibly a reference to the title document) or until all the people in Papua-New Guinea had done so, or until the local member of the House of Assembly had been told about it in the House. Some said that they should not move until the Administration told them.

Three people said the Administration favours villagers living on their blocks. Two of these do so and the third said he is waiting till the other villagers move before he moves.
The Local Government Councillor presumed the Administration wanted people to stay in the village. He said that he would prefer to live on his block but would not move as he might be gaoled for doing so.\(^1\) He had ordered two men from Ombi who started building houses on their blocks to stay in the village.

Administration officers said there was no longer an official policy on where people should live, but that individual officers had different ideas on the matter. As this is the source of much of the misunderstanding an official statement of policy through the Local Government Council may be helpful. Over half the people replied to the question 'where would you prefer to live - in the village or on the blocks?' by saying that whichever the government wanted they would do.

It has been said that conversion leads people to settle on their blocks, thus encouraging the breakdown of the village and lessening the attractions of village life for the younger generation, causing them to 'drift' to the towns. Several people, however, including one man who had intended going to Rabaul, mentioned that they preferred growing cash crops at Ombi-Tara to working for wages now that conversion has been introduced. It seems possible, therefore, that conversion may help to increase the attractiveness of the village rather than decrease it.

**Social organisation**

The land tenure system lies at the heart of social organisation and 'may actually define the social and economic status of individuals in an agrarian economy' like that of Papua-New Guinea (Parsons 1963:4). Any alteration in the tenure system is bound to have far-reaching social implications.

Social changes occurring at Ombi-Tara are related not only to tenure conversion but also to the wider adaptation which occurs when a subsistence society comes into contact with the market economy. Some traditional practices are abandoned, as the initiation ceremonies, the taro festivals and multi-village feasts have

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\(^1\) The idea that a person may be gaoled for moving out of his village seems to come from observing other people in the area being gaoled under Native Regulation 101 (*Native Regulations* 1939 of the Territory of Papua as amended). This Regulation empowers the magistrate to declare any isolated group of less than three houses a 'Forbidden Settlement' and to direct the native inhabitants 'to remove to a regular village or villages within their district within a time to be specified by him'. Failure to comply with such an order carries a fine of not more than $2 or imprisonment for up to two months.
been at Ombi-Tara, in favour of briefer parties which distract less from market oriented activities.¹

There was verbal evidence at Ombi-Tara of further rejection of old customs since the introduction of tenure conversion. Informants often suggested that conversion marks the beginning of a new life - 'Before we were not using our land well but now we are changing everything and we will live better'. Several previous innovations in the Northern District have been greeted in like fashion (see Belshaw 1951:249, and Crocombe 1964a:29-32).

Leadership in the traditional societies of Papua-New Guinea is generally not inherited but achieved through personal excellence in economic and political organisation and the main activities of the society including a knowledge of land tenure arrangements. It was decided by the members of the Mumu clan that their clan leader was too old to understand and adapt to the new land system. His son was not considered clever enough to succeed him and eventually the thirty-five year old son of the leader's brother was chosen as successor.

The introduction of tenure changes tends to favour younger men who no longer need to defer to their elders for cash crop land. Tenure conversion at Ombi-Tara may also affect the balance of 'informal' authority in the area by altering the balance of land rights. Before conversion some individuals had rights to considerably larger areas of land than others. This was of some significance in determining status and prestige. Since conversion, each individual has rights to twenty acres of land. The long-term effect of this equalisation on social organisation and informal status and prestige systems may be of some significance.

The functions of the clan leader are little changed by the new tenure system. As before, he has no jurisdiction over land held by individuals. He previously had limited authority to intervene if one man planted on another's land without permission and under the new system can prevent one man planting behind another's block. He is charged with preventing people from other clans or other areas planting on his clan's land in much the same way as before tenure conversion, with the difference that now his jurisdiction in this matter applies only to the clan land outside the blocks.

**Obligations**

Mutual assistance and mutual obligation patterns provide a system of social security, a form of institutional safeguard

¹ Similar changes have been reported in another Orokaiva area by Crocombe (1966:71-2) and Hogbin (1966:81-3).
against sickness, crop failure and other catastrophes. The mutual obligation system which operates among kinsmen 'acts as a man's trade union, his friendly or benefit society, his slate club and his orphanage; it takes the place for him of health insurance, and if needs be provides for his funeral' (Lawrence 1964:34).

If it is hoped to set up individual farmers independent of their kinsmen some substitute must be found for the traditional method of social insurance. For as Fisk (1961:777) has pointed out, 'in an underdeveloped country...ready and prompt access to assistance in time of need is a variable of considerable importance to the settler'. Attempts to break down traditional obligation patterns by individualisation of tenure have often met with little success. In Egypt (see Gadalla 1962:80) and in various parts of the Pacific (Crocombe 1964b:127 and 1965:15) land registration schemes designed to result in individual tenure have failed to achieve individual ownership and use of land.

There are indications that traditional obligation patterns may be continuing at Ombi-Tara since tenure conversion was introduced. Blocks were cleared by kin groups in accordance with custom. Two men mentioned that there had been an arrangement whereby if a person worked on the block of another man but the second man did not reciprocate, he would have to pay the first man 80 cents. However, both people said that no one had had to pay it. Two men who were working for wages on road maintenance near Ombi village bought food from the nearby store for those who helped clear their blocks. Five people claimed that they had helped clear other people's blocks but had not received any assistance in return. Everyone who was questioned said that no new obligations had been established by the process of clearing but this may be open to question.

It has already been mentioned that conversion involved substantial redistribution and equalisation of right holdings. Whether obligation to the 'donors' will be established as a result is a matter for future observation.

The blocks of three of the four absentee blockholders were being cleared and planted by kinsmen. The block of the fourth absentee had not been cleared at the time of our stay. It is likely that some obligations will be established by this assistance.

Two families are living in houses constructed on the block of another man; and several people have cocoa, coffee or bush rubber trees growing on blocks held by other people. These situations are discussed on p.29 below.

The Ombi man who moved to his block to protect his taro from the sorcery of another villager replanted some of his taro on the block of a kinsman, for further protection. This was the only reported case of a person planting crops on the block of another
man since tenure conversion was introduced. It suggests that in situations of stress, as when sorcery is feared, traditional tenure patterns may take precedence over the newly introduced system.

Several people mentioned that they will in future share the proceeds from their rubber with non-blockholding kinsmen, but most said they would not.

**Inheritance of converted land**

In law blockholders may depart from the traditional pattern of inheritance when disposing of their land. As far as could be ascertained, most of the Ombi-Tara people wish to continue the traditional Orokaiva inheritance pattern, under which the first son generally has some precedence. The first son is not, however, the sole owner but rather the nominal trustee of the land for all sons. If the landowner has no sons, his daughters may keep the land in trust for their sons and in some cases the daughter's husband may also acquire some rights.

Several people intend to pass their blocks to the first son only and expect any other sons either to take up another block on what is now clan land, or to gain wage employment in an urban area.

**Work organisation**

The time spent in Ombi was too short to enable any conclusions to be drawn about the effects of conversion on work organisation, but a few general points may be made. There was no set routine in the sense of particular days being set aside for particular kinds of work. A number of people reported that Wednesdays and Fridays are set aside for Mission and Council work when required. During our stay no Mission work was done and Council work was done only on the first Friday, when most of the men went to a village two miles away to cut the grass around the Administration school, due to open the following week. Gambling occupied many people for much of Saturday and Sunday but others carried out normal work in the gardens on these days.

Husbands and wives worked together on food and cash crops, but I am unable to estimate whether husbands work more on cash crops and wives more on food crops as has been observed at times elsewhere.

Five men were employed on maintenance work on the Popondetta-Kokoda road near Ombi for the full period of our stay, receiving $6.42 a fortnight. The need for cash to pay the Council tax and the Mission jubilee contribution led five others to work on road maintenance during the final week of our stay. Although working a thirty to forty hour week, the five longer term roadworkers have planted an average of 410 rubber seedlings each which is greater than the average of 346 seedlings for all Ombi-Tara blockholders.
The five work on their blocks in the later afternoons and on weekends and their kinsmen help to clear their blocks while they are absent on road maintenance work.

Some future problems

While the long-run consequences of current alterations in land tenure are always difficult to foresee, some indications of future difficulties at Ombi-Tara may be seen.

Rights to land. Although all individual land rights which existed before conversion in the 800 converted acres have been legally abolished, and all land outside the blocks is held communally, this appears to have been understood and accepted by only a small minority. Each person interviewed was asked if he has any land apart from his block. Thirty-three of the Ombi-Tara people answered in the affirmative, and three more said that although they themselves do not have any land outside the converted area, other people do. Only four people said that they have no land outside the converted area, as all individual rights existing prior to conversion have been abolished and the land outside the blocks is held communally. These four include Charles, one of the clan leaders, and two men who are living on their blocks. There is a wide divergence between the few people who accept the new system of holding clan land worked out with the Agricultural Officer in late 1963 and early 1964, and the many who do not appear to fully understand or accept it. The majority appear to consider that clan land outside the converted area is held under customary tenure, which includes differential individual rights.

The situation is further complicated by the presumptive right of each person to extend his holding by clearing the bush behind his block without consulting the clan leader or other member of the clan. (This right is recognised by the villagers but is not valid in law.)

Several people indicated that they considered they owned the land behind their blocks in the same way as they owned the block, with the difference that the land behind the block had not yet been surveyed. This presumptive right appears likely to cause conflict whether the land outside the converted area is held under customary or communal tenure. It remains to be seen whether all previously existing rights to land will in fact be given up by the villagers, and if this does not occur, what sort of solution will eventually emerge.

At least three of the men absent from Ombi-Tara in outside wage employment have not been contacted since tenure conversion was

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1 See p.14.
initiated and hence are not party to the agreement to set aside 800 acres for individual holdings. Problems could arise if, on returning home and finding all forty blocks occupied, they should refuse to accede to the new arrangements. It also remains to be seen whether the man of Mumu clan whose block is on Kuei land will be permitted to extend his holding beyond the present twenty acres. The leader of the Kuei clan suggested to us that this would be allowed.

Concepts of title. While everybody interviewed said that the blocks belong solely to individual blockholders it remains to be seen whether in future all people will be prepared to cede to the blockholders all rights which they previously held in the converted area.

There was considerable confusion concerning the exact time that the blocks became the property of individual holders. Most people considered that this occurred immediately after the application forms had been signed, while some thought it was as soon as survey had been completed and others thought it was after the blocks had been distributed. Nobody realised that the block did not legally become his until ninety days after the Land Titles Commission hearing.

No one understood the purpose of the Land Titles Commission hearing. A genealogy was prepared in the hope that this might be required by the Land Titles Commissioner. At the hearing, the Commissioner read out the names of the thirty-five applicants and asked each applicant to call out the number of his block. The Commissioner explained that he would send a list of the applicants' names to Port Moresby and after ninety days each man would get a pas1 - the title document - saying the land was his.

After the hearing the Ombi-Tara people indicated in conversation that they thought the Commissioner had come to check that each man knew the number of his own block. They considered that the piece of paper which they would get merely confirmed that each man held his own block as he had done for the past seventeen months. This lack of understanding by the villagers of the true function of the Land Titles Commission hearing could be significant if objections to conversion were raised at the hearing.

Development of a market in land. The Administration hopes, by converting land from customary tenure to holding under individual registered title, to facilitate the development of a market in land. This is essential to ensure that no person with agricultural ability and initiative is deprived of land. It has been pointed out by

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1 A neo-Melanesian word meaning 'letter'.
Lord Hailey (1957:802) in Africa that people showed great reluctance to face commercialisation of land rights, by sale, mortgage or lease. I cannot say how far conversion will contribute to the development of a market in land as it is not clear whether the Ombi-Tara people understand that in law each man may sell his block to anyone he wishes. An attempt was made to gauge this with three questions.

If any man from Ombi wanted to sell his land and go and live in Port Moresby, is he allowed to do that?

Would he have to discuss it with somebody first?

What if the clan leader said 'no': could he still sell it?

Five people, including Charles and the two clan leaders, replied that individuals could dispose of their blocks without consulting anyone, even if the clan leader opposed the sale. Ten more said that a man was allowed to sell his land but would have to discuss it first, and could not sell if the clan leader was in opposition. The remaining twenty-five said they could not sell or did not know whether or not they could sell. A common reply was that no one wanted to go and live in Port Moresby but that if anyone did go he would leave the land in the care of his son or some other kinsman.

Cash crops planted before conversion. There are a number of cases at Ombi-Tara where cash crops planted by one man before conversion are now situated on another man's block. The usual solution to this problem has been for the planter (or in the event of his death, his heir) to retain sole rights to the crop. When the trees die out the land will revert to the blockholder, and the planter may not plant more trees on the same land.1

There have, however, been some variations from this solution. Where the crop concerned was cocoa the planter has in many cases abandoned it, allowing the blockholder to clear it and plant rubber. In one case sole rights to the cocoa will be retained by the planter until the rubber begins to yield a return in about seven years, when rights to the cocoa will be ceded to the blockholder. In another case the cocoa is jointly harvested with planter and blockholder sharing the income received from the sale of beans. Each of these solutions was worked out by negotiation between the persons concerned, and appears to have been determined largely by considerations of kinship and mutual obligation.

The existing situation contains potential difficulties. The blockholder, or his heir, may decide that he needs the land on

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1 This seems to follow traditional Orokaiva practice, as described by Dakeyne (1965:61): '...the right to harvest the produce of a permanent tree is vested in the planter or his heir, irrespective of the rights to the land on which the tree is planted.'
which the planter's crops are standing and may wish to cut down the trees. Where the planter's crop is coffee, the trees may reseed so that the grove may not die out, and the planter may retain a semi-permanent right to portion of the blockholder's land. If the coffee does die out, the planter may still be able to make out a case that he has a continuing right in the land, claiming that when individual title was granted in 1966 the blockholder recognised his right to use part of the block for coffee growing. Similar problems may arise where one man has built his house on another man's block. Eight of the nine houses of Tara village, and two of the houses in the hamlet located forty-five minutes' walk from Ombi are situated on blocks belonging to persons other than the householder.

Multiplicity of rightholders. While it is theoretically possible to provide against more than one person holding rights to converted land by appropriate legislation, there is no simple way of preventing de facto multiple rightholding since no law can prevent the villager from meeting his moral obligations to his relatives. It would not be unique to Papua-New Guinea if multiple rights to land should exist despite legislation forbidding them.\(^1\) In Tahiti, land rights are still passed on to illegitimate children although this is against the introduced law. Land fragmentation in Tahiti after the legislation to individualise tenure is worse than it was previously (Panoff 1964:136-9). In the Cook Islands the attempt to individualise tenure was followed paradoxically by a significant increase in the number of rightholders per acre of land (Crocombe 1964b:127).

We saw earlier that most Ombi-Tara people wish to continue their traditional pattern of inheriting rights to land and that there are signs that traditional obligation patterns may be continuing. The effect of these factors on the number of rightholders per block, and therefore on the achievement or otherwise of the policy of individualising tenure, may be significant in future.

Planting before title is granted. Planting of rubber on the blocks at Ombi-Tara began in September 1964, twenty months before title was due to be granted. Planting of rubber is continuing on the four demarcated and three undemarcated blocks which have not yet been formally allocated.\(^2\) Planting before title is granted is

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1 The existence of multiple rights and the spreading of an individual's usufructuary rights over several pieces of land may, if land is of uneven quality, equalise people's shares in the agricultural potential of an area. Consolidation of holdings in such areas tends to have the reverse effect.

2 Two of the undemarcated blocks are situated immediately behind demarcated blocks (see the conversion plan). This may cause difficulties if the holders of the demarcated blocks exercise their
also likely to occur if any of the blockholders decides to extend his holding beyond the present boundaries.

More than 13,000 rubber trees were planted before the Land Titles Commission hearing took place. Although this caused no difficulty at Ombi-Tara, a similar occurrence at other schemes could have serious repercussions if a dispute should arise at the hearing, or if an appeal should be lodged afterwards. At the Yega scheme the villagers agreed to give a block to the Papuan Assistant Agricultural Officer who had helped them with subdivision and planting of cash crops. On the day of the Land Titles Commission hearing they withdrew this offer. A similar offer was made to the Papuan Agricultural Assistant at Ombi. By the day of the Land Titles Commission hearing he had planted more than 700 rubber seedlings on his block. Awkward consequences would have ensued if the people had decided to withdraw their offer at the hearing. The possibility of quicker registration, perhaps by the Local Government Councils, may be worth examining.

Pest infestations and declining soil fertility. If the introduction of individual farming on consolidated blocks leads to the cessation of the bush fallowing system of agricultural production there will be pest problems. Otherwise the holdings would have to be larger than the amount of arable land available in most areas. It was noted earlier¹ that the bush fallowing system is well suited to the production of annual food crops in tropical areas. Newton (1960:85), writing about New Britain, concluded: 'The concentration of food crops into an area cleared from rain forest has resulted in a fairly rapid multiplication of diseases and pests of colocasia, sweet potato, peanuts and sorghum.' Without fertilisers and advanced agricultural techniques soil fertility may decline in areas where there is continuous cultivation of food crops.

Credit. The government decided not to offer credit facilities to participants in land tenure conversion schemes in order to prevent people assuming that tenure conversion was associated with financial assistance, but the District Commissioner of the Northern District has said that contrary to his expectations only two applicants for conversion have asked for financial assistance. One was extremely tentative and the other sought a loan of perhaps $25 (Williams 1966:7).

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2 (continued)

presumptive right to extend their holdings. We were told that in each case the two persons involved had negotiated a solution to this problem.

¹ See p. 6.
The need for credit at Ombi-Tara where rubber is being planted may be less than at schemes where other crops are being promoted. Bauer (1948:318) stated that where tapping and processing of rubber is done by family labour, 'many small-holders could almost be referred to as no-cost rather than low-cost producers'. The visiting World Bank mission suggested that credit could play an important part in securing local interest in planting rubber in consolidated areas, in organising group processing and marketing, and in providing scope for enterprising men to increase production (International Bank for Reconstruction and Development 1965:111).

It has been suggested both by the District Commissioner (Williams 1966:7) and by a former Agricultural Officer in the Northern District (Cheetham 1962:67-78) that it may be an appropriate time to reassess official credit policy, looking particularly at the criteria for providing credit to smallholders. Cheetham (1962:77) concluded: 'A farmer's ability to repay may be a better criterion on which to provide loan capital than the present notion of "credit-worthiness" in the sense of adequate tangible farm assets.'

Cash cropping and productivity

It is too soon to determine the effects tenure conversion will have on cash cropping and productivity. However, even at this early stage a few observations may be made. The acreage under cash crops at Ombi-Tara has increased significantly since conversion. Before conversion was introduced, 167 cocoa trees, 92 coffee trees and 19 bush rubber trees were planted per adult male at Ombi-Tara. In the fourteen months after the villagers began planting high-yielding rubber on the converted blocks an average of 304 seedlings was planted per adult male.

There is no shortage of food or suitable agricultural land. Both terrain and climate are favourable for growing rubber. There is easy access to Ombi-Tara from Popondetta. Villagers are able to earn money to buy rubber seedlings from the Department of Agriculture by tapping their bush rubber, by working on road maintenance, or by working for wages on the Sangara ex-servicemen's plantations. The proximity of the Sangara plantations and the existence of bush rubber stands at Ombi-Tara provided villagers with experience in tapping and handling rubber. The Sangara plantations also serve to demonstrate a 'European way of life' which many villagers find attractive and wish to emulate.

Tenure conversion appears to have contributed to the improved cash cropping performance mainly by reducing the labour inputs required to establish cash crop gardens, thus increasing labour

1 For example, the processing of green leaf into tea requires substantial investment (Clayton 1961:623).
2 Excluding the two 'outside' blockholders and a man from Tara who declined to be interviewed (see p.1).
productivity. Consolidation of an individual's scattered plots reduces the amount of time devoted to travelling and increases the acreage which can be planted with cash crops in any one location. The road running through the converted area allows easy access to all holdings and facilitates interpersonal co-operation by reducing the amount of travelling time involved.

Consolidation has facilitated the provision of assistance by Department of Agriculture staff, increasing the effectiveness of officers. Planting, pest control and general crop maintenance can be more efficiently supervised where there is easy access to all holdings.

Increased assistance from the Department of Agriculture has been an extremely significant factor in the increase in cash cropping activity at Ombi-Tara. In the Northern District there are more agricultural extension officers per head of local population than in most areas in Papua-New Guinea. The diligence, patience, and understanding of the Agricultural Officer who initiated the conversion scheme, the stationing of an Agricultural Assistant full time at Ombi-Tara to supervise the rubber nursery and the bush rubber processing unit, and the regular visits of extension officers from Popondetta have helped to provide the essential technical and managerial skills which are lacking in the village situation.

Tenure conversion appears likely to enable economies of scale when the rubber trees come into production, hence increasing the productivity of village labour. Economies may be gained in processing the latex, since the relatively large output may warrant the introduction of larger and more efficient processing equipment; in transporting the processed rubber in bulk; and in marketing. One of the problems previously faced by Ombi-Tara cocoa producers, especially when prices were low, was that buyers did not consider it worthwhile to make the journey to Ombi-Tara from Popondetta for the relatively small amount of produce.

While conversion introduces economies of large scale production it also retains one of the better features of the small holding system, the maintenance of individual incentives to increase production.

Ombi-Tara experience appears to support the well-known maxim of the Food and Agriculture Organization that tenure reform, in order

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1 The principle of concentration of development effort was endorsed by the visiting World Bank mission (International Bank for Reconstruction and Development 1965:35).

2 The argument for increasing returns to labour in an economy moving from pure subsistence to the production of a market surplus has been stated by Fisk 1964:164.
to be effective, must be associated with improvements in technical skills and the provision of credit, transport and marketing facilities. That individualisation of tenure does not necessarily lead to improvements in productivity has been demonstrated in many areas including South Africa (Yudelman 1965:239), Ongoho in the Northern District of Papua (Crocombe 1964a:36), and the Cook Islands, where Crocombe (1964b:142) concluded that

the issue of registered freehold titles by the Land Court of itself made little if any contribution to output in the early decades of the century and of recent years has had a negative effect.... Security of tenure must also be complemented by other measures if major increases in productivity are to result.

Tenure conversion at Ombi-Tara has enabled labour inputs in the establishment and maintenance of the rubber plantations to be reduced and appears likely to lead to economies of scale when the trees come into production. Conversion has facilitated, and has been complemented by, increased agricultural assistance. These factors together have contributed to the increase in cash cropping activity and improved labour productivity at Ombi-Tara.
Chapter 5

Summary and conclusions

Current Administration land policy aims at the introduction throughout Papua-New Guinea of a single system of land holding under secure individual registered title, and the promotion of indigenous agricultural development.

Land tenure conversion has been confined to the Northern District of Papua where it is at present costing the Administration about $116 per block or $6 per acre. This estimate includes the cost of providing salaries, staff housing, stationery, and office facilities, and excludes provision of planting materials, field equipment and extension services. There appears to be some scope for simplifying and reducing the costs of tenure conversion. The costs of tenure conversion should be compared with the costs of other methods of promoting indigenous agricultural development, for example land resettlement schemes, in order to determine which methods are most economical of public funds.

To what extent are the two aims of the tenure conversion legislation being achieved at the Ombi-Tara conversion scheme?

Individualisation of tenure

Land rights at Ombi-Tara were traditionally held both by individuals and by groups. There are several indications that the de facto tenure system introduced since tenure conversion may be little different in some important respects from traditional tenure arrangements.

(i) The Ombi-Tara people intend to continue traditional inheritance patterns (with some modifications) in future, and this may lead, as it has in other Pacific countries, to several persons holding de facto rights in a block of land which is considered in law to belong to a single individual.

(ii) It appears unlikely that traditional Ombi-Tara obligation patterns will be broken down by tenure conversion since the obligation system provides the main means of social security for the villager.
(iii) As was the case before conversion, a man whose crops stand on another man's land retains his rights to those crops (in the local view, but not in law).

(iv) As was the case before conversion, each man is considered by the villagers (but not in law) to have the right to extend his planting behind his present holding without consulting the clan leader or other members of the clan.

(v) It remains to be seen whether all villagers fully understand that all previously existing rights to land have been abolished since conversion, and whether in future some people may make claims on the basis of such rights.

(vi) Residence patterns appear also to be in accordance with traditional custom as those people who have left the village are living in hamlets composed of kinship groups and not as single farmers each on his own block.

**Promotion of agricultural development**

Even if tenure conversion alters the tenure system less radically than expected, it is still possible that it may act as a stimulus to indigenous agricultural development. The acreage under cash crops and labour productivity has increased at Ombi-Tara since tenure conversion was introduced. The improvement seems to be due more to the benefits arising from the consolidation of fragmented holdings than to increased security of tenure since the land rights that Ombi-Tara people held before conversion were sufficiently secure to allow them to plant cash crops.

Consolidation of holdings has reduced the labour inputs required to establish cash crop gardens by reducing the time spent travelling between the village and food and cash crop plots. Whereas previously each man had relatively small areas of land on each plot, making extension of plantings difficult, all his land has now been brought together on one twenty acre block. The provision of easy access to all blocks has facilitated interpersonal co-operation particularly in clearing bush lands, and has enabled officers of the Department of Agriculture to supervise planting, pest control and general crop maintenance more efficiently. This increased assistance from the Department of Agriculture has played an important role in increasing the acreage under cash crops by providing essential technical and managerial skills. It is questionable whether conversion would have led to a greatly improved cash cropping performance if it were not accompanied by increased agricultural assistance.

Tenure conversion appears likely to enable economies of scale to be gained in processing, transporting and marketing of produce when the Ombi-Tara rubber trees come into production, thereby increasing labour productivity still further.
I am unable to determine how far tenure conversion will facilitate the development of a market in land.

Several problems apart from those considered under the individualisation of tenure may arise from tenure conversion as it operates at present. The villager's concept of individual registered title appears to differ from that of the framers of the tenure conversion legislation. There may be future disputes over rights to cash crops planted before conversion now situated on the block of a man other than the planter. Because of the long delays required by the conversion legislation, planting of cash crops has preceded the granting of individual title by up to twenty months, which could be significant if objections to conversion were raised at the Land Titles Commission hearing. The consolidation of holdings implies the cessation of the traditional bush fallowing system of cultivating food crops, which may lead to problems of pest infestation and declining soil fertility. A lack of credit facilities could hamper efforts to increase cash cropping at some tenure conversion schemes, particularly those requiring large capital outlays for processing, transport and marketing. This is not, however, a current problem at Ombi-Tara.

The Ombi-Tara people regard conversion, which they perceive as consolidation, as the road to improved standards of living. While this faith is retained there seems every chance that conversion will succeed in raising agricultural output. Continued faith will probably depend on the extent to which the expected improvements in terms of living standards and income are in fact achieved.
Appendix A

Process and costs of tenure conversion in the Northern District

This Appendix attempts to estimate roughly the economic costs of tenure conversion. Land tenure conversion can only be justified if the economic and social benefits to be derived from it exceed the economic and social costs of its execution. Information is not available to allow comparison of costs and benefits from alternative methods of promoting agricultural development.

Procedure

The procedures to be followed in converting land held under customary tenure to individual registered title are set out in the Land (Tenure Conversion) Ordinance 1963 and the Land Titles Commission Ordinance 1962. The country is divided into a number of 'adjudication areas' and within each a 'demarcation committee' (with a majority of indigenous members) is established to prepare demarcation plans marking the boundaries of all native held land within the area. If a group is acknowledged as the undisputed holder of an area of land, members of the group may apply to hold portions of the land under individual registered title.

The Land Titles Commissioner prepares a conversion plan and publishes notice that the application will be dealt with after three months, during which time objections may be lodged. If he is satisfied that all persons with rights in the land agree to the application and that adequate compensation is provided for interests abolished or reduced by conversion, the Commissioner issues a conversion order. Ninety days is allowed for appeal and thereafter the conversion order is sent to the Registrar who registers the applicant as the owner of an estate in fee simple. Upon registration of individual title the land ceases to be subject to native custom and all previously existing rights are abolished.

The procedure followed in the Northern District differed from that laid down in the Ordinance in that conversion began there over a year before adjudication areas were mapped out (in January 1966) and no compensation was paid to persons losing rights to land - nor has any been requested by villagers.
The procedures which operated from the introduction of tenure conversion in the Northern District are summarised in Appendix B. Procedure was altered by Circular 31.1.9 from the Administrator to all field officers, dated 3 November 1965. Since all tenure conversions up to 1 January 1966 were carried out under the old procedure this has been used as the basis for the following cost estimates.

**Method of estimating costs**

An attempt was made to gather information on eight conversion schemes in order to estimate the costs of tenure conversion in the Northern District. The stage of development reached at these eight schemes by 9 February 1966 is set out in Table 1. All except the Dapari scheme were among the first ten conversion schemes promoted, and consequently are among the most advanced conversion projects in the country.

**Table 1**

**The state of eight tenure conversion schemes at 9 February 1966**

<table>
<thead>
<tr>
<th>Name of scheme</th>
<th>Blocks</th>
<th>Acres</th>
<th>Crop</th>
<th>Stage of progress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barisari No.1</td>
<td>55</td>
<td>1,680</td>
<td>coconuts</td>
<td>Hearing completed for 47 applicants on 29 Sept. 1965. Applications filed for other blocks.</td>
</tr>
<tr>
<td>Somara</td>
<td>10</td>
<td>200</td>
<td>rubber</td>
<td>Awaiting conversion plans to accompany applications.</td>
</tr>
<tr>
<td>Barisari No.2</td>
<td>7</td>
<td>210</td>
<td>coconuts</td>
<td>Awaiting conversion plans to accompany applications.</td>
</tr>
<tr>
<td>Dobarudra-Buna</td>
<td>63</td>
<td>1,260</td>
<td>coconuts</td>
<td>Awaiting applications.</td>
</tr>
<tr>
<td>Dapari</td>
<td>44</td>
<td>1,000</td>
<td>rubber</td>
<td>Land Titles Commission survey in progress.</td>
</tr>
</tbody>
</table>
The costs in salaries of each stage in the conversion process were estimated separately. The number of days spent by an officer on a particular task was converted into the number of days needed per thousand acres and per hundred blocks. Salaries assumed for costing purposes are set out in Table 2.

Although every effort was made to cross-check all information on costs, the figures represent an approximation only. Where possible Field Officer Journals were consulted to determine the number of days each officer spent at a particular scheme. Otherwise estimates were made from discussions with officers concerned. The number of vehicle days in each stage was estimated from the rest of the data.

Salary costs of each stage of the conversion process

(i) Preliminary discussions. Officers of the Department of Agriculture, Stock and Fisheries (D.A.S.F.) or sometimes the Department of District Administration (D.D.A.) are approached by village people who request a tenure conversion scheme for their area. Discussions follow on the nature and implications of conversion. This involves two days each for an Agricultural Officer and his assistant. The number of days spent by officers does not vary with the size of the scheme.

(ii) D.A.S.F. investigation. Agricultural Officers investigate and submit a report on accessibility, names of neighbouring villages and schemes, topography, soil type, vegetation, people's attitude to conversion, crop recommendation and a recommendation concerning priority to be given to the scheme. Estimated time at Ombi-Tara was four days each for an Agricultural Officer and assistant.

(iii) District Development Committee meeting. The D.A.S.F. report goes before an informal meeting of the District Development Committee which allocates priorities for further investigation. Tenure conversion is only one of the committee's many spheres of

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1 Based on 219 working days a year for expatriate officers, being 365 days less forty-five days leave (overseas officers are entitled to three months leave after twenty-one months' service), less ninety-one Saturdays and Sundays, less ten statutory holidays. Local officers receive three weeks annual leave and hence have 236 working days.

2 'Vehicle' is used in this appendix to include vehicle and driver unless otherwise stated. A full day for vehicle and driver was assumed if the officer requisitioning the vehicle spent the whole day at a scheme and returned the same evening. A half day was assumed if the officer was left at the scheme and the vehicle returned to Popondetta.
Table 2
Salaries (and allowances) assumed for costing purposes

<table>
<thead>
<tr>
<th>Position</th>
<th>Annual salary</th>
<th>Salary assumed</th>
<th>Allowances added**</th>
<th>Total</th>
<th>Cost of one man-day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Titles Commissioner</td>
<td>6,050</td>
<td>6,050</td>
<td>818</td>
<td>7,228</td>
<td>33.0</td>
</tr>
<tr>
<td>Field Officer - L.T.C.</td>
<td>2,084-2,588</td>
<td>2,336</td>
<td>818</td>
<td>3,154</td>
<td>14.40</td>
</tr>
<tr>
<td>Field Assistant - L.T.C.</td>
<td>600</td>
<td></td>
<td></td>
<td>600</td>
<td>2.54</td>
</tr>
<tr>
<td>Agricultural Officer, grade 1</td>
<td>2,106-3,814</td>
<td>2,960</td>
<td>818</td>
<td>3,778</td>
<td>17.25</td>
</tr>
<tr>
<td>Asst. Agric. Officer</td>
<td>720-1,000</td>
<td>860</td>
<td>-</td>
<td>860</td>
<td>3.64</td>
</tr>
<tr>
<td>Agric. Assistant</td>
<td>600</td>
<td></td>
<td></td>
<td>600</td>
<td>2.54</td>
</tr>
<tr>
<td>Farmer Trainee</td>
<td>172</td>
<td>172 (incl. rations $133)</td>
<td>-</td>
<td>172</td>
<td>0.73</td>
</tr>
<tr>
<td>Asst. District Officer, grade 1</td>
<td>4,058-4,324</td>
<td>4,196</td>
<td>818</td>
<td>5,014</td>
<td>22.89</td>
</tr>
<tr>
<td>Interpreter - Dept of District Admin.</td>
<td>400-760</td>
<td>600</td>
<td>-</td>
<td>600</td>
<td>2.54</td>
</tr>
<tr>
<td>Clerical Assistant</td>
<td>600</td>
<td></td>
<td></td>
<td>600</td>
<td>2.54</td>
</tr>
<tr>
<td>Draftsman, grade 2</td>
<td>3,814-4,058</td>
<td>3,936</td>
<td>818</td>
<td>4,754</td>
<td>21.71</td>
</tr>
<tr>
<td>Clerk</td>
<td>2,838-3,326</td>
<td>3,082</td>
<td>818</td>
<td>3,900</td>
<td>17.81</td>
</tr>
<tr>
<td>Driver</td>
<td>600</td>
<td></td>
<td></td>
<td>600</td>
<td>2.54</td>
</tr>
<tr>
<td>Vehicle ($0.70 per hour = $5.60 per day)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camping allowance (per night in the field for all except Farmer Trainees)</td>
<td>expatriate, single</td>
<td>1.05 per day</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| ** Salaries and allowances are as listed in the Public Service (Salaries and Overtime) Determination 1964 and the Public Service (Overseas Officers' Allowances) Determination 1964. Most second division salaries were increased by 1½ per cent during late 1965. These increases have not been taken into account. Vehicle costs are official estimates.**

** Overseas officers receive an Overseas Allowance ranging from \$500 to \$960 per year depending on marital status and length of service, and a cost of living allowance of \$370 per year. They are required to pay \$52 per annum as contributions to the cost of child allowance payments. Therefore, assuming that the minimum Overseas Allowance is applicable, \$818 per annum has been added to the basic salary ranges of overseas officers for costing purposes (\$500 + \$370 - \$52). One man in five is assumed to be married. Hence an extra \$360 per annum or \$1.64 per man-day has been added when costing one-fifth of the man-days involved in conversion.

*** The Commissioner is assumed to be married.
interest and the time it spends on conversion has not been included in these cost estimates.

(iv) D.D.A. investigation. An officer investigates the ownership of the land to be converted. This involves walking around the boundaries of the land with representatives from the claimant clan or clans, and neighbouring clans. The investigator checks whether any persons are absent from the area to be converted and whether they are agreeable to conversion. He submits a written report. There was no D.D.A. investigation at Ahora, Barisari No.1 or New Warisota, all of which began before mid 1965 when the D.D.A. investigation was introduced. The figures for Dobadura-Buna were not available. The schemes at Ombi-Tara, Somara and Dapari were investigated jointly, and D.D.A. officers accompanied by Land Titles Commission surveyors spent two days there, but they spent five days at Barisari No.2.

(v) Survey. If D.D.A. findings are satisfactory, Land Titles Commission staff make a chain and compass survey of the scheme to a design approved by D.A.S.F. Block boundaries are cut with the help of D.A.S.F. staff and local villagers and corners are marked with cement and wooden pegs. A plan is prepared from this survey and reduced size duplicate copies are made.¹ Time involved in surveying includes that spent on preliminary discussions, preparations, obtaining supplies, travelling, surveying in the field, and plotting and mapping. The most reliable information is for Ombi-Tara and Somara. The estimates for most of the others are almost certainly an understatement. The relatively large differences in time involved at different schemes (Table 3) reflect partly differences in topography and density of vegetation.

During the twelve months to 5 October 1965 nine schemes totaling 294 blocks and 6,650 acres were surveyed. Excluding work other than conversion, a total of seventeen Field Officer months was worked in the period, giving on the average 17.3 blocks surveyed per Field Officer month. Two Field Assistants were employed throughout. Since requests for tenure conversion were being received at a rate of more than one hundred per month during 1965, a large backlog remained.

(vi) Completing applications. An Agricultural Officer obtains five copies of each of the Application for Registration, the conversion plan, and the statutory declaration by the Land Titles Commission surveyor, and assists the village people to complete their application forms. This is time-consuming as repeated visits are often required to locate people who were absent at the time of the first visit. This involves an estimated four days per thousand acres for an Agricultural Officer and nine for his assistant.

¹ The Ombi-Tara conversion plan is reproduced on p.12.
Table 3

Survey - man-days per 1,000 acres

1. Salary and allowances

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Barisari No.1</td>
<td>45</td>
<td>79</td>
<td>32</td>
<td>45</td>
<td>-</td>
<td>90</td>
<td>5</td>
</tr>
<tr>
<td>New Warisota</td>
<td>26</td>
<td>18</td>
<td>3</td>
<td>-</td>
<td>30</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>Ahora</td>
<td>27</td>
<td>27</td>
<td>3</td>
<td>27</td>
<td>27</td>
<td>-</td>
<td>11</td>
</tr>
<tr>
<td>Ombi-Tara</td>
<td>94</td>
<td>94</td>
<td>33</td>
<td>43</td>
<td>352</td>
<td>525</td>
<td>12</td>
</tr>
<tr>
<td>Somara</td>
<td>110</td>
<td>110</td>
<td>10</td>
<td>-</td>
<td>585</td>
<td>440</td>
<td>65</td>
</tr>
<tr>
<td>Barisari No.2</td>
<td>72</td>
<td>72</td>
<td>-</td>
<td>72</td>
<td>-</td>
<td>144</td>
<td>24</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>374</strong></td>
<td><strong>400</strong></td>
<td><strong>81</strong></td>
<td><strong>187</strong></td>
<td><strong>994</strong></td>
<td><strong>1,199</strong></td>
<td><strong>131</strong></td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>62</strong></td>
<td><strong>67</strong></td>
<td><strong>14</strong></td>
<td><strong>31</strong></td>
<td><strong>166</strong></td>
<td><strong>200</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

2. Camping

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Barisari No.1</td>
<td>40</td>
<td>74</td>
<td>28</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New Warisota</td>
<td>18</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>26</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ahora</td>
<td>21</td>
<td>21</td>
<td>-</td>
<td>21</td>
<td>22</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ombi-Tara</td>
<td>87</td>
<td>87</td>
<td>26</td>
<td>39</td>
<td>225</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Somara</td>
<td>60</td>
<td>60</td>
<td>-</td>
<td>39</td>
<td>320</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Barisari No.2</td>
<td>48</td>
<td>48</td>
<td>-</td>
<td>48</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>274</strong></td>
<td><strong>300</strong></td>
<td><strong>54</strong></td>
<td><strong>148</strong></td>
<td><strong>593</strong></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>46</strong></td>
<td><strong>50</strong></td>
<td><strong>9</strong></td>
<td><strong>25</strong></td>
<td><strong>99</strong></td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Abbreviations:

F.O. Field Officer, Land Titles Commission
F.A. Field Assistant, Land Titles Commission
A.O. Agricultural Officer
A.A.O. Assistant Agricultural Officer
A.A. Agricultural Assistant
F.T. Farmer Trainee
Veh. Vehicle

(vii) Processing applications. An Agricultural Officer spends about two days per 1,000 acres checking, amending and correcting all applications.

(viii) Registering applications. The applications are registered in the office of the Deputy District Commissioner by a Clerical Assistant who spends about one day per 1,000 acres.

(ix) Drafting notices of hearing. The applications are forwarded to the Land Titles Commissioner who makes out notices of the Land
Titles Commission hearing. This occupies the Commissioner for one day.

(x) Conducting hearing. After at least three months the Land Titles Commission hearing is conducted. This is usually accomplished in one day's work each for the Commissioner, a Field Officer and a Field Assistant.

(xi) Drafting conversion orders. Conversion orders are completed by the Land Titles Commissioner and if no objections are lodged within ninety days they are sent to the Registrar of Titles in Port Moresby. This takes the Commissioner about one day per 1,000 acres.

(xii) Drafting and registering titles. The applicant is registered as the owner of an estate in fee simple by the Registrar of Titles in Port Moresby. Three copies of each individual title are drawn up by hand by a draftsman in the Registrar-General's Branch, Department of Law. No individual title documents had been drawn up by the end of February 1966 but it was assumed that a scheme of 1,000 acres containing fifty individual blocks would require about fifty days for a draftsman and a clerk.

(xiii) Programming and progress reports. At different stages of the conversion process an average of four days is spent by Agricultural Officers organising, planning, checking on conversion schemes and writing progress reports.

(xiv) Total salary costs. The costs in salaries of the thirteen stages of the conversion process are summarised in Table 4.

Other costs

The total costs of conversion must include capital costs which are even more difficult to estimate than the recurrent costs.

(i) Staff housing. Assuming 1,000 blocks of twenty acres are converted each year,¹ we can make an approximate estimate of the staff housing requirement of the tenure conversion programme.²

Table 5 sets out the number of man-days spent on converting 1,000 blocks by those officers for whom housing is provided.

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¹ This assumption was made in estimating the funds required for tenure conversion during the five year period 1966-67 to 1970-71 (Department of Agriculture 1965:1).

² It was assumed in the D.A.S.F. plan that housing would be provided for all officers engaged on conversion except Farmer Trainees, interpreters, and drivers; and that one officer in five would be married. These assumptions are followed here.
### Table 4

The process of tenure conversion - man-days per 1,000 acres and salary costs per 1,000 acres and per 100 blocks

<table>
<thead>
<tr>
<th>Process</th>
<th>Man-days per 1,000 acres</th>
<th>Cost per 1,000 acres ($)</th>
<th>Cost per 100 blocks ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prelim. discussions</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DASF investigation</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DDA investigation</td>
<td>-</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Survey</td>
<td>62</td>
<td>67</td>
<td>14</td>
</tr>
<tr>
<td>Complete applications</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Process applications</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Register applications</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Notices of hearing</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total man-days</td>
<td>3</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>Cost per 1,000 acres ($)</td>
<td>99</td>
<td>986</td>
<td>172</td>
</tr>
<tr>
<td>Cost per 100 blocks ($)</td>
<td>99</td>
<td>2,238</td>
<td>399</td>
</tr>
</tbody>
</table>

### Abbreviations:

- **Com.**: Land Titles Commissioner
- **F.O.**: Field Officer, Land Titles Commission
- **F.A.**: Field Assistant, Land Titles Commission
- **A.O.**: Agricultural Officer
- **A.A.O.**: Assistant Agricultural Officer
- **A.A.**: Agricultural Assistant
- **P.T.**: Farmer Trainee
- **A.D.O.**: Assistant District Officer
- **Int.**: Interpreter
- **C.A.**: Clerical Assistant
- **Dft.**: Draftsman
- **Clk**: Clerk
- **Veh.**: Vehicle

Columns do not add because of rounding.

Cost per acre = $5.10
Cost per block = $105.52
Table 5

Man-days per 1,000 acres and per 1,000 blocks for officers for whom housing is provided

<table>
<thead>
<tr>
<th></th>
<th>Man-days per 1,000 acres</th>
<th>Man-days per 1,000 blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overseas officers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Titles Commissioner</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>Field Officer - L.T.C.</td>
<td>67</td>
<td>1,340</td>
</tr>
<tr>
<td>Agricultural Officer</td>
<td>31</td>
<td>620</td>
</tr>
<tr>
<td>Asst District Officer</td>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>Draftsman</td>
<td>50</td>
<td>1,000</td>
</tr>
<tr>
<td>Clerk</td>
<td>50</td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>205</strong></td>
<td><strong>4,100</strong></td>
</tr>
<tr>
<td>Assistant Agricultural Officers</td>
<td>31</td>
<td>620</td>
</tr>
</tbody>
</table>

| Other local officers  |                          |                            |
| Field Assistant - L.T.C. | 68                      | 1,360                      |
| Agricultural Assistant | 181                     | 3,620                      |
| Clerical Assistant    | 1                        | 20                         |
| **Total**             | **250**                  | **5,000**                  |

Overseas officers would require 4,100 man-days on a year's programme of converting 1,000 blocks, and thus need housing for nineteen overseas officers (four married and fifteen single). Housing has also to be provided for three Assistant Agricultural Officers (one married, two single) who spend 620 man-days on converting 1,000 blocks and for twenty-one other local officers (four married, seventeen single) who spend 5,000 man-days.\(^1\) The cost of providing housing for these officers is set out in Table 6. The annual cost of providing staff housing for a programme to convert 1,000 blocks averaging twenty acres in area is $9,030 which represents $0.45 per acre or $9 per block.

(ii) Office facilities. Proportionate costs of office space have been estimated at $0.05 per acre or $1.00 per block.

(iii) Stationery and materials. Each individual title document will require materials which are estimated by persons concerned with them to be worth $0.60.

\(^1\) Using days of work as set out in footnote 1, p.40.
Table 6

Cost of providing staff housing for a one year programme to convert 1,000 blocks

<table>
<thead>
<tr>
<th></th>
<th>No. of officers required</th>
<th>Total cost ($)</th>
<th>Cost of housing per year (1/15th capital cost)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overseas officers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>single</td>
<td>15</td>
<td>75,000</td>
<td>5,000</td>
</tr>
<tr>
<td>married</td>
<td>4</td>
<td>40,000</td>
<td>2,666</td>
</tr>
<tr>
<td>Assistant Agricultural Officers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>single</td>
<td>2</td>
<td>4,000</td>
<td>266</td>
</tr>
<tr>
<td>married</td>
<td>1</td>
<td>4,000</td>
<td>266</td>
</tr>
<tr>
<td>Other local officers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>single</td>
<td>17</td>
<td>8,500</td>
<td>566</td>
</tr>
<tr>
<td>married</td>
<td>4</td>
<td>4,000</td>
<td>266</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
<td>135,500</td>
<td>9,030</td>
</tr>
</tbody>
</table>

* Based on Department of Agriculture 1965:3.

The costs of field equipment (e.g. compasses, cement pegs, etc.), agricultural extension work, the provision of planting materials, transport and marketing facilities have not been included in this cost estimate as they are not part of the immediate process of tenure conversion. They are, however, essential to the success of any conversion scheme and may add significantly to the overall costs of the conversion programme.

Total costs

Insufficient data were collected to enable an accurate estimate of the total costs of tenure conversion. The available information is summarised in Table 7.

---

1 D.A.S.F. estimates that the cost of planting materials over five years for 2,500 blocks on which rubber or coconuts are grown would be $233,200 or $93.28 per block. Farmers on the other 2,500 blocks could obtain cocoa and coffee planting materials locally at little or no cost.
Table 7

The costs of tenure conversion per acre and per block

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost per acre</th>
<th>Cost per block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries</td>
<td>5.10</td>
<td>105.50</td>
</tr>
<tr>
<td>Staff housing</td>
<td>0.45</td>
<td>9.00</td>
</tr>
<tr>
<td>Office facilities</td>
<td>0.05</td>
<td>1.00</td>
</tr>
<tr>
<td>Stationery and materials</td>
<td>0.03</td>
<td>0.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5.63</strong></td>
<td><strong>116.10</strong></td>
</tr>
</tbody>
</table>

Note. Field equipment, extension services and planting materials have not been included.

It may be useful to spell out some of the implications of these estimates. In the twelve months to October 1965 work was commenced in the Northern District on converting 2,000 blocks (covering about 40,000 acres). The cost to the Administration when conversion of these blocks is complete (excluding the provision of planting materials, field equipment and extension services) will be about $232,200.

If the Administration were to extend tenure conversion to 5 percent of indigenous heads of households in Papua-New Guinea each year (that is, to about 20,000 people, assuming one person in five is a householder) the cost (excluding the provision of field equipment, extension services and planting materials) would be about $2,322,000 per annum. There may be ways in which these costs could be reduced, but these fall outside the scope of the present paper.\(^1\)

---

\(^1\) Discussion of such topics as degree of accuracy of survey, maximum use of indigenous staff, costs of registration procedure, and the possible delegation of certain functions to local officers and/or local governments, merit discussion. It may be that costs of future conversion could be significantly reduced. On the other hand, the changes in procedure introduced by Circular 31.1.9 from the Administrator, which had not been put into effect at the time of this study, appear likely to increase costs and slow down the conversion process. In particular, the reports from both the District Development Committee and the Department of Agriculture are to be sent to the Administrator's Headquarters Advisory Committee on Land Tenure Conversion.
Appendix B

The Ombi-Tara environment and population

Ombi village is in the Kokoda sub-district about twenty-seven miles from Popondetta along the main Popondetta-Kokoda road. It is situated on top of a plateau up a steep escarpment, about 250 yards from the main road. Tara is about two miles from Ombi and straddles the access road which runs through the converted land occupying part of two of the blocks. It was previously about two miles further away and was moved to its present site in 1964 after survey of the land to be converted was under way.

The Kumusi River flows close to the Popondetta-Kokoda road, about four hundred yards from Ombi village. Ombi village was formerly sited next to the river but was moved to its present higher location in about 1957, reportedly to escape the mosquitoes.

The nearest school is conducted by the Administration at Ajeka, about two miles away. Most children of the appropriate age attend school daily. Several of the older children board at schools in Popondetta while some children do not attend school at all.

The nearest trade store is at Ajeka but this is seldom open, and most purchases are made from the store operated by a European planter at Awala, a distance of seven miles. Clothing and larger items are purchased in Popondetta.

The Ombi-Tara lands are part of the Higatura land system which contains a considerable proportion of good land with reasonably fertile soils, suitable for many arable or tree crops as well as pasture.¹

The most important features of the climate are the generally heavy rainfall, and the almost uniformly high temperatures and humidities throughout the year. Rainfall ranges from 120 to 150 inches annually and may well be greater in the higher areas, including Ombi-Tara. These climatic features are reflected in abundant plant growth. At Ombi-Tara rainforest covers much of the surrounding land, which is marked by a series of steep ridges.

¹ See C.S.I.R.O. 1964.
The principal food at Ombi-Tara is taro, while other foods of importance include sweet potatoes, yams, bananas and plantain, edible pit-pit (Saccharum edule) and a wide variety of leaves and bush cabbages. Bread-fruit, pandanus, betelnuts, coconuts, pineapple, pawpaw, watermelon and sugar cane are also eaten. The main sources of animal protein are provided by wild pigs, birds, flying foxes and the occasional cuscus. These add variety but provide comparatively little food. The keeping of domestic pigs in villages has been outlawed for health reasons by the Ilimo Local Government Council which serves Ombi-Tara, but one old man, a former clan leader, kept three pigs under his house.

Readily available natural vegetation provides housing materials. Timber is used for the framework and walls, blackpalm or timber for the floor, and thatched sago leaves for the roof. Houses have an average life of about four years.

The population of Ombi-Tara by clan and location is presented in Table 8.

Table 8

Resident population of Ombi-Tara by clan and location, January 1966

<table>
<thead>
<tr>
<th>Clan</th>
<th>Ombi</th>
<th>Tara</th>
<th>Blocks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M*</td>
<td>F*</td>
<td>C*</td>
<td>M</td>
</tr>
<tr>
<td>Mumu</td>
<td>20</td>
<td>20</td>
<td>56</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>28</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>Kuei</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>11</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>23</td>
<td>63</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>39</td>
<td>98</td>
<td></td>
</tr>
</tbody>
</table>

M* Adult males. F* Adult females. C* Children.

Note. In addition there were seven Ombi men and six Tara men absent from the area working for wages, that is, roughly one man away for every three remaining at home.
Appendix C

Factors associated with high cash cropping activity

Although this study is mainly concerned with land tenure conversion, information was also collected on factors associated with high cash cropping activity which may be of interest when compared with related findings published in earlier New Guinea Research Bulletins.

Blockholders resident at Ombi-Tara had planted an average of 348 high-yielding rubber seedlings by 1 November 1965. The nine men who had planted more than the average were compared with the remainder of the Ombi-Tara population to determine whether they differed significantly in education, non-traditional experience, age, clan, religion, number of children, sources of income, responsible positions held in the village, languages spoken, cash crops planted before conversion and attitudes as revealed in answers to the questionnaire. In most of these characteristics there was a striking similarity between the nine men and the total population. However, several differences did emerge.

While there was almost no difference between the average number of years spent in paid employment by the sample and total populations, there was a significant difference related to responsibility, skills and locality of employment. The nine above average planters included six of the eight Ombi-Tara men who had been to Port Moresby and two of the three who had been to Rabaul. Jobs held in these towns tended to be of a more skilled and responsible nature than those held by other villagers. In Port Moresby two men were employed as policemen for nine and two years, one worked for two years first as a plumber's assistant and then as a labourer, and the other three each worked for twelve months as a workshop assistant (and later as a survey assistant in Popondetta for four months), an office boy, and a labourer respectively. The two men who went to Rabaul worked as painters with an oil company for eighteen months. The man who spent nine years in Port Moresby as a policeman was also employed as a domestic servant at Kokoda for twelve months, the only Ombi-Tara man to have a job of this nature.

One of the nine men is Charles¹ and another is the clan leader of the Mumu clan. A third is the joint custodian with Charles of

¹ See p.11.
the Ombi-Tara village savings account, and a fourth is a man who was frequently mentioned as having had rights to very large areas of land before conversion and who appears to hold a position of high status at Ombi.

The nine men had planted more cash crops before conversion on the average than the other Ombi-Tara blockholders. They had planted an average of 321 cocoa trees (compared with an average of 108 trees for the other Ombi-Tara blockholders) and 126 coffee trees (as compared with 83). The nine men included three of the four men who had planted their own bush rubber seedlings before conversion was introduced.
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