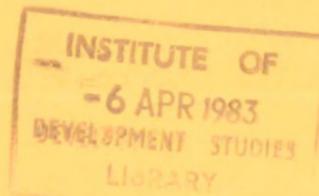


**LAND SHORTAGE AND LAND  
UNUSED : THE PARADOXICAL  
PATTERNS OF KWAZULU**

**Giuseppe Lenta**



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by  
Giuseppe Lenta

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## 1. INTRODUCTION

The need for this study arises from the particular situation in South Africa today, where land is divided between Africans and Whites in such a way that the different tribal groups each receive their separate parts of the 14 per cent allocated to Africans out of the total area of the country. It may well seem to the non-South African who is unacquainted with the disputes about allocation of land among racial groups in South Africa that, given the racial composition of the population (Africans accounting for 67 per cent of the total population),<sup>(1)</sup> and the allocation already mentioned, demands by Africans for more land are inevitable. This may be true, but the way in which the demands have been, and still are, expressed requires that they be investigated in a particular manner: it is claimed that more land must be added to the Reserves<sup>(2)</sup> on the grounds that the present land is inadequate to generate an output sufficient to satisfy the basic needs of the inhabitants.

African leaders contend that the quota of land allocated to their people in 1936 is inadequate, as conditions have changed drastically since then: not only has the population increased over the years at a rapid rate, but the extension of influx control in the early 1950s, which has reduced emigration from the Reserves, has exacerbated the situation and led to increasing overcrowding with its related social and economic problems.<sup>(3)</sup> Yet a situation puzzling to the observer exists in which a comparatively large proportion of arable land (20-30 per cent) is left uncultivated every year.<sup>(4)</sup>

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(1) BENS0 (1981) Statistical Appendix, Table 1.

(2) This term - the oldest and, it is hoped, the most neutral politically - will be used throughout the present study for areas designated for exclusively-African occupation and cultivation in South Africa.

(3) Horrell (1973), pp. 17-26.

(4) In 1965, for example, only 80,5 per cent of all arable land was under cultivation, 73 per cent in 1972 and 67 per cent in 1978/79. KwaZulu, Department of Agriculture and Forestry, Annual Reports, unpublished.

The main intention of this study is to attempt to explain this puzzle. A few questions on the matter will be answered including the following: In what sense is there a shortage of arable land in KwaZulu? Why is land left uncultivated? The intention, therefore, is not to investigate the ways in which land at present cultivated could be made to produce higher yields, but to try to indicate how a larger extent of land could be cultivated.

Our discussion will be preceded by an historical review of the way in which the concept of the Reserves developed and altered from their inception until the present day (Section 2), the object being to throw light on the principles on which, at different times, land was allocated to Africans and to allow some judgements to be made, in later sections and in the conclusion, on the justice of those principles. With the exception of Section 2, the study restricts itself to KwaZulu, or rather to that part of South Africa at present so called.

In Section 3, trends in crop production during the period 1867-1977 will be examined. The amount of land available at different periods will be compared with population figures in order that it may be established whether the degree of change in the land/population ratio is sufficient to account for declining per capita output, and the effect that changes in the quality of land may have, both on yields and upon incentives to cultivate land, will be discussed.

The main focus of Section 4, and indeed, the situation which originally led to this study being undertaken, is an investigation into the reasons why arable land is left uncultivated. A survey of this matter was conducted, and the responses of landholders as to why they left part or all of their land idle are grouped according to the factor shortages which they emphasise, and analysed in detail.

In Section 5 the system of land tenure which prevails in KwaZulu is outlined, together with the way in which it permits landholders to leave their holdings uncultivated for comparatively long periods. This is follo-

wed by a discussion of the recommendations of the Select Committee of Land Tenure (KwaZulu, 1976) and of the degree to which it can be hoped that they will solve the problem of arable land left uncultivated.

Finally, the conclusion tries to offer answers to two sets of questions, the first being, given the multiplicity of reasons which have emerged in Sections 3-5 as to why land is not cultivated, those concerning the nature and extent of the changes which must be brought about if people are to be made able and willing to cultivate the areas now idle. The second series of questions will be concerned with the cost to KwaZulu and to South Africa as a whole of creating a situation in which all land will be cultivated.

## 2. THE "RESERVATION" OF LAND TO THE ZULUS

*"We will give you locations to live on after your own fashion, save so far as that may include cruelties and other enormities".*  
(Natal Native Commission, 1881-82, p. 7)

Contemporary records provide a considerable volume of information about the circumstances in which the African Reserves of Natal were created, the motivation of the colonial government which created them and the pressures on that government from the colonists which modified or at least influenced to some extent the form and extent of the Reserves. It must be remembered that a colonial government is normally, because of the very nature of colonisation, exposed to the pressures created by three very different sets of interests.

The first originates from the government of the home country whose appointees the expatriate officials of the colony are. The home government will itself be vulnerable to political and economic pressures from its own electorate, whose state of information or concern for affairs in the colony will ordinarily be low, but will rise dramatically if any crisis demanding expensive intervention by the mother country occurs.

The colonists - the second pressure group - will probably have economic interests which will be quite different from those of the home government and, in the case of the creation of the reserves, their interest in maintaining peace between themselves and the indigenous population may well be less than their wish for economic dominance over them. In the case of the colonists of Natal, at least those of British origin, the pattern of their behaviour and their attempts to influence the colonial government when it was attempting to establish reserves suggest that they were, perhaps subconsciously, trying to recreate the class patterns which had emerged in 19th century Britain, where the land enclosures of

the previous centuries had created a class of landless agricultural tenant-labourers, as well as a larger and growing group of urban industrial 'operatives'. It is not perhaps the business of the economist to discuss the question of whether the Natal colonists saw themselves as setting in motion in Africa the process which had occurred in Britain, or whether they were simply responding to the situation of a landed Zulu peasantry with no existing wish to sell its labour. There can be little doubt that the British immigrants into Natal conceived of themselves as embryo entrepreneurs: perhaps, given their national origin and the fact that they left Britain in the nineteenth century when the successful entrepreneur was the image of material achievement, it was inevitable that they should do so. In order to make that dream an actuality, to achieve in fact economic success of the same kind, it was absolutely necessary for them to transform African landed peasants into workseekers - what has been called the 'proletarianisation' of the Zulus had to be brought about.

A third pressure on colonial governments has been mentioned: it is that from the indigenous people themselves. Although a colonial government can never be called 'representative' except of the interests of the home government, and only in certain senses of them, the vested interest of that government is in peace within the colony. The possibility of the indigenous people either taking up arms, or by-passing the colonial officialdom and bringing its dissatisfaction to the notice of the home government either directly or through powerful intercessors, must also be taken into consideration, and colonial governments, and especially that of nineteenth century Natal, were obliged to be sensitive to some extent to the needs of the indigenous peoples.

The first move by the colonial government which registered the need to allocate land purely for use by Zulus came in 1846, when a Location Commission was established to consider what land- extent and placing - should be set aside as 'Native Reserves'. The Commission recommended that roughly one-sixth of the colony - two million acres - should be regarded

as African Land, that is to say, reserved entirely for African occupation.<sup>(5)</sup> An outcry from colonists greeted the publication of these proposals; it was claimed that the amount of land allocated was greatly in excess of the needs of African farmers, and that the reservation to them of large amounts of land would free them from the need to offer themselves as tenant-labourers or seekers of other types of work within the sphere controlled by the white colonists.<sup>(6)</sup>

Partly because of the opposition of the colonists, a 'Land Commission' was appointed two years later "for the purpose of investigating and ascertaining all claims to the land".<sup>(7)</sup> At the same time, a Proclamation was issued which ordained that "a distinct line should be established between the White and Coloured races", and the intermingling of 'Kaffir' locations with the properties of the White colonists should be forbidden. The intentions of this Proclamation were no doubt to satisfy both population groups in Natal: Africans working on White farms or other types of undertaking would be dependent on wages, since they would be either tenant-labourers or remote from their own agricultural base. On the other hand, the very concept of a 'Native' area, where Whites could not purchase or work land, meant that the possibility of conflict between the groups for land disappeared: in 'Native' areas, not even the greediest or most energetic colonist might hold land and the Africans, disadvantaged in competition with the Whites for land by a land tenure system which divided ownership (a communal matter) from use by an individual, might regard themselves secure.

The Land Commission reported that the allocation of two million acres of land to Africans was an extravagance. The recommendations of this Commission show a very pronounced inclination towards the interests of the colonists: "Extensive locations for the settlement of independent communities would free (the Native) from the necessity of agreeing with the Euro-

pean settlers to establish himself upon their land as a labourer".<sup>(8)</sup> It therefore recommended the creation of five reserves, extending in total over an area of a quarter of a million acres, which were to provide for an estimated African population of 100 000.

The British government rejected the Land Commission's suggestion that the amount of land deemed necessary two years before by the Location Commission for use by the Native population be now reduced by three-quarters. It expressed a belief that Natives should be given sufficient land in their Reserves, provided 'sufficient intervals' existed between each reserve and white settlements - a proviso probably related more closely to its responsibility to maintain peace than to any sense of the undesirability of economic competition. The British government therefore decided to implement the recommendation of the 1846 Locations Committee in this matter, to the lasting dissatisfaction of the colonists.

It must be recognised that the bitter and consistent opposition of the colonists to Africans farming their own land was not based on any fear that their produce might compete on the market with that of Whites, nor was it, at this stage when a huge surplus of land available to Whites existed, a fear of losing valuable territory to Africans. The problem, however, was equally as intractable as one of land shortage, since it arose in part from the differences of culture between Zulus and Europeans, and in part from the fact that most of the colonists had come to Natal determined to play the role of entrepreneur. There was moral disapproval of Zulu customs which combined with and strengthened the fear that economically independent Zulus would not agree to become employees of Whites. The Natal Native Commission of 1852 gave memorable expression to the typical nineteenth century European view of Zulu life: a sufficiency of land would enable Africans "to follow idle, wandering and pastoral lives and habits, instead of settling down to fixed, industrial pursuits".<sup>(9)</sup> It

followed from this that the large amount of land allocated to the Zulus was virtually a moral evil, if wage-labour was a good. If between two and three acres of land were "sufficient to supply and support civilised populations in Europe", 20 acres per head for the African population were certainly excessive. Two million acres, it was contended, "if cultivated", would have been adequate for the support of half a million Africans, not 100 000.<sup>(10)</sup> In the words of the Report: "The immense extent of the Kaffir locations is an injury to the Kaffir themselves. It retards civilisation, encourages idleness, diminishes the supply of labour. The fatal error has been committed of providing for the subsistence of a great Kaffir nation within the district and creating rights in their favour, instead of merely satisfying the wants of a limited number of aborigines and refugees."<sup>(11)</sup>

It is immediately apparent that the African population were already being considered as a separate group in so far as no comparison was made of their lives with those of the colonists, to whom immensely larger amounts of land were available. The comparison which was being made with the rural proletariat of Europe, is a very telling one, and makes clear at once the relationship regarded as desirable between them and the colonists. Moreover, for the first time, the idea arose of 'proper' cultivation of African reserves, which was to punctuate the debate about the adequacy of the land allocated, and to inform one side of it with the moral weight of the European work ethic.

As in the case of the 1848 Land Commission, it is clear here that the views of the colonists had great influence over the Commissioners. Implicit in these views was a dislike of the idea that a way of life based on traditional values, and absolutely different from their own, should continue unchanged alongside theirs. As they saw the matter, theirs was a morally superior mode into which the African ought to be assimilated. The economic ambitions of the colonists, combined with this

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(10) *Ibid*, p. 22.

(11) *Ibid*, p. 23.

sense of cultural superiority, produced the belief that Africans ought to be assimilated at the level of labourers into the process of Natal life as it was established by the colonists. They realised that not only did traditional ways of life amongst Zulus depend on the availability of a large amount of land, but so did the ability for the individual to opt for a particular life-style: in fact, a shortage of land would have to be created if they themselves were to be assured of a large supply of labour.

In the face of this opposition, a large number of reserves were actually established in between the White farming areas. It was a 'chessboard' land policy, as opposed to one of creating large, homogeneous Native Reserves. Military considerations, which were concerned with the control of hostile elements amongst the Zulus and with preventing any possibility of a simultaneous and large-scale revolt, were important in the formation of this policy, as was the wish that the Reserves should function as sources of labour for White farmers. It had been recognised as early as 1849 by Earl Grey that even though Zulus would have Reserve land allocated to them, they would in some cases be obliged to work outside it. It would be difficult or impossible "to assign to Africans reserves of such a size that they could continue to be economically self-sufficient". Moreover, Grey maintained, it was desirable that Africans should be placed in circumstances in which they would find regular industry necessary for their subsistence.<sup>(12)</sup>

In 1864 the lands of the Reserves were vested in trustees for the 'Natives' with the creation of the Natal Native Trust, in order to prevent their cession or diversion into the hands of 'non-Natives'.... "pressure might be brought to bear upon the colonial government to bring the location land into the market for sale to non-African parties".<sup>(13)</sup> This measure was, of course, a recognition that the interests of Africans

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(12) Cited by Welsh (1971), p. 177.

(13) Report of the Natal Native Commission (1881-82), p. 17.

and colonists were already colliding in the matter of the Reserves and that they were likely to do so increasingly. The home government no doubt foresaw that the colonists must in the future become more influential in the administration of Natal, and wished to put the land of the Reserves out of their reach.

It may seem ironic that such a measure should be necessary when a White population of about 16 000 had access to about five million acres of land, much of it as yet uncultivated, whilst for an African population many times larger, two million acres were held to be excessive.<sup>(14)</sup> A partial explanation of this inconsistent but prevalent attitude lies in the fact that the colonists regarded themselves as having much more than numerical importance: they were the advance party of European civilisation and they looked forward to their numbers being added to by further settlement from abroad. The lands allocated to them were regarded by them as 'White' areas, but also as the places in which development and advancement, economic and other, would be generated for all. It was in deference to such beliefs that the most accessible and readily cultivable land had been allocated to the colonists and the more broken and inaccessible areas to Zulus.

In the early 1880s a second Natal Native Commission was established to review the overall 'Native policy' of Natal. The question of the 'locations' system, that is, the legal reservation of lands for African use, and the adequacy of the land at present so reserved for the needs of the African population, were both considered. On the first point it was decided that to speculate on the desirability or otherwise of the locations,

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(14) Welsh (1971), p. 178. An indication of the amount of land considered a 'reasonable' allocation to the Whites is given by the fact that, a few years later, in 1874-75 the colonists owned over six million acres of which no less than five million were actually occupied by Africans. One company alone, the Natal Land and Colonization Company, controlled 657 000 acres; for this absentee landlord the extraction of rent in the form of produce or cash from Africans on the land constituted the most attractive form of 'farming'. (Slater (1975), pp. 262-63.

when they had been so long established, was futile. A 'the government knows best' stance was adopted. "We are certain that the location system was intended kindly and justly, and for the Government to have acted in that spirit must in some sense have been the best wisdom", reported the Commissioners, in unenthusiastic tones.<sup>(15)</sup> They went on to express a regret, no doubt linked to their lack of enthusiasm for the concept of locations, that "the locations were not originally so arranged, so that the inhabitants should have been less congregated in masses".<sup>(16)</sup> This sentiment, which may have grown out of the sense of insecurity and of being threatened militarily by the Zulus which gained strength amongst the colonists in the 1880s, survived to exacerbate future debates about the desirability of consolidating African lands.

When the Commissioners came to consider the question of land adequacy, no change in the size of the locations was deemed necessary. The uneasiness amongst the colonists at the rapid growth in numbers of the African population and the feat that Natal was likely in the near future to become a 'Black colony' was not shared by them. This fear, in so far as it referred to overpopulation, the Commissioners contended, was completely unfounded: there existed twelve million acres of land in Natal for a total population (Blacks and Whites) of 400 000. What seems likely is that the basis of the feat was not a matter of the ratio of total land to inhabitants, but the colonists' sense that they were heavily outnumbered by Africans and that they must not allow a situation to develop where economic power in any way proportionate to their numbers could be wielded by Africans. There was in any case no real overcrowding in the Reserves, as nearly half the Africans in the colony resided as tenant-labourers in White areas, or on Crown lands. "While some of the locations may be called fully occupied", the Commission reported, "others are not so".<sup>(17)</sup> As for the remote possibility of population pressure on the Reserves in the future, the Commissioners were clear about the proper remedy: Africans could either

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(15) Report of the Natal Native Commission (1881-82), p.3.

(16) *Ibid.*

(17) *Ibid*, p.7.

become tenants or owners of other land, or migrate out of the colony, presumably to some newly-opened area (this last an anachronistic survival of eighteenth century and early nineteenth century beliefs in a perpetually expanding world) or they could employ improved methods of farming and land utilisation. "The truth seems to be that what is meant is that there is a want of room for a people whose property consists mainly of cattle",<sup>(18)</sup> stated the Report. The Commission in fact was requiring that the Zulus change from pastoral habits to those of settled agriculture, and there is a strong implication that the Government could not be held responsible for a decline in the economic fortunes of a people whose agricultural technology had not kept pace with its growing numbers. What is especially interesting in this Commission's report is that the location system was not considered to impose an absolute limit on the amount of the areas in which Africans might own land.<sup>(19)</sup> The right to hold land outside the locations was to be rigorously denied to Africans in the future, but at this stage, the meaning of the locations was still that originally envisaged by the home government and resented by the colonists - land reserved to Africans, where no competition for ownership with Whites could occur.

At the turn of the century, the British government set up yet another Commission<sup>(20)</sup> with a brief to review 'Native policies' throughout Southern Africa and, as far as possible, to streamline them, so that given the differences in local conditions, they should nevertheless relate to a centralised policy. The question of land allocated to Africans naturally features prominently in the Commission's report: three main features of the existing situation were considered.

The first was the growing numbers of Africans 'squatting' on Crown and privately-owned lands "in an irregular manner", which was held to be "an evil" and "against the best interests of the country". Consequently,

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(18) *Ibid*, p. 15.

(19) *Ibid*, p. 8.

(20) The South African Native Affairs Commission 1903-05.

"no native other than *bona fide* servants of the owner or occupier should be permitted to live on private land".<sup>(21)</sup> Secondly, the ever-increasing tendency among Africans, particularly in Natal, to purchase land within spheres of European occupation, was disapproved of by the Commission. To allow Africans free traffic in land, the Commissioners believed, "cannot fail to accentuate feelings of race prejudice and animosity with unhappy results. It will be far more difficult to preserve the absolutely necessary political and social distinctions if the growth of a mixed rural population of landowners is not discouraged". Therefore, "to safe-guard what is conceived to be the interests of the Europeans of this country...purchase (of land) by Natives should in future be limited to certain areas to be defined by legislative enactment".<sup>(22)</sup>

This is a crucial statement, and represents a turning-point in the attitude of Government to the African population and what may be called a conversion to the colonists' point of view. Earlier Commissions' reports had certainly shown a lack of understanding of the real problems of African agriculture and had been too ready to assume that easy comparisons could be made between agriculture in Europe and in Africa and to imply that only irrational adherence to traditional ways prevented the adoption of better agricultural technology. In the case of this Commission, however, the problem is not one of misunderstanding: it seems consciously to have determined to protect the economic interests of Whites at the expense of those of Africans by preventing free competition between the two in the market for land. It is to the credit of the colony of Natal that its representatives dissented from these recommendations on the grounds that land demarcations were based "on racial or colour lines, unaccompanied by any other considerations, such as the attainment by Natives of material and social progress".<sup>(23)</sup>

Thirdly, when it came to consider the question of whether any more

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(21) Report of the South African Native Affairs Commission (1903-05) pp.31-33.

(22) *Ibid*, p. 35.

(23) *Ibid*, p. 37.

land should be reserved for African occupation, the Commission recommended that the land question should be settled permanently by legislation which would set aside and delimit lands for African occupation, either immediate or future, so that finality could be arrived at in the matter. In order that this 'finality' should be total, the Commission recommended that after the envisaged piece of legislation had defined Reserve land, no more should be added to it.<sup>(24)</sup> Again, the Natal representatives disagreed: they felt that it was inequitable that a final decision, binding on future generations, on the allocation of land to racial groups should be taken by a legislature "in which the Natives have no share, in which they would be unable by constitutional means to resist an adverse vote or to protect their interests, and which, in consequence of its being composed of members representing only the European population, might be unwilling or opposed to such land being dedicated or set apart for the Natives".<sup>(25)</sup>

It was to the recommendations of the Commission that the Native Land Act of 1913 may be said to owe its origin. One of its fundamental purposes, the one with which we are particularly concerned here, was the achievement of a 'final solution' to the land question. This it did by guaranteeing the ownership in perpetuity to the Whites of most of the land of South Africa and by embodying in law the principle of segregation of land ownership and occupation.<sup>(26)</sup>

The Act aroused strong and divided feelings in Natal. A spokesman for the African people said that the effect of the Act "will undoubtedly be to enslave the people of my race".<sup>(27)</sup> Africans, especially in Natal,

(24) *Ibid*, p. 39.

(25) *Ibid*, p. 40.

(26) For a full discussion on the intentions of the Act, with particular reference to the abolition of 'squatting' of Africans on 'White' farms and its concomitant consequences, see, for instance, Horwitz (1967), pp. 135-143; Legassick (1977), p. 80; Wickins (1981), pp. 114-122.

(27) Cited by Slater (1975), p. 280.

regarded the Act as a violation of promises made to them by the Government and a deprivation of the rights which they had exercised and enjoyed up to this time.<sup>(28)</sup> They were particularly indignant at the fact that they were now subject to eviction from land which they and their ancestors had occupied for generations, despite the fact that no other land was offered to them.

Among Whites reactions were mixed. Some disapproved of the principle of dividing land on grounds of race instead of "allowing economic forces to take their way". Others held that the size of the Reserves was adequate and that the establishment of larger Reserves would simply aggravate the chronic problem of labour shortage; they welcomed the Act as a cornerstone of a 'Native policy' designed to force Africans into paid labour for White employers.<sup>(29)</sup>

The Beaumont Commission (1916-18) was given the task of determining the extent of land necessary, not only for the present requirements of Africans, but for all time. The situation in Natal was already a difficult one: some tribal groups had not been provided for and lived, with no secured land base, on White farms. In the Reserves themselves 'numbers have increased to such an extent, both by ingress and by natural increase that they have long overflowed these reserved areas and located themselves on Crown and private lands'. Consequently, "the one reiterated cry of the Natives in the Reserves is that the land is overcrowded and that more land is required".<sup>(30)</sup>

The Commission had no doubts that a major cause of the occupational problems of the Reserves was poor land usage. Pastoral practices and overstocking were both land-consuming and land-impoverishing and it appeared vital to the commissioners that pastoralists should be converted to agriculture, "for whatever land may be set aside for Native use their

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(28) Report of the Natives Land Commission (1916), Beaumont Minute, para. 24.

(29) *Ibid*, para. 21.

(30) *Ibid*, paras. 34 and 38.

natural increase must surely bring about, sooner or later, a recurrence of the conditions of overcrowding". The Commission therefore introduced a new possibility, that of Government intervention to improve agricultural practices in the Reserves. It pointed to the need for "increased supervision of the Reserves, with a view to their more economic use, so that they may be able to support a far larger population than they do at present".<sup>(31)</sup>

The Commission also pointed out that the overcrowding which was already a problem in the Reserves, the remedy for which was a long-term matter, would be worsened if squatters were to be forced off White lands by the rigid application of certain provisions of the 1913 Act. It commented, "if the defined Native Areas are examined, it will be found that most of them are already largely occupied by Natives and there is not much room for more".<sup>(32)</sup> The Report then drew attention to the fact that "there are several localities with whole tribes living on private lands which they have occupied for generations. They regard these as their ancestral lands, though they have become the property of private owners to whom they pay, annually, large sums by way of rent".<sup>(33)</sup> It was pointed out that if these large groups of people were to be relocated in the Reserves, the land situation there must deteriorate.

The idea of the 'consolidation' of the Reserves into a single large Native area in Natal was also considered. The Commissioners felt it was too late radically to alter the patterns of land allocation established in Natal, "for lands solely occupied by Natives are....scattered in all directions and hopelessly intermixed with the lands owned and occupied by Europeans, whose vested interests have to be considered".<sup>(34)</sup>

Debate continued in the years that followed on the matter of adding

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(31) *Ibid*, paras. 43 and 44.

(32) *Ibid*, para. 95.

(33) *Ibid*, para. 83.

(34) *Ibid*, para. 31.

to the Reserves. The Economic and Wage Commission of 1925 argued that "the provision of additional reserves which in our opinion should considerably increase the inadequate areas reserved at present, is the first essential towards a reasonable solution of the problem raised by the contact of the Native with the European civilisation....we consider therefore that an area equivalent to that recommended by the Beaumont Commission is probably the minimum area that should be allocated permanently to the Native Reserves".<sup>(35)</sup>

Even so, held the Commission, "the provision of adequate Native Reserves has been delayed too long for it to be possible now to provide Reserves within which it would be possible for the present Native population of the Union to live without dependence on outside employment".<sup>(36)</sup>

The Native Economic Commission of 1932, however, advised that the situation should not be treated simply as one of land shortage although this was undoubtedly the way in which it was regarded by the African people. As it reported: "To a people knowing only extensive methods in agriculture, more land appeared to be the natural and only cure for economic pressure... If the Land Act had been accompanied by an intensive campaign of Native agricultural education the cry of the Native for more land would have been less insistent and less urgent.... The carrying capacity of the Reserves set aside in 1913 was naturally limited by this very primitive agricultural technique. Overpopulation is purely a relative term. But in relation to the main determinant, the way in which man uses the soil, the majority of the Native areas are overpopulated.... It follows therefore that as a corollary to the policy of agricultural development...the provision of more land is also essential... the introduction of better farming methods will be hampered in many parts by the congestion now existing and it will be necessary to relieve the congestion".<sup>(37)</sup>

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(35) Report of the Economic and Wage Commission (1925), para. 281-282.

(36) *Ibid*, para. 275.

(37) Report of the Native Economic Commission (1930/32), paras. 188-192.

The principle of land segregation embodied in the 1913 Land Act, the recommendations of the Beaumont Commission, the opinions of other official Commissions that followed - all were part of the making of the 1936 Land Act (Act 18 of 1936), the last and most important piece of legislation on the land question in South Africa. Besides areas officially recognised as Reserves (the 'Scheduled' areas), the White legislature allocated to the Africans additional land (the 'Released' areas) which was to be added to the Reserves in the future. Once this quota was filled, no more land could be given.<sup>(38)</sup>

This was the state of affairs which the National Party government inherited in 1948. It was to this partitioning of the land between Africans and Whites that they continued uncompromisingly to commit themselves until very recently. The discussion in this study of land and its present division must, therefore, be understood against the background of the 1936 Land Act.

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(38) Thus the Reserves of Natal, 2,5 million hectares in extent in 1913, were to be given a further half a million hectares in terms of the 1936 Land Act. By 1975 some 54 000 hectares of 'promised' land were still outstanding. See Benbo (1976) Tables 3.2 and 3.4.

### 3. LAND AND ITS PRODUCTIVITY: A CENTURY OF DECLINE

*"Native areas which once had good arable land...and were able to produce a surplus of grain, lost their fertility so that they were compelled to import grain to make good an annual deficiency".*  
(De Kiewiet, 1941, p. 200)

It has been claimed that the ability of the 'Native Reserves' of Natal to support the population resident there, was already exceeded in the early 1900s, partly because of the rapid growth in numbers of that population whose demands for food exceeded what could be produced, but even more because of environmental degradation which reduced output and standards of living and increased the dependence of residents in the reserves on food produced in other parts of South Africa.<sup>(39)</sup>

Within this section, the situation of shortage of a locally-produced food, together with the way in which food production has altered over the long period 1867-1977, will be scrutinised. Other studies have already shown that from the 1920s onwards, per capita output from agriculture has declined fairly steadily.<sup>(40)</sup> The purpose here is not therefore to break new ground in the evaluation of production trends, but to establish to what extent shortage of land has been responsible for the observable decline in agriculture productivity in the Natal Reserves. Is there, in fact, any connection between decline in per capita output and decline in per capita land holdings? Our interest will not, therefore, be in output for its own sake, nor in the trends which it has displayed, but in the link, if any link exists, between those trends and land availability.

It must be admitted that the records existing of over a century of

(39) See, for example, Report of the Native Economic Commission (1930/32), paras. 72-75; Brookes (1927), p. 344.

(40) Knight and Lenta (1980), pp. 160-161; Simkins (1981), pp. 260-265.

agriculture production in the Reserves display many characteristics which limit their usefulness to the economist. They are always less than complete in their coverage; what we know about the methods used in their collection suggests that they may often be inaccurate, and there are sometimes internal inconsistencies which seem to confirm our doubts. They sometimes fail in continuity in a way which makes it difficult for measurement over so long a time-span to be made.<sup>(41)</sup> But however limited in their use as small-scale assessments of particular years or areas, it must for our purposes be accepted that the figures used represent the best estimates available of the agricultural production of their time. If an historical sense of the difficulties of collecting statistics in each period, and of conditions in Natal in particular, informs our attitudes to the figures and their use, they will be found to be estimates suggestive of existing conditions if not exact calculations.

Three sources of figures have been drawn on for different parts of the time period; for the first 40 years or so (1867-1905), the Blue Books of the Colony of Natal have been used. These figures in particular are of necessity approximate; the Blue Books represent the early days of the collection of statistics in colonial Africa, when methods were still crude.<sup>(42)</sup> Certain trends can, however, definitely be observed, even though *minutiae* cannot be relied on. The figures for agricultural production by 'Natives' in this early period refer to inhabitants of the Colony of Natal and not specifically to those within the Reserves. It must, however, be remembered that the Reserve concept was still in the

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(41) For a fuller discussion of the problems involved in economic research of this nature, see Lenta (1981), pp. 197-199.

(42) The Natal Blue Book of 1883, for example, states: "There is an increase shown in the stock possessed by Natives, though no great reliance can be placed on any estimate of Native stock". (Lions River Division). And in a comment on Natives' crops it is stated: "The returns are arrived at by estimating mealies, one acre per hut; kafir corn, two acres per hut, to which is added half an acre of mealies to each Kolwa, or semi-civilised Native" (Natal Blue Book, 1884, Msinga Division).

early stages of its development and that much land was still to be added to the Reserves, so that even though figures in this period are broader in their extent, they are still comparable with the later periods when Reserve areas had been defined more clearly and figures for production within them were available.

From 1905-1922 no records are available. The second sequence of figures spans the period 1923-1952, and has been extracted from agricultural censuses. For the last of the three periods, 1957-1977, figures have been taken from the Annual Reports of the Department of the Bantu Administration and Development, which later became the Department of Agriculture of KwaZulu.<sup>(43)</sup>

Since the whole period is a very long one and statistics during much of it do not exist for the whole spectrum of production, it was decided to select particular crops as indicators of performance - firstly, and for the whole period, the cultivation of the grain crops, maize and sorghum and secondly, in order to extend the coverage, root crops and sugar cane, for which there are figures for the first 40 and the last 20 years of the period. The estimates of root crops and sugar cane production, when offered alongside the grain figures, have the further advantage that they serve to suggest to what degree agricultural production was diversified in the period. In the late 1860s, for example, a total of 95 per cent of cultivated land was devoted to the production of cereals; a century later this figure had altered to 80 per cent. In spite of this change it is evident that trends in cereal production remain fair indicators of total agricultural performance.

The most salient, and for our purposes, most important features of cereal production in the Natal Reserves during the chosen time period, are given in Appendices I and II and summarised in Table 1. Over the 110 year period, output has risen at an annual growth rate of 0,88 per

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(43) The interruption in the series between 1952-57 is due to the fact that data are not available for that period for individual Reserves: estimates are given for all Reserves together.

cent and population at 2,04 per cent per annum, with the result that per capita output declined at the average rate of 1,16 per cent per annum.

These appear to be the significant trends when the sum of events is surveyed in order to relate the position a century ago to that of today. In fact, however, the situation over the period has not been homogeneous; on the contrary, very different tendencies have been apparent in different parts of the period. From 1867-1894, for example, there occurred a period of rising output. During this quarter of a century, output increased two-and-a-half fold and average output per head of population rose from 1,6 bags to nearly three bags. Production outstripped the needs of the rising population and a surplus emerged which reached a maximum of 65 per cent over needs in the early 1890s.

In 1895 an abrupt change in patterns of agriculture occurred and the long process of decline in reserve agriculture began. No comprehensive survey can here be undertaken either of evidence for this decline or of explanatory hypotheses for it, as the present study restricts itself as far as possible to the relationship between land holdings and production.<sup>(44)</sup> At the turn of the century the situation had altered to the extent that only 73 per cent of grain requirements could be satisfied by

(44) Bundy (1979, pp. 183-4) argues that the political economy of Natal underwent changes about 1890 which had immense and continuing effects on African Reserve agriculture. In this period, White agriculture grew rapidly and became increasingly commercialised, a process concurrent with and assisted by the development of self-government within the colony, the legislature composed of colonists elected by, and representative of, the interests of their fellow Whites. The effect of self-government was that White rural areas were developed at the expense of others, and competition from Africans in agriculture eliminated. There existed contributory factors. The rinderpest plague which swept through much of Southern Africa in 1896-97 took an extremely heavy toll of the Natal and Zululand African-owned stock. Six-sevenths of African cattle were wiped out between 1897 and 1898, with losses in some parts of Natal amounting to 90 per cent. This meant that many were not able to plough. Further serious setbacks suffered by many Africans during the same period were the locust plague of 1896, drought, losses during the AngloBoer war because many people were prevented from planting, lung-sickness, aphis, East Coast fever and scab. (Blue Books for the Colony of Natal, Magistrates' Reports, various years).

Table 1 Crop Statistics - Natal Reserves/KwaZulu, 1867-1977

Year (3-year averages)	Index of production	Output per head	Land under Cereals per head	Land under all crops per head	Yield of land under cereals	Production/ requirements
	Average 1929-31=100	90 kg bags	ha	ha	Bags per ha	%
1867-69	68,3	1,75	0,17	0,17	10,4	98,8
1870-72	73,2	1,82	0,21	0,21	8,7	102,6
1873-76	85,9	1,95	0,21	0,22	9,3	110,1
1877-79	84,2	1,71	0,19	0,21	8,7	96,0
1880-82	135,3	2,64	0,30	0,32	8,8	148,8
1883-85	166,2	2,94	0,30	0,31	9,8	165,9
1886-88	154,2	2,45	0,25	0,28	9,7	136,1
1889-91	144,3	2,03	0,23	0,25	8,5	114,7
1892-94	172,8	2,29	0,28	0,31	8,1	129,4
1895-1900	123,5	1,35	0,17	0,20	7,8	76,0
1901-1905	135,5	1,29	0,18	0,21	7,1	73,0
...	...	...	...	...	...	...
1923-25	101,4	0,91	...	...	...	50,0
1926-28	77,9	0,65	...	...	...	36,7
1929-31	100,0	0,79	...	...	...	44,5
1932-34	104,6	0,78	...	...	...	44,1
1935-37	96,2	0,68	...	...	...	38,5
1938-40	115,4	0,80	...	...	...	45,5
1941-43	133,8	0,92	...	...	...	52,1
1944-46	136,6	0,93	...	...	...	52,7
1947-49	129,4	0,88	...	...	...	49,4
1950-52	135,3	0,70	...	...	...	39,3
...	...	...	...	...	...	...
1957-59	125,7	0,67	0,21	0,24	3,2	37,9
1960-62	115,1	0,55	0,19	0,22	2,9	31,0
1963-65	132,7	0,56	0,19	0,22	2,9	31,6
1966-68	119,0	0,45	0,16	0,20	2,7	25,4
1969-71	151,1	0,52	0,17	0,19	3,1	29,3
1972-74	176,6	0,55	0,13	0,16	4,2	31,1
1975-77	195,1	0,54	0,10	0,15	5,8	30,7

Sources: Appendices I and II.

local production, and half a century later the proportion had dropped to 50 per cent and cereals per head from 1,25 bags in the 1900s to less than one bag: This process of decline accelerated in the 1950s and a third stage is finally arrived at when a static balance seems to be reached and at least temporarily maintained between rising population and output in the period 1960-1977. The production/requirement ratio steadies at 30 per cent and output at 0,5 bags per person, or 25 per cent of what it was a century earlier.

Even if crops other than grains are taken into account, the situation does not appear radically different from the description just given, since, as has been indicated, the production of grain crops is, and has always been, of paramount importance in the Reserves. Between 1867-1894, as indicated in Table 2, the average income of the Zulu farmer from the cultivation of cereals, root crops and sugar cane, which together occupied 98 per cent of land cultivated, was in real terms two-and-a-half times higher than the income derived from the same crops between 1957-1977. The decline in income would probably have been even greater had not further diversification occurred in the pattern of crops planted, as maize production figures have shown a tendency for yields to decline more sharply than those of other crops. In the 1970s average income rose appreciably, though in 1975 it stood only at two-thirds of the level of real income earned at the turn of the century.

Much the most striking phenomenon related to this situation is the growth of population amongst the Zulu people: our first question must therefore be whether this resulted in a decreasing availability of land per person or per household, and if so, to what degree this contributed to the secular decline in average income. The increase in population density is revealed in figures which give the land/person ratio for various years.<sup>(45)</sup> In 1881 5,3ha of total land area were available to each person in the Reserves of Natal; the amounts decreased to 3,1ha in 1960 and 1,3ha in 1975.

(45) Population as per Appendix II; Land Area 1881: Natal Native Commission, 1881-82, p.35; 1951: Brookes and Hurwitz (1957), p.23; 1975: Kwa-Zulu, Department of Agriculture, Annual Reports.

Table 2 Gross Value of Given Crops at Constant (1960) Prices and Income per Head - Natal Reserves/KwaZulu, 1867-1977

YEAR (3-year averages)	Cereals	Root crops	Sugar cane	Total value of given crops	Index	Rural Popu- lation	Income per head	Index
					(1901-05 = 100)	('000)	(R-c)	(1901-05 = 100)
R'000								
1867-69	1222	74	0.659	1297	40,7	250	5-18	109,2
1870-72	1307	103	0.450	1410	44,3	258	5-46	115,1
1873-76(a)	1536	197	2.136	1735	54,5	282	6-15	129,7
1877-79	1504	321	0.729	1736	54,5	317	5-47	115,4
1880-82	2417	169	0.852	2587	81,3	329	7-86	183,3
1883-85	2968	180	0.310	3148	98,9	362	8-69	183,3
1886-88	2751	218	0.380	2969	93,3	409	7-25	152,9
1889-91	2576	520	0.459	3096	97,3	455	6-80	143,4
1892-94	3084	415	0.472	3499	109,9	483	7-24	152,7
1895-1900(b)	2205	650	0.388	2855	89,7	597	4-86	102,6
1901-05(c)	2418	763	0.384	3181	100,0	670	4-74	100,0
...	...	...	...	...	...	...	...	...
1957-59	2245	486	742	3473	109,2	1196	2-90	51,1
1960-61	2053	1090	712	3855	121,2	1339	2-87	60,5
1963-65	2369	413	763	3545	111,4	1512	2-34	40,3
1966-68	2125	662	1088	3875	121,8	1686	2-29	48,3
1969-71	2696	958	1345	4999	157,1	1858	2-69	56,7
1972-74	3151	889	1865	5905	185,6	2046	2-88	60,7
1975-77	3486	1712	2018	7216	226,8	2297	3-14	66,2
Compound growth rate (%) average 1867-72/ 1972-77	0.88	2.48	...	1.45	...	2.04	-0.52	...

Notes: (a) 1873-75-76.  
(b) 1895-96-1900.  
(c) 1901-02-03-05.

Sources: Output: Appendix I; Prices: Cereals: Producer Price, Maize Board Annual Report 1960, Root Crops: Potato Board Annual Report 1960, Sugar Cane: The South African Sugar Year Book 1960, Population: Appendix II.

As the pressure of population on the land mounted, the Zulu farmer was, at least in theory, confronted by two alternative possibilities. He might, had information and equipment been available to him, have adopted intensive methods of cultivation on existing arable land or on newly acquired land in an attempt to maintain constant average output. Alternatively, he could retain his extensive methods of farming, expand as much as possible the area under cultivation and hope by this expansion to achieve the same objective.

Levels of education, non-availability of capital and other factors made it inevitable that the second alternative would be adopted. Between 1867-1977, as indicated in Table 1, land brought under the plough increased at a rate of 1,76 per cent per annum, a growth rate not very dissimilar to that of population (2,04 per cent). Consequently, the actual *per capita* area of land under all crops did not change significantly during the period: from 1867-1879 the land/population ratio averaged 0,2ha, rising in the next 15 years to 0,33ha, to decline again to its former level at the end of the century. Fifty years later the ratio was unchanged and it was only in the early 1970s that it dropped to 0,16ha per person. Thus over nearly a century the average Zulu family (estimated at 6 people) living in the Reserve areas of Natal had the use of about 1,25ha of arable land.<sup>(46)</sup> The extension of cultivated land necessary to maintain this ratio as population grew, was made possible by the inclusion in the total arable area of land from two main sources; the first was the addition to the reserves made by legislation,<sup>(47)</sup>

(46) In all contexts, but especially in the present one, the concept of the 'average' household is misleading, if it is held to imply that conditions which prevail in agriculture in the Reserves are fairly uniform for all families. In 1965, for example, only 60 per cent of all households had an arable plot. Department of Statistics, Agricultural Census No. 39, Part 1, Report No. 060107.

(47) Between 1916 and 1978-79 the Reserves of Natal increased by 10 per cent from 2.15 million hectare to 3,01 million hectare, a compound growth rate of 0.56 per cent per annum. 1916: Report of the Natives Land Commission (1916), Appendices 3 and 4; 1978-79: KwaZulu Government, Department of Agriculture, Annual Report.

but the second, and in extent the more important, source of additional arable land was effected by the bringing under the plough of land previously unused, or used for other purposes.<sup>(48)</sup>

As population grew, therefore, the cultivation of the land was extended at an almost equal rate. Output, however, did not expand at anywhere near the same rate. The fact that the growth of arable land almost kept pace with population growth disproves the hypothesis that an increasingly unfavourable arable land/population ratio is responsible for agricultural decline.<sup>(49)</sup> If the explanation for decline in output does not lie in any worsening of the cultivated land/population ratio, then we must look at the other elements in agriculture, especially those which have changed in the 110 years of our survey period.

It is when the necessity arises for this kind of analysis that the poverty of data available becomes a serious hindrance to the economist, who must be aware that records are so incomplete that influential fac-

(48) A process which could not, of course, be expected to continue indefinitely. As indicated in other studies (Hattingh, 1965, p.62), when population pressure on the land intensifies, attempts are made in the first instance to give each household a share in the land by further subdivision of land, as the case has been in KwaZulu. Ultimately, however, as the limit to the expansion of the resource base is reached and current resource utilisation techniques become obsolete in the face of new demographic and economic needs, the need to migrate, or at least to find non-agricultural employment, becomes intense.

(49) This hypothesis was also tested by fitting a production-function of the Cobb-Douglas type to data for the period 1867-1905 and 1957-1978, which were the only periods for which suitable data were available. For the early period changes in population/land ratios explained 81 per cent of the variation in average output and both parameters are significantly different from zero at the 1 per cent level. For the more recent period only 10 per cent of the change in average output is explained, and neither parameter is significant. This is to some extent due to the fact that the earlier data are grouped, but mainly to the fact that there is no significant change in average output over time during the second period, whereas population density increases throughout this period. The lack of explanatory power of population density in the second period, together with the differences between the first and second periods which cannot be accounted for by the model, led us to conclude that, without further data, refinement of the regression analysis was not warranted.

tors may be escaping him; to test the productivity of factors in a situation where both quality and quantity change becomes an impossible task. What is evident, however, is that the stock of capital in KwaZulu has risen rapidly during the period, as will be shown later in this study,<sup>(50)</sup> and no explanation can therefore be found in any worsening of the capital/land and capital/labour ratios. The quantity of labour has increased with the increase of population, though its quality has worsened with increasing and selective migration. In some studies the marginal product of labour has been found to be zero;<sup>(51)</sup> in others, positive.<sup>(52)</sup>

Since the composition of the labour force has not been homogenous over the years, it is practically impossible to determine to what extent decline in average product can be attributed to changes in quantity of labour. The economist must not ignore the fact that the sex ratio of the labour force, as well as the age groupings in it, is different from that to be found, for example, in the Reserves during the productive period 1867-1894; the probability is strong that this has been influential on output, but at the present state of information the extent of this particular influence cannot be quantified accurately.

If the impact of changes in the composition of labour and capital cannot be gauged, it is nevertheless possible to demonstrate that a change in the quality of arable land has been an important cause of declining output. As is shown in Table 1 and Figure 1, the average product of land has declined steadily from an average of 8,5 bags per hectare in the period 1867-1905 to 3,6 bags between 1957-1977. Even allowing for inaccuracies in the estimates (over- and underestimation at different times), the figures indicate beyond doubt that the fertility of the land has declined over the years. Such decline was no doubt inevitable, given the steady increase in population and the absence of any

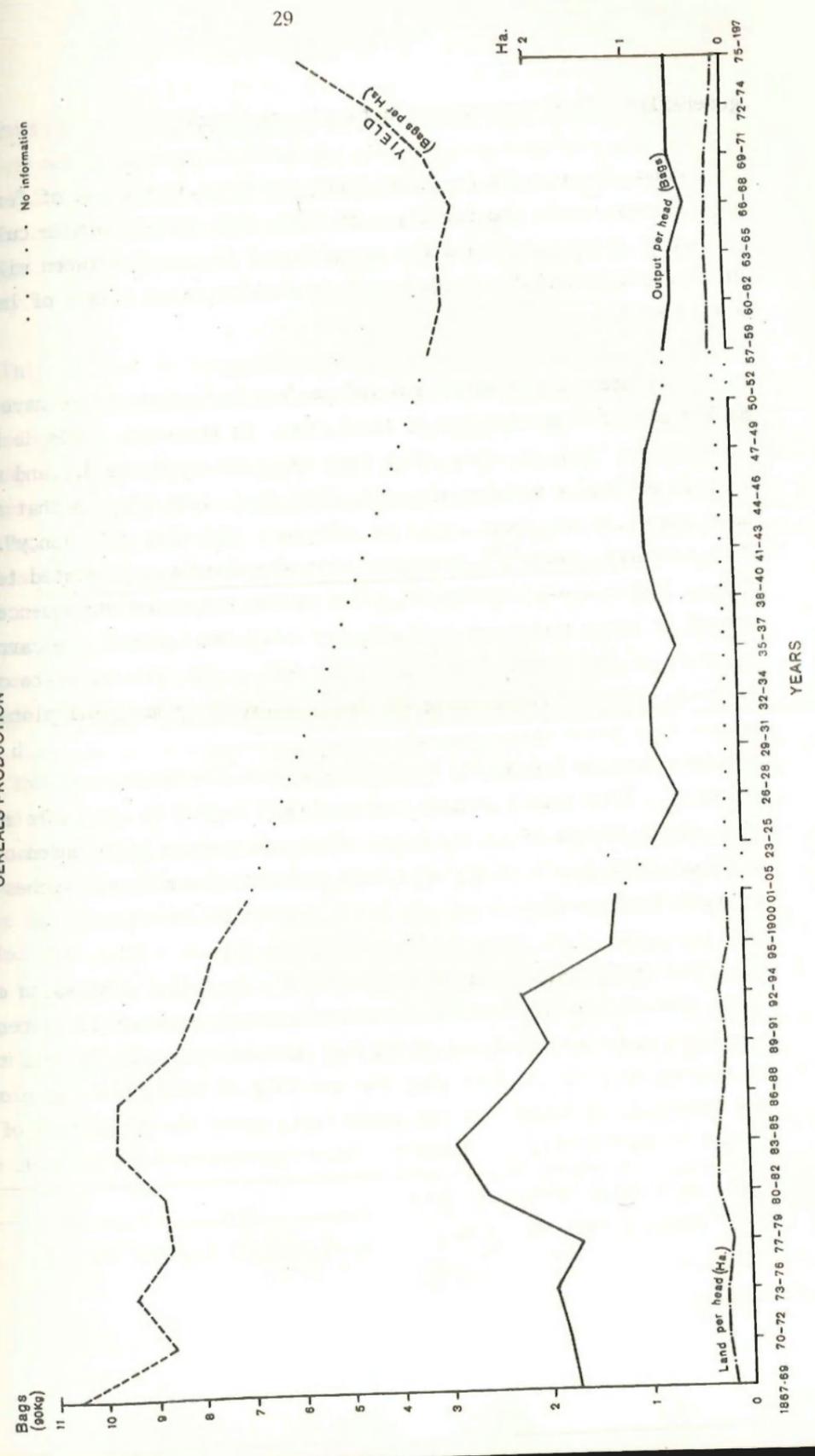
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(50) Section 4, Table 4.

(51) Westcott (1976), p. 145.

(52) Simkins (1981), pp. 265-270.

FIG 1  
 NATAL RESERVES / KWA ZULU: 1967-1977  
 CEREALS PRODUCTION



generally-adopted innovation in farming techniques.

Monoculture, with no accompanying increase in the use of fertilisers, must erode the fertility of land. The indiscriminate cultivation of steep slopes and the trampling of livestock between villages, grazing points and dip tanks have been further major causes of land deterioration.

Government commissions and independent historians alike have remarked on the deterioration of the lands. In the early 1940s de Kiewiet wrote: "Native areas which once had good arable land...and were able to produce a surplus of grain, lost their fertility so that they were compelled to import grain to make good an annual deficiency".<sup>(53)</sup> More recently, Hanks<sup>(54)</sup> commented that when land was allocated to the Zulus, little consideration was given to the long-term consequences of growth in human numbers and in comparatively short period the carrying capacity of the area was exceeded. Excessive and indiscriminate use of land, such as over-grazing or the cultivation of marginal plots, causes what Hanks calls 'desertification', i.e., a state in which land has been damaged beyond the resilience of the eco-system's powers of recovery. Traditional demands can no longer be met by available resources, and standards of living drop. When cultivation is extended over marginal land, productivity must fall and soil-destruction reaches dangerously high levels.

What emerges from this situation is the fact that discussion of the 'land problem' in the Reserves is too often conducted purely in terms of quantity, and considerations of quality are underplayed. Outputs tend to be related only to the fact that the quantity of land under the plough has increased in extent and the known facts about the proportion of land suited to such a use, are ignored. Such discussions tend to focus on the

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(53) de Kiewiet (1941), p. 200.

(54) Hanks (1980), pp. 1-4.

conservatism of the Zulu farmer, who is accused of a wilful ignorance of modern farming techniques, or on the inertia of government which fails to supply adequate assistance. It is equally doubtful whether comparisons with White farming and in particular with percentages of arable land in the two agricultures are profitable; the quality of the land itself is different.

This pattern of extensive cultivation has assisted the rise in popularity of the hypothesis that if intensive methods of cultivation were adopted, land would be adequate to the support of the whole population; estimates are made from time to time to indicate that, if properly farmed, KwaZulu could become an exporter of food.<sup>(55)</sup> The problem, it is contested, is not one of land shortage, but of poor use of existing land. Such argument, no doubt, has some validity. Our first reservation here, however, must be that before land usage could improve to the extent required, enormous social and economic changes, at great social costs, would have to be brought about, particularly in view of the degraded quality of land in the Reserve.

The Reserves have been designated, as is implied in Hanks' comments quoted earlier, in terms of estimates made at the time of designation of what were thought to be the current and immediate future land needs of Africans. The effect has been that the pressure of population on Reserve Land has increased and fertility has declined. The use of degraded land alters the threshold of profitability, with decreasing return to factors; economic incentives to those engaged in, or considering engaging in agricultural employment, change and opportunity costs alter. The decision of whether to cultivate or not, is itself affected.

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(55) See, for example, Raubenheimer (1973), pp. 4-10.

4. LAND UNUSED IN A SITUATION OF LAND SHORTAGE:A SURVEY

*"Both my wife and I are too old for planting all this land; my children are in town with their wives".*

A survey, the aim of which was to explain the apparent contradictions of land unused in an area of alleged land shortage, was conducted in 11 sub-wards located in three different districts of KwaZulu.<sup>(56)</sup> The survey was carried out by ten extension officers of the KwaZulu government. A total of 110 household heads were interviewed in order to establish the reasons why, in each case, they left either part or all of their land uncultivated.

Practical considerations dictated that the sample chosen be a fortuitous and non-probability one: districts where fieldworkers were available had necessarily to be chosen for the survey, and although the familiarity of the extension officers with their districts was in some respects an advantage in their ability to report, the possibility cannot be discounted that responses recorded by them during interviews were to some extent predetermined by their own attitudes and beliefs. The more desirable alternative to this kind of survey, which would be one based on a probability sample, was impossible because of shortage of finance, lack of trained fieldworkers and lack of information about the location of potentially arable land at present uncultivated.

Partly to test the findings of this survey, further interviews were conducted in the northern districts of KwaZulu<sup>(57)</sup> by an experienced fieldworker who had no connection with agricultural administration; the responses obtained corroborated to a great extent those of the earlier survey.

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(56) The Districts of Umbumbulu, Vulamehle and Umzumbi.

(57) The Districts of Nongoma and Nqutu.

The limited scope of the sample clearly makes impossible large-scale generalisations. It is acknowledged that the analysis of responses undertaken in this section refers in the strictest sense only to the particular cases on which reports have been made. It is nevertheless claimed that the responses offered here are of value insofar as they are suggestive of the kinds of conditions which prevent cultivation, and point to areas where more extensive or more detailed research might profitably be undertaken.

The responses obtained in the 130 interviews conducted are summarised in Table 3. Since many respondents offered several contributory reasons why they did not cultivate their land, the total responses exceeds the number of interviews. In each case there appeared to be a primary reason for failure to cultivate, and these primary reasons are listed in the first column where the number of responses therefore corresponds to the number of households.

Responses fell naturally into three main categories, each relating to one of the three main factors of production—land, labour and capital. Whilst no land can be cultivated without labour and capital (defined in a broad sense to include such inputs as seeds, fertilizer and insecticides), in order to obtain optimum output the optimum combination of factors is needed. Our interest here, however, is not in optimum conditions but in determining what failures or shortages prevent the occurrence of the minimum acceptable combination of factors for land cultivation. The arrangement of responses according to the emphasis which each places on a particular factor of production, serves to draw attention to particular shortages of factors or failures to combine them satisfactorily.

Approximately 58 per cent of individuals interviewed stated that their inability to cultivate was the result of lack of capital. A further 30 per cent experienced shortage of labour. The remaining respondents complained of the quality of their land which made cultivation unprofitable or impossible. As will emerge in the analysis of Table 3,

Table 3 Failure to Cultivate Land - Reasons Offered  
by Households

General category	Specifications within categories	Primary responses		Multiple responses	
		n	%	n	%
Land unsuitable	(a) land too steep and/or rocky	8	6	15	9
	(b) land used for grazing	6	5	6	4
Land/labour disequilibrium	(a) too old/widowed/nobody in family to help	23	18	32	19
	(b) engaged in other occupations/migrancy	15	12	15	9
Land/capital disequilibrium	(a) lack of finance to hire oxen/tractor or to purchase seeds and fertilizer	47	36	58	34
	(b) non-availability of oxen/tractor for hire	29	22	31	18
Other	Drought; switch to sugar cane cultivation	2	1	13	7
Total		130	100	170	100

there exists in KwaZulu a situation of factor disequilibrium; the proportions in which factors are combined are economically undesirable, and frequently disastrous so far as agricultural production is concerned. Households with land lack capital or labour: households possessed of capital or labour, or even both, often have insufficient or no land; there are, in other words, bottlenecks of key factors.

We shall now proceed to analyse the three broad categories into which responses have been organised in Table 3.

#### Land Unsuitable

Approximately 11 per cent of individuals interviewed said that the reason why they left part or all of their land uncultivated was that, although the land allocated to them was officially classified as arable, it was in fact unsuitable for crop production. Some indicated that the low fertility of their land made cultivation unprofitable and that they therefore used it as grazing. As has been indicated earlier in this study, extensive rather than intensive farming methods have always characterised agriculture in the Reserves and the very great increases in population have caused land which is at best only marginally suitable for cultivation, to be classified as arable. As one respondent put it: "My father cultivates only one-third of his land, because most of his land is too steep and rocky. It requires a lot of labour to do soil preparation by hoe; oxen or tractors cannot do much here because of the slope of our land". Another respondent said: "The land allocated to us is not all suitable for crop production, as it is rocky, and only a small part of it is suitable for cultivation".

The scope of the present survey does not allow the emergence of any suggestions about the degree to which the area of arable land has been overestimated in KwaZulu, but it appears likely that some of the land at present regarded as uncultivated arable land is in fact unsuited to cultivation. It is likely that such land, at present inaccurately designated in official reports as potentially arable, will be reassessed as planning of areas progresses. It is intended that land be classified as arable or otherwise in terms of soil formation, soil depth, slope location and climatic conditions. What today appears as neglect of valuable land may, in fact, be the rational refusal to use land for purposes for which it is unsuited.

Land-labour Disequilibrium

It was possible to establish from the survey that the suboptimal combination of land and labour fell into two broad categories: some plots had been allocated to people who were no longer in a position to undertake cultivation; other plots had been allocated to people who were theoretically temporary but nevertheless long-term absentees from the area, or to people who, though resident, were fully employed in non-agricultural work. In the case of 18 per cent of households where interviews were conducted, it was reported that failure to cultivate occurred because cultivation rights belonged to individuals who were too old or infirm, or to widows without adequate labour for ploughing and weeding, who act as caretakers of land rights for their children. The following responses are offered as indication of this kind of situation: 'My health is unsatisfactory, so I cannot work my land'. 'My sons stay in townships; nobody is going to do proper management'. 'Both my wife and I are too old for planting all this land; my children are in town with their wives. My children used to hire some labourers to plant the land, but this year they have failed to do that'. 'Both husband and wife in this household are sick, so the money sent to them by their children working in Durban is used to a great extent for paying for medicines'.

A further 12 per cent of representatives of households said that either the head of the family of both husband and wife had migrated to town to work, or that although still resident, they were engaged in full-time non-agricultural work. Comments from this group were, 'My wife is sick; no-one is going to weed my land because I am working far from home. My children are too young for weeding'. 'I am all by myself; my children go to school; my husband is working in Durban, so I cannot plough all the land'. 'My husband is not interested in farming because he does not give me money for farming. He is a teacher'. 'Both my wife and I are employed in Durban and only come home occasionally; it would be useless to plant if nobody would see to it that everything is

properly managed". "I plough part of the farm of my late brother as a precautionary measure against forfeiture of land, until my nephew returns from town to settle here".

These comments have been given in some detail because they reveal a strange situation of labour shortage in the midst of unemployment. The teacher's wife's comment suggests that the holding of land may be of social as well as economic importance, since a resident with no wish to engage in agriculture retains his land holdings, though no doubt the wish to preserve the right to land in the family for later generations is also an important motive, as it is stated to be in the case of the uncle who works part of his nephew's land. Predominating in this group, however, are responses which draw attention to the fact that idle arable land is frequently yet another of the evils of migrant labour. The man or woman who works for years in Durban, returning only for holidays, cannot cultivate; equally, since he or she can never become a permanent urban resident, land rights in the rural area must be jealously retained.

From the planner's point of view, however, the problem of good land standing idle remains a barrier to development, as does the problem of landed households with the wrong kind of labour or landless households with redundant labour.

No new issues concerning migrancy will be raised in this paper, although the relationship between migrancy and the failure to use land is evident. The abnormal demographic composition of the average family in the rural areas of KwaZulu, the very high dependency ratio and the detrimental effects of migration on agricultural practices have been well documented elsewhere and can for our purposes be taken as established facts.<sup>(58)</sup>

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(58) See, for example, Report of the Native Laws Commission, 1946-48, para. 54-58; Van der Horst (1942), p. 317; Houghton (1973), pp. 92-95; Nattrass (1977), pp. 15-21.

Nevertheless, it is necessary to examine the situation in the rural areas as it exists as a result of migrancy and as it affects agriculture. The most salient feature is the large number of households headed by women: it is important to remember here that Zulu social custom implies that if a woman acts as head of a household, there is no resident adult male in it. As the Planning Committee for the development of the Buthelezi Ward<sup>(59)</sup> points out: "Farming operations are mainly in the hands of women, children and old men. Twenty-three per cent of the farmers (households with arable plots) are women". In the Sithole Ward in the Msinga Location, out of 720 kraals, 105 (or 15 per cent) were headed by women.<sup>(60)</sup> In this situation, agricultural activities must be limited by the time that a housewife who is in all probability the only resident parent of a family of young children, is able to spend on cultivation. In many other instances, the man named as kraal head is absent as a migrant worker in town, and the effective head is either his wife or father.

The question of what effect the shortage of male labour has on agriculture is not a straightforward one: in 1946 the Social and Economic Planning Council reported: "...it also raises the question as to what effect the migration of labour has on the agricultural practices in the Reserves. There is, of course, an element of truth in the statement that it has no effect, because the native male in his original setting was not a cultivator, the tilling of the fields, the sowing and the harvesting being left to the women. As a result, so the argument runs, even when the native man is at home today, he does nothing. Apart from the fact that this sweeping statement is not always true, the Council doubts whether a sound agricultural system, as distinct from a primitive semi-subsistence system, can be built up with such a considerable proportion of adult male working force absent".<sup>(61)</sup>

(59) KwaZulu, Department of Agriculture and Forestry Natural Resources Development Plan, Chief M.G. Buthelezi Ward, Mahlabatini District, Part C. 1975, unpublished.

(60) Bates (1972), pp. 10-11.

(61) Social and Economic Planning Council (1946), p. 16.

Whilst the emphasis of this extract, which seems to be on the wilful idleness of African males, appears prejudiced and inaccurate today, there is no doubt that it puts its finger on the crucial element in the situation - the fact that it is vitally necessary that reserve agriculture be transformed and that new crops and new methods, capable of producing yields which will support a population far larger than in the past, be introduced. Much emphasis has been laid in the recent past on the role of the Zulu male as the decision-maker, and it is still probable that the absence of the male family head makes the adoption of new agricultural practices much less likely. Equally important is the fact that a married woman, especially when bearing alone the responsibilities of a household, is likely at best to keep to her traditional role of cultivating in order to produce minimal subsistence for her family and will probably leave uncultivated whatever is not absolutely necessary. The Council does not make a further point which has become evident today, which is that the whole context which surrounds the rural household has changed and the choices which presented themselves to past generations have altered. The African male does not choose freely between migrancy, privileged idleness or agricultural innovation unless both land and capital are available to him in sufficient amounts for him to produce an income comparable to that which he might obtain if he migrated. Similarly, the migrant's wife does not have the alternatives of her ancestresses of cultivating more or less land, in terms of her family needs or her own diligence; the situation is greatly altered by the fact that she is the only resident parent and that she has income from a source other than agriculture, in the form of remittances from her husband.

The determinants of migrancy are well-known<sup>(62)</sup> and their relation to the failure to cultivate existing land holdings is clear; the opportunity cost of farming is too high and the structure of incentives, as affected by institutional factors such as the size of smallholdings, is unfavourable. A comparison with the situation prevailing in Swaziland is

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(62) See, for example, F. Wilson (1972), p. 96.

relevant here: it has been calculated that at 1978 prices, average gross returns per hectare were R61 for hybrid maize cultivation and R91 for local maize. At this rate of return, a family unit would have to cultivate 12-16ha of maize to equal an individual's earnings in South African mines in the same period. <sup>(63)</sup>

There remains the question of why part-time farming, after the departure of the migrant, is not more popular: why do so many wives leave their available land completely idle when it is capable of producing supplementary income for the family? There are two possible reasons. The first, that they may not have sufficient time, has already been suggested. Derman <sup>(64)</sup> has calculated that the labour content involved in the cultivation of one hectare of maize is about 360 hours, if no tractor is available for use. Given a maize production cycle of 110 days, 7½ working hours per day for seven days per week for 3½ months of the year would be required to cultivate two hectares of land under maize. It is certainly not surprising that comparatively few women who are, in effect, family heads, can concentrate such a large amount of labour into such a short period of time. An alternative to the mother's work could be the use of children, especially during the weeding cycle, but most parents wish to send their children to school and the long periods required for them to walk back and forth makes it difficult for them to be more than occasional helpers.

The second reason is that, besides the fact that maize production under such conditions involves a high labour input, there is the added deterrent that yields are low. According to 1977 figures, the average yield in the cultivation of cereals in KwaZulu was 5 bags per hectare, the highest ever recorded for the area. This means that in 1977 the net return per hectare was about R35 <sup>(65)</sup> or about 9 cents per hour of labour

(63) Derman (1981), p.17.

(64) Unpublished information kindly supplied by Peter Derman, Department of African Studies, University of Natal, Durban.

(65) Maize valued at R9 per bag, the ruling producer price in 1977 (KwaZulu, Department of Agriculture, Annual Report, 1977). Cost of ploughing, seeds and fertiliser estimated at R10 per hectare.

expended and the equivalent of three hours labour for a loaf of bread. Under such conditions it seems more appropriate to ask why people cultivate at all, than why they do not make full use of their land.

A survey conducted in Transkei suggested that the reasons why land was cultivated despite similarly minimal returns to labour were often more social than economic.<sup>(66)</sup> Sometimes it was made explicit that families liked to be sure of their subsistence requirements as far as possible. Many women live in perpetual insecurity, aware that support from a migrant labourer may not arrive for a period, or cease altogether, so that some measure of independence at home is highly desirable. No doubt the same pressures are present in KwaZulu to make desirable the cultivation of a little land, sufficient to ward off for a while destitution, should remittances be delayed or fail altogether.

A further reason why women may fail to supplement their incomes by cultivating their land, is that as disposable income of households rises from sources other than agriculture - such as remittances from migrants, transfer payments from government, local employment particularly in the public sector, economically productive activities in the informal sector of the economy - so the need to obtain supplementary income regardless of returns to labour diminishes as long as the household's basic needs are already satisfied.

In the last few years the income from agriculture of the average KwaZulu household has decreased, but its income from all sources has increased.<sup>(67)</sup> When a family can obtain its most urgent requirements from non-agricultural income, there is little incentive to cultivate land which is often only marginally suitable for crop production. Once these

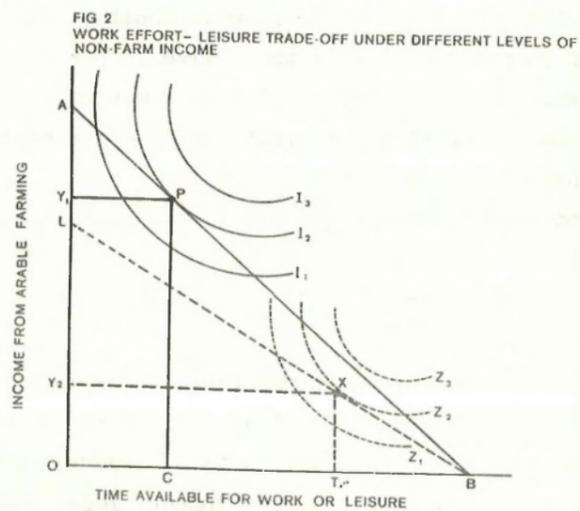
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(66) Westcott (1977), p. 149.

(67) For changes in real per capita income from agriculture, see Lenta (1978), p. 30, and for changes in real per capita national income, Benso (1979), Table 37.

basic needs are satisfied, a higher value is likely to be imputed to leisure with the result that leisure will be substituted for work-effort at the margin.

Figure 2 depicts, in the simplest terms, this hypothesis. Income from cultivation is measured on the vertical axis and the trade-off between work and leisure in terms of the time available for each is measured on the horizontal axis.



The line AB is the income-leisure constraint, which shows how much time out of his leisure the subsistence farmer must surrender in order to earn a certain income from cultivation. Thus, given a certain ranking of preferences between income and leisure corresponding to a particular level of 'poverty', as represented by the indifference map  $I_1$ - $I_3$ , the individual's equilibrium will be at point p, where utility is maximised by working CB hours, earning income  $OY_1$  and using remaining time OC for leisure.

As income from cultivation decreases, indicated by a downward shift of the income-leisure constraint line to the new position BL, pressure will be put on the farmer to work more in order to maintain a desired

living standard. However, as non-farm income rises, a new ranking of preferences between income and leisure arises, indicated by a new indifference map  $Z_1-Z_3$ ; at this new evaluation of leisure and labour disutility, the individual's new equilibrium will be at X on indifference curve  $Z_2$ , showing that he will decrease his working hours (by CT) and be satisfied with a smaller income from farming ( $OY_2$ ). Thus a new situation arises where other income is substituted for farm income, with total income and standard of living probably unchanged, but with less hard work in the fields.

It might well be suggested that some of the problems which arise from the unfavourable combinations of land and labour could be solved by the use, at periods of peak demand for labour, of the system known as 'ilima' (work-parties). Unfortunately, though perhaps inevitably, the practice is dying out. One of the respondents in the survey commented: "I just cannot afford it". Group assistance has in fact become commercialised, as is no doubt inevitable in a society where individuals are able, at least when they migrate, to sell their labour, and agricultural assistance to a neighbour therefore has an opportunity cost. Work parties attracted by the offer of entertainment have given way to the hiring of labour, and since most KwaZulu families suffer from cash shortage, they tend to leave their land idle when the alternative is to employ people to cultivate it.

#### Land-capital Disequilibrium

Problems of this nature fall into two major sub-categories, namely, inadequate finance to purchase intermediate inputs (such as the means of ploughing, seeds and fertilizer) and the physical impossibility of obtaining oxen or tractors to plough the land. More than one-third of householders interviewed said that they were prevented from cultivating by lack of finance. Mention has already been made of the fact that widows, widowers and old age pensioners indicated that besides shortage of labour, lack of finance prevented them from making use of their landholdings.

Many of those who offered shortage of finance as their reason for non-

cultivation, appeared to display a rather curious attitude towards agricultural activities, which they did not view primarily as the means of supplementing income from other sources. They regarded themselves, not simply as part-time cultivators, but as people whose ability or willingness to cultivate depended on there being sufficient income from other sources in the family to provide some capital for farming. Lack of earnings from non-agricultural sources inhibits the acquisition of inputs, which in turn discourages cultivation. This produces a paradoxical situation in which unemployment outside agriculture, instead of stimulating the full use of land, in fact leads to land wastage since the individual lacks the income necessary for the acquisition of essential inputs. It is from this type of situation that the following responses come: "The whole land is not cultivated on account of insufficient employment to enable us to carry out farming practices such as hiring tractors, buying fertiliser and seeds"; "I do not have constant employment and so I am underpaid; as a result I can only cultivate one-quarter of my land"; "I am not working so it is very hard for me to buy fertiliser for the whole land".

It seems to be relevant here to draw attention to the fact that not only are no credit facilities available to the farmer, part-time or full-time, but yields are so low that the extension of credit to farming under these conditions would hardly be financially profitable. Nevertheless, in the present situation land lies idle because the purchase of inputs necessary for its use competes within income constraints with other activities aimed at increasing future income flows. In particular, the education of children competes with the need for capital to cultivate, in that parents frequently prefer to use available money for the payment of school fees rather than for the purchase of agricultural inputs. Typical responses were: "I have no money to hire a tractor or oxen; I spent my little money on school books, school fees and uniforms for children"; "I have many children to support; when schools opened, I had to pay a lot of money. As a result I failed to cultivate my land"; "My husband sends home periodically R30 to cover all expenses at home, that is, clothing, hospital fees, school fees and groceries. Eventually I am left

with nothing for doing farming".

Within the second sub-category, capital cannot be applied to land because of the physical impossibility of obtaining the means of ploughing. Twenty-two per cent of all householders interviewed offered this as their reason for non-cultivation. Plough oxen or tractors are either seasonally unobtainable, or else it is considered that the expense of hiring them is too great. Responses of this kind were: "Plough oxen are not easy to find; all their owners are selfish. They want to plant their fields first and do yours after a long wait. This robs us of our opportunity to grow our crops whilst the season has just started"; "It is not scarcity of funds, but problems created by not getting plough oxen to till all our land in good time that makes it difficult for me to cultivate my land"; "At times we hire tractors to plough for us; they are hard to find. Besides, they charge us R10 per hour, so if I were to plough all this land, I would pay a fortune, and where would I get that money from?"; "We don't have machinery to do the ploughing for us; that is why we are able to cultivate only half of our land as we have to use hand-hoes".

It may be thought paradoxical that cultivation may be prevented by a lack of draught animals in a land where over-stocking has for generations been considered an obstacle to development, but there are several reasons why this is so. The first is that only one-half of all households own livestock, and stock-owners are not necessarily holders of arable land.

The survey conducted in Msinga district, to which reference has already been made, shows that in the early 1970s, whilst 86 per cent of all kraals had an arable plot, only 62 per cent owned cattle.<sup>(68)</sup> In the Buthelezi Ward in 1975 only half the families owned cattle.<sup>(69)</sup> In 1965,

(68) Bates (1972), p. 22.

(69) KwaZulu, Department of Agriculture and Forestry, Natural Resources Development Plan, Chief M.G. Buthelezi Ward, (1975) Part C.

when the holdings of all African areas of Natal were assessed, only 64 per cent of all households had both arable land and cattle.<sup>(70)</sup>

Whilst these figures reveal once again the disequilibrium in the endowment of factors of production among households, it must at the same time be noted that the phenomenon of overstocking acts to weaken the draught animals available and hence to reduce the use of beasts weakened by underfeeding, making them less adequate to the agricultural needs of their owners. But this is not all; having completed their owners' ploughing, they are often hired to any neighbours who have no oxen of their own. A comment from one respondent was: "The owner of the oxen which I hire forbids me to inspan the oxen daily. He wants me to use them two, three times a week only, after he has completed his ploughing, and this hampers me in using my land, but I have no option except to accept his terms. I can't see how this shortage of plough oxen can be improved".

It has for some time been clear that the almost traditional and simple view that overstocking in African areas is an evil which could be remedied simply by a reduction in total numbers is mistaken, as is the belief that the desire to own cattle represents a survival of now out-dated attitudes. Successful farming in KwaZulu and the ownership of draught animals are still linked, and the farmer without oxen is under a serious disadvantage which may prevent him from cultivating. Rutman and Werner,<sup>(71)</sup> in their discussion of the situation which prevailed in Transkei, have argued that even in the overstocking equilibrium, cattle ownership represents rational economic behaviour and offers the highest return on capital available. The return comes from the use of cattle as draught animals; ploughing with a team of oxen as opposed to hoeing enables families to cultivate much larger areas. Indeed, the authors claim a seven-fold increase. Using plausible assump-

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(70) Agricultural Census No. 39, Part I.

(71) Rutman and Werner (1973), pp. 574-577.

tions, they show that the return on an investment in two oxen exceeds the return on the best alternative investment available to people in the reserves, which is probably a Post Office account yielding a comparatively low rate of interest.

In this situation, where both oxen and tractors are in short supply during the ploughing season, it may be asked why farmers unable to command the use of either, do not always make extensive use of the hoe. Some of the reasons for this failure have already been indicated: the fact that working with the hoe is very time consuming and returns are low. A further reason why the hoe is not frequently used when mechanised ploughing is impossible may well be that work norms have changed over the years and the hoe has been discarded from the category of tools suitable for extensive use, though it is retained for occasional and minor use. This hypothesis seems to be supported by records of Zulu agricultural practices which begin in the nineteenth century. In 1877 (see Table 4), the ratio of ploughs to land under grain cultivation was one to every 25ha: at the turn of the century the ratio had dropped to 1:6 and remained practically at that

Table 4 Incidence of Selected Items of Capital Equipment and Cattle Population - Natal Reserves/KwaZulu, 1877-1977

Year	Ploughs	Hectares of cultivated land per plough	Tractors	Cattle ('000)
1877	2 677	25		310
1885	10 011	11		415
1897	18 849	6		209
..	..	..		..
1926	33 223	..		..
1937	52 713	..		1 188
1950	67 121	..		1 123
..	..	..		..
1960	73 925	4	310	1 223
1965	61 979	5	718	1 307
1973	..		1 042	1 255
1977	..		1 589	1 348

Sources: 1877-1897 Natal Blue Books; 1926-1950 Department of Agricultural Economics and Marketing, Handbook of Agricultural Statistics 1904-1950, Table 8; 1960-1965 Department of Statistics, Agricultural Censuses, Nos. 34 and 39; 1973-1977 KwaZulu, Department of Agriculture, Annual Reports.

level over the next 60 years. As tractors were introduced in the late 1950s, the number of ploughs declined; but the number of tractors increased five-fold over the relatively short period 1960-1977.

This increased application of capital to land did not improve yields: on the contrary, yields per hectare declined in this period, probably because, as we have already indicated, the new land brought under cultivation was less fertile than the old, and the fertility of land cultivated over a long period was declining. Nevertheless, the plough replaced the hoe as an effort-saving device; in 1946 the Social and Economic Planning Council commented: "One of the greatest changes in agricultural practices has been the substitution of the plough for the hoe. The plough has made cultivation easier".<sup>(72)</sup> The point which must be made here is that, over more than a century, the norms of cultivation have been shifting from the use of the hoe to that of the plough, to the extent that at the present time, cultivators will be likely to leave land idle rather than till large extents of it with the hoe.<sup>(73)</sup>

(72) Social and Economic Planning Council (1946), p. 16.

(73) It is interesting to see that reasons for non-cultivation of land were already generally understood in the 1940s, though no remedial action was ever seriously considered by government. The Report of the Witwatersrand Mine Natives' Wages Commission (1943) lists a set of reasons which correspond closely to those offered in the present survey: "(a) Many lands are badly eroded and portions only are capable of being used. It is not possible to arrive at even an approximate estimate of the number of acres involved; (b) Many lands are regarded by the Natives as unproductive through exhaustion and other causes; (c) Shortage of draught animals and their low condition when ploughing operations ought to be undertaken; (d) The absence of males at labour centres. The women, children and old men are unable to cope efficiently with the heavy work of ploughing. According to the Agricultural Census of 1936-1937, there were in the Transkeian Territories 689 000 bulls and oxen and this figure which would include calves, only gives an average of 2,65 male animals per family unit. As seldom less than 6 animals are used for ploughing, it is obvious how inadequate is the number available for this purpose. It is quite a common practice to inspan cows, but that would not make up the deficiency. Those Natives owning ploughs and other implements as well as oxen either lend or hire them to their less fortunate neighbours when they have finished ploughing their own lands. By that time, the season has probably considerably advanced and it is possible that some owners only manage to cultivate half their lands and others none at all. Even in a good season those who have no implements or draught animals are, more often than not, too late with their crops and fail to reap any grain" (para. 134-135).

It is useful to compare the findings of the small-scale survey discussed above with a larger study undertaken in the Tsolo district of Transkei in the 1975-76 cropping season. The intention was to investigate, by means of interviews with 110 farmers in the area, agricultural methods and the underlying reasons for low productivity in the Transkei. The primary purpose of the survey was, therefore, not an investigation of the reasons why land was left idle, but these emerged as a by-product of the investigation. About 10 per cent of fields during that growing season had been left unploughed; 55 per cent of the farmers questioned had failed to plough some or all of their land. The report states: "The most important reason for not ploughing was financial. Some of those who reported that they were prevented from ploughing by heavy rain in late November and December would have been able to plough before had they had the money to hire a tractor. Sometimes the son or husband who worked away had failed to return or to send the money for ploughing-time. Poorer families may laugh about their 'laziness' in not cultivating their field or evade the point by saying that they may still do so, but it is painfully obvious that they have little means of ploughing".<sup>(74)</sup>

The second relevant point is that most farmers who did not plough had no oxen of their own with which to do so. Only 17 per cent of the families in the sample owned plough-oxen. Lack of labour, on the other hand, was not offered as an important reason for failure to plough, but it did affect cultivation in two important ways. Firstly, a large proportion of the families who had failed to plough would have encountered labour problems in the later stages of crop management had they done so. Secondly, whilst the presence of the full complement of family labour, including the male head of the family, did not affect the yield per unit of land ploughed, probably implying a zero marginal product of labour, the presence or absence of the man did affect the extent of cultivation; instances occurred where land was left uncultivated because the family head was a migrant.

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(74) Westcott (1977), pp. 148-150.

The similarities between the reasons offered for land left idle in this Transkeian survey and our own are striking, especially the importance placed in both cases on the lack of finance, and both surveys suggest areas where intervention is possible, especially the extension of some kind of credit facilities to farmers. But there are serious problems, the solution of which must be complex, especially in the case of those which arise from the fact that potentially arable land continues to be held by those who are unable, because of age, health or other commitments to cultivate it. The present system of land tenure certainly influences land use and it is, therefore, necessary in the next section to review land tenure practices in Kwa-Zulu.

5. LAND TENURE

*"If I lend out a tract of my land...they could take advantage of my being a widow, as I am. These children will need a home to come back to when they grow up".*

Two conditions attached to a system of land tenure which obtains in KwaZulu today are particularly detrimental to the full utilization of land. The first of these is unwritten, but visibly applied throughout the areas: it is that land is not sequestered from the current holder unless it has been left completely unused over a considerable period of years. This custom naturally combines with the other pressures which have been discussed in earlier sections to allow land to remain idle. As one respondent put it, "The Chief reserves the right to confiscate your land after failure on your part to use it over a period exceeding five years, but as counter-measures against land forfeiture, I and many others resort to a scheme of rotating our tracts of land when planting our crops between three- and five-year periods".

The second condition implicitly present in the system of land tenure is that, even when obliged to allow their land to remain uncultivated, landholders are unwilling to allow the use of it to someone else, even on a temporary basis, for fear that they may lose permanent usufruct. "I haven't granted anybody a tract of land on my farm because I have too many children who will soon be needing this land for settlement", was a respondent's account of his situation. Another replied: "If I lend out a tract of my land, I fear I would only be caught in trouble: they could take advantage of my being a widow and helpless, as I am. These children will need a home to come back to when they grow up".

In fact, as has been argued elsewhere, the absence in the traditional system of land tenure of leasehold agreements or of provision for a proper price in money for land-use, works as a retarding factor on the develop-

ment of an efficient system of land-use. Since the landholder pays no price for land-use, there is no cost to him in leaving it unused and, equally, he could not expect profit if he were temporarily to cede the use of it to another. The purpose of this last section will therefore be an analysis of the manner and extent to which the land tenure system as it exists today in KwaZulu contributes to the problems of under-utilisation of land, and to see what prospects exist either for change or for the preservation of traditional practices. It must be emphasised that it is not the intention of the present survey to intervene in the debate on the role of land tenure reform in economic development; our discussion will confine itself to the manner in which the land tenure system has in the past affected utilisation of land in KwaZulu, and to the trends which are visible at the present time.

The essential features of land tenure amongst the Zulus, as in most African societies, are well known: traditionally, the concept of property in land does not exist as all land is at the disposal of the king or chief who acts as representative of the nation as a whole, and in him is vested the power of allocating land to his subjects. Land is always assigned gratuitously, but no-one may consider himself a landowner, since he has no power to sell it or to use it in negotiations with others. What is granted to individuals is the usufruct of both arable and residential land, and land not designated as arable or residential is regarded as communal.

The system of communal land tenure which prevails in KwaZulu today is an adaptation of the tribal system of land allocation; the final ownership of land is secured to the State, which vests the powers of ownership to the South African Development Trust. While land allocation is still part of the duty of the Chief or his Indunas, the final authority in these matters rests with the Magistrates, but the manner of allocation, as well as the nature of the individual's rights over the land allocated to him, are governed not by tribal custom but by government regulation. After the death of a landholder, rights of occupation lapse *ipso facto*, but in practice the heir normally takes over the holdings with the con-

sent of the authority, that is to say, the Magistrate of the district, or in some cases, the Chief or his Induna. There is no security of tenure in the absolute sense which belongs to legal ownership as it exists elsewhere, and the landholder is liable to loss of his right for 'misdemeanour' - rather vaguely defined. In practice, however, the system of land tenure as it exists, with its accompanying emphasis on the responsibility of the family group, offers a fair amount of security: the rights to use of land granted are seldom cancelled and then only when some very serious misdemeanour has occurred.<sup>(75)</sup>

Nevertheless, an awareness that the present system of land allocation and tenure might not be adapted to the changing needs of its people led the KwaZulu Government in 1974 to appoint a Select Committee to "investigate and consider the advisability of initiating a gradual change of land tenure system...to investigate ways and means to improve the use of all land in KwaZulu". The Committee was to operate within the constraints of the need, which it recognised, "to res-

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(75) In this connection, the Executive Councillor of Agriculture of the KwaZulu Government stated in his Policy Speech to the Legislative Assembly in May, 1974: "The Chief and his council allocate land for the use thereof to tribe members. By doing so, the Chief does not lay down certain conditions as far as the proper use and utilisation of the land or grazing is concerned. The result is that a landuser, or call him or her a farmer, does not make full use of the potential. If the land is not ploughed, normally nothing happens, the same if no weeding is done. Land and the use thereof should be very strictly controlled by the tribal authority or Chief in collaboration with the Department of Agriculture of KwaZulu and the Government. Another question that arises is, should the man that shows he is a good farmer be allocated more land by the authorities concerned or do they treat all the users of land the same? The Chief and his council should consider the allocation of more land to a good farmer by taking land away from the bad farmer...To ensure the proper utilisation of the land, farmers, or let us say, the people who are allocated a piece of land should be motivated and if necessary control measures be drawn up to achieve an acceptable production per unit of area". Unpublished.

pect as far as possible the tradition social system of the Zulus, including the authority of the Chiefs and the Tribal Councils".<sup>(76)</sup> The Government, in other words, was instructing the Committee to attempt a reconciliation of the traditional cultural values with the need for development.

The Select Committee drew attention to two types of problems which in the opinion of its members occurred under the present system. The first was that there was insufficient security of tenure to encourage landholders to apply capital to their land, and that this insecurity therefore constituted a retarding influence on agricultural development. The Committee's second point concerned the way in which land was divided into small units for allocation, so that the desire of as many households as possible to hold land might be satisfied. This fragmentation of farming land made the emergence of a class of full-time farmers impossible. The Select Committee, responding with sympathy to the wish of householders for some holding in land, felt that the impossibility of allowing at the same time larger areas of land to householders prepared to engage in full-time farming was an indication that a situation of land-shortage existed. Figures taken from the Tomlinson Commission Report and up-dated were used to support the Committee's claim that viable land units capable of producing an income comparable to, and in competition with that from non-farming employment could be provided only for 20-25 per cent of the Reserve population of the mid-1970s. The report stated: "If families are to get a full economic unit, only one-fifth of the rural population could be settled as farmers and an alternative livelihood would have to be found for the other four-fifths".<sup>(77)</sup>

This statement begins to indicate how many complex and far-reaching issues are related to land tenure. The Committee tested the opinions of local authorities and private individuals in an attempt to gauge the feelings existing on the matter of land tenure, and especially to estimate

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(76) KwaZulu Government Service, Select Committee on Land Tenure in KwaZulu, Final Report, p. 1 (unpublished).

(77) *Ibid*, p. (iii).

whether there was a desire for reform of the system.<sup>(78)</sup> Submissions to the Committee suggested a fairly general recognition of the fact that reform was desirable. Local authorities, however, in the composition of which Chiefs tend to be strongly represented, expressed fears that changes in the system of land tenure would disrupt the present social system. They maintained that under any system different from the present one, the power of the chiefs over their tribesmen would disappear. Whilst they agreed that change was necessary, they were unwilling that Reserve land should be used to try out new types of tenure, which they suggested could better be applied on newly-acquired land or on land still to be added to the Reserves in terms of the 1936 Land Act.

Private individuals tended to be less conservative in their attitudes and less afraid of the side effects of changes in land tenure. Some suggested a changeover to a system of freehold tenure, with conditions of occupation embodying an upper limit to the amount of land to be held by any one family, so that some degree of equity might be preserved in distribution; it was also suggested that further subdivision by sale or inheritance should be forbidden. Others felt that part of the tribal lands should be made available to what they termed 'progressive farmers', in the form of individual allocations on long leases, whilst the remainder of the tribal lands are cultivated on a communal basis by employed workers, so that employment may be provided at home for people who in the earlier years of their adult lives have worked elsewhere as migrants. A third view expressed was that measures aimed at establishing a prosperous group of full-time farmers, possessed of comparatively large amounts of arable land, would have as a necessary concomitant the development of a class of landless rural poor, and that the possibility would arise of dangerous resentments if land were to be reallocated in such a way that it could be acquired by a small group of professional farmers. It was therefore suggested that smallholding agriculture, such as has been successfully developed in Kenya, be encouraged

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(78) Interim Report, pp. 28-37.

within the present system of land tenure. At the same time, if a household did not actively farm its land, or give evidence of attempts to do so, the householder should be obliged to allow another farmer resident in the same ward to use the land, and a rental should be paid by the user to this 'primary' holder. Existing legislation should be amended to permit the use, for a fee, of traditional family holdings by *bona fide* farmers who wished to engage in further cultivation. This would provide income to 'primary' holders who for one reason or another were unable to use their landholdings fully. It was suggested as an added incentive for those unable to cultivate or lease their lands to others that a small penalty for non-cultivation be imposed after a warning had been given. It was argued that a scheme of this kind would allow the use of larger areas of land to progressive farmers whilst safeguarding traditional land rights. Smallholder farming, either on a basis of land held in the traditional manner or on lease-hold, for relatively long and fixed periods, would, it was hoped, emerge.

The importance of these individual opinions to the problems which form the subject of the present study lies in the fact that they recognise the situation of land shortage combined with land which remains unused. They are aware, too, that there can be no simple solution such as repossession by the authorities of such land, which may well be of essential economic importance for the future of its occupants, however neglected at present.

After recording the submissions made, the Select Committee went on to offer its own recommendations, both long- and short-term: the eventual goal of land tenure reform in KwaZulu should be freehold farm land, based on individual titles to sites in residential areas, individual titles to plots in arable blocks and grazing rights in communally-held grazing areas. The title to an arable plot should be combined with the grazing rights, so that the two would be negotiable only as a unit. Understood in this long-term recommendation was the rejection of the traditional policy of communal ownership of land, and the advocacy of a move-

ment towards a market in land.

In the interim period of progress towards freehold tenure, the Select Committee felt that all existing land rights should be investigated and, if found valid, given formal recognition. From this point, a rental should be charged on all land and this rental should be assessed in terms of the probable market value of the land, since the system of freehold tenure, which is to be the ultimate result of these changes, will have the effect of creating a market for land which will function on economically realistic terms. It is assumed that the imposition of rental for land, as opposed to the present system of free usage by those to whom it is allocated, would have the advantage that it would oblige landholders to make productive use of their land, or else relinquish it. In addition, the collection of rent would provide Land Boards with an opportunity to check on the cultivation of plots and, if necessary, to encourage or oblige a holder who failed to cultivate to give up his holdings which would thus become available for lease to active farmers. This would also help in the process of building up allocations of land to the size recommended by the Planners for the particular tribal area. The actual period when, in each area, the transition from leasehold to freehold could occur, would have to be determined by the competent land boards at some future date.

The Committee held it to be of vital importance that any future legislation on the matter should embody the provision that no more than three economic units could be held by any one person: the system to be established should not have the effect of concentrating large amounts of land in the hands of individuals but of creating viable economic units. It was suggested that, for the future, people should be discouraged from residing on their arable holdings, and should instead be encouraged to live in properly planned residential areas where modern amenities and work opportunities could be provided to absorb the increasing numbers of people who could be expected to leave agriculture and seek work elsewhere. It was further recommended that the Land Use Planning System give its attention to the provision of such residential areas, as well as to the

supply of facilities and the development of industry in rural areas to provide jobs for the landless.

In 1976 the Government of KwaZulu accepted the recommendations of the Select Committee, with only minor amendments.<sup>(79)</sup> There has so far been no attempt to implement them, however, and it is easy to see why this is so. The Committee addressed itself to the problem which has been the subject of this study - that there is both a shortage of land and land unused. The process of creating units of economic size must necessarily have the effect of creating a class of landless people: this was the reality faced by the Tomlinson Commission in the 1950s, and the Government White Paper of 1956 which rejected the recommendations of the Tomlinson Commission on land tenure reforms did so on the grounds that it could not contemplate making provision, presumably in terms of employment opportunities, for the large numbers of people who would be displaced if economic farming units were to be created. The problem at present is presumably greater to the extent that population growth has outstripped the increase in arable land. No committee appointed solely to consider conditions of land tenure could make sufficiently wide recommendations to solve the problem of the landless.

The Committee's short-term recommendations seem, however, to be capable of offering some remedy for the immediate problem of land unused in KwaZulu, in that the imposition of rent for land both increases the holder's need to use his land and presumably makes it possible for him to sublet it at a fee if he is absolutely unable to cultivate it. It seems likely that the present situation, in which the landholder receives his land free from the Chief, makes those who wish to cultivate more than their own allocation unwilling to pay a fee to acquire more land, and unless they can expect profit from doing so, there seems no reason why holders should cede their land, even temporarily, to others. The payment of rent to the authorities would also serve to mark as a 'primary landholder' the individual who was entitled to sub-let; this would eli-

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(79) KwaZulu Legislative Assembly, Resolutions. Serial No. 17/76.

minate a situation in which, as is the case under the present system, landholders and land-users tend to be regarded as indistinguishable.

## 6. CONCLUSIONS

The demands for more land made by Zulu and other African leaders in the recent past have usually been supported by reference to the conditions prevailing in the Reserves; overcrowding, shortage of arable land, the fact that the Reserves are composed of fragments of land enclosed in 'White' areas, the division of the land into non-viable economic units - all have been mentioned in justification of demands for a larger share of the country. White leaders have based their continued refusal on the 1936 Land Act which, as has been indicated earlier, was claimed to be a 'final solution' of the land question in South Africa. The associations of this phrase, as well as the inescapable facts of population growth, make it clear that this determined attempt to close a vital debate must fail, but it is an important part of the purpose of this study to show that the case made by African leaders in the past has been somewhat weakened by an over-simple interpretation of their need for more land. It cannot, in fact, be denied that considerable amounts of Reserve land are left uncultivated and that poor use of land is made, as is indicated by declining yields.

The justice of the demands made by Africans for more land lies in the fact that the division of land between Africans and Whites has been made on two different principles. Africans have been given land according to estimates made at different times of their needs, whereas no justification of this kind has ever been made for the enormously larger areas allocated to Whites. Had the original principle of establishing the Reserves as an area where Africans could farm without fear of competition from Whites been retained, and had Africans been permitted to compete freely outside the Reserves in all economically-productive activities, then the idea of 'need' in terms of the numbers of people who could function only in the economically-protected areas of the Reserves, might have been used to obtain more Reserve land. But this concept of the Reserves disappeared almost at its birth, and Reserves function today

as the only places where Africans can hold and farm land and where their residence can legally be considered permanent. The Reserves, in fact, are to Africans what non-Reserve land in South Africa is to Whites, and comparisons can properly be made between the terms on which each allocation was made. Since no plea concerning population numbers has ever been made to prove the need of Whites for the land, and no evidence offered that if the amount of arable land were less, the area retained would be over-farmed, it is curious that a defence of this kind of the need for more land for Africans should be required. It certainly could not be argued that all the agricultural land in White areas is already fully exploited and therefore no such claim needs to be made by KwaZulu.

If the division of land between racial groups is to continue, it should, in fact, have a different basis, namely that of equity in distribution between those groups. African leaders should claim at the same time a greater share in the social product, the means of producing it and in infrastructures and social amenities. It is perhaps the second item on this list which is the vital one. We have shown that from the beginnings of the Reserves it has been intended that residents in them should experience a need to sell their labour outside them, that is to say, that the Reserves should not be self-supporting in the sense of producing all their needs internally as the terms of the requests for more land made by African leaders seem to suggest. It would, in fact, be an unusual situation in the modern world if a small area like KwaZulu were to attempt this kind of self-sufficiency. What is seriously wrong in KwaZulu's situation is the urgency of the need to accept whatever work is available on whatever terms are offered in the White areas.

This brings us to an important truth which also has been discussed at length elsewhere, namely, the fact that no adequate attempt has ever been made to transform conditions in the Reserves and especially Reserve agriculture. Government, despite occasional reproaches about the failure of Reserve farmers to adopt intensive farming techniques, has apparently been content to see the possibility of this occurring recede ever further.

Many studies have shown that migrancy is selective of the best elements in the labour force; there has been token investment only in the creation of infrastructures by the public sector; low levels of income in rural areas have prevented the formation of private capital financed by internal sources; credit has been unavailable, as have transport facilities which might have allowed any surplus produced to be marketed. The neglect of the area has been almost total, compared to the facilities provided for Whites. To produce the transformation of conditions which would permit Africans to make full and intensive use of their land would require an infusion of capital and skilled personnel such as South Africa has never contemplated as necessary or indeed desirable.

There has been much discussion among political economists of the fact that development of the Reserves has been retarded in the interests of White industrial interests; in more recent years, government spending has been somewhat increased in the hope of producing 'viable' economic units which could with some degree of credibility, be regarded as capable of receiving political independence. But our survey (Section 4) makes it clear that poor use of land actually cultivated and the occurrence of land left uncultivated are nevertheless common and are the result of lack of finance and lack of efficient labour. In the latter case, migration is an important cause: the African migrant worker cannot establish himself in town, nor can he become a secure part of the core of the modern sector of the economy. The legislation which deems him the citizen of a particular rural area to which he is destined to be returned, prevents the confiscation of the arable land which he is obliged to leave idle. When his migratory period is over he must use it to supply his subsistence needs.

Large scale changes in the political thinking of those in power will be required before the migrant's problems can be solved. In the meantime, short term and palliative measures seem to be possible. Some of the responses to the survey quoted in Section 4 suggest that an equation exists at present between the cultivator and the legal holder of the land, to the

extent that people unable to cultivate their land fear that they will lose their rights over it permanently if they allow others to cultivate it. The introduction of the concept of tenancy into the structure of Reserve land tenure could solve this problem, but it must be noted here that the payment of rent by a tenant to a primary landholder would imply the commercialisation of Reserve agriculture and would have to form part of a package which would include availability of capital, agricultural education and access to markets.

It is likely that the extension of tenancy, with the attendant conditions we have listed, would bring about a recognition of which areas of land were potentially profitable and which are marginal. The effects of this recognition on migrancy and therefore on the composition of the labour force of KwaZulu can only be guessed at, but it might well be that it would become less, or differently selective, since agriculture would offer profitable opportunities to those who held and cultivated good land or were able to rent it, whereas holders of poor land, whose interest in agriculture was not sufficient to motivate them to become tenants, would be likely to migrate. As to the erosion of the powers of the chiefs and the creation of that vacuum of authority in rural areas which the Select Committee on Land Tenure seems to have feared, the existence of the possibility of tenancies need not have this effect, since chiefs would continue to allocate land to primary holders.

All of these changes, vital to the conditions of life in the Reserves and therefore to the political stability of South Africa as a whole, depend on the willingness of political leaders, and especially White political leaders, to accept the necessity of creating in the Reserves an economic climate which allows the individual real choices about the place and nature of his work. The old idea of the man forced by poverty to accept conditions devised for him by Whites - for their own profit - must disappear. In order that this may happen, the fear of sharing power over the means of production which has so long conditioned South Africa's leaders, must be conquered.

APPENDIX I Estimates of Production of Selected Crops : Natal Reserves/KwaZulu, 1867-1977

Year (a) (3-Year Averages)	MAIZE			SORGHUM			TUBERS			SUGAR CANE		
	Area ha	Output (90 kg bags)	Yield (bags/ha)	Area ha	Output (90 kg bags)	Yield (bags/ha)	Area ha	Output (tons)	Yield (tons/ha)	Area ha	Output (tons)	Yield (tons/ha)
1867-69	29849	323375	10,8	12239	116156	9,4	517	1863	3,6	53	0,151	2,8
1870-82	30756	325380	8,8	17687	144852	8,2	590	2573	4,4	114	0,360	3,1
1873-76 (b)	40137	407396	10,1	19480	145150	7,4	1289	4928	3,8	222	0,489	2,2
1877-79	48971	413287	8,4	13718	127927	9,3	3031	5785	1,9	167	0,218	1,3
1880-82	69751	594710	8,5	30082	274631	9,1	4108	4221	1,0	195	0,66	0,4
1883-85	72379	754281	10,4	37017	313571	8,5	3504	4493	1,3	71	0,223	3,1
1886-88	69836	721725	10,3	32629	267979	8,2	3513	5458	1,6	87	0,272	3,1
1889-91	61344	584149	9,5	44498	342609	7,8	4699	13012	2,8	105	0,258	2,4
1892-94	85948	661967	7,7	50380	447673	8,8	4957	10378	2,1	108	0,277	2,5
1895-1900	54093	442005	8,1	46704	351357	7,5	8379	16241	1,9	89	0,36	0,4
1901-05 (d)	68902	513620	7,4	52792	356094	6,7	9894	19083	1,9	88	0,103	1,2
...	...	...	...	...	...	...	...	...	...	...	...	...
1957-59	206013	667897	3,2	46869	139694	2,9	11791	12163	1,1	7129	170	23,8
1960-62	215033	621045	2,9	42801	117371	2,7	16969	27265	1,6	8462	163	19,3
1963-65	245015	711443	2,9	45286	140802	3,1	9227	10341	1,1	9039	176	19,5
1966-68	232859	630734	2,7	43727	133574	3,0	11355	16555	1,5	13456	249	18,5
1969-71	256229	827867	3,2	51497	141859	2,7	12756	23963	1,9	13439	308	22,9
1972-74	227113	1014531	4,5	40743	119151	2,9	13974	22242	1,6	14746	427	29,0
1975-77	185907	1158470	6,2	27806	95355	3,5	20388	42814	2,1	20744	462	22,3
Compound Growth rate 1867-82 / 1972-77	1,67	1,10	-0,43	0,69	-0,55	-0,93	3,17	2,58	-0,67	5,0	7,02	,95

Notes: (a) Period 1867-1905: Excludes Zululand (statistics for which appear in the Year Books from 1900 onwards) and the districts of Vryheid, Utrecht and Paulpietersburg (statistics for which appear in the Year Books from 1903 onwards).

(b) 1873-75-76; (c) 1895-96-1900; (d) 1901-02-03-05.

Sources: 1867-1899: Natal Blue Books (Vol.1); 1900-1905: Colony of Natal, Statistical Year Books; 1957-1971: Bantu Administration and Development Division of Agriculture, Natal, Annual Reports (mimeo); 1972-1977: Department of Agriculture and Forestry, KwaZulu, Annual Reports (mimeo).

## APPENDIX II

## Estimates of Cereals Production and Requirements - Natal Reserves/KwaZulu, 1867-1977

Year (3 year averages)	Rural popu- lation (a)	Cereals Production					Cultivated Land			
		Output	Index of produc- tion	Output per head	Require- ments (b)	Produc- tion require- ment	Land under cereal (c)	Land under cereals per head	Total land cultivated (c)	Total cultivated land per head
		'000	90 Kg bags ( '000)	Average 1929-31 =100	90kg bags	90 kg bags ( '000)	%	ha '000	ha	ha '000
1867-69	250	439	68,3	1,75	444	98,8	42	0,17	43	0,17
1870-72	258	470	73,2	1,82	458	102,6	54	0,21	56	0,21
1873-76 (d)	282	552	85,9	1,95	501	110,1	59	0,21	63	0,22
1877-79	317	541	84,2	1,71	563	96,0	62	0,19	67	0,21
1880-82	329	869	135,3	2,64	584	148,8	99	0,30	106	0,32
1883-85	362	1 067	166,2	2,94	643	165,9	109	0,30	114	0,31
1886-88	409	990	154,2	2,45	727	136,1	102	0,25	117	0,28
1889-91	455	927	144,3	2,03	808	114,7	106	0,23	114	0,25
1892-94	483	1 110	172,8	2,29	858	129,4	136	0,28	149	0,31
1895-1900 (e)	587	793	123,5	1,35	1 043	76,0	101	0,17	116	0,20
1901-05 (f)	670	870	135,5	1,29	1 191	73,0	122	0,18	141	0,21
...	...	...	...	...	...	...	...	...	...	...
1923-25	722	651	101,4	0,91	1 283	50,0	...	...	...	...
1926-28	767	500	77,9	0,65	1 363	36,7	...	...	...	...
1929-31	812	642	100,0	0,79	1 443	44,5	...	...	...	...
1932-34	858	672	104,6	0,78	1 525	44,1	...	...	...	...
1935-37	904	618	96,2	0,68	1 607	38,5	...	...	...	...
1938-40	916	741	115,4	0,80	1 628	45,5	...	...	...	...
1941-43	926	859	133,8	0,92	1 646	52,1	...	...	...	...
1944-46	937	877	136,6	0,93	1 665	52,7	...	...	...	...
1947-49	946	831	129,4	0,88	1 681	49,4	...	...	...	...
1950-52	954	669	135,3	0,70	1 696	39,3	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...
1957-59	1 196	807	125,7	0,67	2 126	37,9	253	0,21	296	0,24
1960-62	1 339	739	115,1	0,55	2 380	31,0	257	0,19	304	0,22
1963-65	1 512	852	132,7	0,56	2 688	31,6	290	0,19	343	0,22
1966-68	1 686	764	119,0	0,45	2 997	25,4	277	0,16	345	0,20
1969-71	1 858	970	151,1	0,52	3 303	29,3	309	0,17	350	0,19
1972-74	2 046	1 134	176,6	0,55	3 637	31,1	267	0,13	338	0,16
1975-77	2 297	1 253	195,1	0,54	4 083	30,7	214	0,10	331	0,15
Compound growth rate (%) Ave. 1867-72/ 1972-77	2,04	0,88		-1,16	2,04		1,47	-0,42	1,76	-0,16

Notes: (a) Population: mid-point of the 3-year averages.

(b) Requirements: Estimated at 1,8 90kg bags per person per annum. (Cfr. Bantu Administration and Development, Division of Agriculture, Natal, Annual Report 1959).

(c) Land under cereal and Total land cultivated: data for individual reserves are not available for the period 1923-1952; (d) 1873-75-76; (e) 1895-96-1900; (f) 1901-02-03-05.

Sources: Output: 1867-1905 and 1957-77: Appendix I; 1923-52: Department of Agricultural Economics and Marketing, Handbook of Agricultural Statistics, 1904-1950;

Population: 1867-1905: Natal Blue Books and Colony of Natal, Statistical Year Books; 1923-1977: Based on the following population Estimates/Censuses (interpolated for intervening years); 1936: Social and Economic Planning Council, Report No.9 UG/32/1946, Table I, pp.8-9; 1951: UG 42/1955, p.94; 1970: South African Statistics, 1978, A.10; 1980: Benso, Development Studies Southern Africa, January 1981, Statistical Section, Table 2, p.219.

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