EXPERIMENT IN SWAZILAND

(REPORT OF THE SWAZILAND RANDOM SAMPLE SURVEY, 1960)

INSTITUTE FOR SOCIAL RESEARCH
UNIVERSITY OF NATAL
FOR THE SWAZILAND GOVERNMENT

EXPERIMENT IN SWAZILAND

Report of the Random Sample Survey, 1960

by

the Institute for Social Research,
University of Natal,

for

the Swaziland Administration

Edited by

J.F. Holleman

(VOLUME ONE) (+ Vol II)
(combined)

Institute for Social Research,
University of Natal, Durban, 1962.

The organization and execution of the Swaziland Random Sample Survey of July, 1960, as well as the Pilot Survey which preceded it in 1959, were a joint effort by several Departments and individual officers of the Swaziland Administration and a team of academics of the Institute for Social Research in the University of Natal.

The processing and analysis of the Survey data were entrusted to members of the Institute team who take full responsibility for all findings, conclusions and views expressed in this Report.

J.F. HOLLEMAN

Director
Institute for
Social Research.

University of Natal,
Durban, June 1962.

S W A Z I L A N D S A M P L E S U R V E Y

The following persons were, in one way or another, directly involved in the Swaziland Sample Survey of 1959 and 1960.

A. SWAZILAND GOVERNMENT AND SERVICES

The Resident Commissioner, Mr. B.A. Marwick, C.M.G., C.B.E., M.A.

The Paramount Chief, Ngewonyama Sobhuza II, C.B.E.
and other Swazi authorities.

Col. C.J. van Heerden, O.B.E., M.R.C.V.S. - Director of Land Utilization.
W.E.C. Pitcher, O.B.E., B.Sc. - Director of Education
J.F.B. Purcell, O.B.E. - Secretary of Swazi Affairs
Dr. B.D.Whitworth, M.R.C.S., I.R.C.P., B.A., M.B., B. Chir.- Director of Medical Services

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H.M. Jones, M.A. - Survey Officer,1960
A.J.B. Hughes, M.A. - Research Fellow

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SURVEY REPORT

Members of the University team wrote the chapters comprising this Report. Although in all cases the chapter drafts passed through several hands in the process of formulation and editing, the majority are the independent products of the individual authors under whose names they appear. A number of chapters were written by the Editor largely on the material generously submitted for this purpose by fellow workers, and their contributions must here be acknowledged:-

Chapter I : J.R. Masson, H.M. Jones.
Chapter III : B.D.F. Methley, J.B. McI. Daniel.
Chapter IV : S.E. Cruise, A.J.B. Hughes, J.B. Mc.I.Daniel.
Chapter V : A.J.B. Hughes, H.M. Jones, J.R. Masson.

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CHAPTER I

O U T L I N E

1. INTRODUCTION:

On the 18th February, 1904, the Secretary for Swaziland sent the following telegram to the Census Commissioner at Pretoria: 'Special Commissioner estimates following quantities beads should be sent Swaziland in thousands, viz: Big Black twenty two, Small Black twenty three, Big Yellow twenty five, Small Yellow twenty five and ten thousand cords'.

On the morning of the 18th April, 1904, all kraal heads in Swaziland were tying up the cords to which they had threaded the black and yellow tokens, big and small, representing the male and female members, adult and juvenile, of the Swazi population. Their efforts produced 84,529 beads, being the combined yield of the first Swazi census 1), of which 36,851 were black (big and small) and 47,678 yellow.

Since then, five more official censuses have taken place with the following returns:-

Year	Totals (including temporary absentees)
1911	104,533
1921	110,295
1936	153,270
1946	181,269
1956	229,744

Every one of these censuses involved a total count of the Swazi population, or rather, the combined totals of the kraal populations as reported by chiefs and headmen. Their accuracy can be neither proved nor disproved, but has at times been subject to considerable doubt.

The idea of a sample census is not new, even to Swaziland. In 1950 Professor Batson conducted the first sample survey, using the areas served by a random selection of cattle diptanks as matrices for enumeration. But the results of this ingenious exercise,

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1) Which formed part of the 1904 Transvaal Native Census.

too, were open to question. For instance, when his broad regional distribution figures are compared with those of Liversage of a few years earlier 1), there are some striking if not baffling discrepancies, which cannot be explained merely by the uncertain delimitations of the major geophysical divisions.

	Highveld	Middleveld	Lowveld	Lebombo	Total
Liversage, 1948	96,722	29,940	13,880	10,390	150,932
Batson, 1950	30,000	36,000	120,000	-	186,000

To understand why, despite this experience, the Swaziland Administration decided to sponsor yet another sample survey, we must trace the history of its conception.

1.1 C.D. & W. Scheme R.661:

Faced with the prospect of economic development and the problems which rapid change were likely to bring about in the traditional structure of Swazi society and economy, the Administration was aware of the need for preparatory research, and invited consultations with Dr. J.C. Mitchell, then Director of the Rhodes-Livingstone Institute at Lusaka. Mitchell's advice (1954) ultimately led to Colonial Development and Welfare Scheme R.661, under which a Research Fellow was to direct his attention mainly to two assignments: (a) a study of Swazi social anthropological land tenure in relation to the present political and social structure; (b) a demographic study of population trends.

The Institute for Social Research of the University of Natal agreed to supervise the academic side of the research and, in January 1957, a social anthropologist, Mr. A.J.B. Hughes, assumed his duties in Swaziland under a three-year contract 2).

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1) Liversage, Swaziland Development, 1948, based on the 1946 census figures.
2) Later extended to 4 years.

It was realized from the beginning that the two assignments were totally different. The first involved a field study in depth, requiring intensive research in a few selected areas, and was eminently suitable for a single qualified worker. But the second would require a nation-wide survey involving a large team of assistants working within an extensively organized and equipped apparatus.

For various reasons - one of them the obvious desirability to gain background knowledge and establish local contacts before embarking on a major survey - it was decided to concentrate for the time being on the land tenure study, itself a major task for one man, and to see in how far existing statistical material, including Batson's work and the 1956 census, would fill the demographic gap.

1.2. Study of Economic Development:

A few months after Hughes had begun his fieldwork, Mr. J.B. McI. Daniel, an economic geographer newly appointed to the University, expressed his interest in Swaziland as a field of active research. Having done some preliminary work on the economic aspects of the country during his post-graduate year at Cambridge, he now decided to make the economic development of Swaziland the subject of a major study 1), complementary to Hughes' investigation. The dovetailing of their plans marked the first step towards a multi-disciplinary research approach on the part of the University to Swaziland's social and economic problems.

Daniel's main task was to examine the component aspects of the country's economy and the use of its resources, and to fit the bits and pieces together in a coherent overall picture. More than Hughes, he had from the beginning to rely heavily on published and unpublished statistics and departmental returns. Like Hughes, he established personal contact and a sound working relationship with officers of the Administration, spending much time in finding out what factual information could be derived from the existing records and periodic returns.

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1) Mr. Daniel was given a grant by the National Council for Social Research for this purpose, and subsequently received substantial assistance from both the Swaziland Administration and the Institute for Social Research.

It soon became clear that both the University and the Administration desired to know a good deal more than past and current statistics could reveal. A substantial volume of quantitative data was being collected in Swaziland from time to time or as a matter of departmental routine. Some of this material was abstracted for the Annual Reports of the Territory. But many of these efforts lacked a wider coherent frame, with the result that the correlation of allied aspects was often difficult, if not impossible. What these data revealed were tantalizing pieces of a jigsaw puzzle, but not the full and varied picture of national life and potentialities.

For instance, the census of 1956, despite its merits as a full enumeration of the population, lacked the refinements needed for a confident study of demographic trends. Batson's survey again, because of the variable nature of its sample units, revealed some valuable aspects of a picture frozen in time, but did not lend itself to the essential study of growth and development, nor in fact, to reliable generalizations on a regional or national scale.

1.3. Combined Operations:

It was in the community of frustrated feelings that the idea of a combined survey by the Administration and Institute was conceived. The embryonic idea was simply to provide a common and permanent statistical matrix which would serve the requirements of all scientific and practical (administrative) interests concerned. Because of its universal usefulness, it should be possible (we argued) to create a joint inter-departmental and university organisation to exploit its potentialities, thus obviating the waste of scattered and partially overlapping efforts which the limited resources of Administration and research Institute could ill afford. In short, the aim was to club together in a single scheme of action which would provide the maximum satisfaction to all, with the minimum effort and expense.

This commendable aim was discussed at joint meetings of the Resident Commissioner, Heads of Departments, Director of the Institute, the University Statistician, the Geographer and the Anthropologist, at Mbabane in July 1958.

In a preparatory Memorandum the Director suggested that the problem of collecting statistical data hinged on four main questions:-

1) what information was required, generally and specifically;
2) what staff and facilities could be made available for collecting and analyzing this information;
3) what statistical frame should be designed to ensure the effectiveness of the information, now and in the future;

4) what organization could be created to turn abstract plans into a working scheme.

On the first point the meeting decided that each Department of the Administration should draw up its own requirements. The academics would do likewise, and all requirements would subsequently be cast, in suitable categories, in a common scheme to be agreed to by all.

With regard to personnel it was recognised that most of the fact gathering would have to be done on a part-time or temporary basis by existing Swaziland departmental staff, especially trained for this purpose if necessary. Two Departments, Land Utilization and Education, would be in a position to make a considerable number of fairly well educated Africans (such as, rural development personnel and teachers) available for short periods, when a major concerted effort was required. The Administration agreed in principle to the formation of a small and modestly equipped statistical unit as part of its establishment. The Institute's team agreed to undertake in an honorary capacity the planning and supervision of the initial surveys.

1.4. The Random Sample:

In his memorandum the Director had anticipated that, with regard to fact gathering, it would be 'clearly impossible fully to cover the whole Territory'. Yet the 'information gathered should enable Administrators and scientists to draw conclusions which, with reasonable certainty, would reflect the position in the Territory as a whole, and make it possible to contrast one area with another'. This indicated the necessity of sampling methods of a sufficiently representative character, and moreover, of a statistical framework which would meet two essential requirements:-

sufficient stability or permanence to allow comparative analyses to be made from time to time in order to assess the trends and measure of development;

sufficient flexibility to permit the assessment of local differences, present and future.

In view of the wide diversity of the information required, and the fact that both the human population and the physical resources of the country had to be sampled, it was realized that any plan which set out to combine these requirements in a single frame, would have to be a compromise between the ideal and the feasible.

The University team tabled, as its main proposal for the Swazi rural area, a scheme based on the selection of some sixty to eighty small fixed geographic squares of standard size, randomly dispersed over the four recognized geophysical strata 1) of Swaziland. These strata are sufficiently unlike each other to have a fundamental and differential effect upon the socio-economic structure of the rural Swazi population. Within this stratification each sample area would represent a small, recorded unit of the 1:50,000 topographic map, a square of 3,000 x 3,000 metres, covering about 4 square miles 2) of territory. In a 'grid' of these squares the total area of Swaziland is covered by some 1,800 units. Sixty to eighty of these were expected to yield a 5-7½% random sample of the Swazi-held rural area and its population. The distribution of these squares over the aforementioned strata would be determined by the relative homogeneity of each stratified region. The plan envisaged that the entire effort of fact-collecting with regard to this area would be confined within the strict limits of these small units.

For the urban and industrial areas, land settlement schemes, Lifa land and squatters on European farms, other methods of sampling and enumeration would be devised 3) by Mr. S.E. Cruise, of the Department of Mathematics, who had assumed responsibility for all statistical aspects of the scheme.

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1) Highveld, Middleveld, Lowveld, Lebombo.
2) 2,224 acres or 1,051 morgen.
3) Full details of all sampling methods appear in Chapter II.

From the Administration's point of view the disadvantages of the main sampling scheme were in the beginning more apparent than its advantages. For example, while generalizations could be made for the main physiographic regions and for the Territory as a whole, they would not be possible for the administrative districts, as had been customary hitherto. Moreover, since it would be likely that a sample square would contain some people whose lands fell outside its boundaries, as well as some lands whose holders would be resident elsewhere, individual correlations between landholders and their holdings would often be impossible, and this relationship would only become statistically valid in wider generalizations. From the point of view purely of a population census, this method of area sampling might well be inferior in comparison with some other sampling methods, such as the random sampling of kraals used in Southern Rhodesia. There was also the weakness inherent in all sampling methods applied to heterogeneous

universes, namely, the relative uncertainty of resulting totals. To those used to the apparent safety of full enumerations, the very principle of random sampling and its concomitant mathematical manipulations, appeared to present a somewhat risky exercise in fact-juggling instead of a responsible undertaking.

All these objections, however, were outweighed by the need of gathering, in many fields of inquiry, information of sufficient detail to reveal coherent patterns, and to permit reasonably reliable comparisons and generalizations. It would be a physical impossibility to obtain a wide variety of detailed information from more than a small portion of the total population and its land holdings.

1.5. F.A.O. Survey:

One powerful factor helped to clinch the issue: Swaziland had agreed to take part in the World Food and Agricultural Survey in 1960, and it was considered possible to use the proposed sample scheme as a means of providing the necessary information.

At the meetings of July, 1958, the Swaziland Administration accepted the idea of the Sample Survey as outlined by the University spokesmen largely as an act of faith, and promised full support. Owing to the experimental nature of the undertaking it was further decided to run a 'pilot' survey in July 1959, to test the validity of the proposed statistical premises, and to assess the practical difficulties besetting a major survey of this kind.

A second meeting of Administrators and Academics took place in December 1958. By that time both parties had more or less decided what information they desired to get out of the first major survey. The combined inventory of questions was formidable, and the main task of the meeting was to pare down the demands to manageable proportions. By this time, too, it was clear that a vast amount of organization would be required, especially in Swaziland itself, and that the appointment of an officer of the Administration as local co-ordinator was essential. The Swaziland Administration seconded for this purpose Mr. J.R. Masson, on a part-time basis.

1.6 The Pilot Survey of 1959:

The pilot survey was designed as a 'reconnaissance in force'. Planned to cover 18 sample squares (that is, a sample of about one per cent of the population), it amounted to about one-quarter of the work envisaged for the main survey of the Swazi rural area alone.

Nearly the full range of questions was submitted to the people, covering personal particulars, marriage, domestic and religious affiliation, education and state of literacy, the pattern of employment and wage income, full reproductive history of females, details about rural production. The questionnaire further included a section for use in urban areas which was not, however, utilized in the pilot survey and in fact subsequently considerably revised for the main survey.

No questions about livestock ownership were asked during the enumeration, but in each case the dip tank reference numbers were recorded so that this vital information could be abstracted from the dip tank registers.

This questionnaire reflected the stage of our thinking and experience at the time. It was comprehensive and fairly straightforward, except for the employment section, in which we tried to break new ground, both as regards our method of approach 1) and as an effort to

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1) See 'Questionnaire'.

assess the 'overhead factor' (cost and time of travel to place of employment, between-jobs intervals, etc.) borne by workers in a migratory labour system. After the pilot survey the whole questionnaire was subjected to considerable revision in the light of our practical experience.

Between January and June 1959, while at the Institute in Durban the technical aspects of questionnaire, selection of sample squares, etc., were worked out, Hughes and Masson in Swaziland laid the foundation for the organization of the pilot survey operations.

One of the practical problems was to mark off the corners of the sample squares on the ground. Officers of the Department of Land Utilization accepted this responsibility and were faced with major difficulties. The exercise called not only for the accurate transposition of map-points on the ground, but for the erection of suitable beacons in often barely accessible places. In the sharply folded geography of the Highveld, a two-miles' crow flight could equal seven or eight miles of clambering and hiking over ridges and gullies with paint pot and survey equipment, in order to mark a bare rockface with a white cross, or to erect a widely visible cairn. In the Lowveld, again, where visibility on the ground was often reduced to twenty or fifty yards, the problem assumed totally different dimensions.

Moreover, the Swazi population, insufficiently informed of what was going on, regarded these beacons with suspicion. For this and other reasons to be discussed later, it was decided to make use of aerial photography of the sample squares for demarcation purposes. The flights took place in the beginning of May.

Once the sample squares had been plotted on the ground, detailed lists of all homesteads within their boundaries were drawn up as an essential preliminary to the enumeration, and to assess the volume of work to be allocated to each enumerator or team of enumerators to be employed.

In the meantime, Hughes also thrashed out the curriculum of a brief but intensive training course to which field personnel had to be subjected, while Masson was mainly engaged in arranging the multiple physical aspects (transport, catering, equipment, etc.) of the undertaking. Due to the fact that the whole force of enumerators had to be recruited from African teachers and Land Utilization personnel, it was necessary that both the training course and the enumeration take place in the July school holiday.

The eighteen sample squares of the pilot survey were dispersed over the entire Territory. Due to the rejection of some of the fifty-three candidates who had mustered for the training course, the programme could not be fully completed: one area was left undone, and another only partially enumerated when the ten-day (20-30th July) operation ended without further mishap, and with a total harvest of some 4,000 returns. After preliminary checking in Swaziland this material was sent to Durban for analysis by the Institute's staff.

The main purpose of the pilot survey was to test both the scientific premises and the organization of the survey. In both respects so many vital lessons were learned that separate sections of this Report will be devoted to them. At present it is sufficient merely to indicate the trends of these findings.

First, our confidence in the validity of our basic concept of area sampling appeared to be justified because even from this extremely small sample a number of persistent and comparable patterns had emerged. Yet we had to modify the scope of its application. For instance, the returns from one area situated in close proximity of an urban centre were so different from the rest of the rural squares, that it precluded the future inclusion of both rural and peri-urban areas in a common sampling matrix. In the main survey the latter type of area was excized from the rural scheme, and subjected to the sampling methods designed for the urban areas. Furthermore, comparisons

of standard deviations with regard to population density in the rural areas themselves, revealed a greater heterogeneity within the four recognized geophysical strata than we had expected. This made it necessary to add specially selected (and separately treated) areas to the random selection of sample squares in the main survey.

A second problem was that we had proved the impossibility of obtaining, within the time and with the enumerators available to us, accurate estimates of crop yields as part of a comprehensive survey. If, therefore, we were to collect meaningful information on agricultural production, we should have to approach this problem in an entirely different manner.

Another major difficulty was caused by the recurrent bug-bear of all censuses among underdeveloped peoples: the lack of accuracy with regard to dates and ages. Having been prepared for this, we had made considerable efforts to draw up chronologies of local and national events, in order to provide enumerators with a reliable time-scale against which they could check ages of adults and children, dates of employment, etc. Yet the pilot results had been disappointing, and some other results, relating to the sex ratio of young children, frankly baffled the University's demographic expert, Dr. Jooste.

Apart from these points, there was other evidence which suggested that the training course for enumerators had to be intensified as well as expanded, and that the whole system of supervision and checking in the field would have to be reconsidered. Some deficiencies in the pilot returns indicated flaws in the questionnaire itself. Designed to meet the requirements of the main survey, it had been drawn up with considerable care. Its preliminary drafts had repeatedly been shuttled between Durban and Swaziland in the process of improving and editing; and it had been given a 'trial run' during the training course and 'field exercises' 1), during which certain difficulties had been ironed out. Yet, when the responses of the pilot survey were examined individually and in bulk, it was clear that it needed drastic revision in some parts, and a host of minor alterations in others.

As far as the operations in the field were concerned, the population had on the whole been found co-operative, if a bit puzzled. In other quarters, however, the pilot survey had been received with mixed feelings. A number of European extension officers, who had kindly assisted with the onerous task of demarcating sample areas and with

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1) During which the local gaol inmates sometimes served as 'guinea pigs'.

other aspects of the survey organization, without having been fully enlightened about the purpose and underlying principles of the survey, were frankly sceptical about its value. The Swazi National Council, apparently likewise insufficiently informed, was showing signs of resentment, the possible effect of which upon the Swazi people could not be ignored. On the whole, there appeared to be a need for a greater effort in 'public relations', if the main survey were to have the necessary co-operation from all concerned.

In connection with the movement of enumerating personnel and their equipment, Masson's organization had withstood the severe strain placed upon it, but there was scope for improvement, especially with regard to the availability of transport and the liaison with supervisors and district administrative centres.

Perhaps the most urgent lesson learnt from the pilot survey was the need for a full-time Survey Officer. As part-time officer seconded to the survey, Masson had done a sterling job of organization together with Hughes, the Research Fellow; but both men had important other duties to perform and could not hope to cope with the much greater demands of a fully extended survey. Although faced with a shortage of staff, the Administration agreed to make a full-time appointment, and in September, 1959, Mr. Huw Jones was seconded to the project as Survey Officer in charge of co-ordination of all plans on the Swaziland front.

2. THE MAIN SURVEY:

2.1 Re-appraisal:

Our experience with the pilot survey provided a realistic basis for a re-appraisal of the problems we were likely to encounter in the main survey which we planned to execute in July 1960.

On the one hand we had, as a powerful stimulant, confirmation of our intiial belief that a comprehensive and statistically valid survey was indeed possible along the lines proposed by the Institute. On the other hand, however, we could not fail to recognize the ever widening scope and growing complexity of the main operation, and the grave risk of failure if its manifold and exacting demands were not adequately met.

'The Swaziland Survey', the Institute's Director observed in his Annual Report, 'is one of those things which begin with a rather appealing but obscure germ of an idea, which happens to be dropped in the minds of colleagues of a like disposition at the right moment.

Before you know where you are, there is a flurry of cross-pollination by several keen but differently oriented minds, and the thing grows and assumes shapes and dimensions which none of us could expect, but all of us could but accept as co-begetters of this hybrid child. And so we went on feeding and fostering it, in the hope that it would, in spite of its sometimes alarming fickleness and stubbornness, ultimately prove to be manageable'.

It was for the purpose of deciding whether the projected main survey would be at all 'manageable', that representatives of the Administration and Institute again met at Mbabane and Bremersdorp at year's end, 1959. From the academic side it was frankly admitted that, during the eighteen-odd months since the survey had first been mooted, it had grown from an attractive theoretical concept to a practical problem of almost alarming proportions. Furthermore, in order to succeed, it might well be necessary to enlarge rather than curtail the programme. But any such enlargement would inevitably involve more staff and greater expenditure.

The main aspects of the problemwere briefly outlined. To satisfy the statistical requirements, the rural sample would have to be refined by the inclusion of a number of squares in specially selected areas. The urban survey would have to be extended to the densely populated peri-urban areas. To account for the whole Swazi population, at least a modified form of enumeration would have to take place on the freehold farms, and similar returns should be obtained in respect of urban dwellers living at European premises (private homes, hotels, hospitals, etc.). To complement the employment data of our rural and urban surveys, we required special labour returns from all major employers of African labour, an exercise which might entail a good deal of official time and persuasion.

In a category of its own was the problem of obtaining reasonably satisfactory information on the agricultural production of the sample population, the sizes of their fields, etc., which were needed for the F.A.O. World Census.

Finally there was the urgent need to persuade the Swazi National Council to give its support to the survey.

In all except the last two problems, probably the most difficult question was personnel. The pilot survey had covered about one-quarter of the rural field which the main survey proposed to cover, and had not or barely touched the urban centres and other areas which had to be separately enumerated. Yet it had exerted a considerable strain upon the man-power placed at our disposal. More enumerators

and supervisors of adequate educational standard would have to be seconded by the Education and Land Utilization Departments. This might well cause a temporary dislocation of departmental activities, and for a longer period than the year before. The alternative would be to restrict the physical scope of the survey and/or to take drastic cuts in the questionnaire, both measures which would seriously impair the value of the survey.

The Institute's spokesmen advanced their arguments with a certain amount of diffidence. Having taken the lead in these plans from the beginning, they could not escape the uneasy feeling that, albeit in good faith, they had led a trustful Administration (as well as themselves) into a much bigger and more complex undertaking than the comparatively simple exercise they had originally envisaged. Moreover, they knew better than anyone else how slender the dividing line between success and failure had become.

The Administration's representatives did not take long to make up their minds. They wanted the information and could suggest no satisfactory alternative method of getting it. Under the circumstances it seemed to be a case of 'in for a penny, in for a pound'. If the Institute's team were still prepared to accept the challenge, the Administration was willing to do likewise, and to give the scheme the priority it required. In this connection one more issue had to be settled. In the original plans, provision had been made for the Administration to establish its own statistical unit to process and analyze the survey material. Although funds for this unit had been authorized, no staff or equipment had yet been obtained, and it was doubtful if these would be available by the time the main survey was carried out. Would the University accept the responsibility for processing and analyzing the survey material?

The Institute had processed the pilot survey returns and had no illusions about the magnitude of the work involved. Extra staff would have to be engaged, trained and accommodated in already cramped working quarters. For the small band of academic volunteers who were closely associated with the survey, it would entail many more months of voluntary work, squeezed into a tight schedule of academic duties and into the university holidays. Especially for Cruise, the statistician, the amount of work would be immense. On the other hand, they were scientists engaged in a research enterprise of fundamental and unusual interest, a bold adventure of their own creation. To see this through was worth considerable sacrifice in time and effort. A rough estimate of costs was made, the Administration promised to pay the bill, and the matter was settled.

Having thus resolved to go ahead with the main survey, the meeting now turned to technical problems, the most important of which was the question of agricultural yields. The pilot survey had proved the unreliability of yield estimates by field-holders. Actual measurements of quantities stored in bulk, even if acceptable to the population, were too laborious to be practicable within the limited time available to enumerators 1).

After much discussion a simplified approach to the whole problem was found. We assumed that, fundamentally, the F.A.O. was interested to know (a) whether people produced enough staple crops for their own consumption, (b) what was the extent of their shortage, (c) how big was the surplus. We decided to ask exactly these questions with regard to the 1959 harvest. 'Enough' would be the subjective assessment by each head of a household, subsequently quantified by taking the composition of his family and a reasonable rate of consumption 2) into consideration. 'Shortage' would be the actual quantities which

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1) Such results would at any rate have to be amplified by estimates of quantities consumed before and after harvest.
2) Various estimates of the consumption of maize (the Swazi staple crop) per person have been made, based on small food intake studies. In January 1961 the Institute for Social Research, again with full co-operation of the Swaziland Administration, launched a major nutrition survey in Swaziland, the results of which are expected by 1962.

a household had obtained by purchase or barter as a necessary supplement to an inadequate harvest; 'surplus' was the measurable quantity sold or left over after normal consumption requirements had been met. Similar questions were framed to obtain forecasts for the 1960 harvest. The Department of Land Utilization would provide a check on the latter set of figures by (a) estimating the anticipated yields per acre of standing crops in the sample areas, and (b) providing estimates on a regional and national basis.

Without a fairly accurate assessment of the acreage under cultivation, however, such estimates would be rather meaningless. This brought the meeting face to face with another major problem: how to measure the sizes of often irregularly shaped cultivated fields, a task which (the pilot survey had proved) could not be left with any confidence to enumerators.

2.2 The Land Use Survey:

The geographer on the Institute's team had from the beginning argued in favour of a land use survey through the use of aerial photography, but the cost involved, even on a random sample basis, had been considered prohibitive. It was in the course of finding a satisfactory solution to the problem of measuring cultivated fields in the sample areas, that his ambition was realized. In the pilot survey, aerial photography had been used mainly as a means of identifying sample squares. These photos, however, had been single 'shots', and their usefulness was strictly limited. For accurate field measurements, especially in an undulating country, stereoscopic photography was needed, a considerably more expensive venture.

With modern interpreting and mapping equipment, however, stereoscopic aerial photographs could add new dimensions to our survey. Not only would field measurements become a relatively simple matter, but an accurate picture could be provided of the full pattern of land use in the random sample areas.

The Institute's team pointed out that the University's Department of Land Surveying had the equipment and specialized staff to interprete this photographic material, and would probably be prepared to draw the land use maps on a cost basis. Once again the Swaziland Administration rose to the occasion, and after a thorough discussion sanctioned the new venture at our year's end meeting.

This welcome decision, however, further complicated our already complex survey plans. To reflect the land use pattern during the survey year 1960, and to give an idea of the volume of cultivation of various crops, the photography should preferably take place in February, when both late and early crops would be on the fields. Shortly afterwards, the completed photographs would have to be checked on the ground, to ensure the accuracy of their stereoscopic interpretation and to provide a basis for estimating crop yields in the sample squares. To be effective this ground check should take place during March-April. Considering the uncertainty about good flying weather in February, this tight schedule could easily be upset, but the risk was accepted.

It must be remembered that we also relied on aerial photography for the demarcation of sample areas and the identification of individual homesteads for our population survey. Lists of these homesteads had to be drawn up, not only to ensure that none would be omitted during the enumeration, but also to distribute the total load of work as evenly and economically as possible over the enumeration staff. Apart from this, we needed this preliminary information in order to prepare the tribal authorities and people involved for what was coming to them. In short, the photography programme had become a major cog in our census apparatus, and the success of the whole operation largely depended on the smoothness with which a vast amount of work in connection with these photos could be accomplished in a short space of time.

Ironically it was not the weather which upset our carefully worked-out plans, for the month of February, and even early March, happened to be unusually favourable for aerial photography. It was the photographer himself, to whom the task had been assigned, who fell ill and had to be rushed to hospital. By the time he had recovered and flying operations did start, in the middle of March, the Gods in their whimsy had turned against us. Weather conditions had deteriorated and an unseasonable crop of veld fires added a thick haze of smoke to the heavy early morning mists which often obscured visibility over much of the country. To add to the delay and frustration, a consignment of special photographic printing paper, unobtainable in South Africa, was unaccountably lost in transit.

It was not until the 10th of May that the first nine of a total of eighty-odd photographs reached Swaziland, and by that time harvesting was well underway. The pre-harvest ground control programme by the Department of Land Utilization was abandoned, and with it went our hopes of obtaining first-hand crop estimates in the sample survey.

It was fortunately still possible to use the photographs for area identification, and the preparation of homestead lists, but owing to their late arrival the planned publicity campaign was shelved. Instead, the District Commissioners were requested to notify the tribal chiefs and representatives of the Swazi National Council 1) in the areas concerned of our plans, in the hope that this information would be passed on to the people. The inadequacy of this measure was proved more than once during the enumeration.

2.3 Final Preparations:

During June, the final preparations for the population survey was completed in a rush of multiple activity of which Jones (Survey Officer) and Hughes (Research Fellow) bore the brunt in Swaziland. Like Masson before him, Jones was mainly responsible for the complex material aspects of the operation (transport, catering, equipment, stationery, etc.) and the co-ordination of various activities in a tight schedule. Meanwhile, Hughes prepared the innumerable details of a much enlarged and intensified training course for our field personnel, a ten-day curriculum of instruction interspersed with practical exercises which covered every aspect and foreseeable difficulty of the enumeration. He also arranged for the separate training of supervisors.

In Durban, the main questionnaire had been thoroughly revised and recomposed in the light of our previous experience. Everyone of its fifteen sections was designed to produce a comprehensive statement in the most concise manner. The composition of the form itself,

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1) Which gave its final approval to our plans on the 9th May, 1960.

the spacing of its entries and, especially, the phrasing of each question, had been cast and re-cast to suit the weakest element among our enumerating staff. Although a much improved instrument in comparison with its predecessor, the new questionnaire was also, alas, considerably longer, and the Institute's team viewed it with some dismay and a good deal of anxiety. For they knew only too well that every one minute spent on a superfluous question, might mean a ten-thousand-fold loss of time in the total survey operation.

The forms were printed in Swaziland on stiff triple-foolscap paper, and were ready in time for the training course.

The pilot survey had revealed the vital need for careful checking and cross-checking of completed forms at the earliest opportunity and before the enumerators left a sample area in which they had worked. The plan of supervision for the main survey provided that enumerators would work in pairs, and that, as a first check, an enumerator would examine the work of his mate at the end of every day. The second scrutiny would be undertaken by supervisors, each in control of a small team of enumerators, before the team left the locality 1).

In the training course, the checking and cross-checking of fellow workers' practical exercises were an important part of the instruction programme, for it was here that a wide variety of misunderstandings with regard to any part of the questionnaire was likely to be revealed, and that the need for accuracy (especially with regard to dates and ages) could be demonstrated by a rich harvest of discrepancies. As the course progressed, however, it was clear that in spite of every willingness to learn, the required standards would prove too high for some of the candidates, and at the end it was necessary to reject five of them.

2.4 Survey Operations:

The training course was wound up on the 9th July, and the enumeration staff was given a day's breathing spell. The following

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1) The third and fourth checks would take place at district headquarters and at the Secretariat at Mbabane respectively.

morning the main survey was launched. A report from the Survey Officer on the first stage of the operation reads:-

> 'Early on the morning of Monday the 11th July, the enumerators dispersed to the first of their sample areas. Many went by public transport, others were collected by Land-Rover, and several walked. In Mbabane last minute stores were being loaded on Land-Rovers. A thick white mantle of hoar-frost covered the ground, but the day itself was sunny and the weather, in fact, continued fair all through the enumeration period. Remarkably few transport difficulties were encountered, because of the close contact which supervisors and agricultural officers maintained with each other. While agricultural officers offered supervisors every facility for moving their teams from sample square to sample square, supervisors in turn tried all methods of keeping agricultural officers informed of their progress. In general, trucks were used to move teams and equipment, and where difficult country made this impossible, relays of Land-Rover loads were organized. Methods of communication ranged from the latest type of Italian motor scooter and the radio telephone, to using passing motorists to convey messages and, in the last resort, runners'.

Meanwhile, in Durban, where the University had just opened its doors to a massive international Education Conference to celebrate its Golden Jubilee, the Institute's Director read a telegram received from Swaziland, and passed round the word to his colleagues that the Swaziland Survey had finally been launched and, 'believe it or not, is proceeding according to plan'.

It was not until the 21st July, ten days after the sample survey was launched, that an Institute team (Holleman, director; Cruise, statistician and Jooste, demographer), were able to visit Swaziland, having all been involved in the Conference at their University. The news they received was reassuring. After the succession of difficulties which had beset the preparatory stage of the survey, the actual operation was unfolding itself with surprising smoothness. There was

a high spirit of adventure, and a gratifying display of initiative and successful improvisation by individual enumerators whenever they were faced with odd situations and problems for which their training had not specifically prepared them.

Insufficient prior publicity had made it necessary in many areas for enumerators and supervisors to act as their own ambassadors. Although in one or two places serious difficulties were initially encountered, the population on the whole responded in a spirit of good humoured co-operation, and with almost complete absence of the 'resentment' which some speakers in the National Council meetings had predicted some months earlier.

Yet the situation was not completely free from anxiety. While some teams and supervisors were turning out splendid work, others revealed persistent weaknesses in their treatment of certain sections of the questionnaire. These needed immediate corrective measures and the re-doing of a considerable amount of work, which resulted in the loss of much valuable time. The teams operating in the Highveld moreover found their working hours cut short by the severe cold which fell upon them as soon as the sun went down; and instead of being able to cross-check each other's batch of completed returns in the evening, as had been planned, the poor fellows had to beat a shivering retreat under their blankets to avoid being frozen in their frosty tents. Since a large proportion of the enumerating and supervising staff were teachers who could not be spared from their normal duties beyond the end of the school vacation, lost time had to be made up over the weekends.

The first team to complete its task finished work in the Stegi area on the 27th July; and on the 30th, all enumeration in the sample areas, with the exception of the work of two teams, had been done. At the various district offices hundreds of large manilla envelopes, each one containing a batch of returns relating to a Swazi homestead, piled up. They were checked, provided with the necessary code references and summaries, bundled together according to sample square, and despatched to the Secretariat at Mbabane. There, each individual form and entry received a final check, before the material was packed and sent off to Durban by special road transport a few weeks later.

3. OTHER SURVEYS:

Although by far the greatest effort went into the random sample population survey of the Swazi rural area, this was not the only survey which took place. In order to complete the national picture, several other surveys had to be undertaken. Although most of these had been recognized from the beginning, it was not until our joint meetings

in December 1959 and January 1960, that we had been able to present our plans in fair detail. These concerned -

1. an urban and peri-urban survey of Swazi settlements;
2. an urban survey of Swazi housed on European premises;
3. a labour survey of major employers;
4. a livestock survey relating to the random sample areas;
5. a land use survey of the random sample areas.

The land use survey was mentioned earlier, and will be discussed in detail in Chapter III; the other surveys may be briefly outlined in the present chapter.

3.1 Survey of Urban and Peri-Urban Swazi Settlement:

Even before the pilot survey of 1959, it was clear that the 'grid pattern' of sampling, used for the rural areas, could not be applied to the much more densely populated areas of urban settlement. For the latter another method of random sampling was therefore designed. Prior to the enumeration, complete lists of Swazi homesteads were drawn up of the dense settlements at Mbabane, Manzini, Hlatikulu and Goedgegun, Stegi and Pigg's Peak village, and of these lists random samples of varying proportions were selected for full enumeration. At Mbabane and Manzini, where the Swazi homesteads had been plotted on maps, it had been our original intention again to use some form of miniature grid pattern. But the problems of demarcation proved too difficult and these townships, too, were therefore enumerated on the basis of a random sample of complete homestead lists.

No urban enumeration took place during the pilot survey, which did, however, include among its sample 'squares' at least one which covered a large part of Kwaluseni, a 'peri-urban' dormitory settlement some five miles outside Manzini. We mentioned before that, when the 1959 results were analyzed, the returns for this sample square were so different from those of all other rural squares, that all peri-urban settlements were excised from the rural survey and enumerated in the same manner as the urban areas, that is, by a random sample of previously prepared list of homesteads.

In the main survey of 1960, the urban and peri-urban population sample received full enumerating treatment. That is, the same questionnaire was applied, with this difference, that a series of questions relating to housing and urbanization was substituted for the detailed section on agriculture applicable to the rural population.

In the survey we had to guard against the possibility of duplication. The Swazi population, in common with African peoples elsewhere, are in a state of transition. Many urban 'settlers' have not severed their ties with their rural home districts, in which they retain landed interests, if not some of their dependants. In this situation it might happen that an absentee father or son would be enumerated as an (absent) member of a rural household, and again as a member of some urban Swazi community. To avoid duplication in the total estimate, an arbitrary 3-year period of continuous urban residence was laid down which disqualified a person from inclusion in the rural population count and qualified him for the urban count. Full details about such persons were, however, to be taken down in both areas, and the decision whether to include such a person in the rural or urban count, would be left until the counting stage. In this way dual-based persons would be reflected in their domestic context both at the rural and urban end but not duplicated in the total population count.

The urban and peri-urban survey, though following a different sampling method, was carried out as part of the main survey operation.

3.2 Survey of Swazi in European Urban Quarters:

For the purpose of a population count it was necessary to enumerate those in the urban areas who did not normally reside in an African township, that is, employees (with or without dependants) sleeping at their employers' premises (i.e. domestic servants, staff of schools and hospitals, hotels, employees of the Administration housed in compounds, etc.). Since we could not under the circumstances expect employers to complete the full questionnaire with regard to their employees, and since the relatively small number of people involved did not seem to warrant an eleborate random sampling method, we decided to aim at the fullest possible head count with the barest minimum of personal details (mainly: sex, adult or juvenile status, length or urban residence).

The necessary forms were distributed by the District Commissioners concerned, and in the smaller urban areas yielded a full return. In the larger centres (Mbabane and Manzini) the shortage of staff led to insufficient administrative control of this part of the census and although, after very considerable delay, efforts were made to gather outstanding forms, it is doubtful whether more than 85% or 90% of those distributed could finally be accounted for. Since the exact extent of this shortfall was unknown, no allowance was made in the final population count. The error is, however, unlikely to exceed 300 people.

3.3 Freehold Farm Survey:

There are some 850 freehold farms in Swaziland (the vast majority in European ownership), and their Swazi tenant population could not be neglected. To include them in the total population count we first decided to sample the farms. The results of this effort were so unsatisfactory that we followed this up at a later stage with an enumeration (sex and simple age breakdown only) covering all farms during the annual agricultural census, in October 1960.

3.4 Labour Survey: Major Employers:

The random sample surveys in the rural and urban areas covered a good deal of the employment history of Swazis of working age. From this information we expected to be able to draw a fairly accurate picture of the distribution of labour, duration of employment, turnover, wage levels, etc., as seen from the side of the employees and their families. We considered it useful, however, to check these findings against employer returns. It had for some years been obligatory for employers of fifty and more labourers to provide the Swaziland Labour Officer with a quarterly return. Adapting this periodic effort to suit our requirements, a special form was designed, which was first sent out at the time of the pilot survey in 1959. The returns, apart from being far from complete, left so much to be desired that for the main survey a carefully drafted explanatory note was enclosed with every questionnaire, in an appeal to employers to take this exercise more seriously. This time the response, though still far from perfect, was more satisfactory. All but two employers supplied the required information which, after being checked by the Labour Officer at Mbabane, was forwarded to the Institute at Durban. For the inclusion of subjects in the total population estimate, the 'three-year rule' (see section 3.1 above) again applied.

3.5 Livestock Survey:

In order to save time (and to avoid possible resentment from the population) it was decided not to ask questions about livestock ownership during the actual enumeration. Information about individual livestock holdings was available in detailed and up to date form in the diptank registers, and could be abstracted from these at any time we required. During the population survey, therefore it was sufficient to take down in each case the reference number to the particular diptank registers. Subsequently, after the survey returns had been coded, lists of these reference numbers were sent to Swaziland, where the Department of Land Utilization checked on their records and provided the figures we required in respect of the livestock holdings of our rural sample population. It will later be seen how this, in turn, provided a welcome check on the reliability of our sampling methods.

4. PROCESSING:

4.1 The Battle Against Time:

The main random sample survey of 1960 yielded a vast amount of material. Weighing nearly one ton it formed, if stacked in a single pile, a paper column of some sixty feet high.

The Institute for Social Research had accepted the responsibility of processing and analyzing this material when the Swaziland Administration had been unable to implement its plans to establish its own statistical office. The Institute was equipped for research requirements of much more modest proportions. It had a single 40-column Powers-Samas sorter and one card-punching machine. Moreover, it had neither regular operating personnel nor, in fact, sufficient accommodation for a large-scale operation.

With the assistance of one or two fellow departments in the University, and a considerable amount of carpentry, additional space was provided for storage and extra staff, of whom we engaged and trained fourteen for the coding operations.

The basic problem, however, was time. Experience with similar operations concerning the pilot survey had shown that, once the University term had started, the academic staff involved in this survey were too heavily committed to their normal duties to give them much spare time for supervision and analysis. All the information would therefore have to be coded, transferred to punch cards and largely sorted, by the end of the academic year (November), so that the tabulation of the results and some of the analyses could be done during the long University vacation. Given favourable circumstances, it was hoped to complete the full report in draft form by the middle of 1961.

The first load of material was expected to arrive from Swaziland during the first or second week in September, after having been finally scrutinized by the Survey Officer and a small staff at Mbabane. Six to eight weeks were considered the minimum time required for coding, provided the material did not raise many queries which required an answer from Swaziland. With regard to the pilot survey material, such queries had resulted in many weeks' delay, and we had hoped to avoid a similar experience by organizing a four-stage checking scheme in Swaziland before the material was to be despatched to Durban. Although even then the results were not perfect, they were a vast improvement upon the 1959 returns. Less than one-hundred forms (.6% of total) had to be returned for further attention - enough to raise some mild irritation, but insufficient to cause despair.

Most of the card punching could be done concurrently with the coding, and an extra ten days was added to the time table to finalize the preparations for the sorting stage 1).

We realized that, with the wealth of material on hand, sorting operations could be extended almost indefinitely, as each expert would wish to apply a wide variety of correlations within his own field. In order to curb this scientific appetite, and in view of our limited sorting facilities, the Institute team had agreed to prepare a preliminary report containing the basic results of the survey by the end of the year. All refinements were to be left for the main report which we hoped to issue during 1961. Both the coding and punching programmes were therefore designed to make the early production of preliminary results possible.

We had hoped to include in our preliminary report also the principal findings of the complementary surveys (freehold farms, European urban premises, employers' returns), since without these no generalization about the total Swazi population could be made. Both Jones and Wilson (Labour Officer), however, had great trouble in collecting the returns which had been sent out all over Swaziland for these purposes, and the first report (December 1960) had to be confined to the rural sample areas.

Because Holleman (Institute's Director) was at the time heavily committed to urgent other research, Cruise (statiscian) undertook the responsibility of organizing the processing of the survey material, which demanded an immense amount of his time. In this task he was loyally assisted by Hughes, who had moved to Durban at the end of his anthropological field period, by Jooste (demographer), Daniel (geographer) and John Burrows (economist and labour expert).

In spite of the sustained hard work on the part of this small academic team and the temporary staff at the Institute, the time-table could not be fully maintained. By the middle of January, 1961, when

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1) When we began to exceed our time limits, part of the punching job was handed over to a commercial firm.

we had hoped to have most of our material in tabulated form ready for analysis during the latter part of the University vacation, we were awaiting information without which we could not begin to draw comprehensive conclusions from the hundreds of tables which Cruise's team had prepared. The very danger which the processing of the pilot survey had revealed and which we had so hoped to avert in the main survey, was upon us. The long vacation was slipping by without the possibility of 'breaking the back' of the main report. For this reason, and also to rectify some of the inevitable omissions in the first preliminary report, it was decided to prepare a second preliminary report (May, 1961), on parallel lines as the first, this time dealing with the urban, peri-urban and specially selected 'border' areas. By this time, however, the academic year was in full swing, and progress had become painfully slow. It had taken three weeks of vacation time to produce the first preliminary report; it took nearly ten weeks' of term-time to issue a second report of similarly modest proportions.

By the middle of the year two major blows fell. Cruise, who had been the pivot of the entire project and without whom, in fact, the Swaziland Survey could not have been undertaken, was appointed to the Chair of Mathematics at Rhodes University, and left in July. Although, characteristically, he took a pile of survey work with him and remained available for consultation from time to time, his departure left an irreplaceable void.

At about the same time, Burrows accepted a post in the Southern Rhodesian civil service before he could write up the Employment section of the survey of which he had been the principal architect. Owing to the unconventional manner in which this section had been constructed, it was difficult to find a substitute who could extract from the material the full range of possibilities which had been built into it.

Faced with these set-backs the Institute's Director had to report to the Swaziland Administration that the original target - the completion of the first draft of the main report by the end of July, 1961 - could not be achieved, and that the report would be delayed.

4.2 The Transmutation of Survey Material:

For most of the time the processing of census material is a tedious job. The coding operation is the routine of translating disembodied and apparently insignificant facts into an endless succession of pre-selected code numbers which ultimately cover thousands of identically block-printed sheets of paper. These numbers in turn determine the almost infinitely varied but equally obscure patterns of perforations which must be punched in thousands of identical little cards.

Both coding and punching are soul-destroying tasks. Both call, however, for great accuracy and therefore constant vigilance, in spite of tedium. Fourteen temporary staff members were engaged for this task, jotting down numbers for eight hours a day over eleven weeks.

In the meantime, those of us who had watched the gathering of this information in the villages of Swaziland, perceived an odd sense of detachment, if not of unreality, as we witnessed its transmutation.

We had looked upon this survey in the first place as a human undertaking. It had involved the training of scores of people, who had moved in all directions over hundreds of square miles of country, sitting down in a thousand and more homesteads, interviewing many thousands of people, old and young, men and women, recording the numerous facts which outlined the individual histories of all these different lives. For thousands of people the survey had been something deeply personal, a compelling hour during which memories had to be evoked and the events of a life time reviewed - childhood, courtship and marriage, the birth of one child, or the death of another, the first earnings or the last employment, the day a husband left his family, or a wife her husband. But soon afterwards the inevitable process of 'depersonalization' began, when this vast collection of human experience was being reduced to impersonal bundles of paper, one ton of 'material'.

During the coding stage, very occasionally, the personal element would still strike a feeble spark, as in the odd marginal scribble of an enumerator at the end of a wearying day - '<u>this person was very kind to us but had great trouble.....</u>'; '<u>this woman's husband left a long time ago and she does not know where.....</u>' but it was soon completely extinguished in the reams of handwritten code figures. Then, even this human touch was wiped out by the punching machine, which reduced every bit of information, whether it concerned a stillbirth or a bag of mealies, to a little hole in a piece of pasteboard. And when this process was completed, the immense volume and infinite variety of human responses to our personal enquiries into the affairs of thousands of living people, were reduced to piles of uniform small perforated yellow cards, neatly stacked on edge in long filing trays, laying side by side on top of a single office table.

The long dreary weeks of coding and punching, and tabulation begins, when the first batch of cards is driven through the sorter with the sound of muted machine-gun fire. The change in atmosphere is almost as dramatic as when a prolonged drought is suddenly broken by a bursting rainstorm. Barely suppressed boredom abruptly changes to keen expectation as the clattering machine flicks hundreds of cards per minute into a row of numbered compartments, where indivi-

dual little counters record their totals.

But tabulation itself is a long and meticulously prepared process, and all that emerges after days and even weeks of sorting is a mounting pile of hundreds of tables containing thousands of big and small totals and the preliminary correlations of these.

This is the material which is handed back to the experts. In a sense it is still raw material, in spite of its distilled and classified form. On the surface it reveals little more than a huge jumble of figures, which even to a practiced eye often fail to show any pattern, however vague. But the scientist goes to work on them, with pencil, paper and calculator, adding or multiplying some figures, subtracting or dividing others. In the beginning he follows the fundamental rules his discipline has taught him. But as the broad patterns being to emerge (or sometimes, fail to emerge), he starts playing his hunches, and before long he is feverishly beating a way through a mental tangle which may ultimately lead him to a revelation, or (probably more often) to a dead end.

Perhaps the most important requirement of this exciting hunt for meaningful results is that the research worker whould live with his figure material for most of his waking hours. For there can be few things more disheartening than closing following a promising trail and then having to interrupt the search for days or weeks because of other duties. In this respect the small handful of volunteer workers at the Institute had to fight a grim battle in the face of heavy teaching duties.

By the end of June, 1961, the fundamental facts of Swazi life and economy had been computed. The patterns they revealed were being cast into selected tables, diagrams and maps. What remained now was to write the text in which their implications would be analyzed in a series of chapters which would form the solid core of our Report. And in the writing it would be possible for us to revert to our original premises and orientation with regard to our survey, for the ultimate abstractions and condensation of our material would again be cast in terms of human problems and the interpretation of man's behaviour in his struggle to make a living.

4.3 The Total Swazi Population:

We had emphasized from the beginning that the principal value of a random sample survey would be the broad patterns, relative values and comparable norms which it would reveal, and we repeatedly stressed that, whenever we had to multiply our sample figures in order to arrive at regional or national 'totals' we could not accept their accuracy except within a certain margin of probability.

Privately, Cruise had expressed the hope that with our sampling methods it might be possible to keep this margin to between five and ten per cent. When the results of the pilot survey came in, however, and the standard deviations revealed a far greater degree of heterogeneity in our major stratification than we had bargained for, Cruise glumly predicted that 'we might well end up with something closer to twenty per cent.

Although for the main survey we had refined our sampling methods to some extent (mainly by separating peri-urban and rural areas, and by adding a number of squares in special selected areas), we also found to our dismay that at least three of our random sample squares in one stratum alone had landed in virtually uninhabited 'Lifa' land, and the effect of this twist of pure chance would not be known until the results were calculated.

In any population census, one figure reigns supreme: the grand total of all heads counted. In spite of our academic arguments extolling the virtues of 'patterns' and berating the relative unimportance of exact 'totals', there was no escaping the impression that, by and large, our friends of the Swaziland Administration were still keenly interested to know what our random sample exercise would turn out for the total figure of the Swazi population. Nor could the Institute's team deny that, in spite of all their lofty academic preferences, this very question had a peculiar and powerful fascination. The problem was the more intriguing because the total of just under 230,000, produced by the 1956 official census (a full count) was widely believed to be a considerable under-statement; and there were a number of officials who were convinced that the actual figure 'should be' between 250 - 300,000.

At a meeting at Mbabane, late in 1959, Cruise had made some rough calculations on the basis of our pilot survey, and thrown out the suggestion that the number in the Swazi rural area might be not more than between 170 - 187,000. Since the number of Swazi living in townships and freehold farms was not expected to exceed 25,000, his remark had been received with mild derision. While no one present took this estimate seriously, since it was based on a preliminary exercise involving a sample of about one per cent, there was, somehow, the tacit understanding that the main survey would have to produce a considerably better figure in order to prove its merits. For this reason Cruise was in no hurry to anticipate its final result. The first preliminary report confined itself to the figures of the rural sample areas, and made no attempts at generalizations except that it gave, in its introduction, the tentative multiplication factors for the various physiographic strata. The second preliminary report (urban, peri-urban, and border areas) did not even mention multipli-

cation factors, for these were at the time in the process of being revised in the light of the latest stereoscopic measurements coming in from the University's Surveying Department.

It was not until late May, 1961, when most of the returns of the complementary population counts (European premises, freehold farms, etc.) had been analyzed, that Cruise made an attempt to draw the available threads together, and arrived at a preliminary total estimate of about 213,000, plus or minus 10%. There were still a number of outstanding refinements, but he doubted whether these would make a substantial difference. It was at any rate most unlikely that our effort had produced a total not very much different from that of the pilot survey.

Our first reaction was one of disappointment and of uneasy doubt about the validity of our sampling methods. So we critically re-examined our premises, modifying some of our stratifications as far as this was statistically permissible. None of our efforts produced substantially different results.

We then searched for comparable material, and found some local population counts (among others, the malaria control survey of 1960) which, carefully analyzed, provided some basis of comparison in certain regions. These results were fairly re-assuring.

At about the same time Hughes and Daniel decided to compose a population distribution map directly based upon the detailed returns of the 1956 census. In the course of this painstaking work they found that on several occasions the reported district totals were higher than the broken down figures could account for. Although it was impossible to make accurate checks, the 'discrepancies' seemed to range from a few hundred to several thousand in each case, and that the total 'inflation' might well amount to some ten-thousand souls. This rendered the 1956 census suspect to us, and we lost the sense of obligation of having to 'compete' with it.

Nevertheless, before he left for Grahamstown, Cruise decided once again to examine the entire structure of our population count. Three weeks later he sent us by post a sheaf of calculations, and a reasoned resume of all the factors which had guided him to his final estimate. With a coefficient of variation of 9.47%, he put the total indigenous population of Swaziland in 1960 at 220,798.

Even without further confirmation of the reasonable accuracy of our sampling methods, the Institute's team was prepared to stand by this figure, Within a week, however, Hughes turned up a trump card. The lists of dip-tank reference numbers of our sample popula-

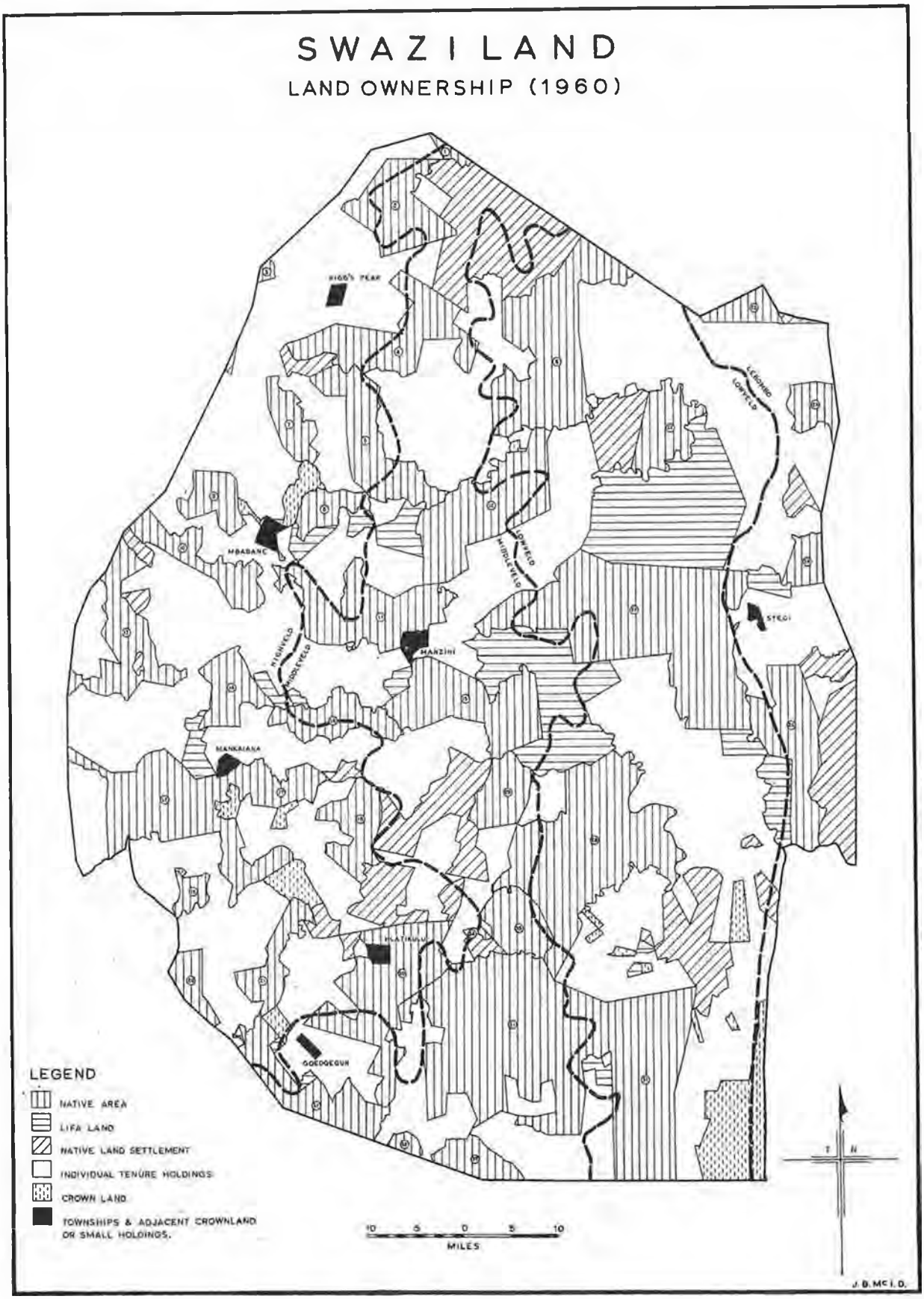
tion, which had been sent to the Department of Land Utilization, had been returned with the relevant information regarding individual cattle holdings. Adding up the figures of the sample squares, he found the man-beast ratio to which he could apply the multiplication factors for our regional stratifications. When he had finished his rough calculations he had arrived at a national total which was within a few per cent of the official cattle count for 1958. Cruise's modest reply to this splendid bit of news came back by return of post: 'a very encouraging agreement'. Slight adjustments still had to be made to render the rural survey area closely comparable to the total area involved in the official cattle count. This was done when the returns of the Department's stock census of August, 1960 came to hand. In the final comparison our random sample multiplications revealed a discrepancy of minus 1.6% of the official cattle count. With this result we considered that the accuracy of our sampling methods had been sufficiently established.

4.4 Conclusions:

It had been our aim to establish for the Swaziland Administration a statistical instrument of 'sufficient stability to allow comparative analyses to be made from time to time in order to assess the trends and measure of development, and of sufficient flexibility to permit the assessment of local differences, present and future'. This we have done.

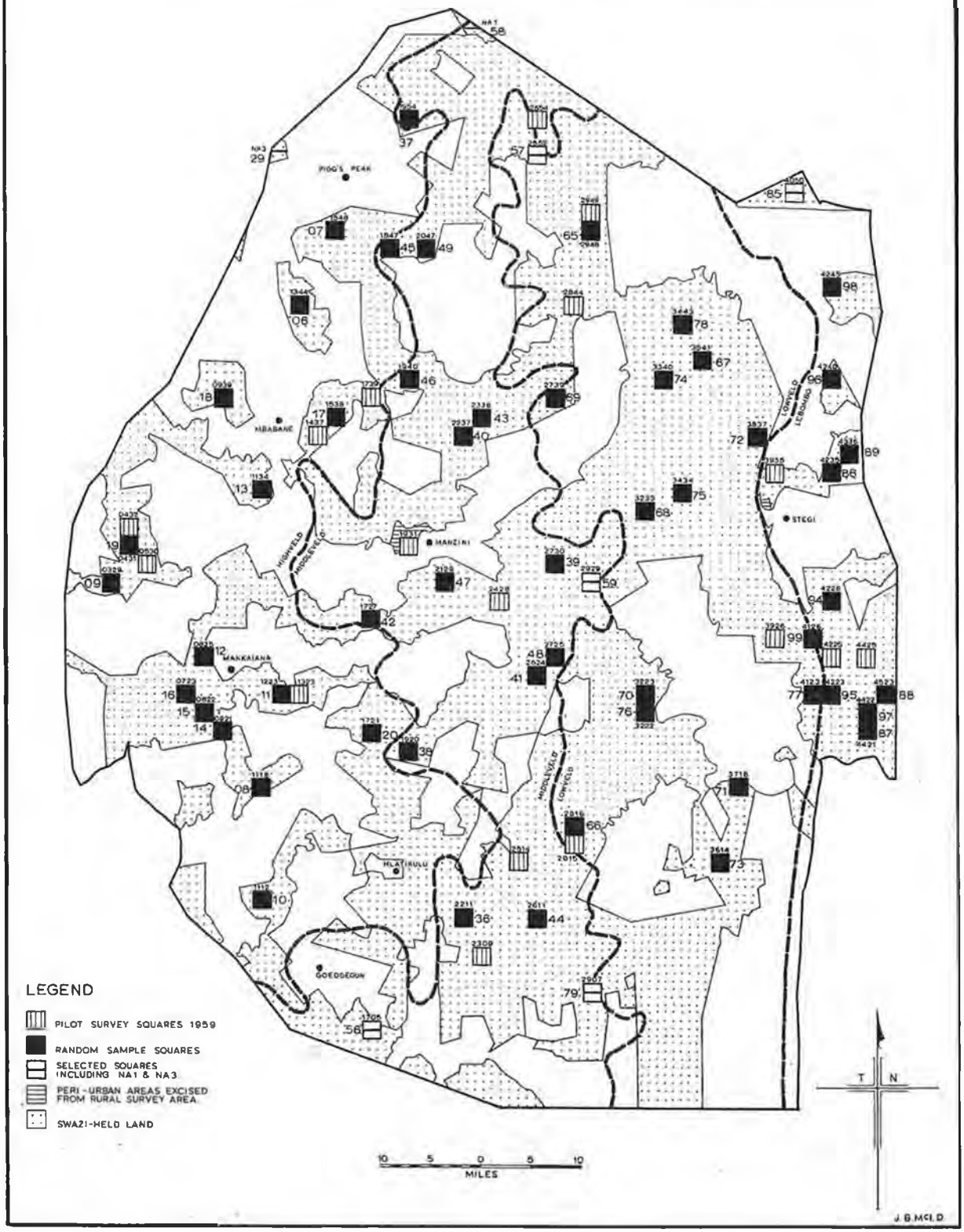
The next chapter is a detailed technical account of how this instrument was constructed and its effectiveness subsequently improved in the light of our own use of it during the 1959 and 1960 surveys; and finally, of how its accuracy was critically tested and found to be reasonably satisfactory.

It is possible (especially after the next chapter) that the reader is left with the impression that what we now hand back to the Administration for its future use is an apparatus of discouraging complexity. Such an impression we must correct. The complexity and intricacies of the scheme were essentially connected with the process of its creation and first trials and are, therefore, not recurrent. The product itself is a fairly simple and reliable measuring tool: a small land and population sample consisting of a few dozen fixed and well-charted bits of Swazi-occupied country within accurately defined and meaningful strata of enumeration; plus a handful of known and reasonably accurate multiplication factors for generalizations on a regional or national scale.


SWAZILAND
LAND OWNERSHIP (1960)
HIGH'S PEAK
MBABANE
HIGHVELD
MIDDLEVELD
LOWVELD
LEBOMBO LOWVELD
MANZINI
STEGI
MANKAIANA
HLATIKULU
GOEDGEGUN
LEGEND
NATIVE AREA
LIFA LAND
NATIVE LAND SETTLEMENT
INDIVIDUAL TENURE HOLDINGS
CROWN LAND
TOWNSHIPS & ADJACENT CROWNLAND OR SMALL HOLDINGS.
10 5 0 5 10
MILES
T N
J.B.McI.D.

SWAZILAND

DISTRIBUTION OF AREAS SURVEYED (1960)



The tool itself has proved to be adequate for the dual purpose of revealing, in fair detail, the essential characteristics of the Swazi population, and of the patterns of land use. It is the handling of it that still offers most scope for refinement and improvement: the composition of the questionnaire and the exploitation of pre-coding possibilities, the training and supervision of enumerators, and the checking of returns. But in this respect, too, we leave in this volume a record of our experiences, a critical account of trial and error and of the lessons we have learnt. We feel this to be as essential a part of the record of our stewardship as the information which we set out to collect, and to have failed to do this would have been tantamount to offering to prepare a special dish at a host's house and to depart without leaving the recipe. Moreover, it may well be that what proved feasible in Swaziland may find useful application somewhere else, in which case our successors have the right to benefit fully from the lessons we learned the hard way.

Finally, our sample survey is an example of a fruitful partnership of a Territorial Government and an Academic Institution for the pursuit of a common venture of vital interest to both. If the Institute from its side helped to obtain information of fundamental importance to the Swaziland Administration in the planning and practical application of its development policies, the Administration again opened a rich field of scientific research and generously contributed the means with which to explore it.

It is not only for the scale of this contribution, but also for the manner in which it was granted, that this Institute would like to pay tribute to its senior partner.

CHAPTER II

THE STATISTICAL FRAME

(S.E. Cruise
J.F. Holleman)

1. SAMPLING AND STRATIFICATION:

1.1 Sampling Criteria:

In view of the decision to conduct a comprehensive survey on a random sample basis, and as far as possible within a single statistical matrix, the main problem for the statistician was to design a frame within which a number of sometimes divergent demands could be reconciled.

Some of these demands are here listed:-

(a) The provision of a sampling pattern which could be used, not only to obtain representative information with regard to population characteristics, but also regarding land and its usage. The latter requirement prescribed some form of area sampling.

(b) The sample had to be geographically sufficiently defined to permit generalizations on a national scale with a reasonable check on the accuracy of the results; at the same time it had to be flexible enough to permit differentiation between the main geophysical regions of the territory (if possible between one locality and another), and between urban and rural areas.

(c) The design of the sample should preferably be of a permanent nature, that is, it should be possible to use the same matrix or matrices in successive surveys, to ensure the comparability of their results and thus making it possible confidently to assess the measure of change or development in the intervening periods.

In our view, the main weakness in Professor Batson's sampling scheme of 1950 had been the uncertain spatial definition of the 'dip-tank areas' which made generalizations difficult. Moreover, since their delimitation is subject to alteration from time to time, they are less suitable as a frame for comparable subsequent surveys. Apart from these objections we had some misgivings about the true randomness of this sampling method, since homesteads on the fringes of these areas appeared to have less chance of being included than those nearer the centre.

1.2 Sampling and Code Numbers:

Having decided upon area sampling as a common frame for both the population and land survey, we looked for standard units of convenient size. The 1:50,000 topographic map of Swaziland suggested such units in its marginal metric marks. These range from 229,000 in the west to 364,000 in the east; and from 1,478,000 in the south to 1,656,000 in the north. These northings and eastings provide a grid pattern upon which we based our standard sample units, squares of 3.000 x 3.000 metres each. Read in kilometres, their numbering on the map moreover provide a convenient basis for identification, which we coded as follows:-

EASTINGS			
Grid markings (kilometres)	Code	Grid markings (kilometres)	Code
229-232	01	1478-1481	01
232-235	02	1481-1484	02
235-238	03	1484-4187	03
etc. to		etc. to	
361-364	45	1655-1688	60

Using four-number codes, the first two numbers of which referred to the coded eastings grid-line and the latter two to the northings grid-line, each individual square was not identifiable by a single code related to its recognized geographic boundaries. For instance, the standard-size 'square' bounded by grid-lines 235-238 eastings and 1655-1658 northings received the code reference 0360. In the same way, the square bounded by eastings 238-241 and northings 1568-1571 was coded 0431.

Sampling took place with the help of Kendall and Babington Smith's Tables of Random Sampling Numbers. Taken in groups of four figures, of which the first two had to represent 45 or less, and the last two, 60 or less, four-number references to the selected map squares were obtained.

1.3 Stratification:

Apart from physiographic strata (below) we had to distinguish four categories of areas for the Swazi population census:-

Rural Swazi Areas
Swazi Urban Areas
European Farming (freehold) Areas
Crown Land

Of these, only the first-mentioned, and by far the most important category, was to be sampled within the grid pattern outlined above. For the other areas, in which the Swazi occupation pattern is different, other sampling (if not enumerating) methods were required. Originally, the peri-urban areas formed, for the purpose of sampling, part of the Swazi rural land category. When, however, a peri-urban area was returned in the pilot survey, not only the density but also the characteristics of its population were so different from the rest of the rural sample that this type of area was removed from the rural category, and sampled in a manner similar to that applied to the Swazi urban areas.

The rural Swazi areas are irregularly scattered over the whole territory. For this reason all random references to squares situated outside their recognized boundaries were rejected, until an ordered random sample of squares all falling inside the rural Swazi areas was obtained.

Owing to the varied nature of the country and the diversity of its ecological conditions, it was decided to incorporate in the sampling pattern the four major physiographic strata, which run in roughly parallel strips from south to north. These are (from east to west):-

Highveld
Middleveld
Lowveld
Lebombo

There is some difference of opinion with regard to the exact demarcation of these strata, but on the whole the classification by H.J. de Blij 1) was followed, on certain points modified by G. Murdoch.

The selection of the random sample squares was continued until each of the above strata was represented by a list of about 25 squares, separately numbered (in four blocks: 1-29; 30-59; 60-79; 80-99, one block allocated to each stratum) in the sequence in which they had been selected. This identification was additional to the four-figure (map) reference numbers mentioned earlier.

Apart from the random selection, eight special squares and other territorial slices were chosen by the geographer, either because they were expected to reveal some peculiarities, or in order to provide a more balanced representation of certain type of area. In this manner some border areas, Land Settlement areas, and the so-called National Lifa lands were specifically represented, and their enumeration could be handled either in conjunction with, or separate from, the random sample areas. Since the selection of random sample squares for enumeration did not exhaust the block allocations of numbers, these special areas were given their numbers within the blocks related to their respective strata.

1.4 Selection of Rural Sample:

For the pilot survey of 1959 it was intended to enumerate five squares each from the Highveld, Middleveld and Lowveld, and four from the Lebombo as follows:-

Stratum	Square Code No:
Highveld	1 - 5
Middleveld	30 - 34
Lowveld	60 - 64
Lebombo	90 - 93

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1) Journal of Geography, Sept. 1960, Vol. I, 7.

Actually, the enumeration only covered five squares in the Highveld, four each in the Middleveld and Lowveld, and three in the Lebombo. No. 31, close to Manzini, caused the decision to excise all peri-urban localities from the rural sample and to treat them as a seperate stratum for sampling purposes. No. 61 (2948), situated next to No. 63, was omitted in the pilot survey but subsequently included in the main survey (re-numbered as 64). Likewise, No. 92 (4228), left out of the pilot survey, became No. 94 in the main survey.

The pilot survey revealed that the variability in the Lebombo was much greater, and in the Highveld slightly greater, than in the Middleveld and Lowveld. To improve the accuracy of the results of the main survey, the number of random squares per stratum was therefore modified as follows:-

Highveld -	15 squares
Middleveld-	14 squares
Lowveld -	13 squares
Lebombo -	10 squares
Random Sample Total -	52 squares

To these were added the eight specially selected areas (not all of them 'squares') to which we earlier referred. They were:-

(29) the whole of Native Area 3 (Mlembe, near Havelock), a border area.
(56) square 1705 in Native Area 21 (a border area).
(57) square 2652 in a planned Native Land Settlement Area in the north.
(58) the whole of Native Area 1 (a border area).
(59) square 2929, in a Lifa Area, since this type of area was considered to have been underrepresented.
(78) square 3443, in Native Area 22.
(79) square 2907, in Native Area 31.
(85) square 4050, in Native Area 23 (Nomahasha, a densely populated border area, a Portuguese town being just across the border).

For the main survey, the rural scheme was therefore as follows:-

Stratum	Random Areas		Specially Selected Areas	
	Code No.	Map reference	Code No.	Map reference
Highveld	06	1344	29	NA 3
	07	1548		
	08	1118		
	09	0329		
	10	1112		
	11	1223		
	12	0825		
	13	1134		
	14	0921		
	15	0822		
	16	0723		
	17	1538		
	18	0939		
	19	0431		
	20	1721		
Middleveld	36	2211	56	1705
	37	1954	57	2652
	38	1920	58	NA 1
	39	2730	59	2929
	40	2237		
	41	2624		
	42	1727		
	43	2338		
	44	2611		
	45	1847		
	46	1940		
	47	2129		
	48	2725		
	49	2047		
Lowveld	65	2948	78	3443
	66	2816	79	2907
	67	3541		
	68	3233		
	69	2739		
	70	3223		
	71	3718		
	72	3837		
	73	3614		
	74	3340		
	75	3434		
	76	3222		
	77	4123		
Lebombo	86	4235	85	4050
	87	4421		
	88	4523		
	89	4336		
	94	4228		
	95	4223		
	96	4240		
	97	4422		
	98	4245		
	99	4126		

A total of sixty sample areas was considered the maximum that the survey organization could handle in the rural strata.

1.5 Other Enumerating Methods:

When the pilot survey revealed that random sample square No. 31 (near Manzini) had characteristics radically different from the other rural areas, it was decided to excise all peri-urban localities from the rural area and to treat them separately. The procedure followed near Manzini illustrates the methods we applied. In this case an arbitrary boundary was drawn around the population settlement, enclosing an area of 4,625 areas. All homesteads (451) in this area were listed and numbered. From this list 63 were selected by random sampling numbers and earmarked for enumeration in the usual way. The excision of such peri-urban areas required adjustments in the total regional acreages.

Complete lists of Swazi homesteads in the urban areas were likewise obtained, sampled in a similar random manner, and subjected to the full questionnaire.

With regard to some areas the main purpose of enumeration was merely to bring them into account for an estimate of the population total. European farmers were required to furnish returns of their squatters' population (sex and age-group only); European occupants or urban premises were likewise requested to supply information about their servants and servants' dependants living with them. Both returns rendered some under-enumeration, but the numbers involved are very small in relation to the total Swazi population,

Major employers of African labour were circularized by the Government Labour Officer, and the ratio between Swazi and foreign native labour was taken into account 1) to assess the number of Swazi dependants in order to estimate the total Swazi population element at the end of June 1960.

1.6 Residential Qualification:

Throughout the enumeration an arbitrary 3-year residency rule was applied to avoid possible duplication. Thus, a person absent during the enumeration because of employment in Johannesburg, would be enumerated in his rural homestead if he came home annually; but his colleague who had not returned for three years, would be excluded. Similarly, an employee of less than three years' standing at Havelock Mines, would be enumerated, but not included in the total population count since he could have been included in the rural sample.

1.7 Regional and National Estimates:

The rural (and by far the most important) section of the survey was based on area sampling within certain strata. In order to arrive at totals for any one stratum, the sample return would therefore normally have to be multiplied by a factor representing the total acreage of the stratum divided by the combined acreages of the samples enumerated within such stratum. National totals could be obtained by adding regional totals.

In the pilot survey this simple principle was still applied in a relatively straightforward manner, since no attempts had yet been made to adjust the survey area in order to achieve greater stratificational homogeneity, and the sample squares were assumed to be 2,224 acres each.

In the main survey, however, both the survey area and the sample areas underwent considerable adjustments; the former in a careful effort to improve homogeneity within the various physiographic strata, the latter as the result of stereoscopic measurements which produced the accurate sizes of the individual sample areas actually enumerated 1). The regional multiplication factors could therefore be determined only after considerable elaboration.

1.8 Size of Rural Survey Area:

The geographer on the Institute's team calculated the acreage of the original main physiographic strata as follows:-

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1) cf. 'Aerial Survey, and sections 2.2.1 to 2.2.5 for deviations from the originally assumed norm.

RURAL SURVEY AREA : ORIGINAL ACREAGE

	Native Area	Lifa	NLS	Total
Highveld (H)	464,075	23,760	49,686	537,531
Middleveld (M)	549,496	69,757	106,949	726,202
Lowveld (L)	510,586	167,918	94,783	773,287
Lebombo (Leb)	89,286	9,340	60,542	159,168
Total	1,613,443	270,775	311,970	2196,118

Note: Native Area (NA) is all land recognized for (communal) Swazi occupation under Concessions Portion Proclamation of 1907 and subsequent legislation.

Lifa land: all land purchased by the Swazi Nation for Swazi occupation since Partition was effected in 1913.

NLS: Native Land Settlement areas, established from time to time under the Native Land Settlement Proclamation of 1946.

CL (below): Crown Land.

To improve the homogeneity of these strata for the purpose of generalizing the random sample returns, the following adjustments were made to their respective acreages:-

	Area	Acres	Stratum
Subtractions:- (in acres)	NA 1	603	from H
		2,167	from M
	NA 3	1,467	from H
	NA 23	10,970	from Leb
	CL 214 (NLS)	1,342	from Leb
	Manzini:- peri-urban (NA)	4,625	from M
	Stegi peri-urban (NA)	603	from Leb
Additions:- (in acres)	CL 164 Mankaiana	2,100	to H
	CL 196 Sobank Ngwempisi	3,400	to H
	CL 196 Makumula	2,100	to H
	CL 196 near Sicunusa	300	to H
	CL 154 next NA 8	8,000	to H
	CL 154 next NA 9	800	to H
	CL 179 near Goedgegun	3,200	to H
		19,900	
	CL 166 Gollel	43,000	to L
	CL 166 Big Bend	6,000	to L
		49,000	

The adjusted acreages of the relevant 1) 'Rural Survey Area' thus became:-

RURAL SURVEY AREA: ADJUSTED ACREAGE

	Native Area	Lifa	NLS	Total
Highveld (H)	481,905	23,760	49,696	555,361
Middleveld (M)	542,704	69,757	106,949	719,410
Lowveld (L)	559,586	167,918	94,783	822,287
Lebombo (Leb)	77,713	9,340	59,200	146,253
Total	1,661,908	270,775	310,628	2,243,311

1.9 Size of Sample Areas: Multiplying Factors:

1.9.1 Distinction Population Sample and Land Use Sample:

The use of stereoscopic aerial photography both for the purpose of demarcating the areas selected for the population sample, and for the land use sample, produced a curious problem. It involves the inevitable distortion of the shape and size of the sample areas as they appear on single photographs and their reality as revealed stereoscopically. Because time did not permit the necessary corrections to the standard 2,224 acre norm to be made at that stage of the operation, the enumeration of the population took place within the areas marked by frames purporting to be squares of 3 x 3 km on the single photographs. Subsequently, however, the exact acreage of each enumerated area was calculated, and, of course, taken into account for the determination of multiplying factors applicable to regional population estimates.

The land use survey, however, was carried out after planimetrically correct maps of the sample areas had been drawn by stereo-plotting, and on these maps the boundaries were corrected in such a manner that each area was framed by a square of 3,000 x 3,000 metres, and again represented a standard module of 2,224 acres. The land use categories were drawn, and their quantities and proportion calculated within this standard frame. The only adjustments needed were those where, in a number of cases, the

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1) Relevant, that is, to the generalization of random sample units.

sample frame slightly overlapped European farmland.

The result is a slight difference between the area used for the population sample and that of the land use sample, which necessitates the use of different sets of multiplying factors for estimating regional quantities. These differences will presently be revealed.

1.9.2. Land Use Survey: Size of Sample Areas and Multiplying Factors:

The land use survey is, on the whole, based on standard-size area samples of 2,224 acres each. Minor adjustments to the Swazi areas as the result of occasional overlapping of sample squares upon European farmland, amounted to 2,472 acres or 2.14% of the total random sample area.

The area factor of multiplication for estimating regional totals with regard to land use categories is derived by dividing the total acreage of each stratum (see sections 1.8) by the total acreage sampled within such stratum, as follows:-

LAND USE SURVEY: ACREAGES AND REGIONAL MULTIPLYING FACTORS

Stratum	Total Stratum Acreage	Total Sample Acreage	Area Multiplying Factor
Highveld	555,361	32,977	16.84
Middleveld	719,410	30,568	23.53
Lowveld	822,287	28,407	28.95
Lebombo	146,253	21,224	6.89

1.9.3. Population Survey: Acreage of Random Sample Areas:

Accurate measurements of the enumerate random sample areas ('squares' 1)) were made when the University's Surveying Department had completed the maps based on the stereoscopic aerial photographs. The individual deviations from the 2,224 acre norm are reported elsewhere 2). Their effect upon the acreages of the sample areas in the various strata may here be summarized as follows:-

ACREAGE OF SAMPLE AREAS (POPULATION SURVEY 1960)

	Native Area	Lifa	NLS	Total
Highveld (H)	29,094	2,070	-	31,164
Middleveld (M)	23,550	4,130	1,460	29,140
Lowveld (L)	14,990	8,470	3,940	27,400
Lebombo (Leb)	11,775	600	8,237	20,612
Total	79,409	15,270	13,637	108,316

In respect of Highveld and Middleveld these results were used without further adjustment in order to arrive at the relevant regional multiplying factors (17.82 and 24.69 respectively). With regard to Lowveld and Lebombo, however, it was possible to carry out considerable refinements in order to ensure greater accuracy in regional population estimates. Details about this process are reported in the next section.

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1) The shapes of the selected topographic sample areas after stereomapping were no longer square (see Chapter III, section 3.3).
2) Sections 2.2.1 to 2.2.5.

1.10 Sampling Refinements for Total Population Estimates:

1.10.1 Modified Lowveld Stratum:

With regard to the Lowveld, chance had placed two random squares and the bulk of a third one in the Paramount Chief's hunting ground, also known as 'Forbes Ranch'. a large area devoid of human population. The whole of Forbes' Ranch (Lifa Land) was excised from the survey area; likewise squares (code) Nos. 72 and 74 were excluded from the random sample area. Square 67 (3541) straddled the boundary; and 440 acres with 59 people outside it. The 1,780 acres were therefore excised from the stratum's random sample area, together with a corresponding 111,043 acres from the stratum's survey area 1).

The modified Lowveld stratum (symbol: 1-) therefore represents:-

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Lowveld (L-) Survey Area (in acres)	NA	Lifa	NLS	Total
	559,586	58,875	94,783	711,244

and the modified Lowveld random sample area (L-) becomes:-

Lowveld (L-) Sample Area (in acres)	NA	Lifa	NLS	Total
	14,990	2,170	3,940	21,100

The modified acreages resulted in a refined multiplication (L-) factor: 33.71. The (L-) factor may be used in this stratum for generalizations with regard to population data only. Generalizations with regard to land use characteristics must be based on factor 28.95. For regional land-population correlations both factors may be employed in conjunction.

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1) With one exception: Only in the estimate of the total Swazi population has square 67 been wholly excluded.

1.10. 2. Lebombo Sub-Stratification:

The increased number of sample areas in the Lebombo made it possible to divide this stratum into two sub-strata, one composed of Native Land Settlement areas (suffixed S) represented by four random squares, yielding a sub-stratum multiplication factor of 7.17; and the remainder of the rural Swazi area in this stratum (suffixed R), with six random squares and a multiplication factor of 7.04. (Square No. 85, in NA 23 - Nomahasha - falls outside the random selection and is treated separately).

For population estimates referring to the whole Lebombo survey area, a weighted multiplication factor of 7.055 can be used instead of combining the results of the sub-stratum factors; stratum (Leb) generalizations with regard to land use remain, of course, based on factor 6.89.

1.10. 3 Nomahasha:

The Nomahasha area (NA 23) falls within the physiographical stratum of the Lebombo. It is a border area and a-typical. A specially selected square (No. 85) was placed in the middle of NA 23 and treated as a separate statistical stratum. Within this square, 135 homesteads with a total population of 998 were enumerated. The sample area is 18.52% of NA 23, but known to be more densely populated than the rest. According to the tax registers there are but 330 kraalheads in NA 23, very likely an accurate figure. Since the average family sizes were found to be remarkably constant the population estimate of NA 23 was therefore based on a multiplication factor of $\frac{330}{135} = 2.44$, instead of 5.77 (area factor).
The resultant estimate of 2,440 agrees well with the 1956 census figure of 2,407.

1.10. 4 Regional Multiplying Factors:

The effect of all the refinements discussed above are incorporated in the following table, in which the regional multiplying factors for both population and land use estimates are set out side by side:-

REGIONAL MULTIPLYING FACTORS FOR RURAL STRATA

Stratum		Area Factor	Population Factor
Highveld	(H)	16.84	17.82
Middleveld	(M)	23.53	24.69
Lowveld	(L)	28.95	-
	(L-)	-	33.71
Lebombo	(Leb)	6.89	7.055
	(Leb) (S)	-	7.17
	(Leb) (R)	-	7.04
Nomahasha	(NA 23)	5.77	2.44

1.10.5 Possible Variation of Total Estimates:

The analysis of the survey results has been entrusted to several people, each working in his own academic field, each working upon the same basic statistical premises of the survey, its spatial ramifications, sample quantities, regional multiplying factors, etc. Yet it may be found that in some cases two workers dealing with the same material but each to his own purpose, arrive at slightly different results. This should not be ascribed to carelessness. It is due to the fact that, when the sample material is broken down in different categories, of which percentages or multiples are calculated to a limited number of decimal points, it is sometimes inevitable that they add up to slightly different totals.

1.11 Percentage of Swazi Population and Swazi-held Land Sampled:

From the previous pages it is clear that the proportions of our samples varied from stratum to stratum, and that within the strata the land use sample and population sample were proportionately different.

With regard to three other population groups, a full headcount was attempted. These are:-

squatters on freehold farms;
servants on European urban premises;
employees (and their dependants) of major employers.

In the sampled strata the proportions of the samples were as follows:-

RURAL AREAS

Type of Sample	Stratum	Percentage of Total Acreage	Percentage of Total Population
Random	Highveld	5.9	5.6
	Middleveld	4.25	4.05
	Lowveld (L)	3.5	-
	Lowveld (L-)	-	3.0
	Lebombo*	14.5	14.2**
	Lebombo (S)	-	14.0
	Lebombo (R)	-	14.2
Selected	Nomahasha (NA 23)	17.3	41.0
	NA 1	100.0	100.0
	NA 3	100.0	100.0

* Excluding NA 23
** (Weighted) factor

1.12 In the Urban and Peri-Urban Areas a total of 1,689 homesteads appeared on the preliminary tests. Of these, 330 homesteads were enumerated (19.05%) after a random sample was drawn in each area. The proportions of these samples varied, however, being greater when the total was smaller. Percentages ranged from 11.04 at Pigg's peak (18 out of 163), and 12.7 (26 out of 204) for Stegi peri-urban, to 37.5 (18 out of 48) at Hlatikulu.

2. ESTIMATE OF TOTAL SWAZI POPULATION:

Our estimate of the total Swazi population at the end of June, 1960, is 220,798, subject to a variation coefficient of 9.47%.

The total sample estimate represents the sum of the sub-totals within the following component strata of enumeration:-

Stratum	Population Enumerated	Multiplying Factor	Estimate Tot.Pop.	
Rural Swazi Areas:				
Highveld	3,229	17.82	57,541	*
Middleveld	3,534	24.69	87,255	*
Lowveld (1-)	1,090	33.71	36,744	*
Lebombo : (S)	65	7.17	466	*
(excl.Nomahasha):(R)	1,354	7.04	9,536	*
Nomahasha	998	2.445	2,440	a)
NA 1	782	1.00	782	
NA 3	468	1.00	468	
Total Rural Swazi Areas	11,520	16.95	195,232	
Urban and Peri-Urban areas	1,238	5.34	6,609	b)
Freehold farms ('squatters')	13,704	1.00	13,704	c)
Urban European premises	1,335	-	1,335	d)
Labour communities (major employers)	3,918	-	3,918	e)
Grand Total:			220,798	f)

Note: * Details in separate schedules below.

a) Multiplying factor obtained by dividing the number of kraalheads in tax registers for whole stratum (330) by the number of homesteads in the sample (135).

b) Actually, 1,744 persons were enumerated, but 506 were subtracted from this total since they had resided in an urban or peri-urban area for less than three years and would therefore have been allowed for in the rural sample (see section 1.6 above). The multiplying factor 5.34 is an average of various factors used for the different areas included in this section of the sample (cf. section 2.2.6 below).

c) The figure given is the total of a headcount of permanent residents in freehold farms. The relevant instructions of enumeration were: 'the term "resident" includes:-

(a) all those who regard their kraal on the farm in question as their home (umuti), and so do not have another home in the Native area;
(b) all those who have been residing on that farm, without a break, for three years or longer.

d) The number enumerated was 2,369 from which 1,034 were subtracted as being eligible for enumeration elsewhere. It is likely to be an under-enumeration - see Chapter I, section 3.2).

e) Excluding employees with less than three years' residence and their dependants.

f) See section 3 below.

2.2. Sub-Totals:

In order to arrive at the sub-totals for the regional strata, and to calculate the variations coefficient of the results, it was necessary to take account of the varying population density figures 1) in the sample areas. The acreage of the latter is based on the stereoscopic measurements carried out by Methley, of the University's Department of Land Surveying.

The following schedules give the detailed results for the rural sample areas, random and specially selected.

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1) cf. Section 3.1 below, for simplification assumptions.

2.2.1 Highveld Stratum:

ENUMERATED POPULATION, ACREAGE AND DENSITY PER SQUARE MILE IN HIGHVELD SAMPLE UNITS

Square No.	Type of area*	Population	Acreage	Density
06	NA	174	2370	46.98
07	NA	252	2050	78.66
08	NA	355	1930	117.70
09	NA	139	1790	49.73
10	NA	401	1910	134.37
11	NA	96	2220	27.65
12	Lifa	146	2070	45.12
13	NA	257	2020	81.41
14	NA	273	2230	78.34
15	NA	288	2020	91.26
16	NA	253	2130	76.03
17	NA	274	2224	78.85
18	NA	77	2010	24.51
19	NA	63	2000	20.16
20	NA	181	2190	52.86
Total		3,229	31,164	66.31**

* See Section 1.8 above
** Average density

2.2.2 Middleveld Stratum

ENUMERATED POPULATION, ACREAGE AND DENSITY PER SQUARE MILES OF MIDDLEVELD SAMPLE UNITS

Square No.	Type of area	Population	Acreage	Density
36	NA	461	2000	147.52
37	NA	297	2080	91.39
38	NLS	148	1460	64.89
39	Lifa	75	2230	21.50
40	NA	432	2280	121.28
41	NA	39	2020	12.35
42	NA	413	2160	122.37
43	NA	401	2110	121.60
44	NA	474	2260	134.21
45	NA	218	2180	64.00
46	NA	136	2150	40.51
47	NA	159	2000	50.88
48	Lifa	110	2080	33.86
49	NA	171	2130	51.39
Total		3,534	29,140	77.62*

* Average density

2.2.3 Lowveld Stratum:

ENUMERATED POPULATION, ACREAGE AND DENSITY PER SQUARE MILE OF LOWVELD SAMPLE UNITS

Square No.	Type of area	Population	Acreage	Density
65	NA	225	2000	72.00
66	NA	86	2320	23.74
67	Lifa	59	2220	17.02
68	NA	21	2230	6.02
69	NA	181	2140	54.14
70	NA	74	2160	21.95
71	NLS	90	1640	35.14
72	Lifa	0	2120	0
73	NLS	224	2300	62.34
74	Lifa	0	2150	0
75	NA	5	2050	1.54
76	NA	48	1900	16.19
77	NA	77	2170	22.72
Total		1,090	27,400	25.46* 28.06**

* Average density of all sample units
** Average density in modified sample (L-) excluding 'Forbes Ranch' (see Section 1.10 above)

2.2.4 Lebombo Stratum:

ENUMERATED POPULATION, ACREAGE AND DENSITY PER SQUARE MILE IN LEBOMBO SAMPLE UNITS

Square No.	Type of area	Population	Acreage	Density
86	NA	365	2090	111.74
87	NLS	5	2300	1.41
88	NLS	9	1840	3.14
89	NA	0	1960	0
94	NA	503	2140	150.40
95	NA	148	2320	40.83
96	NLS	10	2012	3.20
97	NLS	41	2100	12.48
98	NA	299	1890	101.25
99	NA	39	1960	12.74
Total		1,419	20,612	44.06* 43.08**

* Average density of all sample units combined
** Weighted average density after division into two sub-strata, Leb (S) and Leb (R) - see Section 1.11 above.

2.2.5 Special Areas:

ENUMERATED POPULATION, ACREAGE AND DENSITY PER SQUARE MILE OF SPECIALLY SELECTED SAMPLE UNITS

Square No.	Type of Area	Population	Acreage	Density	Stratum
29	NA 3	468	1,672	179.33	Highveld
56	NA	569	2,080	175.10	Middleveld
57	NLS	175	2,040	54.91	Middleveld
58	NA 1	782	2,482	201.79	Middleveld
59	Lifa	158	2,150	47.04	Middleveld
78	NA	51	2,040	16.00	Middleveld
79	NA	187	2,220	53.89	Middleveld
85	NA 23	998	2,410	265.02	Nomahasha

2.2.6 Urban and Peri-Urban Strata:

These strata comprised 21 separate areas of enumeration (16 urban and 5 peri-urban) which were randomly sampled. For a schedule of these areas, see the Chapter on Urbanization, section 2.1. The proportions of the samples varied (see section 1.12 above), and for the population sub-totals separate multiplying factors were employed in each area. These factors were based on the known total number of homesteads in such an area and divided by the number of homesteads in the enumerated sample.

Of the known total of 1,689 homesteads in all these areas 785 were urban and 904 peri-urban, giving an estimated total population of 9,310. The enumerated samples had a total population of 1,744, distributed over 330 homesteads, of which 186 belonged to the urban and 144 to the peri-urban samples. Of this sample population 506 were subtracted for the total Swazi population count under the 'three year residence' rule, leaving a sample of 1,238 which, upon multiplication by 5.34, yielded an estimated 6,609 to the population count.

2.2.7 Labour Communities (Major Employers):

Enumeration in this stratum is based on the labour returns (30/6/60) collected by Mr. J.B. Wilson, Labour Officer, Swaziland Administration, from 13 major employers 1) of African labour in the Territory. Only employees with three years or longer service have been taken into account for the population total (see Chapter I, sections 3.1 and 3.4).

The returns included dependants of employees, and only those having lived on the employer's premises for at least one year, were considered for the population estimate. Although the labour returns distinguished Swazi and non-Swazi employees, no such distinction was made with regard to dependants. For our calculation it was therefore assumed that the proportion of Swazi dependants of the total number of employees' dependants, was the same as the proportion of Swazi employees out of the total of employees.

Since we included 1,809 Swazi employees out of an eligible total of 3,667 in the present enumeration, and the total number of (eligible) dependants was 3,474, the number of Swazi dependants was estimated at 2,109. These labour communities, therefore, contributed 1,809 + 2,109 = 3,918 to our estimate of the total Swazi population.

2.2.8 Freehold Farms and Urban European Premises:

The enumeration within these strata, involving mainly squatters and servants respectively, was designed as a full headcount of those not likely to be included in other strata of enumeration. The former count 2) was carried out through the Department of Land Utilization, the latter through the District Commissioner's Offices. In both cases there is likely to have been a slight under-enumeration, (see Chapter I, sections 3.2 and 3.3).

---

1) Crooke's (Big Bend); Havelock Mines; Laing; Peak Timbers; Ralli Bros.; Sw. Canners; Sw. Irrigation; Sw. Plantations; Tabankulu Estate; Ubombo Ranches; Umbuluzi Estate; Usutu Pulp (Gege); Usutu Pulp (Mhlambanyati).
2) Cf. Map D for the distribution of squatters on individual tenure holdings.

3. ESTIMATE OF ERROR IN GRAND TOTAL:

3.1 Simplifying Assumptions:

In assessing the variation of the population from sample square to sample square, the deviations of these areas from the ideal module of 2,224 acres were ignored as being comparatively small and unbiased for this purpose. The exact areas of these squares (see sections 2.2.1 to 2.2.5 above) were, however, used in estimating the total population in each physiographic stratum.

The stratification and refinements of the rural random sample have been dealt with (sections 1.8 - 1.12).

The next section deals with the following five strata randomly sampled:-

1. Highveld - H
2. Middleveld - M
3. Lowveld excluding Forbes' Ranch - L-
4. Lebombo NLS - Leb (S)
5. Lebombo, remainder - Leb (R)

3.2 Notations and Formulae 1):

N_h = (area of stratum h) x (number of sample squares in stratum h) ÷ (total area of sample squares in stratum h)

= number of squares of same size as an average sample square of stratum h which would be fitted into the whole of stratum h.

n_h = number of sample squares in stratum h.

Y_{hi} = population of square i in stratum h (The values of Y_{hi} are scheduled in sections 2.2.1 to 2.2.4).

$\overline{Y}_h = \frac{\sum_i Y_{hi}}{n_h}$ = average population per square in stratum h.

---

1) Cf. Cochran, W.G., Sampling Techniques (Wiley, 1953), pp.18, 19,64-69.

$\text{var}(\overline{Y}_h)$ = sampling variance of the mean for stratum h

$$= \left(\frac{\text{var}_h (Y_{hi})}{n_n} \right) \left(\frac{N_h - n_h}{N_h} \right) \quad \text{, where}$$

$$\text{var}_h (Y_{hi}) = \frac{1}{n_h - 1} \sum (Y_{h_i} - \overline{Y}_h)^2$$

= variance of Y_{h_i} within stratum h.

The variance of the estimated average population per sample square, var $(\bar{Y}_{st})$, is then given by:-

$$\text{var}\ (\bar{Y}_{st}) = \frac{1}{N^2} \sum N_h^2 \quad \text{var}(\bar{Y}_h), \quad \text{where } N = \sum N_h.$$

This formula will give an inflated value, since the sampling derives from a finite population.

The ordinary finite population corrections, however, does not apply since the sampling was not strictly proportional.

The following results were thus obtained:-

Stratum	N_h	n_h	$\bar{Y}_h$	var $(\bar{Y}_h)$	$\frac{N_h^2}{N^2}$	var $(\bar{Y}_h)$
1.Highveld	267.3	15	215.3	632.1		43.054
2.Middleveld	345.7	14	252.4	1650.3		188.015
3.L-	340.3*	10	103.1	614.0		67.783
4.Leb (S)	28.7	4	16.25	59.6		.047
5.Leb (R)	42.2	6	225.7	5553.1		9.393
Total	1042.2	49				308.292

*see footnote section 1.10.1. above.

3.3. Variation Coefficient:

$\bar{Y}_{st}$ = the combined estimate of the average population per square for the whole rural survey area.

$= \frac{1}{N} \sum N_h \quad \bar{Y}_h = 185.4;$

var $(\bar{Y}_{st}) = 308.3;$

standard deviation of $\bar{Y}_{st} = 17.56;$

coefficient of variation $= \frac{17.56}{185.4} = 9.47\%.$

3.4 Accuracy of Estimates:

A variation of the size of the standard deviation is to be expected about once in three times.

The estimated population of this part of the rural area was 191,542; 9.47% of this is 18,139. The true value therefore probably lies between 173,403 and 209,681.

To these figures should be added the returns of the other enumeration areas, which may be taken as substantially correct, as they depended either on a complete enumeration or on a sample from a known total of homesteads:-

	Population	Variations
NA 1	782	-
NA 3	468	-
Nomahasha	2,440	2,209 - 2,671
Urban and peri-urban areas	6,609	6,279 - 6,939
Squatters, freehold farms	13,704	-
Servants, European urban premises	1,335	-
Employee communities	3,918	
Total	29,256	28,695 - 29,817

The following allowances for possible errors in this figure have been made:-

The 9.48% variation coefficient of the rural survey area has been applied to Nomashasha (although the proportion of this sample 1) is so large that the actual error is likely to be much smaller;

As the coefficient of variation in the sizes of families in the urban areas was found to be 5.07% and the peri-urban areas 4.96%, 5% (330) was allowed for error in the urban/peri-urban estimate. Adding the lower sub-totals to the lower estimate of the bulk of the rural population, and the higher sub-totals to the higher bulk total, the estimate of the total Swazi population in July, 1960, varied between 202,098 and 239,498. The average of these figures represents our best estimate: 220,798.

3.5 Comparisons with Other Enumerations:

3.5.1 The Liversage and Batson Surveys:

There are certain difficulties in the way of comparing the returns of the 1960 Survey with those of other enumerations. Both Liversage's and Batson's enumerations are cast in a physiographic frame (Highveld, Middleveld, etc.) but arrived at along totally different ways. Liversage appears to have taken the details of the 1946 census returns, calculated the populations of the various recognized Native Areas and classified the latter as undivided entities roughly according to physiographic strata. Batson in effect made use of a random sample of variably-sized 'diptank areas' (see section 1.1 above) but we have been unable to trace his delimitation of the strata he used. Moreover, he did not recognize (as did Liversage) the Lebombo as a separate stratum.

The surveys by the Institute for Social Research were the first strictly to be stratified accordingly to accurate physiographic studies (by De Blij and Murdoch). The result is that, although the total rural population estimates of these older surveys bear some comparison with our own figures (after a population increase of, say, 2% per annum is taken into consideration 1), their physiographic distributions appear to lack any reasonable ground for comparison with the 1960 survey.

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1) See section 1.10.3 above.

ESTIMATES OF RURAL SWAZI POPULATION

	Highveld	Middleveld	Lowveld	Lebombo	Total
Liversage 1948	96,722	29,940	13,880	10,390	150,932
Batson, 1950	30,000	36,000	120,000	-	186,000
I.S.R.Survey 1960	58,791*	87,255	36,744	12,442**	195,232

* including NA1 and NA 3
** including Nomahasha (NA 23)

3.5.2. The 1956 Population Census:

The 1956 Census involved a full population count and returned a total of 229,774 Africans. If this total were correct, the figures for 1960 might be higher, due to the natural increase of the population. In comparison, the present survey could then appear to have under-estimated the Swazi population total. It has been pointed out, however 2), that there are indications that the census totals may be inflated. Moreover, owing to the different methods and strata of enumeration, reliable comparisons are extremely difficult to make.

3.5.3. Malaria Control Population Survey:

A census of the population in Malaria Control Areas was undertaken in 1960. These areas cover almost half of the country. Although their boundaries do not coincide with those of the Institute's random sample strata, some adjustments are possible which render the malaria control material to some extent comparable to that of the present survey.

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1) Which would give a 1960 total of ± 190,000 on Liversage's figure and 224,000 on Batson's figure.
2) Chapter I, section 4.3

(a) Control area No. 4 includes most of Nomashasha plus another area on the Portuguese border, with a combined population return of 3,718. This appears to have Nomahasha with a population of between 2,000 and 3,000. Our estimate for Nomahasha is 2,440.

(b) Control area No. 5, covering much of the Lebombo Native Area (excluding Nomahasha) returned a population of 9,067; which appears to agree fairly well with our estimate of 10,002 for a slightly larger area.

(c) Control areas Nos. 3,6,8,9, 11 and parts of areas 1, 2 and 7, are in the Lowveld and their combined population was given as approximately 45,000. Compared to this figure our Lowveld estimate of 36,744 is low, even if an unknown number of squatters (among them, 1,786 from the Stegi district) were to be added.

3.5.4. Resettlement Areas:

A number of scattered resettlement areas were fully enumerated by the Department of Land Utilization 1). The areas involved comprised some 6.6% of the Swazi National Land Area, but 12.8% of the arable land available in it. In the resettlement areas the average population density was a high 125.6 per square mile, more than twice the average of 53.35 for our random sample squares over all strata. It is possible that, by chance, these high-density areas are under-represented in our random sample, in which case our rural population estimate would appear to be on the low side. But a comparison between admittedly high density areas and a random sample of both low and high density areas is obviously invidious.

3.5.5. Livestock Census, August 1960:

In the preceding comparisons there was no reliable basis for adjusting the random sample units to the particular areas of the other enumerations mentioned, and their results therefore remain inconclusive.

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1) 'Some facts about Land Use', Bremersdorp 1/11/1960 (code GM/LG).

The independent stock census of August 1960, by the Department of Land Utilization, however, does provide a means of direct comparison and a more valid check on the accuracy of the random sampling methods of the 1960 survey. No information regarding homestead stock ownership was obtained from the population sample during the 1960 survey itself, but in all cases the reference numbers to the (diptank) stock registers were noted. Subsequently, the lists of the owners and their reference numbers within the random sample squares were sent to the Department of Land Utilization, which returned the relevant individual stock figures. In this manner a direct tie-up between our random sample and a concurrent complete enumeration was established. The lists of sample homesteads totalled 1,219, of which the Department returned 1,214, the distribution being as follows:-

	H	M	L	Leb
Total Homesteads in Sample	417	453	144	205
Stock returns received*	417	450	143	204

* Not all homesteads actually had cattle or other stock.

The regional multiplying factors were adjusted accordingly to these slight discrepancies, e.g., the Middleveld factor of 24.69 became $\frac{453}{450} \times 24.69 = 24.85$

The adjusted multiplying factors for livestock in the rural survey area therefore became as follows:-

Highveld	-	17.82
Middleveld	-	24.85
Lowveld (L)	-	33.95
Lebombo	-	7.09

Applying these factors to the stock returns for the random sample areas the regional totals were as follows:-

SWAZI-HELD LIVESTOCK REGIONAL TOTALS: RURAL SURVEY AREA ONLY 1)

	Highveld	Middleveld	Lowveld	Lebombo	Total
Cattle	69,302	154,592	119,810	19,469	363,173
Donkeys	4,402	6,983	2,614	532	14,531
Sheep	14,024	13,096	2,546	1,361	31,027
Goats	52,213	64,908	20,472	4,502	142,095

These figures are not yet fully comparable with the totals of the 1960 stock census, because allowance must be made for stock owned by Swazi outside our 'rural (random) survey area'. This necessitates an adjustment of these combined regional totals by taking into account the populations enumerated in the other rural areas (the urban and peri-urban population was excluded in this connection on the assumption that their stock ownership was negligible). These populations are:-

Nomahasha	- 2,440
NA 1	- 781
NA 3	- 468
Squatters (freehold farms)	- 13,704
Total:	- 17,394

Our estimate of the total Swazi population of our rural survey area is 195,232. The addition of 17,394 gives and estimated total rural population of 212,626, and a multiplying factor of 1,08909, to be applied to the combined regional stock totals of the rural survey area in order to cover the full area to which the 1960 stock census applies.

The following schedule provides the resulting comparisons between the census stock totals and our estimates.

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1) Cf. Chapter VII, section 3.3.2 which gives slightly different estimates (for explanation, see Chapter II, section 1.10.5.)

COMPARISON 1960 STOCK CENSUS AND RANDOM SURVEY ESTIMATES.

Total Swazi-owned Stock*	Stock Census A	Survey Estimates B	% Discrepancy $\frac{(A-B) \times 100}{A}$
Cattle	401,973	395,528	- 1.60%
Donkeys	15,153	15,826	+ 4.44%
Sheep	27,498	33,791	+22.89%
Goats	200,873	154,754	-22.96%

* Excluding horses and mules, owing to their small numbers in our samples.

The records of the cattle population are perhaps the most accurately kept by the Administration, and to arrive, on the basis of a random sample, at a total estimate within two per cent of the full count, is strong evidence in favour of the accuracy of the sampling methods. Almost equally strong is the 4.4% over-estimate in respect of donkeys, considering that their number is very much more sparsely represented in our sample.

At first sight the discrepancies with regard to sheep and goats tend to weaken the confidence inspired by the first two livestock categories. It must be stressed, however, that the livestock returns are based on the owners represented in our sample, and since the goat and sheep owners amounted to a mere fraction of the number of cattle owners, a much larger margin of error may be expected with regard to small-stock figures. At the same time, the small-stock discrepancies represent, as do the cattle and donkey discrepancies, both under- and over-estimates, and in this respect they again strengthen rather than weaken confidence in our population sample.

We therefore consider the validity of our random sample methods to be sufficiently corroborated, and the probable accuracy of our total estimate of the Swazi population to be well established.

4. THE RELIABILITY OF THE SURVEY RESULTS.

In the preceding section we assessed the reliability of one survey result: our estimate of the total Swazi population in the Territory. We should have liked to go further and to provide assessments of the reliability of all our tabulated findings, a task which would have involved as much time and labour as the compilation of the findings themselves, and which we could not undertake in the time at our disposal. What we have done is to request our statistician to scrutinize our tabulations and to apply spot checks in order to guide us in the manner in which we should formulate our results. Each chapter draft involving statistical material was moreover submitted to him for approval and such modifications as he thought fit. To add more to the already heavy burden he had to carry 1), would have been unreasonable.

Yet it is necessary, especially for those who might act upon our findings, to have an intelligent idea of the possible margins of error of the material before them. It is for this reason that the present section is written. To those with statistical training most of it will be tedious and elementary; but to the majority of readers who are laymen in this specialized field, the following pages may be useful.

It may be safely said that there has never, as yet, been an accurate census, for even a (theoretically) simple matter as counting the number of people in a country cannot in practice be done exactly, some being left out and others being counted twice. The same difficulty, in some respects many times enlarged, is inherent in a random sample survey like ours. Yet the latter methods has a number of advantages, one being that it is possible to determine, within certain degrees of probability, the magnitude of errors; another being that, the size of the operation being reduced, the information collected in each case can be both more comprehensive (thus providing a fuller picture of inter-related characteristics), and the fact gathering process can be more closely supervised and more efficiently executed.

In a random sample the measure of reliability depends primarily upon the homogeneity of the material to be sampled: the more evenly its relevant characteristics are distributed, the smaller the size of the sample required for making reliable estimates about the material as a whole. The problem is a dual one: not only should the sample enable less common characteristics to turn up with sufficient total frequency, but they should be represented, even if infrequently, with a fair degree of regularity in the sampling units. If ten units comprise the sample of a given material, the relative importance of characteristic Y can be reliably estimated if it appears but once in every unit, but the value of characteristic Y, appearing ten times in only one unit, remains extremely speculative.

The problem of homogeneity (that is, in fact, the problem of determining the size and reliability of the investigations by sampling) therefore depends on both the number and the variety of characteristics to be examined. The more numerous and divergent the characteristics, the more difficult the problem of homogeneity.

It is possible to increase the measure of homogeneity by 'stratifying' the material, that is, by dividing the subject matter in such a way that a given characteristic is distributed more evenly within each sub-division separately, than it does in the material as a whole. Being capable of more accurate evaluation within each component stratum, its value in relation to the whole can be estimated with greater reliability. But because within each stratum the potential frequency with which such a characteristic can be recorded is only a fraction of its potential frequency in the total sample, the need to obtain adequate frequency of recording also tends to demand an increase of sampling units within each stratum. The physical limitations of the inquiry therefore militate against too much stratification.

It is obvious that only in very simple sampling investigations, involving the statistical evaluation of but a few characteristics of a similar kind, can homogeneity with regard to all be obtained to a high degree. In a sample concerning the physical characteristics, and to some extent the behaviour, of a human population in different ecological environments, as well as the manner and extent it has utilized the land, some compromises with the ideal of homogeneity are inevitable.

The sampling schemes were designed as a compromise to achieve the best results with regard to the major demographic characteristics of the Swazi population and the land use pattern of Swazi-occupied land. A considerable amount of stratification was introduced (see sections 1.3 ff. above) to take account of suspected major differences in population density and ecological factors. But even this fairly complex scheme could not possibly ensure that the very numerous and

widely divergent details of people and land use would all be represented in our samples with sufficient frequency and regularity. For this reason the probable reliability of our findings varies from one aspect to another.

For example, in our total rural sample both male and female persons are represented regularly in frequencies of several thousands, so that the overall sex ratio of the whole Swazi population can be estimated with a very high degree of accuracy. In comparing the sex ratios in the different regions, these frequencies are reduced to mere hundreds in the smaller strata, but they will permit fairly accurate comparisons on a regional basis. When, however, within each region the sexes are divided into some twenty age categories, the frequencies within these often become so small that the chance addition of one or two individuals say substantially affect the proportionate value of this category in relation to similar groupings. At this level of subdivision the value of the absolute numbers themselves may be low, and any attempt either to estimate the total value of this small and insufficiently represented detail for the entire population, or strictly to compare this value with other like values returned in the sample, is obviously subject to relatively large fluctuations and, hence, substantial margins of error.

The following table illustrates this tendency:-

Number in Combined Rural Sample					Sex Ratio				Maximum ± Variation from Combined Sample	
	M	F	T	H	M	L	Leb	Comb. Rural	-	+
All Age Groups	4405	2865	9270	90.39	89.23	90.05	94.65	90.54	1.22	4.09
- 20	2463	2558	5021	96.60	95.08	95.27	99.72	96.29	1.21	3.43
20- 39	1118	1248	2366	87.47	93.04	83.66	90.69	89.58	5.92	3.46
40-59	600	689	1289	81.67	84.41	93.33	100.90	87.08	5.46	13.82
60-79	189	310	499	65.66	45.80	88.57	73.33	60.97	15.17	27.60
80 +	32	60	92	86.67	58.82	35.71	38.46	53.33	17.62	33.34
Number (M and F) in Regional Sample				3229	3533	1089	1419	9270		
Male				1533	1666	516	690	4405		
Female				1696	1867	573	729	4865		

In the first row of figures, representing the male and female frequencies returned in the total rural random sample, the regional sex ratios reveal some measure of differentiation. Since even the regional sub-totals are large and a very high degree of random distribution of the sexes can be expected, these differentiations may be considered to reflect the real differences in sex ratio between the regions (due, for instance to internal migration and a number of other factors). In the second row, representing several thousands of those under 20 years of age, the regional differences again obtain (and the sub-pattern has somewhat changed) but the inter-regional fluctuations remain small and highly probably reflect the reality.

In the remaining four rows, however, the sub-stratification of the sample into progressively less represented age categories, reveals progressively larger interregional fluctuations. Now it is not possible, without resorting to laborious examination of the deviations of each of the 52 individual sample units which returned these sub-totals, to estimate how much of these fluctuations are due to real regional differences and how much to a weakening of the random factor (i.e., growing heterogeneity) in the dwindling representation of these sub-samples. But it is safe to assume that the latter factor is indeed progressively outweighing the former. For, while in some narrow age categories real interregional differences may indeed be large 1), there seems to be no reason why, for instance, in the 60-79 age group or among those of over 80 years old, such real differentiations should be as large and erratic as the variations in these small sub-stratifications indicate.

The layman may now well ask why we should go into such detail or sub-stratification if the individual findings in these tend to become progressively less reliable. The main reason is that, without a 'break down' of major categories, the nature, range and distribution of vital variations in the sample remain undiscovered and the total results may therefore be rather meaningless if not deceptive. To return to the same illustration, an overall sex ratio of 90.54 is itself 'abnormally' low in comparison with most other countries. The fact that in each region the ratio is unusually low not only strengthens our confidence that this result is not due to careless work of some enumerators, but there is sufficient variation in this 'abnormality' to prompt us to examine possible factors which may cause these differences, and this further inquiry may lead us to a better understanding of the low sex ratio problem as a whole. Again a vertical perusal of the combined rural findings in the various age categories clearly shows the progressive results of a differential mortality rate of males and females. The consistency of this trend is partially obscured by the regional figures. Yet, in

the much more detailed age stratification (see Chapter VI) than we have here given, the nature of this trend could be studied with greater understanding. For in spite of the fact that, in many of the smaller sub-strata, the individual returns are probably subject to large margins of error due to a chance under- or over-representation in the sub-sample, together they provide a fairly consistent and meaningful pattern.

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1) For instance, as the result of crop failure in one physiographic region, but not in others, the sex ratio in the 20-30 age group may be far more seriously disturbed by a temporary efflux of migrant labourers from the region than it is in the other regions.

In some distribution tables the appearance of less reliable sub-categories is the inevitable result of a systematic classification. If, for instance, a population is divided into five-year age groups, the younger age groups will be better represented than the older ones, and fluctuations due to inadequate representation in such sub-samples will, in more sparsely populated regions, become marked in comparatively younger age groups than in the more densely populated regions. It is sound usage to group some scantily represented categories together into a better represented larger grouping. But it would obviously destroy the basis of comparison if, merely for the sake of adequate representation, one were to group together all age categories of, say, over 50 years in the sparsely populated Lowveld, but those over 60 in the more populous Middleveld.

Systematic sub-stratification is the only means of analyzing the characteristics of the sample. It is at best a compromise between comparing better represented but possibly less meaningful larger categories, and more meaningful but possibly less 'reliable' smaller categories. In each case, however, it is important to remember that, while individual findings with regard to small sub-samples are subject to comparatively large margins of error, they remain an integral part of larger frames of analysis within which they represent comparative values in a coherent relationship with other findings. With regard to land use categories, for instance, the overall position shows that there is nearly nine times as much grazing land as cultivated land. Even in a carefully stratified land sample it must be expected that the amounts of cultivated land represented in the 52 sample areas will, within this particular land use category, show greater fluctuations than are revealed with regard to the amounts of grazing within the grazing land sub-sample.

The tables in section 3.4.1 - 3.4.4. of Chapter III give the following proportions of grazing and cultivated land as a percentage of the total land area within the four main strata of our rural sample:

LAND USE QUANTITIES

	% Grazing Area	% Cultivated Land
H	78.24	8.95
M	66.22	14.62
L	85.04	4.22
Leb	89.03	5.90

In the Highveld sample, 8.95% cultivated land represents 2,950 acres out of a total of the 32,977 acres constituting the Highveld area sample (which in turn is 5.94% of the total Highveld survey area). If, in this respect, the fifteen random areas which constitute our Highveld sample had been ideally representative with regard to cultivated land, the proportions returned in all sample areas would have been the same, and we could with utter confidence have estimated the total cultivated area in the Highveld to be 49,678 acres, merely by multiplying the sample return of 2,950 acres by the appropriate factor (16.84). But the proportions did vary, of course, and the variation in the sample areas amounted to 36.32 acres on a mean cultivated acreage of 198.5 acres per area, i.e., a coefficient of variation of 18.4%. This renders (with a two to one probability) our estimated 49,678 acres for the total cultivated Highveld area liable to a possible error of not more than plus or minus 9,141 acres 1). This is a relatively large margin of error if it is taken within the category of cultivated land alone, but in relation to the total land involved it amounts to less than 1.7%.

The following figures represent the coefficients of variations of these land use categories (grazing and cultivated land) in the four physiographic strata. The percentage of the total land represented by the variation is given in brackets in each case.

COEFFICIENTS OF VARIATION
(and total land percentage)

	Grazing Area	Cultivated Land
H	2.8% (2.19%)	18.4% (1.65%)
M	6.4% (4.24%)	17.8% (2.60%)
L	4.5% (3.83%)	25.6% (1.08%)
Leb	4.4% (3.92%)	45.0% (2.66%)

On examining these figures it is at once apparent that the higher coefficients of variation for the 'cultivated land' arise because the amount of cultivated land is relatively small, and the figures in brackets show that variation measured in acres is actually less in every case than that for the corresponding 'grazing area'. The very high 45% coefficient of variation for the Lebombo shows great variability in the areas of cultivated land in our sample squares. In this case we are dealing with a heterogeneous area, mountainous and practically uninhabited in the east, but with comparatively fertile and fairly well populated plateaux in the west. These variations are reflected in the ten random sample areas of this region, three of which have more than 13.8% cultivated land, as against seven with less than 2.3% cultivated. Hence the large coefficient of variation for the regional estimate in this respect, which could only be substantially reduced by the most careful and laborious geographical sub-stratification, a task not yet undertaken.

An occasional high coefficient of variation such as this need not invalidate our conclusions if correctly interpreted. For instance, the percentage ofcultivated land in the Middleveld is 14.62% of the whole area, and in the Lebombo 5.90%. Introducing the respective coefficients of variation of 17.8% and 45%, we would write these figures as 14.62 $\pm$ 2.60% and 5.90 $\pm$ 2.66%, which clearly demonstrates the greater percentage of cultivation in the Middleveld, despite the great variability in the Lebombo.

In the analysis of our material we are not so much concerned with simple estimates of isolated phenomena (the amount of cultivated or fallow land, the total Middleveld population, the number of people or working age, etc.), interesting as these might be. Of more importance is the relation of one phenomenon to another, and the comparative value of several characteristics in a broader and coherent pattern of relationship, thus, for instance: the comparative ratios of arable to grazing land in the various ecological regions, the amount of land cultivated per head of the population, the ratio of livestock and grazing, the sufficiency of food production, the proportion of able bodied men engaged in wage employment and in relation to the regional state of rural economy, sex ratios and age structures as indices of population growth and social stability, etc. And between these broader themes again, the possible interaction of one upon the other in an unfolding pattern of socio-economic life.

In all these analyses there may be a question of pairing findings of probably great reliability with some that are probably less reliable. The precise estimate of the reliability of such comparisons is often a most difficult matter, but certain guiding principles, based on a commonsense approach, can be applied. Wherever an independent check of the

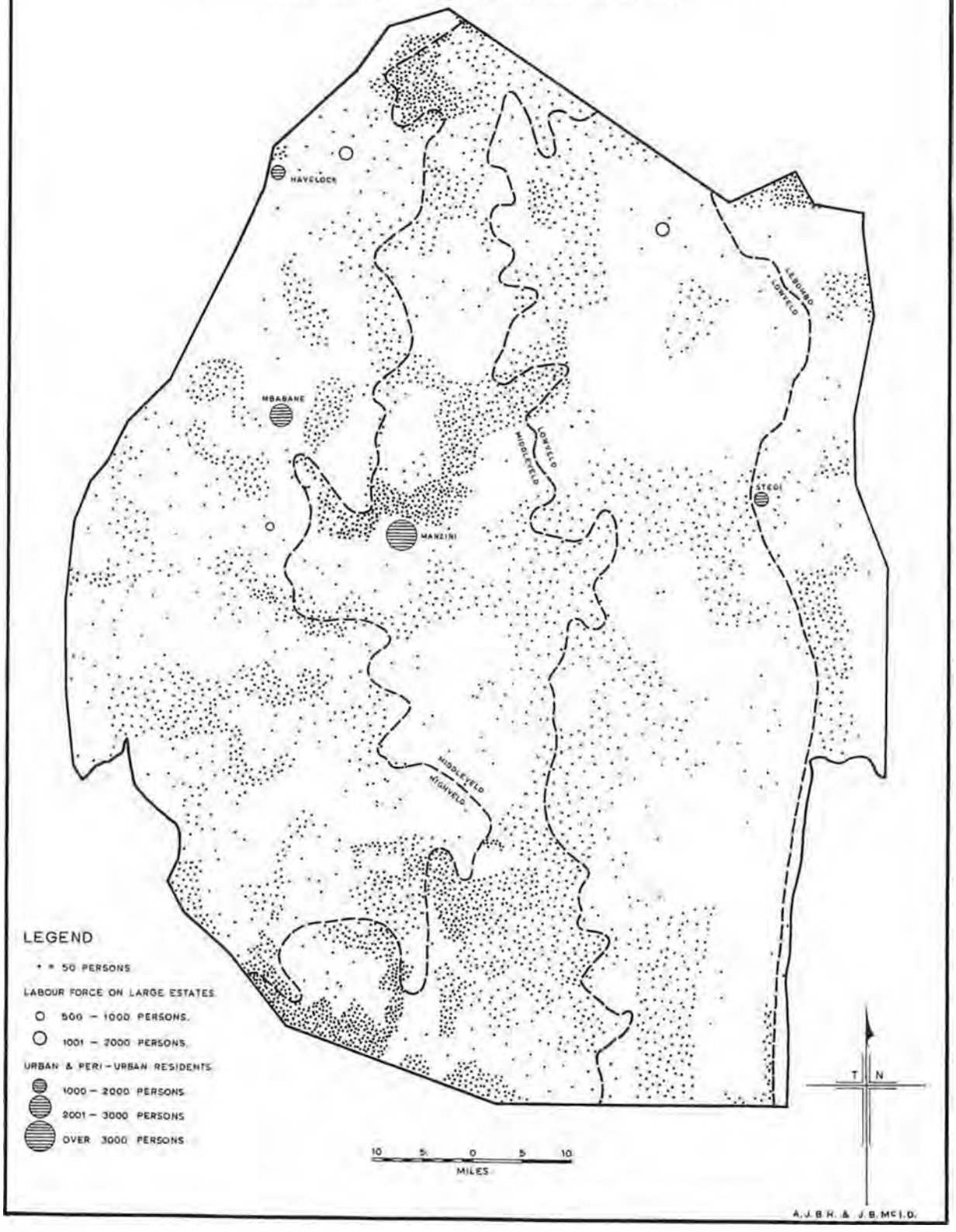
accuracy of our figures exists, it can be very helpful. Earlier in this chapter, for example, we used the official cattle-count to confirm our total population estimates, which indicated that we were actually within 2% of the true figure, although our coefficient of variation, based on the sample variability alone, was over 9%. The second principle is based on the correlation of certain statistics, and affirms that highly correlated statistics are likely to be subjected to the same kind of sampling variation. By the application of this principle we can use admittedly accurate figures to give support to seemingly less accurate ones, because the attributes involved are highly correlated. Since we appear to have been fortunate in getting a more representative sample from the point of view of population than we might have expected, any attribute which is highly correlated with population is likely to give more accurate estimates than our quoted coefficient of variation might suggest, since these coefficient of variation figures are based on observed variability (which led to a $9\frac{1}{2}\%$ coefficient for population when the actual error was under 2%). While this welcome news increases our confidence in our population and stock data in a general sense, as well as in other data highly correlated with them, the likelihood of widening margins of possible error in the smaller subdivisions of our random sample remains, and the reader must exercise his discretion, understanding and common sense.

This brings us back to the problem of homogeneity and representation in sample returns. An advanced expression of maldistribution is 'clustering', that is, a high frequency of a certain phenomenon in a small part of the sample and little or nothing in the other parts. Where the phenomenon is important and expected, the sampling method is designed to avoid clustering. Where it is unexpected and worth the trouble, its effects may be modified by sub-stratification of the sample. But some forms of clustering are not only expected but are of insufficient importance to warrant special treatment. A good example of the latter kind is the membership of certain churches dealt with in Chapter X (Religious Affiliation). In these cases a little common sense and understanding of the background should be enough to assess the comparative reliability of some of the estimates appearing in the tables. After several generations of widespread missionary activities one may expect a good random distribution of Christians and traditionalists in Swaziland, although real regional variations in their proportions will undoubtedly obtain. On the other hand, within the Christian groups, membership of certain denominations may be more localized, or 'clustered', and this applies particularly to some of the Independent Bantu Churches or sects whose numerical following and local concentration depends heavily upon the personal influence and place of domicile of the leader.

SWAZILAND

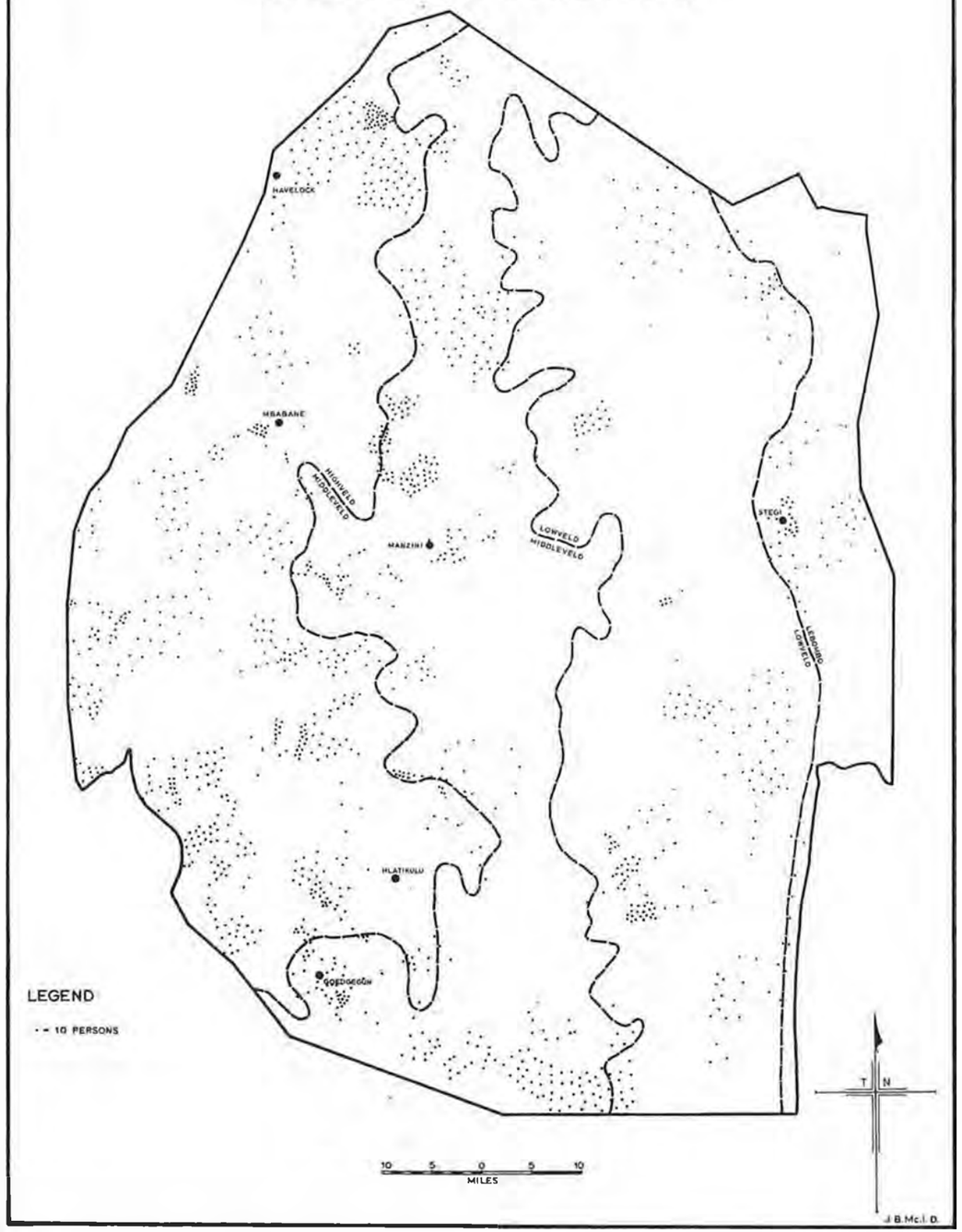
DISTRIBUTION OF SWAZI POPULATION (1960)

(BASED ON 1956 CENSUS & 1960 SAMPLE SURVEY)



SWAZILAND

DISTRIBUTION OF SQUATTERS ON INDIVIDUAL TENURE HOLDINGS (1960)



The estimated regional and total proportions of Christians and traditionalists, and the correlation of these with sex divisions and major age groupings, are therefore comparatively much more reliable 1) than the individual entries in a table like R2 (in the Annexure to that section) the value of which lies largely in that it gives a broad impression of the comparative distribution of Christians among a few large and a host of smaller churches.

In conclusion we wish to repeat that the authors of the various chapters have themselves exercised considerable caution with regard to the material they handled, and have not been slow in stressing the

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1) A few specific estimates of reliability may here be given in relation to the territorial proportions given in Tables 1, 3 and 4 of the section concerned. Having been calculated on the basis of the variations shown in five regional totals, the variations involve both regional (real) differences and sampling variations in unknown proportions:-

Tables 1+ 4		Percentage	± Variation
	M Trad.	50.9	± 7.01
	F. Trad.	38.6	± 6.31
	M + F trad.	44.3	± 6.57
Table 3:	M + F mission	56.4	± 8.05
	M + F Separatist	38.4	± 6.88
	M + F other	5.2	± 1.70

comparative weaknesses or tentative nature of such findings as they considered doubtful. In this respect they had, moreover, the benefit of constant scrutiny by a statistical expert.

Another expert in this field has stated that 'a statistical analysis, properly conducted, is a delicate dissection of uncertainties 1). Having been aware of the limitations of our investigation, we think we have avoided becoming victims of 'delusions of accuracy'. With this sobering reflection we can but present the fruits of our combined efforts as 'the product of honest and careful enquiry'.

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1) Moroney, M.J., Facts from Figures, Penguin Books, (revised edition), 1956, p. 3.

CHAPTER III

THE LAND USE SURVEY

1. The Need for a Land Use Survey:

The success of any geographic study depends largely on the ability to answer two questions: 'Where' and 'Why there?' The second question involves the interpretation of collected factual data, and the correlation of environmental, human, economic, political and social factors. It cannot be answered without adequate and reliable information with regard to the geographic distribution of facts relating to man's production and the use he makes of the natural resources available to him. Where, for instance, does he grow his maize, cotton or tobacco, and with what success? Where does he husband his livestock and to what extent?

In Southern Africa this information is available in fair detail with regard to European enterprise; with regard to the African population and land occupied by them, however, the data are scrappy, due mainly to the scattered nature of African holdings, the shifting pattern of their cultivation, the paucity of information and the resulting doubtful value of general estimates and statistics. Yet, in view of the development within the continent, such information is vital.

In this respect Swaziland was no exception. With the possible exception of resettlement areas, accurate meaningful statistics relating to the distribution and growth of the Swazi population, its agriculture, grazing, employment and movement of labour, etc., were lacking, and it was in an effort to remedy this lack that a fairly comprehensive random sample survey was designed, since a detailed survey of the whole Swazi area was physically impossible.

2. Physiographic Stratification:

From a geographer's point of view the recognition of the existing main physiographic regions of Swaziland was a prerequisite of any sampling methods employed. There are four of these, running in roughly parallel strips from south to north, being (from west to east):-

Highveld
Middleveld
Lowveld
Lebombo

Although their exact deliminations may sometimes leave room for argument (there are a number of 'transitional' zones), these regions, broadly speaking, reveal physical, climatological and other characteristics sufficiently different 1) from each other to affect the growing of crops and livestock, which, in turn, are bound to influenze the economy, and distribution of the human population, if not its social structure. In this survey we adhere to the regional deliminations by Dr. H. de Blij 2), as revised by Mr. G. Murdock, a geographer in the Swaziland Department of Land Utilization (see maps).

While these physiographic stratifications are fundamental in the present survey, the method of sampling also had to allow for a varying degree of heterogeneity within each region, in order to provide the scope, if necessary, for comparative studies of smaller localities. In this respect further criteria had to be considered. Among these are the different legal bases of tenure underlying Swazi occupation and use of land, classified as follows:-

Native Area	)
Lifa Land	) Swazi National Land
Native land Settlement	)
	)
Individual tenure holdings	(freehold farms)
Crown Land	
Townships and peri-urban settlements	

Their distribution is shown on Map 1.

Apart from these classifications, a number of localities was selected because, for one reason or another, their human geography and pattern of land use might be expected to reveal different characteristics, such as a few areas on the Swaziland border. The full list of randomly and specially selected sample areas, and a description of the methods of their selection, have been given in Chapter II. The distribution of this sample is revealed in Map 2, which should be viewed in conjunction with Map 1.

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1) For a broad outline of these differences, see Chapter VII.
2) Journal of Geography, Sept. 1960, Vol. I, 7.

3. Aerial Survey:

In the pilot survey of 1959, serial photography had been employed mainly as a means of identifying the sample areas and homesteads. In this exercise, however, each area had been covered by a single photograph, the interpretive value of which (apart from these identification purposes) proved to be strictly limited.

The decision to make use of stereo-photography for the main survey in 1960, made a detailed land use survey of the random sample areas a realistic possibility. In fact, it was the need for this study that became the decisive factor influencing the decision 1).

Elsewhere we described the role of the aerial photographs in the organization of the population survey. Here it is necessary to give some details about the aerial survey itself, and its application to the study of land use. This exercise, broadly speaking, comprised three stages:-

(a) The aerial photography itself, and the processing of the photos;
(b) Ground work aimed at standardizing measurements (that of the relationship between distances on the photograph and on the ground), as well as checking the photographic interpretation of land use categories with the actual situation on the ground;
(c) Interpretation and mapping of photographic material, involving the demarcation of sample areas, and the distribution of land use categories and homesteads within each of these areas; as well as the calculation of the quantities of each land use category in the sample.

3.1 Aerial Photography:

The aerial photographs were taken in such a way that full stereoscopic coverage was given to each sample area. In other words, every porition of land within the sample could be viewed three-dimensionally, and appeared in at least two photographs taken with the

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1) See Chapter I, section 2.2.

aircraft in a different position. A pre-calculated time interval between successive photographs ensured an overlap of at least 60% of one photograph over its successor. In the 1960 sample survey it was moreover decided to have one photograph covering the full extent of the sample area concerned. With the scale on which we worked the result was usually that full stereoscopic cover was provided by only three photographs per sample area. This is wholly satisfactory for mapping purposes; but it was found that it somewhat restficted the interpretation of the land utilization pattern of the area concerned, and therefore limited the number of land use groups which could be discerned and mapped with reasonable certainty. Greater refinement in this respect could be achieved by flying at a lower altitude, thereby increasing the scale and definition of each photograph (as well as their number and the cost of the exercise).

3.2 Ground Work:

Although the aircraft is supposed to fly at a given height throughout the photographic survey, this altitude can not always be strictly maintained and inconsistencies occur. The result is not only that the scale of the photos differs from exposure to exposure, but also, especially in mountainous country, that within a single photo individual portions are differently scaled. These differentiations can be corrected by stereoscopic analysis, but accurate measurements are only possible after the exact relationship of distances between identifiable objects in the stereoscopic picture and the reality on the ground has been established in each area. This ground control was carried out in various ways, by using measuring tape, theodolite and even electronic means. After these scale factors were obtained, it was possible to plot the area on the map which is planimetrically correct.

Once ground control has been established it need not, in subsequent photography of the area concerned, be repeated because the scale factors for the new photographs can be established by comparison with the accurate may derived from the first exercise.

For the mapping of the patterns of land utilization, the use of stereoscopic photographic material offers some substantial advantages over field inspections. Much more can be achieved in far less time and in relative comfort. Moreover, the delimination of the boundaries of the various land use grouping is more accurate, since there is a tendency in the field to resort to a measure of guesswork. Yet, as far as the interpretation itself is concerned, a certain amount of checking by ground inspectors remains necessary to ensure accuracy.

Differences in the type of soil, the density of vegetation, the state of maturity of a given crop, as well as other factors, may cause similar land use categories to appear slightly different on the photographs. Therefore, in each physiographic region, if not locality, spot checks on the ground and the annotation of identifiable fields, etc., on the photographs, should form the basis of the interpretation of the bulk of the material. The more judicious and numerous the choice of test areas and the fuller the description of their land use groups, the greater the overall accuracy of the interpretation, and the more refined the land use categories which can be mapped. In the Swaziland survey a fair number of such ground checks was made, but this method could have been more fully exploited if more time and personnel had been available. As it was, the degree of refinement of the interpretation had to be limited to those groupings which could be identified with confidence.

3.3 Demarcation, Interpretation, and Mapping:

With the use of aerial photographs for the purpose of demarcating the three kilometre squares which constituted the sample units of the 1960 survey, certain problems of delimitation arose which were not fully recognized beforehand. One set of photographs had to be used in order to identify the sample squares on the ground preparatory to the enumeration of the population. In the tight time schedule of the survey operations 1), this had to be done before it was possible to establish ground control. The areas of enumeration were therefore demarcated as squares on single photographs. When, however, these pictorial squares were later plotted on maps on which the distortions due to elevation variations had

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1) See Chapter I, section 2.3.

been corrected, the reality was revealed in irregularly shaped areas whose acreage deviated from the assumed norm of 2,224 acres (9 square kilometres). In some cases this discrepancy amounted to as much as 15% 1). These discrepancies did not affect the population count within the sample areas, because the enumeration actually took place within the irregularly shaped real boundaries ofthe areas. They did, however, have to be taken into account in the multiplication factors used for the regional and total estimates of the population, since these are based on the proportion of the total land area actually involved in the sample enumeration.

To facilitate future comparative surveys, a random adjustment was made to the maps, so that each sample area was finally bounded by a square of 3,000 x 3,000 metres. The corner points of the 1960 sample areas are, however, plotted on these maps, so that their original identity is preserved.

Measurements and calculations for the land use survey took place within the adjusted frames, that is, on the basis of modules of 2,224 acres. In twelve random areas some corrections had to be made because of a measure of overlapping on European farmland and international boundaries. In all, these corrections reduced the total of the sampled Swazi area by 2,14% (2,472 acres), and this slight reduction is duly accounted for in the regional multiplication factors relating to land use quantities.

With regard to stereoscopic interpretation of land utilization within cultivated areas, classification was sometimes made difficult by a varying measure of mixed cropping on the same or overlapping fields (e.g., legumes interspersed with the staple maize crop). Even if the photographs had been taken from a much lower altitude, interpretation in these cases would often have been impossible. In fact, it would have been difficult to classify such fields even by ground inspection. There were, even at the scale of photographs with which we worked (1:24,000), some notable successes in interpretation. For instance, vegetables grown in market gardens were easily discernable.

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1) See Chapter II, sections 2.2.1 - 2.2.5 for full details.

Their quantities, however, were so small that they did not warrant plotting as a separate land use group.

Wattle grown in plantations offered no difficulties, but became problematic when they were growing wild (as in some parts of the Highveld) and became barely distinct from the surrounding natural bush.

Likewise, while freshly abandoned fields were easily classified as fallow land, the distinctions between old overgrown fallow land and natural bush sometimes presented a problem in classification.

From the photographs, land use maps of all sample areas were plotted on a scale of 1,6,000, accurately defining the following categories:-

Cultivated land
Fallow land
Plantations (Wattle)
Natural bush and scrub
Marsh
Unproductive land (rock outcrops and erosion)
Grazing

and such further details as homesteads, paths, and water courses (including furrows). The quantities of the abovementioned groupings were calculated for each sample area, and cast into tables 1), which provided the reliable raw material used by the geographer for his analysis of the land use pattern of the Swazi held areas.

3.4 Acreages of Land Use Categories in Sample Areas:

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1) In these tables, grazing includes natural bush and scrub.

3.4.1 Highveld (Random Sample Areas):

Square No.	Map Ref.	Total Acreage	Land use categories					
			Cultivated	Fallow	Wattle	Marsh	Unproductive	Grazing
06	1344	2,224	47	156	207	-	38	1,776
07	1548	2,102	53	148	5	-	1	1,895
08	1118	2,137	346	209	40	-	-	1,542
09	0329	2,070	137	205	8	-	107	1,613
10	1112	2,224	289	154	47	-	85	1,649
11	1223	2,224	118	160	-	-	-	1,946
12	0825	2,204	160	172	6	-	-	1,866
13	1134	2,224	183	302	74	-	88	1,577
14	0921	2,224	482	235	9	-	-	1,498
15	0822	2,224	389	239	23	-	-	1,573
16	0723	2,224	348	293	5	-	-	1,578
17	1538	2,224	156	175	-	-	-	1,893
18	0939	2,224	30	8	44	-	209	1,933
19	0431	2,224	159	514	49	32	13	1,457
20	1721	2,224	53	161	4	-	-	2,006
Regional Total		32,977	2,950	3,131	521	32	541	25,802
		100%	8.95%	9.49%	1.58%	0.10%	1.64%	78.24%
Standard Error			±1.65%	±1.26%	± .62%	-	-	±2.22%

3.4.2 Middleveld (Random Sample Areas):

Square No.	Map Ref.	Total Acreage	Land use categories					
			Cultivated	Fallow	Wattle	Marsh	Unproductive	Grazing
36	2211	2,224	667	361	3	-	-	1,193
37	1954	2,224	477	645	-	-	5	1,097
38	1920	1,656	125	314	-	-	-	1,217
39	2730	2,224	80	165	-	-	-	1,979
40	2237	2,224	643	413	19	15	-	1,134
41	2624	2,224	32	48	-	-	48	2,096
42	1727	2,224	446	432	8	-	-	1,338
43	2338	2,224	478	504	-	21	3	1,218
44	2611	2,224	524	563	4	-	3	1,130
45	1847	2,224	289	742	-	-	-	1,193
46	1940	2,224	77	161	10	-	10	1,966
47	2129	2,224	278	534	-	-	-	1,412
48	2725	2,224	196	555	-	-	4	1,469
49	2047	2,224	157	264	2	-	-	1,801
Regional Total		30,568	4,469	5,701	46	36	73	20,243
		100%	14.62%	18.65%	0.15%	0.12%	0.24%	66.22%
Standard Error			±2.60%	±2.39%	-	-	-	±4.26%

3.4.3. Lowveld (Random Sample Areas).

Square No.	Map Ref.	Total Acreage	Land use categories					
			Cultivated	Fallow	Wattle	Marsh	Unproductive	Grazing
65	2948	2,224	254	727	-	-	-	1,243
66	2816	2,224	49	159	-	-	11	2,005
67	3541	2,224	14	18	-	-	-	2,192
68	3233	2,224	76	141	-	-	-	2,007
69	2739	2,224	220	515	2	-	-	1,487
70	3223	2,224	199	481	-	-	-	1,544
71	3718	1,920	62	132	-	-	3	1,723
*72	3837	2,224	-	-	-	-	-	2,224
73	3614	2,224	168	436	-	-	-	1,620
74	3340	2,224	31	21	-	71	19	2,082
75	3434	2,224	64	124	-	-	-	2,036
76	3222	2,056	34	169	-	-	-	1,853
77	4123	2,191	27	21	-	-	-	2,143
Regional Total		28,407	1,198	2,944	2	71	33	24,159
		100%	4.22%	10.36%	0.01%	0.25%	0.12%	85.04%
Standard Error			±1.08%	±2.95%	-	-	-	±3.86%

3.4.4. Lebombo (Random Sample Areas):

Square No.	Map Ref.	Total Acreage	Land use categories					
			Cultivated	Fallow	Wattle	Marsh	Unproductive	Grazing
86	4235	2,224	359	219	2	-	-	1,644
87	4421	2,224	9	37	-	-	-	2,178
88	4523	1,895	8	38	-	-	-	1,849
*89	4336	1,964	-	-	-	-	-	1,964
94	4228	2,224	490	218	-	-	13	1,503
95	4223	2,224	51	270	-	-	-	1,903
96	4240	2,073	5	12	-	-	-	2,056
97	4422	2,224	10	38	-	-	-	2,176
98	4245	1,948	269	196	-	-	12	1,471
99	4126	2,224	51	20	-	-	-	2,153
Regional Total		21,224	1,252	1,048	2	-	25	18,897
		100%	5.90%	4.94%	0.01%	-%	0.12%	89.03%
Standard Error			±2.65%	±1.57%	-	-	-	±3.93%

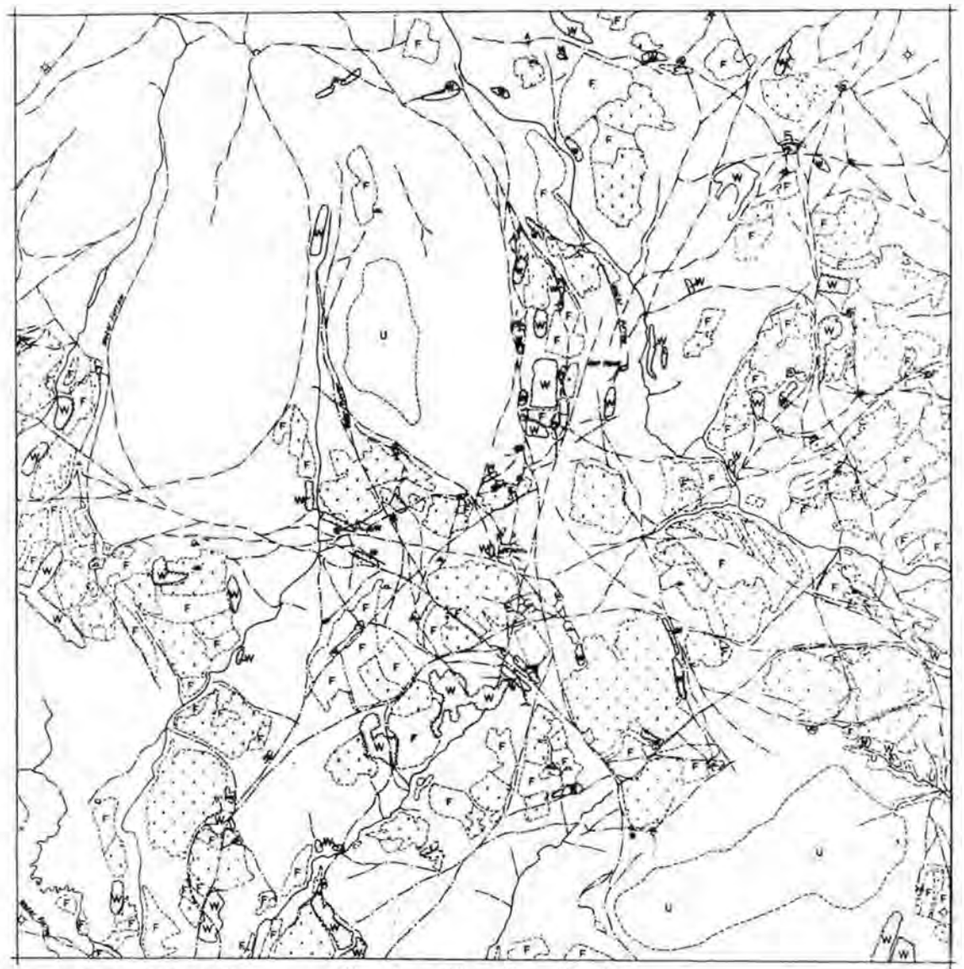
3.4.5 Special Area Samples:

Square No.	Map Ref.	Total Acreage	Cultivated	Land use categories				
				Fallow	Wattle	Marsh	Unproductive	Grazing
29	NA 3	1,672	6	32	-	-	-	1,634
56	1705	2,184	710	1,098	5	-	-	371
57	2652	2,224	39	376	-	-	-	1,809
58	NA 1	2,482	700	108	-	-	-	1,674
59	2929	2,224	104	209	-	-	4	1,907
78	3443	2,224	33	334	-	-	-	1,857
79	2907	2,224	318	197	-	-	-	1,709
85	4050	2,135	690	220	-	-	16	1,209

*Uninhabited

See Page 78.

PLAN SHOWING LAND USE ON
SQ. 1112 – NA.



PHOTOGRAPHY Feb. 1960. Scale 1 : 24000
CAMERA Wild RC 8 f = 114-52
Plotting in Wild Autograph A8.

200 0 200 400 600 800
YARDS

N

LEGEND

- Cultivated Land (Maize, Kaffir-corn, beans)
- Fallow Land
- Wattle Plantations
- Grazing & Natural Vegetation
- Homesteads
- Tracks & Footpaths
- Rivers & Streams
- Unproductive Land
- Control Points
- Square Corners (as shown on photo enlargement)

B METHLEY

CHAPTER IV

THE QUESTIONNAIRE.

1. LANGUAGE MEDIUM :

The subjects to be interviewed, as well as the enumerators, were Swazi-speaking. This factor would favour the use of the vernacular in the questionnaires. Yet it was decided to use English, both as a printed medium, and to record responses in the field. The main consideration was the fact that those who would have to process and analyse the material were likely to be people without a knowledge of the vernacular, and a translation of thousands of responses would obviously be impracticable. Moreover, all enumerators had a good enough command of English to enable them to give a fair rendering of Swazi verbal responses.

In only one or two aspects it was found that language raised a problem. One was in connection with kinship terminology in the section 'Relation to Head of Household' and the intrinsic difficulty of applying English terms of kinship to a radically different system of kinship relations. For instance, the term "auntie" (so commonly used among the Swazi that some believe it to be a Swazi word borrowed by the English) is applied only to a father's sister, a mother's sister being 'mother'; English-speaking Swazi will use 'our cousins' normally only for cross-cousins, parallel cousins being either 'brothers' or 'sisters'; 'uncle' again, is a common translation of the Swazi's term for 'mother's brother', a father's brother being classed as 'father'. In early experiments, enumerators' linguistic excursions produced such translator's gems as 'step-wife' and 'tenant-in-law', which would have baffled the most experienced of our coding staff.

The descriptive method, commonly employed by social anthropology (e.g. father's sister's son instead of 'nephew'), can itself be a tricky tool in the hands of novices, especially in abbreviated code (e.g. z.h. can be a rendition of either sister of husband or sister's husband).

For these reasons the anthropologist first examined a casual sample of about 150 homesteads from which he drew up a list of the most prevalent kinship relationships the survey was likely to strike. These formed the core of a relationship code, drawn up in both English and the vernacular, which enumerators were taught to use, after which they were expected to note the appropriate code numbers for the various relationships. Relationships not listed had to be fully described.

On the whole this system proved to work well, although its bilinguality appeared to be confusing in some isolated cases, when an enumerator, thinking in terms of the Swazi classificatory kinship system, mixed up the sexes of their subjects. For instance, a few males were put down as 'daughter's daughter' instead of son's son', because the Swazi classificatory term 1) covers both relationships and the enumerator was apparently not certain whether the bilingual list gave priority to English or Swazi! This type of error was fortunately easily corrected, but might have been avoided by the sole use of English terminology.

The fact that the African enumerators had to handle an English-medium survey instrument put a premium on the clarity of the language in which each individual question was cast. In this respect the experience gained during the 1959 pilot survey led to a great deal of minor editing, for instance, by the substitution of 'husband or wife' for 'spouse' in the section on marriage, since the latter term remained an oddity to many enumerators.

In one case, however, the semantic problem connected with a single English word necessitated the recasting of an entire section and the sacrifice of nearly half a page of valuable questionnaire space. In the employment section, information was required with regard to three separate employments : the respondent's first job, his present job (or if he were at the time unemployed, the job he held last), and his last but one job. In the pilot instrument these three were simply listed as follows in order to save much needed space :

1. First Employment :	
2. Last (or present Employment :	
3. Last but one Employment :	

The alternative use in the second entry was exhaustively explained at the 1959 training course, but the difficulties proved insuperable for many enumerators, to whom a 'last' employment was something that remained part of a completed past and could not conceivably be extended into the present. With regard to people not employed at the time of enumeration, the position was comparatively simple, but in respect of those currently employed the resulting tangle was formidable. The second entry would, as often as not, reflect information belonging

1) Umtukulu.

to the third entry, in which case the third entry would record the details of an unemployment about which no information was required. Confusion was compounded in the subsequent section, which asked for details about the 'interval between last (or present) employment and last but one, that is, between 2 and 3 above'.

The only remedy was to sacrifice space, and to divide respondents into two categories : those presently employed, and those not presently employed, and to give each category its own space on the questionnaire form. In the 1960 instrument the same section was therefore cast as follows :

EMPLOYMENT

Is subject EMPLOYED AT PRESENT? Yes or No [ ]

If YES, fill in section I
If NO, fill in Section J

IF SUBJECT AT PRESENT EMPLOYED

X
Present Employment

Y
Employment preceding
present employment

I Z
Very first employment

IF SUBJECT AT PRESENT NOT EMPLOYED

X
J Last employment

Y
Employment preceding last employment

Z
Very first employment

Subsequent questions could now safely be directed to particulars of employments 'X', 'Y' and 'Z' without creating confusion in the minds of enumerators. A concomitant result of this solution was,

however, that the double foolscap printed instrument of the pilot survey proved too small to accommodate all other sections, and a triple foolscap form had to be adopted for the 1960 survey - a major price to pay for the removal of a problem arising from a single and apparently simple English expression.

2. CONTENTS OF QUESTIONNAIRE :

2.1 Main Divisions:

In order to simplify administration and to avoid the possibility of wrong selection out of a multiplicity of different forms, the principal questionnaire was designed as a comprehensive instrument to be completed 'for each person, whether child or adult, resident in the sample square'. Obviously, however, not all sections of the questionnaire were applicable to all persons.

Apart from an extensive section dealing with the identification of individual respondents, the questionnaire comprised the following sections, the sequence of which was partially influenced by the problems of lay-out :

A. Country of origin and domicilium
B. Parents
C. Education
D. Relationship to head of homestead
E. Religious Affiliation
F. Age
G. Marital history
H. Reproductive history
I-K. Wage employment
L-N. Agriculture and other rural sources of income 1)
O-R. Urbanization and housing.

In probably the majority of sections the line of questioning largely followed standard practice. Few sections were, however, entirely devoid of some experimental element or other. In a number of them, the approach itself was largely experimental and the outcome therefore a matter of speculation - successful in some cases, a failure or partial failure in others.

The various sections will now be discussed separately :-

2.2 Identification :

Numerical identification was required of the sample square

---

1) Information regarding livestock ownership was obtained separately from the diptank registers, the reference numbers to which were recorded during enumeration.

concerned, of the homestead within such square, and of the subject within the homestead. Also required were the name and surname of head of the homestead, the name of the Chief of the area and the subject's diptank reference number. Other entries established the identity of the enumerator, date of enumeration, checking, super - vision etc.

All these preliminary entries were ranged in the upper left and right hand corners of the first page of the form and, in contrast with the rest of the questionnaire sections, not set out in 'blocks'. The reason for this was that the pilot form had enclosed part of this information, including the name of the head of the homestead, in the 'block pattern', with the result that the name of the particular subject appeared lower down on the form, thus losing the prominence it required. On the 1960 form this was rectified, and the first line of entry in the block pattern referred to the name, surname and sex of the person concerned.

2.3 Country of Origin and Domicilium :

Where born : Country.....	If born in Swaziland District.....	If born outside Swaziland : Ethnic Group...
Was subject born inside present Chiefdom? YES or NO		
Is subject absent from homestead at the time of survey? YES or NO		

A straightforward section, based on the legal position that those born in Swaziland are Swazi. Possible ethnic groups for those born outside Swaziland were discussed during the instruction course. The question regarding birth in the chiefdom of which the person was a resident at the time of the survey, was included to open the possibility of studying the relative mobility of the population in the 160-odd chiefdoms in Swaziland.

The final question was vital. Even absent residents were enumerated in their domestic context, provided they had not been away for a continuous period of three years or longer; in the latter case they were excluded and became eligible for enumeration in the non-rural strata of the population survey.

2.4 Parents :

Father's name	Mother's name.....
Father's surname.....	Mother's surname.....

Apart from being an aid in sorting out the kinship relations in the homestead, this section makes possible :

(a) an investigation of possible relaxations of the rule of exogamy and
(b) an inquiry into the incidence of pre-marital and extra-marital birth (i.e. 'illigitimacy').

2.5 Education :

The pilot survey merely asked for 'standard of education reached' and, if below Std. IV, whether the person could read and write.

In the 1960 form this section was slightly expanded and the questions framed more explicitly :

EDUCATION	
School Standard Completed.....	Year left School.....
If subject is below Std.IV :	Can read and write English: YES or NO ☐ Can read and write Swazi: YES or NO ☐

2.6 Relationship to Head of Homestead:

This section, a standard requirement in anthropological surveys, provides the basis material for a study of the structure of domestic groupings. It covers both kinship and other relationship ties.

In the pilot survey a list of eleven possible relationships (in English), with their code numbers, appeared on the questionnaire form itself. For the main survey, however, this list was considerably revised, removed from the questionnaire,

and included in the enumerator's manual :

RELATIONSHIP			RELATIONSHIP		
ENGLISH	SWAZI	CODE	ENGLISH	SWAZI	CODE
Head of Homestead	Umnumzane	0	Brother's son	Indodana	A3
Wife	Umkakhe	1	Brother's daughter	Indodakazi	A4
Son	Indodana	2	Father's brother	Ubaba lom cane	A5
Daughter	Indodakazi	3			
Brother	Umnekabo	4	Sister's son	Umshana	A6
Sister	Udadzewabo	5	Sister's daughter	Umshana	A7
Mother	Umake (Umama)	6			
Little Mother	Umake lomn-cane	7	Son's wife	Umaluka-tana (Makoti)	A8
Big Mother	Umake lomk-hulu	8	Brother's wife	Umkhula wake (Umfati womnakabo	A9
Son's son	Umtukulu	9			
Son's daughter	Umtukulu	A0			
Daughter's son	Umtukulu	A1	"Sweetheart"	Singani sakhe	B0
Daughter's daughter	Umtukulu	A2			

In the questionnaire itself this section could therefore be reduced as follows:

RELATIONSHIP TO HEAD OF HOMESTEAD
Consult list and insert code ☐
If not on list, specify below :
.....

2.7 Religious Affiliation:

Enumerators were instructed to record the religious affiliation only of persons of 18 years of age and older. There was here a question not merely of traditionalists and Christians but also of Muslims. Moreover, in the Christian field there are a number of established White Mission churches as well as a wide variety of independant Bantu Churches. In the 1959 questionnaire the principal Mission churches had been listed and coded, but the enumerators were expected to record the names of any Bantu churches to which respondents might belong. It soon appeared that the official names of these churches were often unknown to their members, and were referred to either by some colloquial appellation or by the name of a local or national leader. To avoid confusion a coded list of the larger ones of the Christian churches, with their colloquial names and best-known leaders, was drawn up and included in the enumerator's manual:

MISSION CHURCHES			
Anglican (Isheshe)	0	Seventh Day Adventist Isa-batha)	8
Methodist (Weseli)	1	Swedish Alliance Mission (Iswidi)	9
Roman Catholic (Roma)	2	Norwegian Free Evangelical Mission	A0
Berlin Lutheran (Luthela)	3	Pilgrim Holiness	
Dutch Reformed	4	Mission Metropolitan Church	A1
Nazarene	5	Associated Mission	A2
S.A.G.M.		Apostolic Faith Mission	A3
Evangelical Alliance Mission (Libandla Levangeli)	7		

OTHER CHURCHES			
Official Name	Colloquial Name	Known Leader	Code
United Christian Church of Africa	Libandla lama Krostu Libandla lelive	Rev. Dube (Lobamba)	B0
	Swazi National Church		
-do-	-do-	Rev. Dladla	B1
Apostolic Holy Catholic Christian Church in Zion	Libandla laka Masangane	Rev. Masangane (Mahlanya)	B2
African Methodist Episcopalain	Ikushi	Rev. Khoza (Mbabane)	B3
	Damaseko-Damascus		B4
Swazi Christian Church in Zion		Rev.Mncina	B5
Jericho Christian Church in Zion	Jeliko-Jericho	Rev.Vilakazi (Mankaiana)	B6
St.John's Apostolic Church	St. John	Rev.A. Msibi (Kwaluseni)	B7
Antioc Zionist Church	Antioc	Rev.A. Khumalo (Mliba)	B8
Christian Apostolic Zulu Church in Zion	Eqinisweni sweni	Rev.P. Hlatshwako	B9

On the 1960 questionnaire itself this section was cast as follows:

RELIGION	
Christian	○
Traditional	○
Muslim	○
Unknown	○

(X appropriate circle)

If subject is CHRISTIAN,
consult list and insert code here [ ]

If not on list, specify here .....
.....

2.8 Age:

To obtain accurate information regarding a person's age is one of the fundamental requirements in any demographic survey. In a society without written records it is also one of the most difficult problems. In a comprehensive survey like ours this information became especially important because it had to serve as a check not only on marriage and reproductive history, but also on such aspects as employment, length of education and duration or urban residence.

In the absence of a system of registration of birth, age had to be estimated, and special efforts were therefore made to render these estimates as accurate as possible. With regard to very young children it is possible, by observation of their physical development and by relating the event of birth to the season of the year and the particular agricultural activity pursued at the time, to determine age within a few weeks accurately. With older children and adults, however, the risk of inaccuracy tends to increase with age. There are in juvenile life a number of events (some institutionalized) the date of which can be fixed with reasonable confidence - such as the piercing of the ear lobes, the onset of puberty, the issue of a labour or tax liability certificate - and these may help the age estimate.

But these, as well as the age-group classifications recognized in traditional Swazi society, still permit of fairly wide margins of error, and can therefore only be used as rough guides. 1)

Basically, age determination is but part of the general problem of dating, which is of vital importance in many other aspects of an enquiry of this kind. It was therefore necessary to design some reliable standard measure which could be used as an aid whenever dates were required. The result was the 'event chronology' a device often used in anthropological fieldwork. It is a list of accurately dated historic events of sufficient national or local importance to be remembered in the community. This chronology, some details of which will be discussed in the next chapter, was therefore used to check a person's age or the date of any other event in his or her life relevant to our enquiries.

The questionnaire required three entries to be made with regard to a person's age. The first was an estimate of the exact age in years; or with regard to children under one year, in months. The second required an answer (yes or no) to the question (Is this certain?' (i.e., the age), inserted largely for psychological reasons, to force enumerators (and respondents) critically to examine the validity of their previous answer. In the third entry the enumerator had to encircle the appropriate code number representing one of twenty listed age categories. This was partly meant to assist coders at a later stage of the work, but probably even more as a further check upon the age first recorded.

The age groupings were designed not only for the purpose of demographic analysis, but also to provide the most flexible age categories into which this information could be sorted for various other purposes without having to resort to the full age distribution year by year. Up to six years the ages are grouped in two-year categories; between 7 and 19 there is an alternating of two-year and three-year groups which takes into account puberty, labour age regulations and tax liability; from 25 years there are five-year intervals. Five-year groupings are moreover possible over the entire age range - as follows:

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1) Age-regiment affiliations, used in previous surveys and censuses, proved unsatisfactory as a means of age determination. Not only do they provide but a rough guide to age, but for thegeneration too young to participate in the 1939-45 war there is only one regiment; while in Southern Swaziland there is the possibility of confusion with different sets of regimental groupings.

under 1 year	0	25-29 years	B0
1 - 2 years	1	30-34	B1
3 - 4	2	35-39	B2
5 - 6	3	40-44	B3
7 - 9	4	45-49	B4
10 -12	5	50-54	B5
13 -14	6	55-59	B6
15 -17	7	60-64	B7
18 -19	8	65-69	B8
20 -24	9	70 - over	B9

In spite of the attention paid to age determination in the design of the questionnaire itself, as well as in the construction of the event chronologies and at the training course for enumerators and supervisors, and notwithstanding checking, rechecking, cross-checking and final checking of individual returns, it was still possible for age to play an odd trick or two- as with the Swazi female who made history in the coding room because her record showed that, before she had married at the enterprising age of seven, she had produced two children before she had reached the age of three!

2.9 Marriage:

The section on marriage (designed for both husbands and wives) was meant to be a straight forward effort to determine marital state, type and duration of marriage, domestic co-residence and the incidence of polygamy:-

	MARRIAGE			If never married, cross here ◯		
Name and Surname of husband or wife	Resident in homestead Yes/No	How married (see code)	Year when married	Year of divorce	Year of death	Still married Yes/No
1st						
2nd						
etc.						

A marriage by some other (say Muslim) religious rites, was classified as 'by other religious ceremony', even if it had included some customary or civil rites.

Traditional marriage itself is not always a straight-forward issue, because the range of marriage proceedings varies locally, and the whole process may often be considerably protracted. The crucial question is: at which stage can a customary marriage be considered valid? In other words, when would it be correct to describe a union of man and woman as 'just living together'?

We could not expect the enumerators to be experts on the finer distinctions of customary marriage law (a fertile field of debate in tribal courts) and therefore instructed them that traditional marriage includes all marriages recognized by Swazi custom that have not been accompanied by a civic or religious ceremony. It includes full umtimbo (i.e. bridal procession) marriages, simpler forms of traditional marriage recognized as valid by Swazi law and custom, and traditional marriages contracted by couples of non-Swazi origin which are recognized as valid marriages in the area where they are contracted'.

A considerable flexibility was therefore allowed. In practice, the classification of marginal cases was facilitated by the additional instructions limiting the category of those 'just living together' to instances in which (a) the respondents themselves described their union as such (b), the enumerator was completely satisfied that no ceremony, that would be recognized by the law of Swaziland or Swazi law and custom, had taken place; (c) the enumerator was completely satisfied that the woman is still regarded as the legal wife of another man, either by the law of Swaziland or by Swazi law and custom.

Even apart from the question of dating, however, there were several problems of a legalistic nature which had to be thrashed out. The most important of these concerned the type of marriage. The relative column refers to a coded list in the enumerator's manual, which included the following:

Traditional	0
Marriage by Christian rites	1
Civil Marriage	2
Other religious ceremony	3
Just living together	4
Unknown	5

In respect of each marriage the enumerators had to make a single selection. The difficulty is that, with regard to a substantial proportion of Swazi marriages, elements of more than one type of

marriage may be present. In the great majority of christian marriages, for instance, the element of lobolo 1) (bridewealth) is retained, and it is not uncommon to find in urbanized areas that a couple have successively passed through traditional, christian, as well as civil rites.

In the 1960 survey, classification was based on a compromise between the initial basis upon which the marriage was contracted, and such developments as might subsequently have taken place. Enumerators were instructed in the following rules:-

If the couples were originally married by traditional rites, the marriage was regarded as such, unless within one year the marriage had been converted into either a christian (or civil) marriage, in which case the latter classification applied.

In all other cases :

A marriage by christian rites was classified as Christian even if it contained elements of customary procedure and/or civil rites;

A marriage by civil rites was recorded as a civil marriage despite possible customary ceremonial;

Only in cases where the enumerator was wholly unable to obtain sufficient information to assign the marriage to any specific category, was he instructed to make an 'unknown' entry.

The instructions outlined above aimed at a single classification of Swazi marriages and unions according to the legal basis they were entered upon and recognized at an early stage of cohabitation. Even as such the results are somewhat biased in favour of the christian and civil marriage. A more serious defect in our scheme, however, is that the tabulated results do not reflect the extent to which traditional and modern elements have merged in present-day Swazi marriage, an aspect of considerable sociological interest. It would be advisable in future surveys to make provision for this information, even if the exercise were to involve more questionnaire space and enumerator's time.

The questionnaire form contained space for eight husbands or wives, a generous allocation in the vast majority of cases. In the event of even a greater marital mobility, enumerators were instructed to make use of a detachable blank sheet in their manual.

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1) In Swazi : emabeka.

2.10 Divorce:

Before the date of divorce could be entered enumerators had to satisfy themselves that :

(a) in cases of a recognized religious or civil marriages a competent court of law had granted a legal divorce;

(b) in traditional marriages the customary kujuba isisu ceremony had been performed, or that the husband and his lusendvo (paternal kingroup) had unequivocally renounced any claim to children born (or to be born) of the woman after the alleged divorce.

There is a strong body of opinion, especially among the conservative Swazi, that maintains that, once contracted with full traditional ritual, a Swazi marriage cannot be dissolved by legal means (such as the return of the wife and marriage cattle, as is common elsewhere), and any sustained claim by the husband's family to the offsprings of a 'former wife' would therefore be a strong indication that the marriage had not been properly dissolved.

In those cases in which the couple had 'merely lived together' and then separated, the date of 'divorce' would be entered if the enumerator was satisfied that this particular union had decisevely come to an end.

2.11 Reproductive History:

The 1959 pilot survey instrument required full details of the reproductive history of all females of 15 years and older, inter alia dividing them into those who had never given birth, and those who had. Of the latter, details of every child, whether alive, stillborn or subsequently deceased, were recorded. To get the fullest possible demographic information, enumerators were also expected to enquire whether the respondent female happened to be pregnant. It was the last question which raised considerable resentment in Swazi official circles - although there was actually little opposition from the side of the women themselves - and became a focal point of emotional resistance against the survey as a whole. It was alleged that this question, addressed by a stranger to respectable women, violated the customary reticence of women to reveal 'something that she would keep secret even from the husband'. It is possible that the matter would have been taken less seriously, had the whole purpose of the survey been discussed thoroughly and well beforehand with the Swazi authorities. Unfortunately,

this preparatory aspect had been unduly delayed, and under the circumstances it would have served little purpose to debate the possible merits and demerits of this particular issue. A compromise was therefore devised, and an assurance given that propriety would be fully respected. Enumerators were emphatically instructed not to ask this question, but merely to note if a respondent was clearly pregnant. It was assumed that this would at least give a record of women pregnant for about six months or more, thus making it possible by arithmetical means to arrive at a rough estimate of pregnancy in our sample population.

In the 1960 instrument the age limit was lowered to 12 years and older, and the relevant section on reproductive history was cast as follows:

. REPRODUCTIVE HISTORY

(of all females of 12 years and older)

If subject clearly pregnant, cross here but DO NOT ASK the question. ◯

Has subject ever given birth? Yes or No ☐

IMPORTANT: All subject's children, whether alive, stillborn or subsequently deceased, must be recorded, including those not at present in the same unit. Cases of still-birth or miscarriage should be recorded as such in the Name Column.

Name of Child In strict chronological order (practice on inlay sheet if necessary)	Sex M or F	Birth Date Month	Birth Date Year	Death Date Month	Death Date Year	Resident in Homestead? Yes or No.
1						
2						
etc.						
12						

Strict chronological order (from first born to last born) was required because the pilot survey had given ample proof that a random sequence of entries not only made checking of the probable accuracy of individual dates an extremely tiresome process, but also greatly retarded the coding of the information. Moreover, by insisting that births be recorded in chronological sequence, enumerators themselves could more easily spot any apparent discrepancies in the intervals between confinements. Since it had been found during the pilot survey that respondents not uncommonly recited their reproductive history in non-chronological order (e.g. grouping first male then female children together, or enumerating the surviving children before mentioning those that died), the enumerators manual contained an ample supply of blank fascimiles ('practice sheets') of this section, upon which the information could be jotted down provisionally before being transcribed in correct order in the questionnaire form itself.

2.12 Employment:

The employment section was probably the most ambitiously conceived aspect of the survey and, perhaps for this reason, became the most complex from the enumerator's as well as the analyst's point of view.

It was meant to provide a comprehensive and fairly detailed picture of Swazi wage employment and labour migrancy. The field to be covered was not only wide and varied, but sometimes uncharted. We were interested in the volume and distribution of wage labour inside and outside the territory, in terms of sex, age groups, industrial and occupational categories, education, etc. We wanted to assess the duration of employment, job mibility, income in cash and kind, not merely at a given moment but as a reflection of the dynamic process of an indigenous economy depending both upon rural subsistence activity and wage employment.

In the ceaseless traffic between two spheres of livelihood not only the duration of and interval between one wage earning sortie and another is important, but also the worker's movements during the intervals, where, how, and how far he travelled, home or elsewhere, and what his journeys cost him. With regard to some avenues of employment recruiting services are available and free long-distance transport is arranged. In other cases people make their own arrangements to cover the distance, far or near, to the place of work. How far away does a person go in search of gainful work; and while in employment, how often, (if at all) does he travel between home and work?

For a country like Swaziland, on the threshold of a large-scale exploitation of its considerable mineral and other resources, a reliable

assessment of its available and potential labour force is of particular importance. An analysis of the size and age structures of the population gives only part of the answer. Of equal importance is the knowledge to what extent and in what number this labour force is in fact prepared to participate in wage employment. Hence the questionnaire was structured not merely to find out what percentage of the potential labour force was in fact engaged in wage employment at a given time, but also to throw light upon the individual patterns of this participation, the duration and number of wage-earning sorties and the length of intervals between them.

The opening question ('Has subject ever been employed?' and 'Is subject employed at present?') merely divides the potential labour force according to two broad classifications : first, between those that have and those that have not, entered the wage labour market; secondly, between those presently employed and those presently not employed.

Due partly to lack of enumeration time, partly to the belief in the fallibility of human memory, it was decided not to obtain particulars about a person's full labour history, but to concentrate on getting adequate information on a maximum of three jobs held by the respondent : his very first wage earning employment (Z); his present employment (X), or, in the case of a person currently out of wage employment, his last job; and (Y) the job held prior to holding job (X). In addition, the total number of jobs held by the respondent during his employment history was noted.

Job (Z) provides the starting date of a person's entry into wage economy and, related to his age, provides the time-span within which his total number of jobs give some indication of the regularity or irregularity of wage employment. It also provides some basis of comparison (duration, wage level, nature of employment) with his more recent employment. Jobs (X) and (Y) (or rather the start of job (Y) until the beginning of job (Z) present a known time span, composed of a completed period of employment plus a completed interval of 'unemployment' 1). This provides the ratio between employed and unemployed periods in each case, and a means of giving, by mathematical calculations, a distribution table expressing the percentage of a given time-span in which workers actively participate in wage employment.

This information was considered to be of vital importance to major employers of local labour, since it would give them an idea of

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1) Interpreted in terms of wage employment only.

what turnover to expect under present conditions, and thus enable them to assess the effective number of man-years' labour they could expect to derive from the locally available potential labour force. Since much of the information regarding the individual X - Y time-spaces is spread over a comparatively long period of time (in respect of some, the X - Y space falls within the most recent quinquennium; in respect of others it goes back much further) we hoped to be able to refine our analyses to the extent of indicating, for instance, a progressive change in the employed-unemployed time ratio over a period of years, or to find, perhaps, evidence of a cyclical pattern of wage labour participation, which might throw further light upon the relation between the wage earning and subsistence sectors of the dualistic Swazi economy.

The semantic difficulties which caused us to augment and re-cast questionnaire form with regard to employments 'X', 'Y' and 'Z', have been discussed earlier in this chapter 1).

In respect of each of these employments the following information was sought:-

Inside or outside Swaziland (write IN or OUT).....
Exact place of employment (see instructions).....
Distance from homestead (see instructions).....
Dates (months and years) : from.....to.....
Nature of employment : (a) Industry) see list
(b) Occupation)
Cash income: per week/per month.....
Rations provided : Yes or No.....
Housing provided: Yes or No.....

A few remarks with regard to each of these questions will suffice :

Inside or Outside Swaziland:

Swaziland has been, and still is, a considerable exporter (as well as importer) of African labour, the bulk of this export being directed towards the Witwatersrandmining industry. For any large-scale industrial expansion inside Swaziland, reliable information on the size and mobility of this migrant force is essential.

Place of Employment:

This question, together with the next (Distance from homestead), creates the possibility of a detailed analysis of the local and regional distribution pattern of Swazi labour, an aspect about which, in the

1) Section 1. The reproduction also indicated the basic lay-out, the entries in respect of each employment are spread horizontally over double foolscap width. In the present context the questions are, for convenience sake, vertically aligned.

absence of adequate labour records, only the vaguest assumptions obtained.

The distribution pattern of migrant labour is influenced by a great many factors of an economic, psychological (and even legal) nature. Wage levels, distance from home, the existence or absence of established channels of recruiting, economic circumstances and previous experiences, have as much a bearing on the choice of job (and place of employment) as have the reputation of the employer, the known presence of kinsmen or friends at the place of work, the 'glamour' of the environment and a host of other considerations. To gain a full understanding of the motivating powers behind this sometimes oddly criss-crossed labour traffic, would require intensive and skilled questioning of large numbers of workers. For this our survey organization was not equipped, and our questionnaire was therefore designed to reveal only some physical characteristics of this distribution pattern. Once revealed, however, these might well indicate the reaction in which further research would have the most fruitful results.

Our questions were part of a two-pronged plan of attack on the problem, the other prong being to persuade major employers to include (among other innovations) a reference to home locality on the records of their individual workers. If the latter suggestion had been generally adopted, a meaningful (if incomplete) picture could have been obtained with little effort from the handful of large-scale employers operating in Swaziland. The measure was, regretfully, not adopted, however, and only a laborious piecing together of the survey returns from some sixty separate sample squares, can now provide a comprehensive picture of the manner in which the Swazi population distributes its labour in the fields of wage employment open to it. Owing to the shortage of staff and time, these efforts had to be abandoned in our present report.

Enumerators were instructed to record the place of employment in sufficient detail (e.g. Impala Hotel, Barberton) and to distinguish town and district of the same name(e.g. Esangwini, Pigg's Peak district; District Commissioner's office, Pigg's Peak Town).

Since a large proportion of rural labour is attracted to a limited number of employers and localities, enumerators were given a list of these, together with the distance in miles from these places to the sample areas entrusted to them for enumeration. In addition to facilitate both the estimate of distance from home to other (unlisted) localities of employment and the classification of these distances, every enumerator was given small maps on which his sample squares were the centre of two concentric circles of 15 and 30 miles radius 1). (See Page 99).

It was sufficient for them to record distance between home and place of employment as follows:-

-15 (i.e. about a day's walking)

15-30

over 30

These entries were also meant to be related to the information with regard to the frequency with which a worker commuted between home and place of work during his period of employment (see below).

Dates of Employment:

No greater accuracy than the month and year of commencement and completion of period of any employment was attempted.

Nature of Employment:

The classification of industrial and occupational categories was largely guided by international (United Nations) usages. The enumerator's manual in this respect laid down the following:-

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1) For illustrations of these aids to enumerators, see Annexure Chapter V.

EMPLOYMENT	
(a) Industry	(b) Occupation (State the occupation itself, not the class of occupation
Farming, Forestry	Professional workers: teachers, preachers, nurses, orderlies, extension officers, herbalists
Mining and Quarrying	
Manufacturing (making goods in factory or home)	Clerical Workers: clerks, typists, interpreters, office messengers
Trading	Salesmen: shop assistants, shop owners, butchers, hawkers
Transport	
Government Service: (Police, education, health, municipality etc.)	Manual Labourers: general labourer (underground or surface), machine operators, boss boy, watchmen, drivers, firemen, packers, sorters, farmers, market gardeners, herd boys, dairy hands, tree planters, lumbermen
Domestic Service	
Religious and Welfare Services	Craftsmen: (State if self-employed) shoemarkers, machanics, carpenters, other wood-workers, blacksmiths, builders, curio makers, barbers, tailors, seam-stresses
	Domestic Servants: houseboy, housemaid, cook, garden boy, nannie.
IF UNCERTAIN,	DESCRIBE JOB

Cash Income:

Earnings could be noted per week or per month, as payments were made, in £. s. d. Decimalization of the S.A. currency was introduced some seven months after the date of survey, and the results were calculated in Rand.

Rations/Housing Provided:

Since it would be futile to attempt assessing the value of rations or housing provided in individual cases, only a yes or no answer was required.

2.13 Employees' 'Overheads':

The great majority of Swazi engaged in wage employment are migrant workers. It is a feature of the migrant labour institutions that the workers leave their homes and may have to travel long distances in order to reach their place of work. In some cases the place of employment is near enough for a worker to make commuting between home and work possible at regular intervals; in other cases this is out of the question. In all cases, however, it is pertinent, both economically and from other points of view, to ask what this travelling costs a worker, in time, effort and money.

For the same reasons it is of value to know about the migrant's movements during intervals between employments : does he remain in the same locality whiling away his time (and earnings), does he return home or does he go elsewhere (and if so, at what cost)?

Little is known about these segments of time which are an integral part of the migratory effort and which represent an 'overhead' charge upon those workers who do not travel at their employer's expense.

It was decided that the 1960 survey should make an exploration sortie into this aspect of Swazi labour, and two experimental sections were included to probe the ground.

The first (means and cost of transport to place of work) was confined to employment 'X' (present or last job) only, and was drafted as follows:-

EMPLOYMENT X ONLY	
(a) cost of single journey to subject, including food, to EMPLOYMENT X	£. s. d.
(b) Means of transport.....	
(c) If on foot, state time taken	------- days
(d) While in employment X, subject commuted :	daily ○ weekly ○ irregularly ○ (cross relevant circle)

The second section concerned the worker's movements during the interval between employments Y and X (i.e. his present or last job and the preceeding one) thus:-

INTERVAL BETWEEN EMPLOYMENTS Y AND X			
Did Subject : Return Home YES or NO		What was cost of total journey to subject including food	£. s. d.
OR Remain in same locality YES or NO			
OR Go elsewhere YES or NO		What was cost of total journey to subject including food	£. s. d.

It should be repeated that the 1960 survey approached the aspect of Swazi participation in wage employment with a generous measure of experimental design. In addition there was the ever-present necessity to pare down the number of questions in order to save enumerator's time. In some respects it therefore was a matter of speculation whether the resulting instrument would enable us to find the answers to the questions we had built into it. Much would (we expected) depend on the flexibility of the coding schemes under which the returns would be made for mechanical sorting and correlating, and these efforts were restricted by the time, staff and type of equipment at our disposal.

The preliminary harvest proved to be a mixed bag. The material yielded, without much difficulty, the answer with regard to standard questions as the size, age structure and industrial distribution and other characteristics of the active wage labour force, the duration of its present employment etc. When, however, it came to a study of the trends in wage-labour participation over a period of time, the going became more difficult, and the statistician had to apply considerable ingenuity in sorting and tabulating methods of the material as coded 1), before the results began to reveal a meaningful pattern. But even before this problem worried us, we learned that, ironically, the carefully designed 'three-job short-circuit' of labour histories, had during the actual survey operation often been considered a hinderance rather than a help. Many enumerators afterwards confided that they had found it easier to extract full employment histories from their respondents, and to write down all particulars on scrap paper. From this information they had subsequently entered the particulars of the required jobs on the survey forms, and discarding the rest. Such may be the penalty for invention and over-organization!

The section on employment yielded a good deal more material than we have been able to handle. For the time being 2) the principal findings are contained in chapter IX. The remaining material may be exploited later, time and staff permitting.

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1) In retrospect, the recording, and therefore repunching of the raw material in a manner specially designed to meet this exingency, would have been preferable. At that stage, however, we halted at this major operation which would have involved us in engaging new staff and considerable extra expenditure.

2) Mr. J. Burrows and Dr. D.Sloan, the Institute's original collaborators in this section of the survey, left the country during 1960-61, before they could analyse the material.. Their place was taken by Mr. C. McClelland, post-graduate student in the Department of Economics, working under the supervision of, and in collaboration with, Mr. A. Humphreys and Mr. Smith of the research staff of that Department.

2.14 Rural Production:

2.14.1 Agriculture:

We stated earlier in this report 1) that the 1959 pilot survey had raised serious doubts with regard to the feasibility of obtaining reliable information on crop yields within the time and with the survey personnel available to us, and we described the reasons for adopting our somewhat unconventional methods in order to arrive at reasonably reliable assessments of the sufficiency (or insufficiency) of staple crop production. The approach centered upon three questions relating to the past (1958-59) and current (1959-60) production of the staple crop (maize) : Enough?; if not enough, how far short? ; if more than enough, how big the surplus? The questions were asked in respect of homestead production, since the anthropologist had found that, for all practical purposes, the homestead (admittedly a variable quantity) in Swazi rural society is the effective economically productive unit.

'Enough' therefore, represents the subjective but informed opinion of the head of the homestead that his unit had produced a sufficient quantity of mealies to meet the normal subsistence requirements of its members, neither appreciably more nor appreciably less. As the size and composition of each sampled homestead group is known, a reasonable estimate of the normal staple food consumption in each case could be made which, related to the information on shortfall or surplus of homestead production could, if desired, provide an estimate of total production. The latter estimate is, however, not necessary for an assessment of the sufficiency of staple crop production. Reliable information referring only to shortfall or surplus on a homestead basis, is sufficient for this purpose, and permits this assessment to be made either in global figures per homestead or per head of the population, with due regard to local and regional differences.

With regard to shortages and surpluses within the homesteads, it was (correctly) assumed that these usually represent specific and known quantities acquired or disposed by purchase, sale or barter, which can be expressed in terms of bags or other fairly well standardized measure (e.g. four-gallon paraffin tins). The information thus obtained from homestead heads or other responsible members can therefore be regarded as reasonably reliable.

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1) Chapter I Section 2.1.

The element of speculation, a major problem in total yield estimated by the methods available to us, was therefore very largely avoided in our new approach; and while it was not completely ruled out, it was reduced to much smaller proportions. In cases of over-production, where the surplus was not or not fully, disposed of by sale or barter, the quantities stored for next year had to be estimated, but both the numbers of cases and the quantities involved, could be expected to be fairly small.

With regard to the 1960 maize harvest, still being consumed at the time of enumeration, the information regarding expected sufficiency, shortfall or surplus, was obviously based on rough estimates tendered by homestead representatives, and therefore merely regarded as being of some comparative but not of absolute value. The relevant section of the 1960 questionnaire was cast as follows:-

This information should refer to the HOMESTEAD as a whole and not to individuals.				
1959 MEALIE Harvest	1. Enough for own needs? YES or NO	2. If not enough state how much bought or bartered	3. If surplus plus state how much sold or bartered	4. Or Stored for next year
	[ ]	[ ] bags	[ ] bags	[ ] bags
1960 MEALIE Harvest	1. Expects Enough for own use? YES or NO	2. If not enough estimate shortfall	3. If surplus expected, estimate how much	
	[ ]	[ ] bags	[ ] bags	

Probably a more serious shortcoming of the 1960 survey instrument is that, unlike the 1959 instrument, it treated sorghum as an 'other crop' instead of a staple crop. This was due on the advice of the Department of Land Utilization, for the reason that, in comparison with maize, sorghum is of relatively minor importance in Swazi food production. This is probably true in most physiographic regions, but not in all. Sorghum is produced as a secondary crop by the great majority of Swazi everywhere (mainly for the brewing of beer), and in at least one region (Lowveld) constitutes a substantial part of staple food production. Under these circumstances, since the basic aim of this part of the survey was to determine the measure of self-sufficiency of basic Swazi food production, the lack of specific information on the sufficiency of sorghum production constitutes a weakness in our overall assessment which needs to be rectified in subsequent surveys.

In respect of other crops we were mainly interested to know how widely these were cultivated and for what purpose (home consumption and/or for gain). In consultation with the Department of Land Utilization, we therefore specifically listed a variety known to be cultivated to supplement the staple diet and as cash crops. These were : Sorghum, pumpkins, groundnuts, potatoes, tomatoes, beans, vegetables, fruit, wattle, cotton and tobacco, (the questionnaire form also provided space for at least three unlisted crops).

This section of the survey instrument (partially reproduced below) was set out as follows:-

OTHER CROPS

Were any of the following crops cultivated, for own use, sale or barter, during the past 12 months. Mark relevant section with X

	Kaffircorn	Pumpkins	etc.....
Cultivated			
For own use only			
For sale or barter			
Value sold or bartered if any	£	£	

2.14. 2 Economic Activities other than Crop Production:

To round off the broad picture of rural production and to get some idea of the existing variety and relative importance of sources other than crop production in the economy of the rural Swazi population, two further sets of questions were designed. One dealt with the type of home production in which the homestead was assumed to be more or less self-sufficient in traditional Swazi society, i.e. such common handicrafts as pottery, basket and woodwork, in respect of which a family supplied its own household utensils and the personal items of clothing and adornment of its members 1). The extent to which these crafts are still practiced today in individual homesteads is itself a useful indication of the stage of transition of Swazi tribal society.

HANDICARFT Specify what type of handicraft still occassionally or regularly pursued for own or family use, or for sale or barter during past 12 months (for instance: pottery, mats, baskets, beadwork, woodwork, leatherwork etc.)		
Type of Handicraft	Own use only (X)	Value Sold or bartered
		£
		£
		£
		£
		£

The other section aimed to incorporate the remainder of other possible (rural) sources of income, i.e. those not specifically covered elsewhere in the questionnaire. This mixed bag ranged from the activities of such 'professionals' as midwives and herbalists, to odd-jobbing, sale of forest produce, livestock or dairy products. It was simply cast as follows:-

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1) Actually, a certain amount of 'specialization' did obtain also in traditional society, in that people particularly skilled in pottery or other craft, produced more than their domestic requirements for the purpose of barter.

ESTIMATED INCOME OTHER SOURCES Has subject any OTHER source of income not yet mentioned? If so, specify and estimate income from each source during past 12 months. (For instance: midwife, herbalist, blacksmith, odd jobs for neighbours, selling forest produce, or sale of cattle, goats, fowls, eggs, hides, milk).	
Source of income	Value in £

2.15 Urban Areas:

For those living in the urban and peri-urban areas a special set of questions was substituted for the sections on agriculture and other sources of rural income applicable to the rural areas. Since the demographic, educational, employment and other characteristics of the urban population were covered by the rest of the questionnaire, the new section dealt solely with some aspects of urbanization. A comprehensive study of urbanization was not possible and the survey was therefore confined to only three key-aspects; Length of urban residence, the basis of urban tenure, and urban-rural contact.

With regard to the first topic, it was recognized that urban residence might constitute a pattern of urban living not confined to the locality of present residence, but possibly preceded by residence in another urban community either within or outside Swaziland. Both the mobility and total span of urban residence was therefore relevant.

LENGTH OF URBAN RESIDENCE			
	How long has subject resided :	Years	Months
(a)	in present urban area	- - - -	- - -
(b)	in other urban areas in Swaziland	- - - -	- - -
(c)	in other urban areas outside Swaziland	- - - -	- - -

The question of urban tenure is somewhat complicated by the fact that, apart from the people in one or two recognized and more or less planned African townships, there is a good deal of 'spontaneous' urban aggregation in Swaziland, especially in the immediate vicinity of such centres as Mbabane and Manzini. In the latter type of area there is no clearly defined basis of tenure; in fact it is even common for the ownership of land and building to be in separate hands (e.g. a person may have bought or built himself a simple dwelling on Crown land, or Swazi National land or privately owned farm). It was in an attempt to get some idea of the distribution of various forms of urban tenure that the following section was designed. The returns proved to be not altogether satisfactory because more often than not the responding householders themselves were completely ignorant of the legal basis of their tenure.

HOUSING
(Heads of Household Only)

1) Is subject OWNER OF HOUSE he lives in? YES or NO

Is subject OWNER OF PLOT he lives on? YES or NO

	Plot £ s d	House £ S D
If yes, what his house and plot cost him?		

2) If NOT Own house:-

(a) does house belong to EMPLOYER? YES or NO

does subject pay rent YES or NO

if YES, state MONTHLY rental £ s d

(b) does subject rent house from some OTHER LANDLORD? YES or NO

if YES, state MONTHLY rental £ s d

and name of landlord.....

If (a) or (b) not applicable or uncertain, explain basis of urban tenure.....
.....

3) Number of people REGULARLY SLEEPING in same house

ADULTS		CHILDREN	
M	F	M	F

The desirability of including in the present survey particulars about size, construction and condition of dwellings, was discussed with the Government Township officer. The idea was dropped, partly because it would increase an already extended schedule of enumeration, partly because this information could more effectively be obtained in the course of departmental routine inspection.

The extent to which urban-rural contact is being maintained is an essential aspect of the study of urbanization of a transitory society 1).

1) See Chapter X.

The 1960 survey could cover this aspect only in bare outline, and itself to two brief sets of questions. One dealt with the general (sometimes subjective) issue of whether the respondent considered that he or she had 'another home' in the rural area, a concept which can have particular relevance when the urban resident is, in fact, also the head of a rural homestead.

The second series of questions, concerned the deliberate maintenance of rural ties : the continued cultivation of fields in the rural area.

These two sections were structured as follows :-

DUAL HOME

Does subject have ANOTHER HOME :

(a) in the Swazi area? YES or NO [ ]

(b) elsewhere YES or NO [ ]

If so, state exactly where.....

Is subject the head of ANOTHER HOMESTEAD?

YES or NO [ ]

Does subject cultivate any fields in the Swazi or other rural areas?

YES or NO [ ]

If so, did he RETURN TO CULTIVATE:

In 1959? YES or NO [ ] if yes, state month.....

In 1958? YES or NO [ ] if yes, state month.....

In 1957? YES or NO [ ] if yes, state month.....

3. PRE-CODING AND COMPOSITION OF QUESTIONNAIRE FORM:

During the enumeration a certain amount of use was made of pre-coded responses (e.g. in the section dealing with Relationship to Head of Homestead, Religion, Age, Nature of Employment), and it is possible that this procedure, especially if the full range of code symbols is printed on the survey instrument (as in the Age section) may in future be profitably expanded in order to save both enumeration and coding time. In a recent urban survey 1) this device has been carried through to a very large extent, and apparently without undue trouble, although this method requires special training of enumerators.

In the 1960 survey, owing to its largely experimental nature, precoding was deliberately restricted, partly because of the uncertainty of the possible range of responses to many questions (and hence, uncertainty about meaningful response categories to be 'ticked off'), and partly because this procedure would substantially enlarge an already large survey instrument. In fact, we had reasons for preferring our fieldstaff to write down instead of mark off, replies. Our experience with the 1959 pilot survey had shown that there is a danger in allowing enumerators to make too liberal use of 'ticking off' pre-selected replies, since this sometimes led to hasty and careless work. In the 1960 survey we therefore insisted on written answers even to questions to which merely a 'yes' or 'no' reply was required; and in only a few cases did we permit 'crossing' of entries (e.g. 'If never married, cross here ◯ '). This policy was, furthermore, closely related to the manner in which the questionnaire was printed. For all Yes or No entries square 'boxes' were provided, and all 'crossed' responses were to be marked in heavily printed circles. In the pilot survey these boxes and circles were scattered rather haphazardly over the face of the questionnaire form, and there was a tendency for enumerators as well as supervisors to overlook some of them. The 1960 instrument was designed in such a manner that, as far as possible, boxes and circles were vertically aligned, so as to enable survey personnel to check with one glance whether any had been omitted. This device proved wholly successful.

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1) Of the Xhosa in East London, see D.H. Reader, The Blackman's Portion, Oxford, 1961.

4. PROCESSING:

4.1 Introduction:

Processing of the survey returns involved three stages of operation : coding, punching, sorting and tabulation. The tabulated results are the raw material upon which, after the necessary computation, the analyses are based, which in turn lead to the preparation of the tables, diagrams, graphs, maps and tect in which the results of the survey are cast in meaningful form.

It is the coding of the original returns that largely determines the degree of flexibility with which the survey material can ultimately be handled. Theoretically it is possible to accomodate every single variation of the responses given to all questions, and to correlate each variable with every other one. In practice this absolute flexibility is limited, in the first place by the need to create response categories large enough to be statistically meaningful, and secondly by the capacity of the sorting equipment available.

The Institute possessed one machine capable of sorting cards (at the rate of approximately 400 per minute) containing forty columns of twelve points each 1), that is a maximum variability of 480 responses per card. This sounds generous. In practice the scope is severely restricted. While sorting, the machine scans only one column per run and will react to only one punched hole in order to select the receiving box in which to drop the card. Ideally, for both punching and sorting, there should be not more than one response (i.e. punched hole) per column. In practice, multiple punching is possible and a single column could accommodate the responses to two or more questions, provided their combined number of possible variables does not exceed twelve. Since this complicates the sorting process (apart from slowing down the operation), 'double or triple punching' is avoided whenever possible, and coding is based on the hopeful premises that every card is used to accommodate the responses to not more than forty questions, each with a maximum of twelve possible variables.

Our survey involved between 100 - 300 questions, a substantial number of which (e.g. identification, age, income, relation-

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1) Ranged as follows:- A, B, 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

ship to homestead head etc.) involved, even in classified form, more potential variables than could be accommodated in a twelve point column. This meant that the information with regard to individual respondents had to be distributed over several cards. With an interpolating machine the question of correlating information punched on a person's first card with that contained on his subsequent cards, is no problem as long as his individual identity is suitably punched out on all his cards. We did not have an interpolator, and the correlative flexibility of our sorting procedure was limited to whatever information was contained on each card.

The design of the coding scheme for each set of cards was therefore complicated by the necessity of determining beforehand what variables were likely to require correlation. As long as we found ourselves on well-charted ground, the problem was merely one of card-space (itself a tricky jig-saw puzzle at times). But some sections of the survey had been drawn up experimentally and covered ground not or insufficiently explored before. In these cases we had to speculate on the items of information that should be repeated on a person's subsequent card or cards to make correlation by mechanical sorting possible. That we were not entirely successful in this respect, is proved by the fact that for Chapter III ('Rural Homestead Incomes') we had to resort to a large extent to individual examination and manual sorting of part of the original survey material in order to abstract the information we required. This was the lesser, and more flexible, alternative to designing a new coding scheme with a fresh set of cards suitable for mechanical sorting of the desired correlations 1). An example of how a single inadvertent omission, belatedly discovered in a normally well-charted field of survey, caused an immense amount of extra work, will be described below (section 4.4).

4.2 The Coding Scheme:

The main coding scheme made provision for the transmission of the survey material onto five different sets of punched cards which, as far as we could anticipate, would take all our sorting requirements into consideration. Four of these sets contained information

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1) In view of the fact that an interpolator would have greatly facilitated processing of the punched material, it may be asked why sorting was not handed over to a commercial firm under specific sorting instructions. One reason is that no interpolator for 40 column sorters was locally available. Apart from this, since much of the sorting itself was done on an experimental basis, the innumerable trial runs and revised instructions would have exasperated the professional operator who is used to the routine schedules of commercial and industrial accounting.

culled from the principal questionnaire form; one set covered the returns of the special survey of persons employed (largely in domestic service) on European premises in the urban centres (the so-called 'servant's card). In addition, two sets involved supplementary ('B') cards, to accommodate the overflow of the principal cards. The series thus comprised the following :

No. 1 'Homestead' card
No. 1B 'Supplementary Homestead' card
No. 2 'Personal' card
No. 2B 'Supplementary Marriage' card
No. 3 'Employment' card
No. 4 'Servant's card
No. 5 'Urban' card.

To render each individual card fully identifiable by mechanical sorting, its classification within its appropriate set, as well as its reference numbers with regard to sample area, homestead and individual order within homestead, were punched. Except for the Homestead card, the identification of which required the use of four columns (some 'double punched'), six columns were needed for this purpose.

Some details of the punch-coding of the various cards may now be given.

4.3 'Homestead' Card (No. 1):

In order to facilitate the production of preliminary results relating to the main characteristics of the population, the information with regard to the number of males and females in the homestead over and under 18 years old, as well as the total number of homestead members, was entered on this card. This gave us, at short notice, the overall distribution of the Swazi population in the various strata, by sex and adult or juvenile status, as well as the size of the homestead groups.

This information required five columns, and the remainder of the card was therefore used to accommodate information collected on a homestead or household basis : agricultural production, the pursuit of handicraft, income from all sources except wage employment.

In cases where the homestead comprised more than one semi-autonomous household, a supplementary card (1B) was required with suitable cross-references punched on both principal and supplementary card. All forty columns were ultimately utilized, and even some double punching was required.

4.4 'Personal' Card (No. 2):

This card, apart from the necessary individual identification (six columns) contained most of the personal information relating to the respondent: sex, age, and age group, country of origin, place of birth, ethnic group, religion, kinship relation, first marriage, and (in the case of females) reproductive history.

A supplementary (2B) card was used to record details about a person's second, third and fourth marriages; and in a handful of cases, even second supplementary cards were required to complete his or her marital history.

It was in connection with marriage and marital state that the smooth process of sorting and tabulation was severely jolted owing to a slight but near fatal ommission in the coding scheme. Having punch-coded full details (including particulars about divorce and death of the spouses concerned) about every single marriage contracted by individual males and females, it did not strike us to provide a special code entry summing up the person's present marital state after taking all his or her marriages into consideration. Nor did we repeat the respondent's age on his or her supplementary card. The result was that, when we wanted to draw up the fundamental table reflecting the marital state of the Swazi population in various age categories, we could not by mechanical sorting extract the necessary information in respect of the pluralists who, while being widowed or divorced under one marriage, might still be married under another marriage (the details of which we possessed but could not correlate without the interpolating machine, which we lacked). The subsequent transperforation of age data from the principal card to the supplementary marriage card (possible only because, by sheer luck, the corresponding columns happened to be vacant on the latter card) reduced the number of 'unknown' cases to a fraction of a per cent of the total production. Even then it required a most complicated sorting schedule, and some thirty hours of additional sorting operations, before our cards yielded the data for the 'marital status by age' table - which would have been a routine process had we not omitted a single, appropriate perforation on our 'personal' cards.

4.5 'Employment' Card (No. 3) :

This card containedthe particulars about the respondent's employment history, repeating his sex and age group from his personal card, and giving the data about his employments 'X', 'Y' and 'Z' (see Section above), that is: place of employment (six columns), duration (six columns), starting and termination dates (two columns), its nature (three) income (three), interval between employments (four), means and times of transport, frequency of commuting, distance to place of work, total number of employments etc.

Owing to the experimental design of this section of the survey, the statistician had to apply considerable ingenuity in order to ensure the utmost flexibility in sorting procedure. The cording schedule for this card is therefore at certain places a complex document, which requires a certain amount of double punching to expand the range of possible variables per column to several times the normal range of twelve. By adroit use of either 'A' or 'B' positions 1), a single column, for instance, sufficed to identify twenty-eight different places of employment 2); a similar device 3) made it possible to differentiate some 360 time-categories in the two columns dealing with the duration of an employment, instead of the normal 144. A vast amount of variegated data was in this way cast into a single set of cards, giving the analysts much-needed extra scope for experimental correlations. In spite of this, however, it is felt that an even greater flexibility might have been obtained had the material been coded for more than one set of cards, each schedule specially (but more simply) designed to meet a limited number of specific requirements 4).

4.6 'Servant's' Cards (No. 4):

This set of cards contained the information abstracted from the returns of a brief questionnaire circulated among all European employers of Africans on residential premises in the urban areas. The amount of detail required was small (simple sex and age divisions, nature of employment, frequency of home contact, town of employment, and a few other items), and no problems arose.

4.7 'Urban' Card (No. 5):

This card contained the coded data with regard to aspects of urbanization 5) i.e. details about duration of urban residence, 'dual home' situation (including the respondent's possible cultivating

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1) See footnote, page 113.
2) e.g. 4 - Hlatikulu; A4 - Havelock Mines.
3) By making 'A' represent 10, and 'B' represent 20.
4) For instance : the duration of employment was coded in time categories by subtracting the starting date from final date of employment, but (except in one instance) the dates themselves were left uncoded to save card space. For a study of increased participation in wage employment over a period of time, however, it would have been much easier if the dates of all employments had been incorporated in the cards. As it happened, this particular aspect of the employment study could only indirectly, and even then not quite satisfactorily, be tackled with our existing coding scheme.
5) See section 2.15 above.

activities at his rural home), accommodation (and possible overcrowding) and home ownership. In addition (apart from the necessary identification data), certain information from his or her other cards was repeated to make direct correlation possible; such as sex, age group, educational standard; whether the respondent was employed, and if not, the interval since he stopped working, the nature of his occupation - a straightforward coding schedule from which no sorting problems arose.

5. SORTING, TABULATION AND FORMULATION:

Mechanical sorting started at the end of November, 1960, and went on virtually without a break for more than two months. The process, carried out under the supervision of the statistician, yielded many hundreds of large and small frequency distribution tables on the major aspects of the survey. These were studied by the experts on the various disciplines, and at their instructions excerpted, revised, recast in percentage tables, or rejected, according to taste.

As broad patterns began to emerge and the research workers wanted to pursue their hopes and hunches, special sorting schedules were designed and the production of the sorting room changed from steady output to spasmodic outbursts of productivity, the studied results of which might either please or displease the scientist concerned, but would invariably prompt him to ask for more. Until, towards the end of May, 1961, the Institute's director had to call an embargo on further sorting operations until he had seen some tangible and reasoned results of previous efforts. The next few months the team members buckled down to systematic computing and writing, meeting from time to time to discuss and co-ordinate their findings. Since most of this work had to be squeezed into full lecturing time-tables, progress was slow, and the burden was not eased by the departure of one collaborator after another taking up duty elsewhere. Their places had to be filled 1) mainly by volunteer workers at the University, colleagues who lacked the advantage of being familiar with the broad concept and specific aims and methods of the survey, but who were nevertheless prepared to sacrifice time and effort to help out.

By December, 1961, more than half the Survey Report had been written, and several chapters were submitted to the Swaziland Administration before Christmas. The remaining chapters were completed by the end of March, 1962, when only two of the original team that launched the 1960 sample survey, were still left at the University to mark the end of this venture.

1) With the exception of Cruise, the statistician, who, having accepted the chair of mathematics at Rhodes University, nevertheless continued his active participation in the work by correspondence.

CHAPTER V

THE TRAINING COURSE

1. INTRODUCTION:

The wide dispersal of the enumerating staff during the survey operations made it necessary, in spite of a fairly elaborate system of supervision, that every enumerator not only had a sound working knowledge of the method of enumeration, but also a thorough understanding of the underlying principles and broad aims of the survey. The need for understanding was two-fold. First, no set of instructions could be devised which would cover all exigencies which might arise in the field, and only an understanding of the issues involved would enable an enumerator to use his common sense in situations for which he was not specifically prepared. Secondly, there was the need to explain the purpose of the survey to an enquiring population. We mentioned before that, largely through circumstances beyond our control, our plans to acquaint the Swazi people with our survey well before the start of operations, could not be implemented. The fact that the pilot survey of 1959 had, in some official Swazi quarters, met with some misunderstanding and suspicion, made it even more difficult to predict what the popular reaction to the main survey operations would be. Since the success of the enumerators depended entirely upon the willing co-operation of people and local authorities, the enumerators had to be prepared to act as their own ambassadors, capable of accounting lucidly and satisfactorily for their unusual activities and inquisitiveness.

The training course was therefore designed to provide the 'know why' before it got down to the 'know how'.

2. TIMING AND DURATION:

The enumerating staff was temporarily recruited from among suitable Swazi civil servants, and the fact that the majority were seconded by the Education Department made it necessary to hold the training course during school holidays. It was further highly desirable that the survey operations should start while instructions were still fresh in people's minds. Since the long summer vacation at the turn of the year would coincide with the considerable disruption of routine life and administrative activities due to Christmas, New Year and the great Incwala ritual, the winter vacation, though much shorter, was chosen instead and had to accommodate both the training course and the enumeration.

The training of enumerators for the pilot survey had lasted four and a half working days, and had proved to be too short. The 1960 course was therefore extended to two weeks (ten effective working days). Even this period, the maximum that we could afford without upsetting not only the enumeration schedule but also the school time table, was insufficient for some enumerators in whom, at the end of the course, we had less than full confidence. Had the supply of candidate-enumerators been more plentiful it would undoubtedly have been possible, within the time set aside for training, adequately to prepare the required number of field staff. But both for the 1959 and the 1960 training course, only a few more mustered than the minimum number required for the enumeration; and although the ultimate selection took a toll of the very weakest, perhaps one-third of the enumerators that entered the field, were less competent than we could have wished.

The scope of selection was further narrowed by the decision, in 1960, to form a small corps of supervisors from among the trainees, a dozen of the most promising of whom were picked out early in the course and given special training. This left a bare sixty-four recruits from whom to select the sixty enumerators we required.

The size of the enumeration team was determined by our experience of the pilot survey and our estimate of what the main survey would require in order to complete the task in approximately three weeks' field work, taking the length of the questionnaire, the geographic distribution and population density of the sample units, transport facilities and a number of other more or less speculative factors into consideration. Retrospectively, it may well be asked whether a smaller team of more uniformly high competence could not have done an efficient job in the same or perhaps slightly longer time. The Swaziland Survey Officer himself appeared to incline towards this view, but rightly pointed out that this would need both a higher degree of mobility of enumerators (possible only with the fullest inter-departmental co-operation 1) with regard to transport) and a prior and thorough public relations effort to familiarise the population with the aims and objects of the survey. The time lost by enumerators having to explain the nature of their enquiries before they could start firing their scheduled questions, must have been very considerable; and although the process of 'establishing rapport' with individual respondents will always demand some unhurried effort, no matter how thorough a preceding publicity campaign, the time spent on these recurrent preliminaries can undoubtedly be substantially reduced once the people have a general understanding of what is expected of them. A smaller and more select group of trainees can, moreover, be more intensively instructed during a two-weeks training course. (See Page 121).

3. SYLLABUS AND TIME TABLE:

3.1 Objects:

For the pilot survey enumerators were trained at the Swazi National High School at Mbabane. For the main survey the Director of Education offered the use of the more suitable Trades School at Mbabane. Trainees were accommodated and fed on the school premises. Teaching personnel consisted of Hughes (Social Anthropologist, responsible for the design of the course), Jones (Survey Officer) and P. Dlamini, an African headmaster of outstanding ability whose experience of the pilot survey made him admirably suited for this work. Two partially overlapping courses had been evolved, one for enumerators and one for supervisors. In outline both courses aimed at providing our field personnel with:-

a full explanation of the general and specific objects of the survey, and some understanding of its sampling methods;

explicit instructions with regard to each section of the questionnaire and the use of the special

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1) Although the Departments of Land Utilization and Education were primarily involved in the survey, other Departments, such as Public Works, Geological Survey, Police, Stores and Provisions generously co-operated whenever help was needed.

aids (count chronologies, etc.) designed for some of them;

a thorough opportunity for all concerned to test understanding and skill by means of theoretical and practical exercises by making them check their own and each other's work, and by encouraging them to ask questions, offer criticism and suggest improvements.

Throughout, the need for accuracy and the value of checking were stressed.

For the first three days, until the selection of supervisors had been made, the group of trainees remained undivided. After that, the course was split and supervisors received separate instruction. The time table, reproduced below, gives a useful outline of the training plan.

SWAZILAND SAMPLE SURVEY - 1960

TIME TABLE - ENUMERATORS AND SUPERVISORS TRAINING COURSE

Course assembles Saturday 25th June, 1960 (Supervisors will attend Lectures for Enumerators unless otherwise shown).

MONDAY 27th JUNE

0900-0945	LECTURE	Purpose and nature of survey.
0945-1030	LECTURE	Explanation of questionnaire.
1030-1130	BREAK	
1100-1200	LECTURE	Explanation of questionnaire.
1200-1300	LECTURE	Use of chronologies.
1300-1400	LUNCH	
1400-1445	EXERCISE	Completion of questionnaire, from mock personality (Exercise 1).
1445-1530	LECTURE	Labour section.
1530-1545	BREAK	
1545-1630	LECTURE	Comments on results of Exercise 1.

TUESDAY 28th JUNE

0900-0945	LECTURE	Discussion of Exercise 1.
0945-1030	LECTURE	Marriage, Divorce, Reproductive History, and Agricultural Section.
1030-1100	BREAK	
1100-1200	EXERCISE	Exercise II in class.
1200-1300	LECTURE	Urban section.
1300-1400	LUNCH	
1400-1530	LECTURE	Questions from enumerators.
1530-1545	BREAK	
1545-1630	LECTURE	General approach to enumerators.

WEDNESDAY 29th JUNE

0900-1030	EXERCISE	Exercise III.
1030-1100	BREAK	
1100-1200	LECTURE	Urban section.
1200-1300	LECTURE	Questions from enumerators.

THURSDAY 30th JUNE

0900-0945	LECTURE	Cross-checking by enumerators.
0945-1030	TALKS	Departmental officers.
1030-1100	BREAK	
1100-1200	TALKS	Departmental officers.
1200-1300	LECTURE	Agricultural section.
1300-1400	LUNCH	
1400-1445		Cross-checking of returns of Exercise III (supervisors only: Lecture on general responsibilities of Supervisors).
1445-1530		Comments on cross-checking of Exercise III (Supervisors only: Examination of returns of Exercise III).
1530-1545	BREAK	
1545-1630		Practice with chronologies.

FRIDAY 1st JULY

0830-1300	EXERCISE	Exercise IV in field.
1300-1400	LUNCH	
1400-1530		Discussion of problems encountered in Exercise IV (Supervisors only: Lecture on checking forms). (Supervisors only: Examination of returns of Exercise IV).
1545-1630		Practice with Labour section.

SATURDAY 2nd JULY

0900-1030		Practice with Agricultural, Urban and Reproductive History sections.
1030-1100	BREAK	
1100-1200		Practice with Labour section and chronologies (Supervisors only: Lecture on purposes of survey).

MONDAY 4th JULY

0830-1300	EXERCISE	Exercise V in field.
1300-1400	LUNCH	Cross-checking and correction of forms.
1400-1445	LECTURE	(Supervisors only: Labour section).
1445-1530		Cross-checking of returns of Exercise V - Supervisors only.
1530-1545	BREAK	
1545-1630	LECTURE	Practical problems in the field (Supervisors only: examination of forms from Exercise V).

TUESDAY 5th JULY		
0900-1030		Labour section (Supervisors only: Lecture on particular faults likely to be found).
1030-1100	BREAK	
1100-1230		Practice on difficult sections (Supervisors only: Lecture on Marriage, Religion and Reproductive History sections).
1230-1330	LUNCH	
1330-1630	EXERCISE	Exercise VI in field.
WEDNESDAY 6th JULY		
0900-1030		Cross-checking of forms of Exercise VI and discussion of specific practical problems (Supervisors only: lecture on Labour section).
1030-1100	BREAK	
1100-1200	LECTURE	Religion, Marriage and Employment sections (Supervisors only: Examination of forms of Exercise VI).
1200-1300		Practice on Religion, Marriage and Employment sections.
THURSDAY 7th JULY		
0900-1030		Comments on Exercise VI.
1030-1100	BREAK	
1100-1300		Movement plans for the enumeration period (Supervisors only: movement plans for supervisors).

COURSE DISPERSES

3.2 Explanation of Questionnaire:

The structure and particular features of the questionnaire, which formed the main dish of the training course, have been discussed in Chapter IV and need not be repeated.

Although very great care had been taken to render the phrasing of the questions as simple and straightforward as possible, it remained in some respects a complex document. Consequently, during the training course, and especially the practical exercises, a host of minor confusions cropped up for which specific rules had to be laid down. Three examples may suffice here.

Head of Homestead: The questionnaire required, as a primary means of identification, the name and surname of the head of the homestead. This apparently straightforward question raised queries at the very first scrutiny of the form at the training course. What was to be done in the case of widows who in fact, but not legally, occupied such a position? To enter the woman's name would be contrary to Swazi custom; to write down the name of the deceased's eldest surviving brother (de jure head of the family) would be legally correct but might be logically wrong; to mention the eldest son might be slightly absurd if he happened to be a child; if the popular usage of referring to the homestead by the deceased's husband name were followed, would it not in effect mean (some trainees asked) that 'corpses' were to be enumerated as well as living people, and would not this be driving Swazi custom a bit too far?

The answer was simple: (a) the problem would not occur, because complete lists of all homesteads to be enumerated had been drawn up beforehand and all had been identified by the correct names of the homestead heads; (b) even if some of these names represented deceased people, they would not be included in the population count.

Surnames: Every Swazi, male and female, has a clan name, sibongo, inherited in the paternal line, and usually translated in English as 'surname'. Our questionnaire therefore required 'surnames'. In Swazi, however, married women retain their paternal surname, but are referred to, in English, as Mrs. So-and-so, the husband's clan name. Enumerators were puzzled, until it was ruled that the surname according to Swazi custom was to be recorded.

The 'N/A' bogey and the 'Nil' return: The questionnaire used in the pilot survey permitted enumerators to take liberties with questions which either were irrelevant to certain respondents, or merited a nil return. In this type of case the entries were often left blank, which caused confusion in the coding room. The 1960 questionnaire was therefore designed to elicit written answers as far as possible (e.g. Yes or No). During the training course, moreover, explicit instructions were given that no answer 'boxes' were to be left blank. How now to deal with such questions (sometimes whole sections) which were obviously not applicable to certain respondents? The ruling: write N/A for 'not applicable' in the spaces concerned. During the first practical exercise some meticulously applied this rule in respect of every single box in sections which as a whole were clearly inapplicable, a time-consuming and barren exercise. The rule was therefore modified and trainees were instructed to strike out and write N/A across irrelevant sections (such as 'Reproductive History' in the case of all male and immature female respondents; or the irrelevant one-half of two mutually exclusive parts in the Employment section. This still left the scattered multitude of individual questions which might be either inapplicable or require a 'nil' return. The distinction between the two types of entry somehow eluded a number of candidates, and in order to avoid a return to the era of inexplicable blanks - a not uncommon escape for uncertain minds - a considerable amount of time and practice had to be devoted to exercises in elementary logic.

It was impossible, and indeed undesirable, to lay down hard and fast rules for every eventuality. Instructors aimed to ensure that, in general, there would be uniformity in the way enumerators handled their questionnaires, and that whenever an unforeseen situation would arise, individual team members would be able to record the information in an intelligible manner, if necessary by appending explanatory notes on the prepared sheets of paper especially supplied for this purpose. The written instructions in the enumerators' and supervisors' manuals were therefore reduced to a minimum, and the majority concerned the principles, definitions and codes applicable to specific sections of the questionnaire (Chapter IV).

3.3 Practical Exercises:

Familiarity with the routine of fact collection, the discipline of accuracy and critical examination of recorded responses, and the ability to cope with the unexpected in a satisfactory manner, depended very largely upon the amount of practice and correction the trainees were able to get during their ten-day course. A large part of the programme was therefore devoted to practical exercises, of which the first took place in the classroom (a hypothetical respondent). For the second, the candidates were required to act as their own respondents. The third exercise was arranged with the co-operation of the

Department of Prisons which delivered a truckload of merry offenders at the school premises for a series of amicable and successful interviews 1).

The last three exercises were planned as full-fledged enumerating excursions into Mbabane and environment, making use of volunteer homesteads falling outside the sample areas. The first of these was meant to occupy a full morning, during which the enumerators were to visit homesteads previously notified and agreeable to co-operate. For some reason the arrangements miscarried, and by midday a report came through to headquarters indicating that no volunteer homestead could be found in the assigned area and that enumerators were roving far and wide over the hilly countryside, hunting for an elusive quarry. All training was suspended for the day in order to rescue strayed team members. When dusk fell, this operation at least was successfully completed without the loss of a single man. The next exercise was planned for the area round Ekupheleni, where prospects for a good reception seemed fair because the anthropologist had worked and was well-known in that neighbourhood. Unfortunately, this dress rehearsal happened to coincide with the local annual agricultural show, so that the necessary preliminary explanations and introductions, and the actual interviews, had to compete with such more spectacular performances as formal speeches by chief and agricultural experts, and the giving of prizes for the best needlework, pastry or cabbage.

The last exercise took place in the urban area of Mbabane itself and proceeded more or less according to plan.

Questionnaire forms returned by trainees were checked and corected by their colleagues, supervisors and instructors. Recurrent mistakes formed the topics of joint discussions and helped to sort out minor difficulties which might otherwise have impeded the smooth running of the survey operation, or the accuracy and intelligibility of the recorded responses.

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1) In their present predicament, the section on Employment, naturally raised some problems.

4. SPECIAL AIDS FOR ENUMERATION:

4.1 The Manual:

At the end of the training course the enumeration staff was issued with a mimeographed, bound foolscap manual containing:-

general instructions to enumerators and supervisors (see Annexure A and B);

classified notes and code lists referring to various sections of the questionnaire 1);

a list of near-equivalents in Swazi of the months of the year (see Annexure D);

lists of dated events of territorial and local importance in chronological order ('event chronologies') and instructions on how to use these (see section 4.2 below);

a supply of blank fascimile forms which enumerators could use as 'practice sheets' for the reproduction history of women with a large number of children 2);

a supply of partially prepared sheets on which enumerators were expected to record any observation or comment which would facilitate the interpretation of possibly unusual situations or information relating to any homestead.

Apart from the manual, the fieldstaff was equipped with small but detailed maps of the Territory on which, in relation to the particular sample area concerned, two concentric circles showed the 15 miles and 30 miles limits referred to in the Employment section of the questionnaire. In addition separate lists, providing a dozen likely places of employment outside the Territory, and the names and exact distances to, two dozen of the most popular places of employment inside Swaziland, were handed out in respect of every sample square (see Annexure E).

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1) The gist of these notes is given in Chapter IV.
2) See Chapter IV, section 2.11.

The supply of stationery included large envelopes, each one to contain the completed forms and summary schedule of the inhabitants of a single homestead (see Annexure F). The latter schedule had to be pasted on the outside of the sealed envelope after the forms had been checked, cross-checked and passed.

4.2 The Event Chronology:

Of all the enumerator's aids, the event chronology was perhaps the most important. Designed to promote accuracy and a measure of uniformity in the difficult task of fixing dates and estimating ages in a society largely devoid of written records, the event chronology was introduced as a time scale into which the dates of the respondents' personal histories could be fitted as closely as possible. Mindful of the dispersed nature of our operation, a double effort was made in this direction. One chronology comprised dated events of a more or less nationwide interest; a second set was designed for each of the five administrative districts and contained events of more localized significance. To make the device even more useful, not only the dates of the events were given in chronological order, but also the number of years since their occurrence until the present (i.e. 1960). A portion of the 'national chronology' and the chronology for the Hlatikulu district, are here given as illustrations:-

EVENTS OF TERRITORIAL IMPORTANCE

(Excerpt covering period 1906-1925)

Year	Year ago	Event
1906	54	Tax reduced from £2 to £1.
1907	53	Swaziland Police started - Swazi deputation to England.
1908	52	Demarcation of N.A.'s - Zombodze School built.
1909	51	Youngest Balondolozi and oldest Masotja born (approx).
1910	50	Dog Tax started - Zombodze burned - Inkanyeta yomsila 1).
1911	49	Census taken. Swazi National Fund started.
1912	48	The "Abantu-Bathe" paper established in Johannesburg. Youngest of the Masotja Regiment born.
1913	47	Chiefs meet High Commissioner at Barbeton.

1) Halley's Comet (the 'Star of the Tail')

1914	46	Outbreak of first World War - Mr. Coryndon (Mzindazwe) left Swaziland.
1915	45	Mnt. Malunge died - Lobamba burned.
1916	44	Ingwenyama went to Lovedale. Mr. Honey (Mhlope) became R.C. - Tax raised to £1.10.0.
1917	43	10/- War levy on Swazi.
1918	42	Heavy rains and floods. Ngwenyama Sobhuza returned from Lovedale. Influenza - Chieftainess Thongathonga died.
1919	41	Sobhuza shown to the Nation and the Administration.
1920	40	Bachelor's tax raised to £1.15.0.
1921	39	Ingwenyama installed.
1922	38	Census taken - Ingwenyama went to England.
1923	37	Ingwenyama returned to Swaziland.
1924	36	Indhlovukazi handed office to Lomawa.
1925	35	Visit of Prince of Wales - Death ofLabotsibeni.
1882	78	Mahamba Mission established.
1892	68	Makosini Mission established.
1901	59	Nazareth (Hluti) Mission established.
1902	58	Galilee, Bersheba, Mooiplaats, Mizpah, Patmos Missions established. South African Police stationed at Mahamba. District Commissioner arrived at Hlatikulu.
1904	56	Ekujabuleni Mission established.
1906	54	Pameel Mission established.
1907	53	Ekana Mission established.
1913	47	Dip "No. 26" built on Ingwavuma river - Nsongweni School established.
1916	44	Mr. A.G. Marwick (Ndlavela) became A.C. Hlatikulu.
1924	36	Makesini store opened.
1925	35	Lubuli Dip Tank No. 137 opened.
1926	34	Cotton Growing at Nsoko started.
1928	32	Death of Chief Ntshingila.
1932	28	Chief Ngungungyani Dlamini executed.
1933	27	Police Station at Lubuli opened.
1938	22	Death of Chief Magele.
1941	19	Hlatikulu Central School opened.
1944	16	Halpins store at Hlatikulu closed.
1952	8	Chief Nyakenye died.

Although considerable care was exercised in the selection of events 1) and the verification of dates, we realised that these chronologies were still pretty crude measuring instruments which needed refinement by critical use and amplification in the field. Enumerators and supervisors were therefore instructed to test the effectiveness of

1) During the pilot survey enumerators were especially charged with collecting well-remembered and verifiable occurences; a request for a similar type of information was sent to all district administrator's offices. Although the harvest in both cases was small, some useful data were obtained and incorporated in the 1960 chronologies.

the individual entries in the field and, whenever possible, improve the future usefulness of instruments by suggesting more suitable items on the basis of their experience gained in the different localities.

Even a good event chronology requires skill and caution in handling, and our enumerators were warned of the dangers of careless use (see Annexure C). While they could, at best, use the device as an aid to jogging a person's memory or to verifying a reported date, they should never dispense with further checking.

In one or two cases the event chronology itself tended to confuse rather than clarify. For instance, an early version contained reference to a 'locust' plague in 1934, but subsequently it appeared that in some parts of the country an even more disastrous, and therefore locally better remembered, visitation had taken place in the 1920's. After the date of the earlier event had been established and duly added to the chronology, enumerators had to make certain in each case which of the two events was used as a reference date.

The years of regimental inauguration (one of the most common indiginous methods of establishing a person's age) constituted frequent points of reference on the national time table, but were of little use when it came to accuracy. Not only are the dates at which the older regiments were formed subject to some speculation, but they are too widely and irregularly spaced to serve as accurate guides to a person's age.

Our field personnel had to be warned that, although generally speaking the illiteracy of the population constituted the greatest impediment to accurate dating, in some cases a measure of literacy might be even more dangerous. Among those who possess a smattering of English the use of English in referring to years and months is often a matter of pride and self-assertion which is not always matched by an understanding of the time values involved. In such cases, dates confidently offered as absolute certainties, upon closer inquiry only too often prove to be uncertain indeed.

The instructors themselves found out how easily literacy could give rise to over-confident assumptions. The enumerators were comparatively well-educated men who, in their official capacity (for instance as school teachers) must have been acquainted with the kind of administrative record which requires dates and ages. It was therefore only natural for instructors to suggest that, in checking the ages of people they might in some cases find their own age a useful yardstick. This was immediately contradicted by several trainees who asserted that, while as literate men they knew their children's ages, as children born of illiterate parents they had no idea of their own age.

The sample survey introduced the event chronology as a general chronometric instrument on a nation-wide scale. Like other measuring devices which we designed and used because the more conventional means were either non-existent or not practicable, this instrument, too, in spite of its proven usefulness, needs to be refined to improve the accuracy and scope of its application. It would take little effort by some interested officers in the Administration to undertake this task, and the benefits would be great. For the need remains for accurate dating as an essential sociometric tool in the study of population development, and it will take a generation and longer before more sophisticated forms of human documentation have become the established norm in Swazi society.

5. SUMMARY:

In common with virtually every other aspect of our random sample survey, the training course for enumerators and supervisors was a compromise between the ideal and the feasible. Here, too, without precedent and well-proved methods to lead us all the way, experiment and speculation of necessity formed part of a largely empirical process of finding the best way out. In the field of training, as in other fields, we had to accept risks, if only because we dare not risk feeling defeated. And in this respect, as in others, we placed our confidence in the common sense and loyalty of our collaborators. Having viewed the results of the work of our enumerators and supervisors, some of whom we saw off to their remote stations with a prayer in our hearts, we find that our confidence was not misplaced.

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2.

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A N N E X U R E S

5.

6.

7.

ANNEXURE A

SWAZILAND SAMPLE SURVEY 1960

GENERAL NOTES FOR ENUMERATORS.

The information obtained during this survey is CONFIDENTIAL and will be used solely for the purpose of compiling statistics. The uses to which these statistics will be put and the main purposes of the survey are described in a separate note.

The survey will include not only Swazi but all Africans.

Because the lists of homestead heads were obtained some time ago, enumerators should advise supervisors if they see any new kraals or kraals that have been abandoned.

Enumerators will be organised into teams under the direction of a supervisor who will be responsible for the conduct of work in each square. Supervisors will allocate homesteads to enumerators. All difficulties must be reported to the supervisor immediately.

The enumeration period is short and enumerators will be expected to see that their programme of work is completed in the time allotted.

For the purpose of this survey enumerators should use their common sense in deciding what constitutes a homestead and, in cases of doubt, should accept the ruling of the subjects concerned. In general terms, a homestead may be defined as any distinct residential unit, which is described in Swazi as an umuti, under the control of a single homestead head, the umnumzana.

Enumerators must ensure that a separate form is completed for every man, woman and child in each homestead. If possible, enumerators should interview the umnumzana, and each person (except children) for whom a form must be completed. In the absense of any member of the homestead, another member may be interviewed about the absent member provided that they can ACCURATELY answer the questions. Children and neighbours cannot usually provide accurate information and information on lodgers should be obtained from the lodgers themselves, if possible.

8. Enumerators must have no preconceived ideas as to what the answers to their questions should be, and they must be careful to see that the subjects do not answer the questions in the way they think enumerators want them to answer.

9. Enumerators must, at all times, be POLITE and TACTFUL. They should try to establish friendly relations with the subject who is being interviewed and act as though they expected the information to be readily supplied.

10. Enumerators should report, as soon as practicable, to the supervisor if the occupants of an umuti are absent or if any subject refuses to answer questions. In the latter event, enumerators must maintain a courteous and conciliatory manner under all circumstances whilst stressing the value of the survey information and the fact that the answer will be treated in strict confidence.

11. When the enumerator is satisfied that a form has been accurately completed for each member of a homestead, the forms should be put into an envelope and the form on the cover of the envelope completed. The envelope should on no account be sealed.

12. On the completion of each day's work, forms should be handed to another enumerator for checking and another enumerator's forms should be checked. When the forms have been checked and any mistakes or omissions rectified, the forms should be handed to the supervisor.

13. The supervisor should be informed of the progress of each enumerator's work each day.

14. All claims for travelling, subsistence and special allowances will be dealt with by supervisors.

ANNEXURE B

SWAZILAND SAMPLE SURVEY 1960

INSTRUCTIONS FOR SUPERVISORS

1. Supervisors will be in charge of teams which will vary in number from three to eight enumerators.

2. The responsibilities of the supervisors will be:-

   (a) Supervisors will ensure that every homestead in each square has been covered and that a form for each inhabitant of the homesteads has been accurately completed. All forms should be cross-checked by enumerators for mistakes and omissions and supervisors must ensure that this is done each day. If supervisors discover mistakes, ambiguities and omissions, these should be corrected immediately. The information on the outside of the homestead envelopes must correspond with the information given on the forms. When supervisors are satisfied that all the forms in one homestead have been fully and accurately completed, and only then, the envelope should be sealed. The envelopes for each homestead should be checked against the homestead list, and when all are ready should be bundled together and handed over to the Agricultural Officer or person responsible for moving the team to the next area.

   (b) Supervisors will be given lists of the homesteads in each square they will cover. They will be responsible for allocating homesteads to each member of their team. They should maintain a careful record of each day's work on the forms provided, so that they can check on the progress of each enumerator and the team as a whole.

   (c) If an enumerator appears to be weak in his knowledge of how to fill in any particular section, or repeatedly makes the same mistake, supervisors must draw the enumerator's attention to his weaknesses and mistakes and correct them.

   (d) Supervisors will be responsible for the erection and break up of camps so that enumerators are free to begin the survey as soon as possible.

(e) Supervisors must ensure that friendly relations are maintained with the local chiefs and tindvuna. Their first task on arrival in any square is to contact the chief and induna who will assist in providing a camp guard and labour for the erection of the camps. The chiefs have been warned that the survey is taking place and have been instructed to give every assistance.

(f) If enumerators report that any person has refused to answer the questions, supervisors must first attempt to persuade the subject of the value of the survey information, that this information will be treated in confidence and that Ngwenyama and the Swazi National Council have given their full support. If the subject is still reluctant, the matter should be reported to the chief or induna.

(g) Supervisors should remember that the survey must be completed as soon as possible, without sacrificing any standards of accuracy. To do this, it may be necessary to work over weekends, early in the morning or late in the afternoon. There will be no fixed working hours. Although this is not their principal task, supervisors should help out with the enumeration where possible.

3. An Agricultural Officer has been allotted to each team to move the team from square to square. Supervisors should keep the Agricultural Officer informed of the progress of enumeration. Time-tables for the enumeration of each set of squares will be issued and if it appears that this will be varied in any way supervisors should contact the Agricultural Officer as soon as possible by any means, such as telephone, message by bus or taxi, or by runner.

4. Supervisors will be in charge of the equipment of each team. They will be supplied with enumeration forms and homestead envelopes by Agricultural Officers. Other items will be supplied during the Course of Instruction.

5. Supervisors will be issued with claim forms for allowances and these should be completed for each member of the team before the team disperses. They will be collected by Agricultural Officers.

6. In order to cover any expenses that may occur, supervisors will draw £3 from the Survey Officer. This should be used to pay for camp guards, etc., or runners. The pay of camp guards and guides must not exceed 2/0d a day. Supervisors will complete the relevant receipts and pay slips and account for the money used.

ANNEXURE C

SWAZILAND SAMPLE SURVEY 1960

INSTRUCTIONS FOR USE OF CHRONOLOGIES

1. It is extremely important to establish as accurately as possible the ages of individuals, both now and at the times when certain events occurred: marriage, births of children, first departure for work, etc.

2. Many of these enumerated will be unable to give their exact ages or the exact dates when past events occured. To enable enumerators to establish these, chronologies have been prepared, listing a number of important events which informants should remember (if old enough), and the dates when these events occurred.

3. The enumerator's task is to establish dates. Ages etc. can then be read off, if required, from the entry opposite the date in the column headed "years ago".

4. In establishing these dates enumerators should use common sense, and confirm that dates of births, etc., conform to their own estimates of the probable age of subjects.

5. As human memory is fallible, reliance should not be placed on an informant's memory of a single event - thus, if a man states that he can remember the death of King Bunu, he should be asked to estimate his own age at the time of some later event he clearly remembers (say, during the period 1904-1914). This should agree with his regimental affiliation.

6. If informants can remember no event occurring in the same year as a birth, death, etc., attempt to establish the date of this as so many years after or before an event that they do remember.

7. In many sections of the questionnaire it is not sufficient to discover only the year in which an event occurred. Enumerators must attempt to establish the month. If this cannot be established most subjects will remember the season of the year, and this should enable enumerators to estimate the month of occurrence with reasonable accuracy.

8. For the convenience of enumerators, a list of Swazi months and their approximate English equivalents is given at the end of the event chronologies.

ANNEXURE D

SWAZILAND SAMPLE SURVEY 1960

APPROXIMATE SWAZI EQUIVALENTS FOR ENGLISH MONTHS.

January	Mbimbitwane
February	Indlovana
March	Indlovulenkulu
April	Mabusu
May	Inkwekweti - Inhlangulu
June	Inhlaba
July	Lukolwane
August	Inei
September	Inyoni
October	Impala
November	Inkosilencane - Ulweti
December	Inkosilenkulu

ANNEXURE E

SWAZILAND SAMPLE SURVEY 1960

PLACES OF EMPLOYMENT OUTSIDE SWAZILAND

Rand
Orange Free State
Witbank
Barberton Town
Zululand
Vryheid
Dundee
Durban
Portuguese East Africa
Carolina Town
Pongola
Piet Retief
Ermelo Town

PLACES OF EMPLOYMENT IN SWAZILAND AND EXACT DISTANCE FROM SQUARE 2907

Distance in Miles	Places of Employment in Swaziland
86	Pigg's Peak Town
66	Mbabane Town
48	Manzini Town
52	Stegi Town
24	Hlatikulu Town
6	Hluti Town
28	Goedgegun Town
48	Mankaiana Town
18	Gollel Town
	Rural Centres
28	Big Bend
20	Kubuta
82	Ranches (S.I.S.)
72	Tambankulu & Umbuluzi Est.
92	Ngonini
86	Peak Timbers
84	Swaziland Plantations
88	Havelock Mines
56	Usutu Forests - Mhlambanyati
48	Malkerns
60	Ezulwini
18	Ralli Bros & Stock (one region)
66	Croydon
8	Anthracite Mine (J.C.I.)
34	Usutu Forests - Gege

ANNEXURE F

SWAZILAND SAMPLE SURVEY 1960

HOMESTEAD SCHEDULE

Sample Unit No:

Homestead No:

Name of Head of Homestead:

Date of Enumeration:

Name of Enumerator:

INHABITANTS				
1	2	3	4	5
	Name (Ibito)	Surname (Sibongo)	Sex M or F	Relationship to Head of Homestead.
1				
2				
3				
4				
5				
6				
7				
8				
9				
etc.				
25				

EXPERIMENT IN SWAZILAND

Report of the Random Sample Survey, 1960

by

the Institute for Social Research,
University of Natal,

for

the Swaziland Administration

Edited by
J.F. Holleman

(VOLUME TWO)

Institute for Social Research,
University of Natal, Durban, 1962

P A R T II

SURVEY RESULTS

CHAPTER VI A

DEMOGRAPHY

DEMOGRAPHIC CHARACTERISTICS

C.J. Jooste

INTRODUCTION: COMPARISON WITH BASUTOLAND AND BECHUANALAND:

.1 Size and Growth of the Population 1):

Swaziland is the smallest of the British Protectorates in Southern Africa, and, with the exception of Gambia, the smallest non-self governing territory under British control on the continent. It is approximately half the size of Basutoland, and can fit into Bechuanaland more than thirty times. Its area is 6,704 square miles.

.2 Size:

The total population in Swaziland numbered 185,215 in 1946 as compared with 563,854 in Basutoland, and 296,310 in Bechuanaland. The ten years from 1946 to 1956 have been a period of rapid population growth in the protectorates, but by the end of that period Swaziland, with 237,041 people, including absentees, still had the smallest population and Basutoland with 641,674, excluding absentees 2), the largest.

The average annual growth for the three protectorates is given below in Table 1. The rates fluctuate considerably from one census to the other, and no doubt these fluctuations could partly be attributed to differences in completeness of the enumeration. On the whole the growth rates seem to be higher for Swaziland than for the other two territories. Both Swaziland and Basutoland have, after periods of decline, experienced considerable increases in their growth rates during the past ten years 3).

The declining rates during the thirties and the forties may be attributed to an increasing tendency for workers in the High Commission Territories to take up employment in the Republic of South Africa and elsewhere, and to acquire permanent residence

1) For the purpose of this section the figures relating to Swaziland are based on the official census of 1956, and not (unless specifically mentioned) on the 1960 Sample Survey by the Institute for Social Research.
2) "Out of a total population of perhaps 800,000, it is estimated that about 130,000-mostly men - are continuously resident outside the territory...." (Report of an Economic Survey Mission, HMSO 1960, p. 225).
3) The figures for Basutoland are not strictly comparable, as the population totals do not include workers temporarily residing outside the protectorate.

there. In Basutoland, in particular, it would seem that over the past few decades about all of its population growth has been absorbed by the Republic. The earnings of the migrant workers are also an important source of income to the African families in Basutoland, Bechuanaland and Swaziland 1).

TABLE 1.

THE POPULATION OF SWAZILAND, 1904 - 56. AND GROWTH RATES FOR SWAZILAND, BASUTOLAND AND BECHUANALAND.

Census Year	Swaziland Population	Rates of Population Growth		
		Swaziland 1)	Basuto-land 3)	Bechuana-land
1904 2)	85,419	-	-	-
1911	99,959	2.25	2.11	-
1921	112,951	1.23	2.12	2.01
1936	156,715	2.21	0.80	3.75
1946	185,215	1.68	0.03	1.09
1956	237,041	2.50	1.30	0.99

1) Including absentees.
2) It is possible that no account was taken of the absentees for the 1904 Census.
3) Excluding those resident outside the territory.

Apart from the possible effects of migration, the high increase rates in the protectorates during the 1946-56 decade are also significant in that they may indicate the emergence of these populations from a phase of slow growth, resulting from continuing low levels of living and high mortality, and their entry into a phase of rapid growth as a result of falling death rates. A closer examination will have to be made of the mortality experience of these territories. If death rates are in fact falling persistently the numbers of young children will tend to increase rapidly over the years to come. This will give a high dependency ratio which in turn may hinder economic development.

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1) According to the "Report of an Economic Survey Mission" (HMSO 1960) the average number of Swazi working in South Africa during 1958 was 7,200 and it was estimated that during that year these labourers brought cash and goods to the value of £200,000 into the country.

Part of the recent increase may, however, be due to a reduction in the flow of workers to South Africa and other neighbouring territories. It is estimated that since 1936, approximately 300,000 foreign born Bantu acquired permanent residence in the Republic 1). The High Commission Territories, whose citizens have until recently been treated as South African Bantu, contributed a considerable proportion of these migrants. Movements of this nature are now largely confined to recruited workers who return to their countries of origin upon the completion of their contracts. The period of a contract in the case of Swaziland may not exceed one year 2).

1.3 Density:

Population density is a useful measure of the relative degrees of concentration of population in the country as a whole, and in the various districts or other subdivisions. One of the important implications of population growth is the rising densities it produces. At the census taken in 1904 the average density of population (all ethnic groups) in Swaziland was roughly 13 persons per square mile, and this has risen steadily to 35 in 1956. The Swaziland Survey of 1960 3) revealed that the average population density in the Rural Survey Areas was 55 persons per square mile, which is comparable with the 1956 average density figure for Basutoland, where in contrast to Swaziland, there is virtually no land held by Europeans. The most densely populated of the three protectorates is Basutoland, but the slower rate of growth has naturally resulted in a more gradual rise in density than in the case of Swaziland. Density in Basutoland has doubled since the beginning of the century, while in Swaziland it has increased more than three times. Densities in Basutoland are very low - at present probably well below two persons per square mile.

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1) Cf. J.L. Sadie, "Aard en aanwas van die S.A. Bevolking", in die S.A. Akedemie vir Wetenskap en Kuns, 'n Halfeeu van Ekonomiese Vooruitgang. Kaapstad: Nasionale Handelsdrukkery, 1959.
2) Swaziland : Report for the Year 1958, p. 6, Her Majesty's Stationery Office, London, 1959.
3) Chapter VII Table 8.

TABLE 2

POPULATION DENSITY IN THE THREE PROTECTORATES
(PERSONS PER SQUARE MILE)

Census Year	Swaziland	Basutoland	Bechuanaland
1904	12.7	29.8	-
1911	14.9	34.5	0.45
1921	16.8	42.6	0.56
1936	23.4	48.0	0.97
1946	27.6	48.1	1.08
1956	35.4	54.8	1.19
1961*	40.0	58.4	1.25

*Estimated figures; the Swaziland density is based on a predicted population of 268,190, derived from the rate of growth indicated by the official census figures. This is well above the figure indicated by the 1960 Sample Survey.

A useful measure for supplementing the density figures given in Table 2 is to calculate the number of persons (male and female) engaged in agriculture per unit area of cultivated land. As a result of the 1960 Survey, it was possible to obtain the ratio between population and arable land for the Rural Survey Area 1). Successive records of such ratios will give an indication of the rise or decline in the efficacy of agriculture over a period of time, and will therefore present a more refined picture of the relation of population to resources than do average population figures as such. Indicative of greater efficiency in agriculture would be either a higher average output per agricultural worker resulting from improved crop yields, or a rise in the acreage under cultivation, accompanied by a reduction in the number of agricultural workers per square mile of cultivated land. For instance, the developments in the sugar industry alone can lead to considerable progress in this direction in the territory as a whole, even if the cultivation of other crops remains less efficient.

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1) Chapter VII. Table 8.

In a predominantly agricultural country such as Swaziland it is also useful to measure the pressure of population on agricultural land in terms of cultivated acreage per head of the population 1). This will in effect reflect the capacity of the territory to sustain its population from its own agricultural resources. The efficiency of agriculture and the development of other sectors of economic and social life are most closely inter-related 2).

1.4 Distribution:

Of special interest in the analysis of population growth is the geographical distribution in the various subdivisions of the country. One way of doing this is in terms of the six administrative districts in Swaziland. The distribution by district of the various ethnic groups is given in Table 3. It is evident that Hlatikulu, in the southern part of the territory, is the district with the largest total population (79,969). Over one-third of the Swazi (77,823) and Eurafrican (526) groups and over one-quarter of the White Group (1,620) are living in this district. However, on account of its size (1,844 square miles) the average population density of Hlatikulu (43 persons per square mile) is less than half that of the Manzini district (98 persons per square mile) and fairly similar to that of Mbabane and Pigg's Peak. In Mankaiana, a district situated largely in the Highveld and containing a large number of trek sheep farms owned by absentee landlords, the overall density is 34 persons per square mile. Stegi, the largest of the districts (2036 square miles) is the least populous district, the average density being 12 persons per square mile. The latter district which covers the dissected plateau of the Lebombo and a large area of the Lowveld north of the Great Usutu River, has 10% of the European and African groups (628 and 24,602 respectively) and 15% of the Eurafrican group (226). The Sample Survey of 1960 indicated that heavy concentrations of the Swazi population occur in the southern and central Middleveld where average densities rise to more than 150 persons per square mile 3).

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1) These figures are available for the Swazi Rural Area. See Chapter VII, Table 8.

2) See Chapter VII, section 1.4.1 for relationship between population and cultivation in the four main geographic regions.

3) See Chapter II, sections 2.2.1 - 5.

The predominantly rural character of the Bantu population is evident from Table 4. In 1956 only 3,219 (1.4 per cent) were living in towns, the great majority of them (2,211) in the capital, Mbabane. The relatively small white population, on the other hand, is predominantly urban, the majority of them living in Mbabane (1,092), Manzini (652), Havelock (426), and other small towns.

There appears to be a close association between the distribution of Swazi and the prevailing types of land tenure in each district.

About 932,000 morgen or 46.7% of the land area of Swaziland is held on the basis of individual tenure and is owned by Europeans and a few Eurafricans and Swazi. Four-fifths of this land consists of freehold farms, and the remainder, apart from a few grazing concessions, comprises land concessions, either in perpetuity or for periods up to 100 years. Most of the concessions so held are convertible to freehold at the option of the owner. The trek sheep districts of Mbabane and Mankaiana in the western part of Swaziland, have considerable proportions of Swazi living on white-owned farms (map of distribution of squatters in I.T.H.).

In addition to the individual tenure holdings, unalienated crown land amounted to less than 3% of the land area of Swaziland, leaving over 51% of the total area available for Swazi settlement.

Land available for Swazi occupation can be classified under three categories 1); viz. Lifa land, Native Land Settlement and Native Area. Lifa land ($\pm$ 128,000 morgen) consists of former European farms bought by the Swazi and held in trust by the Paramount Chief for the Swazi nation; a further 147,000 morgen is land vested in the Swaziland Government for purposes of Native Land Settlement. According to this latter scheme the land is issued to Swazi settlers on a system of permanent lease-hold. The Native Areas, consisting of over 762,000 morgen are there set aside for the sole and exclusive use and occupation of the Swazi people at the time of partition and held in trust for them by the High Commissioner.

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1) These three categories have recently been grouped under a single category of Swazi National land.

The African population, which at present constitutes over 97% of the total population of the territory, is largely confined to what is known as the Native Areas. In 1956 just over 87% of all Swazi were living in Native Areas, although in extent these lands comprised 37.6% of the total land area of the territory.

The proportions living on Native Area in the various districts range from 70% upwards, and rise to well over 90% in the districts of Hlatikulu, Manzini and Stegi (Table 4). The land is held on a communal basis and is used for animal and crop husbandry.

In general the Swazi population seems to have gravitated towards the more suitable agricultural lands of the Middleveld. The climate in this part of the territory is favourable; it is well supplied with water and fertile soil. Various types of dry farming are carried out by Europeans and Swazi, and there is a certain amount of irrigation farming in the vicinity of Malkerns, principally on individual tenure holdings. More recently, malaria control has made land available for human habitation in the Lowveld, and this factor, provided water supplies are available, will no doubt continue for some time to bring about minor alterations in the population distribution pattern (e.g. Big Bend and Mhlume).

TABLE 3.

DISTRIBUTION OF THE POPULATION BY DISTRICT
1956 (PERCENTAGE)

District	Bantu	Coloured	White	Density per sq. mile (all ethnic groups)
Pigg's Peak	11.1	4.7	14.2	39
Mbabane	11.9	11.9	25.3	42
Manzini	18.8	25.8	19.5	98
Mankaiana	14.2	3.0	3.0	34
Stegi	10.3	16.4	10.6	12
Hlatikulu	33.8	38.2	27.4	43
Total	100.1	100.0	100.0	

The system of land tenure has played its part in determining the distribution of population (e.g. the partition of 1907) and is likely to play an important role in the future as the Swazi nation continues to buy European farms, and the Administration sets aside more land for Swazi occupation. The subdivision of large estates and the tendency towards freehold are other factors which will contribute towards population redistribution.

The limited secondary industrial development in recent years has tended to follow the existing concentration of people, and has not as yet resulted in any large-scale movement. Manzini, with a creamery, bone meal factory, a tannery, leather manufacturers, engineering and other concerns, is a relatively important industrial centre. Towards the south there is limited industrial development at Malkerns and Goedgegun.

Exceptions to the above trend are the forestry developments in the Highveld and the large irrigation projects, concentrating on sugar production in the Lowveld, e.g. the patulite factory at Pigg's Peak, the Usutu Pulp Mill and the (Mhlume and Big Bend) Sugar Mills. The exploitation of the asbestos resources of the territory has led to the growth of Havelock, and iron ore mining could bring about a large settlement of Bomvu Ridge which will also be the terminus of the Swaziland railway. In addition to the influence of primary industry on population distribution, the construction of the railway could result in the growth of satellite towns at the stations or halts closest to the existing towns of Mbabane, Manzini and Stegi, which are all by-passed by the proposed railway (as presently surveyed). Furthermore, if these new towns arise, they could well become centres for secondary industry in view of their favourable location regarding transport facilities.

TABLE 4

PLACE OF RESIDENCE OF AFRICAN BY DISTRICT, 1956
(PERCENTAGES OF DISTRICT POPULATION)

Area	Pigg's Peak	Mbabane	Manzini	Mankaiana	Stegi	Hlatikulu	Total
Native Area	69.8	77.4	92.5	84.1	94.3	92.4	87.2
White Farms	2.6	11.8	5.5	14.1	2.7	4.1	6.4
N.L.S.*	27.1	0.3	0.1	-	1.4	2.0	3.8
Crown Land	0.2	1.7	0.3	0.3	0.1	1.1	0.7
S.N.L.**	-	0.7	0.4	-	0.3	-	0.2
Urban Area	0.2	8.1	0.2	1.3	1.1	0.3	1.4
Own Farm	0.1	-	-	-	0.1	0.2	0.1
Unspecified	-	-	1.0	0.1	-	-	0.2
Total	100.0	100.0	100.0	99.9	100.0	100.0	100.0

* Native Land Settlement

** Swazi National Land

Large scale inter-regional movement of an agricultural character does not seem likely, and the distribution of the Swazi in the future will therefore largely depend on urban development in the territory. Low standard of living, the traditional system of land-holding, lack of efficiency in agricultural production, will exert great pressure on people to move to urban places, wherever they may arise. The transfer of workers and their families to urban employment may have to be organised and assisted by the State in order to eliminate waste and suffering.

2. MAJOR CHARACTERISTICS OF THE POPULATION:

2.1 Ethnic Composition :

The Africans who constitute the bulk of the Swaziland population, have lost ground slightly to the White group over the past fifty years. In 1911 nearly 99% were African, while by 1956 the percentage had fallen to below 97. The White group has risen over the same period from 1.1 to 2.5 per cent. The numbers of Asians and Coloureds are very small - in the 1956 census only 16 Asians and 1,362 'Eurafricans' were enumerated.

TABLE 5

ETHNIC GROUPING OF THE POPULATION (PERCENTAGE)

Ethnic Group	1911	1921	1936	1946	1956
White	1.1	2.0	1.8	1.7	2.5
African	98.8	97.6	97.8	97.9	96.9
A & E*	0.1	0.4	0.4	0.4	0.6
Total	100.0	100.0	100.0	100.0	100.0

* Asians and 'Eurafricans'

Census figures relating to occupational distribution would seem to indicate that the small white population is responsible for initiating and directing the development of the Territory, for performing the administrative and managerial functions, and for supplying the technological skill. The development over the past ten years was marked by a substantial growth of the white population.

The African population is largely engaged in agriculture, either as peasant farmers or as labourers on white-owned farms, and on commercial undertakings in forestry, as well as in the sugar, citrus and pineapple branches of agriculture. There are about 3,000 foreign-born workers in Swaziland, the majority of them employed in the mining industry.

Africans from other territories are free to take up employment in Swaziland, and an increasing number of them do. It is expected that this trend will continue. As economic development proceeds, and the occupational structure becomes more diversified, experienced and skilled Africans from more developed areas in South Africa, the Rhodesias and other neighbouring territories, will be attracted to Swaziland. In 1956 there were approximately 5,000 foreign-born Bantu all living in Swaziland, and the 1960 Survey results suggest a considerable increase over the past few years.

TABLE 6

POPULATION BY COUNTRY OF ORIGIN (RURAL SURVEY AREA, 1960)

Country of Origin	Combined Rural Areas			Highveld			Middleveld			Lowveld			Lebombo		
	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F	Tot	M	F
Swaziland	8752	4181	4571	3002	1431	1571	3397	1610	1787	982	469	513	1371	671	700
South Africa	494	212	282	226	101	125	136	56	80	100	44	56	32	11	21
Portuguese East Africa	23	11	12	1	1	-	-	-	-	8	4	4	14	6	8
Other *	2	2	-	-	-	-	-	-	-	-	-	-	2	2	-
Total	9271	4406	4865	3229	1533	1696	3533	1666	1867	1090	517	573	1419	690	729

PERCENTAGE DISTRIBUTION

Swaziland	94.40	94.89	93.96	92.97	93.35	92.63	96.15	96.64	95.72	90.10	90.72	89.53	96.62	97.25	96.02
South Africa	5.33	4.12	5.79	7.00	6.59	7.37	3.85	3.36	4.28	9.17	8.51	9.77	2.25	1.59	2.88
Portuguese East Africa	.25	.25	.25	.03	.06	-	-	-	-	.73	.77	.70	.99	.87	1.10
Other	.02	.04	-	-	-	-	-	-	-	-	-	-	.14	.29	-
Total	100.00	100.00	100.00	100.00	100.0	00.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

* Excluding 1 unknown.

Data collected in the sample survey show that the foreign-born comprise about six per cent of the total African population 1). The big majority of these immigrants are from the Republic of South Africa. Proportionately more women than men come from South Africa. The preponderance of South African women is presumably associated with the migratory movement of male workers between the two countries. The distribution of foreign-born in the various physiographic regions is largely similar to their distribution in the territory as a whole, and the proportions of persons born in South Africa are also highly similar in the various regions.

TABLE 7

ETHNIC COMPOSITION: AFRICAN POPULATION, 1960

Males	H	M	L	Leb	Total Rural	Urban	Peri-Urban	Total Urban/ Peri-Urban
Swazi	96.54	99.10	94.39	98.41	97.55	90.33	92.29	91.33
Zulu	2.81	.72	4.84	.29	1.86	5.19	1.81	3.47
Shangaan and others*	.65	.18	.77	1.30	.59	4.48	5.90	5.20
Total	100.00 =1533	100.00 =1677	100.00 =517	100.00 =690	100.00 =4407	100.00 =424	100.00 =441	100.00 =865
Females								
Swazi	96.05	98.77	91.10	97.81	96.77	93.02	95.54	94.30
Zulu	3.01	.86	7.85	.68	2.40	5.81	2.23	3.99
Shangaan and others**						1.16	2.23	1.71
Total	100.00 =1696	100.00 =1867	100.00 =573	100.00 =729	100.00 =4865	100.00 =430	100.00 =448	100.00 =878

* Including total of 300 Shangaan, 2 Basuto, 10 Tongu, 4 Xhosa and 25 others.

** Including total of 22 Shangaan, 12 Basuto, 5 Tongu, 4 Xhosa and 12 others.

1) Cf. Table 7; a fair proportion of these foreign-born, however, consider themselves ethnically Swazi.

Data on the ethnic composition of the Bantu population tend to support the conclusion that people from the neighbouring territories have become increasingly attracted to Swaziland. With the exception of the Lowveld and Highveld (where the non-Swazi element constitutes about ten and seven per cent respectively of the population) the proportions of non-Swazi in the rural area are, however, still small. The rural population is therefore very overwhelming Swazi.

The picture in the urban areas shows, as far as the African population is concerned, a slightly higher proportion of non-Swazi. Taking all ethnic groups into consideration, however, the urban composition assumes a very different character.

Inside the urban areas, according to the 1956 census, the Europeans, Eurafricans and Asians constitute about half of the population, and the Swazi probably less than 45%.

It would appear then that the urban situation in Swaziland in many respects resembles that which is found in underdeveloped territories elsewhere, particularly those which had colonial administrations. The urban settlements have a cosmopolitan character, mainly oriented towards the outside world, based on participation in an exchange instead of subsistence economy. The social and economic structure of the towns tend to be highly diversified, and this trend is likely to be stimulated by whatever further industrial and commercial development will take place in the country. A small hard population core is, however, still rural oriented in spite of lengthy urban residence 1), and will probably remain so for some time to come.

There have also developed a number of peri-urban concentrations in which a similar socio-economic re-orientation seems to have taken place despite their often rural character and predominantly Swazi ethnic composition. This differential ethnic pattern of the urban and peri-urban population is likely to become more crystalized as time goes on, although the concentration of Swazi peri-urban communities around towns and industrial centres will probably substantially increase. Any spectacular development programme is bound to attract large numbers of rural people, whether or not they directly participate in it.

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1) See 'Urbanization'.

2.2 AGE STRUCTURE:

2.21 General:

The distribution by age of the rural Swazi population is given in Table 8, while corresponding distributions for the urban/peri-urban areas and for the African in the Republic of South Africa, are given in Tables 9 and 10, respectively. The typical situation in underdeveloped countries, where rates of fertility and mortality are ordinarily high, is a relatively large proportion of children, and a relatively small proportion of older persons, compared with the typical pattern in the case of a developed western-type of population. The age structure in Swaziland fits the pattern for an underdeveloped population, and is markedly similar to that of the rural African in the Republic.

Roughly 45% are under 15 years of age, and almost 6% are 60 years and over, compared with 44% and 6% respectively, for the rural African in South Africa. The corresponding figures for the white population of the Republic are 32% and 10%, which is in agreement with trends in western countries.

The proportions of children in the various geographic regions are highly similar (approximately 46%), with the exception of the Lebombo where the figure is 43%. In the case of the Lowveld, and of the Middleveld, the proportions of children and of older persons are slightly higher than in the rest of the country, suggesting a significant volume of emigration to the urban areas, and to the neighbouring territories. Separate figures for males and females also suggest a greater outflow of males of working age, particularly from the Lowveld.

People in the urban and peri-urban areas have a different age structure from those in the rural areas, but the difference is not nearly as marked as in the case of the African population in South Africa. It would seem that urban and peri-urban settlement in Swaziland takes place on a family basis to a considerable degree. The proportion of children, in contrast to the urban African in the Republic is well over 40%, and there is practically no difference between the respective percentages for urban and peri-urban areas. The proportion of people of 60 years and over is smaller than in the rural areas, fairly close to the corres-

TABLE 8

DISTRIBUTION OF THE SWAZI POPULATION BY AGE AND SEX (PERCENTAGES) - RURAL AREAS.

Age	Combined Rural			Highveld			Middleveld			Lowveld			Lebombo		
	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages	92.70	44.05	48.65	32.29	15.33	16.96	35.33	16.66	18.67	10.89	5.16	5.73	14.19	6.90	7.29
- 1	3.54	3.50	3.58	3.56	3.72	3.42	3.42	3.12	3.70	4.13	3.68	4.54	3.31	3.77	2.88
1 - 4	13.96	14.37	13.59	13.22	13.11	13.33	14.38	14.83	13.98	15.70	16.67	14.83	13.25	14.35	12.21
5 -14	27.80	28.90	26.83	29.23	31.51	27.18	27.71	28.39	27.10	25.99	26.74	25.30	26.21	25.94	26.47
15 -19	8.86	9.15	8.59	9.45	9.07	9.79	9.43	10.44	8.52	7.25	7.56	6.98	7.33	7.39	7.27
20 -29	15.32	15.07	15.54	15.48	14.68	16.21	15.26	15.07	15.43	14.32	14.34	14.31	15.85	16.52	15.23
30 -39	10.20	10.31	10.11	9.54	9.92	9.20	9.88	10.63	9.21	11.48	10.46	12.39	11.56	10.29	12.76
40 -44	3.73	3.31	4.11	3.81	3.07	4.48	3.37	2.76	3.91	4.41	4.85	4.02	3.95	4.06	3.84
45 -49	4.46	4.68	4.25	3.72	3.33	4.07	4.63	5.04	4.28	4.59	4.65	4.54	5.57	6.81	4.39
50 -59	5.72	5.63	5.80	5.98	6.39	5.60	5.72	5.52	5.89	4.32	4.07	4.54	6.20	5.36	7.00
60+	6.41	5.09	7.60	6.01	5.22	6.72	6.20	4.20	7.98	7.81	6.98	8.55	6.77	5.51	7.96

TABLE 9

DISTRIBUTION OF THE POPULATION BY AGE AND SEX (PERCENTAGES) - URBAN AND PERI-URBAN

Age	Combined Urban/Peri-Urban			Urban Areas			Peri-Urban Areas		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages	17.43	8.64	8.79	8.53	4.23	4.30	8.90	4.41	4.49
- 1	4.25	4.17	4.32	4.10	3.78	4.42	4.38	4.54	4.23
1- 4	13.54	14.24	12.86	15.01	15.84	14.19	12.13	12.70	11.58
5-14	24.21	23.50	24.91	22.98	22.22	23.72	25.39	24.71	26.06
15-19	9.35	8.45	10.24	8.91	7.33	10.47	9.78	9.52	10.02
20-29	16.87	15.86	17.86	17.94	15.37	20.46	15.84	16.33	15.37
30-39	13.02	11.92	11.83	13.01	12.06	13.95	13.03	11.79	14.25
40-44	5.39	6.48	4.32	4.81	5.91	3.72	5.96	7.03	4.90
45-49	4.88	6.02	3.75	5.98	8.51	3.49	3.82	3.63	4.01
50-59	4.65	5.67	3.64	3.63	4.96	2.33	5.62	6.35	4.90
60+	3.84	3.70	3.98	3.63	4.02	3.25	3.93	3.40	4.68

ponding proportion for urban areas in the Republic. It would also appear that there is little difference between the age distributions of males and females, respectively, which supports the contention that movement towards the urban areas in Swaziland is largely a movement of families. The difference is much more significant in certain parts of the rural areas, which would mean that the movement of individuals consists largely of men who work outside Swaziland. It is expected that the pattern of rural-urban movement will change under the impact of industrialization and greater measures of urban control. In the initial stages at least there is likely to be a considerable excess of male migrants, and this situation will continue until an advanced stage of urbanization has been reached.

TABLE 10.

AFRICAN POPULATION OF SOUTH AFRICA BY AGE AND SEX

(PERCENTAGE)

Age	SOUTH AFRICA			SOUTH AFRICA (RURAL AREAS)		
	Total	Male	Female	Total	Male	Female
Total	100.00	100.00	100.00	100.00	100.00	100.00
0 - 4	14.33	13.76	14.93	15.90	16.51	15.36
5 -14	24.71	24.49	24.93	28.36	30.65	26.29
15 -19	10.20	10.28	10.11	10.30	10.49	10.12
20 -29	17.08	17.51	16.62	13.61	12.05	15.01
30 -39	13.71	14.31	13.08	11.44	10.56	12.24
40 -44	5.14	5.30	4.97	4.76	4.55	4.94
45 -49	4.01	4.23	3.78	3.83	3.91	3.77
50 -59	5.30	5.23	5.37	5.54	5.47	5.60
60+	5.43	4.79	6.14	6.21	5.75	6.62
Unspec.	.09	.10	.07	.05	.06	.05

2.2.2 Women of Child-Bearing Age:

Of special interest usually is the proportion of women of child-bearing age. This proportion varies as a rule from one-fourth to one-third of the total population. In Swaziland women aged 15 to 50 years comprise only 22.4% of the population. This proportion is low, largely because of the high proportion of children, and also because of the higher representation of women in this age group in urban and peri-urban places. In the latter areas they form just over 25% of the total population. Tables 8 and 9 also show that the proportion of older women is nearly twice as high in the rural areas as in urban and peri-urban places - which further accounts for the low proportions in the age categories from 15 to 50.

The experience is similar in South Africa, namely that the urban areas have larger proportions of African women of child-bearing age than those in rural areas. In this instance the difference is due to the absence, relatively speaking, of older persons as well as children under 15 years of age, from the urban areas. The Swaziland pattern of today, i.e. the absence of older persons but not of young children from the urban areas, conforms roughly to the South African pattern of the 1930's.

2.2.3 Population of Working Age:

Another population group which merits special consideration, is the population in the working ages. It is conventional to treat people from 15 to 64 years of age as the group supplying the bulk of the economically active population 1).

The size and composition, particularly by age and sex, of the total population will determine the maximum limits of the labour force, Other social, economic and demographic factors such as the rural-urban ratio, proportions of women married and educational, welfare, and other facilities, determine the proportions in various age-sex categories who find their way into the labour force in any given period. In less developed countries children begin to work at earlier stages than in highly industrialized countries, and men continue to

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1) See Chapter IX for the participation of the population in wage economy.

work longer. There is also a tendency for women to be engaged in local agriculture to a considerable degree, so that the proportion of women gainfully occupied are consistently high compared with the situation in industrialized countries.

The size of the population of working age in relation to the rest of the population shows some of the conditions which the age structure imposes on the livelihood of the population. A population with high fertility, which gains large numbers of younger people each year, has its age structure weighted with a large proportion of children too young to work. In the case of the populations listed in Table II, the proportions of persons between 15 and 60 years of age range from 48% to 71% (column A). The proportions are particularly low in the case of the South African Asian population, and of the rural African in South Africa and in Swaziland. By contrast the lower-fertility white population of the Republic has almost 59% of its members in this category, and, therefore, a smaller burden of dependency on those who are working. The urban African population of the Republic, which is heavily influenced by migration of people in the working ages has an exceptionally high proportion of 71.5%. Urban areas in Swaziland, on the other hand, have a proportion (53%), which is only slightly above the rural figure.

This is expressed somewhat differently by the ratios in column B of Table II. In Swaziland, where there were 107 persons in the dependent ages for every 100 in the working ages, it is evident that the age structure is considerably less favourable from the point of view of the effective use of people in productive activities than in the case of the other populations. The South African white population has a relatively low burden of dependency. The variation in the dependency ratio is largely a result of the past history of birth rates in each case. Knowing the experience of the South African Asian population, the high figure of 107 for the Swazi would not only suggest high fertility, but also that mortality rates may have been falling rapidly over the past few years. Note also the dependency ratio for the urban Swazi population is more than twice as high as the corresponding figure 1) for the Republic.

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1) A somewhat deceptive figure since it does not reflect the numbers of rural dependants of urban workers.

TABLE 11

POPULATION OF WORKING AGES - 15 TO 60.

Population and Year	A	B	C	
	Percent 15 - 60 of Total Population	Ratios: Persons of Dependent Ages per 100 Persons of Working Age	Distribution of People 15-60	
			Percent 39 and below	Percent 40 and over
Swaziland: Urban 1960	53.08	88.4	73	27
Swaziland Rural 1960	48.3	107.1	71	29
Union African: Rural 1951	49.5	102.0	71	29
Union African: Urban 1951	71.5	39.9	79	21
Union African: Total 1951	55.5	80.2	74	26
Union Asian: 1951	48.9	104.6	78	22
Union Coloured: 1951	51.6	93.8	75	25
Union White: 1951	58.6	70.6	65	35

The influence of the age composition within the working ages is suggested by column C in Table 11. In the more mature white population of South Africa the people of working ages are older. In the younger populations, e.g. the Asian and Coloured groups in the Republic, the economically active population would be younger even if the children were not put to work at an early age, because a large proportion of the group aged 15 to 60 is concentrated in the lower part of the interval. It will be noted that nearly four out of every five urban Africans of working age are below 40, suggesting a heavy influx of young workers, and their return to their natural areas in later life. The situation in Swaziland is almost identical to that of the Republic, with the exception that the urban African in Swaziland is older than his counterpart in the urban areas of South Africa.

The high proportion in the group 40years and over, in the case of Swaziland, is presumably also the result of migration tendencies, namely that workers leaving at early ages tend to return home towards the end of their working lives 1). The same situation obtains to a slightly lesser extent in the case of the rural African in South Africa. This tendency for workers to leave when they are young and to return later in life is also illustrated by the relatively high proportion of younger workers in the total African population of the Republic (showing the effect of a high percentage of young workers in the urban population).

By their large reservoirs of younger workers, practices of early employment, and their high employment rates for females, underdeveloped populations are in a position to achieve a balance of the numbers of economically active and dependants that compares favourably with many of the highly industrial countries. This numerical balance, achieved by mass employment of people without special skills, does, however, inflict its costs in terms of low output per person. It simply means that increasing numbers of people enter the ages of economic activity each year in a situation characterized by low living levels and a shortage of jobs rather than a shortage of workers.

2.2 Sex Ratio:

The balance of the sexes has a direct bearing on the employment of women, the marriage rate, the birth rate and other demographic and social characteristics of a population. The sex distribution at any given time is the net result of three primary factors: the sex ratio at birth, differential mortality between the sexes, and the sex ratio among migrants.

In Swaziland we can expect that the operation of the first two factors will in the long run tend to produce a balanced sex distribution - a higher sex ratio at birth being offset by a higher mortality rate among males. In the short run, however, there may be considerable fluctuations, both in the sex ratio at birth and in differential mortality, owing to the small size of the population. Deviations from the 'normal' or expected sex distribution, may therefore have to be explained in terms of such chance fluctuations, and in terms of the operation of the third factor, namely the sex ratio of persons leaving and entering the territory.

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1) Cf. Chapter X, &Urbanization'.

The sex ratios of the African population of the three protectorates as at the various census dates are given in Table 12. The 1956 census results indicate that Swaziland probably had the most unbalanced sex distribution of the three territories. The figure of 92 males per 100 females is lower than the 1946 and 1936 figure of 94. The sex ratio for Basutoland, on the other hand, has been rising steadily from the very low level of 75 in 1936 to almost 97 in 1956.

TABLE 12.

MALES PER 100 FEMALES IN THE PROTECTORATES (AFRICAN)

Territory	1911	1921	1936	1946	1956
Swaziland	80.7	91.7	93.7	94.1	92.0
Basutoland	83.3	81.3	74.6	78.2	96.5
Bechuanaland	-	107.6	98.8	98.9	-

Bechuanaland maintained a ratio of 99 during the 1930's and the 1940's. The trends in Basutoland and Bechuanaland are more or less in accordance with general expectation, but those in Swaziland not. Increases in the number and variety of employment opportunities, restrictions in South Africa regarding migrant labour, and the entry of foreign-born workers into the territory, will have the effect of raising the sex ratio. The Swaziland figures, however, show a slight decline from 1946 to 1956, which would ordinarily suggest an increased exodus of male workers.

According to the sample survey figures the sex ratio of the rural Swazi was 90.5 males per 100 females in 1960. This figure is slightly lower than the 92 obtained in the 1956 census, which means that the tendency towards a declining sex ratio has been substantially reduced over the past five years. The urban and peri-urban areas have a sex ratio of just over 98. It seems therefore that there has been a considerable movement of females towards the urban areas since 1956, when the ratio for urban Swazi was 105.

As far as the geographic regions are concerned the Middleveld has the lowest sex ratio, and it would appear that this densely settled agricultural area provides the bulk of the migrants to the existing urban areas, as well as to areas of afforestation and commercial agriculture. This may also apply to certain densely populated parts of the Lowveld. The differences between sex ratios for the three most populous regions are, however, not very great, and range from 89.2 to 94.7, the overall figure being 90.5. The Lebombo plateau has a sex ratio of

94.7, which comes closer to the corresponding ratio for urban and peri-urban areas.

There is a close correspondence between the sex ratio in Swaziland and that of the rural African population of the Republic. The latter has 90 males per 100 females, as compared with 91.7 1) in the case of Swaziland. The high ratio of 104 for Africans in the Republic as a whole, is largely the result of predominantly male immigration to the urban areas from the neighbouring territories, including Swaziland 2).

There is, however, a marked difference between the sex ratios for urban Africans in Swaziland and South Africa, respectively. The South African population has high ratios during early working life, whereas in Swaziland these ratios are considerably lower than one would expect. In later working life, on the other hand, sex ratios for the urban Swazi are exceptionally high. It should be noted, however, that the figures for Swaziland include the peri-urban communities where the age-sex distribution differs significantly from that of the typically urban African population. It seems that males in the younger age groups tend to work outside the territory, leaving the urban areas in Swaziland with fairly heavy concentrations of men in their later working lives (40 years and over). The urban and particularly the peri-urban populations also have relatively large concentrations of females of early working age 3).

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1) Based on unweighted totals for both rural and urban/peri-urban sample population.
2) Cf. Table 13.
3) Note for instance section 2.2 of Chapter X.

2.4 Age-Sex Distribution:

The ratio of males to females in any population varies widely with age. Table 13 shows these ratios for the Swazi population as obtained in the sample survey, and for the Africans in South Africa. In the case of developed western populations there is usually a greater number of boys than girls at birth. This numerical advantage, however, is gradually diminished as the higher mortality among males makes itself felt. The imbalance of the sexes is particularly severe at the older ages where, in the typical situation, there are many more women than men.

TABLE 13

MALES PER 100 FEMALES.

Age Group	South Africa*	South Africa Rural*	Swaziland Rural**	Swaziland Urban and Peri-urban
0 - 4	96.1	96.3	93.8	105.3
5 -14	102.4	104.4	97.8	92.7
15 -19	105.9	92.9	95.5	81.1
20 -29	109.8	72.0	88.1	87.3
30 -39	114.1	77.3	91.3	83.1
40 -44	111.2	82.3	72.8	147.4
45 -49	116.6	93.0	98.6	157.6
50 -59	101.4	87.5	88.6	153.1
60+	81.5	77.9	61.6	94.3
Total	104.25	89.60	90.5	98.4

* 1951 Census
** 1960 Survey

A number of undeveloped populations have, however, experienced very low sex ratios at birth. This has been the experience of the non-white populations of the United States, Manchuria, Thailand, Jamaica, and indeed of all non-Indian populations of the West-Indies 1).(See P.168.) The figures in Table 13 would seem to suggest similar low ratios for the African in South Africa. These low ratios, together with the effect of marked differentials in mortality between the sexes, resulted in an excess of females within the first five years of life.

The situation changes considerably at the higher ages, particularly in the age groups 20 to 50. These age groups are most strongly affected by migration. In the case of the African in South Africa a fairly clear picture is presented. The sex ratios among dependent children are low compared with those of western populations, but they rise rapidly from about 106 for persons aged 15 to 19 years to 117 for those aged 45 to 49 years. Then there is a sudden drop to about 80 in the age group 60 years and over.

The rural South African population, taken separately, shows falling ratios through the early productive years of life, rising again slowly in the later years as migrant workers begin to return from the urban areas. There is, however, at all stages a considerable excess of females. Rural sex ratios are not significantly influenced by international migration, but if there were no immigration to the urban areas from neighbouring territories the sex ratios in the rural areas, and in the Republic as a whole, would have been lower by five to fifteen per cent over the various age groups.

No such clear picture can be drawn from the figures obtained for Swaziland in the sample survey. The ratios fluctuate from one age group to the next, and especially at the younger ages the figures deviate from the expected patterns to such an extent that it is impossible to draw conclusions with any degree of confidence. If, however, only the broader, economically significant, age groups are considered, a picture emerges which closely approximates that of the rural African population of South Africa. The rural sex ratio throughout is unusually low, starting with an excess of females among dependent children, falling gradually in the early productive period, and recovering slightly in the later years. The older dependent population again has a large excess of females.

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1) Roberts, G.W., "The Population of Jamaica", Cambridge University Press, 1957.

An examination of the figures for the four geographical regions would tend to support the contention, stated earlier on, that there is internal migration towards the Highveld from the more populous Middleveld and from the Lowveld. The movement appears to be largely confined to males of working age who return to their homes in the later productive years. The picture, however, is by no means clear 1)a See P.169 It is not known for instance, to what extent the sex ratios of the various regions are influenced by internal movement on the one hand, and by international migration on the other.

While no general statement can therefore be made about the relative importance of each of the three primary factors affecting the sex ratio, selective migration appears to have a greater influence in the case of the African than in the case of white populations of a western-urban type. The sex ratios of both populations are nevertheless profoundly affected by differential mortality, and it was felt that a more thorough analysis of this aspect was not only justified, but desirable in view of the rather surprising nature of the survey returns. For this reason, too, this part of the analysis must be preceded by a statement with regard to the precautions under which the information was collected.

The first indication of an 'abnormal' sex ratio and differential mortality rate appeared from an examination of the pilot survey returns. Feeling inclined to blame the smallness of the sample (total population plus minus 3,000), and keeping in mind the possibility of inaccurate enumeration of sex and age, special efforts were made during the training course and in the subsequent enumeration to ensure absolute accuracy as far as these items were concerned. At the same time enquiries were made to ascertain whether, perhaps, there existed any popular bias with regard to reporting the sex or age of very young children. These enquiries proved negative.

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1) a The regional numbers, when broken down into age groups, become too small for refined statistical treatment.

When the 1960 survey data became available they supported in the main the pilot survey results. It is claimed, therefore, that more than the usual care has been taken to ensure the reliability of the age and sex date. A closer examination of the 1956 official census (a full count) also revealed tendencies similar to those contained in the present findings 1)b As a further measure, as complete a record as possible was obtained of all African births recorded at the four principal hospitals in Swaziland for a number of years. On the whole these supported the survey findings with regard to sex ratio and mortality at an early age.

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1)b Cf. Chapter I, section 1.1. It will also be noted that the quantity of 'small yellow beads' required for the proposed enumeration of young females during the 1904 census, is larger than that of the small black beads for young males. This points to an early observation of the preponderance of young females over young males.

At this stage colleagues at the Medical School were consulted, and it was decided to make a special examination of a fairly large sample of birth records in Durban. The results of this study, involving well over 12,000 authenticated cases, will be discussed below 2).

Variations in the Swazi sex ratio appeared to be somewhat abnormal as far as the younger age groups are concerned. Further evidence obtained for the Swazi fairly consistently pointed towards an excess of females in the first year of life. This would suggest a very low sex ratio at birth. Ratios obtained for various samples range from 98 to as low as 75 males per 100 females for persons under one year of age. The ratios then rise, in spite of differential mortality, up to about the age of 15, before they take a definite downward trend 3).

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2) In view of the complexity of the problem, a further series of inquiries are being undertaken. Since these will necessarily take time to complete, their results cannot be incorporated in our present report.
3) For a similar trend, see Tanganyika General African Census, 1957, which reveals the following sex ratios: under 1 year, 90.1; 1-5 years, 95.5; 6-15 years 107.2; 16-45 years, 86.1; 45 plus years, 90.8; total 92.6 (J.C. Martin, in Essays on African Population, ed. Barbour and Prothero, London, 1961, p.59).

As stated above, the available records at the following four Swaziland hospitals were examined in order to obtain greater clarity on the sex ratio at birth: Mbabane (Jan '59 - March '61), Manzini (March '58 - May '61), Stegi (Jan '55 - Sept '61) and Hlatikulu (Jan '57 - Feb '62) 1). See Page 171.

TABLE 14.

AFRICAN LIVE BIRTHS AT SWAZILAND HOSPITALS.

Place	M & F	M	F	Ratio
Mbabane	1,426	700	726	96.4
Manzini*	1,717	880	837	105.1
Stegi**	690	285	405	70.4
Hlatikulu	1,192	617	575	107.3
Total	5,025	2,482	2,543	97.6

* Excluding 19 births without sex reference
** Information submitted with Research Fellow's comment that records had been kept with meticulous care.

The results vary from one hospital to another, but on the whole suggest a ratio not dissimilar to that indicated by the rural survey results.

With the co-operation of the Medical School 2), Durban, the non-European birth records of the King Edward VIII Hospital for 1960 were abstracted (a total of 12,352 African and 1,977 Indian births of which sex identification was beyond doubt). The results were:-

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1) These constitute in all cases the longest consecutive periods of recording at these hospitals, and at two of them the dates go back to the earliest available record. We are indebted for these figures to the Director of Medical Services, Mbabane, and to Miss S. Jones, M.Sc., one of our Research Fellows in Swaziland.
2) We are especially indebted to Professor E. Keen in this connection.

TABLE 15.

		M	F	$\frac{M}{F}$ x 100
African	Full term	5,645	5,375	105.0
	Premature*	611	721	84.7
	Total	6,256	6,096	102.6
Indian	Full term	787	760	103.6
	Premature*	198	232	85.3
	Total	985	992	99.3

* Under 5.5 lbs.
Percentage premature African births: 10.78
Percentage premature Indian births: 21.75

The figures reflect a more or less normal sex distribution for full term births, but the pattern is strikingly different in the case of premature births. As a by-product of the Swaziland Survey, the latter finding is of general interest. It will admittedly need closer scrutiny, and a wider range of evidence. It does seem, however, as if not only the extent, but also the sex pattern of foetal and infant mortality, as well as the sex ratio of live births, may be vitally affected by environmental conditions, such as housing, per capita income, sanitation and public health measures, etc.

It is realised that specific knowledge about the relationship between mortality and socio-economic circumstances on differences in mortality, is still inadequate. In the case of less developed populations, however, the importance of studies of mortality trends must be stressed, because they provide a better basis for population projections, and, hence, a better basis for planning the development of the populations concerned.

It is known that the infant mortality rate reacts sensitively to socio-economic change. Slight improvement in living conditions will be reflected almost immediately in lower infant mortality. It is also fairly well established that mortality at all ages is higher among males than it is among females, and that this excess is highest in the first few months of life. We are much less certain, however, about differences in mortality of the sex groups in the pre-natal stage. It is expected that declining infant mortality, still-birth and early foetal death rates will all be related directly to improvements in level of living. It is, furthermore, expected that the sex ratio of still-births will be higher than in the case of infant deaths, and the ratio for early foetal deaths in turn higher than in the case of still-births. The evidence in this regard is inadequate, and the shorter the period of pregnancy the more unreliable it becomes. There does, however, seem to be a strong tendency for the sex ratio of foetal deaths to decline by month of pregnancy, and for the excess of males over females to be higher in the case of early foetal deaths than in the case of still-births.

The indications are, therefore, that the 'normal' pattern of western countries is somewhat accelerated in the case of high-mortality underdeveloped countries, resulting in disequilibrium in the early years of life. High mortality in the pre-natal stage, when the sex differential is presumably at a maximum, will give a balanced sex ratio at, or before birth. This would give an excess of females at an early stage of life, whereas in the normal situation it would occur much later. The diminishing excess of male over female deaths, on the other hand, will tend to raise the sex ratio after a while. In other words, in a population with a high death rate the reduction in male infant mortality appears to be sharper than the corresponding reduction in female mortality, with a consequent rise in sex ratios during the first five or more years of life. In a population with a low death rate there will be a gradual decline in sex ratios from birth onwards.

Under these circumstances it may be possible for female death rates to exceed male death rates, and thus bring about a balance of the sexes in the age group 10-15 years, or earlier 1). Certain countries where infant mortality rates are known to be high, have actually experienced an excess of female over male mortality very early in life. In Mexico, for instance, it was found that the average death rates, 1936-45, for children 1-4 years of age were 139.1 for females and 130.5 for males. Corresponding figures for Chile were 106.2 and 104.9; and for Ceylon 113.8 and 96.3 for females

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1). See footnotes pages 169 & 170.

and males, respectively. In these, and in several other countries, there is a significant difference between male and female mortality during the first month after birth, but this difference declines with age until at age 1-4 years the sex specific death rates are almost equal, with a difference in favour of males in some instances. The following table will further illustrate this point.

TABLE 16.

Age	MALE MORTALITY RATE / FEMALE MORTALITY RATE x 100			
	Group I	Group II	Group III	Group IV
Under 1 month	129.8	128.0	118.4	115.4
1 - 5 months	128.1	129.8	112.7	110.9
6 - 11 months	116.4	122.1	106.6	108.4
1 - 4 years	114.3	112.3	98.6	99.6
Under 1 year	126.8	126.7	113.0	110.5
Under 5 years	123.9	123.1	106.2	104.4

Group I - Average Infant Mortality rate below 70
Group II - " " " " 70 - 99
Group III- " " " " 100 - 129
Group IV - " " " " 130 and over

Taken from U.N.: Foetal, Infant and Early Childhood Mortality, Volume I, New York, 1954, p. 40.

The table is based on an examination of 26 countries, arranged in four groups according to the size of their infant mortality rates. It will be seen that in the case of the developed countries (Groups I and II) male mortality is much greater than in the case of less developed countries (Groups III and IV). In the case of the latter female mortality is actually higher at ages 1-4 years than male mortality. It also emerges from the table that the higher the infant, and presumably pre-natal, mortality, the sharper the decline in the excess of male deaths and, hence, the earlier the stage at which a balance of the sexes is reached. While, in the case of the developed nations sex ratios will continue to fall more or less persistently throughout life, the underdeveloped nations may experience an upward trend in the ratios from about 1-10 years of age, before the downward trend is resumed.

In the Swaziland sample survey pregnancy histories were obtained in considerable detail for all women aged 15 years and older, and a preliminary examination of these was made in order to be able to throw more light on the question of infant mortality, particularly in respect of sex differentials. The mothers in the sample reported 12,881 live births, of which 6,374 were male, and 6,507 female, i.e., a ratio at birth of just under 97 males per 100 females. In terms of the previous discussion this ratio at birth, taken together with the low sex ratios reported earlier for children under one, suggest that the levels of foetal and infant mortality in Swaziland are still high.

In the light of the findings in the Durban hospital about the sex ratio of premature births, the mothers in the Swaziland sample were classified into three groups on the basis of whether they had two or more, one, or no miscarriages during their pregnancy histories. The sex ratios of live births to these three groups of mothers were 83, 86 and 99 males per 100 females, respectively. In other words, live births to women who have reported miscarriages have a substantial excess of females over males. This would seem to lend support to our earlier statement that foetal mortality is inversely related to the sex ratio at birth.

The evidence seems convincing that general living conditions, through their effect on foetal and infant mortality, have a profound influence on sex ratios in the early years of life. In the case of underdeveloped populations any improvement in living conditions would, therefore, among other things, results in a more balanced sex distribution, with important social and economic consequences. The labour force position and dependency, marriage rates, and fertility rates, are among the major aspects likely to be affected.

Evidence on the other, though not unrelated, question of rising sex ratios after birth, is less convincing, but nevertheless strongly points towards the maintenance of female infant mortality at a relatively high level compared with the reductions in male mortality during the first five years of life. It seems certain that the sex differential in infant mortality diminishes to such an extent that female rates may be equal to or actually above the corresponding rates for males. This would explain the tendency for populations with low living levels to experience rising sex ratios in the early years of life.

In order to throw somelight on the diminishing sex differential in mortality after birth, infant mortality ratios 1) for Swaziland have been calculated for males and females separately. For this purpose the mothers have been classified into two groups, namely, those who had one or more miscarriages, and those who had none. The results are shown in Table 17 below.

TABLE 17

INFANT MORTALITY RATIOS IN SWAZILAND.

Age at Death	Deaths per 1000 live births					
	All Mothers		Mothers with one or more miscarriages		Mothers with no miscarriages	
	M	F	M	F	M	F
Under 1 month	26	22	36	31	26	22
1-12 months	52	47	95	67	50	46
1-5 years	54	55	62	75	54	54
Total under 5 years	132	125	193	173	129	122

The number of infant deaths to mothers who had miscarriages is small, so that no great importance can be attached to these particular returns. The important feature which emerges, however, is the reduction in the difference between male and female infant mortality to more or less zero in the age group 1-5 years. This corresponds with the findings of the above-quoted United Nations study, in which it was pointed out that in the high infant mortality countries female mortality actually exceeded male mortality in the age group 1-4 years.

1) These are not infant mortality rates in the sense of infant deaths during a given period per 1000 live births during the same period. The whole of the pregnancy history has been taken into account, i.e., all deaths in the age groups specified were expressed as a ratio per 100 of all live births that have occurred to mothers in the sample population.

FIG I SEX RATIOS FOR SOUTH AFRICA - 1951
TOTAL BANTU AND RURAL BANTU
(MALES PER 100 FEMALES)

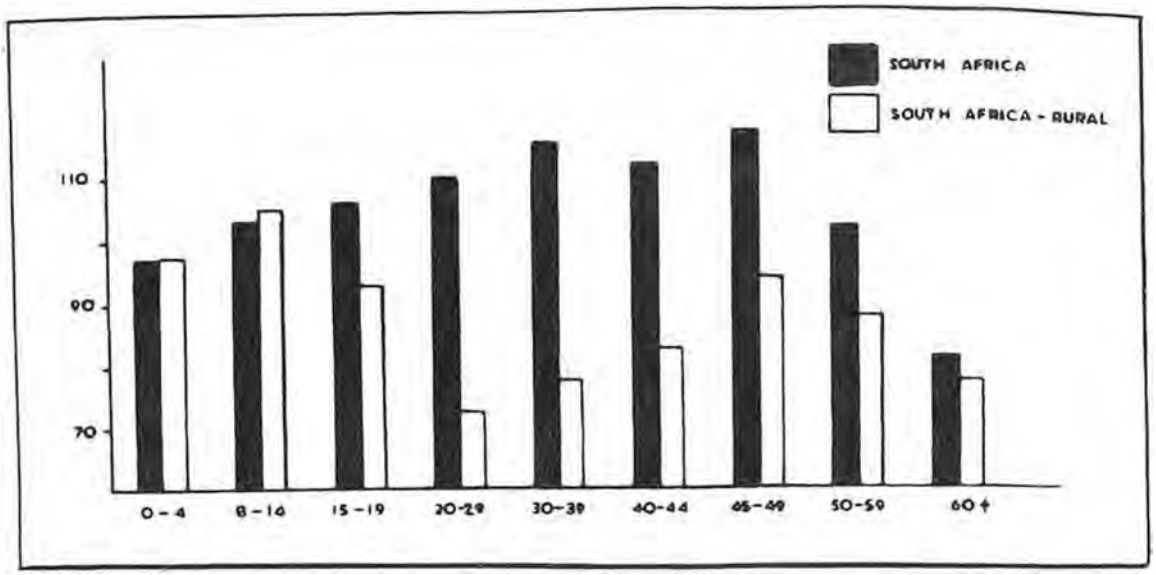
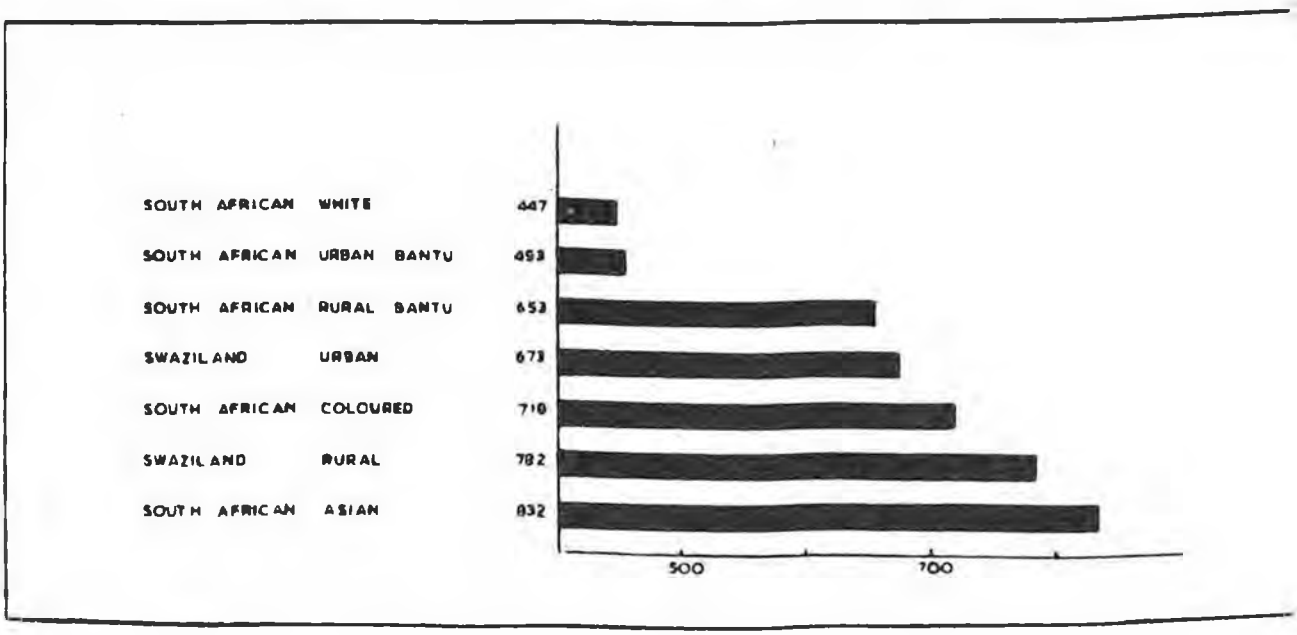


FIG II CHILDREN UNDER FIVE PER 1000 WOMEN OF CHILD-BEARING AGE



The position in conclusion is, therefore, that as far as the total African population of Swaziland is concerned, a severe imbalance of the sexes exists, which is broughtabout in the younger generations by the course of differential mortality, and intensified in the productive periods of life by sex-selective migration. Economic development in the Territory will alter the course of both these factors. It will tend to discourage emigration and encourage immigration of a sex-selective kind. It will, furthermore, have an immediate effect on the infant mortality and on the foetal death rate which will result in a more favourable sex ratio at birth, as well as during school and early productive years.

Depending on the tempo of development, the sex ratio could be improved considerably within from ten to fifteen years. Although a more balanced sex ratio is advantageous from the economic point of view, the initial period of restoring the balance may well be extremely problematical. A greater degree of balance may first of all arise in the productive years as a result of migration changes. This will lead to an increase in fertility, which, together with reductions in infant mortality, will cause a sharp rise in child dependency - a state of affairs which will make sustained economic growth difficult.

CHAPTER VI - B

SIZE AND COMPOSITION OF RURAL HOMESTEAD GROUPS

(A.J.B. Hughes).

1. THE HOMESTEAD:

1.1 Definition:

While most of the sample survey data concern various characteristics of individuals, it was necessary to collect and record some types of information for homesteads as wholes. The rural Swazi homestead (umuti), which has been described as the basic social unit in the traditional society 1), today still functions as an economic unit in a great many contexts, besides being a social and political unit. It would have been wholly unrealistic (if not, in fact, quite impossible) to gather meaningful information relating to such subjects as agricultural activities or stock holdings on an individual basis. Consequently, in many sections of this report the analyses deal with the characteristics of these homestead groups, rather than with those of the individuals comprising them.

Such analyses can only be interpreted correctly if one has some idea of the sizes and compositions of these groupings. Therefore, some of the facts and figures relating to homestead populations which were obtained during the sample survey, are here collated and analysed.

Prior to the 1959 pilot survey, doubts were expressed whether we should be able easily to distinguish between residential groupings that were true homesteads in their own rights, and those that were regarded as only parts of a homestead. In practice this proved no problem. We adopted an operational definition, and regarded as a separate homestead any residential settlement defined as an umuti by the local population. In only a few cases were there any doubts on this score; these were easily resolved by further investigations on the spot.

Thus, when we speak of a homestead in this report, we refer to a settlement so described by the Swazi. We use homestead group for the group of people legally domiciled in such a homestead.

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1) cf. Hilda Kuper, An African Aristocracy , p.36.

1.2 The "Traditional" Homestead:

A complete sociological analysis of the Swazi homestead, would be beyond the scope of the present study. Yet in order to evaluate correctly the data given below, it must be appreciated that according to the evidence we have, the majority of homestead groups are probably much smaller now, than was the rule in the past.

The older style of homestead (according to informants' descriptions and the few examples that are still extant) was approximately circular in shape. It was normally built so that the main entrance faced downhill, with the cattle byre in this entrance, and an open internal courtyard above the byre. The dwelling and cooking huts were built around the circumference of the circle, thus forming two 'horns' (as the Swazi describe them) embracing the courtyard and partially enclosing the cattle byre 1). The principal hut of the homestead (indlu enkulu, or the Great Hut) faced the byre across the courtyard, while on either side of the Great Hut were the other dwelling huts, housing the wives of the homestead head, their children, his married sons and their families, and possibly some dependents not belonging to his immediate family. At the entrance, near the cattle byre, were the quarters of the unmarried youths and girls, the former being placed in this position so as to defend the byre from attack.

Economically, sociologically and politically the homestead presented itself as a single unit to the outside world. The homestead head (umnumzana) was legally responsible for the behaviour of the inhabitants of his homestead, for their debts, and for apportioning the arable land attached to the homestead among them. He also represented the homestead at the council of the local chiefdom.

1.3 Genesis of New Homesteads:

Internally, such homesteads were normally divided into a number of 'houses' (tindlu), the principal 'house' divisions being centered around the main wives of the homestead head. Thus, a wife and her children could form one 'house'. If she had an

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1) cf. diagram in B.A. Marwick, The Swazi, p.47.

attached co-wife (inhlati), the latter and her children would also form part of the same 'house'. A married son, living with his family in the homestead, would form another house within the wider 'house' of his mother. As a physical mark of these divisions, all the huts belonging to such a 'house' were often completely surrounded by a single wind break (liguma).

After the death of the homestead head, and when all matters of inheritance and succession had been settled, the homestead frequently split into several homesteads, the lines of such divisions normally following those that already existed between 'houses' within the homestead. A resulting new homestead group might compromise one of wives of the deceased homestead head, their married sons and their families, and the wives' unmarried children. In such a case, the eldest son would normally rank as the head of this new homestead 1). More complicated groupings could result if the widow of the late homestead head had an attached co-wife, or was accompanied by some other of the deceased's dependants.

Whatever its composition, even such a new homestead was frequently already divided into a number of constituent 'houses' at the time of its establishment. With the passage of time, it could be expected to grow, the number of 'houses' within it to increase until, in turn, it would itself repeat the process by splitting into several homesteads.

1.4 The Modern Homesteads:

The main differences between the majority of homestead groups of today and the larger ones of the past appear to result from the fact that this process of fission now tends to occur far earlier in the life cycle of a homestead. Sons now frequently set up their own homesteads during their father's lifetime, almost immediately after marrying. The same applies to younger brothers of the homestead head. Nowadays, married male dependants, other than sons or brothers of the homestead head, are only found in the few large homesteads maintained by the most conservative.

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1) We must stress that here we refer only to the position within this new homestead; and that this should not be confused with the question of who became the 'main heir' (indlalifa) of the deceased homestead head.

The description is moreover, of necessity, an over-simplification of what is actually a complex process. For further details see H. Kuper, An African Aristocracy, p. 39f J.F. Holleman, in Bantu Studies, March, 1940. pp 44ff and September, 1941, p.91ff.

As the result of the decrease in the number of polygynous marriages, few homesteads of today show the internal division into separate 'houses'.

Thus, although the basic pattern whereby homesteads are established and split has remained the same, the size and composition of the resultant homestead groups has altered markedly. Mothers still settle with their sons after their husbands' deaths; but whereas in the past this grouping was frequently a 'mother-sons' family, now it is more often a 'mother-son' group; the mother living with one of her sons, the others having separate establishments. Swazi themselves frequently argue that these changes have come about because the homestead group is no longer concerned with physical defence, and because 'no grown man likes to be ruled by another'. The greater economic independence now possible for individuals has undoubtedly also been a contributory factor.

Physically, most modern Swazi homestead have abandoned the old circular pattern. The majority still have a 'Great Hut', facing the cattle byre; and the latter is still considered the mark of an independent homestead, although approximately one-third of modern Swazi homestead groups have no cattle. The general layout of the whole settlement, however, more often suggests a rectangular shape than the two 'horns' of the older pattern.

Nevertheless, these modern settlements are still regarded as homesteads (imiti); and the head of such a homestead group is still regarded as a homestead head (umnumzana), and is expected to fill very much the same social, political and economic roles as were fulfilled by the head of the old, larger group. As such, each homestead is still regarded by Swazi as a distinct legal and social entity. It is with the size and composition of the groups inhabiting these entities that we are concerned here.

2. NUMBER OF INHABITANTS:

2.1 Sizes of Homestead Groups:

Table 1 (Annexure) shows the incidence of various sizes of homestead populations in our four rural survey area random samples. The table below gives a summary of these figures, expressed as percentages to facilitate inter-regional comparisons.

SIZES OF HOMESTEAD POPULATIONS

Percentages of HOMESTEADS in each class.

Homestead Population	H	M	L	Leb	Combined*
1	2.9	1.8	2.8	2.9	2.5
2 - 4	19.4	19.2	29.2	26.3	21.7
5 - 7	32.6	33.6	28.5	36.1	33.1
8 -10	24.5	27.4	16.0	19.5	23.7
11 -13	10.8	9.7	11.1	10.3	10.3
14 and over	9.8	8.4	12.5	4.9	8.8
	417= 100.0%	453= 100.1%	144= 100.1%	205= 100.0%	1219 = 100.1%

* unweighted totals

2.2 Proportions of Rural Population in Different and sized Homestead Groups:

It is easy to understand how, if we consider only the numbers of homesteads with various sizes of population, there is a 'built-in' bias against the large homestead. The conservative Swazi, who has succeeded in keeping his agnatic group together in a single homestead, only appears on our table as one homestead; whereas the same number of kin of a less conservative contemporary may be scattered over a dozen or more homesteads, thereby increasing the frequency of low-population homesteads.

To overcome this bias, we calculated the proportions of the total rural population inhabiting the sampled homesteads belonging to the various population classes. The results are tabulated below.

2.3 Characteristics of these Distributions:

The tables in section 2.1., the one overleaf and the annexure bring out:- (a) the relatively small differences between the samples drawn from the four physiographic regions; a fact of some interest in view of the regional differences in respect of many other characteristics, and

(b) the considerable preponderance of small homestead groups.

SIZES OF HOMESTEAD POPULATIONS

Percentages of Rural Sample Area POPULATION belonging to Homestead Groups of Various sizes.

Homestead population	H	M	L	Leb	Combined*
1	0.4	0.2	0.4	0.4	0.3
2 - 4	8.4	7.8	12.2	11.6	9.1
5 - 7	25.6	25.8	21.7	31.3	26.1
8 -10	28.0	30.9	18.4	24.2	27.4
11 -13	16.6	14.8	17.4	17.3	16.1
14 and over	21.0	20.6	29.9	15.2	21.0
	3229= 100.0%	3534= 100.1%	1090= 100.0%	1419= 100.0%	9272= 100.0%

* unweighted totals

Thus, we find that the model homestead population (see annexure table 1) for the Highveld is six, that for the Middleveld eight, for the Lowveld five, and for the Lebombo six. In the grouped table (2.1) we see that approximately one-third of all homesteads fall in the 5-7 group; the figure is rather less than one-third (28%) in the Lowveld, which shows a relatively high incidence of homesteads with populations of 2 to 4 persons.

The pattern is not significantly altered when we consider the proportions of the sample population inhabiting homesteads with various sizes of population. Naturally, there is a tendency for the highest percentages to be in higher population class than in table 2.1; but the shift has only resulted in the peak moving up one class in three regions (Highveld, Middleveld and Lowveld), while in Lebombo it is the same in both tables (in the 5-7 class).

Whether we consider numbers of homesteads, or proportions of the population, the picture is very similar; approximately four-fifths of the homesteads have populations of ten persons or less, and approximately two-thirds are members of homestead groups of ten or less.

3. COMPOSITION OF HOMESTEAD GROUPS:

3.1 Relationship to Homestead Head:

Apart from the size of the modern homestead groups, we were also anxious to discover how they were composed. To this end a question was inserted in the questionnaire regarding the relationship of every subject to the head of his or her homestead. As explained before, the answer to this question had to be given in English, using a simplified form of the English kinship terminology 1).

Despite some prior misgivings, the enumerators soon grasped the basic principles of this system; and due to multiple checking of all completed questionnaires, nearly all ambiguous or suspect answers were spotted while we were still in a position to return to the homesteads involved and obtain the correct answer.

The coding system did not permit analysis of kinship structure of each individual homestead by mechanical sorting, but made it possible to discover the proportions of various types of relationship to homestead heads. In order to discover more about the composition of individual homesteads, we manually sorted four small sub-samples (240 homesteads in all; 60 drawn from each of the four regional strata in the sample area 2).

The relationship between these two sets of data, and the information that can be gleaned by comparing the two, is discussed in greater detail below (sections 3.3. to 3.7.)

3.2 Incidence to Types of Relationship:

Table 2 (annexure) shows the percentages of various types of relationships to the homestead head recorded in our four rural random samples, expressed in percentages. The table given below summarizes these data.

The term 'nuclear family' is used here to denote the nuclear family of the homestead (i.e. himself, his wife, or his child). 'Other agnates' covers all kin linked to the homestead in the male line (i.e. all bearing the same surname, sibongo, such as brothers, sisters, brother's children, or son's children). The categories 'other kin' and 'non-kin' are self explanatory.

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1) Chapter IV, sections 1 and 2.6
2) cf. Chapter VIII, section 3 .

RELATIONSHIP TO HEAD OF HOMESTEAD.

Rural Sample Area Percentages.

Kind of Kinship link	H	M	L	Leb	Combined*
Nuclear Family	67.4	65.6	66.8	72.9	67.6
Mother or other co-wife of father	3.4	4.0	3.1	3.8	3.7
Other agnates	11.0	16.3	14.6	11.9	13.6
Other kin	18.1	14.0	15.6	11.4	15.3
Non-kin	-	0.1	-	-	-
	3229= 99.9%	3534= 100.0%	1090= 100.1%	1419= 100.0%	9272= 100.2%

* unweighted totals

Mothers and classificatory mothers 1) have been classed together in table 3.2; both for sociological reasons, and because of the infrequent occurence of classificatory mothers of homestead heads in our samples (see table 2 Annexure).

It must be borne in mind that, while a man, his wife and their children form a nuclear family in this context, units like this could form part of a wider polygynous family inhabiting a homestead. Considering the present incidence of polygyny (see Chapter VI-C, section 2) and the preponderance of small-sized homestead groups (above) the proportion of this type of cases must be relatively small.

3.3 Composition of Individual Homestead Groups:

In order to obtain further information, we examined in detail a number of small sub-samples, adopting the procedure described in section 3.1 above. Our first step was to establish the incidence of

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1) i.e. other wives of the same man in a polygynous family, whom a Swazi describes by the same term, umake, used for his biological mother. Generally speaking, a 'classificatory mother' is any person who would be referred to by the same term as the biological mother. For details of the Swazi terminology, see H. Kuper, Kinship among the Swazi in African Systems of Kinship and Marriage, (Eds. A.R. Radcliffe-Brown and Daryll Forde), London, 1950, pp 86ff.

various types of relationship to the homestead head found in these sub-samples. This information is tabulated below. In order to facilitate comparisons with the figures obtained for the full rural survey area samples, the equivalent figures for the latter are given in brackets after the percentages for the sub-samples.

RELATIONSHIP TO HEAD OF HOMESTEAD

Special Sub-samples Percentages

Type of kinship link	H	M	L	Leb	Combined*
Nuclear Family	68.4 (67.4)	66.0 (65.6)	69.3 (66.8)	76.8 (72.9)	70.1 (67.6)
Mother or co-wife of father	3.1 (3.4)	2.2 (4.0)	3.7)3.1)	3.4 (3.8)	3.1 (3.7)
Other Agnates	13.1 (11.0)	18.4 (16.3)	13.4 (14.6)	10.0 (11.9)	13.2 (15.3)
Other Kin	15.4 (18.1)	13.4 (14.0)	13.9 (15.6)	10.0 (11.4)	13.2 (15.3)
Non-kin	- (0)	- (0.1)	- (0)	- (0)	- (0.04)
	448= 100.0%	456= 100.0%	442= 100.3%	442= 100.2%	1788= 100.3%

* unweighted totals

This table suggests that sub-samples correspond very closely with the total sample populations from each of the four physiographic regions.

An examination of the familial composition of the homestead groups in our four sub-samples revealed considerable variation in the kinship structure of these groups. Some form of classification into a reasonably small number of types of family grouping was therefore desirable if we were to produce a more meaningful classification.

Table 2 (annexure) shows the negligible proportion of individuals who are no kin to their homestead head; and of those who are not his spouses, descendants, siblings (brothers or sisters), or siblings' children. We therefore made the initial assumption that, as far as the

Swazi homestead group was concerned, it would be sufficient to adopt a classification based on the types of family comprising these groupings, since more complex groupings were virtually unknown in this area.

3.4 Familial Classification:

We also made another basic assumption, namely, that the many complex and exhaustive classifications of anthropology (designed primarily for cross-cultural comparisons) had little relevance in this particular context. We therefore adopted a system of classification designed to fit the modern Swazi situation as we found it, the details of this classification follow.

Nuclear Family: is a term used to cover that type of homestead group comprising only a homestead head, his wife, and his children. Since the 'mother-son' family is a traditional feature, the term 'nuclear family' has here been extended to cover the situation where a mother of the homestead head (or one of her co-wives) is attached to such a grouping.

We could not instruct our enumerators to enquire whether every child of a homestead head was, in fact, also the child of the wife inhabiting that homestead. Our 'nuclear family' therefore diverges slightly from the normal anthropological meaning of this term by the inclusion of all children of a homestead head reported to have only one wife resident in that homestead. From the sociological point of view this variation is of only minor importance in the present context.

Simple polygynous family: a grouping similar to the nuclear family (in that it comprises only the homestead head, his spouse, and his children), but where two or more wives are reported to live in the same homestead.

Extended agnatic family: A homestead group comprising in addition to either of the familial groupings listed above, one or more agnates (kin linked in the male line) of the homestead head, or the wives of his male agnates. The children of such other male agnates would, of course, also be agnates of the homestead head. For example, a group comprising a homestead head, two of his wives, his children, two brothers and their wives, and the children of one of these brothers, would be classified as an extended agnatic family. So would a homestead group which had, in addition to the spouses children of the homestead head, a brother or (classificatory brother) 1) of either the homestead head or his father,

"1) See footnote 1 Page 184"

and the wife (or wives) and children of such kinsmen; and so would a group comprising the wives and children of the homestead head, together with his sons, and their wives and children.

Complex family groupings: all homestead groups not falling into one of the classes listed above have been classified as 'complex family groupings'. The presence of even one non-agnate (other than the homestead head's own wives, or those of his agnates), has been regarded as sufficient to remove the homestead from any of these three classes, and to place it in this residual class of 'complex family groupings'.

3.5 Characteristics of Compositions of Individual Homestead Groups:

The table below shows the incidence of these four types of familial grouping (as homestead groups) in our four sub-samples.

Familial type in homestead group	H	M	L	Leb	Combined*
Nuclear family	41.7	40.0	45.0	41.7	42.1
Simple Polygynous family	6.7	6.7	3.3	10.0	6.7
Extended Agnatic family	10.0	21.7	20.0	25.0	19.2
Complex family groupings	41.6	31.6	31.7	23.3	32.0
	60= 100.0%	60= 100.0%	60= 100.0%	60= 100.0%	240= 100.0%

* unweighted totals

This table reveals that over 40% of the homestead groups do, in fact, comprise only nuclear families; thus supporting the impression given by the figures in Table 2 that the nuclear family is probably the predominant type of homestead grouping in modern rural Swazi society.

Homestead groups comprising only agnates of the homestead head (together with their wives, his wife or wives, and possibly his mother) account for at least 58% of all homesteads in all regional sub-samples, and nearly 70% of all these combined.

3.6 'Mother-son' Families:

The table below shows the incidence of homestead groups containing homestead heads' mothers, among all homesteads in the sub-samples, and among the groups that are nuclear families respecively.

PERCENTAGES OFHOMESTEAD GROUPS CONTAINING HOMESTEAD HEADS' MOTHERS.

	H	M	L	Leb
Among all homestead groups in the sub-samples	23.3	16.7	23.3	20.0
Among nuclear family groups only	63.2	12.0	31.8	10.7

3.7 The Complex Family Grouping:

There is a considerable variation in the actual composition of those homestead groups which we have classified as 'complex family groupings'. They vary from groups in which there is only one non-agnate attached to what was otherwise a nuclear, simple polygynous or extended agnatic family, to those in which the non-agnates outnumber the core group. Very frequently, the non-agnates involved are children of sisters or daughters of the homestead head.

Due to the small numbers involved, a detailed numerical analysis of the different types of complex family groupings in these sub-samples would serve little useful purpose. However, the table given below has been compiled to give some indication of what the various types of 'complexities' entailed. Only rounded percentages have been given.

PERCENTAGES OF COMPLEX FAMILY GROUPINGS SHOWING VARIOUS CHARACTERISTICS.

	H	M	L	Leb
Containing only one non-agnate (other than wives or mother)	24%	70%	53%	50%
Containing children of sisters of the homestead head	40%	37%	5%	36%
Containing children of daughters of the homestead heads.	29%	45%	53%	7%

4. CONCLUSION:

What can we reduce from the various tables, with regard to the size and composition of the rural Swazi homestead? We can confirm that its size is likely to be extremely variable (see Table 1 Annexure). The evidence further suggests that the majority of homestead groups are relatively small, and that there is little variation between the four physiographic regions with regard to the proportional incidence of groups of different sizes. (see sections 2.1 to 2.3 above).

As regards the composition of the homestead group, the evidence from the full rural random sample suggest that the majority (over two-thirds of rural inhabitants can be expected to belong to the nuclear families (as we defined these) of their homestead heads (Table 2 and section 3.2). This is supported by the evidence from the four smaller sub-samples which were analysed in greater detail. In the latter, the familial structures of the homestead groups cluster around two main types, namely, the nuclear family of the homestead head (42%), and the complex family groupings (32%) (table 3.6). The percentages of nuclear families are remarkably similar in the regional sub-samples; those of complex family groupings are rather more variable.

We also noted that the 'complex' families were, in many cases, not so very complex. They often consisted in essence, of nuclear, polygynous or extended agnatic families with only one or two other attachments.

Summing up, we can say that most modern rural Swazi homesteads appear to be relatively small (with modal populations of the order of five to eight persons); probably nearly half of them are essentially nuclear families; while in a large proportion of the remainder, the members of the core family (nuclear or polygynous) apparently easily outnumber the more distant kinsmen of the homestead head who belong to the same group.

It must finally be stressed that the foregoing analysis has been concerned with the homestead group; which is but one of several types of local group, but which happens to be distinguished by the Swazi as a separate and distinct entity. Other African Societies often distinguish rather different types of small scale local groupings, such as the 'villages' of the Southern Sotho and Northern Rhodesia, or the misha (kraals) of the Shona. Any comparison between these and the Swazi homestead must take into account the sociological significance of these local groupings within the context of their own societies, which render them not strictly comparable in every respect.

In many cases, subdivisions of these other groupings (such as, for example, the Shona hamlet or mana) might, as regards size and population (and even physical appearance) correspond more closely with the Swazi homestead. The Swazi do not, however, distinguish the larger, 'village' type of social and residential units found in the other societies we mentioned. For this reason we confined our analysis to the small group which does form the most significant entity at this local level, namely, the homestead.

A N N E X U R E S

TABLE 1

HOMESTEAD SIZES (FOR 52 RANDOM SQUARES)

(AS PERCENTAGE OF TOTAL NUMBER OF HOMESTEADS IN BRACKETS)

(RURAL SAMPLE AREAS)

No. in Homestead	Number of Homesteads									
	H		M		L		Leb		Total	
1	12	(2.88)	8	(1.77)	4	(2.78)	6	(2.93)	30	(2.46)
2	12	(2.88)	21	(4.64)	11	(7.64)	18	(8.78)	62	(5.09)
3	28	(6.71)	32	(7.06)	13	(9.03)	16	(7.80)	89	(7.30)
4	41	(9.83)	34	(7.51)	18	(12.50)	20	(9.76)	113	(9.27)
5	36	(8.63)	52	(11.48)	20	(13.89)	23	(11.22)	131	(10.75)
6	54	(12.95)	50	(11.04)	10	(6.94)	28	(13.66)	142	(11.65)
7	46	(11.03)	50	(11.04)	11	(7.64)	23	(11.22)	130	(10.66)
8	40	(9.59)	57	(12.58)	11	(7.64)	21	(10.24)	129	(10.58)
9	35	(8.39)	34	(7.51)	8	(5.56)	14	(6.83)	91	(7.47)
10	27	(6.47)	33	(7.28)	4	(2.78)	5	(2.44)	69	(5.66)
11	16	(3.84)	16	(3.53)	6	(4.17)	9	(4.39)	47	(3.86)
12	18	(4.32)	17	(3.75)	6	(4.17)	10	(4.88)	51	(4.18)
13	11	(2.64)	11	(2.43)	4	(2.78)	2	(0.98)	28	(2.30)
14	9	(2.16)	6	(1.32)	6	(4.17)	1	(0.49)	22	(1.80)
15	6	(6.71)	5	(3.97)	-	(7.64)	3	(2.93)	14	(5.17)
16	8		6		4		1		18	
17	7		3		3		1		14	
18	5		3		3		1		12	
19	2		1		1		1		5	
20	1	(0.96)	-	(1.55)	-	(-)	-	(0.49)	1	(0.98)
21	-		3		-		1		4	
22	2		1		-		-		3	
23	-		1		-		-		1	
24	1		2		-		-		3	
25	-	(-)	1	(1.55)	-	(0.69)	-	(0.98)	1	(0.82)
26	-		-		-		-		-	
27	-		4		-		-		4	
28	-		1		-		1		2	
31	-		1		-		-		1	
54	-		-		1		1		2	
Total	417		453		144		205		1219	
No.of Squares	15		14		13		10		52	

TABLE 2

SIZE AND COMPOSITION OF HOMESTEAD GROUPS

RELATIONSHIPS OF SUBJECTS TO HEADS OF THEIR HOMESTEADS

(RURAL SAMPLE AREAS)

(PERCENTAGES)

Relationship	H	M	L	Leb	Total*
Head	11.8	11.9	12.2	13.5	12.1
Wife	11.8	12.7	14.4	14.4	12.9
Son	22.9	21.8	21.2	24.9	22.6
Daughter	20.9	19.2	19.0	20.1	19.9
Mother	3.1	3.6	2.8	3.3	3.3
Classificatory Mother	0.3	0.4	0.3	0.5	0.4
Brother	2.7	4.0	3.0	3.7	3.4
Sister	1.8	1.4	1.0	1.0	1.4
Son's son	1.8	2.2	3.7	2.0	2.2
Son's daughter	2.3	2.2	3.2	1.9	2.3
Brother's son	1.2	3.3	2.2	1.5	2.2
Brother's daughter	1.2	3.1	1.5	1.8	2.0
Father's brother	0.03	0.1	-	-	0.1
Daughter's son	3.3	1.6	1.8	0.8	2.1
Daughter's daughter	3.6	1.7	1.2	0.6	2.1
Sister's son	1.8	1.0	1.5	0.8	1.3
Sister's daughter	1.6	1.3	0.6	1.1	1.3
Son's wife	1.7	2.1	3.7	2.7	2.3
Brother's wife	0.8	2.1	0.9	1.8	1.5
Other kin	5.3	4.2	5.9	3.6	4.7
No. kin	-	0.1	-	-	0.04
Total	3229 99.9%	3534 100.0%	1090 100.1%	1419 100.0%	9272 100.1%

* Unweighted totals

CHAPTER VI - C

MARRIAGE

1. THE SAMPLE:

In the 1960 Sample Survey the basic division with regard to marital status was between those never married, and all others. The first group included persons below marriageable age. The second category comprised all those with a marital history (whether actually married at the time of survey or not), totalling 1,353 males and 2,085 females in the rural sample area.

2. POLYGYNY:

To assess the rate of polygyny, widowed and divorced males currently without other wives were subtracted from this male sample. The table below gives the percentage and total number thus subtracted from each regional sub-total of the total sample of 1,353 males.

Highveld	7.9% (34)
Middleveld	7.0% (36)
Lowveld	5.9% (10)
Lebombo	5.4% (13)

Total deduction from sample: 93 or 6.9%

The reduced rural sample thus numbers 1,260 husbands who at the time of enumeration were married 1) to a total of 1,606 wives.

In a similarly reduced urbanized (i.e., urban and peri-urban) sample, there were 279 husbands married to 336 wives. Of these wives, 21.5% in the rural sample and 17.0% of the urbanized sample therefore lived with polygynous husbands.

The table below gives the distribution of husbands with one and more than one wife, as percentages of the total number of husbands within each region.

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1) For the different types of marital unions see section 3 below.

PERCENTAGE HUSBANDS WITH ONE AND MORE THAN ONE WIFE: RURAL AND URBAN/PERI-URBAN AREAS 1)

	Number of Wives							
	1	2	3	4	5	6	7	Total
Highveld	82.9	13.6	2.5	.8	.2	-	-	100% = 397
Middleveld	77.7	17.0	4.2	1.1	-	-	-	100% = 476
Lowveld	74.8	18.7	4.4	-	1.9	-	-	100% = 159
Lebombo	76.3	19.3	3.5	.4	.4	-	-	100% = 228
Combined Rural*	78.7	16.6	3.6	.7	.4	-	-	100% =1,260
Urban/Peri-Urban	89.9	5.7	1.8	.4	1.1	.7	.4	100% = 279

* Unweighted totals

From this table it can be seen that the overwhelming majority of Swazi husbands are monogamists: about four out of five in the rural areas, and an even larger proportion (nine out of ten) in the urbanized areas. The rate of polygyny in the rural areas ranges from about 25% in the Lowveld to about 17% in the Highveld. Seventy-eight per cent of the rural polygynists have two wives, and less than 17% three wives, very few have more than three wives.

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1) Standard errors, calculated on the formula $\sqrt{\frac{}{}}\, p\,(1-p)$ for the first three columns of this table, were as follows:-

Highveld	82.9 ± 1.89	13.6 ± 1.73	2.5 ± 0.78
Middleveld	77.7 ± 1.91	17.0 ± 1.72	4.2 ± 0.92
Lowveld	74.8 ± 3.44	18.7 ± 3.09	4.4 ± 1.63
Lebombo	76.3 ± 2.82	19.3 ± 2.61	3.5 ± 1.22
Rural	78.7 ± 1.15	16.6 ± 1.04	3.6 ± 0.53
Urban	89.9 ± 1.80	5.7 ± 1.39	1.8 ± 0.80

3. TYPE OF MARRIAGE:

3.1 Criteria:

Information was obtained with regard to the legal basis of Swazi marriages, and the following main categories were distinguished:-

(a) according to customary law
(b) according to Christian rites
(c) according to civil rites

In the practice of Swazi marriages, however, (as elsewhere in Southern Africa), it is not uncommon to find that in one and the same marriage a combination of elements from more than one of these categories obtains, the most common one being a Christian marriage in which bride-wealth (lobolo) has passed between families. It also happens that a marriage according to customary law is subsequently solemnized by Christian and/or civil rites. In these cases, classification obviously presents some problems. Enumerators were therefore instructed to ascertain the predominant aspect of such marriages and to classify accordingly. The first criterion was the chronology of the marriage process. Thus, a marriage first contracted under traditional ceremonial but subsequently solemnized by Christian (or civil) rites, would remain classified as traditional unless such solemnization occurred within one year of the traditional ceremony. Where the interval was less than one year the converted marriage was to be classed as Christian (or civil as the case might be). Moreover, a Christian marriage accompanied by civil rites, was classed as Christian. The possibility of marriages having been solemnized by some other religious ceremonial, was recognized, but yielded an almost negligible number of cases.

With regard to traditional marriages, the range of customary ceremonial varies, and in each case the criterion was whether the process constituted a valid marriage according to local custom. If the union did not (yet) satisfy these requirements, the couple were classified as 'just living together'.

3.2 The Sample:

The rural sample discussed below refers to all males that were or had been married (including widowed or divorced and without other wives) at the time of enumeration.

3.3 Legal Basis of First Marriage:

The first table reflects the legal basis of the first unions entered upon by these males:-

LEGAL BASIS OF FIRST MARRIAGE: RURAL AND URBAN/PERI-URBAN MALES.

		Percentage* Frequency per Region				
	H	M	L	Leb	Comb. Rural**	Urban/ Peri-Urban
Traditional	59.4 (±2.37)	78.7 (±1.81)	82.8 (±2.90)	74.7 (±1.22)	72.4 (±1.22)	35.3 (±1.86)
Christian rites	23.2 (±2.03)	8.6 (±1.24)	5.9 (±1.81)	8.7 (±1.82)	12.9 (± .91	26.1 (± 2.63)
Civil rites	1.6	3.1	-	2.1	2.1	11.4 (± 1.90)
Other Religious Ceremony	.2	-	-	.8	.2	-
Merely living together	15.5 (±1.74)	9.6 (±1.30)	11.2 (± 2.43)	13.3 (± 2.19)	12.3 (± .89)	27.1 (± 2.66)
Unknown	-	-	-	.4	.1	-
	100% =431	100% =512	100% =169	100% =241	100% =1,353	100% =306

* Standard errors in brackets
** Unweighted totals

There is, first of all, a heavy preponderance of customary marriages in the rural area, higher than one might have expected of a population among whom well over 50% of those over 18 years old profess to be Christian 1). Only in the Highveld does the incidence of customary marriages drop sharply below the rural average, and is the incidence of Christian marriages substantially higher than in the other three rural regions. The waning influence of traditional unions in the urban communities, to which we referred in Chapter VI - D, is again revealed in a low (35.3%) proportion of customary marriages and the fact that nearly two out of every five husbands contracted a marriage in western style (Christian or civil).

1) See Chapter VI - D 'Religious Affiliation'.

The category of unions described as 'merely living together' is fairly large, over 12% in the rural area as a whole (15.5% of the Highveld alone). It should be stated, however, that this is only partially an indication of slackening moral discipline, because undoubtedly in many of these unions the negotiations with regard to legalizing the marital situation will be completed at some future date 1). It is significant, however, that in the urbanized communities this category is substantially larger than elsewhere.

In a similar table below, reflecting the position with regard to women, very close parallels can be detected in virtually every respect. As may be expected as the result of the preponderance of females over males in a society which practices polygyny the proportion of traditional first marriages is higher among females than among males. The obvious reason is that all polygynous marriages are of necessity based on customary and not on Christian rites.

LEGAL BASIS OF FIRST MARRIAGE: RURAL AND URBAN/PERI-URBAN FEMALES.

	Percentage* Frequency per Region					
	H	M	L	Leb	Comb-Rural**	Urban/Peri-Urban
Traditional	67.4 (±1.84)	86.1 (±1.19)	86.7 (±2.07)	79.6 (±2.13)	79.2 (± .89)	39.3 (±2.92)
Christian rites	16.7 (±1.84)	6.2 (± .85)	3.3 (±1.09)	5.9 (±1.25)	9.1 (± .63)	25.0 (±2.59)
Civil rites	1.7	1.9	-	2.2	1.6	9.3 (±1.74)
Other Religious Ceremony	.2	-	-	.6	.1	-
Merely living together	14.0 (±1.36)	5.8 (± .85)	10.0 (±1.83)	11.4 (±1.68)	9.9 (± .65)	26.4 (± 2.63)
Unknown	-	-	-	.3	.1	-
	100% =651	100% =806	100% =270	100% =358	100% =2,085	100% =280

* Standard errors in brackets

** Unweighted totals

1) Cf. section 6.4

3.4 The Effect of Education on Type of Marriage:

It is to be expected that formal education will have an effect upon the type of marriage that people contract. In a rural sample (all regions) of 1,101 married females between the ages of 15 and 44, 71.39% had contracted their first marriages according to traditional rites and only 11.44% according to Christian rites. The corresponding figures for the rural male sample (687) were 66.38% amd 13.25% respectively. These people were divided into four classes of educational attainment:-

I those wholly illiterate;
II those who had completed four years of formal education (i.e. up to and including Standard II) together with those who could read and write either Swazi or English;
III those who had completed Standard VI;
IV those with Standard VII and higher education.

The proportions traditional and Christian marriages within these sub-divisions appeared to be as follows (other forms of marital relationships excluded):-

RURAL MARRIAGE

	Males		Females	
Literacy Class	Traditional %	Christian %	Traditional %	Christian %*
I	76.81	5.80	82.04	4.96
II	46.23	20.75	57.21	18.60
III	38.96	36.36	36.75	33.33
IV	28.57	61.90	34.78	43.48

*Percentages of total marital relationships of all types in literacy class concerned

Although the group of illeterates at present still greatly outweighs those who have had formal education, the effect of various degrees of educational standard is clearly demonstrated by the progressively larger proportions of Christian marriages as against diminishing proportions of traditional marriages among both male and female rural groups.

The urbanized population is, as a whole, more literate than the rural population, but the same trend is revealed in a similarly sub-divided urban/peri-urban sample of 189 and 258 married males and females respectively.

URBAN/PERI-URBAN MARRIAGES.

	Males		Females	
Literacy Class	Traditional %	Christian %	Traditional %	Christian %
I	33.33	17.78	45.53	10.68
II	26.92	26.92	28.57	19.05
III	27.87	22.95	27.78	26.67
IV	19.15	36.17	4.35	56.52

*Percentages of the total marital relationships of all types in literacy class concerned

The effect of educational standard upon the fairly large category of informal marital relationships (the 'just living together' group) is less straightforward, as the following figures show:-

PERCENTAGE* INFORMAL MARITAL RELATIONS

	Rural		Urban/Peri-Urban	
Literacy Class	Males	Females	Males	Females
I	15.53	12.47	44.44	39.81
II	31.13	22.33	38.46	47.62
III	12.99	18.80	36.07	30.00
IV	4.76	13.04	17.02	13.04

*Percentage of total marital relationships in literacy class concerned

Apart from the greater overall proportion of not (yet)legally sanctioned relationships in the urbanized sample, two trends emerge. The first is the heavy representation of this type of relationship among those with lower primary education, who are here revealed as the least settled class 1). In the urbanized communities comparative lack of legal stability in marital relations is also a feature of the illiterate class and of those with upper primary education, which somewhat obscures the broad tendency in both types of community for the higher educated to eschew the legally insecure basis of an informal marital partnership.

4. AGE OF MARRIAGE:

The tables in this section are based on the information collected with regard to the first marriages entered upon by males and females in the rural and urbanized areas. Included are the marital unions of those 'merely living together', since they are, except for their lack of legal sanction, distinctive domestic, procreative and economic units.

Full distribution tables have been omitted, and only two sets of results are given: the average (arithmetic means) and median age 2) of first marriage, and the proportion of married males and females who had entered their first marital unions by certain ages.

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1) Cf. section 6.6 below, in which this tendency is also reflected in higher divorce rate.
2) Standard errors are estimated to be less than .5 years with regard to mean age, and to range from .3 to .7 years with regard to median age.

REGIONAL MEAN AND MEDIAN AGE AT FIRST MARRIAGE: PERCENTAGE MARRIED AT AGE 25 AND 30

(A)	MARRIED MALES					
	H	M	L	Leb	Comb. Rural*	Urban/ Peri-Urban
	N -431	N-512	N-169	N-241	N-1353	N -306
Mean age at first marriage (years)	27.0	27.1	27.5	26.6	27.2	29.5
Median age at first marriage (years)	27.2	26.3	27.7	26.6	26.8	31.5
Percentage** first married at age 25 or younger	43.4 (±2.39)	47.8 (±2.21)	38.5 (±3.80)	44.8 (±3.21)	44.7 (±1.35)	24.5 (±2.46)
Percentage** first married at age 30 or younger	69.4 (±2.22)	76.0 (±1.89)	71.0 (±3.54)	69.3 (±2.97)	72.1 (±1.22)	48.0 (±2.86)

(B)	MARRIED FEMALES					
	N - 651	N-806	N-270	N-358	N-2085	N -280
Mean age at first marriage (years)	20.6	21.0	21.0	22.1	21.1	21.8
Median age at first marriage (years)	20.6	20.8	20.2	21.1	20.8	20.5
Percentage** first married at age 25 or younger	8.48 (±1.41)	83.4 (±1.31)	79.3 (±2.47)	78.2 (±2.18)	82.4 (± .83)	76.1)± 2.55
Percentage** first married at age 30 or younger	95.1 (± .85)	95.4 (± .74)	93.3 (±1.52)	90.8 (±1.83)	94.2 (± .52)	91.1 (±1.70)

* Unweighted totals
** Standard errors in brackets

As a general observation it can be stated that, as between the various rural regions, very little variation in mean and median age is revealed; and with regard to females, the pattern in the urbanized areas is very similar to that of the rural regions. Regarding male ages, however, a substantial difference exists between the rural and urbanized areas.

The average age of rural males at thetime of first marriage is round 27 years old. In the urbanized areas the men are from 2-4 years older when they marry. Among the reasons which can be advanced for this age rise, economic pressure must be mentioned, together with the fact that here, much more than in traditional rural communities, the responsibility for gathering the substantial amount of bridewealth, has come to rest largely upon the individual rather than on a fairly extensive group of kindred. This factor does not affect the age of brides. The age of Swazi marriage used to be strongly influenced by the regimental (age group) organizetion, in that a considerable period of service to King and country had to be completed before permission to marry was given 1). This applied to girls as well as young men. The age of rural marriage still seems to reflect some of this discipline. While less than one-half of the married men had married by the time they were 25 years old, nearly three-quarters of them had done so by the time they were 30.

The women were, on the average, some six years younger than the men when they first married, with the result that round 80% of those that married did so by the time they were 25, and well over 90% by the time they were 30.

In the urbanized areas the few years delay in the male age of marriage resulted in a situation that some 75% of them married after the age of 25, and nearly one-half not until they were 30 years or older.

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1) Marwick, B.A., The Swazi, pp. 70, 274; Kuper H., An African Aristocracy, Chapter IX.

Education has effected the age at which people first marry. The age of schoolgoers 1) is high in comparison with European norms, and at the secondary level of education is high enough to some extent to overlap the early age level at which young men, and especially women, used to enter into marriage. Apart from this factor, there is undoubtedly also, among the better educated, the desire and need first to earn and save money so that married life might start at a comparatively high standard of material comfort.

We therefore see, in a sample of married rural women of between 15-44 years old that the percentage of those with Standard VII upwards who married before the age of 20, dropped to a little under 22% in comparison with over 51% of the illiterate group (the figures for a comparable urbanized sample are approximately 22% and 45½%). A similar decrease, though less sharp, was even noticeable with regard to the proportion of women who had married before the age of 25 (about 70% as against 85%), though only in the rural area.

Men generally marry considerably later in life than do women, and the effect of education upon their age of marriage shows a different pattern which seems broadly similar in both rural and urbanized samples. At the lower age division, school-going has a slightly retarding effect in that a smaller proportion of literate males are married by the age of 20. At 25 years, however, the proportion of married men, with primary education is larger than among the illiterates, and it is only the secondary levels of education (Standard VII upwards) which appear to have a retarding effect, as follows:-

MARRIED MALES (15-44 AGE GROUP): PERCENTAGE MARRIED UNDER THE AGE OF 25 IN FOUR LITERACY CLASSES 2)

Literacy Class	Rural	Urban/Peri-Urban
I	49.90	26.67
II	53.77	38.46
III	50.65	32.79
IV	33.33	23.40

1) See Chapter VI - C 'Education'
2) For definitions of these classes see section 3.4 above.

5. AGE AND MARITAL STATE:

The Swazi population can be divided into three divisions of marital state: those never married, those married, those no longer married. The last division includes those widowed, divorced and separated. The situation reflected below takes into consideration the fact that we are dealing with a society in which polygyny is sanctioned, and further that it is possible for a man to be a widower by his first marriage, a divorced man by his second wife, but still married to his third wife. In such cases the classification is based on the ultimate marital state reflected by all marriages. To be 'no longer married' therefore means that, whether a person married one or more than one spouse, he or she was no partner to an extant marriage during the time of enumeration. 'Married' means that at least one of a person's marriages was intact at this time.

At the end of this section two sets of distribution tables will be given: one set deals with the male and female populations in terms of marital state within certain age classes separately; the other set reflects the situation cumulatively, that is in terms of the total population below and over certain age limits.

In the text only a limited number of findings which struck us as significant are discussed, and the reader should refer to the annexure for further details.

It should also be stated that, due to the uncertainty with regard to the fate of certain marriages, the population sample used for this analysis, differs very slightly from the full random sample, the adjustments being as follows:-

Population	Present Sample	Full Random Sample
Rural males	4376	4406
Rural females	4865	4866
Urban/Peri-urban males	853	865
Urban/Peri-urban females	881	881

Towards the end of July, 1960, the marital state of the Swazi population, as reflected in our random samples, was:-

	Rural Areas		Urbanized Areas	
	M	F	M	F
Never married	70.00%	57.14%	65.53%	59.70%
Married	28.22%	31.98%	32.12%	32.46%
No longer married	1.78%	10.88%	2.35%	7.84%
	100.00%	100.00%	100.00%	100.00%

The larger proportion of urbanized married males in comparison with rural males, is rather deceptive, because the age group which comprises the vast bulk of married men (25-29) is comparatively larger in the urbanized areas than it is in the rural area (37.56% as against 30.84%). The difference of about 4% is therefore actually smaller than the 7% which might have been expected. Analogous to these figures, the proportion of never married males is relatively larger in the rural areas, but here again, the difference may be ascribed mainly to a proportionately larger group of under 20 years old (55.87% in the rural as against 50.29% in the urbanized areas).

The rural males start marrying at a slightly younger age, and reach the highest proportion of married men in any one age-group (94.04% married in the 50-54 age-group as against 90.48% for the same age-group in the urbanized areas). Once started (between the ages of 25-30), however, the proportion of urbanized married males rises more steeply than in the rural areas, and is maintained at a higher level in relation to the total male population, in spite of the fact that, at an elderly age (over 55) the proportion of those no longer married is a little larger among the urbanized than among the rural males. This differential pattern may well be due to labour migrancy, for the traffic between place of domicile and place of work is a phenomenon which, in Swaziland, particularly affects rural society, the comparatively stable urbanized communities having to a much larger extent found their employments where they are domiciled. The result is that the urbanized Swazi male can 'settle down' earlier than his rural counterpart and has, on the whole, a better chance to devote himself to a regular domestic life.

The rural pattern is, however, not uniform and in some respects regional differences are fairly marked. The table 1) below reveals the marital situation of the total male population samples in the four physiographic regions:-

	H	M	L	Leb
% Never married	72.54	69.98	68.91	65.17
% Married	25.37	28.26	29.90	33.24
% No longer married	2.09	1.76	1.19	1.59
Total	100.00	100.00	100.00	100.00
N	1533	1649	505	689

The variation concerns mainly the never married and married proportions, with the married rate in the Lebombo population being highest and substantially larger than in the Highveld (lowest married rate). The proportions of those no longer married differ too slightly to affect the general pattern.

Turning to the figures for females, there are again some slight differences between rural and urbanized society. While the proportions of married females are about the same in both populations, the percentage of never married females is a little larger in the urbanized areas 2), the difference being relatively more marked in the 30-44 age division. The larger proportion of

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1) Standard errors ($\sqrt{pq}$ (1-p) formula) for this table are:-

Never married	72.54 ±1.14	69.98 ±1.13	68.91 ±2.06	65.17 ±1.82
Married	25.37 ±1.11	28.26 ±1.11	29.90 ±2.04	33.24 ±1.79
No longer married	2.09 ±0.37	1.76 ±0.32	1.19 ±0.46	1.59 ±0.48

2) This is the overall picture. In the University group of literate women, however, the position is rather reversed, and especially those with upper primary education, seem to find it easier (or actually prefer) to marry in an urban community (60% of the rural women between 15-44 with upper primary education were never married, asagainst 45% of their urban counterparts).

of (elderly) women in the rural areas who are no longer married is largely due to the fact that their age classes are here more heavily represented (13.27% over 50 years of age) than in the urbanized areas (7.62%). The overall pattern, however, appears to be very similar in rural and urbanized areas.

It is when we compare male and female figures, however, that morestriking contrasts are revealed. Both the female proportions of never married and of no longer married are substantially different from those of the males. Since these differences emerge in conjunction with the approximate parity of the proportions married males and married females, it is useful to examine the situation with particular regard to the early and late marital age groups.

We noted earlier that women marry at an earlier age than men, their mean age at first marriage being between 6-8 years younger. In a polygynous society like the Swazi, moreover, few potential spouses need remain unmarried during their prime years; and even if (as is the position among the Swazi) there is an appreciable overweight of females within these age groups 1), these can be accommodated in plural marriages. How successfully this is being done is shown by the fact that, within the 35-44 age group, only 2.24% of the women in the rural areas had remained unmarried 2).

When they grow older the men can, and do, continue to marry; but the chances of women entering marriage are becoming slim, especially after child-bearing age 3). The proportion of women who are no longer married, is therefore bound to increase sharply in the older age groups.

The whole divergent development process of male and female marital state is strikingly illustrated in the following table:-

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1) Our figures indicate an overall preponderance of females in the population structure (see Chapter VI - A, section 2.2) and between the ages of 20-49 there are some 120 females per 100 males.
2) The corresponding figure for the urbanized area is 6.68%.
3) A similar divergent tendency, though not as sharply differentiated, can of course be observed in western societies, cf. Union Statistics 1910-1960, tables A15 and graph A17.

Age Group	Marital Status	Males		Females	
		Rural	Urban	Rural	Urban
20-29	% never married	70.49	60.58	30.82	33.39
35-44	% married	79.42	89.52	83.30	78.43
50 and over	% no longer married	7.33	14.29	59.51	60.61

In the 20-29 age group about two-thirds of the women have entered married life, but only one out of three of the men have done so. In the 35-44 age group the great majority (about four-fifths) of both men and women are married and the respective proportions are approximately the same. In the over 50 age group, however, the vast majority of men continue to live in married state, but about three out of five 1) women are either widowed, divorced or separated.

6. DURATION OF MARRIAGE:

6.1 The Sample:

Information about the duration of Swazi marriages was obtained from both male and female respondents within the sample areas. We are here dealing with two random samples, which overlap in those cases in which husband and wife refer to their existing marriage, but differ with regard to their previous marriages (if any). Since each sample is a random one, and both sexes reported in each case on the duration of a bilateral relationship, one would expect total responses of the male and female group to correspond very closely. For some reason, however, these results vary. With regard to their first marriages, for instance, the female responses in all regions indicate a longer duration than do the male responses. In the subsequent section on the termination of marriage, possible reasons for this discrepancy are suggested.

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1) This proportion reached over 70% in the age group of 60 years and over.

In view of these discrepancies, however, we have also combined male and female responses, thus drawing on what constitutes, in effect, a third and enlarged sample in which the abovementioned differentiations are modified.

6.2 Duration: All Types of Marriage:

Taking male and female responses together, the duration of first marital unions of all types (including 'just living together'), is reflected in the table below, in which the results are given for each region and distributed according to various duration categories:-

DURATION OF FIRST MARRIAGE: ALL TYPES OF UNION (COMBINED MALE AND FEMALE RESPONSES): RURAL AREAS

Region	Duration in Years							Total N
	-4	5-9	10-14	15-19	20-24	25-29	30+	
Highveld	20.32	14.19	15.31	10.67	12.24	9.55	17.72	1078
Middleveld	20.59	18.46	14.65	9.92	12.43	9.46	14.49	1311
Lowveld	23.22	17.70	13.56	13.56	9.20	8.28	14.48	435
Lebombo	25.50	12.42	16.95	8.89	9.73	7.72	18.79	596
Combined Rural	21.69 =742	15.96 =546	15.12 =517	10.44 =357	11.49 =393	9.04 =309	16.26 =556	100.00 =3420

The median duration of marriage in the rural areas was a follows:-

Region	Years	Months*
Highveld	15	1 (± 4)
Middleveld	13	8 (±3.5)
Lowveld	12	11 (±7)
Lebombo	13	5 (±7)
Comb. Rural	13	10 (±4)

* Standard errors in brackets

Overall regional differences are not insignificant. Among the Highveld population, for instance, marriage appears to be more stable than in other rural regions, a somewhat surprising result since it is the Highveld in which, on the whole, the process of socio-economic transitions appeared to be more advanced than elsewhere in the rural strata, except some border areas.

With regard to second marriages the rural random samples (both male and female responses) revealed the median duration to be approximately:-

Region	Years	Months
Highveld	11	10
Middleveld	10	0
Lowveld	13	9
Lebombo	12	4

The median duration for the combined rural sample was 11 years and 5 months; and the same sample gave 10 years 11 months for third marriages 1).

The shortening duration of second and third marital unions can probably largely be ascribed to the time lapse between successive marriages in the marital chronology of individual respondents.

The full distribution table yielded a median duration of marriage in the urban/peri-urban areas of 9 years 8 months, which is considerably shorter than the rural median. The difference is probably partly due to the older age at which men first marry in the urbanized areas (see section 4 above), which curtails the potential duration of their married life. There is, however, little difference between rural and urbanized females with regard to the age at first marriage, and the assessment by urban females of the duration of their marriages is not substantially different (10 years 1 month) from that given by the urban males. So that we may also expect the urban marriage to terminate sooner for reasons other than death, that is, on account of a higher incidence of divorce (see below).

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1) Frequencies regarding second and subsequent marriages in the sample are too small to warrant the publication of full distribution tables.

A good overall picture of the duration of both rural and urban/peri-urban marriages is given in the table below, which reveals the diminishing numbers and percentages of marriages at successive duration divisions:-

DURATION OF FIRST MARRIAGE: MALE AND FEMALE RESPONSES: DIMINISHING FREQUENCIES AND PERCENTAGES AT SUCCESSIVE TIME DIVISION

		Duration in Years						
Region		Total = 0+	5+	10+	15+	20+	25+	30+
Highveld	N	1078	859	706	541	426	294	191
	%	100.00	79.68	65.49	50.19	39.52	27.27	17.72
Middleveld	N	1311	1041	799	607	477	314	190
	%	100.00	79.41	69.95	46.3	36.38	23.95	14.49
Lowveld	N	435	334	257	198	139	99	63
	%	100.00	76.78	59.10	45.52	32.00	22.76	14.48
Lebombo	N	596	444	370	269	216	158	112
	%	100.00	74.50	62.10	45.13	36.24	26.51	18.79
Combined Rural	N	3420	2678	2132	1615	1258	865	556
	%	100.00	78.30	62.34	47.22	36.78	25.29	16.26
Urban/Peri Urban	N	649	455	313	207	148	76	47
	%	100.00	70.11	48.23	31.90	22.80	11.71	7.24

The above table shows that, with regard to first marriages in the rural areas, nearly one out of five lasted less than five years; more than three out of five was of ten or more years' duration; nearly one-half were of fifteen and more years' standing, while about one-quarter lasted twenty-five years and longer. In contrast, more than two-thirds of the urbanized marriages were of less than fifteen years' duration, and only a little more than one out of ten had lasted for twenty-five years or longer.

6.3. Duration of Marriage: Differentiation by Type of Marital Relationship:

It may be useful to compare the duration of Swazi marital relations according to the legal basis upon which they were contracted (see section above). Only three types of marital union appeared in our samples in sufficient numbers to warrant statistical treatment:

the traditional marriage, the Christian marriage, and the relationship referred to as 'just living together'. The civil marriage was represented in fair numbers only in the urbanized areas; the category 'by other religious ceremony' appeared hardly at all in our samples. The comparative stability of the main marriage groups can perhaps best be revealed in a table giving the percentages of the diminishing frequencies represented at successive duration limits. Only the respondents' first contracted marital relationships (male and female responses combined) are reflected in the table:-

DURATION OF MARRIAGE: COMPARISON BY TYPE OF MARITAL RELATIONSHIP:

		Duration in Years						
	Type of marriage	N 0+	5+	10+	15+	20+	25+	30+
Rural	Traditional	2617 = 100.00	82.19	67.52	51.96	40.50	28.10	18.72
	Christian	364 = 100.00	82.69	65.66	46.98	36.81	24.45	12.10
	Living together	371 = 100.00	49.87	24.80	14.56	10.24	4.31	-
Urban/Peri Urban	Traditional	234 = 100.00	82.48	64.10	43.16	33.33	19.66	12.39
	Christian	162 = 100.00	75.31	52.47	36.42	26.54	13.58	9.88
	Living together	185 = 100.00	46.49	22.70	9.19	4.32	1.62	-

From this table two broad trends clearly emerge: (a) in all areas the traditional marriage is the most stable, fairly closely followed by the Christian marriage, while the not formally recognized relationships are as a class much sooner terminated; (b) with regard to all types of marital relationship, the rural communities show a greater marital stability than the urbanized communities.

The striking difference in duration between the not formally sanctioned relationships and the formal marriages (less than one-quarter of the latter, but more than one-half of the former, are of under five years' duration), may be misinterpreted. The 'just living together' category is not terminated only by death of one of the partners, or their separation while they are alive, but also by the transformation of their relationship into a regular marriage. In the latter event the stability of the relationship is not affected. It is only when we examine the causes of termination that this factor can be revealed.

6.4 Termination of Marriage:

For the purpose of this sub-section the responses of males and females are given separately, for they are significantly different. Only the three main relationship groups are given, and the samples exclude a few doubtful cases.

A. TERMINATION OF MARRIAGE: MALE RESPONSES

Type of Marriage	Region	Total No. involved	Termination by death		Termination by divorce or separation	
			No	%	No	%
Traditional	H	225	17	6.67	27	10.59
	M	402	30	7.46	30	7.46
	L	139	13	9.35	15	10.79
	Leb	179	12	6.70	15	8.38
	Comb. Rural	975	72	7.38	87	8.92
	Urban/ Peri-Urb	104	8	7.69	9	8.65
Christian	H	100	5	5.00	5	5.00
	M	44	3	6.82	1	2.27
	L	10	1	10.00	1	10.00
	Leb	20	-	-	1	5.00
	Comb. Rural	174	9	5.17	8	4.60
	Urban/ Peri-Urb	80	8	10.00	9	11.25
Living together	H	67	3	4.48	8	11.94
	M	49	4	8.16	7	14.29
	L	19	1	5.26	3	15.79
	Leb	32	4	12.50	2	6.25
	Comb. Rural	167	12	7.19	20	11.98
	Urban Peri-Urb	82	2	2.44	5	6.10

	B. TERMINATION OF MARRIAGE; FEMALE RESPONSES					
Type of Marriage	Region	Total No. involved	Termination by death No	%	Termination by divorce or separation No	%
Traditional	H	438	152	34.70	10	2.28
	M	690	214	31.01	23	5.08
	L	231	59	25.54	8	3.46
	Leb	283	66	23.32	4	1.41
	Comb. Rural	1642	491	29.90	45	2.74
	Urban/ Peri-Urb	130	35	26.92	13	10.00
Christian	H	109	13	11.93	4	3.67
	M	50	11	22.00	-	-
	L	9	1	11.11	-	-
	Leb	20	-	-	1	5.00
	Comb. Rural	188	25	13.30	5	2.66
	Urban Peri-Urb	82	17	20.73	2	2.44
Living together	H	89	7	7.87	16	18.00
	M	47	2	4.26	-	-
	L	27	-	-	3	11.11
	Leb	41	3	7.32	1	2.44
	Comb. Rural	204	12	5.88	20	9.80
	Urban Peri-Urb	103	4	3.88	13	12.62

In spite of regional variations (the frequencies involved are sometimes so small that a few cases more or less, substantially affect sub-totals) there are a number of consistent trends. According to both male and female responses the 'just living together' relationships are more often terminated by separation than by death. This is due largely to the fact that we are here dealing with a comparatively younger population than in the other marital groups. Males and females further agree with regard to the low divorce rate among Christian marriages in the rural areas (2.44% to 4.60%) of all such marriages contracted by both respondents). If, in spite of this comparatively low divorce rate (and little differentiation with regard to termination by death) the Christian marriage is of shorter duration than the traditional marriage (see above), this is probably due to their slightly older age at first marriage in comparison with traditional couples.

In the 'just living together' group, the relationship pattern, in spite of varied male and female responses, appears to be surprisingly stable, the combined responses of the total sample revealing that 10.43% is terminated by separation, and 5.4% by death of one of the partners. This shows only little more instability than is admitted by male responses in respect of the traditional rural marriage, and appears to confirm our earlier observations that a considerable proportion of these unions are subsequently transformed into fully legalized marriages.

In at least two reports there is a striking difference between male and female responses. Except in the category of informal unions, the frequency with which women report their first marriage to have been terminated by the death of their spouses, is several times higher than that reported by the men. Only one factor can account for this divergence: the differential age pattern of wives and husbands. Since wives are on the whole from six to eight years younger than their husbands when they first marry, many more wives will survive their husbands than <u>vice versa</u>. The lesser discrepancy in this respect in the Christian marriage group can probably again be ascribed to the smaller age differentiation of the spouses in this group.

The other interesting difference between male and female responses concerns the divorce rate. In every region, except theurbanized areas, the women admit to a considerably smaller proportion of divorces than do men. In view of its consistent appearance, this differentiation is not likely to be due to the fact that we are dealing with partially different population samples. The more plausible explanation lies in the different attitudes of men and women with regard to the propriety of marital relations. Women will, on the whole, be more inclined to 'cover up' an irregular union and therefore keep up the pretence of a married status (especially in the more conservative rural

areas) longer than men would do. Men on the other hand, are more inclined to take a legalistic view of these matters and probably report more correctly on the state of their unions. Hence we are inclined to attach greater credence to the divorce rate revealed by male responses.

In the urbanized areas, it is likely that women take a more 'sophisticated' view of the marital relationship, and therefore reveal a divorce rate similar to that abstracted from the male responses (the numbers involved are, however, so small that one cannot attach too great reliance to this observation).

Our remarks about the different attitudes of males and females may find support in our earlier observation with regard to the duration of marriage. In section 6.1 (above) we stated that in this respect female responses with regard to first marriages in all regions indicated a longer median duration of marriage than did the male responses. The difference, in fact, was about 2 years and five months in the rural areas, and a little more than one year in the urbanized areas. During the often protracted period of marriage preliminaries and negotiations (especially in traditional marriages) a fairly liberal measure of sexual licence is permitted between the couple, and the bride (but not the groom) is expected to be faithful. It is not unlikely, therefore, that a woman may be inclined to consider including this period when she assesses the duration of their marital relationship, while a man may prefer to date the marriage from the time the bride is formally transferred to his village as his wedded wife. It may also be stated that, with regard to second and subsequent marriages (which in the case of remarrying women, usually lack a protracted period of formal 'betrothal') this overall discrepancy between male and female responses was reduced to a few months.

6.5 Stability of Marriage: Comparison First, Second and Third Marriage:

A detailed comparison between first marriages and those contracted subsequently is rendered difficult by the relatively small sizes of the samples representing the latter categories 1).

It is however, of interest to note, in respect of the combined rural samples, the respective 'divorce' 2) rates for each of these categories. The figures include all types of marital relationships.

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1) As against a combined rural first marriage sample of 3420, the rural second marriage sample numbered only 525, and the third marriage sample 126 - the latter containing only 6 female cases.

2) That is, the percentage of all contracted marital relationships terminated by divorce or separation of the partners.

DIVORCE RATES (RURAL AREAS): PERCENTAGE OF TOTAL MARITAL RELATIONSHIPS.

	Sample		
	M & F	M	F
First Marriages	5.57	8.87	3.42
Second Marriages	8.92	9.73	6.03
Third Marriages	14.62	14.52	-

In section 6.2 above we showed that there is a tendency for second marriages to be shorter than the first marriage, and for the third marriage in turn to last for a shorter period than the second. This tendency we ascribed partially to the fact that owing to the time lapse between successive marriages the more recent unions would have a shorter life expectancy than the preceding ones. From the above table it appears, moreover, that such subsequent unions are also rendered less stable by progressively higher divorce rates.

6.6 Education and Marital Stability:

In section 3.4 above the relation between educational standard and type of marriage was discussed, and we noted the fairly high proportions of males and females with lower and upper primary education in the category of informal marital unions. Elsewhere we pointed out that the 'just living together' relationship is not necessarily an unstable one as many of these unions are subsequently transformed into legally sanctioned marriages. Yet it is noteworthy that the impression of the relatively unstable marital relations particularly of the group of men and women with lower primary education (as well as the greater stability of those with secondary education), is borne out by their divorce rates. The table below, however, is of wider interest since it shows the interaction of both education and socio-economic environment upon the stability of marriage and their differential effect upon men and women.

DIVORCE RATES 1): MALES AND FEMALES OF 15-44 YEARS IN FOUR CLASSES OF EDUCATIONAL ATTAINMENT (FIRST MARRIAGES ONLY)

	Rural		Urban/Peri-Urban	
Literacy Class	Males	Females	Males	Females
I	10.33	2.95	6.67	11.65
II	9.43	4.65	11.54	9.52
III	6.49	2.56	6.45	8.89
IV	-	-	6.35	3.35

In rural society the large illiterate female majority is still subjected to the traditional codes of discipline. Those with lower primary education (Class II) are mainly the young women who, though more sophisticated on account of their literacy than the majority of tribes-women, are yet insufficiently educated to be accorded a higher social status which itself would demand a strict code of moral behaviour. The latter situation more likely applies to the much smaller upper primary group, the vanguard of a new rural elite. These women, moreover, are likely to demand husbands of equal if not better education. Together they form the new leadership core which, in a conservative social environment, is expected to uphold a high standard of moral discipline.

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1) For a discussion of the differential responses of males and females with regard to divorce, see previous section.

In the urban environment, on the other hand, traditional sanctions are much less effective and generally speaking, moral discipline is more lax than in rural society. Moreover, the diversified economic basis of urbanized life puts a premium on education to a much greater extent than it does in the rural area. Not only is the degree of literacy 1) far greater, but there is bound to exist a closer correlation between higher educational standard and better paid and more stable employment (e.g., in Government services), which in turn benefits domestic stability.

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1) Roughly 70% of the 20-25 age group in the urban area is literate, as against approximately 30% in the rural area.

This trend is clearly reflected in the diminishing divorce rates as reported by urbanized females. The male responses faintly reveal a similar overall trend, which is, however, interrupted by the high divorce rate in the lower primary class of literacy. With regard to the latter it is likely that their wives comprise a large proportion of illiterates - who are in a comparatively unfavourable socio-economic position in an urban environment - while the husbands themselves may be less happy to accept purely menial work, without being able to compete successfully for the better paid jobs. Under these circumstances it may be expected that their domestic situation is subject to above average strain.

A N N E X U R E S

TABLE 1 AGE AND MARITAL STATE : MALES (July, 1960) CHAPTER VI - C ANNEXURE

(a) Percentages Never Married, Married, No longer Married per Age Group.

	Marital State	Age Group												
		-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total* = N	
Combined Rural	Never Married	100.00	98.01	82.61	55.76	29.51	14.22	13.48	2.96	1.99	1.16	2.35	70.00=	3063
	Married	-	1. 99	16.58	42.90	68.03	77.94	81.56	92.61	94.04	91.86	87.79	28.22=	1235
	No longer Married	-	-	.81	1.34	2.46	7.84	4.96	4.43	3.97	6.98	9.86	1.78=	78
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	4376
	N	=2060	=403	=368	=303	=244	=204	=141	=203	=151	= 86	=213	=4376	
		-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total* = N	
Urban and Peri-Urban	Never Married	100.00	100.00	90.28	43.08	32.65	9.26	3.92	10.00	4.76	-	6.45	65.53=	559
	Married	-	-	9.72	55.38	67.35	90.74	88.24	82.00	90.48	80.00	77.42	32.12=	274
	No longer Married	-	-	-	1.54	-	-	7.84	8.00	4.76	20.00	16.13	2.35=	20
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	853
	N	= 362	= 73	= 72	= 65	= 49	= 54	= 51	= 50	= 21	= 25	= 31	= 853	

* Unweighted totals

TABLE 1 AGE AND MARITAL STATE: FEMALES (July, 1960) CHAPTER VI - C ANNEXURE

(a) Percentages Never Married, Married, No longer Married per Age Group

	Marital State	Age Group											
		-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total* =N
Combined Rural	Never Married	100.00	87.80	48.17	10.37	9.76	3.25	1.00	.48	1.99	.76	.27	57.14=2780
	Married	-	11.96	50.86	86.46	86.18	85.37	83.00	72.95	67.55	56.49	22.43	31.98=1556
	No longer Married	-	.24	.97	3.17	4.06	11.38	16.00	26.57	30.46	42.75	77.30	10.87= 529
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00 4865
	N	=2140	=418	=409	= 347	= 246	= 246	= 200	= 207	= 151	= 131	= 370	= 4865
		-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+	Total* =N
Urban and Peri-Urban	Never Married	100.00	89.24	56.25	11.69	16.67	6.25	7.89	-	-	-	5.88	59.70= 526
	Married	-	9.68	42.50	83.12	80.00	81.25	73.68	81.82	63.16	38.46	20.59	32.46= 286
	No longer Married	-	1.08	1.25	5.19	33.33	12.50	18.42	18.18	36.84	61.54	73.53	7.83= 69
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00 881
	N	= 370	= 93	= 80	= 77	= 60	= 64	= 38	= 33	= 19	= 13	= 34	= 881

* Unweighted totals

TABLE 2(i) AGE AND MARITAL STATE: MALES (July, 1960) CHAPTER VI - C ANNEXURE

Cumulative Percentages Never Married, Married, No longer Married under certain age limits.

	Marital State	Age limits											
		< 15	< 20	< 25	< 30	< 35	< 40	< 45	< 50	< 55	< 60	< ⋈	N
Combined Rural	Never Married	100.00	99.68	97.46	93.43	88.81	84.56	81.87	77.79	74.98	73.46	70.00	= 3063
	Married	-	.32	2.44	6.35	10.81	14.63	17.16	21.06	23.77	25.17	28.22	= 1235
	No longer Married	-	-	.10	.22	.38	.81	.97	1.15	1.25	1.37	1.78	= 78
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	= 4376
	N	=2060	=2463	=2831	=3134	=3378	=3582	=3723	=3926	=4077	=4163	=4376	
		< 15	< 20	< 25	< 30	< 35	< 40	< 45	< 50	< 55	< 60	< ⋈	N
Urban and Peri-Urban	Never Married	100.00	100.00	98.62	92.31	87.60	81.33	75.90	71.65	69.89	67.76	65.53	= 559
	Married	-	-	1.38	7.52	12.24	18.52	23.42	27.19	28.86	30.41	32.12	= 274
	No longer Married	-	-	-	.17	.16	.15	.68	1.16	1.25	1.83	2.35	= 20
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	= 853
	N	= 362	= 435	= 507	= 572	= 621	= 675	= 726	= 776	= 797	= 882	= 853	

TABLE 2(i) AGE AND MARITAL STATE: FAMALES (July, 1960) CHAPTER VI- C ANNEXURE

Cumulative Percentages Never Married, Married, No longer Married under certain age limits.

	Marital State	Age limits											
Combined Rural		<15	<20	<25	<30	<35	<40	<45	<50	<55	<60	<∞	N
	Never Married	100.00	98.01	91.14	82.68	77.64	72.83	69.25	65.87	63.66	61.82	57.14	= 2780
	Married	-	1.95	8.70	16.84	21.63	25.75	28.61	30.78	32.06	32.77	31.98	= 1556
	No longer Married	-	.04	.16	.48	.73	1.42	2.14	3.35	4.28	5.41	10.87	= 529
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	= 4865
	N	=2140	=2558	=2967	=3314	=3560	=3806	=4006	=4213	=4364	=4495	=4865	
Urban and Peri-Urban		<15	<20	<25	<30	<35	<40	<45	<50	<55	<60	<∞	N
	Never Married	100.00	97.84	91.71	81.77	76.03	70.03	67.01	64.29	62.83	61.87	59.70	= 526
	Married	-	1.94	7.92	17.26	22.79	27.82	30.05	32.15	32.85	32.94	32.46	= 286
	No longer Married	-	.22	.37	.97	1. 18	2.15	2.94	3.56	4.32	5.19	7.83	= 69
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	= 881
	N	= 370	= 463	= 543	= 620	= 680	= 744	= 782	= 815	= 834	= 847	= 881	

TABLE 2(ii) AGE AND MARITAL STATE : MALES (July, 1960) CHAPTER VI - C ANNEXURE

Cumulative Percentages Never Married, Married, No longer Married over certain age limits.

	Marital State	Age limits										
		0+	15+	20+	25+	30+	35+	40+	45+	50+	55+	60+
Combined Rural	Never Married	70.00	43.31	31.78	19.68	10.87	6.31	4.28	2.30	2.00	2.01	2.35
	Married	28.22	53.32	64.14	75.47	83.41	87.17	89.55	91.27	90.67	88.96	87.79
	No longer Married	1.78	3.37	4.08	4.85	5.72	6.52	6.17	6.43	7.33	9.03	9.86
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	N	=4376	=2316	=1913	=1545	=1242	= 998	= 794	= 653	= 450	= 299	= 213
		0+	15+	20+	25+	30+	35+	40+	45+	50+	55+	60+
Urban and Peri-Urban	Never Married	65.53	40.12	29.67	17.05	11.03	6.47	5.62	6.30	3.90	3.57	6.45
	Married	32.12	55.80	65.55	77.17	82.21	85.34	83.71	81.89	81.29	78.57	77.42
	No longer Married	2.35	4.08	4.78	5.78	6.76	8.19	10.07	11.81	14.29	17.86	16.13
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	N	=853	=491	=418	=346	=281	=232	=178	=127	= 77	= 56	= 31

TABLE 2(ii) AGE AND MARITAL STATE : FEMALES (July, 1960) CHAPTER VI - C ANNEXURE

Cumulative Percentages Never Married, Married, No longer Married over certain age limits

	Marital State	Age Limits										
Combined Rural		0+	15+	20+	25+	30+	35+	40+	45+	50+	55+	60+
	Never Married	57.14	23.49	11.83	4.00	2.58	1.23	.76	.70	.77	.40	.27
	Married	31.98	57.10	65.28	68.39	64.35	60.23	54.39	47.73	39.72	31.34	22.43
	No longer Married	10.88	19.41	22.89	27.61	33.07	38.54	44.85	51.57	59.51	68.26	77.30
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	N	=4865	=2725	=2307	=1898	=1551	=1305	=1059	= 859	= 652	= 501	= 370
Urban and Peri-Urban		0+	15+	20+	25+	30+	35+	40+	45+	50+	55+	60+
	Never Married	59.70	30.53	17.46	8.28	7.28	4.48	3.65	2.02	3.03	4.26	5.88
	Married	32.46	55.97	66.27	71.89	68.58	65.17	57.66	51.52	36.36	25.53	20.59
	No longer Married	7.84	13.50	16.27	19.83	24.14	30.35	38.69	46.46	60.61	70.21	73.53
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	N	= 881	= 511	= 418	= 338	= 261	= 201	= 137	= 99	= 66	= 47	= 34

CHAPTER VI - D

RELIGIOUS AFFILIATION

A.J.B. HUGHES

1. BASIS OF ENUMERATION:

All subjects in our samples of an estimated age of eighteen years or more were asked what religion they professed and, if Christian, to what denomination they belonged. This question was restricted to the age group over eighteen because of the varying rules of different Christian denominations regarding recognition of church membership. Some, practicing infant baptism, class all baptised children of their adherents as members of their church. Others insist that children should have attained what the church leaders consider the age of reason (which also varies according to the sect) before they are admitted as full members.

We were anxious to obtain as realistic a picture as possible of all types of religious affiliation, including those to separatist churches; and we have little information relating to conditions of membership of these. Investigations carried out prior to the survey suggested that there was no denomination which regarded eighteen as too young for admission to full membership. We therefore chose this age, on the grounds that by considering only the group over eighteen we should still obtain an adequate idea of the overall pattern of religious affiliation; of the proportions of the population professing different beliefs, and belonging to different sects.

2. MAJOR GROUPINGS:

2.1 Estimates for the Total Rural Sample Area and the Whole Territory:

Table 1 shows the percentage of individuals in our samples belonging to the major religious groupings. Also included are estimates of these percentages for the total population of the Rural Survey Area (Col.6) and for the Territory as a whole (col.9). Tables 2A, 2B and 2C give the percentages of Christians in our samples claiming affiliation to various Christian denominations.

The weighted totals for the Rural Survey Area were obtained by compensating for the varying sizes of samples and varying populations in the different physiographic regions, as explained earlier [1].

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1) See above. Chapter 11, 1.7 to 1.10.5.

The figures in the final columns of Table 1 are estimates based, inter alia, on the assumption that the pattern of religious affiliation among the groups not included in our sample[1]) is similar to that in the Rural Survey Area. While this is, admittedly, only an assumption, based on no definite statistical evidence, all that we do know about these populations suggests that they probably resemble the groups in the Rural Sample Area more than those settled in the Urban and Peri-Urban Areas. Even if this assumption were incorrect, the total numbers in these other groups are so small in comparison with those in the groups we have sampled for this particular characteristic, that it could have little effect on the final estimates given.

2.2 Proportions of Christians:

The classification 'traditional' covers all those who claimed to have retained all the traditional Swazi religious beliefs and practices[2]), and to belong to no Christian or other international faith. In view of the remarkable degree of survival of the traditional social and political organisation in Swaziland, the extreme emotive significance to the Swazi of the tribal way of life, and the rulings by the Swazi National Council that the adherence of the Ngwenyama, or any members of his immediate family[3]), to any specific Christian denominations would be incompatible with their official positions, the fact that only an estimated 45.4% of our Rural Survey Area samples, and 43.9% of the total population, claimed to be traditionalists in religious belief is most significant.

Another fact of interest is the lack of any Muslims or Bahia'a-ists in the sample. A Bahia'a mission is operating in Mbabane, and there are known to be a number of Muslims residing in Swaziland, mostly Comorese immigrants. Islam is strong in nearby parts of Portuguese East Africa, and is generally supposed to be making many converts among the African population of South Africa. Yet it appears to have made little or no headway in Swaziland.

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1) i.e. the squatter population residing on freehold farms, domestic servants, and the permanent populations in industrial townships;
2) c.f. Hilda Kuper, The Swazi, Ethnographic Survey of Africa, Southern Africa, Part 1, International African Institute, London, pp 42 ff.
3) Specifically those members of the Ngwenyama's family who have, or will have, official roles to play in the traditional governmental system.

2.3 Interpretation of Religious Affiliation Tables:

In interpreting the tables dealing with religious affiliation, it must be remembered that our sampling technique was not specially designed to investigate this particular characteristic. Members of a religion or a denomination often tend to be more concentrated in some areas than in others, particularly where Christianity has been relatively recently introduced and there is still considerable mission activity.

Our activity of stratification, primarily designed as it was to meet other requirements, could take no account of the proselytizing activities of different churches in various parts of the country. Hence, there is a greater probability of figures obtained from our samples relating to small religious groupings being influenced by chance (and so being less accurately representative of the position in the whole stratum), than is the case with broader groupings.

For example, greater reliance can be placed on the figures relating to the proportions of Christians and traditionalists in the Rural Survey Area and the Urban areas respectively, than on those relating to the strengths of specific denominations in each of the four rural strata. The sampling method in the urban and peri-urban areas was also better suited to measuring this particular characteristic than the area sampling technique employed in the Rural Survey Area.

Despite these limitations, resulting from the fact that data regarding religious affiliation was produced as a "by-product", as it were, of our main exercise, this information appears to be the best that we yet have regarding the religious affiliation of the Swazi. For that reason we have included it in this report.

3. MISSION AND SEPARATIST CHURCHES:

3.1 Definitions:

In tables 2A, 2B and 2C, we give the percentages of Christians in our samples belonging to different denominations. These fall into two broad categories, which we can call mission and separatist churches respectively. The former are the large international denominations, primarily under European control, such as the Methodists, Roman Catholics and Anglicans. The latter are churches under African control, which frequently differ markedly in doctrine, ritual and administrative organisation from the mission churches.

The term "Zionist" is often employed in Southern Africa as a generic term for any African controlled church. Sundkler, speaking of an earlier period, divided such churches into two broad categories, which he called "Ethopian" and "Zionist"1). In the early days of the development of the separatist churches some that broke away from mission control retained most of the ritual and dogma of the parent church, but stressed the necessity for administrative and doctrinal independence. They usually had the word "Ethiopian" or "Ethiopia" in their official title, and looked to the Emperor of Ethiopia, the ruler of one of the few African States then independent, as the natural leader of their environment. Other separatist groups showed little apparent interest in this aspect of the matter, usually had "Zion" or "Zionist" in their titles, and frequently incorporated far more of the traditional African beliefs into their doctrine than was the case with the "Ethiopian" groups.

Nowadays, the "Ethiopian" movement, as such, appears to have weakened almost to the point of extinction[2]). The"Zionist" churches, on the other hand, which were originally distinguished by their lack of emphasis on Christian dogma, and willingness to accept traditional beliefs and practices, have grown considerably in numbers, and have become far more formally organised.

Swazi now distinguish between Apostolic separatist churches (empostoli) and Zionists (emazioni) but a study of the denominational names on our tables will show that many churches have both "Zionist" and "Apostolic" in their titles. On purely doctrinal grounds one could also class as "Zionist" many denominations under purely European control, and with purely European membership. Thus, the "spiritual ancestor" of many of the Zionist groups currently found in Swaziland appears to have been an American organisation, which started mission activities at Wakkerstroom, in the Transvaal, some decades ago[3]). Hence the general term "Separatist", which avoids all these doctrinal and other complications, would seem to be the best for our purposes here.

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1) B.G. Sundkler, Bantu Prophets in South Africa, London (Butterworth), 1948.

2) After the end of the 1939-45 war the leaders of the Ethiopian Coptic Church in Alexandria made arrangements to send a Coptic bishop to South Africa to organise the many "Ethiopian"groups believed to be seeking affiliation to the Coptic Church. Elaborate arrangements were made between this church and the South African authorities. When this religious dignatary arrived, however, he found so few "Ethiopians" that he soon departed again. Professor B. Sundkler, private communication.

3) Professor B. Sundkler - personal communication.

3.2 Borderline Cases:

There are certain borderline cases, such as the African Methodist Episcopalian (A.M.E. No.18 in tables 2A to 2C), founded by American Negroes (and still ultimately controlled from America); and some Apostolic groups that seem to have broken away from the Apostolic Faith Mission, and set up independently. In the case of the last mentioned, it is often difficult to discover exactly where final control does lie, due to the apparently loose, congregationalist pattern of the administrative organisation of this church. It is, therefore, possible that we have included among the adherents of the Apostolic Faith Mission some individuals who actually belong to separatist congregations. The A.M.E. has been classed as a separatist church, since it shares many characteristics with other such churches, despite the fact that it is not technically "African" controlled.

3.3 Classification adopted:

In the tables summarising mission and separatist church affiliations the denominations numbered 1 to 14 in tables 2A to 2C have been classed as mission churches, those numbered 15 to 24 as separatist.

3.4 Number of Major Christian Separatist Sects:

African separatist churches, particularly those of the "Zionist" type, appear originally to have thrived most in Natal and Zululand, among Nguni speaking groups in adjacent parts of the Transvaal, and on the Reef among Nguni speaking migrants from these parts. Only recently has African religious separatism become a strong force in the Transkei (also part of the Nguni language area). In Swaziland, most informants give a date in the early thirties of this century as that of their first recollection of noticeable separatist activity, and other evidence suggests that it was not until about 1940 that these churches gained really large followings in the territory.

One fact of interest is that we were able to establish the exact denominational affiliations of all but 5.4% of the Christians in our rural samples, and of all but 2.8% of those in our urban and peri-urban samples.

The collection of information relating to the denominational affiliations of separatists is complicated by the fact that most of these churches have official titles in English only; titles that may not be known to the majority of church members. These sects may or may not also have colloquial names in Swazi, or they may be known to most of their adherents as "the congregation of so-and-so" (libandla lika banibani). Even dig-

nitaries of separatist churches have often told us that they were, most unfortunately, unable to supply the full name and correct title of their church at the moment, because they had left their documents at home! This information was invariably supplied later, as soon as they could lay their hands on the relevant documents.

Such a delay would have been quite impracticable during our sample survey. To avoid this, we first collected all relevant information about all known separatist churches, and set this out in tabular form to assist our enumerators (see table below). Despite the popular belief that there are "hundreds" of separatist sects, we only located nine such churches (one of which was suffering a schism), and it appears that all but this small proportion of separatists in our samples did actually belong to these nine churches.

This in itself is a finding of considerable interest. Other evidence suggests that some of these nine groups may be split into several semi-autonomous congregations sometimes with slightly different names from the parent church, and slightly different uniforms; but too little is yet known about the administrative arrangements and delegation of spiritual and temporal authority among these sects for any analysis of this aspect of the matter to be attempted here. What one can say, with a reasonable degree of confidence, is that our figures do bring out the major groupings among separatist Christians in Swaziland.

(Table next page)

RELIGION

PRINCIPAL MISSION CHURCHES

Name	Code
Anglican (Isheshe)	X0
Methodist (Weseli)	X1
Roman Catholic (Roma)	X2
Berlin Lutheran (Luthela)	X3
Dutch Reformed	X4
Nazarene	X5
S.A.G.M.	X6
Evangelical Alliance Mission (Libandla levangeli)	X7
Seventh Day Adventist (Isabatha)	X8
Swedish Alliance Mission (Iswidi)	X9
Norwegian Free Evangelical Mission	A0
Pilgrim Holiness Mission	A1
Metropolitan Church Associated Mission	A2
Apostolic Faith Mission	A3

OTHER CHURCHES

Official Name	Colloquial Name	Known Leader	Code
United Christian Church of Africa	Libandla lama Kresta Libandla lelive Swazi National Church	Rev. Dube (Lobamba)	B0
- do -	- do -	Rev. Dladla	B1
Apostolic Holy Catholic Christian Church in Zion	Libandla laka Masangane	Rev. Masangene (Mahlanya)	B2
African Methodist Episcopalian AME	Ikushi	Rev. Khoza (Mbabane)	B3
	Damaseko-Damascus		B4
Swazi Christian Church in Zion		Rev. Mncina	B5
Jericho Christian Church in Zion	Jeliko-Jericho	Rev. Vilakazi (Mankaiana)	B6
St. John's Apostolic Church	St. John	Rev. A. Msibi (Kwaluseni)	B7
Antioc Zionist Church	Antioc	Rev. A. Khumalo (Mliba)	B8
Christian Apostolic Zulu Church in Zion	Eqiniswenisweni	Rev. P. Hlatshawako	B9

3.5 Proportions of Mission and Separatist Church Adherents:

Tables 3 and 4 summarize the position regarding affiliations to mission and separatist churches. The estimated rural and territorial totals (columns 6 and 9) suggest that, in round figures, slightly less than half the Christians in the country (or slightly less than a quarter of the total population) belong to separatist sects - some indication of the headway that these groups have made during the relatively short time that they have been active in Swaziland.

Other minor points of interest in the denominational breakdowns (2A to 2C) are the low membership of the two schismatic sections of the United Christian Church of Africa (15 and 16) and the relatively large membership of the Apostolic Holy Catholic Christian Church in Zion (17) and the Swazi Christian Church in Zion[1](20). The United Christian Church of Africa is sometimes described as the Swazi National Church (Libandla lelive), but appears to have singularly few adherents. The Apostolic Holy Catholic Church in Zion (17) is a branch of the group founded by the Reverend Stephen Nkonyane of Charlestown, Natal, which is also very strong in South Africa (20) co-operates closely with the Apostolic Holy Catholic Christian Church in Zion (17), and the former may even admit the spiritual leadership of Nkonyane. We have no definite information about this last point.

The last two mentioned churches were founder members of the League of African Churches in Swaziland[2]), a body founded in 1949 with the intention of forming a single co-ordinating Christian association for the whole country. The functions of this League appear to be limited, but most of the separatist churches well represented in our samples are also listed as members of it.

4. REGIONAL VARIATIONS:

The tables given show the variation in patterns of religious affiliation between the four strata of the Rural Survey Area, the urban and peri-urban areas, and the Border areas.

Not unexpectedly, the proportion of traditionalists is far lower in the urban sample (10%) than in either the Rural Survey Area (an estimated 45%) or the Border areas (49%) (Table 4C). While there is not a great difference between

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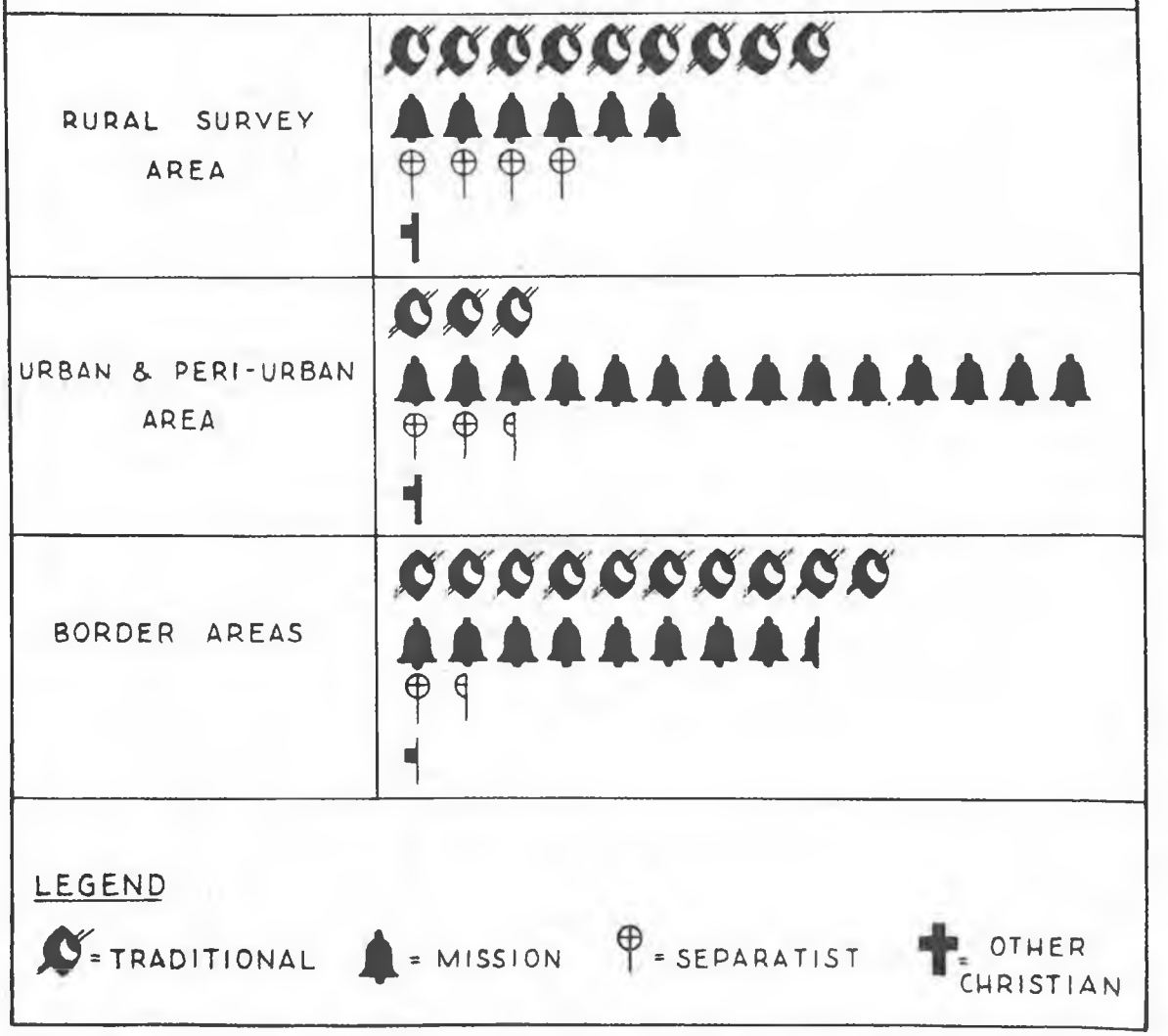
1) See Section 2.3 above.
2) Which seemingly has no Swazi name.

the proportion of the populations of the Rural Survey Area and urban and peri-urban areas belonging to separatist sects (21% and 17%), mission churches are far stronger in the latter, accounting for 69% of our urban and peri-urban sample. In the Border areas, which in many other characteristics resemble the rest of the rural area more than the urban areas, the proportion of separatists is remarkably low (9%), and the proportion of mission church adherents correspondingly high (42%).

The diagram below summarises the main differences between these three areas as far as these characteristics are concerned[1]).

PROPORTIONS OF MAJOR RELIGIOUS GROUPINGS

(Each symbol represents 5% of total in each sample)



1) See section 2.3 above with respect to figures for smaller regional sub-divisions.

5. SEX AND AGE AS DETERMINANTS OF RELIGIOUS AFFILIATION:

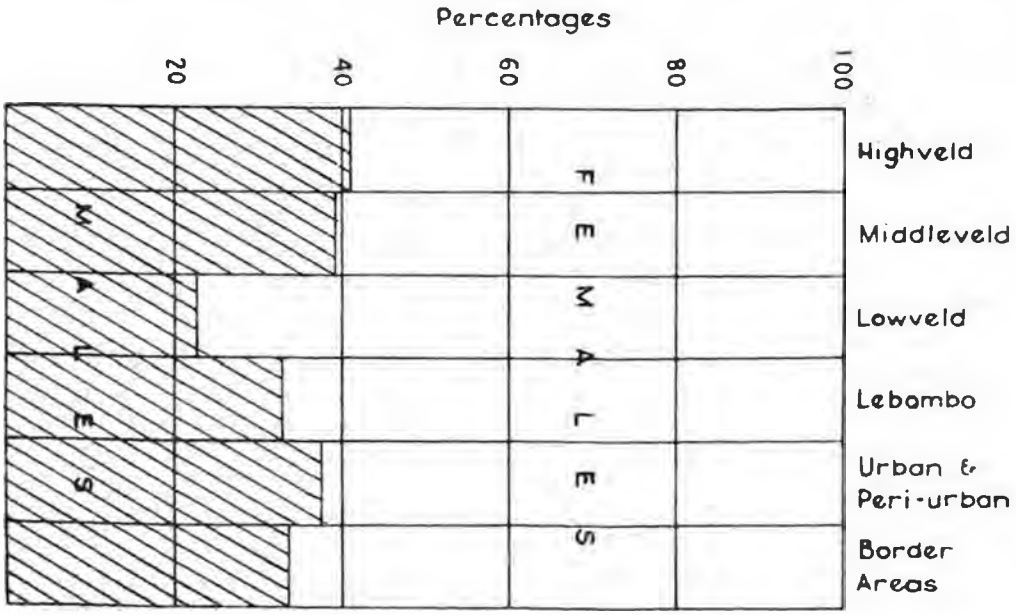
5.1 Proportions of Males and Females professing Christianity:

There were (in all strata except the urban and peri-urban) more females than males in our samples[1]). In all strata, also, the proportion of the total female proportion claiming Christian affiliations was higher than that of males (see Table 1). Thus, there is a considerable predominance of females among the Christian group. Our estimates for the whole territory suggest that nearly two-thurds of all females (over eighteen) are Christians, as against rather less than half the males over that age.

In all regions the pattern was approximately the same; the percentages of male Christians ranging from 23% in the Lowveld sample to 85% in the urban sample; those of females from 39% in the Lowveld sample to 92% in the urban sample. Other strata gave figures lying between these two extremes, but in all cases the proportion of female Christians was higher than that of males.

The diagram below gives an impression of the absolute numerical relationships between male and female Christians in the various samples.

Numerical ratios of male and female Christians.



1) The masculinity rates (number of males per 100 females) for the age groups over 18 in the various strata were:-

H	M	L	Leb	Urban and peri-urban	Border Areas
84.4	84.5	84.6	89.1	101.8	88.5

Women, as well as showing a greater proclivity for Christianity, also apparently tend to join separatist churches rather more than males. In Table 3 it will be seen that only in the Highveld was the percentage of Christian females belonging to separatist sects not higher than the equivalent figure for Christian males. The percentage difference, however, is lower than in the case of affiliation to the traditional or the Christian group as a whole.

5.2 Age and Religious Affiliation:

Table 5 is a summary of the groupings of traditionalists, mission and separatist church adherents in the total Rural Survey Area sample by age groups. Table 6 gives similar figures for the urban and peri-urban stratum. In the rural sample there is a regular increase in the proportion of both male and female traditionalists with increasing age, a not unexpected finding. This is not so obvious in the urban stratum until one reaches the group over 49 years of age, and the difference is only significant in the case of males. One possible cause of this may be that males who adopt a polygamous way of life will often describe themselves as having ceased to be Christians (i.e. are again traditionalists), whereas the female partners in such a polygamous union do not feel bound to renounce any Christian affiliation that they may have had previously.

The pattern of affiliation of Christians to either separatist or mission churches is more confused. In the rural areas, separatism appears to be most popular among males in the 30-39 age group (Table 5); among females the most separatists are found in the 18-29 age group. There is little difference between the percentages of the total number of males and females who are separatists in 18-29 and the 30-39 age groups, but if one considers only the proportions of Christians who are separatists, one has a peak among males in the 30-39 age groups (46% and 40%) respectively, while among females the proportion decreases steadily after the first two age groups. The actual percentages are given in the Table below:-

Rural Survey Area
Percentages of Christians belonging to Separatist Churches

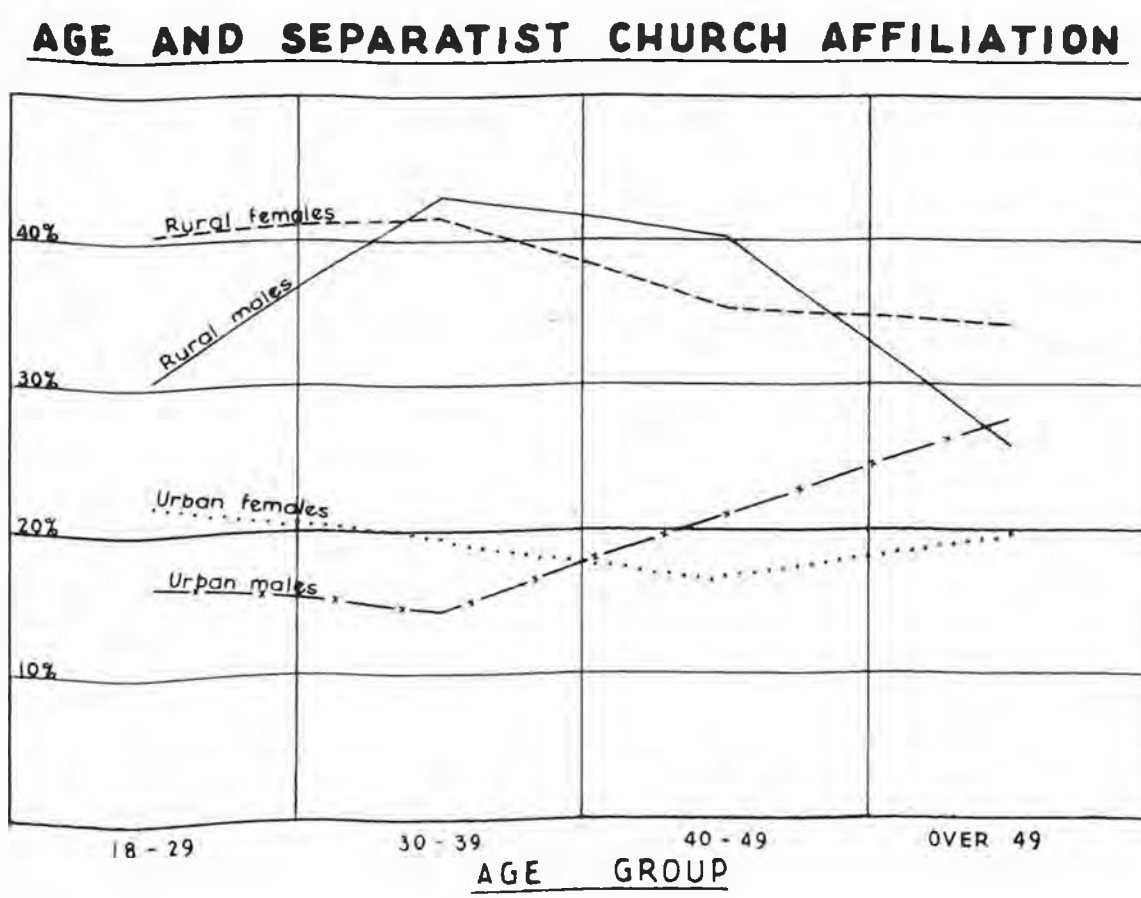
Age Group	18 - 29	30 - 39	40 - 49	50 and over	Totals
Males	30.9%	46.0%	40.3%	26.0%	34.7%
Females	40.2%	41.6%	35.6%	34.0%	38.2%
Males and Females	36.2%	43.5%	37.5%	31.3%	36.8%

In the urban areas the proportion of female separatists falls slightly with increasing age, but varies only between 15.5% and 20.5% (Table 6). The proportion of male separatists increases with increasing age. The difference between male and female patterns is accentuated if one examines the proportion of Christians with separatists affiliations. The relevant figures are given below :-

Urban and Peri-Urban Areas
Percentages of Christians belonging to Separatist Churches

Age Group	18-29	30-39	40-49	50 and over	Totals
Males	16.4%	14.3%	20.7%	27.9%	18.7%
Females	22.0%	19.5%	16.9%	19.7%	20.2%
Males and Females	19.5%	17.2%	19.1%	23.8%	19.5%

The graph below summarises the data given in the two Tables above :-



6. RELIGIOUS AFFILIATION AND EDUCATION:

Tables 7 and 8 summarise the rural and urban area data respectively regarding relationships between the standard of education reached and religious affiliation.

In all strata the proportion of traditionalists without formal schooling is considerably higher than that of those who have been to school. The higher the educational standard the lower the percentage of traditionalists.

Affiliation to mission Churches increases everywhere in direct proportion to the educational standard reached. Separatism, however, seems most popular among those who have received some formal education, but have not gone further than Standard 2. To some extent this is correlated with age, since the 30-39 age group (where most separatists in the rural sample belonged) were of school-going age when formal education was already common, but few Swazi went beyond the lower primary standards. It will also be noticed that among the more educated group (standard 3 and above) separatist affiliations are more common among men than among women, which is the opposite to the position among the less educated groups (below standard 3).

7. CONCLUSION:

It must be appreciated that all the figures in these Tables are based on the religious affiliation claimed by the subjects in our samples. Their opinions may on occasions have differed from that of the Church authorities. I have already explained that males may regard themselves as having reverted to traditionalism after making a polygamous second marriage, while, if they were Roman Catholics, for example, the mission authorities may still consider them to be members (though temporarily lapsed) of their Church.

Also, allegiance to a Christian denomination does not always automatically involve complete rejection of all traditional beliefs and practices. Goats may be killed for the ancestors at a marriage or in times of trouble, a number of National officials with responsibilities in the annual Incwala ritual claim membership of mission Churches, and from our personal experience, Methodism would seem to have a particularly large following among diviners (Tangoma). Even though some missions may officially condemn this sort of "dual allegiance", it does occur; and much of the appeal of many separatist sects undoubtedly lies in their greater readiness to accept, or even incorporate into their own ritual dogma, these traditional practices and beliefs.

In this study, then, we have been concerned not so much with the doctrinal and ritual aspects of any type of religious affiliation, but with our subject's personal classification of the groups to which they belonged. All other evidence suggests that these are important and meaningful groupings in modern Swazi society, creating allegiances and co-operating units that cut across other formal political and social divisions. It is in the light of these considerations that the Tables given in this section should be interpreted.

A N N E X U R E S

Table 1
Religious Affiliation
Percentages

MALES (Over 18)

A

	H	M	L	Leb.	Weighted Survey Totals	Urban and Peri-Urban	Border Areas	Estimated Territorial Totals
Traditional	32.3	55.3	76.2	58.5	52.8	13.7	52.9	50.9
Christian	67.3	44.1	23.0	40.3	46.6	85.0	46.0	48.4
Muslim	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Unknown	0.4	0.6	0.8	1.1	0.6	1.3	0.3	0.7
TOTALS	713= 100.0%	792= 100.0%	248= 100.0%	352= 99.9%	100.0%	460= 100.0%	680= 100.0%	100.0%

FEMALES (Over 18)

B

Traditional	22.2	41.7	59.4	52.7	39.9	7.1	45.6	38.6
Christian	77.1	57.8	39.9	46.6	59.4	92.0	54.2	60.8
Muslim	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Unknown	0.6	0.5	0.7	0.8	0.6	0.9	0.3	0.6
TOTALS	845= 99.9%	936= 100.0%	293= 100.0%	395= 100.1%	99.9%	452= 100.0%	768= 100.1%	100.0%

MALES and FEMALES (Over 18)

C

Traditional	26.8	47.9	67.1	55.4	45.8	10.4	49.0	44.3
Christian	72.7	51.5	32.2	43.7	53.6	88.5	50.7	55.0
Muslim	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-
Unknown	0.5	0.6	0.7	0.9	0.6	1.1	0.3	0.6
TOTALS	1,558= 100.0%	1,728= 100.0%	541= 100.0%	747= 100.0%	100.0%	912= 100.0%	1,448= 100.0%	99.9%

TABLE 2A

Religious Affiliation

Percentages of Christian MALES (Over 18) in each Sample claiming affiliation to various denominations.

	H	M	L	Leb	Urban & Peri-Urban	Border Areas
Anglican	9.6	3.4	-	-	11.3	13.5
Methodist	20.6	10.0	5.3	1.4	16.4	24.5
Roman Catholic	7.3	11.7	29.9	36.6	24.8	4.7
Berlin Lutheran	4.0	3.2	-	-	4.1	1.3
Dutch Refomrned	-	0.6	-	-	1.3	-
Nazarene	0.8	11.7	8.8	35.9	7.0	8.8
S.A.G.M.	3.3	0.6	-	-	5.9	1.3
Evangelical Alliance Mission	0.6	3.4	3.5	-	1.5	17.3
Seventh Day Adventist	-	-	1.8	0.7	0.3	0.6
Swedish Alliance Mission	7.5	3.7	1.8	-	3.8	3.5
Norwegian Free Ev.Mission	0.2	1.1	-	-	0.5	0.3
Pilgrim Holiness Mission	0.4	-	-	8.5	0.3	-
Metro.Church Ass. Mission	-	-	-	-	0.3	-
Apostolic Faith Mission	6.9	0.6	-	-	1.0	7.2
United Christian Church in Africa (Rev. Dube)	1.2	0.6	-	-	1.0	0.9
United Christian Church in Africa (Rev.Dladla)	0.2	-	-	-	-	0.6
Apostolic Holy Catholic Church in Zion	12.7	19.8	5.3	7.7	2.9	4.4
African Methodist Episcopalian AME	3.3	1.4	8.8	-	2.1	1.9
Damaseko-Damascus	0.2	3.2	3.5	-	1.0	-
Swazi Christian Church in Zion	5.6	9.7	8.8	0.7	2.6	2.5
Jericho Christian Church in Zion	4.4	1.1	7.0	2.1	0.8	-
St. John's Apostolic Church	1.9	1.1	-	0.7	4.1	-
Antioc Zionist Church	2.7	1.1	5.3	0.7	1.5	0.9
Christian Apostolic Zulu Church in Zion	2.7	4.3	1.8	-	2.8	3.8
Other Christian	3.7	7.4	8.8	4.9	3.1	1.9
GRAND TOTALS	480= 99.8%	349= 99.7%	57= 100.4%	142= 99.9%	391= 100.4%	318= 99.9%

TABLE 2B
Religious Affiliation
Percentage of Christian FEMALES (Over 18) in each Sample claiming affiliation to various denominations

	H	M	L	Leb	Urban & Peri-Urban	Border Areas
Anglican	9.4	2.4	0.9	1.1	11.8	11.3
Methodist	19.8	6.7	4.3	1.1	19.7	25.5
Roman Catholic	5.8	12.2	14.5	31.5	20.7	5.8
Berlin Lutheran	3.4	3.5	1.7	0.5	4.1	1.0
Dutch Reformed	-	0.4	-	-	0.2	0.2
Nazarene	1.4	10.3	9.4	32.1	8.2	9.4
S.A.G.M.	6.4	0.5	-	0.5	7.0	1.7
Evangelical Alliance Mission	0.8	5.2	6.8	-	1.4	13.0
Seventh Day Adventist	0.2	0.2	-	-	-	1.2
Swedish Alliance Mission	6.9	2.0	0.9	-	2.2	4.1
Norwegian Free Ev. Mission	0.3	2.0	-	-	1.2	0.8
Pilgrim Holiness Mission	0.2	-	-	10.9	-	0.2
Metro Church Ass.Mission	0.2	-	-	-	-	-
Apostolic Faith Mission	8.6	1.5	-	-	0.7	7.2
United Christian Church in Africa (Rev. Duba)	0.3	1.3	0.9	-	1.4	1.0
United Christian Church in Africa (Rev. Dladla)	0.2	-	-	-	-	0.7
Apostolic Holy Catholic Church in Zion	11.8	18.7	6.8	6.5	2.9	7.9
African Methodist Episcopalian AME	3.1	2.8	6.0	-	2.9	0.5
Damaseko-Damascus	0.3	3.5	6.8	-	0.2	-
Swazi Christian Church in Zion	7.7	12.0	19.7	1.1	2.4	2.9
Jericho Christian Church in Zion	4.0	0.9	5.1	6.5	1.4	-
St. John's Apostolic Church	2.6	1.7	-	0.5	4.6	0.2
Antioc Zionist Church	1.8	0.7	2.6	-	0.7	0.5
Christian Apostolic Zulu Church in Zion	3.2	5.7	1.7	1.1	3.6	4.6
Other Christian	1.8	5.9	12.0	6.5	2.6	0.5
GRAND TOTALS	652= 100.2%	541= 100.1%	117= 100.1%	184= 99.9%	416= 99.9%	416= 100.2%

TABLE 2C
Religious Affiliation
Percentages of MALES and FEMALES combined (Over 18) in each Sample claiming affiliation to various denominations

	H	M	L	Leb	Urban Peri-Urban	Border Areas
Anglican	9.5	2.8	0.6	0.6	11.5	12.3
Methodist	20.1	8.0	4.6	1.2	18.1	25.1
Roman Catholic	6.4	12.2	19.5	33.7	22.7	5.3
Berlin Lutheran	3.6	3.4	1.1	0.3	4.1	1.1
Dutch Reformed	-	0.4	-	-	0.7	0.1
Nazarene	1.1	10.9	9.2	33.7	7.6	9.1
S.A.G.M.	5.1	0.6	-	0.3	6.4	1.5
Evangelical Alliance Mission	9.7	4.5	5.7	-	1.5	14.9
Seventh Day Adventist	0.1	0.1	0.6	0.3	0.1	1.0
Swedish Alliance Mission	7.2	2.7	1.1	-	3.0	3.8
Norwegian Free Ev.Mission	0.3	1.6	-	-	0.9	0.5
Pilgrim Holiness Mission	0.3	-	-	9.8	0.1	0.1
Metro Church Ass.Mission	0.1	-	-	-	0.1	-
Apostolic Faith Mission	7.9	1.1	-	-	0.9	7.2
United Christian Church in Africa (Rev. Duba)	0.7	1.0	0.6	-	1.2	1.0
United Christian Church in Africa (Rev. Dladla)	0.2	-	-	-	-	0.7
Apostolic Holy Catholic Church in Zion	12.2	19.1	6.3	7.1	2.9	6.4
African Methodist Episcopalian AME	3.2	2.2	6.9	-	2.5	1.1
Damaseko-Damascus	0.3	3.4	5.7	-	0.6	-
Swazi Christian Church in Zion	6.8	11.1	16.1	0.9	2.5	2.7
Jericho Christian Church in Zion	4.1	1.0	5.7	4.6	1.1	-
St. John's Apostolic Church	2.3	1.5	-	0.6	4.3	0.1
Antioc Zionist Church	2.2	0.9	3.4	0.3	1.1	0.7
Christian Apostolic Zulu Church in Zion	3.0	5.2	1.7	0.6	3.2	4.2
Other Christian	2.6	6.5	10.9	5.8	2.9	1.1
GRAND TOTALS	1,132= 100.0%	890= 100.2%	174= 99.7%	326= 99.8%	807= 100.0%	734= 100.0%

continued...../ 245

Table 3
Mission and Separatist Church Adherents
(Percentages of CHRISTIANS in Samples)

MALES (Over 18)

A

	H	M	L	Leb.	Weighted Survey Area Totals	Urban and Peri-Urban	Border Areas	Estimated Territorial Totals
Mission Churches	61.3	50.1	50.9	83.1	56.6	78.3	83.0	58.4
Separatist Churches	35.0	42.4	40.3	12.0	37.5	18.7	15.1	36.0
Other Christians	3.7	7.4	8.8	4.9	5.8	3.1	1.9	5.6
TOTALS	450= 100.0%	349= 99.9%	57= 100.0%	142= 100.0%	99.9%	391= 100.0%	318= 100.0%	100.0%

FEMALES (Over 18)

B

Mission Churches	63.2	46.8	38.5	77.7	53.6	77.2	81.2	54.9
Separatist Churches	35.0	47.3	49.6	15.8	41.4	20.2	18.3	40.1
Other Christians	1.8	5.9	12.0	6.5	5.1	2.6	0.5	4.9
TOTALS	652= 100.0%	541= 100.0%	117= 100.1%	184= 100.0%	100.1%	416= 100.0%	416= 100.0%	99.9%

MALES and FEMALES (Over 18)

C

Mission Churches	62.4	48.1	42.5	80.1	54.8	77.7	82.0	56.4
Separatist Churches	35.0	45.4	46.5	14.1	39.8	19.4	16.9	38.4
Other Christians	2.6	6.5	10.9	5.8	5.4	2.8	1.1	5.2
TOTALS	1,132= 100.0%	890= 100.0%	174= 99.9%	326= 100.0%	100.0%	807= 99.9%	734= 100.0%	100.0%

Table 4
Traditionalist, Mission, Separatist and Other Affiliations
(Percentages of TOTAL POPULATION in Samples)

A MALES (Over 18)

	H	M	L	Leb.	Weighted Survey Area Totals	Urban and Peri-Urban	Border Areas	Estimated Territorial Totals
Traditional	32.3	55.3	76.2	58.5	52.8	13.7	52.9	50.9
Mission Churches	41.2	22.1	11.7	33.5	26.4	60.5	38.8	28.2
Separatist Churches	23.6	18.7	9.3	4.8	17.5	15.7	7.0	17.4
Other Christian	2.5	3.3	2.0	2.0	2.7	2.6	0.9	2.7
Unknown	0.4	0.6	0.8	1.1	0.6	1.3	0.3	0.7
TOTALS	713= 100.0%	792= 100.0%	248= 100.0%	352= 99.9%	100.0%	460= 99.8%	680= 99.9%	99.9%

B FEMALES (Over 18)

Traditional	22.2	41.7	59.4	52.7	39.9	7.1	45.6	38.6
Mission Churches	48.7	27.0	15.3	36.2	31.7	71.1	44.0	33.3
Separatist Churches	27.0	27.3	19.8	7.3	24.7	18.6	9.9	24.5
Other Christian	1.4	3.4	4.8	3.0	3.1	2.4	0.3	3.0
Unknown	0.6	0.5	0.7	0.7	0.6	0.9	0.3	0.6
TOTALS	845= 99.9%	936= 99.9%	293= 100.0%	395= 99.9%	100.0%	452= 100.1%	768= 100.1%	100.0%

C MALES and FEMALES (Over 18)

Traditional	26.8	47.9	67.1	55.4	45.8	10.4	49.0	44.3
Mission Churches	45.3	24.8	13.7	34.9	29.3	68.7	41.6	30.9
Separatist Churches	25.4	23.4	15.0	6.1	21.4	17.2	8.6	21.2
Other Christian	1.9	3.3	3.5	2.5	2.9	2.5	0.5	2.9
Unknown	0.5	0.6	0.7	0.9	0.6	1.1	0.3	0.6
TOTALS	1,558= 99.9%	1,728= 100.0%	541= 100.0%	747= 99.8%	100.0%	912= 99.9%	1,448= 100.0%	99.9%

Table 5.

Religious Affiliations

RURAL AREAS - AGE GROUPINGS
(Percentages)

A MALES

Age Group	18 - 29	30 - 39	40 - 49	50 and over	TOTALS
Traditional	43.4	49.3	57.4	59.1	50.5
Mission Churches	36.1	24.4	22.4	27.1	29.3
Separatist Churches	17.2	22.9	17.0	10.6	16.9
Other Christian	2.4	2.4	2.8	3.0	2.6
Unknown	0.8	0.9	0.3	0.2	0.6
TOTALS	825= 99.9%	454= 99.9%	352= 99.9%	472= 100.0%	2,103= 99.9%

B FEMALES

Traditional	33.7	41.3	43.2	41.7	38.9
Mission Churches	36.2	30.5	33.4	36.0	34.5
Separatist Churches	26.2	24.2	20.1	19.8	23.1
Other Christian	2.8	3.4	2.9	2.3	2.8
Unknown	1.1	0.6	0.2	0.2	0.6
TOTALS	918= 100.0%	492= 100.0%	407= 99.8%	652= 100.0%	2,469= 99.9%

C MALES and FEMALES

Traditional	38.3	45.1	49.8	49.0	44.2
Mission Churches	36.1	27.6	28.3	32.3	32.1
Separatist Churches	22.0	23.6	18.7	15.9	20.3
Other Christian	2.6	3.0	2.9	2.6	2.7
Unknown	1.0	0.7	0.3	0.2	0.6
TOTALS	1,743= 100.0%	946= 100.0%	759= 100.0%	1,124= 100.0%	4,572= 99.9%

Table 6

Religious Affiliation

URBAN and PERI-URBAN - AGE GROUPINGS

A MALES

Age Group	18 - 29	30 - 39	40 - 49	50 and over	TOTALS
Traditional	11.4	10.7	13.9	22.2	13.7
MissionChurches	70.6	71.8	65.7	51.8	66.5
Separatist Churches	14.4	12.6	17.6	21.0	15.9
Other Christian	2.4	3.9	1.9	2.5	2.6
Unknown	1.2	1.0	0.9	2.5	1.3
TOTALS	167= 100.0%	103= 100.0%	108= 100.0%	81= 100.0%	459= 100.0%

B FEMALES

Traditional	6.3	8.9	5.6	7.5	7.1
Mission Churches	70.5	70.2	73.2	71.6	71.0
Separatist Churches	20.5	17.7	15.5	17.9	18.6
Other Christian	2.1	3.2	2.8	1.5	2.4
Unknown	0.5	-	2.8	1.5	0.9
TOTALS	190= 99.9%	124= 100.0%	71= 99.9%	67= 100.0%	452= 100.0%

C MALES and FEMALES

Traditional	8.9	9.7	10.6	15.5	10.4
MissionChurches	70.6	70.9	68.7	60.8	68.7
Separatist Churches	17.6	15.4	16.8	19.6	17.2
Other Christian	2.2	3.5	2.2	2.0	2.5
Unknown	0.8	0.8	1.7	2.0	1.1
TOTALS	357= 100.1%	227= 99.9%	179= 100.0%	148= 99.9%	911= 99.9%

Table 7
Religious Affiliation

RURAL AREAS

Educational Standard Reached

A MALES

Educational Standard	Nil	Gr.1 - Std.2	Std.3 - Std.6	Above Std 6
Traditional	64.6	25.1	8.3	3.3
Mission Churches	16.7	46.7	69.8	80.3
Separatist Churches	15.7	23.6	18.0	13.1
Other Christian	2.3	4.6	2.9	1.6
Unknown	0.7	-	1.1	1.6
TOTALS	1,507= 100.0%	259= 100.0%	278= 100.1%	61= 99.9%

B FEMALES

Traditional	49.0	13.9	4.1	-
Mission Churches	25.9	45.6	74.4	89.4
Separatist Churches	21.8	37.3	16.5	6.4
Other Christian	2.8	2.4	3.7	4.2
Unknown	0.5	0.9	1.2	-
TOTALS	1,842= 100.0%	338= 100.1%	242= 99.9%	47= 100.0%

C MALES and FEMALES

Traditional	56.0	18.8	6.3	1.8
Mission Churches	21.8	46.1	71.9	84.3
Separatist Churches	19.1	31.3	17.3	10.2
Other Christian	2.6	3.8	3.3	2.8
Unknown	0.6	0.5	1.2	0.9
TOTALS	3,349= 100.1%	597= 100.0%	520= 100.0%	108= 100.0%

Table 8
Religious Affiliation
URBAN and PERI-URBAN
Educational Standard Reached

A MALES

Educational Standard	Nil	Gr.1 - Std.2	Std.3 - Std.6	Above Std.6
Traditional	31.0	7.1	7.6	1.1
Mission Churches	42.1	70.2	77.8	85.1
Separatist Churches	22.7	16.7	12.5	9.2
Other Christian	1.4	3.6	2.1	4.6
Unknown	2.8	2.4	-	-
TOTALS	145= 100.0%	84= 100.0%	144= 100.0%	87= 100.0%

B FEMALES

Traditional	15.9	4.8	-	2.2
Mission Churches	55.9	66.3	85.7	86.7
Separatist Churches	22.9	27.7	12.3	6.7
Other Christian	2.9	1.2	1.9	4.4
Unknown	2.4	-	-	-
TOTALS	170= 100.0%	83= 100.0%	154= 99.9%	45= 100.0%

C MALES and FEMALES

Traditional	22.9	6.0	3.7	1.5
MissionChurches	49.5	68.3	81.9	85.6
Separatist Churches	22.9	22.1	12.4	8.3
Other Christian	2.2	2.4	2.0	4.5
Unknown	2.5	1.2	-	-
TOTALS	315= 100.0%	167= 100.0%	298= 100.0%	132= 99.9%

CHAPTER V1 - E

EDUCATION

(W.R.G. Branford)

OUTLINE:

This Chapter is in four sections :-

1. Introduction (sub-sections 1.1 and 1.2;)
11. Literacy (sub-sections 2.1 to 2.5;)
111. Educational Attainment (sub-sections 3.1 to 3.5);
1V. Education and Employment (sub-sections 4.1 to 4.9);

Tables in the text of this Chapter are lettered A to H.

More detailed tables, numbered 1 to 18, follow as an Appendix.

1. INTRODUCTION:

1.1. Education in Swaziland:

A fairly detailed historical and statistical survey of education in Swaziland appears in the Annual Report Summary of the Director of Education for the year 1960. From this it is here sufficient to note that "Policy is aimed at providing primary schooling for all, and also secondary, technical or vocational training for those with the necessary aptitudes"1). Education is not compulsory for African children2); the African population of school-going age is estimated at about 60,000 of whom about 34,000 (57%) were at school in June, 1960[3]). Most of the African schools are controlled by missionary societies. Primary education is free at Government and at many mission schools, and where the missions levy tuition fees, these are often of the modest order of 50 cents to one Rand per annum[4]).

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1) Annual Report Summary, Director of Education, Swaziland,1960. paragraph 30.
2) Ibid., paragraph 46.
3) Ibid,, paragraph 36.
4) Ibid., paragraph 47.

Children of School-going Age: The Director's estimate of 60,000 African children of school-going age in 1960 is in close agreement with an estimate, based on survey data, of 59,188 children in the age-group 5-14 presented in Appendix, Table 1(a), Survey data yield estimates of a further 9,742 children aged 15-17, and 6,332 aged 18-19 (Table 1(b)).

School enrolments of Swazi children rose from about 3,000 in 1924[1]) to 13,843 in 1950 and by 1960 totalled 34,060, including 173 undergoing vocational and teacher training[2]). As is common in underdeveloped countries, the bulk of the school population is concentrated at the lower primary levels.

The following comparison with Basutoland and the South African Republic is of some interest :-

TABLE A.
AFRICAN SCHOOL ENROLMENT.1960.
SWAZILAND, BASUTOLAND AND THE REPUBLIC.

Territory	Enrolment	PERCENTAGES.		
		Lower Primary	Higher Primary	Secondary
Basutoland*	137,947	77.23	21.43	1.33
Republic **	1,513,063	72.68	23.98	3.65
Swaziland ***	33,887	70.72	25.70	3.57

* Annual Report, Director of Education, Basutoland, 1960.
** De Villiers, F.J., Bantu Education: Where the Money Comes From. Bantu, Vol. VIII, No.3. March 1961.
***Annual Report Summary, Director of Education, Swaziland, 1960, dropping from the Director's figure 173 pupils undergoing vocational or teacher training.

Percentages are correct to two decimal places, and do not necessarily sum to 100.

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1) Annual Report Summary, Director of Education, Swaziland, 1960, paragraph 11.
2) Ibid., paragraph 17.

Lower Primary, Higher Primary and Secondary groups account for approximately the same proportions of the African school population in Swaziland as in the Republic. In Basutoland, there is a greater concentration of children in the Lower Primary course and a correspondingly smaller proportion at Secondary level. The Basuto school population, on the other hand, is four times as large as the Swazi, and (as about 15% of the total Swazi population are at school, against about 20% of the total Basuto) probably accounts for a higher percentage of children of school-going age[1]).

1.2 The Survey Data:

The brief section on education in the Survey questionnaire may be recalled from Chapter IV, section 2.5.

EDUCATION		
School standard completed ..... Year left school		
If subject is below Std.IV.	Can read and write ENGLISH, YES or NO	☐
	Can read and write SWAZI, YES or NO	☐

Literacy. The questionnaire yields a three-fold classification on literacy:-

(1) Illiterate;
(2) Literate in Swazi;
(3) Literate in Swazi and English.

(There is a fourth potential category - "Literate in English only" - but only about a dozen such cases were found in the sample analyzed).

Standard of Education. To simplify analysis, and for the sake of cross-references to other sections of this Report, subjects were classified on education in four groups only, according to the standard completed :-

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1) Annual Report, Director of Education, Basutoland, 1960: Whittaker's Almanack, 1960.

(1) 'None': all who had not completed Sub-Standard A;

(2) 'Lower Primary': the sub-standards to Standard 11, i.e. elementary vernacular education only;

(3) 'Higher Primary': Standards 111 to V1;

(4) 'Secondary': Standards V11 or higher, including the handful with University or teacher training.

These classifications on literacy and standard of education have been tabulated in this chapter against others on locality (rural versus urban/peri-urban), age, sex and various employment data. The relations of education and religious affiliation are considered in Chapter V1-D, section 6; the relations of education with marriage and divorce are considered in Chapter V1-C.

The survey is thus very far from providing a complete picture of the role of education in Swazi society, but it has assembled data illustrating three important topics :-

(1) Literacy (section 2);
(2) Educational attainment (section 3);
(3) Education and employment (section 4);

These are reflected in a rather formidable array of tables which forms the Appendix to this chapter. These Appendix Tables are numbered 1 to 18[1]). The rest of this chapter is a commentary on these tables, but can, it is hoped, be read also as an independent document illustrated with shorter tables at intervals in the text. These tables in the body of the chapter are lettered A to H; most of them are summaries of more detailed tables relegated to the Appendix. When statistically significant differences between groups are reported in the text, details of the statistical tests applied are given in the Appendix.

2. LITERACY:

2.1. Assessments of Literacy:

Literacy, for the purposes of the survey, is defined as the ability to read and write. The two questions which assess this ability follow normal census procedure, and within the limits of the survey were the only practicable means of assessment. But, as has been pointed out in Unesco studies of illiteracy "This method of

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1) The Appendix Tables are listed on page xiii - xv of the Contents.

counting illiterate persons is highly subjective and susceptible to error"1), though it is generally difficult to apply more reliable criteria, such as reading and writing tests standardized in terms of the definition of literacy as "Ability to read and write a simple message in any language"2). Returns based on declarations are liable to yield more optimistic assessments of the percentage of literacy than are returns based on tests. As census returns are normally based on declarations, the Swazi survey data are to that extent comparable with those of other countries.

Our questions on Literacy and School Standard completed, serve, as is shown in section 2.3, as a rough check on one another.

2.2 Literacy: Age, Locality and Sex:

Broadly speaking, literacy in Swaziland is more frequent in the towns than in the country, among younger than among older people, and (subject to certain variations) among men than among women.

The survey registered, in the first place, the expected contrasts between older and younger generations, and between town and country.

Age-Groups (Appendix, Table 2) Comparing older and younger generations, and leaving out of account the age-group 0-9, in which literacy returns for infants and for children at school are liable to cancel one another, we find in rural areas a percentage of 37.62 literates for those aged 10-29 and of 15.42 for those aged 30 or over. In the urban and peri-urban areas the corresponding percentages are 73.73 and 54.25. The figures indicate not only a difference between generations, but also the high proportion of young illiterates (60% of rural Swazis aged 20-29) who may find themselves at a considerable disadvantage if technological progress continues, and for whom adult education might later seek to provide at least the elements of the three R's.

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1) World Illiteracy at Mid-Century, Unesco, 1957.

2) United Nations Populations Commission, Third Session, 1948, Report (U.N. Doc. E/805).

Town and Country. As indicated in Appendix, Table 2, the proportion of illiterates aged 10 years or over is twice as high in the rural as in the urban and peri-urban sample (72% against 35%). Improvements in health, agriculture and administration are all likely to be retarded by the rate of illiteracy in rural areas[1]).

Men and Women (Appendix, Tables 3 and 4). In the sample population as a whole, the literacy rates for men and women differ only slightly. For particular age and area groupings, however, some significant differences emerge. Again leaving out of account the age-group 0-9, we find for the group aged 10-19, both in rural and in urban areas, a higher proportion of female literates than of males. The census of 1951 reported a similar finding for Africans in the Union. For the Swazi urban sample the difference amounts to 2.5% only (of males 70.5% were literate, of females 73%); for the rural sample the difference rises to 6% (males 34% literate, females 40%). For the rural group, as shown in Table 3 this difference is statistically significant.

This, of course, reflects the fact that in Swaziland during the 1950's, as in the Union in 1951, African girls at school considerably outnumbered African boys. The Eiselen Report notes, incidentally, that African girls tend to remain longer at school than do boys. Boys are drawn off to cattle-herding or other duties, while education improves a girl's chances of a good marriage or of admission to nursing or teaching[2].)

For the Swazi 20-29 age-group we find a slightly higher proportion of literate men than of literate women, and among older Swazis generally, the proportion of literate men is greater, as was found among rural Africans in the Union at the census of 1951. The

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1) See, for instance, Fundamental Education (Unesco 1947), page 14; Lewis, Educational Policy and Practice in British Tropical Areas, Nelson, 1954, p.78.

2) Annual Report Summary, Director of Education, Swaziland, 1960, paragraph 57. Year Book of the Union of South Africa, No.28. 1954-5, page 250. Report of the Commission on Native Education, 1949-51. ("The Eiselen Report"), Government Printer, Pretoria, U.G. No.53/1951.

contrast that this suggests - that the older generations sent their boys to school and the younger generations their girls as well - may indicate a gradual re-appraisal of the value of literacy with the passage of time.

It is of interest that for the Swazi urban and peri-urban cases, the proportion of literate men is slightly higher than the proportion of literate women. There are slight differences in the women's favour for the 10-19 age-group (noted above) and for the smaller group aged 40-49; but for all those in urban areas aged 10 or over the proportions literate are: men 66.4%; women 62.9%. This is contrary to the findings of the South African census of 1951, which for the same age-groups in urban areas returned 46.6% of men able to read and write, and 57.2% of women. The influence on the South African returns of large numbers of illiterate male migrant labourers in the cities probably accounts for the difference.

For urban or peri-urban Swazis over 30 the percentage literate are: men 59%, women 49%. This yields a statistically significant difference (Appendix, Table 4).

2.3 Literacy and School Standard:

A high correlation is to be expected between degree of literacy and school standard completed. In the first place, there is a rough correspondence between the percentages in each sample at different levels of education and different levels of literacy; to illustrate from men in the rural sample only :-

EDUCATION		LITERACY	
None	- 76%	Illiterate	- 80%
Lower Primary	- 15%	Swazi Only	- 13%
Higher Primary and Secondary	- 10%	Swazi and English	- 7%

Such a parallel, of course, does not constitute a true correlation, but it does establish one point of importance: 25% are returned as educated to some extent, and only 20% as literate. Literacy does not result automatically from attendance at school.

As a further rough check on the relations of literacy and school standard, these variables were plotted against one another for men aged 15 or over in :-

(a) The rural sample (N-2,346)
(b) The urban/peri-urban sample (N-504)

Limiting the samples to those aged 15 or over excludes infants and the main body of those still at school, and thus provides a rough assessment of the results of education in a group of men whose formal schooling is over. Findings are summarised below (Table B) and appear in more detail in Appendix, Tables 5 and 6.

TABLE B

LITERACY AND SCHOOL STANDARD
MEN AGED 15 AND OVER

EDUCATION	N	LITERACY RATING		
		Illiterate	Literate in Swazi only	Literate in Swazi & English
(a) Rural Sample (N= 2342)				
Secondary	60	-	2%	98%
Higher Primary	331	1%	32%	67%
Lower Primary	336	21%	79%	-
None	1615	98%	2%	-
(b) Urban/Peri-urban Sample (N=504)				
Secondary	63	-	-	100%
Higher Primary	184	2%	26%	72%
Lower Primary	98	18%	79%	3%
None	158	100%	-	-

Nearly all those in the 'Secondary' group describe themselves as being able to read and write both English and Swazi. In the Higher Primary group about 70% are literate in both languages,

and nearly all the rest are literate in Swazi. Of those with Lower Primary education only (N = 434), only four claimed literacy in English as well as in Swazi, though about nearly 80% were literate in Swazi only. Of those with no formal education, numbering 1,774 in both samples combined, only 28 claimed literacy in either language.

The last of these figures suggests the dependence of literacy in Swaziland on schools; of these 1,774 men, less than one in sixty has learned to read and write without benefit of formal schooling,

At the same time, a fair number of those with school records are still illiterate. About one-fifth of those with Lower Primary education only were returned as illiterates, though from Tables 5 and 6 it will be seen that most of these "educated illiterates" are men who did not proceed beyond the sub-standards, and that of the 305 who completed Standard 1 or Standard 11, only 26 described themselves as illiterate. The total number of "educated illiterates" amounts to 96 of the total in both samples of 1,072 who had completed at least one year at school. Of the four best-educated illiterates in the survey population, two had completed Standard 1V and two had completed Standard V. While this might be taken as an error of enumeration, there are many teachers to whom it would not come as a surprise.

Only at the Higher Primary level are a substantial number able to read English. This reflects, no doubt, the contrasting roles of English and the vernacular in the lower and the higher primary school courses. 'In the first stages of the primary school the Native language is the official medium of instruction, English being taught as a subject only. In the first year the teaching of English is limited to oral work, reading and writing being introduced in the second and third years respectively. From the third year increasing use is made of English as a medium of instruction until by the end of the fifth year the transition is complete'1).

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1) Annual Report Summary, Director of Education, Swaziland, 1960, paragraph 52. Problems of the use of English as a medium of instruction and of the transfer to its use are outlined in Chapter 1V of the Report of the 1961 Commonwealth Conference on the Teaching of English as a Second Language (Government Printer, Entebbe, Uganda), which offers, as a guiding principle ("sub-ject to various limitations"), "the earlier the better".

A further point of interest is that "Promotion is authomatic (subject to a satisfactory attendance record) up to Standard 11, the fourth year of the course. Thereafter promotion is by merit. Internal school examinations are held at the end of each year, but in Standard Vl, the top primary class, an external examination is conducted by the Education Department"[1]). Thus the Higher Primary classes, compared with the Lower, are groups selected to some extent by a test of ability (though socio-economic factors, of course, are also likely to influence the composition of the Higher Primary group - see section 3.1 below). A still more stringent selection on the basis of ability is likely to govern admission to secondary classes.

A highly significant difference in point of literacy between the Lower and Higher Primary groups in both samples is shown in Appendix Tables 5 and 6. Inability to read or write English contributes, no doubt, to the uncertain status of the Lower Primary group indicated later in statistics of employment (see section 4 of this chapter).

2.4 LITERACY: Survey and Swaziland Census Data:

Survey data compare as follows with those of the Swaziland censuses of 1948 and 1956, taking literates in each case as a percentage of the total population :-

ABLE TO READ AND WRITE SWAZI	%
Census of 1946	12.74
Census of 1956	20.83
Survey, 1960, Rural Areas	19.12
Survey, 1960, Urban/Peri-urban Areas	45.84

ABLE TO READ AND WRITE ENGLISH	%
Census of 1946	4.91
Census of 1956	5.46
Survey, 1960, Rural Areas	6.21
Survey, 1960, Urban/Peri-urban Areas	24.99

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1) Annual Report Summary, Director of Education, Swaziland, 1960, paragraph 84.

Here the 1960 Survey assessments for rural areas agree quite closely with those of the census of 1956, suggesting little change in the percentages of literacy over the four years separating the two enumerations. A rising rate over the years in question would, however, tend to mask any such change by increasing the proportion in the total population of nominal illiterates aged 0-4.

2.5 Literacy: Swaziland and Other Territories:

An Unesco study of literacy notes that "It would be extremely imprudent to draw any comparisons of the extent of illiteracy between countries", and proceeds to offer comparative figures for 26 territories[1]).

With the same reservation, it is worth offering a brief comparison of statistics of literacy in Swaziland and other territories. The value of such comparisons is limited of course, by variations in the terms of reference and the efficiency of census and other enumerations, and by the rapidly changing educational circumstances of many underdeveloped territories at present.

It will be recalled that literacy, for the purposes of the survey, is taken to mean the ability to read and write. South African census returns distinguish those able to read and write from those able only to read; when survey data below are compared with South African figures, the latter are always for those able to write as well as to read.

The percentages of illiterates indicated by the survey for various Swazi groups in 1960, are generally lower than the roughly corresponding percentages established for Africans in the Union census of 1951 (the latest available figures). Thus for men and women of 10 and over the proportions of illiterates were:-

Swaziland Sample	1960	Urban/peri-urban	35.36
Union of South Africa	1951	Urban	46.9
Swaziland Sample	1960	Rural	72,40
Union of South Africa	1951	Rural	76.6

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1) Progress of Literacy in Various Countries, Unesco, 1953.

However, in the nine-year interval between the Union census and the Swaziland survey a considerable spread of literacy among the South African Bantu is to be expected from the increase in the proportion of children of school-going age who actually entered school[1]). The 1951 census returned only 30.9% of Africans in the Union as able to read and write. This percentage, however, is estimated to have risen to 35 in 1958[2]). It seems inadvisable then, to draw conclusions from any comparison of the Union figures for 1951 with those of the Swaziland Sample Survey of 1960.

Neither the South African nor the Swazi figures for illiteracy afford much ground for complacency. Credit, however, is due to the educational agencies in Swaziland whose slender resources have produced results at least commensurate with, if not better than those of the more developed school systems of the Republic.

Further summary and approximate comparisons follow in the table below :-

TABLE C
ILLITERACY: SWAZILAND AND NEIGHBOURING TERRITORIES.

Population	Source and Date of Estimate	Age Level	Percentage Illiterates
Swaziland (Rural)	Survey 1960	10 and Over	72.4
Union of South Africa (Africans, Rural)	Census 1951	10 and Over	76.6
Basutoland	Unesco estimates 1957*	15 and Over	45-50
Bechuanaland	Unesco estimates 1957*	15 and Over	75-80
Mozambique	Unesco estimates 1957*	15 and Over	95-99

* World Illiteracy at Mid-Century, Unesco, 1957. Literacy, unfortunately, was not assessed in the Basutoland Census of 1956.

1) DeVilliers, Bantu Education: Where the Money Comes From, article in Bantu, March, 1961.
2) Vegter, M.C.E. article in Bantu Education Journal, May 1960, cited in Horrell's Survey of Race Relations in South Africa, 1959-60.

3. EDUCATIONAL ATTAINMENT:

3.1 Correlates of Attainment:

The survey data for educational attainment are based, like its literacy data, on declarations, and are therefore liable to bias of the same kind.

A more serious limitation results from lack of information about the parents of those enumerated in the survey. Educational attainment is likely to be quite highly correlated with socio-economic, and perhaps with hereditary factors[1]), just as "ignorance is not an isolated social fact, but one aspect of a condition of general backwardness which has many other features"[2]).

There must by now be a number of studies of the relation of education to socio-economic status in African communities. To cite only two: Cook in 1939 demonstrated that the fathers of over half the Bantu Standard VI pupils in the Union belonged to occupational groups (such as teachers, interpreters, chiefs, ministers of religion) constituting at the highest estimate not more than five or six per cent of the male African population. Similarly, Dickie-Clark in 1954 found that of 134 fathers of African senior certificate students, 118 (76%) were in 'professional or white-collar occupations'[3]).

From India, the converse of these findings has been reported; that "The children of illiterates lapse into illiteracy unless they have passed the fifth grade"[4]). A fuller understanding of the social forces working for and against educational attainment in Swaziland must await studies on the lines that these findings suggest. Only very modest demonstrations of the relations of attainment with age, sex and locality are possible within the limits of the present study, and these, as might be expected, broadly reflect relationships already sketched in the previous section, since the survey statistics of the

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1) Vernon, P.E. (1957), Secondary School Selection, Methuen; Spearman, C. (1957), The Abilities of Man, Macmillan, Ch.XXII.
2) Fundemental Education, Unesco, 1947, p.11.
3) Cook, P.A.W. (1939), The Native Std.VI Pupil, J.L. van Schaik, Pretoria; Dickie-Clark, H.F. (1954), A Study of South African Senior Certificate Students and Their Parents (unpublished MS).
4) Fundamental Education, Unesco, 1947, p.235, citing Arthur Mayhew, Education in India.

distribution of education parallel, on the whole, those of the distribution of literacy.

There are more educated people in the country than in the towns, among younger than among older people, and generally among men than among women.

3.2 Age-Groups (Appendix, Table 11):

The smallest percentages of uneducated men in both samples occur in the age-group 15-19; in which 44% in the rural sample and 11% in the urban/peri-urban are without education. For older groups the percentage of uneducated men rises steadily until among those aged 60 and over it reaches 90% in the country and 75% in the towns. The steady increase with age of the percentage of uneducated men is only broken for the age-group 30-39 in the urban/peri-urban sample (N=103). This contains not only one of the lowest proportions (18%) of men without any education, but also the highest proportion (31%) with education up to secondary level. In the rural sample only 3% of men in this age-group (14 out of the total of 452) had secondary education. This illustrates the tendency for the most highly educated men to be concentrated in the towns (Appendix, Tables 11 (a) and 11 (c)).

For women the pattern is broadly similar. The smallest percentages without education are in the age-group 15-19 in the rural sample and in the 10-14 age-group in the urban. For women in the country there is a steady and unbroken increase with age in the percentage without education, up to 99% for those aged 60 and over. For women in the towns there is a similar but less regular increase (Table 11(d)). Among women in towns the age-group 30-39 is not conspicuous for education as it is among men. The highest proportions of women with secondary education are in the age-groups 20-24 in the urban/peri-urban sample (N=80:21% with secondary education); in the rural sample about 3% have secondary education in the age group 15-29.

Overall comparisons of men and women, and the rural and urban/peri-urban samples, are summarised in the table below :-

Table D / ....

TABLE D STANDARDS OF EDUCATION : SUMMARY

GROUP	EDUCATION			
	None	Lower Primary	Higher Primary	Secondary
MALES:				
Rural	75	15	9	1
Urban/peri-urban	45	23	22	10
FEMALES:				
Rural	76	15	8	1
Urban/peri-urban	45	23	25	6

Percentages computed for the total sample population

This indicates that the principal contrasts in educational attainment are between town and country populations rather than between males and females. However, the pooling of all available cases for the percentages shown in this table, and the rather coarse classification on educational attainment into four categories only, obscures some important differences. These emerge from the comparisons of the median ages and levels of attainment of school-leavers presented in Table E below.

TABLE E MEDIAN YEARS AT SCHOOL COMPLETED - MEDIAN AGES AT LEAVING SCHOOL. (a) Rural Sample

Period	Median Years at School completed		Median Age at Leaving School	
	Males	Females	Males	Females
1957-59	4.9	4.0	19.6	16.6
1951-56	4.5	3.8	19.7	16.6
1941-50	4.1	3.4	17.8	15.7
Before 1941	3.1	3.1	19.1	16.2

(b) Urban/Peri-Urban Sample

Period	Median Years at School completed		Median Age at Leaving School	
	Males	Females	Males	Females
1957-59	7.4	6.1	19.0	17.3
1951-56	7.5	6.3	20.0	16.8
1941-50	7.3	5.5	19.5	16.5
Before 1941	5.0	4.8	17.9	16.6

Note: The numbers for each group are the same as for those of the corresponding cell of Appendix, Table 12, e.g., 86 for the males of the urban/peri-urban sample who left school during the period 1941-1950.

3.3 Town and Country:

As with statistics of literacy, a considerable difference in standards of education appears between the rural and the urban/peri-urban samples. People with any education at all make up approximately 55% of the urban/peri-urban sample and only 25% of the rural (Table 11). In the most recent group of school-leavers (1957-1959) the median years at school completed are 7.4 for men in the town and only 4.9 for men in the country (Table E). For women the corresponding figures are 6.1 years in the urban/peri-urban group and 4.0 years for the rural. Earlier groups of school-leavers contrast in the same way.

Of special interest is the concentration of those with secondary education in the towns. For details of this see Appendix, Table 11. Of the total of 254 persons with secondary education counted in the course of the survey, 143 (56%) were in urban/peri-urban areas. The total of 254 with secondary education included 106 men aged 25 or over - of these 64 were in the urban/peri-urban sample and 42 in the rural. The binominal test indicates that such a result could be expected to arise by chance less than once in twenty trials.

3.4 Men and Women:

On the rough classification of educational levels presented in Table D, men and women contrast only slightly. From Tables 7 to 11 in the Appendix, however, some fairly large differences between the sexes appear, particularly among older groups, for which the proportions of uneducated women are often, but not always, greater, than those of uneducated men, and the proportions of men with secondary education almost invariably greater than the corresponding proportions of women.

Limiting the comparison to school-leavers (Table E above) shows up further important differences. In the most recent group of school-leavers (1957-1959) the boys on the average had completed one more year of the school curriculum than had the girls and were considerable older - averaging three years older than the girls in the rural sample and 2.3 years in the urban. Broadly similar differences between the sexes appear for earlier groups.

3.5 The Progress of Education:

The survey statistics, and in particular the contrast between older and younger generations which they reveal, reflect to some extent the progress of education in Swaziland. Of special interest are the spread of literacy (section 2.2 above, Appendix Tables 2 to 4), the gradual increase in the holding power of the schools (reflected in statistics of "Median years at school completed" Table E) and an increasing differentiation in levels of educational attainment, as increasing proportions of pupils reach the higher primary and secondary standards (Table 12).

4. EDUCATION AND EMPLOYMENT:

4.1 Data and Analysis:

From section 1.2 it will be recalled that subjects were classified according to education in four groups :-

(i) None
(ii) Lower Primary
(iii) Higher Primary
(iv) Secondary

The men of these groups have been compared on a number of variables reflecting various aspects of employment :-

(a) Employed or unemployed at the time of the survey (Appendix, Table 13);

(b) Field of employment (Appendix, Table 14) - i.e., 'Industry' in terms of the survey questionnaire (see Chapter IV, page 100);

(c) Level of employment (Appendix, Table 15) - i.e., 'Occupation' in terms of the survey questionnaire (see Chapter IV, page 100);

(d) Monthly cash income (Appendix, Table 16);

(e) Number of jobs - i.e., the total number of employments for the entire working life of the subject (Appendix, Table 17);

(f) Duration of present employment (Appendix, Table 18).

Results are summarised and discussed in sections 4.2 to 4,8 below. Detailed comparisons and significance tests are set out in Appendix Tables 13 to 18 at the end of this chapter.

As so few women's returns on employment were available, analysis was limited to men. Further, except for comparisons (a) and (e), the tables present data only for men employed at the time of the survey and only for the employment in which they were at the time ('Employment X', see Chapter IV, page 102).

4.2 Interpretation:

It will be shown below that, generally speaking, the better educated men earned more money, changed jobs less often and tended to remain longer in the same employment than did the less-educated. This cannot, of course, be attributed simply to the effects of education.

As indicated in section 3.1 of this chapter, educational attainment is likely to be quite highly correlated with socio-economic, and perhaps with hereditary factors. Of course, for many of the better-paid or better-esteemed positions in an African community, such as teaching, nursing or the clerical branches of government service, an educational qualification is sine qua non. Nevertheless, in many cases an educated man is likely to owe his economic success more to innate ability, or to the wealth, status or outlook of his family, than to formal education as such.

4.3 Employed and Unemployed at the Time of Survey:

From Table 13 it will be seen that both in the rural and the urban samples the percentage of men not employed is highest for the illiterates and decreases for each of the more educated groups. The data are summarised below:-

TABLE F
PERCENTAGES IN EMPLOYMENT : MEN AT FOUR LEVELS OF EDUCATION
(SUMMARY OF APPENDIX, TABLE 13)

Education	Rural Sample	Urban/Peri Urban Sample
None	43%	72 %
Lower Primary	57%	74%
Higher Primary	60%	77%
Secondary	89%	92%

The percentages employed are higher for each group in the urban/peri-urban sample than in the rural, and the contrasts between groups at different levels of education are sharper in the rural areas.

For both phenomena the main reason is presumably the survival in country districts of the traditional Bantu way of life as distinct from that of the wage-earner. In the towns the majority even of the illiterates are employed, so that they do not contrast with educated men as do their country counterparts living as peasant farmers. In the country, a substantial proportion even of those with higher primary education are without employment. How far this reflects inclination, and how far lack of opportunity, is a matter for conjecture. The total number in the rural sample of 'unemployed' men with higher primary or secondary education is only 74, but this is roughly one-third of those in the rural sample with the qualifications in question. For the urban/peri-urban sample the corresponding number is 35, which amounts to only 17½% of the men in this sample with higher primary or secondary education. This confirms that the urban/peri-urban economy is more likely to absorb men with these qualifications than is the rural. 'The diffusion of literacy skills within a country is both a consequence and a requirement for industrial development[1]).

4.4 Education and Field of Employment:

Table 14 shows the concentration of the more educated men in a relatively restricted range of employments - trading, government service (including teaching), religious and welfare organisations. In the urban sample these absorb over 60% of the men with higher primary or secondary education employed at the time of the survey, and in the rural sample well over 40%. In the rural sample, however, a further 38% of this group are employed in farming, forestry or mining - whether as labourers or in positions matching to some extent their relatively superior education, does not, of course, appear. The creation in these fields of opportunities for educated men and women is of course important for the future of education in Swaziland.

In both samples a highly significant relationship between education and field of employment is established by the chi-squared test (Tables 14(b) and 14(e)).

It is interesting to note that in the small group of 32 men employed in 'religious and welfare services' 19 had either lower primary education only or none. Six of the seven men in this group in the urban/peri-urban sample had no education at all. This indicates a perilously low level of education in a probably influential group[2]).

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1) World Illiteracy at Mid-Century, Unesco, 1957.
2) Sundkler, B.G.M., Bantu Prophets in South Africa, Oxford, 1961, Ch.V, "Educational Standards".

4.5 Education and Occupational Class ("Level of Employment"):

The term "level of employment" is used here only for the sake of the distinction between the organisation which employs a man and his position in the organisation, which is perhaps not clear from the label "Occupational class". While one cannot, of course, formulate a clearcut hierarchy of occupations at various levels, a rough notion of "level", preferably as a spatial metaphor without too many connotations of status, is helpful if one is to visualise the relationship under study here.

The classification of occupations for coding has given rise to certain anomalies in Table 15, in which the "clerical" and "professional" groupings each include a number of illiterates. This is presumably because herbalists and orderlies were classified as "professional" workers and office messengers as "clerical". This, however, probably affects only slightly the broad pattern of the relationship between education and occupational class.

The main elements of this pattern are (a) the relative similarity as to occupational class between illiterates and men with Lower Primary education only; (b) the relatively sharp contrast between these two groups on the one hand and those with Higher Primary or Secondary education on the other.

The data may be summarised as follows :-

TABLE G
EDUCATION AND OCCUPATIONAL CLASS
(PERCENTAGES BASED ON THE DATA OF APPENDIX.TABLE 15)

Education	Occupational Class	
	Manual, Domestic Craftsmen	Service "Clerical", Salesmen, "Professional"
NONE: Rural	97%	3%
Urban	77%	23%
LOWER PRIMARY:		
Rural	93%	7%
Urban	76%	24%
HIGHER PRIMARY:		
Rural	75%	25%
Urban	60%	40%
SECONDARY:		
Rural	15%	85%
Urban	23%	77%

Statistical tests (Tables 15(c) and 15(f)) establish a technically highly significant degree of association between education and occupational class (or "level") in both samples. At the same time it will be seen from Table G above that it is only for the most highly educated group that men classed as "clerical" , salesmen or "professional" preponderate. Illiterates and the Lower Primary group are scarcely differentiated, and even of those with Higher Primary education, over 60% in rural areas (Appendix, Table 15(a)) and over 30% in urban areas (Table 15(d)) are classified as manual workers. One might conclude that in Swaziland at present neither education nor the economy is as yet sufficiently differentiated for any general pattern of correspondence to emerge.

Reader remarks of the situation in East London: "Most occupations open to the Bantu exhibit no functional connection between education and nature of work done". Though Reader seems to have had in mind the colour-bar legislation of the Republic, his comment is probably true, though for different reasons, of much of African employment in Swaziland today1).

4.6 Education and Monthly Cash Income:

Here the relationships reflect those of education and occupational class. In both samples the approximate mean incomes for illiterates and for men with Lower Primary education differ by only a few cents in the rural areas. Indeed, the illiterates tend to earn slightly more than do the Lower Primary group. Between the incomes of Lower and Higher Primary groups, there is a statistically significant difference in both samples (Appendix Table 16), and those with Secondary education earn, on the average, about half as much again as do the Higher Primary group. Approximate mean incomes are tabulated below. The method of calculation is explained in the notes to Appendix, Table 16.

TABLE H
EDUCATION AND APPROXIMATE MEAN MONTHLY CASH INCOME (RAND)
(SUMMARY OF APPENDIX TABLE 16)

Education	Sample	
	Rural	Urban/Peri-Urban
	R	R
None	11.86	14.62
Lower Primary	11.28	14.84
Higher Primary	18.20	21.65
Secondary	29.85	35.72

1) Reader, D., The Black Man's Portion, Oxford, 1961, p.68.

Within each of the groupings on education, of course, there is a considerable spread of incomes; the 581 rural illiterates, for instance, range from seven earning R2 to R4 per month to six earning R40 ro R60 (Appendix, Table 16(a)).

4.7 Education and Number of Jobs:

Appendix, Table 17 indicates that the total number of jobs held tend to be smaller for men in the better educated groups. In the rural sample, for instance, the percentage of those who have had five jobs or more declines from 50 to 40 to 19 over the four groupings on education, beginning with the illiterates. A similar sequence is found in the urban/peri-urban sample. This, however, does not by itself establish that better-educated men changed their jobs less often, since, as shown in section 3.2, the better-educated men tend to be younger and have thus had less time for changes of employment.

Age, however, was held roughly constant by running comparisons between different levels of education for men aged 40-49 only. Even for men in the narrow age-intervals 40-44 and 45-49, the best educated groups have had fewest jobs, and a significant negative relationship between education and number of jobs has been demonstrated for men aged 40-49 in both rural and urban samples (Tables 17(c) and 17(g)).

It appears then, that better educated men tend to change their jobs less frequently than do the less educated, though there are, of course, conspicuous exceptions, such as one member of the 'Secondary Education' group with a record of '10-19' different employments.

4.8 Education and Duration of Present Employment:

In both rural and urban samples, the percentage of men with records of five years' service or over in their present employment is lowest in the group with Lower Primary education only-lower than for those with no education at all (Appendix,Table 18). In the rural sample the record of this group differs significantly from those of the pooled Higher Primary and Secondary groups (Appendix, Table 18(b)). In the urban/peri-urban sample a just significant difference appears between the record of this group and those of the other three groups combined (Appendix, Table 18(d)).

On duration of present employment, the three educated groups stand in the same relationships to one another in the rural and in the urban samples. Of men with records of five years and

over in their present employment, the lowest percentage is in the Lower Primary group, the next in the Higher Primary and the highest percentage in the group with Secondary education. The illiterates, however, yield the highest percentage of men with records of five years' employment or over in the urban sample, and one of the lowest percentages in the rural.

4.9 Comparisons:

On most of the employment criteria above, the group with Secondary education ranks highest, the Higher Primary group next and the Lower Primary group and the illiterates come at the bottom. On practically all criteria there are highly significant differences between groups, but there is considerable overlapping, and it is often in the very small group with Secondary education that say 60% or more are clearly differentiated from the bulk of the numbers in less educated groups.

The main division tends often to fall, not between the illiterates and the educated, but between illiterates and those with Lower Primary education on the one hand, and those with Higher Primary education on the other. The contrast between those with Lower Primary education and those with Higher Primary education is perhaps the most important distinction indicated in this chapter of the survey.

The group labelled 'Lower Primary' is, of course, somewhat heterogeneous, ranging down as it does from those who have completed four years at school to those who have completed only one. Section 2.3 indicates an important difference in point of literacy (in Swazi) between those who reached only the sub-standards and those who went further. It will be recalled, however, that only in exceptional cases are men with only Lower Primary education literate in English as well as in Swazi (see section 2.3, Table B). In factory employment this would be an obvious handicap[1]).

As far as the present analysis goes, it is generally only at the higher primary level, - i.e. among those with at least five years' schooling - that the possible advantages of education begin to show.

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1) See The African Factory Worker (Department of Economics, University of Natal: Oxford University Press, 1950), Ch. 11 - F.

A general target in African education in recent years has been the provision of at least a four-year primary course for all children of school-going age[1]). While a four-year course is probably better than none, the present study points to the need for a longer one, and recalls the findings of Gerardo Flores' study of literacy in the Phillipines: "With the present system of elementary education, about seven years are necessary to make a learner functionally literate in useful citizenship"[2]).

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1) See, for instance: The Eiselen Report (Report of the Commission on Native Education, 1949-51, Government Printer, Pretoria, U.G. No.53/1951), paragraph 851; African Education (Report of the 1952 Cambridge Conference on Education in British Tropical Africa), p.74, East and Central Africa Study Group. Recommendation 10.

2) Cited in World Illiteracy at Mid-Century, Unesco, 1957, p.24.

TABLE 1

ESTIMATE: CHILDREN OF SCHOOL-GOING AGE

(a) The Age-Group 5-14

"The minimum age of entry is five-plus", and the spread of ages in the Lower Primary Course, in which 70% of the Swazi children at school are at present concentrated, appears from the average ages given in Table 111 (a) of the Annual Report Summary of the Director of Education for the year 1960 to be about 5-14 for the majority of pupils.

An estimate of the total numbers in this age-group is obtained from :-

a) The population enumerated in each section surveyed (Chapter 11, section 2.1);

b) The percentage for each area of people in the 5-14 age-group (Chapter V1-A);

c) The population multiplying factor for the area in question (Chapter 11, section 2.1);

These are set out below :-

TABLE 1 (a)
AGE-GROUP 5 - 14

Survey Section	Population Enumerated	Proportion Aged 5-14	Multiplying Factor	Estimated No.aged 5-14
Highveld	3,229	29.23%	17.82	16,822
Middleveld	3,533	27.71%	24.69	24,172
Lowveld	1,089	25.99%	33.71	9,540
Lebombo	1,419	26.21%	7.17	2,667
Urban Areas	853	22.98%	5.34	1,047
Peri-Urban Areas	890	25.39%	5.34	1,207
Squatters	13,704	27.24% *	1.00	3,733
Total				59,188

* Percentage applied is that for pooled Rural Areas.

The obtained total of 59,188 for this age-group is in close agreement with the Director of Education's estimate of 60,000 children of school-going age. It has not been possible to estimate for Nomahasha NA 1, NA 3, or residents on "Urban European premises" or in

"Labour communities (Chapter section 2.1). The inclusion of these small groups would have resulted, of course, in a survey estimate slightly higher, instead of slightly lower, than the Director's.

(b) The Age-Groups 15-17 and 18-19

Substantial numbers, of course, of the Swazi children at school, and even of those in the lower primary standards, are aged 15 or over. The average age of Standard VI pupils in 1960 was 16.3. That of Junior Certificate pupils was 18.9. For this reason an estimate of the age-groups 15-17 and 18-19 may be of interest, although only a small proportion of children already as old as this and not already at school are ever likely to enrol. These estimates have been worked for rural, urban/peri-urban and squatter populations only.

TABLE 1 (b)
AGE- GROUP 15-17

Survey Section	Population Enumerated	Proportion Aged 15-17	Multiplying Factor	Estimated No. aged 15-17
Combined Rural	9,270	5.39%	16.95	8,469
Urban /Peri-urban	1,743	5.73%	5.34	534
Squatters	13,704	5.39%	1.00	739
Total				9,742

AGE-GROUP 18-19

Survey Section	Population Enumerated	Proportion Aged 18-19	Multiplying Factor	Estimated No. aged 18-19
Combined Rural	9,270	3.51%	16.95	5,515
Urban/Peri-urban	1,743	3.61%	5.34	336
Squatters	13,704	3.51%	1.00	481
Total				6,332

TABLE 2
LITERACY BY AGE-GROUP: MALES AND FEMALES COMBINED

Age-Group	Rural				Urban/Peri-Urban			
	Literacy Rating				Literacy Rating			
	Swazi only	Swazi and English	Illiterate	Total	Swazi only	Swazi and English	Illiterate	Total
0 - 9	40	2	2,952	2,994	30	2	524	556
%	1.34	0.06	98.60		5.40	.36	94.24	
10-19	544	201	1,268	2,013	134	109	95	338
%	27.02	9.99	62.99		39.64	32.25	28.11	
20-29	305	241	873	1,419	61	162	71	294
%	21.49	16.98	61.52		20.75	55.10	24.15	
30-39	154	78	711	943	55	94	78	227
%	16.33	8.27	75.40		24.23	41.41	34.36	
40-49	88	31	636	755	57	51	71	179
%	11.66	4.11	84.24		31.84	28.49	39.66	
50-59	45	14	470	529	14	10	56	80
%	8.51	2.65	88.84		17.50	12.50	70.00	
60-69	14	7	314	335	9	6	33	48
%	4.18	2.09	93.73		18.75	12.50	68.75	
70+	4	-	255	259	3	1	15	19
%	1.54	-	98.46		15.79	5.26	78.95	
Total	1,194	574	7,479	9,247	363	435	943	1,741
%	12.91	6.21	80.88		20.85	24.99	54.16	
Total 9+	1,154	572	4,527	6,253	333	433	419	1,185
%	18.45	9.15	72.40		28.10	36.54	35.36	

SUMMARY

(a) AGE-GROUPS

Group	Rural	Urban/Peri-urban
Literates aged 10-29	1291/3432 = 37.62%	466/632 = 73.73%
Literates aged 30 or over	435/2821 = 15.42%	300/553 = 54.25%

(b) RURAL VERSUS URBAN/PERI-URBAN

Group	Rural	Urban /Peri-Urban
Literates	1,768	798
Illiterates	7,479	943

Chi-squared (df:1) : 57.405 $p < 0.001$

TABLE 3
LITERACY BY AGE-GROUPS
RURAL SAMPLE

Age	Males				Females			
	Literacy Rating				Literacy Rating			
	Swazi only	Swazi and English	Illit-erate	Total	Swazi only	Swazi and English	Illi-erate	Total
0 - 9	28	-	1,431	1,459	12	2	1,521	1,535
%	1.92	-	98.08		.78	.13	99.09	
10 -19	254	86	663	1,003	290	115	605	1,010
%	25.32	8.57	66.10		28.71	11.39	59.90	
20 - 29	128	134	401	663	177	107	472	756
%	19.31	20.21	60.48		23.41	14.15	62.43	
30-39	71	41	341	453	83	37	370	490
%	15.67	9.05	75.28		16.94	7.55	75.51	
40 - 49	47	18	283	348	41	13	353	407
%	13.51	5.17	81.32		10.07	3.19	86.73	
50 - 59	27	12	208	247	18	2	262	282
%	10.93	4.86	84.21		6.38	.71	92.91	
60 - 69	13	7	119	139	1	-	195	196
%	9.35	5.04	85.61		.51	-	99.49	
70+	3	-	82	85	1	-	173	174
%	3.53	-	96.47		.57	-	99.43	
Total	571	298	3,528	4,397	623	276	3,951	4,850
%	13.04	6.78	80.24		12.85	5.69	81.46	
Total 9+	543	298	2,097	2,938	274	274	2,430	3,315
%	18.48	10.14	71.38		18.43	8.27	73.30	

SUMMARY

MALES VERSUS FEMALES : AGE-GROUP 10-19 ONLY
(RURAL SAMPLE)

Rating	Males	Females
Literates	340 (33.9%)	405 (40.1%)
Illiterates	663 (66.1%)	605 (59.9%)
Chi-squared (df:1) : 8.036 $p < 0.01$		

TABLE 4
LITERACY BY AGE-GROUPS
URBAN / PERI-URBAN SAMPLE

Age	Males				Females			
	Literacy Rating				Literacy Rating			
	Swazi only	Swazi and English	Illi-terate	Total	Swazi only	Swazi and English	Illi-erate	Total
0 - 9	16	1	268	285	14	1	256	271
%	5.61	.35	94.04		5.17	.37	94.46	
10 - 19	62	43	44	149	72	66	51	189
%	41.61	28.86	29.53		38.10	34.92	26.98	
20 - 29	25	81	31	137	36	81	40	157
%	18.25	59.12	22.63		22.93	51.59	25.48	
30 - 39	26	55	22	103	29	39	56	124
%	25.24	53.40	21.36		23.39	31.45	45.16	
40 - 49	32	33	43	108	25	18	28	71
%	29.63	30.56	39.81		35.21	25.35	39.44	
50 - 59	11	8	30	49	3	2	26	31
%	22.45	16.33	61.22		9.68	6.45	83.87	
60 - 69	3	3	16	22	6	3	17	26
%	13.64	13.64	72.73		23.08	11.54	65.38	
70+	2	-	8	10	1	1	7	9
%	20.00	-	80.00		1.11	1.11	77.78	
Total	177	224	462	863	186	211	481	878
%	20.51	25.96	53.53		21.18	24.03	54.78	
Total 9+	161	223	194	578	172	210	225	607
%	27.85	38.58	33.56		28.34	34.59	37.07	

SUMMARY
MALES VERSUS FEMALES: AGE-GROUP 30 AND OVER ONLY
(URBAN/PERI-URBAN SAMPLE)

Rating	Males	Females
Literates	173 (59.25%)	127 (48.65%)
Illiterates	119 (40.75%)	134 (51.35%)
Chi-squared (df:1) : 5.805 $p < 0.02$		

TABLE 5 (a)
LITERACY RATING AND STANDARD COMPLETED
MEN AGED 15 AND OVER (N=2348) (RURAL SAMPLE)

Standard Completed	Literacy Rating				Total
	Illiterate	Able to Read and Write		Unknown	
		Swazi only	Swazi and English		
VIII - X	-	1	59	1	62
VI	-	-	67	1	68
V	1	1	69	-	71
IV	1	21	72	-	95*
III	2	82	14	-	98
II	3	115	1	-	119
I	17	97	-	-	115*
Sub. B.	26	42	-	-	68
Sub. A.	25	10	-	-	35
Unknown	2	-	-	-	2
None	1,587	27	1	-	1,616*
Total	1,664	396	283	2	2,348**

* Including one literate in English only
** Including three literate in English only

TABLE 5 (b)
LITERACY RATING AND STANDARD COMPLETED
MEN (RURAL AREAS) - SUMMARY

Education	Literacy Rating					
	Numbers			Percentages		
	Illiterate	Swazi only	Swazi and English	Illiterate	Swazi only	Swazi and English
Secondary	-	1	59	-	2	98
Higher Primary	4	105	222	1	32	67
Lower Primary	71	264	1	21	79	-
None	1,587	27	1	98	2	-
Cases enumerated "Unknown" are omitted from the Summary						
For Lower Primary versus Higher Primary Groups only: Chi-squared (df:2) : 347.62 $p < 0.001$						

TABLE 6(a)

LITERACY RATING AND STANDARD COMPLETED

MEN AGED 15 AND OVER (N=504) (URBAN/PERI-URBAN SAMPLE)

Standard Completed	Literacy Rating			Total
	Illiterate	Able to Read and Write		
		Swazi only	Swazi and English	
Vll - X	-	-	63	63
Vl	-	2	49	51
V	1	1	49	51
lV	1	13	35	49
lll	1	32	-	33
ll	5	39	2	46
1	1	24	-	25
Sub. B	6	11	1	18
Sub. A	6	3	-	9
Unknown	-	1	-	1
None	158	-	-	158
Total	179	126	199	504

TABLE 6 (b)

LITERACY RATING AND STANDARD COMPLETED
MEN (URBAN/PERI-URBAN AREAS) - SUMMARY

Education	Literacy Rating					
	Numbers			Percentages		
	Illi-terate	Swazi only	Swazi and English	Illi-terate	Swazi only	Swazi and English
Secondary	-	-	63	-	-	100
Higher Primary 3	48	133	2	26	72	
Lower Primary 18	77	3	18	79	3	
None	158	-	-	100	-	-
Cases enumerated "Unknown" are omitted from the Summary						
For Lower Primary versus Higher Primary Groups only: Chi-squared (df:2) : 127.49 $p < 0.001$						

TABLE 8

EDUCATION : STANDARD REACHED : FEMALES (RURAL AREAS)

Age Group	Standard Reached												Total
	None	Sub. A	Sub. B	I	II	III	IV	V	VI	VII	VIII	IX	X+[1]	
0 - 4	837	-	-	-	-	-	-	-	-	-	-	-	-	837
5 - 9	611	58	19	19	3	-	-	-	-	-	-	-	-	710
10 -14	302	57	54	65	49	43	15	4	3	-	-	-	-	592
15 -19	161	18	23	47	43	33	36	37	10	9	3	2	-	422
20 -24	218	7	18	32	31	28	30	12	19	7	4	1	-	407
25 -29	235	5	16	25	19	10	13	8	6	5	-	5	-	347
30-34	164	5	11	14	13	12	8	3	8	3	4	1	-	246
35 -39	196	6	8	10	11	7	4	1	4	1	1	-	-	249
40- -44	162	6	3	9	5	5	8	1	1	2	-	-	-	202
45 -49	180	5	4	6	4	2	5	-	1	1	-	-	-	208
50 -54	139	-	2	3	4	-	-	-	-	-	1	-	-	149
55 -59	119	2	1	2	1	3	4	-	-	-	-	-	-	132
60 -64	100	-	-	-	1	-	-	-	-	-	-	-	-	101
65 -69	92	-	-	-	-	-	-	-	-	-	-	-	-	92
70+	170	-	-	1	1	-	-	-	-	-	-	-	-	172
Total	3686[2]	169	159	233	185	143	123	66	52	28	13	9	-	4866[3]

It must be stressed that the figures shown in these tables refer to persons enumerated in the 52 rural sample areas. It is probable that most of the more highly educated Swazi migrate to the towns.

Notes: 1), 2) and 3) see footnotes Table 7.

TABLE 7

EDUCATION : STANDARD REACHED : MALES (RURAL AREAS)

Age Group	Standard Reached												Total
	None	Sub-A	Sub-B	I	II	III	IV	V	VI	VII	VIII	IX	X+[1]	
0 - 4	785	-	-	-	-	-	-	-	-	-	-	-	-	785
5 - 9	575	52	29	16	2	-	-	-	-	-	-	-	-	674
10 -14	326	65	50	79	37	31	8	3	1	-	-	-	-	600
15-19	176	20	22	33	42	37	34	22	13	3	1	-	-	403
20 -24	190	6	9	22	30	19	26	21	20	5	4	5	1	358
25 -29	197	2	6	13	16	12	16	10	16	6	8	4	-	306
30-34	183	3	6	10	8	8	4	7	8	1	3	2	-	243
35-39	156	1	7	12	4	10	4	4	3	1	2	3	2	209
40-44	119	2	1	7	3	5	2	1	1	2	1	3	-	147
45-49	177	2	3	9	5	3	3	3	-	-	-	-	-	205
50-54	137	-	6	4	5	3	3	1	2	-	1	-	1	163
55-59	75	-	2	3	2	-	2	1	-	-	-	1	-	86
60-64	73	1	3	2	1	-	1	1	3	-	-	-	-	85
65-69	48	1	2	1	-	-	-	-	2	1	-	-	-	55
70+	82	-	-	-	2	1	-	-	-	-	-	-	-	85
Total	3300[2]	155	146	211	157	129	103	74	69	19	20	18	4	4406[3]

It must be stressed that the figures shown in these tables refer to persons enumerated in the 52 rural sample areas. It is probable that most of the more highly educated Swazi migrate to the towns.

NOTES: 1) Including those beyond Std. X.
2) Including one person whose age-group is unknown.
3) Including two persons whose age-group is unknown, the educational standard of one of these also being unknown.

TABLE 10

EDUCATION : STANDARD REACHED : FEMALES (URBAN AND PERI-URBAN AREAS)

Age Group	Standard Reached													Total
	None	Sub. A	Sub. B	I	II	III	IV	V	VI	VII	VIII	IX	X+ [1]	
0 - 4	151	-	-	-	-	-	-	-	-	-	-	-	-	151
5 - 9	64	26	17	11	2	-	-	-	-	-	-	-	-	120
10 -14	13	7	13	16	20	14	10	4	2	-	-	-	-	99
15 -19	13	1	2	5	11	8	12	10	14	5	6	2	1	90
20 -24	12	2	4	7	3	4	8	11	12	9	4	3	1	80
25 -29	20	1	3	6	6	3	9	13	3	4	5	4	-	77
30 -34	21	-	4	-	6	5	9	4	7	-	2	1	1	60
35 -39	32	-	2	2	2	5	7	7	4	2	1	-	-	64
40 -44	13	1	3	1	5	3	5	1	4	2	-	-	-	38
45 -49	15	-	3	-	3	3	4	3	2	-	-	-	-	33
50 -54	14	-	-	2	1	-	-	1	1	-	-	-	-	19
55 -59	12	-	-	-	1	-	-	-	-	-	-	-	-	13 [2]
60 -64	11	-	-	-	1	-	1	1	1	-	-	-	-	15
65 -69	6	-	3	-	1	-	1	-	-	-	-	-	-	11
70+	7	-	-	-	1	-	-	1	-	-	-	-	-	9
Unknown	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	404	38	54	50	63	45	66	56	50	22	18	10	3	879 [2]

1) Including those beyond Std. X.
2) These totals include one person literate in English but not in Swazi.

TABLE 9

EDUCATION : STANDARD REACHED : MALES (URBAN AND PERI-URBAN AREAS)

Age Group	Standard Reached													Total
	None	Sub. A	Sub. B	I	II	III	IV	V	VI	VII	VIII	IX	X+ [1]	
0 - 4	159	-	-	-	-	-	-	-	-	-	-	-	-	159 [2]
5 - 9	67	36	13	9	2	-	-	-	-	-	-	-	-	127
10 -14	14	7	10	17	11	9	6	1	1	-	-	-	-	76
15 -19	8	3	4	3	7	11	8	8	13	6	1	1	-	73
20 -24	14	-	2	3	5	1	5	8	16	10	4	2	2	72
25 -29	13	2	2	6	7	1	6	4	10	6	-	6	2	65
30 -34	11	-	1	1	7	4	4	3	3	6	4	4	1	49
35 -39	8	-	2	2	3	4	5	6	7	4	4	7	2	54
40 -44	19	2	1	3	6	5	4	2	7	2	3	1	1	56
45 -49	22	1	2	4	4	4	1	4	3	4	1	1	1	52
50 -54	14	-	1	1	2	-	-	-	3	1	-	1	-	23
55 -59	16	1	-	1	3	1	-	-	4	-	-	-	-	26
60 -64	12	-	1	-	1	-	1	-	-	1	1	-	-	17
65 -69	4	-	-	-	-	1	-	-	-	-	-	-	-	5
70+	8	-	-	-	-	-	-	-	2	-	-	-	-	10
Unknown	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Total	390	52	39	50	58	41	40	36	69	40	18	23	9	865 [2]

1) Including those beyond St. X.
2) These totals include one person literate in English but not in Swazi.

TABLE 11 (a)

EDUCATION STANDARD REACHED : MALES IN RURAL AREAS (SUMMARY OF TABLE 7)

Age-Group	None	EDUCATION			Total 100%
		Lower Primary (Sub.A - Std. II)	Higher Primary (Std.III - VI)	Secondary (Std. VII +)	
0 - 4	785 (100%)	-	-	-	785
5 - 9	575 (85%)	99 (15%)	-	-	674
10 -14	326 (54%)	231 (39%)	43 (7%)	-	600
15 -19	176 (44%)	117 (29%)	106 (26%)	4 (1%)	403
20 -24	190 (53%)	67 (19%)	86 (24%)	15 (4%)	358
25 -29	197 (64%)	37 (12%)	54 (18%)	18 (6%)	306
30 -39	339 (75%)	51 (11%)	48 (11%)	14 (3%)	452
40 -49	296 (84%)	32 (9%)	18 (5%)	6 (2%)	352
50 -59	212 (85%)	22 (9%)	12 (5%)	3 (1%)	249
60+	203 (90%)	13 (6%)	8 (4%)	1	225
Total	3300[1] (75%)	669 (15%)	375 (9%)	61 (1%)	4406[2]

1) Including one person whose age-group is unknown.
2) Including two persons whose age-group is unknown, the educational standard of one of these being also unknown.

Percentages are rounded to the nearest integer, and do not necessarily sum to 100.

TABLE 11 (b)

EDUCATION STANDARD REACHED : FEMALES IN RURAL AREAS (SUMMARY OF TABLE EIGHT)

Age-Group	None	EDUCATION			Total (100%)
		Lower Primary (Sub.A-Std.II)	Higher Primary (Std.III-VI)	Secondary (Std.VII +)	
0 - 4	837 (100%)	-	-	-	837
5 - 9	611 (86%)	99 (14%)	-	-	710
10 -14	302 (51%)	225 (38%)	65 (11%)	-	592
15 -19	161 (38%)	131 (31%)	116 (27%)	14 (3%)	422
20 -24	218 (54%)	88 (22%)	89 (22%)	12 (3%)	407
25 -29	235 (68%)	65 (19%)	37 (11%)	10 (3%)	347
30 -39	360 (73%)	78 (16%)	47 (9%)	10 (2%)	495
40 -49	342 (83%)	42 (10%)	23 (6%)	3 (1%)	410
50 -59	258 (92%)	15 (5%)	7 (3%)	1	281
60 +	362 (99%)	3 (1%)	-	-	365
Un-known	-	-	-	-	-
Total	3686 (76%)	746 (15%)	384 (8%)	50 (1%)	4866

Percentages are rounded to the nearest integer and do not necessarily sum to 100.

TABLE 11(c)

EDUCATION STANDARD REACHED : MALES IN URBAN/PERI-URBAN AREAS
(SUMMARY OF TABLE 9)

Age-Group	None	EDUCATION			Total (100%)
		Lower Primary (Sub.A-Std.II)	Higher Primary (Std.III-VI)	Secondary (Std.VII+)	
0 - 4	159 (100%)	-	-	-	159
5 - 9	67 (53%)	60 (47%)	-	-	127
10 -14	14 (18%)	45 (59%)	17 (22%)	-	76
15 -19	8 (11%)	17 (23%)	40 (55%)	8 (11%)	73
20 -24	14 (19%)	10 (14%)	30 (42%)	18 (25%)	72
25 -29	13 (20%)	17 (26%)	21 (32%)	14 (21%)	65
30 -39	19 (18%)	16 (16%)	36 (35%)	32 (31%)	103
40 -49	41 (38%)	23 (21%)	30 (28%)	14 (13%)	108
50 -59	30 (61%)	9 (18%)	8 (16%)	2 (4%)	49
60+	24 (75%)	2 (6%)	4 (13%)	2 (6%)	32
Un-known	1	-	-	-	1
Total	390 (45%)	199 (23%)	186 (22%)	90 (10%)	865

Percentages are rounded to the nearest integer and do not necessarily sum to 100.

TABLE 11 (d)

EDUCATION STANDARD REACHED : FEMALES IN URBAN/PERI-URBAN AREAS

(SUMMARY OF TABLE 10)

Age-Group	None	EDUCATION			Total (100%)
		Lower Primary (Sub.A - Std.II	Higher Primary (Std.III-VI)	Secondary (Std. VII +)	
0 - 4	151 (100%)	-	-	-	151
5 - 9	64 (53%)	56 (47%)	-	-	120
10 -14	13 (13%)	56 (57%)	30 (30%)	-	99
15- 19	13 (14%)	19 (21%)	44 (49%)	14 (16%)	90
20 -24	12 (15%)	16 (20%)	35 (44%)	17 (21%)	80
25 -29	20 (26%)	16 (21%)	28 (36%)	13 (17%)	77
30 -39	53 (43%)	16 (13%)	48 (39%)	7 (6%)	124
40 -49	28 (39%)	16 (23%)	25 (35%)	2 (3%)	70
50 -59	26 (81%)	4 (13%)	2 (6%)	-	32
60+	24 (69%)	6 (17%)	5 (14%)	-	35
Un-known	-	-	-	-	-
Total	404 (46%)	205 (23%)	217 (25%)	53 (6%)	879

Percentages are rounded to the nearest integar and do not necessarily sum to 100.

TABLE 12

LEVELS OF ATTAINMENT - SCHOOL-LEAVERS OF "1940 OR EARLIER" COMPARED WITH THOSE OF MORE RECENT YEARS

	Year of leaving School	EDUCATION			To-tal.
		Lower Primary (Sub.A - Std. II)	Higher Primary (Std.III - VI)	Secondary (Std.VII +)	
MEN:- Rural Sample	1957-1959	40 (41.24%)	44 (45.36%)	13 (13.40%)	97
	1951-1956	46 (43.39%)	50 (47.16%)	10 (9.43%)	106
	1941-1950	62 (48.82%)	51 (40.15%)	14 (11.02%)	127
	1940 or earlier	79 (62.20%)	40 (31.49%)	8 (6.29%)	127
WOMEN:- Rural Sample	1957-1959	81 (50.00%)	75 (46.29%)	6 (3.70%)	162
	1951-1956	87 (53.05%)	66 (40.24%)	11 (6.70%)	164
	1941-1950	109 (60.89%)	60 (33.51%)	10 (5.58%)	179
	1940 or earlier	93 (65.49%)	43 (30.28%)	6 (4.22%)	142
MEN:- Urban/ Peri-Urban Sample	1957-1959	7 (15.90%)	25 (56.81%)	14 (31.81%)	44
	1951-1956	10 (16.67%)	27 (45.00%)	23 (38.33%)	60
	1941-1950	24 (27.90%)	37 (43.02%)	25 (29.08%)	86
	1940 or earlier	42 (40.38%)	44 (42.30%)	18 (17.30%)	104
WOMEN: Urban/ Peri-Urban Sample	1957-1959	9 (25.71%)	18 (51.42%)	8 (22.85%)	35
	1951-1956	15 (23.07%)	37 (56.92%)	13 (20.00%)	65
	1941-1950	29 (30.20%)	53 (55.20%)	14 (14.58%)	96
	1940 or earlier	36 (41.86%)	48 (55.81%)	2 (2.32%)	86

TABLE 13 (a)

EDUCATION AND EMPLOYMENT/UNEMPLOYMENT: MEN IN RURAL AREAS (N= 1810)

At the time of Survey	None	EDUCATION			Total
		Lower Primary (Sub.A - Std.II	Higher Primary (Std.III - VI)	Secondary (Std.VII+)	
Employed	581	120	108	39	848
Unemployed	799 (57%)	89 (43%)	69 (40%)	5 (11%)	962
Total	1380	209	177	44	1810

TABLE 13 (b)

EDUCATION AND EMPLOYMENT/UNEMPLOYMENT : MEN IN URBAN/ PERI-URBAN AREAS (N=418)

At the time of Survey	None	EDUCATION			Total
		Lower Primary (Sub.A - Std.II	Higher Primary (Std.III - VI)	Secondary (Std.VII+)	
Employed	100	59	96	69	324
Unemployed	39 (28%)	20 (26%)	29 (23%)	6 (8%)	94
Total	139	79	125	75	418

TABLE 14(a)

EDUCATION AND INDUSTRY (FIELD OF EMPLOYMENT)

EMPLOYMENT X

MEN IN RURAL AREAS EMPLOYED AT THE TIME OF SURVEY (N=848)

Field of Employment	None	EDUCATION Lower Primary (Sub.A - Std.II)	Higher Primary (Std.III-VI)	Secondary St.VII+)	Total
Farming, Forestry	235	43	23	5	306
Mining	207	34	22	5	268
Manufac-turing	17	5	7	2	31
Trading	20	8	13	5	46
Transport	9	2	4	-	15
Govern-ment	35	8	23	12	78
Domestic	35	3	8	-	46
Religious, Welfare	3	10	3	9	25
Other	18	6	5	1	30
Unknown	2	1	-	-	3
Total	581	120	108	39	848

Pooling workers in groups classified "Trading", "Government", Religious" and "Welfare" for comparison with the numbers in all other fields of employment counted together, yield the following table:-

TABLE 14(b)

EDUCATION AND INDUSTRY (RURAL AREAS)

SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Trading, Govern-ment, Religious Welfare	Other	(Exclud-ing "Unknown")	Trading, Govern-ment, Religious, Welfare	Other
None	58	521	579	10	90
Lower Primary	26	93	119	22	78
Higher Primary	39	69	108	36	64
Secondary	26	13	39	67	33
Chi-squared (computed for numbers, not percentages with df:3) $= 114.71$ $p < 0.001$					

The chi-squared test indicates a highly significant degree of association between education and field of employment for men in rural areas.

TABLE 14 (c)
EDUCATION AND INDUSTRY (FIELD OF EMPLOYMENT)
EMPLOYMENT X.
MEN IN URBAN/PERI-URBAN AREAS EMPLOYED AT THE TIME OF SURVEY (N=324)

Field of Employment	EDUCATION				Total
	None	Lower Primary (Sub.A - Std.II)	Higher Primary (Std.III -VI)	Secondary (Std.VII+)	
Farming Forestry	12	9	6	1	28
Mining	11	5	4	4	24
Manu-facturing	5	-	2	1	8
Trading	17	11	24	4	56
Transport	4	10	8	2	24
Govern-ment	23	14	34	50	121
Domestic	11	6	12	2	31
Religious, Welfare	6	-	1	-	7
Other	11	4	5	5	25
Unknown	-	-	-	-	-
Total	100	59	96	69	324

Casting the data into the same form as that adopted for the rural sample in Table 14(b) yields:-

TABLE 14 (d)
EDUCATION & INDUSTRY (URBAN/PERI-URBAN AREAS)
SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Trading, Govern-ment, Religious Welfare	Other	(Excluding "Unknown")	Trading, Govern-ment, Religious Welfare	Other
None	46	54	100	46	54
Lower Primary	25	34	59	42	58
Higher "	59	37	96	61	39
Secondary	54	15	69	78	22

For the data in this form the contrast lies evidently between those with lower primary education, or none, and those with higher primary or secondary education. Plotting the frequencies for these two combinations only yields :-

TABLE 14 (e)

EDUCATION	FIELD OF EMPLOYMENT	
	Trading, Government, Religious, Welfare	Other
None to Lower Primary	71	88
Higher Primary to Secondary	113	52
Chi-squared (df:1) = 17.78 $p<0.001$		

The chi-squared test again indicates a highly significant relationship between education and field of employment for men in urban/peri-urban areas.

TABLE 15 (a)
EDUCATION AND OCCUPATIONAL CLASS (LEVEL OF EMPLOYMENT)
EMPLOYMENT X
MEN IN RURAL AREAS EMPLOYED AT THE TIME OF SURVEY (N=848)

Occupational Class	EDUCATION				Total
	None	Lower Primary (Sub.A- Std.II)	Higher Primary (Std.III-VI)	Secondary (Std.VII+)	
Manual	516	95	69	6	686
Domestic Service	38	14	8	-	60
Craftsmen	8	2	4	-	14
"Clerical"	2	-	9	15	26
Salesmen	8	4	8	4	24
"Professional"	6	4	10	14	34
Other	1	-	-	-	1
Unknown	2	1	-	-	3
Total	581	120	108	39	848

A clearer contrast between the occupation of men at different levels of education will emerge if the occupational classes are pooled in two groups of three - (a) manual workers, domestic servants and craftsmen, against (b) "Clerical" and "professional" workers and salesmen. Data for these groupings follows:-

TABLE 15 (b)
EDUCATION AND OCCUPATIONAL CLASS (RURAL AREAS)
SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Manual. Domestic Service, Craftsmen	"Clerical" Salesmen "Professional	(Excluding "Other" & "Unknown")	Manual, Domestic Service Craftsmen	"Clerical Salesmen "Professional"
None	562	16	578	97	3
Lower Primary	111	8	119	93	7
Higher Primary	81	27	108	75	25
Secondary	6	33	39	15	85
Total	760	84	844		

Little difference appears between the Lower Primary group and those with no education at all. Since, even for the re-grouped data of Table 15(b) one of the expected frequencies falls below 5, the chi-squared test cannot be run for the figures as they stand. Pooling groups yield :-

TABLE 15 (c)

EDUCATION	OCCUPATIONAL CLASS	
	Manual, Domestic Service, Craftsmen	"Clerical", Salesmen, "Professional"
None to Lower Primary	673	24
Higher Primary to Secondary	87	60
Chi-squared (df:1) = 185.05 $p < 0.001$		

TABLE 15 (d)

EDUCATION AND OCCUPATIONAL CLASS (LEVEL OF EMPLOYMENT)

EMPLOYMENT X

MEN IN URBAN/PERI-URBAN AREAS EMPLOYED AT THE TIME OF SURVEY (N=324)

Occupational Class	EDUCATION				Total
	None	Lower Primary (Sub.A - Std. II)	Higher Primary (Std.III - VI)	Secondary (Std.VII+)	
Manual	56	32	36	7	131
Domestic Service	11	7	12	3	33
Craftsmen	10	6	10	6	32
"Clerical"	2	3	16	34	55
Salesmen	8	9	14	2	33
"Professional"	13	2	8	17	40
Other	-	-	-	-	-
Unknown	-	-	-	-	-
Total	100	59	96	69	324

Grouping the data in the same way as for education and occupational class in the rural areas (Table 15(b)) yields:-

TABLE 15(e)

EDUCATION AND OCCUPATIONAL CLASS (URBAN/PERI-URBAN AREAS)

SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Manual, Domestic Service Craftsmen	"Clerical", Salesmen "Professional"	(Excluding "Other & "Unknown"	Manual, Domestic Service Craftsmen	"Clerical", Salesmen "Professional"
None	77	23	100	77	23
Lower Primary	45	14	59	76	24
Higher Primary	58	38	96	60	40
Secondary	16	53	69	23	77

There is again virtually no difference in occupational class between the Lower Primary group and those with no education at all. Pooling (a) these two groups, and (b) the Higher Primary and Secondary groups, yields :-

TABLE 15 (f)

EDUCATION	OCCUPATIONAL CLASS	
	Manual, Domestic Service, Craftsmen	"Clerical", Salesmen, "Professional"
None to Lower Primary	122	37
Higher Primary to Secondary	74	91
Chi-squared (df:1) = 33.12 $p < 0.001$		

Thus, for men in urban/peri-urban areas, as well as for men in rural areas (Table 15(c)) there is a highly significant relationship between standard of education and occupational class.

TABLE 16 (a)
EDUCATION AND MONTHLY CASH INCOME
EMPLOYMENT X
MEN IN RURAL AREAS EMPLOYED AT THE TIME OF SURVEY (N=848)

Rands per mth.	None	EDUCATION Lower Primary (Sub. A - Std.II)	Higher Primary (Std.III - VI)	Secondary Std. VII+)	Median Income
2 - 4	7	7	-	-	3
4 - 6	38	5	3	-	5
6 - 8	130	21	12	2	7
8 - 10	156	31	14	-	9
10 - 12	77	22	21	2	11
12 - 14	45	9	7	-	13
14 - 16	25	4	5	2	15
16 - 18	20	9	8	4	17
18 - 20	11	3	7	-	19
20 - 40	51	6	21	22	30
40 - 60	6	1	5	6	50
60+	-	-	2	1	(70)
Unknown	15	2	3	-	
Total	581	120	108	39	
Total Excluding Unknown	(566)	(118)	(105)	(39)	
Approx. Mean Income	11.86	11.28	18.20	29.85	

NOTE: The approximate mean income is computed from the median incomes for each class-interval. The median for the class-interval "R60+" is taken arbitrarily as R70. Cases of "Income Unknown" were dropped from the totals for computation of the means.

The contrasts in income between groups at different levels of education emerge more clearly from pooling classes and dichotomising near the median income for the largest group (not counting cases of "Income Unknown"), as shown in Table 16(b) below.

TABLE 16 (b)

EDUCATION AND MONTHLY CASH INCOME (RURAL AREAS)

SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Monthly Cash Income		(Excluding	Monthly Cash Income	
	R10 or less	Over R10	"Unknown")	R10 or less	Over R10
None	331	235	566	58	42
Lower Primary	64	54	118	54	46
Higher Primary	29	76	105	28	72
Secondary	2	37	39	5	95

Most of those with Lower Primary education only, it will be seen, earn no more than do the majority of those with no education at all. Between the 'Lower' and 'Higher' Primary groups, however, a significant contrast emerges: chi-squared, for the four cells of these groups only (df:1) is 15.116, for which $p < 0.001$.

TABLE 16 (c)
EDUCATION AND MONTHLY CASH INCOME
EMPLOYMENT X
MEN IN URBAN/PERI-URBAN AREAS EMPLOYED AT THE TIME OF SURVEY (N=324)

Rands per mth.	None	EDUCATION Lower Primary (SubA - St. II)	Higher Primary (Std.III - VI)	Secondary (Std.VII+)	Median Income
2 - 4	1	1	3	-	3
4 - 6	6	1	1	-	5
6 - 8	20	9	8	1	7
8 - 10	17	14	9	2	9
10 - 12	21	3	5	-	11
12 - 14	9	6	14	3	13
14 - 16	3	3	11	1	15
16 - 18	4	6	3	1	17
18 - 20	-	4	7	3	19
20 - 40	14	11	21	35	30
40 - 60	2	-	11	14	50
60+	2	-	2	7	(70)
Unknown	1	1	1	2	
Total	100	59	96	69	
Total Excluding Unknown	(99)	(58)	(95)	(67)	
Approx. Mean Income	14.62	14.84	21.65	35.72	

The approximate mean income is computed by the same procedure as for the rural group in Table 16 (a). Pooling classes as in Table 16(b) yields:-

TABLE 16 (d)

EDUCATION AND MONTHLY CASH INCOME (URBAN/PERI-URBAN AREAS)

SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Monthly Cash Income		(Excluding	Monthly Cash Income	
	R10 or less	Over R10	"Unknown")	R10 or less	Over R10
None	44	55	99	44	56
Lower Primary	25	33	58	43	57
Higher Primary	21	74	95	22	78
Secondary	3	64	67	4	96

As in the rural areas, virtually no difference appears between the earnings of those with no education and of those with Lower Primary education only. As in the rural sample a significant difference emerges between the Lower Primary and Higher Primary groups: chi-squared, calculated for the frequencies for these groups only (Table 16(d) is 6.56, significant at the 0.02 level and approaching the 0.01 level for one degree of freedom.

TABLE 17(a)

EDUCATION AND NUMBER OF JOBS
MEN IN RURAL AREAS WITH RECORDS OF EMPLOYMENT (N=1810)

Number of Jobs	EDUCATION				Total
	None	Lower Primary (Sub.A - Std.II)	Higher Primary (Std.III - VI)	Secondary (Std. VII+)	
1	199	36	60	24	319
2	201	30	39	7	277
3	150	33	23	4	210
4	138	26	22	4	190
5	165	26	17	1	209
6	132	12	8	-	152
7	98	11	2	3	114
8	100	11	3	1	115
9	61	3	1	-	65
10-19	126	18	2	-	146
20+	7	3	-	-	10
Unknown	3	-	-	-	3
Total	1,380	209	177	44	1,810

The contrast of employment histories between men with different levels of education emerges more clearly from pooling classes and dichotomising about the median number of jobs for the largest group:-

TABLE 17(b)
EDUCATION AND NUMBER OF JOBS (RURAL AREAS)
SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Number of Jobs		(Excluding "Unknown")	Number of Jobs	
	4 or less	5 or more		4 or less	5 or more
None	688	689	1377	50	50
Lower Primary	125	84	209	60	40
Higher Primary	144	33	177	81	19
Secondary	39	5	44	89	11

Since the relatively better-educated groups are likely to contain a higher proportion of younger men, these figures are likely to be biased by the presumably negative correlation of age with number of jobs.

Age was accordingly held constant by running comparisons for men of approximately the same ages. The age-groups 40-44 and 45-49 were chosen for this purpose as likely to contain men with relatively long histories of employment, among whom the differential effects of age on number of jobs should be relatively slight.

TABLE 17(c)
EDUCATION AND NUMBER OF JOBS
MEN (RURAL AREAS) AGED 40-44 AND 45-49

EDUCATION	NUMBER OF JOBS					
	(Ages 40-44)		(Ages 45-49)		(Ages 40-49)	
	5 or less	6 or more	5 or less	6 or more	5 or less	6 or more
1 None	53	60	84	89	137	149
11 Lower Primary	8	5	11	6	19	11
111 Higher Primary	9	-	6	2	15	2
1V Secondary	5	1	-	-	5	1
Chi-squared: Class 1 versus Classes 11, 111 and 1V (df:1)	7.81 $p < 0.01$		2.51 Not significant		10.81 $p < 0.01$	

From Table 17(c) it will be seen that in both age-groups the better-educated men tend to have had fewer jobs, and that, for the age-group 40-44 as well as for the pooled groups 40-49, the data yield a significant value for chi-squared.

There is thus, for men in rural areas, a significant negative relationship between level of education and number of jobs, even when age is held constant.

TABLE 17(d)
EDUCATION AND NUMBER OF JOBS
MEN IN URBAN/PERI-URBAN AREAS WITH RECORDS OF EMPLOYMENT (N=418)

Number of Jobs	None	EDUCATION			Total
		Lower Primary (Sub. A- Std.II)	Higher Primary (Std.III- VI)	Secondary (Std. VII+)	
1	24	11	31	23	89
2	21	15	32	20	88
3	19	16	19	12	66
4	13	6	12	8	39
5	9	8	17	8	42
6	15	5	3	1	24
7	9	2	1	1	13
8	5	2	2	-	9
9	5	3	3	1	12
10-19	18	11	5	1	35
20+	1	-	-	-	1
Unknown	-	-	-	-	-
Total	139	79	125	75	418

The contrast of employment histories between men with different levels of education emerges more clearly from pooling classes and dichotomising about the median number of jobs for the largest group. (On this basis the categories will be "3 jobs or less" and "4 jobs or more", not "4 or less" and "t or more" as in the rural sample).

TABLE 17(e)
EDUCATION AND NUMBER OF JOBS (URBAN/PERI-URBAN AREAS)
SUMMARY

EDUCATION	NUMBERS		TOTALS	PERCENTAGES	
	Number of Jobs		(Excluding	Number of Jobs	
	3 or less	4 or more	"Unknown")	3 or less	4 or more
None	64	75	139	46	54
Lower Primary	42	37	79	53	47
Higher Primary	82	43	125	66	34
Secondary	55	20	75	73	27

In order again to correct as far as possible for the differential effects of age, a further comparison was set up for a limited age-group, in this case the men aged 40-49. It was felt that there were too few cases for the age-groups 40-44 and 45-49 to be studied separately. Dichotomising again at the median number of jobs for the largest group ("5 jobs or less" versus 6 jobs or more"), yields:-

TABLE 17(f)
EDUCATION AND NUMBER OF JOBS
MEN (URBAN/PERI-URBAN AREAS) AGED 40-49 (N=100)

EDUCATION	NUMBER OF JOBS	
	5 or less	6 or more
1 None	21	19
11 Lower Primary	11	5
111 Higher Primary	26	4
1V Secondary	13	1

A clear contrast emerges. A chi-squared test, however, cannot be run for the data as they stand, since in two of the eight cells the expected frequency is lower than 5. (Siegel, Nonparamatric Statistics for the Behavioural Sciences, 1956, p.178). Pooling the groups in pairs, however, yields the following distribution over four cells, for which the chi-squared test is applicable and significant.

TABLE 17(g)

EDUCATION	NUMBER OF JOBS	
	5 or less	6 or more
1 and 11 None and Lower Primary	32	24
111 and 1V Higher Primary and Secondary	39	5
Chi-squared (df:1) = 10.39 $p < 0.01$		

TABLE 18 (a)

EDUCATION AND DURATION OF PRESENT EMPLOYMENT

MEN IN RURAL AREAS EMPLOYED AT THE TIME OF SURVEY (N=848)

Completed Years in Present Employment	None	EDUCATION Lower Primary (Sub.A- Std.II)	Higher Primary (Std.III - VI)	Secondary (Std.VII+)	TOTAL
Under 1	336	60	42	9	447
1	72	17	21	7	117
2	33	12	7	8	60
3	23	6	7	-	36
4	13	3	5	1	22
5-9	28	6	8	10	52
10-14	33	3	9	4	49
15-19	10	1	4	-	15
20-24	7	3	1	-	11
25 or over	4	-	1	-	5
Unknown	22	9	3	-	34
Total	581	120	108	39	848

TABLE 18 (b)

EDUCATION AND DURATION OF PRESENT EMPLOYMENT (RURAL AREAS)

SUMMARY

EDUCATION	NUMBERS Years 0 - 4	NUMBERS Years 5 and over	TOTALS (Excluding "Unknown")	PERCENTAGES Years 0 - 4	PERCENTAGES Years 5 and over
None	477	82	559	85	15
Lower Primary	98	13	111	88	12
Higher Primary	82	23	105	78	22
Secondary	25	14	39	64	36
Chi-squared: (Lower Primary versus pooled Higher Primary and Secondary groups only, (df:1)): 6.67 $p < 0.01$					

TABLE 18(c)

EDUCATION AND DURATION OF PRESENT EMPLOYMENT

MEN IN URBAN/PERI-URBAN AREAS EMPLOYED AT THE TIME OF SURVEY (N=324)

Completed Years in Present Employment	EDUCATION				
	None	Lower Primary (Sub.A - Std.II)	Higher Primary (Std.III - VI)	Secondary (Std.VII+)	Total
Under 1	39	29	36	18	122
1	12	11	13	12	48
2	3	2	7	7	19
3	6	5	10	4	25
4	5	2	4	6	17
5-9	13	5	10	12	40
10-14	13	3	9	5	30
15-19	2	1	5	2	10
20-24	2	-	1	1	4
25 or over	3	-	-	-	3
Unknown	2	1	1	2	6
Total	100	59	96	69	324

TABLE 18(d)

EDUCATION AND DURATION OF PRESENT EMPLOYMENT (URBAN/PERI-URBAN AREAS)

SUMMARY

EDUCATION	NUMBERS		TOTALS (Excluding "Unknown")	PERCENTAGES	
	Years			Years	
	0 - 4	5 and over		0 - 4	5 and over
None	65	33	98	66	34
Lower Primary	49	9	58	84	16
Higher "	70	25	95	74	26
Secondary	47	20	67	70	30
Chi-squared: (Lower Primary versus pooled None plus Higher Primary plus Secondary groups, (df:1)): 4.303 $p < 0.05$					

CHAPTER VII

THE SWAZI RURAL ECONOMY

(J.B.McI. Daniel)

1. THE LAND USE PATTERN:

1.1 Introduction:

The analysis of the results of the Swaziland Random Sample Survey in this chapter is confined to what is termed "The Rural Survey Area". This survey area comprises certain portions of crown land and all Swazi held land except Native Areas 1, 3 and 23 together with a small portion of a scheduled Native Land Settlement area adjacent to NA 23, and the peri-urban regions of Manzini and Stegi [1)]

Although Chapter I of the report contains a full discussion of the aims, advantages and limitations of the survey as a whole, it is necessary to know what these are in the context of the rural economy. Briefly then, the limitations are that it was not possible to measure the extent or the distribution of individual Swazi holdings or fields; nor the exact acreage under each different crop and the crop yields per acre. The scattering of the individual fields and their irregular shapes preclude exact measurement in a general field survey. To ascertain this type of information a separate survey, dealing only with this aspect, would have to be undertaken. However, by stereoscopic study of aerial photographs it was possible to calculate the total area under cultivation and thus calculate the average area cultivated per person and per homestead[2)]. As cultivation centres round the production of maize, which is the main crop throughout Swaziland, the lack of exact information about the area under other crops was not a major handicap. From the maps based on the aerial photographs it was possible to calculate the area under cultivation and by using these statistics in conjunction with those obtained from the pilot survey and the questionnaire, a reasonable estimate of crop acreages and yields could be made[3)]. The main advantage of the survey was that it supplied reliable

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(1) See Chapter II, "The Statistical Frame", section 1.8.
(2) See Table 8.
(3) See section 1.6.1.

information on the all important question, "Are the Swazi producing sufficient food for their own requirements?"

The division of Swaziland into the four physiographic regions viz., the Highveld, Middleveld, Lowveld and Lebombo, each of which formed a primary unit for the purposes of the survey, was fully justified by the regional contrasts which became apparent in the analysis of the results.

1.2 The Physical Environment;

The main features of the physical environment, as distinct from the cultural environment, which influence production and land use, are climate, slope and soil.

1.2.1 Climate:

Temperature does not set any major limits to the production of the main cereal crop, maize, or the general range of crops grown on the Swazi peasant holdings, though for certain cash crops and particularly the tropical and sub-tropical crops such as sugar cane and cotton, the length of the growing season and the temperature requirements of the plants have to be considered in explaining their distribution.

Far more important than temperature is rainfall. There is a general decrease in rainfall from 75" in parts of the Highveld in the west to 20"-25" on the eastern margins of the Lowveld at the foot of the Lebombo plateau. The precipitation of over 30" on the Lebombo plateau, except on its eastern edges where the rainfall decreases as the Tongoland coastal plain is approached, is comparable with that of the Middleveld (see Map 1). In general 25" is regarded as the minimum rainfall required for successful crop production. Consequently, the only region where rainfall is marginal for normal crop production is the lowveld. Here the low precipitation, together with the high variability of the rainfall and high rates of evaporation, constitute a hazard to production.

1.2.2 Slope:

On the other hand if 8^{o} is accepted as the maximum slope desirable for the cultivation of crops under the climatic conditions prevailing in Swaziland, the Lowveld constitutes the most favourable area, for the expansion of cultivation.

TABLE 1

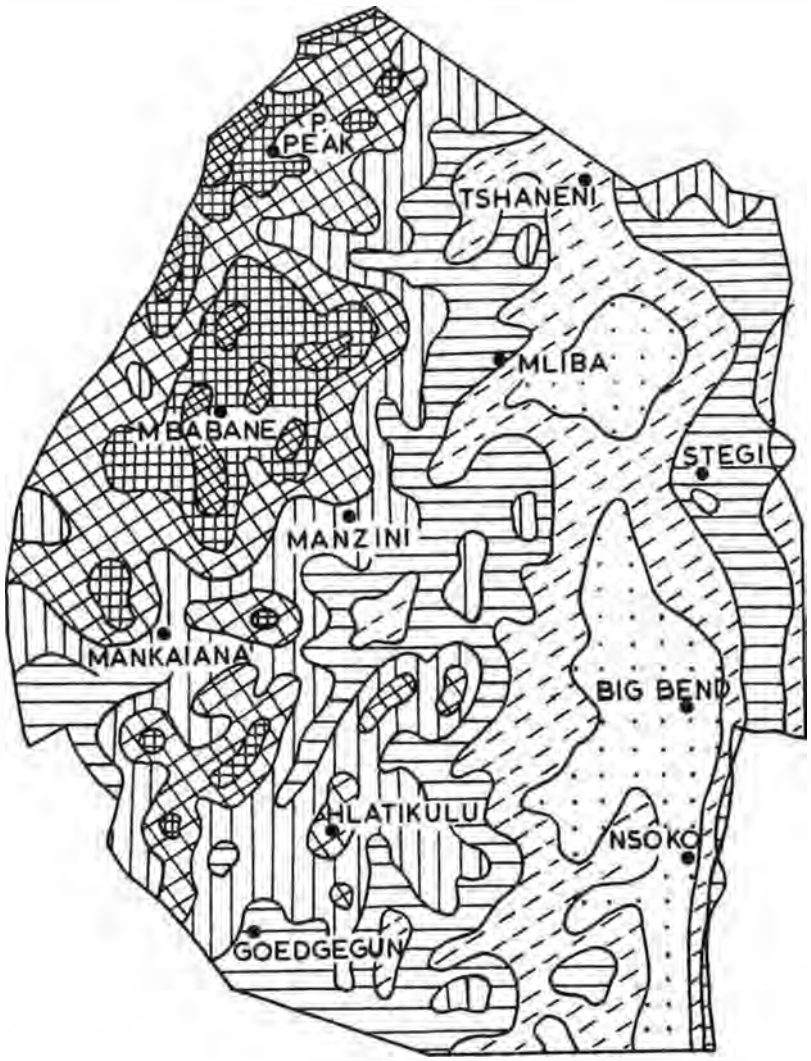
AVERAGE % OF AREA UNDER AN 8^{o} SLOPE[1)]

Highveld	37%
Middleveld	50%
Lowveld	93%
Lebombo	36%

1) See next page.

SWAZILAND

MEAN ANNUAL RAINFALL



10 0 10 20

MILES

INCHES RAINFALL	20-25	25-30	30-35	35-40	40-50	50-60	60-90
SQUARE MILES	780	1370	1500	1340	1000	560	150

TOTAL AREA : 6700 SQ. MILES

AVERAGE RAINFALL : 36 INCHES.

After G.& E.Murdoch.

Some indication of the slope factor in the various regions is provided in Table 1. The Highveld which is part of the eastern escarpment of Southern Africa is mountainous and much dissected by numerous rivers and streams, with limited regions of flat and undulating land. The Middleveld also contains large areas where the country is characterized by steep slopes and broken terrain, but there are nevertheless expansive areas where undulating topography sets no restrictions to cultivation. The Lowveld possesses few ridges or hills which interfere with the gently undulating nature of its topography and in the fourth region, the Lebombo Plateau, level and undulating tracts of land are limited by the steep slopes along the escarpment in the west, the gorges which the major rivers such as the Great Usutu and the Mbuluzi have cut through the plateau, and the incised valleys of the dip slope.

1.2.3 Soil:

Maps 2 and 3 indicate how soil reaction (pH) and organic matter vary over the Territory. "..... in the Lowveld acidity decreases and humus increases as the coarse, quartzose rocks underlying the west of that region are succeeded by basalt and dolerite in the east. By contrast the pH and humus of the Middleveld and Highveld are much more closely related to rainfall than to any other distributional phenomenon"[2].

The density of shading in Map 4 indicates the agricultural value of the pedological regions, assuming that crops are grown in their correct climatic environment and that water supplies are adequate.

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1) Based on slope maps of random sample squares.
2) G. Murdoch: Swaziland Soil Survey. Report for 1960.

1.2.4 Summary:

The advantages and disadvantages of the different physiographic strata for purposes of cultivation can be summarized as follows:-

The Highveld has sufficient rainfall, the soils are mediocre, becoming more suitable in the extreme north and south, but the major limiting factors to cultivation are the dissected nature of the terrain and the steep slopes. The Middleveld is the most suitable region for agricultural activity due to the combination of fairly extensive areas of land under 8°, an adequate rainfall and reasonably productive soils. In the Lowveld the soil fertility increases towards the Lebombo escarpment; slope presents virtually no limitations to cultivation but the region is seriously handicapped by a low and variable rainfall. The Lebombo has an adequate rainfall but limitations to cultivation are imposed by slope, except on the western margins of the plateau and in the larger river valleys, and by soil fertility, except in the vicinity of Nomahasha and Stegi.

The cultural environment is extremely difficult to assess. The main considerations in this respect are the stage of development of the Swazi, including their whole social structure and system of land tenure, and the nature of the rural economy. In general it can be stated that the factors which mitigate against progress towards modern and scientific farming methods are the low standard of education, the basic subsistence nature of the economy, the ease with which rural income can be supplemented by cash wages and the traditional concepts of land husbandry.

1.3 Land Utilization Classification in the Rural Survey Area:

Six categories of land use were recognized in the rural survey area. These were:-

1.3.1 Cultivated Land:

This includes all land under crops or prepared for cultivation at the time the aerial photographs were taken. Interpretation and deliminations of boundaries were accurate, with the Highveld and Middleveld lending themselves more readily to precise interpretation. No allowance was made for crops undersown in maize fields or for the area under contour strips as this was not practicable.

1.3.2 Fallow Land:

This includes land which could be recognized as having been cultivated at one time but which was not actually under cultivation at the time of the survey. Most of the fallow provides additional acreage for grazing. This category of land could not be as precisely interpreted or delimited as that of the cultivated area. For the purposes of analysis "arable" land is defined as the area under cultivation as well as that under fallow, i.e., the total area of land that is or has been cultivated.

1.3.3 Land Under Wattle:

These areas could be accurately interpreted and delimited.

1.3.4 Marshland:

This category of land use could not be determined very accurately and it should be appreciated that the area of marshland is subject to fluctuation throughout the year, depending on the amount of precipitation[1].

1) See next page.

1.3.5 Unproductive Land:

This includes the barren areas where erosion, sheet rock or rocky outcrops prevent the land from being used for productive purposes. The very nature of this type of land restricts its accurate delimitation.

1.3.6 Grazing:

In general this category includes all land which does not fall into the other groups. The effective pasturage available for livestock would in fact be slightly less that that shown in Table 2 as no deduction has been made of the area covered by homesteads, roads and rivers. This area is so small that it does not justify separate treatment.

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1) The aerial photographs were taken in the autumn after a relatively dry summer. The mean rainfall in Swaziland from October-March is 28.5". For the corresponding period during 1959-60 the average rainfall for the whole Territory was 23.7" (Swaziland Climatological Records).

TABLE 2 (i)

ACREAGE AND PERCENTAGE OF LAND USE CATEGORIES: RANDOM SAMPLE AREAS

Category	Highveld		Middleveld		Lowveld		Lebombo	
	Acres	%	Acres	%	Acres	%	Acres	%
Cultivated	2,950	9.0	4,469	14.6	1,198	4.2	1,252	5.9
Fallow	3,131	9.5	5,701	18.7	2,944	10.4	1,048	4.9
Wattle	521	1.6	46	0.2	2		2	
Marsh	32	0.1	36	0.1	71	0.2	-	
Unproductive	541	1.6	73	0.2	33	0.1	25	0.1
Grazing	25,802	78.2	20,243	66.2	24,159	85.1	18,897	89.1
Total	32,977	100.0	30,568	100.0	28,407	100.0	21,224	100.0

*1) For standard errors see Chapter III, Tables 3.4.1 - 3.4.4

TABLE 2 (ii)

ESTIMATED ACREAGE[1] AND PERCENTAGE OF LAND USE CATEGORIES: RURAL SURVEY AREAS

Category	Highveld		Middleveld		Lowveld		Lebombo		(Rural Survey) Total	
	%	Acres	%	Acres	%	Acres	%	Acres	%	Acres
Cultivated	25.1	49,678	53.0	105,156	17.5	34,682	4.4	8,626	100.0	198,142
Fallow	18.9	52,726	48.0	134,145	30.5	85,229	2.6	7,221	100.0	279,321
Wattle	88.4	8,774	10.9	1,082	0.6	58	0.1	14	100.0	9,928
Marsh	15.7	539	24.6	847	59.7	2,055		-	100.0	3,441
Unproductive	76.2	9,110	14.4	1,718	8.0	955	1.4	172	100.0	11,955
Grazing	25.0	434,506	27.3	476,318	40.2	699,403	7.5	130,200	100.0	1,740,427
Total		555,333		719,266		822,382		146,233		2,243,214

1) Multiplication Factors for Land Use Survey

Highveld	16.84
Middleveld	23.53
Lowveld	28.95
Lebombo	6.89

TABLE 2 (iii)

SUMMARY OF ESTIMATED ACREAGE AND PERCENTAGE OF LAND USE CATEGORIES: RURAL SURVEY AREAS*

Land Use	Estimated Acreage	%
Cultivated	198,142 (±22,469)	8.83 (±1.00)
Fallow	279,321 (±29,413)	12.45 (±1.31)
Wattle	9,928	0.44
Marsh	3,441	0.15
Unproductive	11,955	0.53
Grazing	1,740,427 (±56,912)	77.59 (±2.54)
Total	2,243,214	100%

* Standard error in brackets

The areas under cultivation and under wattle have been measured with a high degree of accuracy (far greater in fact than for any agricultural census of the European-owned lands); and for all practical purposes the balance of the area can be regarded as being available for grazing.

1.4 Analysis of the Land Use Patterns (Table 2 (i), (ii) and (iii)):

1.4.1 Cultivated Land:

The Middleveld is quite clearly the most important region from the point of view of cultivation and consequently agricultural production. While comprising only 32% of the total survey area in Swaziland, it accounts for 53% of all the cultivated land or an estimated 105,156 acres out of a total estimate of 198,142 acres under cultivation (Table 2(ii)). The corresponding figures for the other regions are: Highveld 25% of the area, 25% of the cultivated land; Lowveld 37% of the area, 18% of the cultivated land and the Lebombo 7% and 4% respectively (Table 3). From this table it can be seen that the degree of cultivation in the Highveld, and to a lesser extent in the Lebombo, is approximately proportional to its share of the total area whereas in the Lowveld the area cultivated bears little relationship to the overall size of the region. The importance of the Middleveld is further revealed when it is appreciated that 14.6% of the region itself is under cultivation compared with 9.0% in the Highveld, 4.2% in the Lowveld and 5.9% in the Lebombo (Table 2 (i)). The latter two regions fall well below 8.8% which is the figure for the survey as a whole (Table 2 (iii)).

The contrasts in the amount and the percentage of land under cultivation in each of the regions are due partly to environmental conditions and partly to human and historical factors which, in turn, have been largely influenced by the physical environment. For purposes of cultivation it has already been noted that the most favourable region is the Middleveld and the least favourable the Lowveld, the Highveld and Lebombo occupying intermediate positions between these two extremes.[1] Until recently malaria was endemic in the Lowveld and the valleys of the Lebombo and this fact, together with the natural inclination on the part of the Swazi to settle in the Middleveld, which even in the early years was considered the most suitable region for their pastoral pursuits, has had a profound influence on the pattern of population distribution in the Territory. The partition of Swaziland in 1907 was also significant for its influence on the settlement pattern. At the time of partition 48.6% of the Middleveld was allocated to the Swazi people, 35.9% of the Lowveld, 33.9% of the Highveld and 24.2% of the Lebombo. Since 1907 the position has been altered by the addition of Native Land Settlement and Lifa areas to the Swazi communal-held land and the respective figures at the present time are 64.4%, 58.9% 42.2 and 47.7%. The distribution of Swazi-held land has been an important factor in determining the distribution of of population and consequently the pattern of cultivation. The overall relationship between population and cultivation is clearly indicated by Table 3.

1) See next page.

TABLE 3

RELATIONSHIP BETWEEN POPULATION DISTRIBUTION AND THE AREA CULTIVATED IN THE RURAL SURVEY AREA*

Region	% Population	% Total Area	% Area Cultivated
Highveld	30 (±3.5)	24.7	25 (±4.6)
Middleveld	46 (±7.4)	32.1	53 (±9.4)
Lowveld	19 (±4.6)	36.7	18 (±4.6)
Lebombo	5 (±1.7)	6.5	4 (±1.8)

* Standard errors in brackets

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1) See Section 1.2.4.

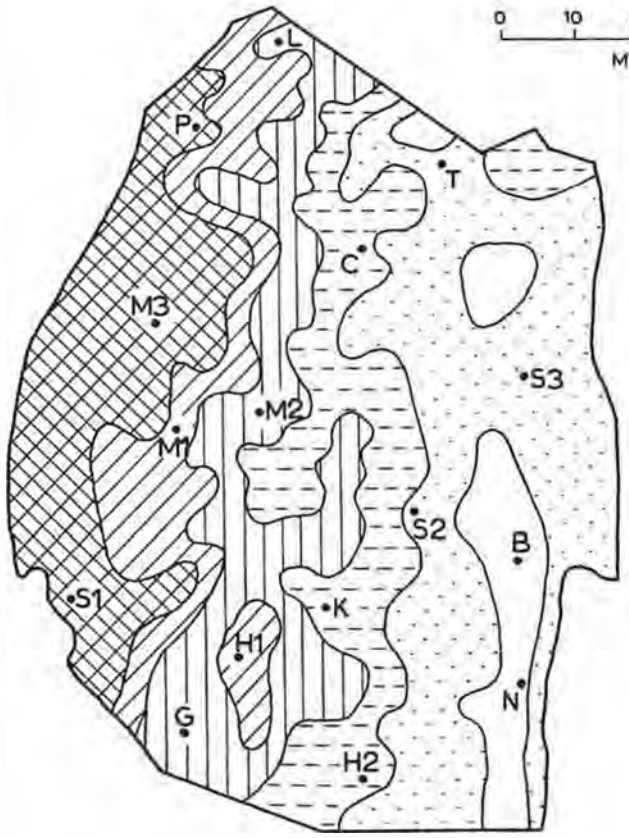
In assessing the contribution of each region to the agricultural production of the Territory, the interaction of the physical environment with human and historical factors cannot be overlooked. The Area under cultivation is closely related to the pattern of population distribution, which in turn has been influenced by the environment, the prevalence of disease and the historical development of the Territory. Further modifications of the pattern of cultivation are attributable to the direct role of the physical environment.

1.4.2 Fallow Land:

The most noteworthy feature about the distribution of fallow land is that, with the exception of the Lebombo, the regions have more land lying fallow than under cultivation. The figure for the Middleveld is particularly high, just under one-fifth of the region being classified as fallow compared with approximately one-tenth of the Highveld and Lowveld (Table 2(i)). These statistics are undoubtedly a reflection of the degree of cultivation in each of the strata and the factors which influenced the distribution of cultivated land are therefore also applicable to fallow land. The abnormally high ratio between cultivated and fallow land in the Lowveld, where the area under fallow is more than twice the cultivated area, is accounted for by the environmental conditions - the marginal nature of the rainfall in particular and the fact that there are no limitations due to slope in this region.

The fallow may represent land that has been taken out of cultivation as part of the soil conservation programme of the Government

SWAZILAND - SOIL REACTION.



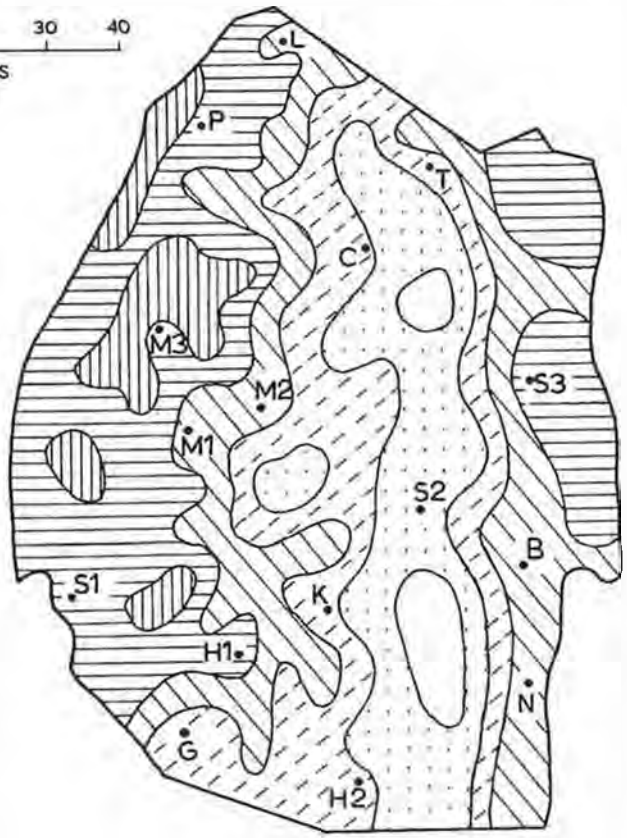
SOIL REACTION - pH VALUES IN TOP 9 INCHES OF SOIL.

4.2-5.0	5.4-5.8	6.2-7.0
5.0-5.4	5.8-6.2	7.0-8.0

RANGE ENCOUNTERED: pH 3.8 to pH 9.0

AFTER G. MURDOCH

SWAZILAND - ORGANIC MATTER.



PERCENTAGE ORGANIC MATTER (HUMUS) IN TOP 9 INCHES OF SOIL.

0.8-1.5	2.0-2.5	3.0-4.0
1.5-2.0	2.5-3.0	4.0-6.0

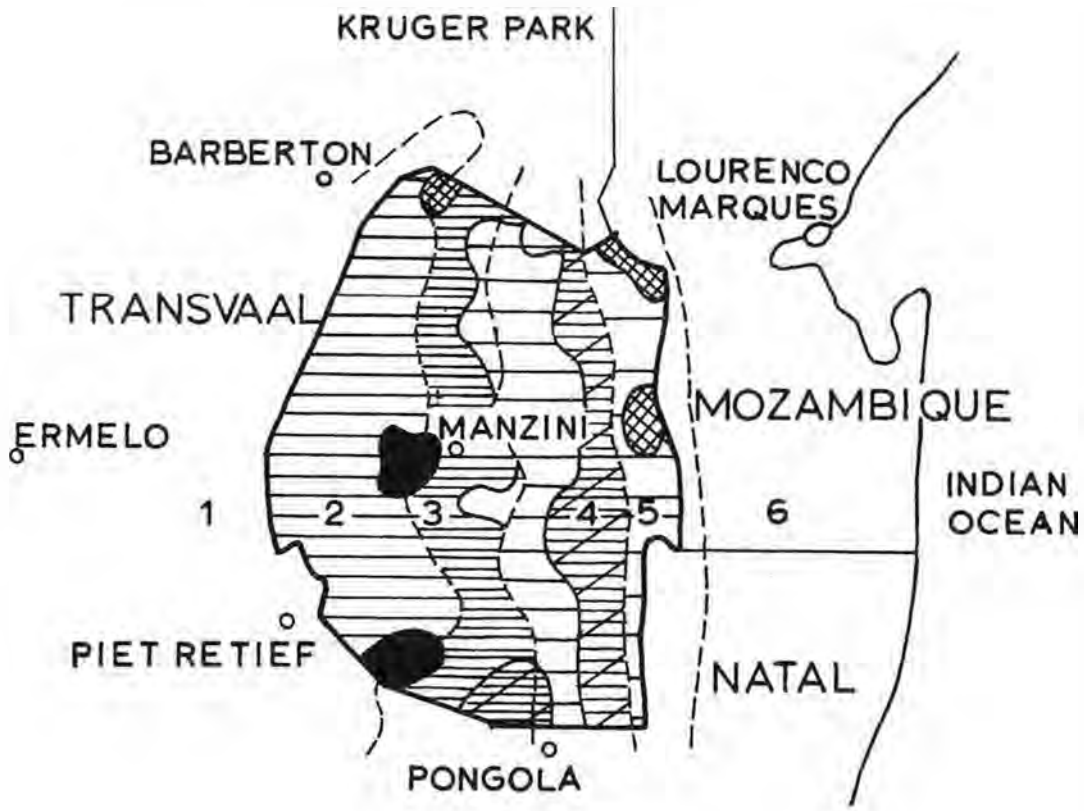
RANGE ENCOUNTERED: 0.2 to 7.0

AFTER G. MURDOCH

SWAZILAND

TENTATIVE SOIL MAP.

1 : 2,5000,000



1. 2. HIGHVELD PLATEAUX & HIGHVELD BERG.
3. MIDDLEVELD.
4. LOWVELD, WESTERN & EASTERN
5. LEBOMBO ESCARPMENT.
6. TONGALAND COASTAL PLAIN.

SUITABILITY OF SOIL FOR AGRICULTURAL PURPOSES INCREASES AS THE DENSITY OF SHADING.

AFTER G. MURDOCH.

but the evidence from the aerial photographs indicates that the total area affected in this way is not very great. More probably the fallow land is indicative of a primitive system of rotation and a legacy of the past when the total Swazi population was smaller, enabling shifting cultivation to be more widely practiced than it is at present. It is also possible that the high percentage of fallow is due to the inability of the people to cultivate more land; or their reluctance to cultivate more than they believe is necessary for subsistence purposes; or indeed, to lay a claim to as large an area as possible. These considerations however, would have to be studied in detail before their influence could be accurately assessed[1].

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1) Factors which need to be more precisely determined include the extent to which land lying fallow is used in the cycle of field rotation and the length of the period of fallow. Information concerning the amount of fallow land that is necessary for agricultural purposes under the varying environmental conditions found in Swaziland, would assist future planning directed at the improvement of crop husbandry.

1.4.3. Potential Expansion of Cultivated Land:

From the point of view of increased production the fallow land is highly important as it is a measure of the extent to which production could be profitably expanded, especially if scientific methods of farming such as crop rotation, fertilization and soil conservation were adopted.

When the 43 sample squares, for which slope maps are available[1a], were studied, it was found that, with the exception of four Highveld and three Middleveld squares, the total amount of arable land did not exceed the total area number 8° of slope, and in no square was the area under actual cultivation greater than the area under 8°[2]. In other words, if the present ratio between arable land and grazing is kept constant, there is additional land with slopes of under 8° available for the extension of the cultivated area.

Another criterion for the possible extension of the area under cultivation, is the percentage of the arable land actually under crops (Table 8)[3]. Other factors such as water supplies and soil conditions being equal, the area under cultivation could be doubled in the Highveld and middleveld and trebled in the Lowveld by making use of the existing fallow land alone. The Lebombo, with 54.4% of the arable land under cultivation is less favourably placed for expansion in this respect, but even in this region, the scope for extending the crop acreage is considerable.

Without taking the possibly increased pressure of livestock on grazing into consideration, the situation with regard to the future availability of land for agricultural purposes therefore appears to be comparatively favourable. If it is assumed that the population will

1a). See next page.

increase by 2% per annum and that each person annually requires about two bags of maize, then - on the further assumption of an overall yield of only two bags of maize per acre - the area under maize will have to be increased by 4,000-5,000 acres per year in the rural survey area.

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1) See Annexure, Table VII, 1[a].
2) This does not mean that all the cultivated lands were necessarily on slopes of less than 8° but it does show that, with the exceptions noted above, all existing land under cultivation could be accommodated on slopes of less than 8°.
3) See sections 1.6.2 and 1.6.3

With an estimated area of 279,000 acres presently lying fallow it should then be possible to provide the additional land needed for at least the next fifty years, without encroaching upon the area under permanent grazing. Even allowing for inaccuracies in the above assumptions it is clear that a shortage of land will provide no major obstacle to expanding the area under cultivation this century.

The adoption of sound methods and techniques of farming, however,is likely to become an even greater priority with the passage of time. When better farming methods do result in greater yields per acre, the day when all the arable land would fall under the plough will be even further postponed.

1.4.4 Wattle:

Wattle covers an estimated 9,928 acres of the rural survey area. Found in scattered clusters rather than in plantations it is not of great importance in the present pattern of land use, even in the Highveld where over 80% of production occurs. The most suitable regions for the growth of wattle are the upper Middleveld and the Highveld. Apart from supplying firewood and building material the trees are of little commercial value in the rural economy, even though small quantities of bark reach the market and some Swazi derive a remunerative income from this source.

1.4.5. Marsh and Unproductive Land:

The estimated acreages under these categories of land are likely to be inaccurate as the small acreages encountered in the random sample squares mean that a high margin of error for the regional totals is possible. It is to be expected that the

2) See next page.
3) See next page.

highest proportion of unproductive land would be found in the Highveld with its mountainous terrain, numerous streams and steeper slopes, but even in this region unproductive land accounts for only 1.6% of the total area. Generally speaking there is too little marsh and unproductive land (i.e., land incapable of being used for productive purposes) to present a major problem to crop or livestock farming in Swaziland, and where it appears its effect on land use is of local instead of regional or national significance.

1.4.6 Permanent Grazing:

If a single dominant criterion were to be adopted for land use classification, the whole of the rural survey area, and in fact the whole of Swaziland, might well be classified as a pastoral region. Over 75% of the rural survey area consists of grazing, and only the Middleveld with 66.2% under grazing falls below this figure. The percentage for the Lowveld and Lebombo is as high as 85.1 and 89.1 respectively. Out of a total of nearly $1\frac{3}{4}$ million acres available for grazing, two-fifths are to be found in the Lowveld, approximately one-quarter in both the Highveld and Middleveld and the balance in the Lebombo.

Within each region the grazing area is limited mainly by the extent of the cultivated land. The Lowveld with its drier conditions and sweeter grasses, is the most suitable region for pastoral farming, especially now that the tsetse fly has been eradicated. The Highveld and the Lebombo with their dissected terrain and relatively poor soils are likewise better suited to pastoral activities rather than to agriculture. Also the Middleveld is suitable for livestock, but the higher percentage of land under cultivation limits the land available for grazing. Nevertheless, the total estimated acreage available for grazing in the Middleveld is greater than that in the Highveld.

1.4.7. Summary:

The patterns of land utilization in Swaziland has evolved in response to the needs of the population within a certain geographical environment. The Swazi by tradition are a pastoral people but the different patterns of land use have been determined not only by this tradition and such factors as population distribution, the need for basic food crops and the early development of the practice of shifting cultivation, but also by the contrasting conditions imposed by the physical environment in each of the four physiographic regions of the Territory.

2. CROP HUSBANDRY:

2.1 Introduction:

Maize is the most important food crop grown by the Swazi. As it is the only crop grown on an extensive scale it must, therefore, be taken as the main index of self-sufficiency in food production. A variety of other crops such as sorghum, beans and pumpkins is grown but their significance is in supplementing the staple diet of maize and maize products. Partly because of their relative insignificance and partly because it was impossible to obtain reliable statistics of sales and consumption of these secondary crops, the random sample survey concentrated on seeking reliable information about maize production. In this respect we have concentrated on the problem of the sufficiency of this staple crop, rather than on the question of yields. Due to the particular approach of our survey we have been able to do this on the basis of concrete information from individual homesteads relating to shortages and surpluses. This information, irrespective of any estimates of yields, reveals the position with regard to the crucial question of the sufficiency of maize production in the Swazi areas, which will be the subject of the discussion in section 2.3 below.

Because of the intrinsic interest in yields, however, some attention has been given to this question, and in the following section we will attempt to drive at an estimate of the yield of maize per acre for the four physiographic regions.

2.2 Acreage and Yield:

The nature of the main survey precluded the area under individual crops and the crop yields being accurately determined. However, by using the information derived from the questionnaire, the land utilization statistics for the rural survey area and the pilot survey in which all acreages were measured by pacing, an estimate of the area under the main crop categories and maize yields was made [1]. The yield figures should, however, be treated with caution.

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1) See next page.

TABLE 4

% AREA UNDER VARIOUS CROPS (BASED ON THE PILOT SURVEY 1959)

Region	Maize	Sorghum	Other Crops
Highveld	85	5	10
Middleveld	80	10	10
Lowveld	40	55	5
Lebombo	70	25	5

TABLE 5

ESTIMATED YIELDS (1959/60)

Region	Bags per Acre
Highveld	2.4
Middleveld	2.2
Lowveld	4.9[1)]
Lebombo	4.3

From the main random sample survey accurate information was obtained about population numbers and the net surplus or shortage of maize. Assuming an average consumption per person of two bags of maize per annum[2)], the maize requirements of the population in each region was estimated. Allowing for reported net surpluses or shortages, an estimate of total maize production in each of the physiographic regions 3) was then made. For the maize yield per acre the percentage

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Footnote 1) from the previous page -

Although the "Swaziland Agricultural Survey" (May 1953) by Professor Batson contains the most recent published material on this subject, it cannot be used for comparative purposes in the Random Sample Survey because the Lebombo was not recognized as a separate physiographic region and the survey was heavily weighted in favour of the Lowveld.

1) This figure is likely to fluctuate considerably because of the marginal climatic environment of the Lowveld for agricultural purposes.

2) See next page.

3) See next page.

2) Based on surveys carried out by Government officials and the quantity of maize given to labourers by large employers of labour.
3) e.g., a population of 1,000 people would require 2,000 bags of maize per annum. If the recorded net shortage was 500 bags, total production is assumed to have been 1,500 bags. If there was a net surplus of 500 bags, total production is assumed to be 2,500 bags.

of cultivated land under maize (derived from the pilot survey, Table 4), the total area under cultivation (derived from the land use survey) and the estimated total production of maize, was taken into consideration (Table 5). Needless to say that, owing to the fluctuations in yields from year to year, it is necessary to have a continuous record of yields over a number of years, before this particular aspect of production can be analyzed with confidence. In this respect it should be noted that the 1959/60 maize harvest was slightly below average[1].

2.3 Sufficiency of Staple Crop Production:

2.3.1 Introduction:

This section aims at answering two questions: "Are the Swazi producing sufficient food for their own requirements?" and, "If not, what is necessary to remedy the situation?" It should be repeated that, in the assessment of the shortage or surplus of maize production, no estimate of actual yields was required. The statistics relating to the net surplus and the net shortage of maize were derived from the difference between the quantity sold or stored, on the one hand, and the quantity bought on the other hand. No allowance was made for rations supplied to employees by the Government, large companies, farmers and householders.

The recorded figures for shortages may be an understatement: they represent the number of bags of maize actually bought, which is likely to constitute the bare minimum required to feed the family in times of shortage, rather than full or normal food intake. The fact that many people are away from the Swazi area at any one time, working, and drawing rations, further complicates the issue.

Examined from the point of view of the number of homestead units having to purchase maize, an unsatisfactory state of affairs is revealed (Table 6). In the whole of the survey area 55% of the homesteads had to buy maize and even in the middleveld which is the most suitable region for cultivation, 45.9% of the homesteads had to purchase maize. The Lebombo with 35.6% of the homesteads requiring additional maize

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1) Barclays Trade Review, July 1960; see also page 313.

TABLE 6 (i)

MAIZE PRODUCTION : SURVEY AREA, 1959/60 SEASON (ESTIMATED SURPLUS AND SHORTAGE)

	Highveld		Middleveld		Lowveld		Lebombo		Total Survey Area	
	%	Est.No	%	Est.No	%	Est.No	%	Est.No	%	Est.No.
Homesteads buying maize	72.7	5,257	45.9	4,987	54.5	2,629	35.6	494	55.0	13,367
Homesteads producing just sufficient maize	13.5	980	19.3	2,099	29.4	1,416	21.8	303	19.7	4,798
Homesteads storing but not selling maize	6.9	499	20.7	2,247	11.9	573	26.9	374	15.2	2,693
Homesteads selling maize	6.9	499	14.1	1,531	4.2	202	15.7	219	10.1	2,451
Total	100.0	7,235	100.0	10,864	100.0	4,820	100.0	1,390	100.0	24,309

TABLE 6(ii)

	Highveld		Middleveld		Lowveld		Lebombo		Total Survey Area	
	%	Est.No.	%	Est.No.	%	Est. No	%	Est.No	%	Est. No.
% homesteads expecting to buy maize in 1960/ 1961	88.8	6,425	65.1	7,072	82.5	3,977	63.3	880	75.5	18,354

supplies came closest in this respect to self sufficiency on a regional basis. The unfavourable position of the Highveld is most evident. It was the region with highest percentage of purchasing homesteads and the lowest percentage of homesteads storing but not selling. The Highveld and Lowveld both had a considerably lower percentage of their homesteads selling maize than either the Middleveld or the Lebombo. The comparatively high percentage of homesteads producing just sufficient for their own requirements is a clear indication that in bad years the number of buying homesteads could be considerably increased. This is further illustrated by Table 6(ii) which shows that 75.5% of homesteads expected a maize shortage in 1960/61 compared with 55% in 1959/60. The favourable position of the Middleveld and Lebombo from the point of view of storing maize is mainly due to their being surplus regions.

It is true that some homesteads, having sold a portion of their harvest soon after reaping, may have been forced to buy extra maize supplies at a later date. However, the fact that only 10% of the total homesteads sold maize at all suggests that the sale and repurchase of maize by the same homesteads would make little difference to the trends noted above.

Table 7 shows the percentage and estimated totals of homesteads buying, selling and storing maize for the whole of the rural survey area. A number of significant points arise when this table is studied, e.g., approximately 77% of all the maize buying homesteads were to be found in the Highveld and the Middleveld and, in spite of the latter region being a surplus region of maize production, it contained 37% of the homesteads in the rural survey area which needed to purchase maize. In order to determine to what extent production must be increased to reach self-sufficiency and the most favourable areas for extending and intensifying production, it is necessary to see the relationship between the total population, the area under cultivation and the production of maize in each of the physiographic regions. The following discussion is based on Tables 6, 7 and 8.

2.3.2 The Highveld:

There was an estimated overall deficit of approximately 15,000 bags of maize in the Highveld. It was the region with the highest number of buying homesteads in the survey area (5,257), and on a national basis accounted for 39.3% of all the homesteads requiring additional supplies of maize. In absolute terms the region was responsible for 44.7% of all the purchased maize or 27,960 bags out of an estimated total for the rural survey area of 62,592 bags (Tables 7(i) and (ii)). The overall deficit in the Highveld was greater than that in the Middleveld yet the former is smaller in area, has a lower population and a higher estimated yield per acre (2.4 bags per acre of 2.2). This unpromising state of affairs manifests itself in this region having the highest average maize shortage in bags per homestead (2.1) and in pounds per head of the population (53.5) (Table 7(iii)).

TABLE 8

LAND USE AND POPULATION DENSITY : RURAL SURVEY AREA RATIO
POPULATION/ARABLE LAND : RURAL SURVEY AREA

	Highveld	Middleveld	Lowveld	Lebombo	Survey Area
Persons per square mile	66	78	29	44	55
Persons per swuare mile of cultivated land	741	531	678	742	619
Persons per square mile of arable land	360	233	196	404	257
Acreage cultivated land per person	.86	1.21	.94	.86	1.03
Acreage arable land per person	1.78	2.74	3.26	1.58	2.49
Acreage cultivated land per homestead	6.69	9.40	7.15	5.97	7.95
Acreage arable land per homestead	13.78	21.39	24.70	10.96	19.16
% arable land under cultivation	48.5	43.9	28.9	54.4	41.5

TABLE 7 (i)
MAIZE PRODUCTION : SURVEY AREA, 1959/60 SEASON (REGIONAL COMPARISONS OF SURPLUS & SHORTAGE

	Highveld		Middleveld		Lowveld		Lebombo		Rural Survey Area & Averages	
	%	Est.No.	%	Est.No.	%	Est.No	%	Est.No.	%	Est. No.
Homesteads buying maize	39.3	5,257	37.3	4,987	19.7	2,629	3.7	494	100.0	13,367
Homesteads producing just sufficient maize	20.4	980	43.7	2,099	29.5	1,416	6.3	303	100.0	4,798
Homesteads storing but not selling maize	13.5	499	60.8	2,247	15.5	573	10.1	374	100.0	3,693
Homesteads selling maize	20.4	499	62.5	1,531	8.2	202	8.9	219	100.0	2,451
Total	29.8	7,235	44.7	10,864	19.8	4,820	5.7	1,390	100.0	24,309

TABLE 7(ii)

Bags bought	44.7	27,960	34.6	21,628	17.7	11,057	3.1	1,947	100.0	62,592
Bags sold	23.4	4,223	54.6	9,851	4.1	742	17.9	3,224	100.0	18,040
Bags stored	21.6	8,500	55.0	21,604	10.7	4,214	12.7	4,981	100.0	39,299
Net surplus or deficit(bags)	- 15,237		+ 9,827		- 6,101		+ 6,258		- 5,253	

TABLE 7 (iii)

Average surplus/shortage per homestead	- 2.1 bags	+ 0.9 bags	- 1.3 bags	+ 4.5 bags	- 0.2 bags
Average surplus/shortage per person	-53.5 lbs	+22.8 lbs	-33.2 lbs	+127.8 lbs	- 5.5 lbs
Average quantity bought by buying homestead	5.3 bags	4.3 bags	4.2 bags	3.9 bags	4.7 bags
Average quantity bought per person in maize-buying homestead	140 lbs	119 lbs	114 lbs	125 lbs	127 lbs
Average qty.sold by selling homesteads	8.5 bags	6.4 bags	3.7 bags	14.7 bags	7.4 bags
Average quantity sold per person in maize selling homestead	181 lbs	152 lbs	73 lbs	378 lbs	169 lbs

More specifically the requirements of the buying homesteads were also greater than in any other region (5.3 bags).

6.9% of the homesteads in the Highveld sold maize (Table 6) but this represented 20.4% of all the maize selling homesteads in the rural survey area (Table 7 (i)). In absolute numbers only the Middleveld exceeded the total for the Highveld (499 of 1531 in Middleveld). In spite of the Highveld being deficient in maize production, the quantity of maize sold was greater than that in the Lowveld and Lebombo combined. It is also important to note that the average quantity sold by the selling homesteads was greater than that in the Middleveld and the Lowveld, but nevertheless, considerably less than the average for the Lebombo (Table 7(iii)). The average figure of 8.5 bags per maize selling homestead indicates that there was quite a large surplus amongst a small group of producers. Storage of maize is apparently not characteristic of the Highveld; and the Lowveld, with its smaller total population, had more Homesteads storing maize than the Highveld (Table 7(i)).

Except for the Lebombo, the Highveld had the lowest overall percentage of homesteads producing just sufficient maize for their own requirements (Table 7(i)). These are the marginal producers and in bad years could swell the number of deficit homesteads and in good years increase the number of surplus homesteads which are few in number. The Highveld stands out as the region with the highest number of deficit producers and the largest maize shortage.

The pressure of population on resources under existing conditions is well illustrated in Table 8. The population density was 66 persons per square mile which was above the average of 55 for the rural survey area. Examined more closely, and seen in terms of the number of persons per square mile of cultivated and arable land, the extent of overcrowding becomes clearer. The respective figures of 741 and 360 persons per square mile were exceeded only by the Lebombo. The extent of overcrowding is further revealed in the low per person and per homestead acreage of cultivated and arable land. Finally, the comparatively high percentage of arable land under the plough (48.5%) is yet another indication of population pressure. The pressure of population on the land resources presents a comparatively more serious problem in the Highveld than in the Middleveld and Lowveld.

The first step should be an attempt to eliminate the large regional shortage of maize. In practical terms this can be done either by increasing the yield per acre or cultivating a larger area. Considering the estimated net shortage of 15,237 bags of maize and 42,226 acres of maize (85% of the cultivated land - Table 4), the average yield per acre would have to be increased by approximately two-fifths of a bag if self-sufficiency were to be achieved under the conditions prevailing in 1959/60. It is true that this is an average figure for the region and that the increase in yield would certainly have to be greater than two-fifths of a bag in certain localities, but the fact that only a relatively small in-

crease in the yield is required, is highly significant. In spite of a large maize shortage, the Highveld could become self-sufficient in maize production. If yields could be further increased the region could become a surplus producer.

The alternative method of making good the maize shortage is to cultivate more land. In view of the estimated net shortage of 15,237 bags of maize, a further 7,620 acres would be required if the average yield were 2 bags per acre; a further 5,080 acres if the average yield were 3 bags per acre, and a further 3,810 acres if the average yield were 4 bags per acre. These acreages represent 14.5% 9.6% and 7.2% respectively, of the existing area in the Highveld lying fallow.

With very little extra effort on the part of the Swazi the Highveld could become self-sufficient in maize. However, the existing pressure of population on resources will make it relatively more difficult to maintain an increase in agricultural output. Present methods of cultivation set a ceiling to yield improvements and when this is reached more land will have to be brought under cultivation in order to provide food for the increase in population.

2.3.3 The Middleveld:

The estimated net surplus of 9,827 bags of maize tends to mask the fact that the Middleveld is really a marginal region as far as maize production is concerned. Maize purchases amounted to an estimated 21,628 bags or 34.6% of the aggregate for the rural survey area (Table 7 (ii)), a total not very much lower than that for the Highveld. Allowance has to be made for the fact that the bulk of the population is to be found in the Middleveld but the average surplus of 0.9 bags per homestead or 22.8 lbs per person (Table 7 (iii)) indicates that the total surplus is relatively small. Even slightly adverse conditions could turn the present surplus into a deficit. The marginal position of the Middleveld is further accentuated when it is appreciated that 45.9% of the homesteads had to buy maize (Table 6), that 37.3% of all the maize-buying homesteads in the rural survey area were in this region and that the average quantity of maize bought by the purchasing homesteads was 4.3 bags or 119 lbs per person (Table 7 (iii)). Approximately one-fifth of all the homesteads were marginal producers and it is perhaps not without significance that after a poor harvest in the 1960/61 season the number of homesteads which anticipated having to buy maize increased from 45.9% in 1959/60 to 65.1% in 1960/61. At the time of the survey the Middleveld was a surplus producer of maize and consequently the average yield per acre was greater than the minimum yield for self-sufficiency. However (under the conditions prevailing in the 1959/60 season), the average yield has only to drop by between one-tenth and one fifth of a bag per acre for the surplus to be

eliminated. The overall recorded maize surplus in the Middleveld, therefore, tends to obscure the delicate balance which exists between sufficiency and insufficiency in food production.

Although 62.5% of all homesteads selling maize in the survey area, were to be found in the Middleveld (Table 7 (i)), this figure represented only 14.1% of the homesteads in this region (Table 6). Quantitatively, the Middleveld sold more bags of maize than the other three regions combined (Table 7(ii)). The average amount sold by the maize-selling homesteads (6.4 bags per homestead or 152 lbs per person (Table 7(iii), was considerably less than that for the Highveld and Lebombo but is indicative of the existing surplus being more evenly distributed over a larger number of homesteads. Over a third of the homesteads in the Middleveld fall into the category of surplus maize producers, that is, those storing or selling maize. The Lebombo is the only region with a higher proportion of surplus producers (Table6). In spite of the marginal nature of maize production in the Middleveld, this region fulfils an important position in the general rural economy of Swaziland, as it accounts for more than half of all the maize sold and stored (Table 7(ii)).

Although the Middleveld has the highest number of persons per square mile (78) and a large proportion of marginal and deficit producing homesteads, there is less population pressure on resources under existing conditions than in any other region. Compared with the other regions there is more cultivated land per person (1.21 acres) and per homestead (9.40 acres), a factor which may account for the lower yields. The ratio of persons to cultivated land is the lowest in the Territory (531), and only in the Lowveld are there fewer people per square mile of arable land (Table 8). Even though 43.9% of the arable land is under cultivation, the Middleveld, with 21.39 acres of arable land and 9.40 acres of cultivated land available per homestead, is advantageously placed to capitalize on its favourable soil and climatic conditions to increase its total production of maize. That this increase is necessary is evident from the large number of homesteads having to buy maize and the small surplus per person and per homestead.

2.3.4 The Lowveld:

There was an overall estimated deficit of 6,100 bags of maize in the lowveld. As the region is sparsely settled it was responsible for only 17.7%, or approximately 11,057 bags, of all the maize purchased in the survey area (Table 7(ii); and while 54.5% of all the homesteads in the Lowveld recorded a maize shortage (Table 6) they formed only 19.7% of the total homesteads buying additional maize supplies (Table 7 (i)). The average shortage of 33.2 lbs per person or 1.3 bags per homestead (Table 7(iii)) was not as great as in the Highveld and the average quantity of maize bought by the maize-buying homesteads was slightly less than that in the Middleveld (Table 7(iii)). It is interesting to note that amongst the deficit producers the shortage per person was the lowest in the survey area (Table 7(iii)). The marginal character of farming in the Lowveld is clearly illustrated by the fact that nearly one-third of the homesteads

within the region produce just sufficient maize for their own requirements (Table 6). This represented the highest proportion for any region, and in absolute numbers more homesteads fell into this category than was the case in the Highveld which was the other deficit region. The Highveld had 29.8% of all the homesteads in the survey area compared with only 19.8% in the Lowveld (Table 7(i)).

The sale of maize in the Lowveld is relatively unimportant. The number of maize-selling homesteads is small both within the region and in relation to the whole survey area; and so is the quantity of maize sold, in aggregate per homestead or per person. The explanation for this is to be found in a combination of factors: the remoteness of many regions and the lack of nearby towns, the low population density and the unfavourable climatic regime. Under these conditions there is very little incentive to produce a marketable surplus.

The proportion of homesteads storing but not selling maize was comparatively higher (15.5%) in the Lowveld, than in the Highveld (13.5%) or the Lebombo (10.1%) (Table 7(i)). However, the total number involved was very small. More significant is the fact that only 16.1% of the homesteads, or one out of every six, in the Lowveld produced a maize surplus (Table 6).

The Lowveld with 29 persons per square mile is the most sparsely settled region and the population density is a little over half the average density of 55 for the rural survey area. With only 4.2% of the land under cultivation the population per square mile of cultivated land (678) (Table 8) is actually higher than that in the Middleveld but still below the corresponding figures for the Highveld and Lebombo. On the other hand, the high proportion of fallow land in the Lowveld is responsible for the very low number of persons per square mile of arable land (196) and the high acreage of arable land available per homestead (24.70). In spite of the low degree of cultivation there is nevertheless more cultivated land per homestead (7.15 acres) than in the Highveld (6.69 acres) and in the Lebombo (5.97 acres). With only 28.9% of the arable land under crops, there is ample scope for cultivating additional land if food production is to be increased. Since the net shortage is estimated to be 6,100 bags of maize, a further 3,050 acres would be required if the average yield were 2 bags per acre; a further 2,035 acres would be required if the average yield were 3 bags per acre, and a further 1.525 acres if the average yield were 4 bags per acre. These acreages represent 3.6%, 2.4% and 1.8%, respectively, of the existing area in the Lowveld lying fallow. The alternative method of eliminating the maize shortage is to increase the yield per acre. With an estimated 13,873 acres in the Lowveld under maize (40% of the cultivated land - Table 4), the average yield per acre would have to be increased by approximately two-fifth of

a bag if self-sufficiency were to be achieved under the conditions prevailing in 1959/60. Increased production brought about by cultivating additional land would interfere but little with the excellent grazing areas. However, it should not be forgotten that the low and variable rainfall is a very real hazard to crop production, and this may well discourage cultivation and efforts to produce a worthwhile crop.

2.3.5 The Lebombo:

The Lebombo is the one region in Swaziland which has many anomalies. In terms of area and population it is the smallest region yet it produced an estimated maize surplus of 6,258 bags compared with 9,827 bags in the Middleveld, which is nearly five times larger. The Lebombo is comparatively more self-sufficient than the other regions, in spite of the limitations to cultivation imposed by steep slopes and relatively infertile soils over much of the plateau.

In spite of this overall favourable position 35.6% of the homesteads in the Lebombo purchased maize. This figure compares favourably with the corresponding figure of 72.7% in the Highveld and 45.9% in the Middleveld which was the only other surplus producing region (Table 6). In relation to the whole survey area the Lebombo accounted for only 3.7% of all the homesteads that purchased maize (Table 7 (i)) and 3.1% of all the maize bought, i.e. less than 2,000 bags (Table 7 (ii)). The average number of 3.9 bags required by the maize-buying homesteads was the lowest in the Territory (Table 7 (iii)). However, the smaller size of the average homestead unit in the Lebombo, raised the demand per person to 125 lbs, compared with 114 lbs and 119 lbs in the Lowveld and Middleveld respectively. The average surplus of 4.5 bags per homestead or 127.8 lbs per person was significantly higher than in any other region (Table 7(iii)). Even when allowance was made for a few particularly large maize producers who tended to inflate these averages (e.g. one homestead recorded a net surplus of 115 bags of maize), the surplus of 60 lbs per person was considerably higher than the average surplus of 22.8 lbs per person in the Middleveld.

Although 15.7% of all the homesteads in the Lebombo sold maize, the estimated number of 219 was not large in comparison with the estimated number of 1,531 in the Middleveld (Table 6). More important is the fact that the Lebombo accounted for 17.9% of all the maize sold, yet represented only 5.7% of the homesteads in the rural survey area (Table 7(i)). The average quantity sold per selling homestead was approximately double the average for the entire rural survey area (Table 7(iii)), mainly due to the few large producers previously mentioned (e.g., one homestead of 14 persons sold 65 bags of maize). In spite of the fact that the Lebombo produced a large maize surplus and has the smallest proportion of deficit, and the highest proportion of surplus homesteads, over one-fifth of all the homesteads can be classified as marginal producers (Table 6). This relatively high percentage indicates a measure of unstable farming in the region as a whole. It is relevant at this stage to note that the estimated number of homesteads in this region expecting to buy maize in 1960/61, rose by 27.7% from an estimated total of 494 to 880 (Table 6(ii)). Nevertheless, the Lebombo, by virtue of its comparatively high maize yields, is in a better position to

cope with the bad years than the rest of the country. Yields would have to drop by approximately 25% (or one bag per acre), for the overall surplus of the 1959/60 season to be elimited. This state of affairs compares favourably with the Highveld and Lowveld(where likewise a maize deficit was recorded) and the Middleveld where a decrease of only one-tenth to one-fifth of a bag per acre would have wiped out the recorded surplus.

The fact that the Lebombo produced a surplus of maize and that the region has a low population density per square mile (44), tends to obscure a number of less favourable conditions which prevail. In addition to the relatively high percentage of marginal homesteads noted above, the Lebombo has more people per square mile of cultivated land than the other strata. The average figure of 742 persons per square mile of cultivated land, high as it undoubtedly is, does not paint the full picture of the extent of population pressure on existing resources. In the Lebombo, more so than elsewhere, there is a marked contrast between the sparsely and the densely settled areas. For example, parts of the Native Land Settlement areas in the south are virtually unpopulated while very high densities are recorded in the Palata and the Nomahasha regions. Consequently, where the population has concentrated in the favoured areas the ratio between population and cultivated land will be considerably greater than the recorded figure of 742. The whole question of population pressure is further accentuated by the small average area of cultivated land and arable land per person and per homestead, and the relatively high percentage of arable land under cultivation (Table 8).

In spite of its large maize surplus, agriculture in the Lebombo requires attention as it does in the Highveld, Middleveld and Lowveld. In the densely settled regions it will be necessary to ensure that the present favourable condition of the physical environment does not become a wasting asset. The deficit producers also require attention, and there is a need for a detailed investigation of the potential of the sparsely settled districts in terms of both settlement and cultivation.

2.3.6 Summary:

Taking the rural survey area as a whole, the statistics suggest that the Swazi come very close to providing their food requirements. An average shortage of one-fifth of a bag of maize per homestead or

5.5 lbs per person does not give rise to undue pessimism about the future of food production in Swaziland (Table 7(iii)). Furthermore, the average of 1.03 acres cultivated per head of the population (Table 8), though low, should be sufficient for the production of 2 bags of maize, as well as small quantities of kaffir corn and other crops. The average area of arable land available per homestead and the percentage of arable land under actual cultivation are further indications that there is abundant space for extending cultivation, provided always that the present ratio of arable land to permanent grazing is more or less maintained.

Encouraging as these facts may appear, there is also a great deal of evidence which gives cause for anxiety. Although the 1959/60 season was reasonably good for agricultural production, 55% of all the homesteads had to buy maize; the estimated total of maize bought amounted to 62,600 bags and the average quantity bought by the deficit homesteads was 4.7 bags or 127 lbs per person (Table 7(iii)). Years of bad harvest must necessarily increase the above figures, and the position must be aggravated by the annual increase in population, unless the area under cultivation or the yields are increased. The position should be carefully watched in future years.

The average figures for the survey region must be studied in conjunction with those relating to the four individual physiographic regions if their full implications are to be appreciated. The differences in maize production and the differences in the man-land ratio between the regions are highly important. The Highveld and the Lowveld are the two regions with an overall shortage in staple crop production. The large maize surplus in the Middleveld tends to hide the essentially marginal nature of its agricultural production. Even the Lebombo, with the highest average surplus of maize per homestead and per person, is faced with certain problems concerning agricultural production.

Each region has its own particular problems which will have to be solved before self-sufficiency in maize production is realised. There is no reason why maize yields should not increase if better farming methods are more widely practiced. Where yields are already much higher than the average, as in the Lebombo, this task may well be more difficult. The Middleveld with its good physical environment should have the greatest opportunities to bring about a significant increase in the yield per acre. The yield in the Lowveld will depend primarily on rainfall, though better cultivation practices will certainly assist in obtaining better results. In the Highveld only a small increase in the yield per acre is needed to achieve self-sufficiency.

The area of cultivation can be enlarged throughout the survey area. In this respect the Middleveld is again the region with the most encouraging prospects. The Lowveld has the land available, but in view of its suitability as a pastoral district and of the dangers of uncontrolled ploughing under the prevailing environmental conditions, it would be more advisable for crop farming to supplement livestock farming and not compete with it for the existing land. Theoretically it is possible to increase both the area under cultivation and the yield per acre in the Lowveld. Yet in practice crop production is likely to be successful in wet years, but a failure in dry years. Without an assured supply of irrigation water and without sound practices of dry land conservation farming, taking due cognisance of the cyclical nature of the rainfall, self-sufficiency in food production is unlikely to be achieved on a permanent basis. The environment sets quite definite limits to the successful cultivation of the main food crop. Sound agricultural practices have not been evolved for cereal production under such marginal climatic conditions as those experienced in the Lowveld. When allowance is made for the individual needs and characteristics of each of the strata, there is no reason to suggest that the food requirements of the people should not be more than adequately met in the Middleveld, The Lebombo and even the Highveld.

In comparison with the other regions, the opportunities to extend cultivation are less favourable in the Highveld and the Lebombo. Because of the more rugged terrain in these regions, agriculture should be intensified rather than extended. In fact, priority should always be given to yield improvement as the cultivation of additional land will only help solve the food problem if it is accompanied by sound agricultural methods which ensure that soil fertility is maintained and improved.

2.4. Other Factors Influencing Maize Production:

2.4.1 Production and Slope of Land:

The relationship between the maize surplus or deficit and the general situation with regard to slope of land (i.e., over and under 8^{o}) was examined for each square but the results show that none of the correlation figures are significant even at the 10% level, and as some appear positive and some negative, it seems unlikely that there is any casual relationship between these two variables[1].

2.4.2 Production and Size of Homestead Units:

The size of homestead units appears to have a significant influence on maize production. Tables 9-11 and Figures 1 - 4 illustrate this relationship. In order to eliminate minor variations, homesteads have been grouped according to size into four categories.

1) See next page.

Figure 1 which relates production to the various homestead groupings, indicates that, with few exceptions[2], the larger the family the larger the surplus or the smaller the deficit in the surplus and deficit regions respectively (Table 9, Column D). The maximum surplus recorded in the5-8 homestead in the Lebombo is partly due to a few very large maize producers who were found in this group.

Figure 2 relates homestead size and production in terms of the maize shortage in lbs per head in the deficit homesteads only (Table 9, Column F). Once again it is emphasized that the maize shortage is greater in the smaller families. It is also noticeable that there is no great range in the per person shortage for the homestead groupings in the four physiographic regions, e.g., for the homestead size of 1-4, the respective shortage in lbs of maize for the Highveld, Middleveld, Lowveld and Lebombo was 244, 296, 235 and 289. The curves for the Highveld and the Lowveld (Fig. 2) show remarkably similar

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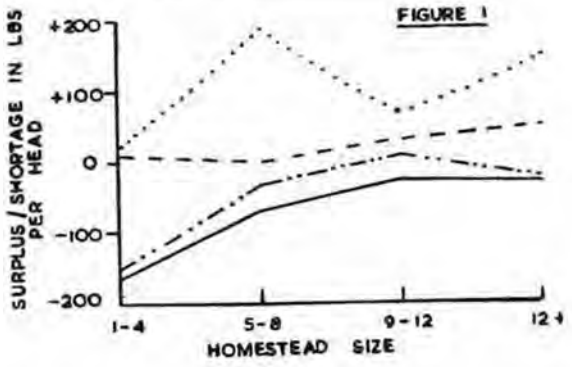
1) The correlation coefficient for the four regions was as follows:-

Highveld	:	0.111 (12 degrees of freedom)
Middleveld	:	-0.387 (10 degrees of freedom)
Lowveld	:	0.169 (8 degrees of freedom)
Lebombo	:	-0.531 (7 degrees of freedom)

2) Homestead size of 9-12 in the Lowveld, the 5-8 in the Lebombo.

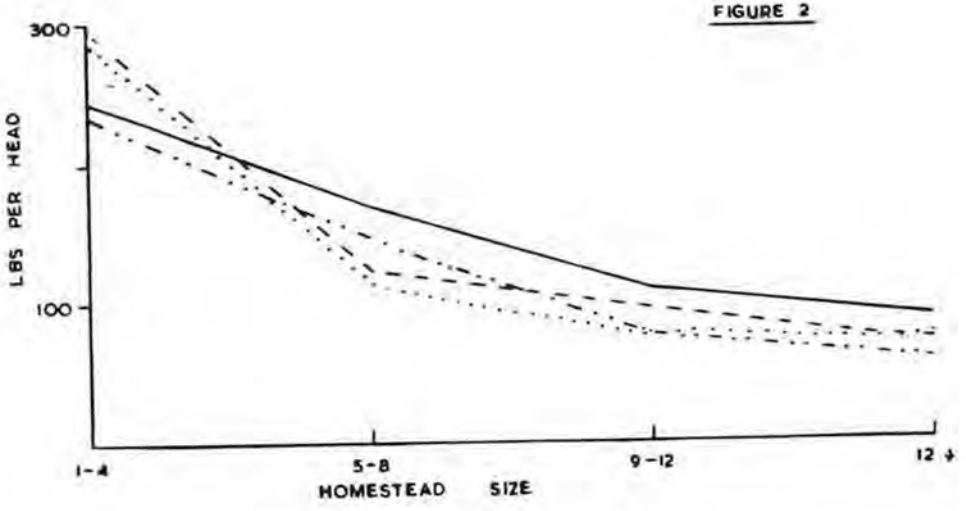
MAIZE SURPLUS / SHORTAGE IN LBS PER HEAD FOR ALL HOMESTEADS

FIGURE 1



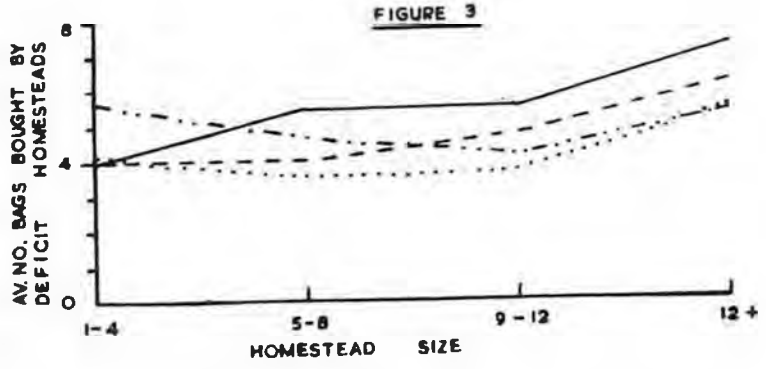
MAIZE SHORTAGE IN LBS PER HEAD FOR DEFICIT HOMESTEADS

FIGURE 2



MAIZE PURCHASES IN DEFICIT HOMESTEADS

FIGURE 3



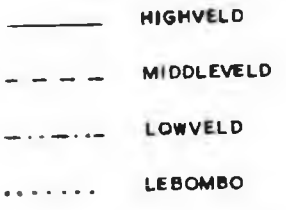


TABLE 9

MAIZE SURPLUS/SHORTAGE PER PERSON ACCORDING TO SIZE OF HOMESTEADS

(RANDOM SAMPLE AREAS)

Region	Homestead Size	A	B	C	D	E	F
Highveld	1 - 4	260	214	-215	-165	261	-244
	5 - 8	1140	827	-383	- 67	697	-169
	9 -12	977	642	-137	- 28	353	-110
	Over 12	822	565	-120	- 29	258	- 91
Middleveld	1 - 4	266	113	+ 14	+ 11	167	-296
	5 - 8	1334	692	- 1	- .1	426	-123
	9 -12	1016	386	+167	+ 33	182	- 94
	Over 12	870	280	+218	+ 50	101	- 72
Lowveld	1 - 9	136	96	-105	-154	113	-235
	5 - 8	325	156	- 51	- 31	112	-144
	9 -12	250	89	+ 14	+ 11	33	- 74
	Over 12	378	235	- 39	- 21	70	- 60
Lebombo	1 - 4	162	76	+ 18	+ 22	110	-289
	5 - 8	589	159	+555	+188	91	-114
	9 -12	395	175	+130	+ 66	64	- 73
	Over 12	242	32	+184	+152	11	- 69

A - Number of persons in all homesteads supplying information
B - Number of persons in deficit homesteads only
C - Net surplus/deficit of maize (bags)
D - Net surplus/deficit in lbs per head in all homesteads supplying information
E - Number of bags bought by deficit homesteads
F - Net surplus/deficit in lbs per head in deficit homesteads only

MAIZE SUFFICIENCY ACCORDING TO GROUPED HOMESTEAD SIZES

FIGURE 4

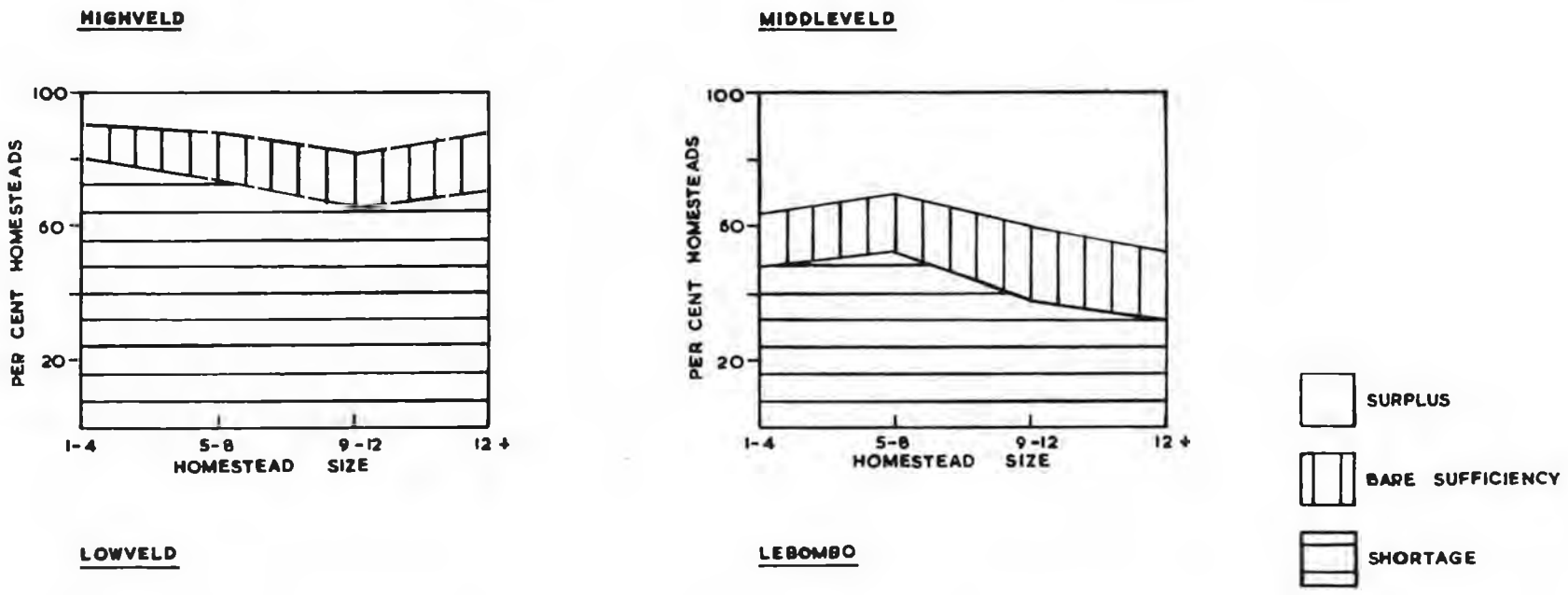


TABLE 10

MAIZE SHORTAGE ACCORDING TO SIZE OF HOMESTEAD

(RANDOM SAMPLE AREAS)

Region	Homestead size (No. of persons)	No. of homesteads supplying information.	No. of deficit Homesteads	No. of bags Maize bought	Average No. of Bags Bought by all homesteads	Average No.of Bags bought by deficit homesteads
Highveld	1 - 4	83	66	261	3.1	4.0
	5 - 8	175	129	697	4.0	5.4
	9 - 12	96	64	353	3.7	5.5
	Over 12	52	36	258	5.0	7.2
Middleveld	1 - 4	88	42	167	1.9	4.0
	5 - 8	203	106	426	2.1	4.0
	9 - 12	100	38	182	1.8	4.8
	Over 12	49	16	101	2.1	6.3
Lowveld	1 - 4	45	32	113	4.1	5.7
	5 - 8	52	24	112	2.2	4.7
	9 - 12	24	8	33	1.4	4.3
	Over 12	22	13	70	3.2	5.4
Lebombo	1 - 4	56	26	110	2.0	4.2
	5 - 8	91	25	91	1.0	3.6
	9 - 12	38	17	64	1.7	3.8
	Over 12	12	2	11	0.9	5.5

FIGURE 5

SUMMARY OF MAIZE PRODUCTION BY HOMESTEADS

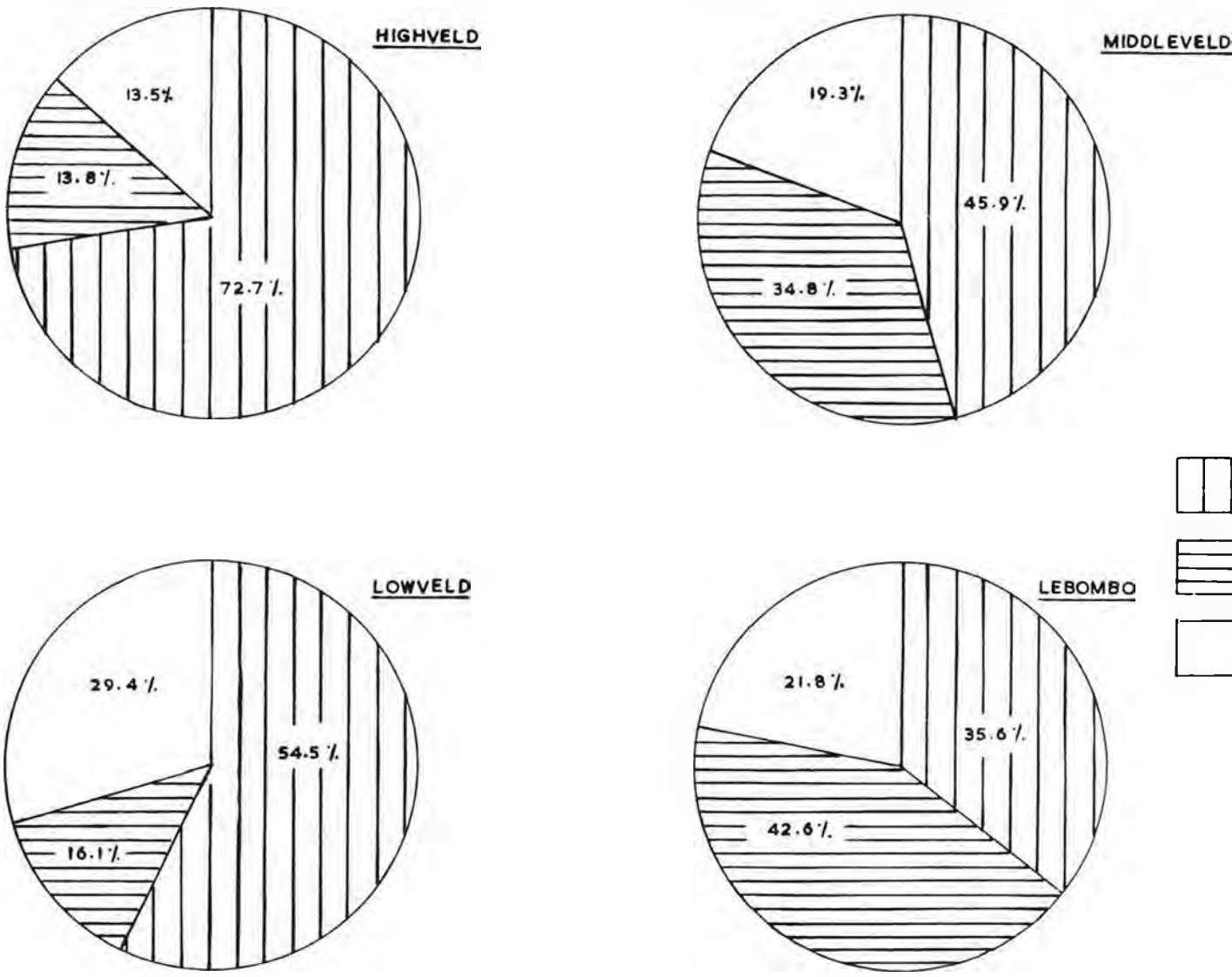


TABLE 11

MAIZE SUFFICIENTLY ACCORDING TO SIZE OF HOMESTEAD (RANDOM SAMPLE AREA)

Region	Homestead size (No. of persons)	% Homesteads recording a surplus	% Homesteads recording a deficit	% Homesteads producing bare sufficiency	Total No. of Homesteads.
Highveld	1 - 4	10.9	79.5	9.6	83 = 100%
	5 - 8	12.6	73.7	13.7	175 = 100%
	9 - 12	17.7	66.7	15.6	96 = 100%
	Over 12	15.4	69.2	15.4	52 = 100%
Middleveld	1 - 4	36.4	47.7	15.9	88 = 100%
	5 - 8	29.6	52.2	18.2	203 = 100%
	9 - 12	41.0	38.0	21.0	100 = 100%
	Over 12	46.9	32.7	20.4	49 = 100%
Lowveld	1 - 4	6.7	71.1	22.2	45 = 100%
	5 - 8	21.2	46.2	32.6	52 = 100%
	9 - 12	33.3	33.3	33.3	24 = 100%
	Over 12	9.1	59.1	31.8	22 = 100%
Lebombo	1 - 4	35.7	46.4	17.9	56 = 100%
	5 - 8	47.3	27.5	25.2	91 = 100%
	9 - 12	42.1	44.7	13.2	38 = 100%
	Over 12	50.0	16.7	33.3	12 = 100%

TABLE 12 (ii)

SECONDARY CROP PRODUCTION MIDDLEVELD : TOTAL HOMESTEADS IN SAMPLE AREA = 453

CROP	A. Homesteads cultivating secondary crops			B. Cultivation for domestic consumption only		C. Cultivation for sale	
	No. of homesteads	% of total homesteads	2)	No. of homesteads	% of A	No. of homesteads	% of A
Sorghum	215	47.5	(±2.35)	212	98.6	3	1.4
Pumpkins	386	85.2	(±1.66)	385	99.7	1	0.3
Groundnuts	299	66.0	(±2.23)	274	91.6	25	8.4
Potatoes	75	16.6	(±1.75)	67	89.3	8	10.7
Tomatoes	47	10.4	(±1.43)	34	72.3	13	27.6
Beans	129	28.5	(±2.12)	113	87.6	16	12.4
Vegetables	52	11.5	(±1.50)	30	57.7	22	42.3
Fruit	83	18.3	(±1.82)	57	68.7	26	31.3
Wattle	42	9.3	(±1.36)	1	2.4	41	97.6
Cotton	16	3.5	(±0.86)	-	-	16	100.0
Tobacco	57	12.6	(±1.56)	15	26.3	42	73.7
Other[1]	59	13.0	(±1.58)	54	91.5	5	8.5

1) e.g. Sesame, melons, sweet potatoes
2) standard errors in brackets

TABLE 12 (i)

SECONDARY CROP PRODUCTION HIGHVELD : TOTAL HOMESTEADS IN SAMPLE AREA = 417

CROP	A. Homesteads cultivating secondary crops			B. Cultivation for domestic consumption only		C. Cultivation for sale.	
	No. of homesteads	% of total homesteads	2)	No. of homesteads	% of A	No. of homesteads	% of A
Sorghum	232	55.6	(±2.43)	229	98.3	4	1.7
Pumpkins	295	70.7	(±2.23)	294	99.7	1	0.3
Groundnuts	137	32.9	(±2.31)	132	96.4	5	3.6
Potatoes	103	24.7	(±2.11)	90	87.4	13	12.6
Tomatoes	43	10.3	(±1.58)	37	86.0	6	14.0
Beans	184	44.1	(±2.43)	178	96.7	6	3.3
Vegetables	85	20.4	(±1.97)	68	80.0	17	20.0
Fruit	91	21.8	(±2.02)	83	91.2	8	8.8
Wattle	128	30.7	(±2.26)	7	5.5	121	94.5
Cotton	1	0.2	(0)	-	-	1	100.0
Tobacco	23	5.5	(±1.12)	14	60.9	9	39.1
Other[1]	47	11.3	(±1.55)	41	87.2	6	12.8

1) e.g. melons, sweet potatoes, medumbes.

2) Standard errors in brackets.

TABLE 12 (iv)

SECONDARY CROP PRODUCTION LEBOMBO : TOTAL HOMESTEADS IN SAMPLE AREA = 205

CROP	A. Homesteads cultivating secondary crops			B. Cultivation for domestic consumption only		C. Cultivation for sale	
	No. of homesteads	% of total homesteads 2)		No. of homesteads	% of A	No. of homesteads	% of A
Sorghum	138	67.3	(±3.28)	127	92.0	11	8.0
Pumpkins	113	55.1	(±3.47)	111	98.2	2	1.8
Groundnuts	127	62.0	(±3.39)	114	89.8	13	10.2
Potatoes	9	4.4	(±1.43)	9	100.0	-	-
Tomatoes	13	6.3	(±1.70)	7	53.8	6	46.2
Beans	35	17.1	(±2.63)	31	88.6	4	11.4
Vegetables	12	5.9	(±1.65)	6	50.0	6	50.0
Fruit	29	14.2	(±2.44)	23	79.3	6	20.7
Wattle	9	4.4	(±1.43)	1	11.1	8	88.9
Cotton	-	0	(0)	-	-	-	-
Tobacco	21	10.2	(±2.11)	16	76.2	5	23.8
Other 1)	1	0.5	(0)	1	100.0	-	-

1) e,g, Sesame
2) Standard errors in brackets.

TABLE 12 (iii)

SECONDARY CROP PRODUCTION LOWVELD : TOTAL HOMESTEADS IN SAMPLE AREA = 144

CROP	A. Homesteads cultivating secondary crops			B. Cultivation for domestic consumption only		C. Cultivation for sale	
	No. of homesteads	% of total homesteads 2)		No. of homesteads	% of A	No. of H/steads	% of A
Sorghum	131	90.8	(±2.40)	128	97.7	3	2.3
Pumpkins	117	81.3	(±3.25)	116	99.1	1	0.9
Groundnuts	48	33.3	(±3.93)	44	91.7	4	8.3
Potatoes	3	2.1	(±0)	2	66.7	1	33.3
Tomatoes	1	0.7	(0)	-	-	1	100.0
Beans	41	28.5	(±3.76)	38	92.7	3	7.3
Vegetables	1	0.7	(0)	-	-	1	100.0
Fruit	10	6.9	(±2.11)	6	60.0	4	40.0
Wattle	1	0.7	(0)	-	-	1	100.0
Cotton	8	5.6	(0)	-	-	8	100.0
Tobacco	3	2.1	(0)	1	33.3	2	66.7
other 1)	19	13.2	(±2.82)	18	94.7	1	5.3

1) e.g. Sesame and melons
2) Standard errors in brackets

trends, both flattening out at the 9-12 homestead size. There is also a marked similarity in the Middleveld and Lebombo curves which show a sharper break at the 5-8 family size.

Figure 3 shows no definite relationship between the average quantity of maize bought and the size of the homestead unit. In the Highveld and Middleveld there was a general increase in the quantity of maize bought with an increase in family size, but in the Lowveld, on the other hand, there was an inverse relationship except for the largest family grouping (Table 10). It is possible that the position shown in Figure 3 has been influenced by an "efficiency factor", that is, the possibility that a certain composition of family may be the most suitable for an optimum relationship between production and consumption under existing conditions. Further research will be required, however, to explore this concept. The main significance of Figure 3 lies in the fact that most homesteads need only increase maize production by 4-7 bags a year in order to achieve self-sufficiency.

Figure 4 (based on Table 11), showing the percentage of homestead groupings, in relation to surplus, deficit or mere sufficiency production, brings out the overall similarity between the Highveld and the Lowveld on the one hand, and the Middleveld and Lebombo on the other hand. The 9 - 12 group of homesteads in the Highveld and Lowveld stands out as the most efficient unit for production purposes. This group has the lowest percentage of deficit and the highest percentage of surplus producers. The increase of deficit producers in homesteads of 12 or more, is more marked in the Lowveld than in the Highveld. On the other hand, the largest homestead units in the Middleveld and Lebombo have the lowest percentage of deficit producers. There is no apparent reason why such a large percentage of the group in the Middleveld and the 9-12 group in the Lebombo should have produced a deficit.

Likely factors in the homestead which influence production are the ratio of children to adults, the age of the people and the number of adult male persons away at work. These are factors which affect all homesteads to some extent, but the smaller homesteads in particular. The correlations between production and size of homestead lack precision. In spite of this there are broad indications that the smaller homesteads (those of 1-4 persons amount to 20-30% of the total) are less efficient units of production than the larger homesteads. If these indications are correct they constitute a factor of major importance in future agronomic planning. A good deal of current thinking in this respect tends towards individualized forms of tenure, in which the breaking up of the larger homestead units will inevitably be speeded up. This would have the result of substantially enlarging the proportion of the very type of homestead unit which, in the dualistic structure of Swazi rural economy [1], appears to be at least capable of maintaining adequate food production.

1) See next page.

2.5 Other Food Crops (Table 12):

The production of sorghum (a hardier and more drought resistant crop than maize) is found in the hotter, drier areas of the country. Locally sorghum is of greater importance in the Lowveld, where 91% of the homesteads grow this crop, than in the other regions, but in view of the larger area under cultivation and the larger population in the Middleveld, it is possible that this region produces more sorghum than the Lowveld.

It is commonly believed that sorghum is used primarily for brewing beer, but further research into its role as a food crop should be undertaken, especially in the Lowveld where it occupies a considerable percentage of the cultivated area. In fact, the pilot survey indicated that in the Lowveld sorghum occupied a greater acreage than maize.

Only a very small percentage of the cultivated land is devoted to food crops other than maize and sorghum. Pumpkins, beans and groundnuts are the most important crops supplementing the cereal diet of the Swazi, and are found in all the physiographic regions. The large variety of beans grown could form a valuable and integral part of a rotation system of cropping in the maize and cotton growing areas.

A feature since the war has been the increase in the number of vegetable gardens. Sales of fruit and vegetables have assisted in

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1) See Chapter Viii.

fostering a commercial trend among the people in the neighbourhood of the principal towns, but Table 12 indicates that few homesteads produce food crops, fruit and vegetables for purposes other than their own consumption. The main cash crops are cotton and tobacco.

2.6 Cash Crops:

2.6.1 Introduction:

During the 19th Century the Swazi grew crops for domestic consumption without thinking in terms of a cash economy. A money economy was probably introduced about the turn of the century but even today it has not reached full maturity. Any money which the Swazi used to required was earned from wage employment. Agriculture was not regarded as a means of earning money until 1932, when the Paramount Chief asked for assistance from the Administration in introducing cotton into the Native areas. The

Government officials welcomed the idea as a means to increase the earnings of cultivators and to teach them better farming methods. It was hoped that a new agricultural outlook would develop based on a variety of crops and crop rotation.

2.6.2 Cotton.

To encourage cotton production the Government issued seed to growers and bought the crop for a price previously settled, depending on the grade. If a higher price than anticipated was obtained for the lint, the surplus was distributed among the growers. From the total paid to the farmers for the crop the Government deducted any amounts owing for seed and transport costs. Marketing, therefore, presented no problem. During the 1933-34 season only 25 Swazi grew cotton. In spite of a poor season and low yields, the cash returns prompted others to plant this new cash crop, and production rose from just over 5 short tons in 1937 to 11 tons of cotton seed in 1940-41, with an average of 165 lbs per acre [1]. After this peak, production declined steadily for many years. The seed was sold to European farmers who required it for replanting, but during the war difficulty was experienced in selling the lint owing to East African

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1) Swaziland. Annual Reports.

competition. Only after 1954 did cotton planting become more popular in the Native area. The value of Swazi cotton production practically doubled between 1957 and 1960 [1a]. Most of the cotton is now sold direct to the ginnery at Magut which is closest to the main centre of production. Apart from a few isolated areas of production along the foot of the Lebombo escarpment near Stegi, Swazi production is confined in the main to the Lowveld region south of the Great Usutu River. As cotton can withstand the high temperatures and meagre rainfall conditions of the Lowveld, it may yet become a more popular crop amongst the Swazi. The hopes of introducing a rotation system and better methods of farming as a result of cotton growing were not really fulfilled but these are two very necessary requisites if cotton which is a most demanding crop on soil fertility is to be successfully grown on an extensive scale.

1a). See next page.

2.6.3 Tobacco:

During the post-war period there has been a steady overall rise, firstly, in the number of non-Europeans[2] growing tobacco, secondly, in the weight produced and thirdly, in the value of the crop. The fluctuations in production were caused primarily by drought or hail in adverse seasons and the concentration on food crops during poor years. Fewer Europeans grow the crop but the production per person is much greater. The standard of production is not high because the leaf requires both careful preparation and specialist handling. Some tobacco is used or sold locally but most of the crop is sold to the Swaziland Co-operative Tobacco Co. Ltd. in Goedegun which is centrally placed in relation to the tobacco growing areas.

1[a]) 1957; R71,210 (£35,605)
1960; R134,812 (£67,406) (Information from Dept. of Land Utilization)

2) Although the tobacco statistics do not differentiate between Eurafrican and African producers, the former comprise a very small percentage.

2.7 Summary:

Within recent years the development of new irrigation, afforestation and mining projects has increased the demand for food in Swaziland. During the same period the trend in European farming has been towards specialization in commercial crops rather than food crops such as maize. Consequently any surplus food production from the Swazi areas should find a ready market to meet the requirements of commerce, industry and other large employers of labour. In other words, the sale of agricultural produce could provide an important means of earning money. The Government has tried wherever possible to increase agricultural production and the Agricultural Division of the Department of Land Utilization, by buying and finding a market for produce, is making every endeavour to replace the old subsistence cultivation with a balanced system of farming in which a cash income will be the corner stone. The task of achieving this ideal is summarised in the following quotation from the 1954 Annual Report of the Agricultural Department: "A modest family income of £10 per month

will necessitate the sale of at least £3,000,000 worth of Agricultural produce and before that goal can be reached present earnings must be multiplied by sixty".

Bearing the above statement in mind, the magnitude of accomplishing this task must be seen against the background of existing conditions. Firstly, the Swazi-held areas are not yet self-sufficient in food production. Secondly, cotton and tobacco are the only cash crops of any significance and their importance during the survey year was confined to comparatively small geographical regions. Throughout the rest of the Territory cash crops contribute very little to the rural economy[1]. Thirdly, provision has to be made to produce food for a population which is increasing at approximately 2% per annum. And fourthly, the needs of the livestock industry have to be considered in the overall planning of the rural areas. Taking all these factors into account the need to increase agricultural production is overwhelming. This can be achieved either by extending the area under cultivation or intensifying production.

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1) See Chapter VIII.

The extension of cultivation into areas of existing fallow land, particularly in the Highveld and the Lowveld will provide only a temporary solution to the problem unless accompanied by better farming practices. Agricultural production can only be placed on a sound economic basis by improving the methods of cultivation in order that the maximum return per acre may be obtained from the existing resources. A number of small irrigation projects offer one solution to increasing the output from the land but past experience of Swazi operated irrigation farming leaves no doubt that the problems of management are considerable. Contour ploughing is now a reality throughout the Swazi-held areas and the use of fertilizers is becoming more widespread. These, however, must be accompanied by better methods of cultivation and crop rotation if the productivity of the dryland fields is to be maintained and improved.

An urgent problem is that of increasing food production and the introduction of suitable cash crops in all regions. The extent of the maize deficit in the Highveld and Lowveld, the marginal nature of maize production in the Middleveld, the contrasts in the degree of population pressure on resources from region to region, the ever present limitations set by the environmental conditions and the particular problem of the smaller family units, are all aspects which must be taken into consideration in the formulation of new development projects. In the long run, however, the success of any scheme

will depend on the attitude of the Swazi themselves. Only when they can be persuaded that a profitable living can be obtained from the land are they likely to improve their methods of cultivation in order to increase the productivity of the land, a process which itself will entail constant hard work, industry and application on their part. The task facing the Administration in this respect is a major one. It is rendered particularly arduous because, in the brief tradition of money economy among the Swazi, wage employment has so far proved itself to be a much more ready source of cash than the cultivation of the soil.

3. LIVESTOCK:

3.1 Introduction:

The aspects of the Swazi rural economy discussed so far have been concerned with agriculture in general and maize production in particular. In spite of the money spent by the Administration in trying to improve the methods of cultivation, it is evident that Swazi agriculture is still at a very low stage of development. The large maize shortage, alone, bears witness to this fact. Improvement in this sphere is vitally necessary but any project aimed at increasing the agricultural output of the Swazi-held areas must pay due regard to the social and economic role of livestock, and especially cattle, in the Swazi community.

The Swazi, like the majority of Africans in neighbouring territories, are cattle keepers. It cannot, however, be stated that they are ranchers; rather, they are cattle owners with very little knowledge of animal husbandry. It is well known that to the Swazi cattle are regarded as an indication of wealth and prestige, that they play an important though declining role in the lobola system and that quantity is more important that quality. This preoccupation with the social status afforded by cattle ownership has contributed to the failure of the Swazi to realize the full economic value of their herds. The response by the Swazi to more than half a century of guidance and assistance from the Veterinary Department of the Administration, has been disappointing.

3.2 Deterioration of the Vegetation:

Destruction of the climax vegetation cover and the deterioration of the carrying capacity of the veld have been brought about by a number of factors closely and directly related to the livestock industry. Briefly the more important of these factors are:

3.2.1 The System of Land Tenure:

The practice of grazing livestock on communal land has hindered the erection of fences and the establishment of rotational paddocks, has encouraged inbreeding and has handicapped the more profitable use of the grazing areas. There is no incentive to conserve range land which the herds and flocks of others might overgraze. Why conserve the pasture in order that others might benefit?

3.2.2 Lack of Experience:

The Swazi lack experience in good animal husbandry. For example, very little attention is paid to selection of breeding stock, calves are often neglected and the best animals are often culled or sold, leaving the most undesirable and inferior animals in the herd.

3.2.3 Over-grazing:

In the past the veld has been damaged by allowing the animals to graze in the early spring before the new growth of grass has become fully established, by continuous grazing without respite, by over-concentration of stock at watering points and dip tanks, by cattle, sheep or goat trails and by grazing too many animals in relation to the carrying capacity of the veld. Written records and reports[1] indicate that the land was already overstocked in the 1930's.

This condition has become more serious in the last three decades and has resulted in the reduced usefulness of the land. Indiscriminate burning has hastened the destruction of the climax vegetation and consequently of some of the best species of forage. Table 13 is a summary of the vegetation changes which have occurred as a result of human occupance.

Examples of the indirect evils which stem from the neglect of the animals and the veld are erosion of the watersheds, dessication of the land, the more irregular flow of streams, greater flood damage and the silting of dams.

3.2.4 Poor Methods of Cultivation:

The need for additional cultivated land in the future, to meet the food requirements of a steadily increasing population, will make inroads into the land at present available for grazing, and the poor methods of cultivation necessarily reduce the fertility of land subsequently allowed to revert to fallow, thus facilitating the encroachment of inferior grasses and bush. Important as all these fac-

(1) Swaziland Annual Reports.

tors are, overgrazing is the most significant single factor leading to the further decline in the carrying capacity of the veld.

TABLE 13.

SUMMARY OF VEGETATION CHANGES

Region	Climax Vegetation	Present Vegetation
(1) Highveld:- a) Better watered localities	Subtropical evergreen humid to sub-humid forest	Sub-climax open grassveld with frequent to widely scattered remnants of the climax forest and scrubs
b) Less well watered localities	Sub-tropical evergreen scrub	
(2) Middleveld:-	Mixed (deciduous-evergreen) sub-tropical scrub	Open grass of sub-climax nature to sub-climax open woodland and woodland of bushveld type. Thicket encroachment pronounced in overstocked areas, i.e., woody shrubs and small trees
(3) Lowveld:-	Tropical/sub-tropical scrub largely deciduous inhabitat	Sub-climax open woodland and woodland
(4) Lebombo:-	Mixed evergreen and deciduous scrub with short evergreen forest in wetter localities	Sub-climax open woodland and open grassveld

3.3 The Extent of Overstocking[1]:-

1) See next page.

3.3.1 Background:

Before the introduction of dipping in 1910 runderpest (1894-1897) and East Coast Fever (1902) had reduced the total number of cattle in the Territory to 37,432 in 1904. The number of cattle increased at a phenomonal rate between 1910 and 1930 (Table 14) and the steady upward trend was continued, though in less spectacular fashion to the beginning of the post-war period, when a marked slowing down was most noticeable. Between 1946 and 1960 the average annual increase was only .89% .

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1) Main source of information. Swaziland Annual Reports, and Report of the Department of Land Utilization.

TABLE 14

SUMMARY OF PRE-WAR STOCK CENSUS FIGURES FOR CATTLE.

Year	No. of Cattle.
1911	57,601
1921	210,291
1930	297,828*

* Of this total 232,614 cattle were Swazi-owned.

Table 15 indicates that the figure of 360,206 African-owned cattle in the territory in 1947 was not exceeded until 1958.

TABLE 15

SUMMARY OF POST-WAR STOCK CENSUS FIGURES FOR SWAZI-OWNED CATTLE

Year	No. of Cattle	Year	No. of Cattle
1946	357,646	1954	328,407
1947	360,026	1955	333,631
1948	338,405	1956	335,824
1949	338,349	1957	335,659
1950	334,252	1958	380,720
1951	327,964	1959	388,688
1952	331,836	1960	401,973
1953	326,985		

The annual percentage increase or decrease of Swazi-owned cattle is summarized in Table 16 which clearly shows that the 1957-58 increase was exceptionally high and the increase in subsequent years considerably higher than the average for the whole period.

The reasons for the decrease in cattle numbers during the post war years were the appearance of Nagana which accounted for approximately 10,000 head during 1946-47, and other diseases (such as Lumpy Skin). Drought, the increase in cattle exports to South Africa [1] and

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1) See next page.

Table 16

% INCREASE OR DECREASE OF SWAZI-OWNED CATTLE 1946-60

Year	% Increase or Decrease
1946 - 47	+ 0.67
1947 - 48	- 6.01
1948 - 49	-0.02
1949 - 50	- 1.21
1950 - 51	- 1.88
1951 - 52	+ 1.18
1952 - 53	- 1.46
1953 - 54	+ 0.43
1954 - 55	+ 0.98
1955 - 56	+ 0.66
1956 - 57	- 0.05
1957 - 58	+13.42
1958 - 59	+ 2.09
1959 - 60	+ 3.42

the slaughter of breeding stock probably contributed to this trend. For example, in 1951, 4,901 cows and heifers were slaughtered at the larger abbatoirs compared with 2,650 oxen and bulls. The result was a noticeable decrease in breeding animals. In spite of the hopes expressed at the inauguration of the Lifa levy, it is certain that the decrease in cattle numbers was not due to organized destocking.

On the evidence available there is little justification for the following statement which appeared in the 1952 Annual Report of the

Footnote 1) from previous page -

In 1946 the Native Authority, in collaboration with the Director of Livestock and Agricultural Services, drew up a scheme for the destocking of the Native Areas and the purchase of land. The scheme made provision for a levy, on the herds of all Swazi cattle owners, which would have to be paid in cattle which would then be sold to raise funds for the purchase of land. The scheme did not develop as hoped. Destocking did not emerge as a major aim, young cows and oxen being offered for sale and exported to South Africa for slaughter.

Veterinary Department: "Swazi-owned stock consist of cattle and cattle equivalent numbering nearly 4,000 units or one cattle beast to 5½ acres. Were this population correctly distributed and controlled there would be no question of overstocking[1]. The maldistribution of stock certainly aggravates the problem of overstocking but an average of 5½ acres per beast under the conditions prevailing in Swaziland does not suggest an altogether healthy state of affairs.

The problem of overstocking is not new to Swaziland. According to the Financial and Economic Mission report of 1932 the average area available per head of native-owned cattle was just under 3 morgen, "a figure representing serious overstocking having regard to the quality of the pasture"[2]. Liversage[3] expressed similar concern about overstocking. In "The Cattle of Swazi"[4] Faulkner stated:-

> "That the stock population has exceed the number which can be safely carried in the Reserves under present conditions is illustrated by the high stock mortality rate of 1945, that year being characterized by severe drought conditions. The total number of spleen smears recorded during the year (by law a smear must be taken from every animal which dies) was 72,920 compared with 64,291 in 1944 and 50,938 in 1943. Approximately half of those smears came from animals which were slaughtered within the Territory for food purposes. Of the remainder, approximately 4% or 1,300 only died from any recognized disease, the majority or 30,000 undoubtedly dying under starvation conditions and old age. The monthly smear record shows a still more vivid picture of the effect of starvation conditions on the mortality rate. The number of smears usually examined in any one month varies between 3,000 and 5,000, but toward the end of winter, during September of 1945, for example, the number rose to over 8,000 and in October to over 10,000".

1) In certain areas, conditions of overstocking were far worse than indicated by average figures. For example in NA 12 in 1947 the ratio was one beast to two acres.
2) The Financial and Economic Situation of Swaziland: Report of the Commission appointed by the Secretary of State for Dominion Affairs, London. H.M.S.O. Cmd. 4114 (1932). This report was written by Sir Alan W. Pim.
3) V. Liversage: Swaziland Development. H.M.S.O. 1948.
4) D.E. Faulkner: The Cattle of the Swazi. Mpisi Series No. 1, 1947.

Since Faulkner's paper was written the increase in cattle numbers has not been accompanied by marked improvements in animal husbandry and grazing control. What was true in 1945 is still applicable at the present time and pinpoints the danger of stocking the range to full capacity without making allowance for the years of drought.

According to the 1953 Annual Report of the Veterinary Department, a survey of the Native Areas, where acreages were known and the stock population could be accurately ascertained, showed that 4.8 acres were available in the Highveld and 6.3 acres in the Middleveld per cattle unit [1]. These figures represented a straightforward ratio of total stock, expressed as cattle units, to total acreage. As no allowance was made for land not available for grazing (e.g., cultivated and eroded land) the actual stocking rate was very much higher than represented by these figures. As the best grazing land in the Territory is not capable of carrying more than one beast to five acres under good management [2], the very high mortality rate which averaged over 20% of the cattle population in the Highveld during 1953, was probably caused by overstocking and consequent starvation.

The above references to overstocking are of particular interest in the light of information contained in the 1960 report of the Economic Survey mission [3]. The report makes no estimate of the average stocking of livestock or cattle units on Swazi-held land, but in view of the fact that Swazi owned cattle increased by approximately 74,000 between 1953 and 1959 while the Swazi-held area only increased by approximately 15,000 acres during the same period, the ratio must have been reduced from the 1953 estimate of one livestock unit to 5½ acres. The report stated, however, that the present ratio for the whole Territory, excluding arable, roads, towns, villages and barren lands was approximately one livestock unit to 7 acres, a ratio considered by the Mission to be too low, in view of the already locally overstocked and despoiled pastoral sectors of the Swazi Areas. Table 17, which is based on the findings of the Mission, leaves no doubt about the seriousness of overstocking in the

1), 2), 3), See next page.

(1) 5 head of small stock were taken as the equivalent of one beast.
(2) See Table 17.
(3) Basutoland, Bechuanaland and Swaziland: Report of an Economic Survey Mission. (H.M.S.O.) London 1960.

Territory as a whole and in the Swazi areas in particular. The more probable carrying capacity for each of the physiographic regions is of special interest.

TABLE 17

VELD CARRYING CAPACITY FOR CATTLE*

(ACRES PER HEAD)

	H	M	L	Leb
Claimed carrying capacity	8	5-6	5	5-6
More probable carrying capacity	8-10	7-8	8-10	7-8

* Based on information contained in the 1960 Economic Mission Survey Report

That the Swazi-held lands have been overstocked for a number of decades must be acknowledged. However, in the past there has been an almost complete absence of reliable statistics relating to certain extremely important aspects of the livestock industry. In post-war years accurate statistics have been compiled annually in so far as the numbers of livestock are concerned, but except for the resettlement areas there is no information about the size of holdings or the ratio of livestock units to grazing in the main physiographic regions. In large measure this state of affairs has been rectified by the Random Sample Survey of 1960.

3.3.2 Random Sample Survey of 1960:

The reliability of the stock estimates has been discussed in Chapter II, section 3.5.5.

By applying the percentage of the types of livestock found in each region in the sample survey (Table 18) to the official 1960 stock census figures, a regional breakdown of cattle, donkeys, sheep and goats was possible. Having achieved the regional breakdown of the principal types of livestock, adjustments were then made to the totals by dividing them by the factor 1.08909[1] in order to arrive at the stock figures for the Rural Survey Area (Table 19). These were then converted to livestock units on the basis of one livestock unit being the equivalent of one head of cattle, or one donkey, or five goats or five sheep (Table 20). For the purposes of analysis, horses, mules and pigs are here excluded because they were not enumerated in the Sample Survey. Had they been included, however, the ratio of livestock units to grazing acreage would not have been reduced by more than .1 or .2 of an acre, in view of the small numbers involved[2]. By making the adjustments it was possible to relate the stock statistics to those on land use, and calculate the ratio of livestock units to grazing on an accurate basis. The results of the calculations are summarized in Tables 18-25.

TABLE 18

DISTRIBUTION OF LIVESTOCK : ESTIMATED REGIONAL PERCENTAGES

	Highveld	Middle-veld	Lowveld	Lebombo	Total
Cattle	19.08	42.57	32.99	5.36	100.00%
Goats	36.75	45.67	14.41	3.17	100.00%
Sheep	45.20	42.21	8.20	4.39	100.00%
Donkeys	30.29	48.06	17.99	3.66	100.00%

TABLE 19

ADJUSTED TOTALS FOR SWAZI-OWNED STOCK IN THE RURAL SURVEY AREA*

	Highveld	Middleveld	Lowveld	Lebombo	Total
Cattle	70,423	157,122	121,763	19,783	369,091
Goats	67,782	84,234	26,578	5,847	184,441
Sheep	11,413	10,658	2,070	1,108	25,249
Donkeys	4,214	6,687	2,503	509	13,913

* 1960 Stock Census figures divided by the factor 1.08909 (See Chapter II, section 3.5.5)

1)
2) See next page.

1) See Chapter II, section 3.5.5.
2) 1960 Stock Census of Swazi-owned stock: Horses 1679; mules 212; pigs 11,382.

TABLE 20

NUMBER OF LIVESTOCK UNITS IN THE RURAL SURVEY AREA

	Highveld	Middleveld	Lowveld	Lebombo	Total
Cattle	70,423	157,122	122,763	19,783	369,091
Goats	13,556	16,847	5,316	1,169	36,888
Sheep	2,283	2,132	414	222	5,051
Donkeys	4,214	6,687	2,503	509	13,913
Total	90,476	182,788	129,996	21,683	424,943

TABLE 21 SUMMARY OF RELEVANT LAND USE GROUPINGS (IN ACRES) IN THE RURAL SURVEY AREA

	Highveld	Middleveld	Lowveld	Lebombo	Total
Grazing	434,506	476,318	699,403	130,200	1,740,427
Grazing & Fallow	487,232	610,463	784,632	137,421	2,019,748
Total land area*	555,361	719,410	822,287	146,253	2,243,311

* Includes also i) Cultivated Land
ii) Land under Wattle
iii) Marshland
iv) Unproductive Land

According to the 1960 report of the Economic Survey Mission[1], the average ratio of livestock (European and African) to all land, was one unit to 7.3 acres for the whole Territory (including all land categories). This ratio, the Economic Mission considered to be too low. Calculated on a similar basis (i.e., including cultivated and waste lands) the ratio for Swazi owned stock for the rural survey area is seen to be even lower, viz. one livestock unit to 5.3 acres (Table 22). To achieve greater accuracy, cultivated and waste lands have been excluded in Table 23 and a

1) See next Page.

1) Par. 73, p. 486.

distinction has been made between the area under permanent grazing and the area under both permanent grazing and fallow. When, on this basis, the cattle figures alone are considered, the discrepancy between the recommended carrying capacity and the actual load becomes more marked, with the adverse state of affairs in the Middleveld being particularly noticeable (Table 23 (i)).

TABLE 22

PRESENT ACREAGE OF ALL LAND PER HEAD OF CATTLE AND LIVESTOCK UNIT IN THE RURAL SURVEY AREA.

	Highveld	Middle-veld	Lowveld	Lebombo	Total
Cattle	7.9	4.6	6.8	7.4	6.1
Livestock Units.	6.1	3.9	6.3	6.7	5.3

TABLE 23

PRESENT ACREAGE OF GRAZING PER HEAD OF CATTLE AND LIVESTOCK UNIT IN THE RURAL SURVEY AREA.

(i) Cattle:-

	Highveld	Middle-veld	Lowveld	Lebombo	Total
On Grazing Area	6.2	3.0	5.7	6.6	4.7
On grazing and fallow	6.9	3.9	6.4	6.9	5.5

(ii) For Livestock Units:

	Highveld	Middle-veld	Lowveld	Lebombo	Total
On grazing Area	4.8	2.6	5.4	6.0	4.1
On grazing and fallow	5.4	3.3	6.0	6.3	4.8

The true extent of overstocking, however, can only be analyzed when livestock units (which allow for goats, sheep and donkeys as well as cattle) are taken into consideration (Table 23 (ii)). The ratio is then seen to be one livestock unit to 4.8 acres of grazing and fallow[1]. The percentage by which each physiographic region is overstocked, is shown in Table 24. The whole of the survey area is overstocked by 86% on the basis of permanent grazing. If fallow land is included as potential grazing this figure drops to 60%, which is still alarmingly high.

Overstocking is present in all the physiographic regions[2]. The problem is not quite as great in the Lebombo as in the other strata. In the Lowveld and the Highveld it is very serious and the position in the Middleveld, overstocked by more than 100%, can only be described as critical. A reduction of livestock units appears essential. Table 25 shows that in this event the present number of livestock units should be reduced by:-

33 - 40% in the Highveld
52 - 63% in the Middleveld
25 - 33% in the Lowveld
10 - 14% in the Lebombo

These percentages represent the minimum reduction necessary in each region to preserve the natural vegetation. In absolute numbers the livestock units in the Rural Survey Area should be reduced by at least 160,000.

Table 24

PERCENTAGE OVERSTOCKING IN EACH PHYSIOGRAPHIC REGION.

	Highveld	Middle-veld	Lowveld	Lebombo	Total
On Grazing	66.6	168.6	48.7	16.6	86.1
On Grazing and fallow	48.6	109.6	32.5	10.4	59.9

1) This represents the maximum ratio as no allowance has been made for land occupied by roads, homesteads and rivers.
2) The seriousness of the problem is alleviated to a small extent by the practice of allowing the livestock to graze the stubble in the cultivated fields.

TABLE 25

SUMMARY OF CARRYING CAPACITY DATA FOR LIVESTOCK UNITS*

	H	M	L	Leb	Total
Present No. livestock units	90,476	182,788	129,996	21,683	424,943
Maximum No. livestock units advisable on grazing	54,313	68,045	87,425	18,600	228,383
Maximum No. livestock units advisable on grazing and fallow	60,904	87,209	98,079	19,632	265,824
Excess No. livestock units on grazing	36,163	114,743	42,571	3,083	196,560
Excess No. livestock units on grazing and fallow	29,572	95,579	31,917	2,051	159,119
% excess livestock units on grazing	40.0	62.8	32.7	14.2	46.3
% excess livestock units on grazing and fallow	32.7	52.3	24.6	9.5	37.4

* Assuming the minimum recommended carrying capacity to be
Highveld and Lowveld = one livestock unit to 8 acres
Middleveld and Lebombo = one animal unit to 7 acres.

If this reduction is made, it is essential to appreciate that the remainder of the livestock units will still represent the maximum number which should be allowed to pasture in accordance with the carrying capacity of the veld. In other words, future livestock numbers should be kept at this total, and a number, equivalent to the natural annual increase, should be disposed of each year. It is also important to recognize the fact that a drop in grazing capacity during dry years will need a corresponding adjustment in the number of grazing animals. In order to make allowance for seasonal fluctuations in rainfall, the range should never be stocked to its full capacity, as a matter of general principle. In the Lowveld, for example, where droughts are more frequent, the veld should not be stocked to more than 70% of its full capacity.

The overall critical position in regard to overstocking is aggravated by the maldistribution of stock. Table 23 is simply a summary of the average conditions prevailing in each region, and the statistics produced by the Department of Land Utilization for the resettlement schemes indicate that there are many places where overstocking is even

more serious. For example, in Chiefs Mantintinti's and Nyanda's areas[1] the ratio of livestock to grazing was found to be 1 unit to 1.6 and 1.8 acres, respectively and in 24 sectors of Swazi-held land which were surveyed in connection with resettlement projects between 1955 and 1960, the average ratio was one livestock unit to 2.3 acres. This is considerably below the average figure for the Rural Survey area as a whole (4.8).

3.4 Distribution of Cattle Ownership:

3.4.1 Introduction:

From the results of the random sample survey a number of distribution patterns relating to the ownership of cattle was obtained.

TABLE 26

DISTRIBUTION OF POPULATION AND CATTLE BY PHYSIOGRAPHIC REGIONS IN THE RURAL SURVEY AREA

	Highveld	Middleveld	Lowveld	Lebombo
% Population	30.0	45.6	19.2	5.2
% Cattle	19.1	42.6	33.0	5.4
% Area	24.8	32.1	36.7	6.5

The distribution of cattle throughout the Rural Survey Area is determined by two main factors - population distribution, and the environment. From the environmental point of view, the Lowveld with

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1) A.L. Mapham, A report on the Mbulongwane/Bokwene area.

its large areas of sweetveld, is the most suitable region for cattle; followed jointly by the Middleveld and Lebombo, and then the Highbeld. In the two extreme cases (i.e. the Highveld and the Lowveld) there is no positive relationship between the sizes of the human and cattle populations. In fact there is an inverse relationship . While the Highveld has 30% of the human population and 19% of the cattle population, the respective figures for the Lowveld are 19% and 33%. This particular distribution pattern is accounted for in the main by the environmental conditions. On the other hand, where there are no sharp contrasts in the environmental conditions, as is the case in the Middleveld and the Lebombo, the distribution of cattle is closely related to population numbers, e.g., the Middleveld has 46% of the

population, and 43% of the cattle; the Lebombo 5% of the population, and 5% of the cattle (Table 26). There is no clear relationship between the size of the area and the cattle population.

3.4.2 Ownership Per Person and per Homestead:

Table 27, which shows the average number of cattle and livestock units owned per person and per homestead, not only brings out the similarity between the Middleveld and the Lebombo, and the contrast between the Highveld and the Lowveld, but also suggests that in the less favourable environments the average cattle holding is smaller.

TABLE 27

AVERAGE NUMBER OF CATTLE AND LIVESTOCK UNITS OWNED PER PERSON AND PER HOMESTEAD

Average number	High-veld	Middle-veld	Lowveld	Lebombo	Total
Cattle per person	1.2	1.8	3.3	2.0	1.9
Livestock units per person	1.6	2.1	3.5	2.2	2.2
Cattle per homestead	9.5	14.0	25.1	13.5	14.8
Livestock units per homestead	12.2	16.3	26.8	14.8	17.1

TABLE 28

PERCENTAGE HOMESTEADS OWNING HERDS OF DIFFERENT SIZES.

Percentage Homesteads	Highveld	Middleveld	Lowveld	Lebombo
With no cattle	35.5	31.1	28.7	48.5
With herds of 1 - 10	26.2	17.6	3.5	11.2
With herds of 11 - 20	24.4	25.3	13.3	16.2
With herds of 21 - 30	11.3	16.0	18.8	13.3
With herds of 31 - 40	1.9	4.5	18.2	4.9
With herds of 40 plus	0.7	5.5	17.5	5.9
Total	100.0	100.0	100.0	100.0

The differences in the size of herds owned by homesteads provides another significant distribution pattern (Table 28). For a territory in which cattle play an important role both socially and economically, the high percentage of homesteads owning no cattle is quite remarkable. The percentages range from 28.7 in the Lowveld, to 48.5 in the Lebombo, i.e., in all regions considerably more than a quarter of the homesteads own no cattle. Furthermore, it was found that the vast majority of these homesteads did not own livestock of any kind. These figures suggest that the findings by Mapham in the Mbulongwane/Bokwene resettlement area where approximately 33% of the homesteads owned no cattle, are by no means exceptional.

The distribution patterns amongst cattle-owning homesteads (Table 28) reveals similar trends in the Middleveld, and the Lebombo where the majority of homesteads possess herds of between 11 and 20 head. The sharp contrast between the Highveld and the Lowveld distributions is again most noticeable. Whereas, 50.6% of the total cattle-owning homesteads in the Highveld own herds of 20 or less and 13.9% more than 20, the position in the Lowveld is reversed with 16.8% of the homesteads owning herds of 20 or less than 54.6% herds of more than 20.

3.4.3 Distribution of Cattle by Size of Herd:

The conclusion to be drawn from the above contrast is that the average size of herd is smaller in the Highveld than the Lowveld. The dominance of the smaller herds in the Highveld is also clearly indicated in Table 29 and Figure 6. Only 11.3% of the cattle in this region are to be found in herds larger than 30, compared with 33.1% in the Middleveld, 71.8% in the Lowveld, and 51.9% in the Lebombo. These large herds are owned by 2.6%, 10.0%, 35.7% and 10.8% of the total homesteads in the respective regions.

TABLE 29

DISTRIBUTION OF CATTLE BY SIZE OF HERD : PERCENTAGE PER REGION

Cattle	Highveld	Middle-veld	Lowveld	Lebombo
In herds of 1 - 10	20.2	9.3	1.2	5.5
In herds of 11 - 20	39.4	28.3	8.2	19.7
In herds of 21 - 30	29.1	29.3	18.8	22.9
In herds of 31 - 40	7.0	11.3	25.4	12.6
In herds of 40 plus	4.3	21.8	46.4	39.3
Total	100.0	100.0	100.0	100.0

The significance of these statistics is that they establish the fact that in the Middleveld, Lowveld and Lebombo in particular, a large proportion of the damage brought about by overstocking is caused by the larger herds which are owned by a relatively small proportion of the total homesteads. Although a policy of reducing the numbers in these large herds may cause personal dissatisfaction, it may not cause undue economic distress.

3.5 Cattle Disposals:

In addition to the sale of animal products such as milk, butterfat, hides and skins, the value of cattle in the rural economy of the Swazi lies in the contribution which they make both to supplementing food supplies and cash earnings.

TABLE 30

CATTLE DISPOSALS* BY HOMESTEADS IN SAMPLE AREAS

	Highveld		Middleveld		Lowveld		Lebombo	
	No.	%	No.	%	No.	%	No.	%
Homesteads owning cattle	269	100	310	100	102	100	105	100
Homesteads selling cattle	65	24.2	123	39.7	68	66.7	80	76.2
Homesteads slaughtering cattle	134	49.8	164	52.9	74	72.6	69	65.7
Homesteads with cattle dying	111	41.3	145	46.8	70	68.6	48	45.7

* Percentages refer to total cattle-owning homesteads in each regional sample

The percentage of cattle slaughtered in each physiographic region shows a close correlation to the overall percentage of cattle to be found in each region (cf Tables 31 and 26). Examined from the point of view of the homestead, it is seen that by no means all of the cattle-owning homesteads slaughtered for their own consumption. In this respect the Lowveld and Lebombo appear to utilize their cattle for food and ceremonial purposes to a greater extent than the Highveld and Middleveld. From the percentage of homesteads which sold cattle, the former two regions also appear to be more conscious of the value of their cattle as a source of cash[1] (Table 30).

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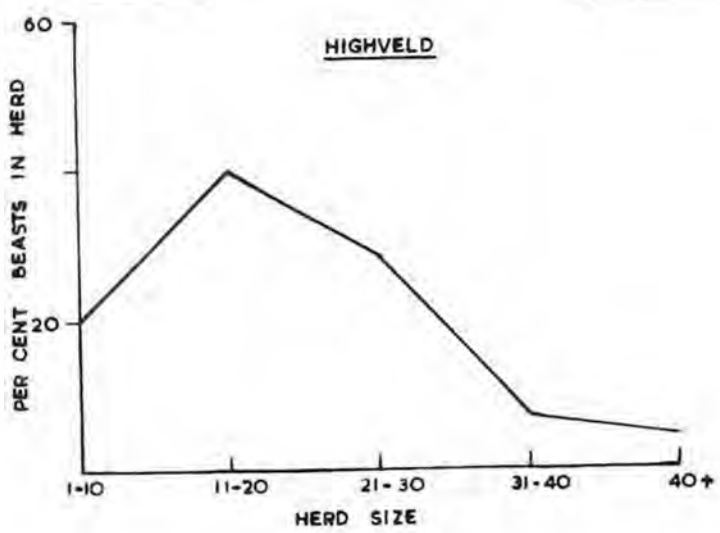
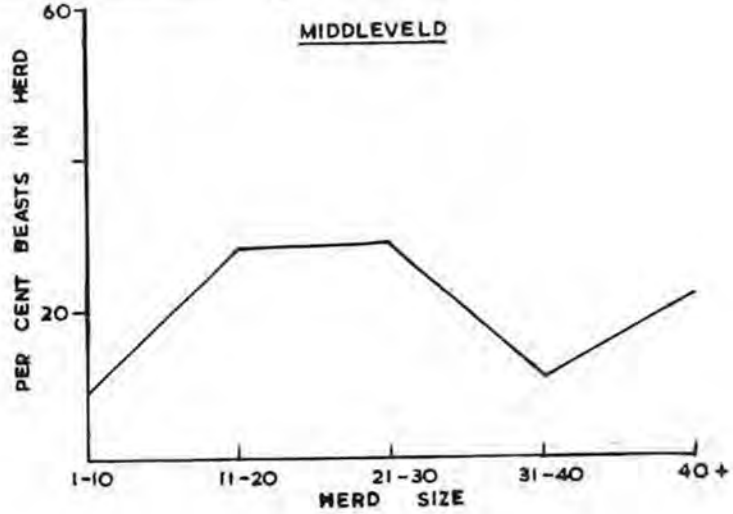
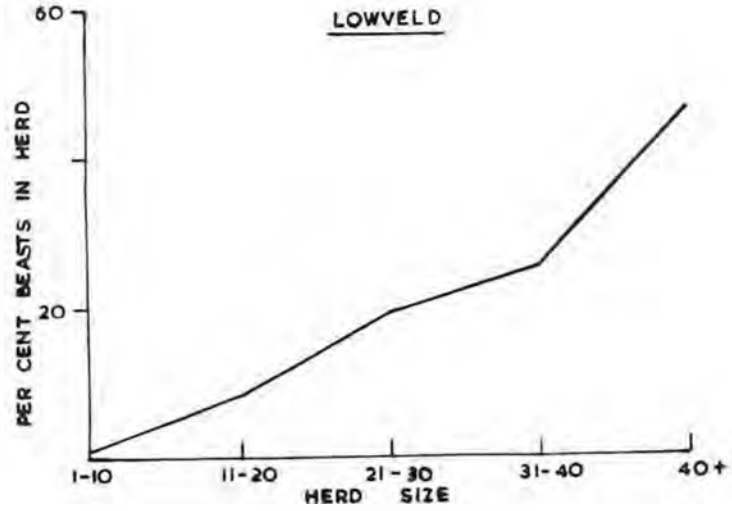
1) Cattle paid for lobola, appear under the heading of "sold" in the dip-tank registers.

FIGURE 6

DISTRIBUTION OF CATTLE BY SIZE OF HERDS







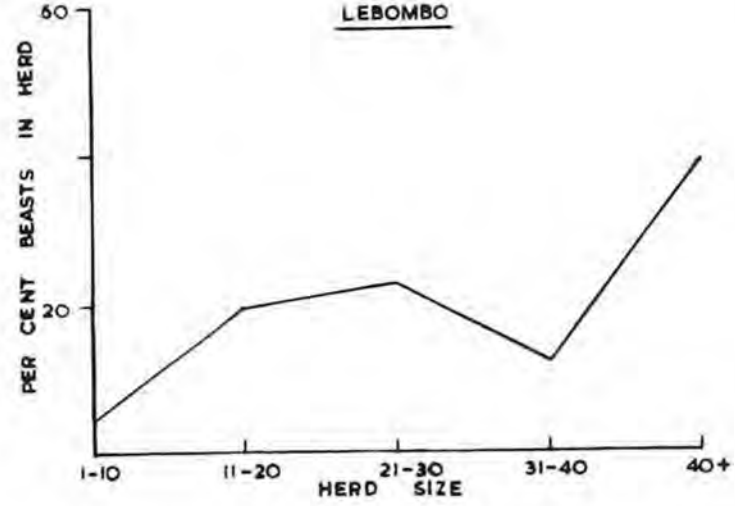


TABLE 31

ESTIMATED TOTALS OF CATTLE DISPOSALS IN THE RURAL SURVEY AREA

	Highveld		Middleveld		Lowveld		Lebombo		Total	
	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
No. of Cattle sold	2,121	9.9	8,971	41.9	6,371	29.8	3,928	18.4	21,391	100
No. of Cattle slaughtered	3,653	20.1	7,902	43.5	5,528	30.5	1,078	5.9	18,161	100
No. of cattle died	3,154	21.1	6,461	43.1	4,551	30.4	815	5.4	14,981	100
TOTAL	8,928	16.4	23,334	42.8	16,450	30.2	5,821	10.7	54,533	100

Lack of detailed records make it difficult to assess the Swazi contribution to local cattle sales, cattle exports to South Africa, and the sale of hides and skins. In 1960 the Swazi contributed 80% of the quantity and 78% of the value of butterfat supplied to the creamery in Manzini.. Of the total value of butterfat supplied to the Government depots, the approximate shares of the physiographic regions are as follows: Lowveld 60%; Middleveld 38%; Lebombo 2% and the Highveld well under 1%[1].

4. REGIONAL CONCLUSION:

Based on the 1959/60 season the main characteristics of each physiographic region can be summarised as follows:-

4.1 The Highveld:

i) This is the region with the greatest overall net maize shortage (15,237 bags) and the highest average maize shortage in bags per homestead (2.1) and pounds per person (53.5).

ii) There is a low per person and per homestead acreage of cultivated land and arable (.86 acres and 6.69 acres respectively).

iii) The pressure of population on land resources is marked (741 persons per square mile of cultivated land).

iv) To eliminate the maize shortage, either the yield per acre would have to be increased by approximately two-fifths of a bag, or between 3,800 and 7,600 additional acres (yielding 4 to 2 bags per acre) would have to be cultivated, i.e. 7-15% of the existing area lying fallow.

v) The region is overstocked by at least 30,000 livestock units, or at least 49%.

The Middleveld:

i) This region produced a net surplus of 9.827 bags of maize but a delicate balance exists between insufficiency and sufficiency in respect

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1) Information derived from returns kept by Dairy Division, Department of Land Utilization.

to food production. A small reduction of one-fifth to one-tenth of a bag in the yield of maize per acre would result in an overall maize shortage being recorded.

ii) The pressure of population on land resources is not serious at present (531 persons per square mile of cultivated land) though it could become so as this is the region with the largest population, and consequently the region where any increase in population numbers will be most noticeable.

iii) This is the most productive region in terms of area cultivated (105,156 acres) and total agricultural output.

iv) The region is overstocked by at least 96,000 livestock units, or at least 110%.

4.3 The Lowveld:

i) The region has an overall maize deficit (6,100 bags).

ii) There is no shortage of land (678 per square mile of cultivated land and 196 persons per square mile of arable land).

iii) To eliminate the maize shortage, either yields per acre would have to be increased by two-fifths of a bag, or between 1,500 and 3,000 additional acres (yielding 4 to 2 bags per acre) would have to be cultivated, i.e., 2-4% of the existing area lying fallow.

iv) The region is overstocked by at least 32,000 livestock units, or at least 33%. The maldistribution of stock which is marked, is caused mainly by the lack of well-distributed water supplies.

v) The marginal nature of the environment is a most important consideration.

vi) This is the region with the best natural grazing.

vii) A high percentage of the cattle is found in large herds owned by comparatively few homesteads (72% of the cattle are in herds of more than 30 head - owned by 36% of the homesteads).

4.4 The Lebombo:

i) This region produced a net surplus of maize (6,258 bags) in 1950-60.

ii) The pressure of population on existing land resources is great (742 persons per square mile of cultivated land).

iii) There is a marked contrast between the sparsely and densely settled areas.

iv) There is a low per person and per homestead acreage of cultivated land and arable (.86 acres and 5.97 acres respectively).

v) The region is overstocked by at least 2,000 livestock units, or at least 10%.

vi) A high percentage of the cattle was found in large herds owned by comparatively few homesteads (59% of the cattle are in herds of over 30 head - owned by 11% of the homesteads).

4.5 Summary:

Two salient features emerge from a study of land utilization in the Swazi rural areas. The first is the extent of the maize shortage and the second is the extent of overstocking. Of the two, the latter presents by far the most serious problem. These problems are not new to Swaziland but with the passage of time they have assumed larger proportions.

Even though the yield of maize need be increased by under half a bag per acre to reach a standard of sufficiency in the Highveld and Lowveld, and to give a greater measure of stability to production in the Middleveld, improved methods of cultivation are unlikely to be adopted overnight. Consequently, the easiest way to increase food production in the immediate future is to extend the area under cultivation, particularly in the Highveld and the Lowveld. Additions to the cultivated area in all the physiographic regions will eventually be inevitable if the Swazi continue to increase their numbers, and the demand for food becomes greater. However, if the present ratio between arable land and permanent grazing is kept constant, the high acreage of land at present lying fallow (279,000 acres) indicates that it should be possible to provide the additional land needed for agricultural purposes for at least the next two generations, even without raising the present yield levels. But unless positive steps are taken to adjust the number of livestock units to the carrying capacity of the land, any extension of the area under cultivation will only aggravate the problem of overstocking. That such steps are a matter of urgency in the immediate present, let alone the future, need not again be laboured. The continued deterioration and destruction of the vegetation cover on which the well-being of the livestock industry depends can only lead to disastrous consequences. Cultivation and grazing are two integral and complementary aspects of the same problem, and it is essential that their reaction, one or the other, be fully recognized if the picture of land use in the Swazi Rural Areas is to be seen as a whole. Finally, it is important to realize that the natural environment sets certain outer limits to the activities of man. The limits set by the environment in each physiographic region to the carrying capacity of the veld, and to the possibilities of cultivation, must be appreciated and understood if maximum productivity is to become a reality.

CHAPTER VIII

INCOMES OF RURAL HOMESTEAD GROUPS

(An Experimental Study)

(A.J.B. Hughes)

1. INTRODUCTION:

1.1 The Semi-Subsistence Economy:

Approximately 93% of the present Swazi population of Swaziland are country dwellers. Most of these live under traditional tribal conditions of tenure in the Swazi Area; but there are also slightly more than 13,000 who live on privately owned farms as squatters, and a few hundred living on land that they, or members of their families, hold on individual tenure.

Members of this rural population are, however, far from being dependent exclusively on the land for their sustenance and their income. Some three quarters of a century ago they were. The Swazi of those days lived in a simple subsistence economy, where virtually all a homestead group's requirements were satisfied from their own lands, their own flocks and herds, and by the labour of their own hands. This is not the case to-day[1]. Now, even in the most remote parts of the country, Swazi are becoming increasingly involved in a money exchange economy. New wants have been created, and the people have also been offered new means of satisfying not only these new wants, but also their simple subsistence needs, by the new opportunities for acquiring money. The land itself has also acquired a new role, that of a potential provider of cash incomes for those who cultivate it, or who graze their stock upon it.

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1) It is likely that some degree of specialization in certain crafts has always obtained, such as iron working, pottery and basketry, the products of which were regularly bartered. Data from the sample survey suggest, however, that this type of specialization has now become even more highly developed. With regard to three extremely common commodities, 42.5% of the 1,219 homesteads in our rural sample made mats (10.7% for gain), only 3.4% produced baskets (2.7% for gain)and 4.0% pots (2.1% for gain.).

Yet, in the economic life of the rural Swazi, subsistence activities are still of paramount importance. This characteristic they share with the so-called "peasant" cultures of the world. There are, however, strong objections to classifying them simply as "peasants"; a classification we could only justify by adopting an extremely broad definition of this term[1]. Nowadays, a substantial proportion of Swazi periodically leave the rural areas to seek income elsewhere, mainly as wage labourers. This intrusive element of wage earning complicates the simple pattern of a population primarily dependent on the land for both its subsistence and its cash incomes.

The phrase "subsistence economy" has hitherto been more favoured by economists than by anthropologists. The latter, whose researches have revealed, even among the simplest societies, the existence of systems of exchange, of formalized sharing relationships, and of embryonic forms of trade[2], have tended to stress the danger of arbitrarily classifying any particular economic system as being just inside, or just outside, the subsistence stage. Despite this, the term "subsistence economy" is a useful one, and does serve to bring out the differences between the type of economic organization (like that of the Swazi in the past) where money and extensive bartering of goods were unknown, and those in which money and regular exchange have been accepted as an integral part of the normal way of life.

A subsistence economy could be sufficiently accurately defined as one in which small groups, like the Swazi homestead group, satisfy most of their own needs by their own labour. It is also sometimes extended to cover situations where money is widely used and markets are known, but where the bulk of the day-to-day needs of the cultivator and his family are met from their own land, and only a small surplus is sold to provide money to buy articles that cannot be home produced.

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1) R. Redfield, Peasant Society and Culture, pp. 25 ff,
R. Firth, Elements of Social Organization, pp. 87 ff.

2) of. B. Malinowski, Argonauts of the Western Pacific:
R. Piddington, An Introduction to Social Anthropology,
Edinburgh, 1950, p.p. 270 ff.

The difficulty, particularly when an economy is in a state of rapid transition, is to decide exactly when it ceases to be primarily a subsistence economy. An attempt has been made in a recent Southern Rhodesian Government report[1] to resolve this problem by breaking up "the journey from a subsistence to a market economy into four parts. The first, which might be called the true subsistence economy, is the stage at which exchange is absent ..... The second stage, in which the producer is mainly concerned with providing for the needs of his family, but in which he seeks to barter or to sell such surpluses as he gets from time to time, is also referred to as a subsistence economy". The third stage is where the producer deliberately sets out to produce surpluses for sale "but at which the annual value of the produce consumed is greater than that of the produce sold". The fourth stage, the transition to a market economy, is marked by the regular production for sale of produce of more value than that consumed.

This convenient and neat schema could, however, only be legitimately be applied to an economy as a whole if one assumes that nearly all the food consumed by the cultivators' families is, in fact, produced by themselves. This is an assumption that we would certainly not be justified in making with regard to many Swazi homesteads. In Chapter VII it has been shown how, even in the case of maize, the staple grain food, nearly three quarters of the homestead groups in some parts of the country have to purchase some of their requirements[2]. It is also known that most rural butchers, who sell meat by the five and ten cents worth, have a thriving trade. Moreover, paraffin, sugar, soap, cloth clothing, and a host of other articles, are now regularly purchased in rural areas, having long since become simple necessities instead of being luxuries. In such circumstances, to describe homestead groups that consume more of their own agricultural produce than they sell as still being in the stage of a subsistence economy could give a completely false picture.

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1) Southern Rhodesia Government, L.A.S.C.3. - Second Report of the Select Committee on Resettlement of Natives, Salisbury, 1960,

2) See Chapter VII, section 2.3.

In view of the important part that money has come to play in the lives of nearly all Swazi, the present economy could probably be more truthfully described as a "semi-subsistence economy", of which the component sectors, the subsistence sector and the money sector, may vary in importance from homestead to homestead, and within the same homestead group from year to year.

1.2 Economies in Transition:

Various bi-polar models could be set up to illustrate the process of transition, from a subsistence economy to one based primarily on money incomes, and the regular purchase of necessities. If one were to consider only rural production, one could adopt the criteria suggested in the Rhodesian report quoted above. Alternatively one could, given adequate data, analyse the situation in terms of the relative contributions to incomes made by the subsistence and money sectors, and express either or both contributions as percentages of the whole. A third approach would be to isolate the relative numbers of individuals, or the proportions of single individuals' time, devoted to activities connected with the subsistence and money sectors respectively, and this again could be expressed in any quantitative terms we chose.

Any of these methods would have the advantage of allowing direct, quantitative comparisons to be made between the Swazi and other peoples in a similar state of economic transition. All, however, would require considerably more detailed information than one could possibly obtain in an investigation of the extensive character of the Swaziland sample survey Even in the case of a much smaller group, it would be extremely difficult to obtain all the necessary data. There would, moreover, be the additional difficulties of deciding exactly what should be treated as 'income' (see below), and of finding meaningful monetary equivalents for all the various elements in the subsistence sector.

In this chapter a modified form of the second line of approach has been adopted, but for the reasons just mentioned we have concentrated mainly, but not solely, on cash incomes. While these can serve only as a very crude index of the extent to which the economy has moved away from a subsistence basis, they do reveal the part that money now plays in the rural Swazi life, and deepen our insight into the relative importance of agricultural and pastoral activities.

2. INCOMES:

2.1 Cash Income and 'Production Income':

Economists have evolved various complex definitions of 'income', but these are all primarily designed for societies in which everything that could reasonably be included under this head can be relatively easily given a monetary value. To apply such definitions to this type of semi-

subsistence economy would involve precise evaluation, in terms of of money, of living sites and arable land (obtainable by Swazi without any payment), of the free pasture for stock, and of the various raw materials which every Swazi can obtain for nothing in the rural environment. Even with regard to the food obtained from the subsistence sector, there is the problem of whether this should be valued at the selling price obtainable by the cultivator, or the purchase price to the same cultivator in the local rural store. Any calculations based on such arbitrary allocations of cash values, to things not normally valued in these terms, are inevitably subject to speculation.

In dealing with an essentially dual-based economy like that of the rural Swazi, however, it is important to get some idea of the relative weight of the contributions to homestead income derived from wage employment on the one hand, and rural sources on the other, and in this respect a comparison of these two types of sources with regard to cash incomes only gives a biased impression. Rural production, especially that of food cultivated for consumption, forms a substantial part of rural homestead income, and cannot be ignored merely because of the difficulty of attaching a monetary value to it.

This has compelled us to introduce a concept of income wide enough to include, apart from cash income (from wages or other sources), also the assumed value of the food produced and consumed in the subsistence sector. For this reason we have selected the term 'production income' for this wider concept. Later in this chapter an experimental section will be devoted to an attempt to assess, within the context of this production income, the relative contribution from wages and from rural sources (in cash and kind) to the income of rural homesteads. The limitations of the production income concept, and the various assumptions underlying the estimates involved, will be discussed at that stage.

In the old subsistence economy the Swazi homestead was an economic unit. This it still is, as far as the subsistence sector is concerned. In some of the larger homesteads there may be an internal division into households (tindlu sing. indlu), each with a considerable degree of economic autonomy. Our survey data revealed, however, that such internal sub-divisions are nowadays relatively rare, and that the majority of modern homesteads are small groups, based mainly on the nuclear family. For these reasons we considered that the most significant incomes we could calculate would be those of homestead groups as wholes, since these still are the effective economic units.

3. THE SAMPLE:

3.1 Selection:

All returns for the 1960 sample survey contained information regarding income derived from all sources, which was coded and transferred to punched cards. With the equipment available to us, however, mechanical sorting of this material on a homestead basis proved difficult, and we decided to rely for this particular investigation on small sub-samples drawn from the main samples, and to sort these manually.

From each of the main samples for the four physiographic regions a random selection of 60 homesteads was drawn, giving a total of 240 homesteads.

3.2 Base of Calculation:

In all the sub-samples the total cash incomes received by each homestead group during the year ending on the 30th June, 1960 were calculated, as well as the amounts received from various sources.

Since this information was originally derived from statements of informants, sometimes regarding the earnings of individuals who were not themselves available for questioning, there is the possibility of some inaccuracies. We also know that in many cases information regarding incomes derived from beer brewing was withheld[1]. Nor could we reflect the proceeds of barter transactions in income, since our concern was only with cash incomes; and in some areas the bartering of cattle for grain is still common. Similarly, no account could be taken of rations, or other perquisites, received by migrant labourers.

The probable result is that the figures given here for cash incomes are on the low side. This should be borne in mind when assessing their significance.

We treated as part of the homestead income all earnings of all de jure members of the homestead group during the year investigated, regardless of where the individuals actually lived while earning this money. This may have tended to inflate these incomes, since some migrants may have had to maintain another establishment, or meet other expenses, while away at work. Although this may have been so in many instances, we felt that it was preferable to calculate the incomes in the manner we did. We know that many migrant labourers have rations and quarters provided in addition to their wages, so that whatever they spent while at work they might equally have spent if not at work. Also, there is the analogy of the "family" income in a full money-economy, which includes all a breadwinner's earnings, regardless of the proportions of these he actually devotes to maintaining his family, or reserves for his own exclusive use.

1) See next Page.

1) This was practically the only subject that informants were often unwilling to discuss freely; despite the fact that the brewing of beer for sale is extremely common in Swaziland, and is not illegal. Enumerators were instructed not to insist on information regarding these sales, but to record it if it were volunteered.
Before the start of the sample survey we were aware that there would be this unwillingness, and considered it preferable to forego detailed quantitative information about this one point, rather than to run the risk of antagonizing, or frightening, our otherwise most co-operative informants.

4. CASH INCOME:

4.1 Distribution:

Table 1, in the Annexure to this Chapter, shows the distribution of income received by homesteads in the four randomly selected subsamples during the year ending 30th June, 1960. Table 1 A gives the actual number of homesteads in each income class, while in Table 1 B these figures are expressed as percentages.

These tables show the sizes of incomes received by different homesteads, regardless of their populations. For each homestead we also calculated the income received per head. The distribution of these incomes is shown in Tables 2 A and 2 B in the annexure.

For ease of reference, some significant characteristics of both these distributions have been tabulated below.

A INCOMES PER HOMESTEAD (IN RAND)

Characteristic	H	M	L	Leb	Total
First Quartile	14.40	1.00	11.00	0.00	4.80
Median	69.00	52.00	62.80	33.40	45.00
Third Quartile	171.00	131.00	121.00	107.60	133.60
Quartile deviation	73.20	65.00	55.00	53.80	64.40
Highest reported income	1160.00	556.00	884.00	4182.00	4182.00

B INCOMES PER HEAD (IN RAND)

Characteristic	H	M	L	Leb	Total
First Quartile	2.60	1.00	2.20	0.00	1.60
Median	10.00	8.00	10.00	5.80	8.10
Third Quartile	25.00	18.20	19.00	19.00	19.80
Quartile deviation	11.20	8.60	8.20	9.40	9.00
Highest reported income	84.00	46.00	148.00	298.00	298.00

In these tables one of the facts of greatest interest is the absolute order of size of the income received; another is the relatively constant proportion of homesteads reporting no cash incomes at all during the year, a proportion ranging from 28% in the Lebombo to 18% in the Highveld[1]. While a number of very large incomes were reported, only a quarter of all homesteads in these four sub-samples had incomes of R133.60 or more. At the other end of the scale are the quarter whose cash incomes fell at or below the first quartile, incomes which could legitimately be regarded as negligible (ranging from zero to R2.60 per head)[1].

While the absolute ranges of cash incomes is large in all regions, the interquartile ranges are considerably smaller. Half the incomes in the whole randomly selected sub-sample fell within R32.20 of the median value of R45.00. We can also say, with some degree of assurance, that these figures suggest that, in all regions other than the Lebombo, half the homestead groups probably receive cash incomes of more than R50.00 a year under present conditions.

4.2 Regional Variations:

The regional differences are also of interest. The Highveld, which is the most agriculturally unsuccessful of the four regions (see Chapter VII), shows the highest cash incomes. The agriculturally most successful region, the Lebombo, also shows the lowest cash incomes. If we consider incomes per head (section 4.1, Table B), it will be seen that the median incomes in the two worst regions from the agricultural point of view (the Highveld and the Lowveld) are the same (R10.00 per head), while the figure for the agriculturally good, but densely populated Middleveld region (R8.00) falls approximately half way between this and the median figure for the Lebombo (R5.80).

1) See next Page.

These tables would seem to offer overwhelming support for our earlier suggestion that the majority of Swazi today could not be classed as living in a subsistence economy, unless one were to extend the definition of that term unduly. Undoubtedly, many do still satisfy a substantial proportion of their basic needs from subsistence activities[2]; but it would obviously be wrong to class as subsistence cultivators communities (such as that in our Highveld sub-sample) where nearly three quarters of the homesteads have to buy part of their staple food requirements, and where a quarter report incomes of

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1) See note 1) on page 379.
2) See Chapter VII, section 2.3.

R25.00 a head or more. While an income of R25.00 a head is not high by world standards, it is large enough to have an important effect on the economic life of any group receiving it.

Those homesteads reporting no cash incomes during the year could legitimately be classed as primarily subsistence cultivators, as could those with incomes falling below the lower quartiles in the Highveld, Middleveld and Lowveld (R14.40, R1.00 and R11.00), or below the median R33.40) in the Lebombo (section 4.1, Table B). For the remainder, however, the value of their cash earnings is too high for them to be included in this class.

5. SOURCES OF CASH INCOMES:

5.1 Composition:

When we examine the relative importance of the various constituent elements of these cash incomes and the sources from which they are derived, we have a number of highly suggestive pointers to the economic orientation of the modern rural Swazi. The relatively insignificant role of incomes from crop sales, or even from cattle selling, is brought out clearly; as is the predominant influence of income derived from wage labour.

Tables 3 A and 3B, in the Annexure, give the distribution of wage incomes among homesteads in the four random regional sub-samples. These should be compared with Tables 1 A and 1 B, which show the distribution of total cash incomes among the same homesteads. It will be seen that, while the general pattern in both sets of tables is similar, there is a considerable increase in the zero category in the wage income tables (3 A and 3 B). This increase is least noticeable in Highveld sub-sample (from 18.3% to 26.7%), but in the other three

regions the increase is, in round figures, from approximately one quarter of the homesteads in the sub-samples to over 40%[17].

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1) In order to gauge the probable representativeness of the distributions obtained for these small sub-samples, means, standard errors and coefficients of variation have been calculated for
   a) the "zero-income" group, and
   b) the first (lowest) three income groups in tables 1 A and 3 A. The results of these calculations are tabulated below.

	Mean	Standard Error	Coefficient of Variation
"Zero-Income" group - 1A	13.75	1.377	10.01%
"Zero-Income" group - 3A	23.5	2.598	11.05%
First three income groups -1A	36.25	1.377	3.80%
First three income groups -3A	38.75	1.1087	2.86%

The inter-quartile distribution in both cases does not differ greatly except as regards the lower quartile. For ease of comparison the most significant parameters of the wage income distributions have been tabulated below. These should be compared with the tables in section 4.1 above.

WAGE INCOMES PER HOMESTEAD (IN RAND)

Characteristics	H	M	L	Leb	Total
First Quartile	0 * (14.40)	0 (1.00)	0 (11.00)	0 (0.00)	0 (4.80)
Median	60.50 (69.00)	46.00 (52.00)	43.00 (62.80)	14.80 (33.40)	42.20 (45.50)
Third Quartile	170.50 (.71.00)	123.40 (131.00)	107.80 (121.00)	100.50 (107.60)	106.30 (133.60)

* Figures in brackets indicate equivalent characteristics of <u>total</u> cash incomes.

Despite the fact that many of the largest cash incomes recorded were derived from sources other than wages, the third quartiles for both wage incomes and total cash incomes do not differ greatly; nor do the median figures in the Highveld and Middleveld sub-samples. In the Lowveld and Lebombo sub-samples, however, the median figures for total cash incomes rise considerably above those for wages incomes only.

5.2 The Contribution of Wage Earnings:

The tables referred to so far would suggest that there is a tendency for Swazi homestead groups either to rely primarily on the rural environment, or to be dependent primarily on wage earning elsewhere. Thus 26% of the homesteads in the Highveld sub-sample, slightly over 40% in the Middleveld and Lowveld sub-samples, and some 46% in the Lebombo, reported no wage incomes at all during the year investigated. At the other side of the scale are those homesteads reporting wage incomes of R100.00 or more, over a quarter of the homesteads in all sub-samples (see Tables 1 A and 1B, and section 4.1).

Tables 4 A and 4 B show the proportions of cash incomes derived from wage earnings in different homesteads. A simplified table showing the main features of Table 4B is given below.

PERCENTAGE OF WAGE ELEMENTS IN TOTAL CASH INCOMES
(Percentages of homesteads in sub-samples)

Percentage of total cash income derived from wages	0%	1-20%	21-40%	41-60%	61-80%	81-100%	
Highveld	26.7	-	-	1.7	8.3	63.3	60= 100.0%
Middleveld	41.7	1.7	-	1.7	6.7	48.3	60= 100.1%
Lowveld	41.7	1.7	-	3.3	8.3	45.0	60= 100.0%
Lebombo	46.7	-	-	-	6.6	46.7	60= 100.0%
All random sub-samples combined	39.2	0.4	0.4	1.6	7.5	50.8	240= 99.9%

These tables bring out, more strongly than any others hitherto discussed, the tendency for clustering at the extreme ends of the scale. Thus, in the shortened table above, it can be seen how approximately 40% of all homesteads in the randomly selected sub-samples had no wage elements in their cash incomes[1)], while slightly, over half relied on wages for over four-fifths of their cash incomes. In the remaining small (ten per cent) minority of homesteads, wage incomes ranged from almost nothing to less than 80% of total cash income.

Regional differences are also brought out. In the Highveld, wages made up more than 90% of the cash income of 60% of the homesteads, while in the Lowveld, where the rearing of cattle for sale is widely practised, this was only the case in respect of 35% of the homesteads.

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1) of section 7.5 below.

5.3 Estimated contributions of all Sources of Income:

For these tables (Annexure 4 A and 4 B) and the shortened table above, section 5.2, the percentage of the wage element in the total cash income of each separate homestead was calculated. In the table below another line of approach was adopted. This gives estimates of the proportions of the total cash incomes of rural homesteads in each physiographic region derived from various sources.

SOURCE OF CASH INCOMES - RURAL SURVEY AREA

Sources	Estimated percentages of total cash income				
	H	M	L	Leb	Rural Survey Area
Wages	88.2	79.8	83.9	58.7	82.8
Cash crop sales	0.6	4.2	1.2	9.1	2.5
Grain crop sales	0.2	0.1	-	3.2	0.3
Cattle sales	1.7	3.8	6.1	16.7	4.0
Handicrafts	2.2	1.7	1.4	1.1	1.8
Services	5.1	10.1	1.3	10.0	6.6
Other sources	2.0	0.4	6.2	1.2	2.0

This table differs from the others in this chapter, in that the information on which it is based was not derived exclusively from the homestead income sub-samples. In order to arrive at the weighted Territorial estimate (given in column 6), it was necessary first to multiply figures obtained from the sub-samples by a certain factor[1] to arrive at estimates for the whole regional sample. These figures were again multiplied by the multiplication factor for the appropriate region, to obtain estimates for the whole region[2].

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1) In each case this factor was the total number of homesteads in the full regional sample divided by 60, the number of homesteads in each sub-sample.
2) See Chapter II, section 1.9.2.

For most of the sources of income we had no quantitative information other than that obtained from the sub-samples of sixty homesteads. With regard to three sources, however, we did have information regarding total cash earnings from these sources for the whole regional samples, for cattle sales, services and handicrafts. We substituted these figures in our calculations of total earnings from each source for the full regional samples. Thus, we estimated that the total wage earnings of the full Highveld sample during the year investigated would be R60,701, while we knew that total cattle sales in this sample were R1,200. We compared this last figure with the estimates of wage earnings, and of total cash incomes, to produce the table of percentage given above.

The final column of the table is an estimate, weighted according to the varying populations of the four physiographic regions in the Rural Survey Area, of the proportions of total cash incomes throughout that area derived from various sources.

Handicrafts includes such items as shoe repairing and dress making, as well as more traditional activities. Services includes proceeds[1] from such activities as storekeeping or practicing as a herbalist. Other sources includes the sale of fowls, small stock and milk (the latter providing considerable incomes for some families in the Lowveld.

This table also gives an indication of the actual contribution from wage earnings to total cash incomes in the different regions, as distinct from the number of homesteads reporting wage incomes. Thus, while in the Highveld sub-sample only 73% of the homesteads reported wage earnings during the year, nearly nine-tenths (88%) of the total cash reported as coming into these homesteads was derived from wages.
1) See next Page.

In all sub-samples, except that from the Lebombo, wages made up approximately four-fifths of all cash earnings.

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1) The last was a popular profession among the people in our sub-samples, and incomes from this type of work accounted for a large proportion of the total income from services.

There is some evidence which suggests that our estimates of the contribution of cash crop sales to total cash incomes may be on the low side. This is not improbable, since only a small proportion of rural Swazi cultivate cash crops, and of these only a few do so on an extensive scale. Thus, as far as total cash crop earnings for the whole Rural Survey Area are concerned, a disproportionately large share may accrue to a relatively small number of relatively large operators in these spheres. As explained above[1], our sampling technique was not specifically designed to cover such erratically distributed characteristics. Nevertheless, even if the contributions of cash crop earnings were as much as two or three times larger than our estimates (and other evidence suggests that they are most unlikely to be higher), this would only result in a change of a few percentile points in the percentages ascribable to other sources; and so would have little effect on the overall pattern, as shown in this table[2].

6. PRODUCTION INCOME:

6.1 Definition:

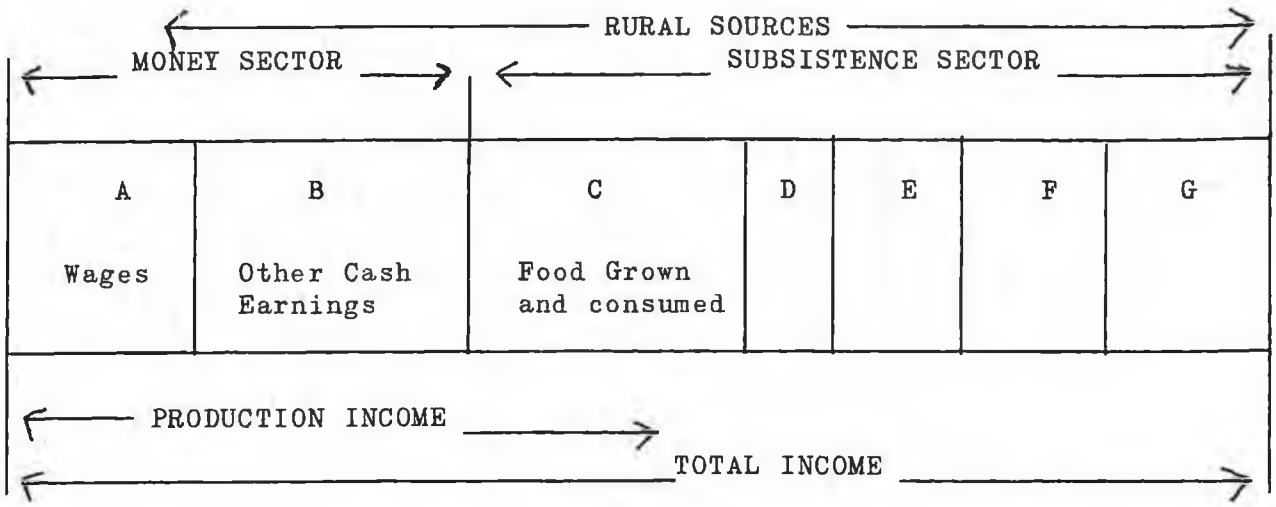
In section 2.1 above we mentioned the difficulties of estimating, or even of defining clearly, any income other than cash income for individuals living in this type of semi-subsistence economy. Nor do these cash incomes alone constitute a valid basis for really meaningful comparisons between semi-subsistence economies and others dominated by money and regular exchange.

The rural Swazi can not only acquire money with which to purchase essentials and luxuries; they can also satisfy many of their basic needs from the resources available in the rural areas, without any need for money. To estimate the total income of any homestead, or group, or area, we would have to take the value of these resources into account. We suggested in section 1.1 above that the rural economy could best be regarded as having two sectors, a money sector and a subsistence sector. When we come, however, to examine the subsistence sector more closely, it can be seen that it, too, is composed of a number of distinct sub-sectors, or segments.

1) See next page.
2) See next page.

1) Cf: chapter II, section 4.
2) Annual Report of the Land Utilization Department (Swaziland), 1961, Appendix 2.

The position is summarized in the diagram below. If we regard the whole block as representing the total income, then segments A and B together would represent the money sector, segments C to (say) G the subsistence sector. If we let C represent the value of food grown and consumed, then D, E, F and G might represent such things as the value of a dwelling site, of arable lands, free pasture, free water, or of free access to a number of raw materials. Needless to say, there is no absolute necessity to divide these into four segments of the total income; they could be divided into any number convenient for the particular analysis to be undertaken.



Earlier in this chapter we have analyzed the relationships between segments A and B, the two comprising the money sector. No attempt has so far been made to relate these quantitatively with the other segments, those belonging to the subsistence sector.

We have not tried to give monetary values to total incomes, for the reasons already given. An an experiment, however, we did make the attempt (mentioned in section 2.1) to give monetary values to the food grown and consumed, and so deduce the monetary values of what we have called 'production incomes'. These we define as the total value of (a) wage earnings, (b) of other cash earnings, and (c) of food grown and consumed. They are, therefore, only a part (though possibly a major part) of total incomes. On the diagram production income is represented by segments A, B and C combined.

6.2 Consumption Index:

In order to calculate production incomes, we had to make a number of assumptions. Thus, we assumed that a moderately active adult male would consume 1.25 lbs of maize products daily, 3 ozs of meat, 4 ozs of beans, and small quantities of other foodstuffs. These we consider reasonable estimates. A conservative monetary value (purchase prices) for this quantity of food, would be 13.7 c, or about R50.00 a year. This figure, and the food quantities involved were regarded as reasonable, if perhaps on the low side, by the nutritionist currently carrying out a nutrition survey in Swaziland[1].

To allow for sex and age differences in food consumption, we applied the following factors, supplied by the South African National Nutrition Council[2].

MALES		FEMALES	
Man (very active)	- 125	Woman (very active	- 100
Man (moderately active)	- 100	Woman (moderately active)	- 90
Man (sedentary)	- 90	Woman (sedentary)	- 85
Boy (16-20)	- 115	Girl (16-20)	- 95
Boy (13-15)	- 105	Girl (13-15)	- 100

Child (10-12)	- 90
Child (7-9)	- 80
Child (4-6)	- 70
Child (2 - 3)	- 65

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1) Miss Sonya Jones, who is conducting this survey on behalf of the Institute for Social Research and the Swaziland Government.

2) Cf. Mrs. Ruth Webb, Durban's Poverty Line, (unpublished report), Durban 1958, part 2, p. 4.

Infants under two years of age were arbitrarily allocated a factor of 50, although this figure was not given by the South African Nutrition Council. Since sedentary occupations are virtually unknown in the Swazi rural areas, and both men's and women's activities involve continuous manual labour, we also arbitrarily classed all adults as "very active". As the calculations on which we had based our estimate of R50.00 for food were based on the assumed consumption of a "moderately active" male, a factor of 100 was equated with a yearly consumption of food of this value.

On the basis of these assumptions we arrived at a total potential consumption index for each homestead. To allow for known absentees (who would not be consuming part of the homestead's food supply during their absence) we deducted from this the absentee figure, which was reached by multiplying the appropriate consumption factor for each known absentee by the proportion of the year that he or she was known to have been absent from the homestead. Thus, for an adult male who was away at work for six months of the year, we deducted 62.5 from his homestead's total potential consumption index. For a seventeen year old girl, absent for the same time, we would have deducted 47.5[1].

After the absentee figure had been deducted, R50.00 was multiplied by the resulting consumption index for each homestead. This gave an estimate of the monetary value of the food consumed in each case. We then deducted the value of food known to have been bought during the year (actually, we only had information about maize purchases). The final figure was assumed to be the monetary value of the food produced and consumed by the homestead group during the year[2].

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1) We only had information regarding those absent at work; so another assumption made (and probably a reasonable one) was that casual visits away from homesteads would largely be balanced, over the whole sample, by other visitors coming to the homesteads.
2) We must stress that, in this experimental exercise, we have sought to do no more than estimate the gross value of food produced and consumed. This does not include the value of any foodstuffs produced and sold (which would be included under cash incomes); nor is any allowance made for the cost of production, whether in cash (cost of seed, fertilizer or paid labour), or in terms of unpaid labour provided by members of the homestead group or others.

To this figure was added the total cash income received. The final figure resulting from all these arithmetical calculations we called the "production income".

6.3 Relative Values of Cash and Production Incomes:

The first table below, based on these calculations, gives our estimates of the percentage contribution of various elements to production income in the four regional sub-samples.

A SOURCES OF PRODUCTION INCOMES (PERCENTAGES)

Source	H	M	L	Leb.
Wages	32.9	20.3	20.5	15.3
Other cash earnings	3.0	2.9	4.8	16.8
Subsistence sector (Value of food produced and consumed)	64.1	76.7	74.8	67.9

The second table gives the percentage wage income in cash income in these sub-samples.

B WAGE INCOME CONTRIBUTIONS TO TOTAL CASH EARNINGS (PERCENTAGES) 1)

H	M	L	Leb.
91.8	87.0	81.7	43.0

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1) These figures, it will be noted, are different from those given in the table under 5.3. This is due to the fact that in compiling the latter table, as explained in that section, we were able to make use of certain figures relating to the whole regional samples, rather than relying on estimates based on the sub-samples alone.

The figures in table B in this section refer only to figures obtained from the sub-samples. Comparison with table 5.3 will show that the differences are not great, except in the case of the Lebombo. Here the proportion of income (both cash and production incomes) ascribable to "other cash earnings" was inflated by one homestead in the sub-sample that reported a cash income, from sources other than wages, of R4182.

From these tables it can be seen that, while in all regional samples other than that of the Lebombo, wages made up four-fifths or more of cash incomes, only in one region (the Highveld) are they estimated to contribute appreciably more than one-fifth to production income.

In spite of their partially speculative basis[1], these figures do give some impression of the possible quantitative relationships between different elements in the total economy of the Swazi rural population; or, in terms of the diagram in 6.1, of the relative contributions to total incomes of the segments we have labelled A, B and C.

6.4 Proportions of Cash Income Contribution:

With regard to the question of how much food is purchased and how much home grown, there are two polar possibilities:-

1) that all of it is home produced, or
2) that all of it is purchased.

Tables 4 A and 4 B of the Annexure show the percentages of homesteads in the sub-samples with varying proportions of their production incomes made up from wage earnings (Table 4 A) and total cash earnings (Table 4 B). A study of these will reveal that the second of the two possibilities, (i.e., all food is purchased) could only be true in a small proportion of these homesteads: those with cash incomes comprising 50% or more of production income.

In all other cases, where cash income contributes under 50% of production income, the value of food consumed (the purchase price) must have exceeded the total value of cash earnings.

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1) One possibility is that we may have overvalued the contribution of home produced food to the diets of the homesteads in our samples, since we have no exact information regarding the extent of food purchases, except in the case of maize. Yet, despite this large area of uncertainty, these figures and calculations do give us some definite information about the domestic economy of these families.

To make this point clearer, some relevant characteristics of both these tables are summarized below.

	H	M	L	Leb	All random sub-samples
Percentage of homesteads deriving 50% or less of production incomes from wages	81.7	93.4	96.7	91.8	90.8
Percentage of homesteads deriving 50% or less of production incomes from cash earnings of all kinds	81.6	91.6	89.6	88.4	88.0
Percentage of homesteads deriving 30% or less of production incomes from wages	65.0	78.4	82.4	75.1	75.0
Percentage of homesteads deriving 30% or less of production incomes from cash earnings of all kinds	65.0	75.0	74.6	71.7	71.7

Thus, we can say with some confidence, that approximately 90% of all homesteads in the Middleveld, Lowveld and Lebombo sub-samples would have been unable to purchase all their food requirements, even had they devoted all their cash earnings during the year to this purpose. A slightly higher proportion would have been unable to do this from their wage incomes.

Similarly, we can say that, if cash earnings comprise only 30% of production income, then the minimum value of the food consumed must be equal to 70% of the production income[1]. We can, therefore, say that probably three-quarters of the homesteads in the Middleveld, Lowveld and Lebombo sub-samples, and nearly two-thirds of those in the Highveld sample

1) This is the minimum value. Where any allowance has been made for food purchases (see section 6.3) the value of food consumed would naturally have been slightly higher.

had insufficient cash incomes to purchase even half their food requirements.

If we had given a slightly lower monetary value to the food consumption element in our calculations, these figures just given would, naturally, be reduced slightly. However, the value of the food consumed would have to be reduced to an unrealistically low level to alter greatly the general pattern suggested above.

7. MAIZE PRODUCTION AND WAGE INCOME:

7.1 Possible Causal Relationships:

We also wished to investigate whether there is a possible connection between the shortage of staple food (maize) in certain homesteads, and the wage earning activities of these homestead groups. We were anxious to discover whether there was any evidence of the emergence of two distinct classes of rural Swazi: one primarily dependent on farming but indulging in some money earning activities; the other comprised mainly of wage earners who attempted to do a little farming.

In Tables 1 and 2 (Annexure) it can be seen that there were an appreciable number of homesteads reporting no cash incomes during the year investigated, and an even higher proportion reporting incomes of less than R40.00 per homestead, or R6.00 per person. Even in the Highveld, which all other evidence suggests is the most money conscious region, homesteads reporting less than R6.00 made up nearly 40% of our sub-sample.

At the other end of the scale, there were the quarter of all homesteads in our samples with incomes at or above the upper quartile (section 4.1, Tables A and B). The minimum incomes for this group ranged from R107 in the Lebombo to R171 in the Highveld. Further evidence, suggestive of a tendency for our sample population to split into two groups, each concentrating on different economic activities, is provided by the table in section 5.2. This shows how nearly 40% of all homesteads in our samples had no wage earning contributions to their total cash incomes, while another 50% relied on wages for 81% or more of their cash incomes.

7.2 Cash Incomes of Homesteads Reporting Maize Deficits. Surpluses and Sufficiency:

In an attempt to get further evidence regarding this question, all homesteads in the regional sub-samples were divided into three groups; those reporting a maize surplus, those reporting a bare sufficiency, and those reporting a maize deficit. The distribution of cash incomes within these three groups was then calculated. The

percentages of the three groups falling into the various cash income classes is shown in the following table.

DISTRIBUTION OF CASH INCOMES (PER HEAD) IN HOMESTEADS REPORTING MAIZE DEFICITS. SUFFICIENCY AND SURPLUSES

	PERCENTAGE HOMESTEADS.		
Cash income per head (in Rand)	Deficit Reporting Homesteads	Sufficiency Reporting Homesteads	Surplus Reporting Homesteads
0	20.7	27.1	23.3
1 - 6	24.8	15.3	31.7
7 - 12	14.9	20.3	6.7
13 - 18	12.4	13.6	13.3
19 - 24	7.4	6.8	5.0
25 - 30	7.4	3.4	6.7
31 - 36	0.8	1.7	3.3
37 - 42	2.5	3.4	3.3
43 - 48	1.7	3.4	1.7
49 - 54	-	3.4	-
55 - 60	0.8	-	-
Over 60	6.6	1.7	5.0
	121 = 100.0%	59 = 100.1%	60 = 100.0%

This table shows that a slightly higher proportion of homesteads reporting maize sufficiencies or surpluses fell in the lower cash income classes, than was the case among the maize deficit homesteads. Thus, only 35.5% of the latter fell in classes with incomes of R6.00 per head or less, while the corresponding figure for the maize sufficiency group was 42.4%, and that for the maize surplus group 45.0%.

7.3 Median Maize Deficits and Surpluses in Different Wage Income Classes:

The deficit reporting and the surplus reporting sections were then divided into classes according to the wage incomes received. The maize deficit (or surplus), in pounds weight per head, was calculated for each homestead. The median deficit or surplus for each wage income class was tabulated, as shown in the table below.

RELATIONSHIPS BETWEEN WAGE INCOMES PER HOMESTEAD AND MAIZE DEFICITS PER HEAD 1959-60

Income per Homestead (In Rand)	Median Deficit - lbs per Head	
	Deficit reporting Homesteads	Surplus Reporting Homesteads
0	200 (39)*	190 (30)
1 - 40	175 (16)	150 (6)
41 - 80	130 (20)	200 (7)
81 - 120	66 (21)	250 (4)
121 - 160	176 (3)	137 (4)
161 - 200	80 (3)	100 (3)
201 - 240	60 (4)	100 (1)
241 - 280	240 (3)	240 (1)
281 - 320	130 (2)	770 (2)
321 - 360	88 (4)	-
361 - 400	140 (1)	-
Over 400	120 (3)	300 (2)
Nos.of Homesteads	121	60

* Figures in brackets refer to number of homesteads in each class.

If the hypothesis, that there was a direct connection between maize deficits and wage earning, were correct one would have expected maize deficits to vary in direct proportion to these. Unfortunately, there were so few homesteads in the higher income classes in both sections that medium deficit and surplus figures are of little significance. In the four lowest classes of the deficit

reporting section, however, where numbers were larger, one has the surprising phenomenon of the median deficit decreasing with increased wage earnings. In the surplus reporting section, one also has a tendency for surpluses to increase with increased wage earnings.

7.4 Median Wage Incomes in Maize Deficit, surplus and Sufficiency Reporting Groups:

Finally, the median wage income in surplus reporting, sufficiency reporting and surplus reporting groups was calculated. Since in each group the median was considerably effected by the number of homesteads reporting no wage income, we also calculated the median wage income for those groups in each section which did report some wage income. The results are tabulated below.

WAGE INCOME (PER HOMESTEAD) FOR HOMESTEADS REPORTING MAIZE DEFICITS, MAIZE SUFFICIENCY, ANDMAIZE SURPLUSES

	Homesteads reporting		
	deficit	sufficiency	surplus
Number of Homesteads with no wage income	39 = 32.2%	25=42.4%	30=50%
Total Number of Homesteads	121	59	60
Median	48	42	9
Median for wage earning group	90	120	96
Maximum reported income	1160	768	834

From this it can be seen that, while the median wage income in the deficit reporting group is close to that of the sufficiency reporting group, it is far lower in the surplus reporting group. A different trend however, is revealed by the median figures of those reporting wage income: the median wage income of the sufficiency reporting group is the highest, followed by the surplus reporting group, with that of the deficit reporting group being the lowest of all.

Thus, the evidence relating to this possible dichotomy of the Swazi rural population into farmers and wage labourers is in many respects contradictory. We may well be confronted with a phenomenon, well known in western money economies, where the initial urge to wage earning may result from some direct need, but where, once the practice has started, it is not stopped once this need is satisfied, but continued as the result of habit, and of adjustment of a way of living to a more liberal income.

7.5 Possibility of Long-Term Cycles:

We have, therefore, no definite evidence from the sample survey data that there is any direct casual relationship between high levels of wage earnings and agricultural inefficiency. In fact, there are some indications that higher wage earnings are more likely to be found in homesteads that are also relatively successful in the agricultural sphere.

In interpreting the foregoing tables, it must be remembered that our investigations were confined to the situation during a specific year. Yet, both with regard to subsistence activities and in the money sector, there is no reason to believe that we are dealing with phenomena that necessarily have an annual cycle. Crop surpluses from one year may make up deficits during the next one. Money earned earlier may be used to purchase food later. Cattle bought in the past, during periods of intensive earnings, may be bartered for grain; possibly to be replaced later, when it is more convenient for the menfolk of the homestead to go out to work.

Thus, in the table in section 5.2, and elsewhere, there are some suggestions of a possible division of the rural Swazi into two main economic classes; one primarily dependent (for cash income) on wage earnings, the other relying mainly on rural activities. One posibility is that these figures do actually reflect such an incipient division within the rural community. Another, which would fit the facts equally well, is that they reflect a cycle of several years, during which the emphasis in the economic life of individual homesteads alternates between dependence on wage earnings and dependence on rural activities.

Most rural Swazi who work regularly do have alternating periods of work and "rest" (when they have the opportunity to concentrate on rural activities). In some homesteads, with two or more adult males, they will arrange to go out to work in turns; but this is impossible in many of the small homestead groups of the present day, in which there may be only one potential migrant labourer. Evidence is given in Chapter IX indicating that the most popular length of the working period is of the order of two years, that of the 'rest period' a little over three years. In such a case, one would have a cycle of a little more than five years. A cycle such as this could also account for the sharp division with regard to sources of cash incomes that we have noted.

While both these hypotheses would explain our figures, others equally plausible could be set up. We have been able to give in this chapter a certain amount of information as to what the patterns of cash and other forms of income are. Our information is not sufficient, however, to enable us to do more than speculate regarding the causes

of these patterns.

8. SUMMARY:

8.1 Farmers or Labour Migrants?:

Our information relating to homestead incomes is in many ways one of the less precise parts of our survey. We need not repeat again why this is so. This being the case, however, the tables in this chapter should be regarded as being primarily indicative of the patterns to be found in the present Swazi rural economy, and they should not be considered in isolation. They should be interpreted in the light of the evidence and figures elsewhere in this report.

One of our aims in conducting this investigation was to provide a meaningful answer to one fundamental, yet apparently very simple question: what are the rural Swazi, from the economic point of view? Are they primarily farmers, who occasionally indulge in wage labour; or are they primarily wage labourers, who merely happen to have country residences?

We have tried to isolate information that might throw some light on this problem. In section 4 we discussed the distribution and sizes of cash incomes among the homestead groups in our random sub-samples; data which strongly indicate that we are not dealing with a population made up mainly of subsistence cultivators. In section 6.4 we adduced evidence which, if our assumptions regarding levels of food consumption are substantially correct, suggests that the majority of rural homestead groups are at present unable to provide even half their basic food requirements from wage earnings alone.

These two findings are not necessarily contradictory. The balance of the evidence would appear to be that, while most rural Swazi have already started on the journey from a subsistence economy to a fully monetised one, only a small minority have yet reached or passed the half-way mark.

8.2 Bearing on Agricultural Extension Work:

With regard to cash incomes, both their absolute size and the main sources from which they are derived, are of interest. In particular, the levels of cash earnings among the most 'successful' quarter in each of our sub-samples should be noted (section 4.1). Since these incomes are mostly derived from wages, and there is no real shortage of opportunities for employment under present conditions [1], we can assume with some confidence that the incomes earned by this quarter could also be earned by an appreciable proportion of the remaining homestead groups, if only the drive were sufficient.

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1) As unskilled labourers, which our survey data suggest the majority of rural Swazi are.

This could have particular relevance in connection with agricultural extension work. For example, it has been estimated[2] that an enterprising Swazi farmer, cultivating a developed holding of 12 acres or thereabouts, could reasonably hope for an annual net cash income of the order of R180 to R200, provided that he had assured markets for his produce, and employed techniques far in advance of those of most Swazi agriculturalists today[3]. While this estimate assumes that this hypothetical farmer would supply most of his family's food requirements from his land, in addition to his cash earnings, it also assumes that he would devote all his time to agriculture, and so be unable to supplement his earnings by going as a migrant labourer.

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2) Principal Agricultural Officer (Swaziland Government), personal communication.
3) That is, the best technique that a Swazi with limited capital resources could reasonably be expected to adopt.

Our evidence indicates that a quarter of the homesteads in some areas already have annual cash incomes of R170 or more (Table 4.1). The possibility of earning R180 to R200 a year would, therefore, seem to offer little in the way of financial inducement for this section to accept all the sacrifices, and radical changes in the traditional way of life, that would be necessary if all Swazi were to be turned into full-time peasant cultivators.

8.3 The Resilience of the Present Economy:

In the present chapter we gave figures which suggest that a large number of rural domestic budgets are highly dependent on wage earnings (sections 5.1 to 5.4). Moreover, some 40% of Swazi wage earners are at present in employment outside Swaziland (Chapter IX). These two sets of facts make it desirable in future to watch the quantitative relationships between the money and subsistence sectors of homestead incomes.

At present, all the indications are that there is a considerable potential resilience in this dualistic economy; that much of the "slack" produced by any sudden decrease in the demand for labour could be taken up by greater reliance on the produce of the land. If, however, the weight of the money sector were to increase substantially, it might not so easily be possible for the rural sector to compensate for the loss of employment opportunities[1].

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1) CF. Chapter VII, section 2.3.6.

8.4 In this section we have only discussed some of the more obvious implications of the figures relating to homestead incomes. We cannot, from the data available, give more definite answers to the fundamental question we asked at the beginning of this section.

9. EPILOGUE:

This chapter has been sub-titled "an experimental study". This, indeed, it was. It was an experiment designed to discover what answers we could give, and how precise these answers could be, to questions which we did not originally (in the sample survey) set out to answer in detail.

The calculation of homestead incomes was the initial experiment; one which we now feel to have been justified. In view of the information that we have been able to extract from these figures, it seems that this concept might prove a useful sociometric instrument for the assessment of economic trends in the rural areas in the future.

Every research worker, offered quantitative data such as we have given in this chapter, is faced with the temptation to produce one or more index figures. Thus, the data given in section 6 suggest the possibility of some numerical "index of economic acculturation". Such an index, apart from being far more concise than the various tables we have given, would also allow direct, quantitative comparisons to be made between the rural Swazi and other societies with a semi-subsistence economy.

Here we have resisted this temptation; partly because of the dangers of over-simplification inherent in all index numbers[1], but mainly because of the speculative elements in some of our key calculations. Thus, with regard to section 6, while we have regional estimates for maize yields, these cannot be correlated directly with the production incomes of individual homesteads. Apart from maize, we have no reliable evidence enabling us to estimate levels of rural productivity on a homestead basis. Nor do we yet have any detailed information about the levels of consumption of different kinds of foodstuffs, or how adequate these are from the dietetic point of view.

Given this additional information, none of which would be unduly difficult to obtain through further field studies, some numerical index to cover this particular aspect of this problem could, however, be devised. It would be even more meaningful if some allowance could be made for segments of the subsistence sector that we have here excluded from our 'production income' (see section 6.1).

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1) Cf. M.J. Moroney, Facts from Figures, Harmondsworth, (Pelican) 1960, pp. 48 ff.
2) See section 6.2, p. 17, footnote1).

This is only one of many possible lines of further research suggested by this investigation. As in most pioneer studies, every section of this chapter may suggest more problems than it solves. With the limited amount of information at our disposal we have been able to do no more than outline the probable main features of this aspect of the rural economy. In the future, however, specially designed studies should lead to a refinement of the various concepts which we have employed, or to the development of new concepts where necessary, and so produce more detailed and less speculative findings.

A N N E X U R E S

TABLE 1 A

RURAL HOMESTEAD CASH INCOME YEAR ENDING 30/6/60 - (DISTRIBUTION OF HOMESTEADS PER INCOME GROUP)

* Unweighted totals

Income during year (Rand)	H	M	L	Leb	Combined *
0	11	15	12	17	55
1 - 41	12	12	12	16	52
41 - 80	10	11	11	6	38
81 - 120	5	5	10	9	29
121 - 160	7	8	3	1	19
161 - 200	2	2	4	2	10
201 - 240	2	-	-	2	4
241 - 280	1	2	2	1	6
281 - 320	1	1	2	3	7
321 - 360	1	2	2	-	5
361 - 400	1	-	-	-	1
401 - 440	-	-	1	-	1
441 - 480	-	-	-	1	1
481 - 520	-	-	-	-	-
521 - 560	2	2	-	-	4
561 - 600	-	-	-	1	1
Over 600	5	-	1	1	7
	60	60	60	60	240

TABLE 1 B

(PERCENTAGE HOMESTEADS IN INCOME GROUPS)

Income during year (Rand)	H	M	L	Leb	Combined *
0	18.3	25.0	20.0	28.3	22.9
1 - 40	20.0	20.0	20.0	26.7	21.7
41 - 80	16.7	18.3	18.3	10.0	15.8
81 - 120	8.3	8.3	16.7	15.0	12.1
121 - 160	11.7	13.3	5.0	1.7	7.9
161 - 200	3.3	3.3	6.7	3.3	4.2
201 - 240	3.3	-	-	3.3	1.7
241 - 280	1.7	3.3	3.3	1.7	2.5
281 - 320	1.7	1.7	3.3	5.0	2.9
321 - 360	1.7	3.3	3.3	-	2.1
361 - 400	1.7	-	-	-	0.4
401 - 440	-	-	1.7	-	0.4
441 - 480	-	-	-	1.7	0.4
481 - 520	-	-	-	-	-
521 - 560	3.3	3.3	-	-	1.7
561 - 600	-	-	-	1.7	0.4
Over 600	8.3	-	1.7	1.7	2.9
	60= 100%	60= 99.8%	60= 100%	60= 100.1%	240= 100%

TABLE 2 A

RURAL HOMESTEAD CASH INCOME (YEAR ENDING 30/6/60)

TOTAL CASH INCOME PER HEAD

(DISTRIBUTION OF HOMESTEADS PER INCOME GROUP)

Income during Year (Rand)	H	M	L	Leb	Combined *
0	11	15	12	17	55
1 - 6	15	13	14	16	58
7 - 12	8	11	8	7	34
13 - 18	8	7	11	5	31
19 - 24	3	6	4	3	16
25 - 30	5	3	3	4	15
31 - 36	-	-	3	1	4
37 - 42	2	-	2	3	7
43 - 48	2	2	-	1	5
44 - 54	-	1	1	-	2
55 - 60	1	-	-	-	1
61 - 66	-	1	-	1	2
67 - 72	2	-	1	-	3
73 - 78	1	-	-	-	1
79 - 84	1	-	-	1	2
85 - 90	-	-	-	-	-
91 - 96	-	1	-	-	1
97 - 102	1	-	-	-	1
Over 102	-	-	1	1	2
	60	60	60	60	240

* Unweighted Totals.

TABLE 2 B

(PERCENTAGE HOMESTEADS PER INCOME GROUP)

Income during Year(Rand)	H	M	L	Leb	Combined*
0	18.3	25.0	20.0	28.3	22.9
1 - 6	25.0	21.7	23.3	26.7	24.2
7 - 12	13.3	18.3	13.3	11.7	14.2
13 - 18	13.3	11.7	18.3	8.3	12.9
19 - 24	5.0	10.0	6.7	5.0	6.7
25 - 30	8.3	5.0	5.0	6.7	6.2
31 - 36	-	-	5.0	1.7	1.7
37 - 42	3.3	-	3.3	5.0	2.9
43 - 48	3.3	3.3	-	1.7	2.1
44 - 54	-	1.7	1.7	-	0.8
55 - 61	1.7	-	-	-	0.4
62 - 66	-	1.7	-	1.7	0.8
67 - 72	3.3	-	1.7	-	1.2
73 - 78	1.7	-	-	-	0.4
79 - 84	1.7	-	-	1.7	0.8
85 - 90	-	-	-	-	-
91 - 96	-	1.7	-	-	0.4
97 - 102	1.7	-	-	-	0.4
Over 102	-	-	1.7	1.7	0.8
	60= 99.9%	60= 100.1%	60= 100%	60= 100.2%	240= 99.8%

*Unweighted totals.

TABLE 3 A

WAGE EARNINGS PER HOMESTEAD (YEAR ENDING 30/6/60)

DISTRIBUTION OF HOMESTEADS PER INCOME GROUP

Wage Income during Year (Rand)	NUMBER OF HOMESTEADS				
	H	M	L	Leb	Combined *
0	16	25	25	28	94
1 - 40	9	4	5	7	25
41 - 80	11	11	8	6	36
81 - 120	6	5	11	9	31
121 - 160	3	7	1	-	11
161 - 200	2	2	2	2	8
201 - 240	2	1	2	2	7
241 - 280	1	1	1	2	5
281 - 320	1	1	1	2	5
320 - 360	1	1	2	-	4
361 - 400	1	-	-	1	2
401 - 490	-	-	1	-	1
441 - 480	-	-	-	-	-
481 - 520	3	-	-	1	4
521 - 560	-	2	-	-	2
561 - 600	1	-	-	-	1
Over 600	3	-	1	-	4
	60	60	60	60	240

* Unweighted Totals.

TABLE 3 B

(PERCENTAGE HOMESTEADS IN INCOME GROUPS)

Wage Income during Year (Rand)	NUMBER OF HOMESTEADS				
	H	M	L	Leb	Combined*
0	26.7	41.7	41.7	46.6	39.2
1 - 40	15.0	6.7	8.3	11.7	10.4
41 - 80	18.3	18.3	13.3	10.0	15.0
81 - 120	10.0	8.3	18.3	15.0	12.9
121 - 160	5.0	11.7	1.7	-	4.6
161 - 200	3.3	3.3	3.3	3.3	3.3
201 - 240	3.3	1.7	3.3	3.3	2.9
241 - 280	1.7	1.7	1.7	3.3	2.1
281 - 320	1.7	1.7	1.7	3.3	2.1
321 - 360	1.7	1.7	3.3	-	1.7
361 - 400	1.7	-	-	1.7	0.8
401 - 440	-	-	1.7	-	0.4
441 - 480	-	-	-	-	-
481 - 520	5.0	-	-	1.7	1.7
521 - 560	-	3.3	-	-	0.8
561 - 600	1.7	-	-	-	0.4
Over 600	5.0	-	1.7	-	1.7
	60= 100.1%	60= 100.1%	60= 100%	60= 99.9%	240 = 100%

*Unweighted totals.

TABLE 4 A

RURAL HOMESTEAD CASH INCOME (YEAR ENDED 30/6/60)

PERCENTAGE WAGE INCOME OF TOTAL CASH INCOME PER HOMESTEAD

Percentage wage earnings (Rand)	No. of Homesteads per wage percentage Group				
	H	M	L	Leb	Combined *
0	16	25	25	28	94
1 - 10	-	-	-	-	-
11 - 20	-	1	-	-	1
21 - 30	-	-	-	-	-
31 - 40	-	-	1	-	1
41 - 50	1	1	-	-	2
51 - 60	-	-	2	-	2
61 - 70	2	-	3	2	7
71 - 80	3	4	2	2	11
81 - 90	2	1	6	3	12
91 - 100	36	28	21	25	110
	60	60	60	60	240

TABLE 4 B

PERCENTAGE HOMESTEADS PER WAGE PERCENTAGE GROUP

Percentage wage earnings (Rand)	H	M	L	Leb	Combined*
0	26.7	41.7	41.7	46.7	39.2
1 - 10	-	-	-	-	-
11 - 20	-	1.7	-		0.4
21 - 30	-	-	-	-	-
31 - 40	-	-	1.7		0.4
41 - 50	1.7	1.7	-	-	0.8
51 - 60	-	-	3.3		0.8
61 - 70	3.3	-	5.0	3.3	2.9
71 - 80	5.0	6.7	3.3	3.3	4.6
81 - 90	3.3	1.7	10.0	5.0	5.0
91 - 100	60.0	46.6	35.0	41.7	45.8
	60= 100%	60= 100.1%	60= 100%	60= 100%	240= 99.9%

* Unweighted totals.

RURAL HOMESTEAD PRODUCTION INCOME (YEAR ENDING 30/6/60)
WAGE INCOME AS PERCENTAGE OF PRODUCTION INCOME

Wage percentage of production Income (R)	PERCENTAGE OF HOMESTEADS				
	H	M	L	Leb	Combined*
0	26.7	41.7	41.7	46.7	39.2
1 - 10	15.0	10.0	10.0	10.0	11.2
11 - 20	13.3	16.7	15.0	11.7	14.2
21 - 30	10.0	10.0	15.0	6.7	10.4
31 - 40	5.0	11.7	6.7	11.7	8.7
41 - 50	11.7	3.3	8.3	5.0	7.1
51 - 60	6.7	3.3	1.7	5.0	4.2
61 - 70	10.0	-	1.7	1.7	3.3
71 - 80	1.7	3.3	-	1.7	1.7
81 - 90	-	-	-	-	-
91 - 100	-	-	-	-	-
	60= 100.1%	60= 100%	60= 100.1%	60= 100.2%	240 = 100%

TABLE 5 B

TOTAL CASH INCOME AS PERCENTAGE OF PRODUCTION INCOME

Wage percentage of production Income (R)	PERCENTAGE OF HOMESTEADS				
	H	M	L	Leb	Combined *
0	18.3	25.0	18.3	28.3	22.5
1 - 10	16.7	20.0	18.3	21.7	19.2
11 - 20	15.0	16.7	20.0	15.0	16.7
21 - 30	15.0	13.3	18.3	6.7	13.3
31 - 40	3.3	13.3	10.0	11.7	9.6
41 - 50	13.3	3.3	5.0	5.0	6.7
51 - 60	5.0	3.3	5.0	6.7	5.0
61 - 70	10.0	1.7	5.0	1.7	4.6
71 - 80	3.3	3.3	-	1.7	2.1
81 - 90	-	-	-	1.7	0.5
91 - 100	-	-	-	-	-
	60= 99.9%	60= 99.9%	60= 99.9%	60= 100.2%	240= 100.2%

* Unweighted totals

CHAPTER IX

WAGE EMPLOYMENT AND LABOUR RESOURCES

(A.S.B. Humphreys C. McClelland)

1. INTRODUCTION:

1.1 Definition of Employment:

In a dual economy such as that of Swaziland, where a developed sector and a subsistence sector exists side by side, the concept of employment has a different connotation within each sector. The first requirement, thus, is to define precisely the meaning of the term 'employment' as it is used in the following analysis. Employment is considered in this particular context as WAGE EMPLOYMENT only. Consequently, for present purposes a person is regarded as being employed only if such a person works for a wage.

By definition, therefore, all persons engaged in subsistence farming and all self-employed persons are excluded for the purpose of this chapter and, consequently, caution must be exercised in assessing the overall degree of unemployment since much of the low work participation reflected in section 3 of this study may well be due to the deliberate exclusion of the full-time farming and self-employed groups from the scope of the definition used here.

Accordingly, in terms of this definition, the present chapter constitutes an analysis of the structure of wage employment in Swaziland, as indicated by the Random Sample Survey of Swaziland (1960), together with a brief commentary upon the position of Swazi subjects in wage employment outside the borders of Swaziland.

1.2 Outline:

The analysis comprises four major sections, viz:-

Section 2 : (a) The industrial and occupational structure of the wage labour force of Swaziland, together with a brief examination of the existing wage structure.
(b) An analysis of certain aspects of the data obtained from labour returns submitted by a number of the major employers of labour in Swaziland.

Section 3 : An examination of work participation in wage exmployment and the age and sex structure of the Swazi labour force engaged in wage employment.

Section 4 : An examination of the duration of wage employment and an assessment of the proportion of the year the average Swazi engages in wage employment.

Section 5 : Summary and major conclusions.

A case study of the administrative district of Hlatikulu, is appended to this chapter.

2. THE INDUSTRIAL, OCCUPATIONAL AND WAGE STRUCTURES OF THE LABOUR FORCE IN WAGE EMPLOYMENT :

2.1 Random Sample Areas :

2.1.1 Method of Classification :

A labour force may be classified in several ways, notably by industries, by occupations, by identity of employer, by status of employment etc. For purposes of this particular study, however, the industrial and occupational classifications have been adopted as furnishing the most significant information. The distinction between these two classifications lies in the fact that in the former, workers are classified according to the industry in which they are employed, while in the latter they are classified according to the nature of the work they perform[1].

The labour force under consideration comprises those persons in the sample who were actually engaged in wage employment at the time of the survey (July, 1960); the regions considered and compared are the urban, the rural and the border areas[2].

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1) For example, a clerk may be employed in agriculture or manufacturing, mining or transport, whilst a concern in any of these types of industry could employ clerks, engineers, manual labourers etc.

2) The 'rural' areas are sub-divided according to the Physiographic strata of the country; into Highveld, Middleveld, Lowveld and Lebombo; or according to administrative districts into Pigg's Peak, Mbabane, Manzini, Mankaiana, Stegi and Hlatikulu. The 'urban' areas cover Africans living in the main urban centres while the 'peri-urban" areas are those surrounding the areas which have been found to have predominantly urban characteristics. As the name indicates, these are areas on the borders of Swaziland selected to discover whether they possessed any special characteristics, particularly any especially attributable to their border situation. Attention is drawn to the fact that throughout section 2.1 only male employment has been analysed in respect of the border areas. (For the distribution of the Border areas, see Chapter II above).

TABLE 1[1)]

MALE WAGE EMPLOYMENT BY INDUSTRY : SWAZILAND 1960 (PERCENTAGES)

INDUSTRY	H	M	L	Leb	Rural *	Border	Urban/ Peri/Urban
Farming and Forestry	38.19	37.86	43.12	24.46	36.51	25.78	8.76
Mining	20.99	35.57	36.70	35.97	31.00	41.93	7.25
Manufacturing	2.92	3.93	3.67	5.76	3.79	3.73	2.72
Trading	7.87	2.14	3.67	7.19	5.40	9.63	16.92
Transport	2.04	1.07	.92	3.60	1.84	1.55	7.25
Government	11.95	8.93	4.59	5.04	8.96	8.07	37.46
Domestic	7.00	4.64	4.59	11.51	6.66	5.59	9.67
Religious & Welfare	2.92	1.79	.92	1.44	2.07	.93	2.11
Other	6.12	1.07	.92	3.60	3.44	2.48	7.85
Unknown	-	-	.92	1.44	.34	.31	-
Number in Sample	100.00 343	100.00 280	100.00 109	100.00 139	100.00 871	100.00 322	100.00 331
Percentage employed outside Swaziland.	42.57	46.43	46.79	37.41	43.51	49.07	7.55

N.B. Industrial classification involves employment both inside and outside Swaziland.

* Rurals totals are constructed without weighting by the use of multiplication factors (see Chapter II, section 1.4).

1) The following standard errors have been calculated for certain of the percentages in Table 1:-

Industry	H	M	L	Leb	Rural	Border	Urban/Peri Urban.
Farming and Forestry	2.62	2.90	4.74	3.65	1.63	2.44	1.55
Mining	2.20	2.91	4.62	4.07	1.57	2.75	1.43
Trading	-	-	-	-	-	-	2.06
Government	1.75	1.70	-	-	-	-	2.66
Domestic	-	-	-	2.71	-	-	-

2.1.2 Male Employment by Industries:

Table 1 shows male employment by industry, the figures representing the proportion of the total labour force of the region employed in various industries. It also indicates that European farms and plantations and the mining industry are the foremost providers of employment for rural male wage earners. Inter-regionally, agriculture, as a source of wage employment is of relatively greater importance in the Highveld region, while the Lebombo region relies more heavily than others upon the employment provided by the mining industry. Apart from farming, forestry and mining, no other avenues of employment absorb more than 10% of the rural male wage labour force.

In the case of the border areas employment by the mining industry far exceeds that provided by farming and forestry, a fact which is probably attributable to the attraction exerted by the Witwatersrand Gold Mining Industry upon the Migratory labour of the areas. For the rest, the employment pattern in the border areas tends to follow the general rural pattern fairly closely.

The urban and peri-urban pattern, however, differs considerably from the rural pattern. While farming, forestry and mining account for almost 68% of rural male labour, only approximately 16% of urban males find employment in these industries. Instead, by far the largest proportion of urban wage earners find employment in Government and municipal services and in trading activities. The only industries employing more than 10% of the present male labour force of the urban areas are Government ($37\frac{1}{2}$%) and trading (17%). Employment in transport undertakings ($7\frac{1}{4}$%) is also much more significant in the urban than in the rural areas.

2.1.3 Female Employment by Industries:

Female participation in wage employment in Swaziland is governed largely by the types of activities which are traditionally undertaken by women in a subsistence economy and are limited mainly to agricultural activities (weeding, hoeing) and to domestic service.

TABLE 2[1)]

FEMALE EMPLOYMENT BY INDUSTRY : SWAZILAND, 1960.

(PERCENTAGES)

Industry	Rural*	Urban/peri-urban
Farming and Forestry	21.58	3.77
Mining	-	-
Manufacturing	1.44	3.77
Trading	.72	3.77
Transport	-	-
Government	2.60	17.92
Domestic	61.15	65.09
Religious and Welfare	11.51	5.66
Other	-	-
Unknown	-	-
Number in sample	100.00 139	100.00 106
Percentage employed outside Swaziland.	35.97	.94

N.B. Industrial classification involves employment both inside and outside Swaziland.

* Rural totals are constructed without weighting by the use of multiplication factors. (See Chapter II section 1.4).

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1) See next page.

1) The following standard errors have been calculated for certain of the percentages in Table 2.

Industry	Rural	Urban/peri-urban
Farming and Forestry	3.49	-
Government	1.58	3.73
Domestic	4.14	4.63
Religious & Welfare	2.71	-

Table 2 indicates that domestic service is the major source of employment for Swazi women, both rural and urban. Female employment in agriculture[1)] in the rural areas, in Government service in the urban areas, and in religious and welfare services in both rural and urban regions is of some significance, but only a negligible number of women are absorbed in employment offered by other industries.

2.1.4 Summary : Employment by Industries:

Most of the wage-employment opportunities open to the population of Swaziland are provided by agriculture and mining and in Government and domestic service. There is, as yet, no significant employment in secondary industry which is, primarily, a reflection of the general level of development of the Swaziland economy.

2.1.5 Male Employment by Occupations:

While the industrial structure of the labour force, as analysed above, indicates broadly the degree of development of the economy, i.e. that is predominantly dependent upon primary activities, analysis of the occupational structure reflects the degree of development of the labour force itself. The following table indicates the importance of various categories of occupations for male Swazi wage earners.

The overwhelming proportion of the wage labour force employed in manual occupations is indicative of the low standards of skill and productivity and, consequently, of wage earnings in this community.

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1) Weeding is an important avenue of wage employment for women in agriculture.

TABLE 3[1)]

MALE EMPLOYMENT BY OCCUPATION : SWAZILAND, 1960 (PERCENTAGES)

Occupation	H	M	L	Leb	Rural *	Border	Urban/Peri-Urban.
Professional	5.25	4.29	1.83	1.44	3.90	4.35	12.99
Clerical	4.66	1.43	4.59	.72	2.99	3.73	16.62
Salesmen	4.37	.71	.92	4.32	2.76	7.14	9.97
Manual	74.04	88.20	86.24	78.41	80.83	74.84	40.48
Craftsmen	2.92	.36	-	2.16	1.61	3.73	9.67
Service	8.75	4.64	5.50	11.51	7.46	5.59	10.27
Other	-	.36	-	-	.11	.31	-
Unknown	-	-	.92	1.44	.34	.31	-
Number in Sample	100.00 343	100.00 280	100.00 109	100.00 139	100.00 871	100.00 322	100.00 331
Percentage employed outside Swaziland	42.57	46.43	46.79	37.41	43.51	49.07	7.55

N.B. Industrial classification involves employment both inside and outside Swaziland. Rural totals are constructed without weighting by the use of multiplication factors (see Chapter II, section 1.4).

1) The following standard errors have been calculated for certain of the percentages in Table 3:-

Occupation	H	M	L	LEB	RURAL	BORDER	URBAN/PERI-URBAN
Manual	2.37	1.93	3.30	3.49	1.33	2.42	2.70

Variations between the proportions engaged in manual labour in the rural areas between 74% and 88%, the Highveld region exhibiting the lowest manual labour ratio. A higher standard of development of the labour force exists in the urban and peri-urban areas where less than half of the labour force is engaged in manual labour and where clerical and professional occupations are of greater importance[2].

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2) The urban and peri-urban labour as defined here is not the actual labour force employed in all urban and peri-urban areas, but that part of the labour force whose homes are in the randomly sampled urban and peri-urban areas. The labour force employed by major enterprises at Pigg's Peak, Havelock etc., is discussed in section 2.2 below.

The dependance of so large a proportion of the labour force of Swaziland upon wages derived from unskilled manual labour indicates that there is wide scope for the development of the African labour force and stresses the need for improved methods and longer periods of education and training, for the development of greater practical experience through continuous employment in homogeneous occupation (which pre-supposes a more stable labour force), and the provision of improved working conditions and facilities.

2.1.6 Female Employment by Occupation :

TABLE 4
FEMALE EMPLOYMENT BY OCCUPATION : SWAZILAND 1960
(PERCENTAGES)

Occupation	Rural*	Urban & Peri-Urban
Professional	14.39	22.64
Clerical	-	.94
Saleswomen	13.67	3.77
Manual	10.79	4.72
Craftswomen	-	1.89
Service	61.15	66.04
Other	-	-
Unknown	-	-
Number in sample	100.00 139	100.00 106
Percentage employed outside Swaziland	35.97	.94

N.B. Industrial classification involves employment both inside and outside Swaziland.

* Rural totals are constructed without weighting by the use of multiplication factors. (See Chapter II section 1.4).

The breakdown of the occupational structure of female wage employment shown in Table 4 emphasises the dependance of Swazi women upon employment in domestic and personal services (over 60%). It is noteworthy, however, that a relatively high proportion of wage-earning women in both rural and urban areas are engaged in professional occupations such as Government and Religious and Welfare services etc.

2.1.7 Conclusions : Industrial and Occupational Structure:

When classified by industry the African labour force of Swaziland reflects the generally underdeveloped nature of the Swaziland economy emphasising particularly the lack of secondary and tertiary industry as sources of wage employment. The occupational classification reveals the generally low quality of the labour, which is largely dependent upon unskilled low-wage manual occupations. The conclusion is therefore that considerable scope exists for the improvement in the quality and production of African labour in Swaziland, which may be accomplished by :-

(a) encouragement of stability of the labour force[1)]

(b) provision of improved facilities for education and training

(c) improved working conditions.

2.1.8 Domestic and External Employment : by Industries :

Since a significant proportion of the Swazi wage labour force customarily seeks employment outside Swaziland, Table 5 indicates the extent of the employment, in terms of industrial classifications, provided by outside sources as against that provided by domestic industry within Swaziland.

From Table 5 it can be seen that farming and forestry and Government service are important as domestic employers of Swazi labour while mining constitutes the prime external absorber of such labour.

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(1) Stability in the present context means a labour force in which the average worker retains the same job for a relatively long period. Where a labour force is stable in this sense, the workers obviously accumulate skill and experience and gain dexterity. In addition, of course, less time is spent in training new workers.

TABLE 5

MALE EMPLOYMENT BY INDUSTRY, 1960

(PERCENTAGES)

Industry	Rural		Border	
	Inside Swaziland	Outside Swaziland	Inside Swaziland	Outside Swaziland
Farming and Forestry	52.07	17.02	35.37	15.82
Mining	4.36	64.66	29.88	54.43
Manufacturing	4.15	3.14	3.66	3.80
Trading	6.43	3.93	9.15	10.13
Transport	2.70	.79	2.44	.63
Government	14.73	1.83	10.37	5.70
Domestic	7.88	4.97	5.49	5.70
Religious and Welfare	3.53	.26	1.83	-
Other	3.73	3.14	1.22	3.80
Unknown	.42	.26	.61	-
Number in Sample	100.00 483	100.00 388	100.00 164	100.00 158

2.1.9 Employment on the Witwatersrand :

As indicated in table 5, 546 males in the sample, who originated in the rural and 'border' areas of Swaziland, were in employment outside Swaziland at the time of the survey in 1960. In addition to these, however, a significant number who were not currently employed were also recorded as having had their most recent employment outside Swaziland. Of these two groups, 717 Swazi males were recorded at the time of the survey as either being currently employed on the Witwatersrand, or, if not employed, as having had their most recent employment there. Table 6 shows the numbers and percentages of these 717 Swazi wage earners according to the type of industry in which they are or were employed and indicates that mining is by far the most important employer of Swazi males on the Witwatersrand.

TABLE 6

INDUSTRIAL CLASSIFICATION OF RURAL SWAZI MALES WORKING ON THE WITWATERSRAND ACCORDING TO PRESENT AND LAST EMPLOYMENT HELD : * 1960

Industry	Number	Percentage
Farming and Forestry	9	1.26
Mining	652	90.93
Manufacturing	10	1.39
Trading	14	1.95
Transport	4	.56
Government	8	1.12
Domestic Service	14	1.95
Religious & Welfare	-	-
Other	5	.70
Unknown	1	.14
Total	717	100.00

* The present, or if unemployed, the most recent employment. i.e. 'Employment X' referred to in Chapter IV.

According to occupational classification, as shown in Table 7 below, almost 95% of all Swazi employed on the Witwatersrand are engaged in manual labour, no other occupation absorbing any significant numbers.

Further examination of the data regarding 675 manual labourers shown in Table 7, revealed that 640 of them were employed in the mining industry, indicating that only 12 (or less than 2%) of the rural Swazi in the sample who worked on the Witwatersrand mines were employed in capacities other than those of manual labourers.

TABLE 7

OCCUPATIONAL CLASSIFICATION OF RURAL SWAZI MALES WORKING ON THE WITWATERSRAND ACCORDING TO PRESENT AND LAST EMPLOYMENT HELD : 1960

Occupation	Number	Percentage
Professional	6	.84
Clerical	11	1.53
Salesmen	7	.98
Manual	675	94.14
Craftsmen	1	.14
Service	16	2.23
Other	-	-
Unknown	1	.14
Total	717	100.00

2.1.10 The Wage Structure:

In analysing the wage structure of the Swaziland African male labour force, a regional approach was adopted. Table 8 below accordingly indicates the proportions of the total wage labour force in each rural region and in the urban and peri-urban areas, which were in receipt of the monthly incomes indicated.[1)]

1) The average wage for each rural stratum and for the urban and peri-urban areas was calculated by multiplying the number of persons in each wage category by the respective wage (at a selected central value) and the products totalled for each stratum, giving the total value of wages earned in the various strata. Each of these totals was then divided by the number of individuals in each relevant stratum , giving the average wage per individual.

TABLE 8

INCOME FROM PRESENT EMPLOYMENT* - MALES ONLY

The Percentage Distribution of Each Region's Labourers according to Monthly Income						
Income in Rand per Month	R U R A L A R E A S					Urban/ Peri-Urban
	H	M	L	Leb	Total**	
- 2	-	-	-	-	-	-
2 - 4	.88	3.94	.95	2.17	2.08	1.81
4 - 6	4.68	7.89	4.76	6.52	6.02	2.42
6 - 8	19.30	15.41	26.67	23.19	19.56	11.78
8 - 10	21.35	27.60	22.86	20.29	23.38	12.99
10 - 12	16.08	11.83	10.48	16.67	14.12	8.76
12 - 14	7.31	6.09	8.57	7.25	7.06	9.67
14 - 16	4.97	2.87	4.76	4.35	4.17	5.44
16 - 18	3.51	7.53	2.86	3.62	4.75	4.53
18 - 20	2.34	2.15	3.81	2.17	2.43	4.23
20 - 40	14.91	11.47	7.62	6.52	11.57	25.38
40 - 60	2.63	1.79	.95	2.17	2.08	8.16
60+	.58	.36	-	-	.35	3.32
Unknown	1.46	1.06	5.71	5.07	2.43	1.51
Number in Sample	100.00 337	100.00 276	100.00 99	100.00 131	100.00 843	100.00 326
Average Earnings (R)	14.48	13.03	11.82	11.95	13.30	21.29
Total Earnings R	4,879	3,597	1,170	1,565	11,211	6,939

* Those actually engaged in wage employment at the time of the survey
** Rural totals unweighted.

Thus the rural males of the Highveld and Middleveld are generally in receipt of somewhat higher wages than those in the Lowveld and Lebombo, while the males employed in the urban and peri-urban areas are considerably better paid than those in the rural areas. In the rural districts the most common wage earned is between R6 - R12 per month (57%). A similar wage is earned by approximately 33.5% of males in the urban and peri-urban areas, but a further 33.5% of the latter earn between R20 - R60 per month.

2.2 The Labour Force of Selected Industrial Concerns :

2.2.1 Introduction :

The statistical data upon which this section is based were drawn primarily from two sources :-

(1) The 'Consolidated Quarterly Return of African Labour employed within Swaziland', as at 31st March, 1960; and

(2) Individual returns of 13 major industrial concerns as at 30th June, 1960[1].

In addition, use was also made of the Labour Officer's reports on his visits to the various concerns during 1957/58[2].

In order to maintain anonymity, the 13 selected industrial concerns have been classified under six headings viz. : Mining, Sugar, Cotton, Timber, other Agricultural and Industrial and General. It should be emphasised that the number of labourers shown under each of these headings in Table 9 below, constitutes the total number employed only by the selected firms in that classification and does not reflect the total number employed in Swaziland in each of the categories[3].

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1) See Chapter II, section 2.2.7.
2) Of particular interest in these reports were the estimated future labour requirements and the notes on accommodation and rations supplied to workers. Estimates of future labour requirements indicated that all concerns were either already understaffed or expected to be understaffed in the near future.
3) Excludes labour employed by the Swaziland Government.

TABLE 9

TOTAL EMPLOYMENT OF AFRICAN LABOUR IN SELECTED CONCERNS : BY INDUSTRY[1)]

Classification	Total No. of Labourers[2)]
Mining	1,585
Sugar	5,233
Cotton	218
Timber	3,290
Other Agriculture[3)]	800
Industrial and General	209
Total	11,335

Source : Individual labour returns.
Notes :
1) This table indicates only the absolute numbers under consideration.
2) As at 30th June, 1960.
3) 'Other Agriculture' includes large employers of labour who cannot be classified specially under Sugar, Cotton or timber. It does not include small farmers.

2.2.2 The Origin of the Labour Force:

Table 10 shows the areas of origin of the labour force employed in the selected concerns in the various types of industry in Swaziland, together with the proportion of that labour force which originates in each of these areas.

While cotton and timber cultivation and industrial and general activities employ an almost entirely domestic labour force, other activities, particularly local mining, rely heavily upon imported labour, mainly from Portuguese East Africa and the Republic of South Africa.

Approximately 94.5% of the labour in the service of the Swaziland Government was drawn from local sources, whilst 79.9% of the labour force employed by the selected industrial concerns and the Swaziland Government, taken together, were of Swazi origin[1)].

1) Consolidated Quarterly Return of African Labour Employed within Swaziland : 31st March, 1960.

TABLE 10

THE ORIGIN OF AFRICAN LABOUR FORCE IN SELECTED MAJOR INDUSTRIAL CONCERNS IN SWAZILAND, JUNE, 1960.

Employed in	Percentage Swazi	Percentage P.E. African	Percentage C.A. Federation	Percentage Republic of S.A. & Other.
Mining	42.78	36.02	13.82	7.38
Sugar	72.16	15.01	3.29	9.54
Cotton	98.62	-	-	1.38
Timber	91.28	3.34	2.98	2.40
Other Agriculture	61.75	15.37	2.13	20.75
Industrial & General	92.82	4.78	.48	1.92

Source : Individual Labour returns as at 30th. June, 1960.

Geographical location close to sources of suitable labour explains for certain individual concerns, the areas of origin and the size of the imported labour force as indicated in Table 10. For others, however, an explanation of the pattern of immigrant labour must be sought from such economic factors as the wage level and the stability of the Swazi labour force and from a variety of sociological factors which include the areas and methods of recruitment, the tendency for the pattern set by first employments to be repeated until greater knowledge and experience of the employment possibilities of the labour market are acquired etc.[1].

1) See also Chapter IV section 2.12.

2.2.3 Immigrant labour :

According to official statistics, approximately 80% of the labour force is drawn from domestic sources. There is thus a significant proportion of immigrant labour, the bulk of which is drawn from Portuguese East Africa. Table 11 indicates the structure of the immigrant labour force.

TABLE 11

ORIGIN OF IMMIGRANT LABOURERS

Employed in	Percentage Non-Swazi	Breakdown of Non-Swazi		
		Percentage P.E. Africans	Percentage C.A. Federation	Percentage Republic & Other
Mining	57.22	62.95	24.15	12.90
Sugar	27.84	53.95	11.81	34.25
Cotton	1.38	-	-	100.00
Timber	8.72	38.33	34.15	27.53
Other Agriculture	38.25	40.20	5.56	54.25
Industrial & General	7.18	66.67	6.67	26.66

2.2.4 The Age and Sex Structure of the Labour Force:

This sub-section is independent of the analysis of the age/sex structure of the labour force as a whole, which will be made under section 3.3 below. The categories adopted for the present analysis are those for which data are available from the individual labour returns of selected concerns, viz.:-

Females : Juveniles and adults.
Males : Juveniles, single and married adults.

The following tabulations indicate the proportions of the labour force, according to age and sex categories, which are drawn from domestic sources within Swaziland (Table 12) and from Portuguese East Africa (Table 13).

TABLE 12

THE AGE/SEX STRUCTURE OF THE DOMESTIC LABOUR FORCE IN SELECTED MAJOR CONCERNS : JUNE, 1960

(Percentage in Each Industry)

Employed in	Female Juveniles	Male Juveniles	Female Adults	Male Adults Single	Male Adults Married*
Mining	-	14.75	2.06	62.98	20.21
Sugar	2.12	9.96	10.17	51.19	26.56
Cotton	1.86	8.37	40.93	15.35	33.49
Timber	2.03	9.19	5.69	39.06	44.02
Other Agriculture	-	4.66	5.26	49.19	40.89
Industry and General	-	-	36.60	8.25	55.15

* Employees living on Employer's premises as married persons.

Although the majority of Swazi employed in Swaziland are adult males who form the predominant group employed in most spheres of industrial and agricultural activity, the employment of adult females is by no means insignificant, particularly in cotton cultivation and in industry and general activities. Juvenile males also constitute approximately 10% of the respective labour forces employed in mining, sugar, cotton and timber.

Amongst the Portuguese East African immigrant workers there are relatively few adult women or juveniles of either sex, male adult labour comprising from 85 - 100% of the respective labour forces. In mining and in sugar cultivation single adult males predominate whilst married adult males form the bulk of the labour force in 'other agricultural' activities and in secondary industry and other general enterprises.

Table 13

THE AGE/SEX STRUCTURE OF THE PORTUGUESE EAST AFRICAN LABOUR FORCE IN SELECTED MAJOR CONCERNS

(Percentages in each Industry)

Employed in	Females Juveniles	Male Juveniles	Female Adults	Male Adults Single	Male Adults Married
Mining	-	3.50	-	74.26	22.24
Sugar	2.54	5.09	6.74	54.58	31.04
Cotton	-	-	-	-	-
Timber	-	9.09	-	47.27	43.64
Other Agriculture	-	-	-	39.84	60.16
Industry & General	-	-	-	20.00	80.00

2.2.5 Length of Employment[1]:

Table 14 shows the length of employment of the domestic Swazi labour force in the selected concerns in various types of industry.

In cotton cultivation and in 'industrial and general' activities, the great bulk of the labour force has been employed for less than one year and for most other industries 50% or more of the labour force have been in continuous employment for two years or less. Significant proportions of the labour forces engaged in mining, timber cultivation and 'other agricultural activities', however, have been employed for several years, indicating that periods of active employment in a number of industries extend far beyond a six months' migratory spell[2].

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1) This sub-section, while forming part of the analysis of selected labour forces, is also relevant to the broader discussion on the duration of employment which appear in section 4 below.
2) A similar finding is made in section 4 ('Duration of Employment').

Table 14

LENGTH OF EMPLOYMENT : DOMESTIC LABOUR FORCE IN SELECTED MAJOR CONCERNS

(percentages in each Industry)

Years Employed	Mining	Sugar	Cotton	Timber	Other Agri-culture	Indus-trial & General
- 1	39.38	45.60	80.93	38.19	10.53	90.72
1 - 2	10.32	48.09	15.81	16.12	19.23	4.12
2 - 3	10.47	2.25	3.26	9.66	12.35	2.06
3 - 4	9.00	2.70	-	11.42	21.46	.52
4 - 5	5.90	.64	-	6.69	18.22	1.03
5 - 10	17.11	.72	-	14.22	18.22	1.55
10 +	7.82	-	-	3.76	-	-

Table 15 compares the duration of employment of local Swazi labourers with that of immigrant labourers from Portuguese East Africa, with the object of ascertaining whether immigrants are customarily employed for longer or shorter periods than local workers.

From Table 15 it appears that there is little consistency in the relative lengths of employment of domestic and immigrant labour. In mining activities the Portuguese African Labourers are, in general, the more stable labour force, while in sugar cultivation employment of Swazi labour appears to be of slightly longer duration. Cotton cultivation provides no comparison, but in timber cultivation there is a greater degree of stability amongst Swazi labourers, whilst in the case of 'other Agriculture' and of 'industrial and general' labour forces it is not possible to determine whether there is a tendency for immigrant workers to be employed for shorter or longer spells than local labourers.

TABLE 15

COMPARISON OF EMPLOYMENT DURATION OF MIGRANT AND LOCAL LABOUR (PERCENTAGES) : BY INDUSTRY

Years	Mining		Sugar		Cotton		Timber		Other Agriculture		Industrial & General	
	Swazi	P.E.A.	Swazi	P.E.A.	Swazi	PE A.	Swazi	P.E.A.	Swazi	P.E.A.	Swazi	P.E.A.
- 1	39.38	16.64	45.60	61.83	80.93	-	38.19	47.27	10.53	12.20	90.72	90.00
1 - 2	10.32	10.16	48.09	27.61	15.81	-	16.12	20.00	19.23	11.38	4.12	-
2 - 3	10.47	14.54	2.25	4.58	3.26	-	9.66	5.45	12.35	25.20	2.06	-
3 - 4	9.00	11.73	2.70	5.09	-	-	11.42	16.36	21.45	21.14	.52	-
4 - 5	5.90	6.65	.64	.38	-	-	6.69	4.55	18.22	15.45	1.03	-
5 - 10	17.11	23.99	.72	.51	-	-	14.22	1.82	18.22	14.63	1.55	10.00
10 +	7.82	16.29	-	-	-	-	3.70	4.55	-	-	-	-
Total	100.00	100.00	100.00	100.00	100.00	-	100.00	100.00	100.00	100.00	100.00	100.00

TABLE 16

EMPLOYMENT DURATION OF SWAZI LABOURERS IN THE SELECTED CONCERNS BY SEX AND TYPE OF EMPLOYMENT (Percentages by Sex and Industry)

	Female Adults	Single Males	Married Males	Female Adults	Single Males	Married Males
		Mining			Sugar	
- 1	7.14	42.15	2.92	38.02	50.13	40.48
1 - 2	-	11.24	10.22	56.51	45.27	47.45
2 - 3	7.14	12.88	7.30	2.08	1.78	3.79
3 - 4	7.14	7.26	17.52	2.86	1.37	6.18
4 - 5	14.29	5.62	10.22	.53	.78	.70
5 - 10	64.29	14.99	31.39	-	.67	1.40
10 +	-	5.86	20.43	-	-	-
	100.00	100.00	100.00	100.00	100.00	100.00
		Cotton			Timber	
- 1	80.68	63.64	83.33	46.20	42.97	27.84
1 - 2	19.32	24.24	12.50	20.47	20.80	10.89
2 - 3	-	12.12	4.17	3.51	9.80	10.29
3 - 4	-	-	-	3.51	9.89	15.20
4 - 5	-	-	-	2.92	8.95	6.20
5 - 10	-	-	-	15.79	4.86	24.74
10 +	-	-	-	7.60	2.73	4.84
	100.00	100.00	100.00	100.00	100.00	100.00
		Other Agriculture			Industrial & General	
- 1	-	3.29	10.40	95.77	62.50	91.59
1 - 2	96.15	16.87	14.36	-	31.25	2.80
2 - 3	3.85	17.70	8.91	1.41	6.25	1.87
3 - 4	-	23.46	24.26	1.41	-	-
4 - 5	-	17.28	23.27	-	-	1.87
5 - 10	-	21.40	18.80	1.41	-	1.87
10 +	-	-	-	-	-	-
	100.00	100.00	100.00	100.00	100.00	100.00

Table 16 isolates the Swazi section of the labour force and examines the duration of employment by sex.

As with table 15, no definite patterns are revealed here, except a tendency for a larger proportion of married males to be employed for somewhat longer periods than either single males or adult females.

2.2.6 Labour Turnover :

In order to measure labour turnover, arrivals and departures during the quarter 1st January, 1960, to 31st March, 1960, were examined and have been expressed in Table 17, as a percentage of the total labour force in each type of industry at the end of the quarter (31st March, 1960).

TABLE 17 *

LABOUR TURNOVER

Industry	As a Percentage of Total Labour force	
	Departures	Arrivals
Mining	15.36	17.24
Sugar	15.29	36.13
Cotton	90.30	98.73
Timber	25.56	43.02
Other Agriculture	12.51	3.77
Industrial & Gen	62.58	98.71

* This Table has been calculated from the Consolidated Return, and the constitution of some of the industries differs somewhat from that in earlier tables.

The labour-turnover indices exhibit a considerable inter-industry variation. Mining, sugar cultivation, 'other agriculture' and, to a smaller degree, timber, have relatively stable labour forces. The fact that the 'industrial and general' labour force (where the seasonal variation might be expected to be smallest) has a comparatively unstable labour force, does not rule out seasonal variation as a possible explanation of at least a part of the difference. For, in the Swaziland context, secondary industry is to a large extent dependent upon agriculture and consequently suffers from similar seasonal variations in activity.

2.2.7 Money Wages:

The comparison in Table 15 between the duration of employment of local labour and that of labour imported from Portuguese East Africa, showed no clear-cut trend. A similar comparison in respect of wages paid to local and imported labour (Table 18) indicates no more definite pattern, for although in mining imported migrant labour appears to be more highly paid, in sugar cultivation and other agricultural activities, local Swazi labour enjoys a slight numerical advantage in the higher paid groups.

Table 19 examines the inter-sex wage differential in the Swazi labour force. Though a fairly consistent pattern is reflected in this table, it does no more than confirm expectations that the older and more stable elements in the labour force are better paid. Married males receive more in wages than do single males, single males more than females and, with the exception of those employed in the sugar and timber industries, females in general receive more than juvenile males[1]. Though table 19 sets out the actual wages received by workers of both sexes and emphasizes the inter-industry differences in wage payments, its chief significance lies in showing the distribution of the labour force over the various wage brackets, the general tendency being for the greater part of the labour force to be concentrated in two adjacent categories whose level in the various industries varies according to the sex and marital status of the workers.

2.2.8 Wage Levels and Length of Employment:

In order to determine whether any positive correlation exists between wage levels and length of employment, the relative lengths of employment and the wages paid to the selected Swazi labour forces are compared in Table 20. This table indicates that, when the labour force in general has a relatively high average period of employment, the wage level, too, tends to be above the average. However, on the basis of this information it is impossible to assess whether the wage level is relatively high because workers have been employed for a comparatively long period and have thus become more productive, or whether the higher wage level causes workers to remain in the same employment for longer periods.

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1) This may be attributed to the nature of some of the work performed by women, notably weeding.

TABLE 18

A COMPARISON OF WAGES PAID TO LOCAL AND TO MIGRANT LABOUR : PERCENTAGES OF SWAZI AND PORTUGUESE EAST AFRICAN LABOUR EMPLOYED AT VARIOUS WAGE LEVELS : BY INDUSTRY

Wages (R per Month)	Mining		Sugar		Cotton		Timber		Other Agriculture		Industrial & General	
	Swazi	P.E.A.	Swazi	P.E.A.	Swazi	PEA.	Swazi	P.E.A.	Swazi	P.E.A.	Swazi	P.E.A
- 6	8.70	1.58	25.66	25.45	10.23	-	14.96	19.09	5.26	-	-	-
6 - 8	40.71	18.74	17.61	39.82	69.77	-	26.82	20.91	5.87	3.25	41.75	30.00
8 - 10	31.12	44.30	26.33	12.09	13.49	-	29.44	35.45	48.58	69.11	51.55	60.00
10 - 20	19.03	35.20	26.96	19.97	5.58	-	23.96	21.82	29.76	21.95	4.64	-
20 - 40	.44	.18	3.44	2.67	.93	-	4.69	2.73	9.11	.81	2.06	10.00
40+	-	-	-	-	-	-	.13	-	1.42	4.88	-	-
Total	100.00	100.00	100.00	100.00	100.00	-	100.00	100.00	100.00	100.00	100.00	100.0

TABLE 19

PERCENTAGES OF SWAZI LABOURERS EMPLOYED AT VARIOUS WAGE LEVELS : BY SEX AND INDUSTRY

Wages (R Per Month)	Male Juveniles	Female Adults	Males Single	Males Married	Male Juveniles	Female Adults	Males Single	Males Married
	Mining				Sugar			
- 6	56.00	7.14	.47	-	58.78	66.93	18.21	5.88
6 - 8	43.00	50.00	50.35	8.03	18.08	32.81	17.85	12.56
8 - 10	1.00	28.57	37.00	35.04	23.14	-	24.99	42.17
10 - 20	-	14.29	11.94	55.47	-	-	34.60	34.80
20 - 40	-	-	.24	1.46	-	.26	4.35	4.49
40 +	-	-	-	-	-	-	-	.10
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Cotton				Timber			
- 6	100.00	-	-	-	51.21	72.19	6.38	6.97
6 - 8	-	100.00	63.64	56.94	27.82	25.82	29.97	23.47
8 - 10	-	-	27.27	27.78	19.76	1.99	36.76	28.97
10 - 20	-	-	9.09	12.50	1.21	-	25.27	31.06
20 - 40	-	-	-	2.78	-	-	1.62	9.22
40+	-	-	-	-	-	-	-	.31
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Other Agriculture				Industrial & General			
- 6	100.00	-	.82	.50	-	-	-	-
6 - 8	-	96.15	1.25	.50	-	95.77	60.00	3.70
8 - 10	-	-	58.02	49.00	-	1.41	26.67	87.96
10 - 20	-	3.85	27.98	38.61	-	1.41	6.67	6.48
20 - 40	-	-	11.11	8.91	-	1.41	6.66	1.86
40+	-	-	.82	2.48	-	-	-	-
	100.00	100.00	100.00	100.00	-	100.00	100.00	100.00

Table 20

LENGTH OF EMPLOYMENT AND WAGE LEVELS OF THE SELECTED LABOUR FORCES : SWAZI ONLY (PERCENTAGES)

Length of Employment (in Years)	Mining	Sugar	Cotton	Timber	Other Agriculture	Industrial & General
- 1	39.38	45.60	80.93	38.19	10.53	90.72
1 - 2	10.32	48.09	15.81	16.12	19.23	4.12
2 - 3	10.47	2.25	3.26	9.66	12.35	2.06
3 - 4	9.00	2.70	-	11.42	21.46	.52
4 - 5	5.90	.64	-	6.69	18.22	1.03
5 - 10	17.11	.72	-	14.22	18.21	1.55
10 +	7.82	-	-	3.70	-	-
	100.00	100.00	100.00	100.00	100.00	100.00

MONTHLY WAGES

Wages R						
- 6	8.70	25.66	10.23	14.95	5.26	-
6 - 8	40.71	17.61	69.77	26.82	5.87	41.75
8 - 10	31.12	26.30	13.49	29.44	48.58	51.55
10 - 20	19.03	26.96	5.58	23.96	29.76	4.64
20 - 40	.44	3.44	.93	4.69	9.11	2.06
40 +	-	.03	-	.14	1.42	-
	100.00	100.00	100.00	100.00	100.00	100.00

3. LABOUR POTENTIAL, LABOUR UTILIZATION AND THE AGE-SEX STRUCTURE OF THE SWAZILAND LABOUR FORCE:

3.1 Labour Potential [1]:

3.1.1 Introduction:

The primary determinant of the labour potential of any region is the total population of that region. Table 21 indicates the total African population of Swaziland as reflected by the official census of 1956, together with the distribution of the sample population upon which the 1960 survey is based:-

TABLE 21

TOTAL AFRICAN POPULATION (1956) AND POPULATION COVERED BY THE SURVEY

Sex	Total Population (1956 Census)	SAMPLE POPULATION				
		Total	Rural	Urban & Peri-Urban	Border	Special [2]
Male	111,214	6,888	4,406	865	1,345	272
Female	118,530	7,516	4,866	879	1,472	299
Total	229,744	14,404	9,272	1,744	2,817	571

1) The analysis in this section follows closely that of J.R. Burrows M.A., in The Population and Labour Resources of Natal : Volume 6 of the Natal Town and Regional Planning Reports, published by the Town and Regional Planning Commission, Natal, 1960.

2) A footnote on the characteristics of the rural, urban and peri-urban and border regions is appended to section 2.1.1 (page 408) The 'special areas' are essentially rural and were selected on a non-random basis, on grounds that they might exhibit different characteristics from those of other regions.

It should be emphasised here that this section constitutes a static analysis which does not consider changes in labour potential but attempts only to measure labour potential of Swaziland as at June, 1960.

3.1.2 Selection of Working Age Group:

A consideration of labour potential must, in the first place, eliminate that portion of the total population which, by reason of age or mental or physical disability is incapable of working. In the absence of detailed information regarding physical or mental disability, the sub-division of the population is here considered only in terms of age[1].

For practical purposes, the working-age group is generally accepted to cover all persons between the ages of 15 and 64. In order, however, to test the applicability of this hypothesis to the Swazi labour force, the wage labour force as reflected in the survey sample, was grouped according to the broad age categories in Table 23. From this it is apparent that approximately 97½% of the existing wage labour force of Swaziland falls within this particular age group.

TABLE 22

NUMBER AND PERCENTAGE OF THE WAGE LABOUR FORCE* IN THE 15 - 64 AGE GROUP.

Age Group	MALE		FEMALE	
	Number	Percentage	Number	Percentage
Under 15	17	1.1	11	3.3
15 - 64	1,527**	97.7	318	96.1
Over 64	19	1.2	2	.6
Total	1,563	100.00	331	100.00

*Persons actually engaged in wage employment at the time of the survey.

**Includes one person whose exact age is unknown.

1) Other cases of inability to work are disregarded, partly because of lack of information and partly because they are not considered to be as extensive in their effects as age.

Application of the same age distribution to the total sample population (see Table 23) reveals that approximately 51% of the total falls within the working age group, and about 45% in the pre-working age group, with less than 4% over 64 years of age.

TABLE 23

PERCENTAGE OF SAMPLE POPULATION IN VARIOUS AGE GROUPS

Age Group	Rural	Urban and Peri-Urban	Border	Special	Total
- 15	45.28	41.97	42.74	49.21	44.54
15 - 64	50.37	55.91	53.53	47.46	51.54
65+	4.35	2.12	3.73	3.33	3.92
%	100.00	100.00	100.00	100.00	100.00
Numbers	9,272	1,744	2,817	571	14,404

3.1.3 Work Potential Ratio:

The work potential ratio[1] has been estimated on the assumption based on table 23, that the conventional 15 - 64 age range is applicable to the Swaziland labour force. Amongst the inter-regional differences in table 23, the most significant is the higher than average ratio of the urban and peri-urban areas. The lowest ratio is found in the 'special areas'.

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1) The work potential ratio, which indicates the number of workers and the number of dependants in a given total population, may be expressed as

$$\frac{\text{Persons in the 15 - 64 age group}}{\text{Total Population.}}$$

Table 24 indicates the regional and sex differences in the work potential ratio of the African population of Swaziland, based on the sample survey.

TABLE 24

SEX AND REGIONAL DIFFERENCES IN THE WORK POTENTIAL RATIO

Region		Male	Female	Persons
Rural	Highveld	.483	.514	.499
	Middleveld	.513	.495	.503
	Lowveld	.484	.494	.489
	Lebombo	.524	.525	.525
Total Rural*		.501	.506	.504
	Border Areas	.539	.532	.535
	Urban and Peri-Urban	.561	.557	.559

*Unweighted Totals

Whilst there are differences in work population ratio between various regions, these are not great, and only the Lebombo region exceeds the rural average to a marked extent.

3.1.4 Work Potential Ratio : International Comparison:

In order to afford a rough standard against which to measure the work potential ratio figures derived for Swaziland, equivalent figures for certain other territories are given in table 25.

According to Table 25 the Swaziland African population has a relatively lower work potential ratio than most comparable areas. Although the table includes such economically highly developed countries as Canada, Japan, Sweden and West Germany, which have relatively high work potential ratios, the equivalent figures for Swaziland still compare unfavourably with such groups as the African population of Natal and the indigenous populations of Madagascar and Bechuanaland. In short, Swaziland shows fewer potential workers per 100 persons, with each worker having a larger number of dependants to support, than most countries where a roughly comparable stage of development has been reached.

TABLE 25

INTERNATIONAL COMPARISON OF WORK POTENTIAL RATIOS

Country	Date	Work Potential Ratio
Swaziland, Africans Highveld [1]	1960 Sample Survey	.499
Trinidad and Tabago [2]	Estimate 1.7.1957	.541
Natal Natives [3]	1951 Census	.560
Madagascar Indigenous [4]	Estimate 1960	.575
Bechuanaland Indigenous [5]	1946 Census	.579
Canada [2]	Estimate 1.6.1958	.593
Swaziland, Europeans [4]	1956 Census	.604
Japan [2]	Estimate 1.10.1957	.627
Natal, Europeans [3]	1951 Census	.640
Sweden [2]	Estimate 30.6.1957	.651
West Germany [2]	Mean 1.9.1956	.689

1) Sample Survey Statistics (for other strata see Table 24)
2) United Nations Demographic Year Book, 1958, Table 5.
3) Population Census : Union of South Africa, 1951.
4) Swaziland Government's 1956 Census.
5) United Nations Demographic Year Book, 1960, Table 5.

3.1.5 Conclusion:

It must be emphasised here that work potential is but one aspect of the problem of employment. For a person to enter employment not only must he be able to work, but there must exist a desire and incentive to work, and there must be employment available. Since it is a premise of this study that there may possibly be a future labour shortage, the availability of employment probably will not constitute a problem. But the desire to work is a complex socio-economic question, which requires further study and is referred to in later sections of this chapter.

3.2 Labour Utilization:

3.2.1 Employment Participation Ratios:

In order to assess the extent to which the labour potential of Swaziland is being used, the actual existing labour force must be determined. This necessarily involves a definition of employment and attention is again drawn to the definition of employment which applies in this section, i.e. wage employment only.

(a) Net Wage Employment Participation Ratio:

So far the total sample population has been considered, and a rough index of the proportion of potential workers in the total population has been devised. Consideration must now be given to the extent to which these potential labourers are actually engaged in wage employment. A convenient index, devised by J.R. Burrows[1] is the Net Wage (Employment) Participation Ratio (N.W.P.R.) which is calculated as follows:-

$$\frac{\text{Persons engaged in wage employment}}{\text{potential labour force}}$$

Unlike the work potential ratio, this index is not dependent entirely upon demographic factors but is influenced also by economic and social factors. Sex differences in this index, in particular, are noteworthy.

The definition of 'employment' which is used is also significant in the calculation of this ratio. If all self-employed rural persons were to be regarded as being employed, a Net Employment Participation Ratio, as distinct from a Wage Employment Participation Ratio, approaching 100% would have been obtained. Self-employed persons have, however, been excluded and the definition is concerned only with persons engaged in wage employment. Table 26 shows the potential labour force (aged 15 - 64), the actual labour force in wage employment (according to the sample) and the Net Wage Employment participation Ration for Swaziland at the time of the survey.

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1) Op. cit.

TABLE 26

THE POTENTIAL LABOUR FORCE, ACTUAL LABOUR FORCE AND NET WAGE EMPLOYMENT PARTICIPATION RATIO : SWAZILAND, 1960.

Area	Sample Population 15 - 64	Number in Wage Employment	Net Wage Employment participation ratio		
			Male	Female	Total
Highveld	1,611	415	.464	.083	.258
Middleveld	1,779	322	.328	.045	.181
Lowveld	533	117	.436	.028	.220
Lebombo	745	156	.385	.044	.209
Total Rural	4,668	1,010	.395	.056	.216
Border	1,508	403	.444	.103	.267
Urban and Peri-urban	975	437	.683	.216	.448

From table 26 it is evident that the extent of participation in wage employment at the time of the survey was relatively low, particularly so amongst females. Because of the scant representation of the latter1) attention is directed primarily to male participation in wage employment.

(b) The Gross Wage Employment Ratio:

A final index, determined by demographic, cultural and economic factors whether affecting the size of the population of working age or the size of the labour force, is that most commonly used for the measurement of work participation and simply called the 'Work Participation Ratio'. It is calculated as follows:-

$$\frac{\text{Persons engaged in wage employment}}{\text{total population}}$$

1) For the increasing rate of female work participation, see section 4.6 below (Table 43).

and is the product of the Net Wage Employment Participation Ratio and the Work Potential Ratio, i.e.:-

$$\frac{\text{Total labour force}}{\text{Potential Labour Force}} \times \frac{\text{potential labour force}}{\text{total population}} =$$

$$\frac{\text{total labour force (wage employees)}}{\text{total population}}$$

Table 27 shows the Gross Wage Employment Ratio of the Swaziland African population, subdivided by strata for either sex and according to regions.

TABLE 27

GROSS WORK PARTICIPATION RATIOS ;
SWAZILAND, 1960

Area	Male	Female	Total
Highveld	.224	.042	.129
Middleveld	.168	.022	.091
Lowveld	.215	.014	.107
Lebombo	.201	.023	.111
Total Rural	.198	.029	.109
Border Areas	.239	.055	.143
Urban and Peri-Urban	.383	.121	.251

The various indices used above can now conveniently be combined into one table :-

TABLE 28

WAGE EMPLOYMENT PARTICIPATION : SWAZILAND, 1960

Area	Males			Females			Total		
	1	2	3	1	2	3	1	2	3
Highveld	.483	.464	.224	.514	.083	.042	.499	.258	.129
Middleveld	.513	.328	.168	.495	.045	.022	.503	.181	.091
Lowveld	.484	.436	.215	.494	.028	.014	.489	.220	.107
Lebombo	.524	.385	.201	.525	.044	.023	.525	.209	.111
Total Rural	.501	.395	.198	.506	.056	.029	.504	.216	.109
Border	.539	.444	.239	.532	.103	.055	.535	.267	.143
Urban and Peri-urban	.561	.683	.383	.557	.216	.121	.559	.448	.251

1 = Work Potential Ratio (W.P.R.)
2 = Net Wage Employment Participation Ratio (N.W.P.R.)
3 = Gross Wage Employment Participation Ratio (G.W.P.R.)

In so far as inter-regional variations within Swaziland are concerned, a comparison between male wage employees in the Highveld and Lebombo regions indicates that there is a higher Work Potential Ratio in the Lebombo. However, the Net Wage Employment Participation in the Lebombo is so much lower than that of the Highveld that it more than offsets the higher Work Potential Ratio and thus leaves the Lebombo with a lower gross figure. Between the urban and peri-urban areas and the rural areas as a whole there are wide variations, the urban and peri-urban areas showing a considerably higher ratio.

The generally low work participation ratios for females reflect the fact that the persons in wage employment are predominantly males.

3.3 The Age-Sex Structure of the Labour Force:

3.3.1 Introduction:

In analysing the age and sex constitution of the African labour force of Swaziland[1] as reflected in the sample, it was found that both the regional and sex variations were noteworthy.

Two basic classifications were considered :

(a) the proportion of each group engaged in wage employment; and
(b) the proportion of the total wage labour force stemming from various age groups.

In each case a separate table has been compiled for males, females and total persons. These tables are set out below (Tables 29 - 34), comment being postponed until after the last table. This section concludes with an analysis of the ages of the persons falling into the following groups, distinguishing, where possible, between males and females :-

(a) Presently employed i.e. those actually engaged in wage employment inside and outside Swaziland at the time of the survey;
(b) Presently Unemployed but having previously been employed i.e. those who, though actually unemployed at the time of the survey, had at some time previously been in wage employment.

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1) Those persons actually engaged in wage employment at the time of the survey.

TABLE 29

PERCENTAGE OF PERSONS* IN EACH AGE-GROUP GAINFULLY EMPLOYED ** : SWAZILAND, 1960

M A L E S

Age-Group	Rural	Urban and Peri-Urban	Border
- 13	. 1	. 3	.19
13 - 14	5. 1	3. 7	1.56
15 - 17	12. 8	19.05	6.49
18 - 19	20. 5	33.33	31.37
20 - 24	40. 8	63.38	46.67
25 - 29	58. 5	84.85	58.59
30 - 34	55. 1	81.63	67.47
35 - 39	49. 3	79.63	64.38
40 - 44	43. 5	78.57	42.62
45 - 49	36. 1	71.15	45.61
50 - 54	24. 5	62.50	38.64
55 - 59	30. 2	64.00	30.43
60 - 64	21. 1	62.50	11.11
65 - 69	9. 1	16.67	9.52
70 +	7. 1	40.00	-
Total (G.W.P.R.)	19.77	38.27	23.94
Persons	871	331	322

* Those persons actually employed at the time of the survey, in and out of Swaziland.

** In wage employment.

TABLE 30

PERCENTAGE OF PERSONS* IN EACH AGE-GROUP GAINFULLY EMPLOYED** SWAZILAND, 1960.

FEMALES

Age-Group	Rural	Urban and Peri-Urban	Border
- 13	.05	-	.18
13 - 14	1.82	-	5.71
15 - 17	4.26	5.17	11.36
18 - 19	6.10	15.15	16.00
20 - 24	9.83	28.85	11.85
25 - 29	6.34	20.78	12.73
30 - 34	9.76	30.16	9.38
35 - 39	5.22	25.40	8.33
40 - 44	2.48	24.32	7.69
45 - 49	1.92	21.21	7.41
50 - 54	1.34	31.58	5.88
55 - 59	.76	15.38	-
60 - 64	.99	-	5.88
65 - 69	-	9.09	-
70 +	.58	-	-
Total (G.W.P.R.)	2.86	12.06	5.5
Persons	139	106	81

* Those persons actually employed at the time of the survey, in and out of Swaziland.

** In wage Employment.

TABLE 31

PERCENTAGE OF PERSONS* IN EACH AGE-GROUP GAINFULLY EMPLOYED** : SWAZILAND, 1960

TOTAL PERSONS

Age-Group	Rural	Urban and Peri-Urban	Border
- 13	.05	.15	.19
13 - 14	2.97	1.54	3.73
15 - 17	8.40	11.00	9.09
18 - 19	13.23	23.81	23.76
20 - 24	24.31	44.67	28.24
25 - 29	30.78	50.35	34.50
30 - 34	32.31	52.68	36.31
35 - 39	25.33	50.43	36.55
40 - 44	19.77	56.99	26.55
45 - 49	18.89	51.76	27.03
50 - 54	13.46	48.84	21.05
55 - 59	12.39	47.37	10.94
60 - 64	10.22	32.26	8.57
65 - 69	3.40	11.76	4.35
70+	2.71	21.05	-
Total	10.89	25.06	14.34
Persons	1,010	437	403

* Those persons actually employed at the time of the survey, in and out of Swaziland.

** In wage employment.

TABLE 32

NUMBER EMPLOYED* IN EACH AGE-GROUP AS A PERCENTAGE OF THE TOTAL WAGE LABOUR FORCE : SWAZILAND, 1960

M A L E S

Age Group	Rural	Urban and Peri-Urban	Border
- 13	.11	.30	.31
13 - 14	1.26	.30	.31
- 15	1.37	.60	.62
15 - 17	3.60	2.42	1.55
18 - 19	3.79	3.02	4.97
15 - 19	7.39	5.44	6.52
20 - 24	16.76	13.60	17.39
25 - 29	20.55	16.92	18.01
30 - 34	15.38	12.08	17.39
35 - 39	11.83	12.99	14.60
40 - 44	7.35	13.29	8.07
45 - 49	8.50	11.18	8.07
50 - 54	4.59	4.53	5.28
55 - 59	2.99	4.83	2.17
60 - 64	2.07	3.02	1.24
65 - 69	.57	.30	.62
70+	.69	1.21	-
Total	100.00	100.00	100.00
Persons	871	331	322

* Actually employed in wage employment at the time of the survey, in and out of Swaziland.

TABLE 33

NUMBER EMPLOYED* IN EACH-AGE GROUP AS A PERCENTAGE OF THE TOTAL WAGE LABOUR FORCE: SWAZILAND, 1960.

F E M A L E S

Age-Group	Rural	Urban and Peri-Urban	Border
- 13	.72	-	1.23
13 - 14	2.88	-	4.94
- 15	3.60	-	6.17
15 - 17	7.91	2.83	12.35
18 - 19	7.19	4.72	9.88
15 - 19	15.10	7.55	22.33
20 - 24	28.78	20.75	19.75
25 - 29	15.83	15.09	17.28
30 - 34	17.27	17.92	11.11
35 - 39	9.35	15.09	7.41
40 - 44	3.60	8.49	4.94
45 - 49	2.88	6.60	4.94
50 - 54	1.44	5.66	3.70
55 - 59	.72	1.89	-
60 - 64	.72	-	2.47
65 - 69	-	.94	-
70 +	.72	-	-
Total	100.00	100.00	100.00
Persons	139	106	81

* Actually employed in wage employment at the time of the survey, in and out of Swaziland.

TABLE 34

NUMBER EMPLOYED* IN EACH AGE-GROUP AS A PERCENTAGE OF THE TOTAL WAGE LABOUR FORCE: SWAZILAND, 1960.

TOTAL PERSONS

Age-Group	Rural	Urban and Peri-Urban	Border
- 13	.2	.23	.46
13- 14	1.49	.23	1.24
- 15	1.51	.46	1.70
15 -17	4.16	2.51	3.71
18 -19	4.26	3.65	5.94
15 - 19	8.42	6.16	9.65
20 - 24	18.42	15.30	17.82
25 - 29	19.90	16.44	17.82
30 - 34	15.64	13.47	16.09
35 - 39	11.49	13.47	13.12
40 - 44	6.83	12.10	7.43
45 - 49	7.72	10.05	7.43
50 - 54	4.16	4.79	4.95
55 - 59	2.67	4.11	1.73
60 - 64	1.88	2.28	1.49
65 - 69	.50	.46	.50
70 +	.69	.91	-
Total	100.00	100.00	100.00
Persons	1,010	437	403

*Actually employed in wage employment at the time of the survey, in and out of Swaziland.

TABLE 35

AN ANALYSIS OF THE AGE OF THE EMPLOYMENT STATUS CATEGORIES BY CENTRAL MEASURES

Employment Status at the time of Survey	Central Measures	Relevant Age-Group[1] : by Area			
		Rural Males	Rural Females	Urban & Peri-Urban Males	Border Males
Employed	Median Age	30/34 (31)[2]	25/29 (25)	35/29 (35)	30/34
	Modal Age	25/29	20/24	25/29	25/29
	1st Quartile Age	20/24 (24)	20/24 (21)	25/29 (26)	25/29 (25)
	3rd Quartile Age	40/44 (42)	30/34 (33)	45/49 (48)	40/44 (40)
Not Employed, but have been	Median Age	45/49 (45)	30/34	40/44	40/44
	Modal Age	45/49	20/24	45/49	60/64
	1st Quartile Age	30/34 (31)	20/24	30/34	30/34
	3rd Quartile Age	50/54 (50)	40/44	55/59 (55)	50/55

1) The inclusion of the under 15's to some extent distorts the table, but it emphasises the youth of the population.
2) Figures in brackets, where given, indicate the position of the exact measure within the age-group.

3.3.2 Interregional Comparison of Age-Sex Structure:

Table 29 shows a considerably higher perticipation in employment among males in the urban and peri-urban areas than in the rural areas, a difference which becomes more marked in the higher age groups, the urban males working both more regularly and for a longer period of their lives than rural males. This is indicated in table 29 by the relatively high proportion of urban and peri-urban males who are employed during the years of highest participation. That they are employed for longer periods is indicated by the fact that in the urban and peri-urban areas relatively high work participation extends into the age group of over 60 years.

In short, the urban labour force is more 'permanent' in character than the rural labour force, which is largely due to its greater independence from the traditional agricultural economy. The border areas, while exhibiting a somewhat higher degree of work participation than the rural average, tend to follow the general rural pattern rather than the urban and peri-urban age pattern.

In respect of female wage labour (Table 30) a similar regional age pattern is apparent, - a longer period of active participation in urban than in rural areas - though the actual proportions of female labour are lower than those of male labour.

3.3.3 Analysis of Age Distribution:

Table 35 provides a brief analysis by central measure of the ages of persons falling with the two selected employment status categories.

The following measures of central tendency have been used for comparative purposes :-

The median age, in which 50% of the population, as reflected by the sample, lie below this age and 50% above it.

The modal age group i.e. that group which includes the greatest number of persons.

The quartiles in terms of which the ages of the sample population are arranged in ascending or descending order and are divided into four equal groups, so that the first quartile has 25% of the population below it, and the third quartile 25% above it.

(a) 'Employed' Population:

Those actually engaged in wage employment at the time of the survey generally fall within the intermediate age group (approximately from 24 to 42 years of age). The model age group of the various male labour forces at the time of the survey was consistently[1] 25 - 29 years. The modal age group of the only female labour force considered (i.e. the rural females) was somewhat lower viz: 20 to 24 years, indicating that there is a tendency for women in Swaziland to reach their maximum work participation at a lower age than men do.

Regarding the median age of those engaged in wage employment at the time of the survey, it is found that the female median of 25 is considerably lower than that of males, which varies from 30 to 39. The more mature labour force (35 years of age and over) is found in the urban and peri-urban areas.

Examining the mode and the median together, it is immediately apparent, without recourse to more sophisticated statistical means, that the distribution is somewhat skewed. When a distribution is 'normal', the mode and the median will coincide. The skewness of the distribution of those actually employed at the time of the survey, with a younger modal than median age, indicates that the labour force consists of a large number of persons in the lower age groups with an ever decreasing number of representatives from the higher age groups.

Examination of the quartiles shows that in the inter-quartile range (i.e. the 'middle' 50% from the point of view of age) there is a fairly even distribution amongst various age groups, with a tendency, however, for the upper quartile to be further from the median (in years) than the lower quartile.

(b) 'Unemployed' Population:

The second major category comprises persons who, though not employed at the time of the survey, had been employed at some earlier time. Those constituting this category were, as could be expected, on average older than those who were actively employed at the time of the survey. Amongst the males the modal age group exceeds the median age, indicating that there is a comparatively heavier representation of the older age groups in this 'unemployed' class of persons.

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1) As between the various regions.

Amongst the females, a different pattern emerges, the median age being greater than the modal age. It is noteworthy also that the modal age of those 'unemployed' females coincides with that of the females employed at the time of the survey. A general interpretation of these figures indicates that female employment, in any substantial degree, is at present limited to the lower age groups, and that amongst the older women very few have ever been in wage employment. It is safe to assume that an increasing proportion of women is now entering the wage labour market. In support of this assumption, we refer to the proportions of the persons in the various age groups who had never been employed at the time of the survey.

TABLE 36

NUMBERS AND PERCENTAGES NEVER EMPLOYED IN VARIOUS AGE GROUPS (RURAL)

Age Group	Female		Male	
	Number	Percentage	Number	Percentage
- 13	1,916	99.84	1,840	99.89
13 - 14	214	97.27	205	94.47
15 - 17	231	89.53	199	82.23
18 - 19	124	75.61	114	70.81
20 - 24	273	67.08	130	36.31
25 - 29	235	68.30	28	9.15
30 - 34	168	69.29	18	7.41
35 - 39	186	74.70	3	1.44
40 - 44	158	78.22	4	2.72
45 - 49	170	81.73	6	2.93
50 - 54	129	86.58	1	0.61
55 - 59	109	82.58	4	4.65
60 - 64	86	81.15	2	2.35
65 - 69	83	90.22	2	3.64
70 +	159	92.44	9	10.59
Total Number in Sample	4,241	87.16	2,565	58.22

It is apparent from the above table that while about one-third of the female population today enters wage employment at some time or another, less than one-fifth of the corresponding 'high participation' age groups of twenty years ago entered employment (assuming a normal distribution of deaths amongst those who have worked and those who have not worked). The equivalent male figures indicate that over the years more than 90% of males have consistently entered employment.

Further examination of table 36 reveals high percentages amongst persons under 20 who have never been employed. However, it is felt that the important statistics are not those high proportions amongst the very youthful section of the population, but rather those which indicate that there are some potential labourers who never enter wage employment. Bearing in mind, however, the importance of the subsistence economy in the Swazi life, it is felt that amongst the males over 25 years of age, these figures are remarkably small.

In conclusion, it can therefore safely be said that essentially, and for obvious reasons, the 'never employed' persons are the youth in this population, while the presently unemployed persons with records of past wage employment, amongst the males at least, are the aged. Those actually employed at any time are principally to be found in the 20 to 40 years age range.

4. THE DURATION OF WAGE EMPLOYMENT:

4.1 Introduction:

The future development planned for Swaziland envisages the extensive employment of Swazi labour and for this reason some indication of the labour reserve of Swaziland is desirable. In the absence of information regarding the changes which the proposed development might bring about in the traditional employment pattern of Swazi labour, it was felt that some indication of the labour reserve might initially be furnished by an assessment of the proportion of the average year which the average Swazi spends in wage employment. In order to determine the average duration of employment several periods of employment were examined.

For the purpose of this survey three distinct employment periods were recognised[1], viz.:

'X' present (current) employment, or, in the case of those who were not actually employed at the time of the survey (but had been employed at some previous time), their most recent employment period.

'Y' the employment period immediately preceding the 'X' employment period, or, in other words, the second last employment period.

'Z' the very first or initial employment period of the labourer.

Where the labourer has been employed only once, the employ- recorded as 'X' will also be his very first (or 'Z') employment. Where there have been two employment periods, then 'X' is the

1) See next page.

present or most recent employment and 'Y' the immediately preceding employment as well as the very first (or 'Z') employment. Where the subject has been employed many times these employments which are neither 'X', 'Y' nor 'Z' are unrecorded, except in the total number of employment periods. Hereinafter, for the sake of brevity, the relevant symbol only will be used when referring to these particular employment periods.

4.2 The Duration of First Employment:

In the following analysis all first employments, whether they are designated 'X', 'Y' or 'Z'are considered. Certain problems, however, arise in the statistical application of these categories. For example, in the case of those persons who have only been employed once, the 'X' employment is used and many of these 'X' employments were current or uncompleted at the time of the survey. This factor immediately introduces a bias in the statistics by making some employments seem shorter than they are in fact[1]).

The primary aim of this study of first employments is to ascertain whether the average duration of employment has increased with passing decades. It is necessary to use the first employment[2]) for this purpose since neither the 'X' nor the 'Y' employments alone would have given a satisfactory time distribution.

In the construction of table 37 it was noteworthy that, even when allowance was made for incompleted employment periods, there appeared to be little difference in the duration of first employments over the years, even though in some cases the employments tend to be longer at the present time than they were thirty years ago.

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1) To have considered completed 'X' employments only would have had an opposite effect.

2) The first employment was used in its strict form i.e. not only 'Z' employments but also 'X' and 'Y' employments if they happened to be the first employment period of any subject. In favour of using the very first employment, it may also be argued that a consistent employment period is being used, whereas if, for instance, the 'Y' employment had been used, it could conceivably have been the very first, second or even the tenth employment of the subject.

The average duration figures were calculated as follows :-

The time intervals of the employment period were taken at their central values (i.e. 1 - 2 years = $1\frac{1}{2}$ years; 20 plus years = 25 years). These figures were subsequently multiplied by the frequency in each class, giving a total number of 'man-years' for each class interval. These were then added for each commencement date class interval, yielding the total number of man-years resulting from all first employments in that class interval. This figure was then divided by the total number who commenced work (for the first time) on that date interval, yielding the average number of years of employment per entrant[1].)

TABLE 37

AVERAGE DURATION OF FIRST EMPLOYMENT.

Date Commenced Work	Duration (average in years) M A L E S		
	Rural	Border	Urban
1955/60	1.41 *	1.59*	1.65*
1950/54	2.41 *	3.09*	3.75*
1940/49	2.78	4.09	5.72
1930/39	3.04	4.12	3.93
1920/29	2.94	3.28	4.57
1910/19	4.05	3.98	6.36
1900/09	3.23	4.00	10.1
Total	2.50	3.22	3.89

* A large number of these employments were uncompleted at the date of the survey. This accounts for at least part of their comparative brevity.

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1) The calculation is described here in some detail since the conclusions drawn fron these 'average' figures form the basis of the analysis in this section and it was considered necessary that the method of their derivation should be clearly stated.

Table 37 indicates, perhaps contrary to expectation, there is no definite tendency for first employment periods to become longer; on the contrary (and unless the unfinished employments prove to be longer than average) there is a tendency in the opposite direction.

In conformity with previous findings, the average length of employment is found to be greater in the urban than in the rural areas.

4.3 Annual Proportion of Employment Period:

4.3.1 Employed - Unemployed Time Ratios:

In the introduction to this section the 'X', 'Y' and 'Z' employment periods were defined in some detail. It is clear that when a subject has been employed on two or more occasions, it is possible to measure the length of the 'Y' employment (the second last employment period) and the interval between the termination of the 'Y' employment and the commencement of the 'X' employment (the current or most recent employment). This interval is hereinafter termed the job interval. The two periods taken together i.e. from the beginning of the 'Y' employment to the beginning of the next (i.e. the 'X' employment) is referred to as 't'. From these figures it is possible to calculate a proportion of time employed to time unemployed in wage employment.

There is, however, another method of calculation, which may be briefly stated as follows :- If a total labour force of 100 labourers, of whom 40 are engaged in wage employment at any one time, is assumed, and if each of the 100 works for the same length of time the whole labour force will be employed for four-tenths of the year. This is so because the labour force active at any time is 40, giving over the year 40 man-years of labour whereas a labour force of 100 employed for four-tenths of the year also yields 40 man-years of labour. In practice the situation is very much more involved, since not all persons work for equal periods of time. For the average[1] labourer, however, this would be true. The above calculation, however, has already been reflected in the Net Wage Employment Ratio[2], since the Net Wage Participation Ratio indicated the proportion of the potential labour force which is engaged in wage employment at the time of calculation.

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1) This hypothetical individual is the mean of all the actual individuals, some of whom may, of course, not engage in wage employment at all.

2) See Section 3.2 above.

Abstracting from variations in the Net Wage Participation Ratio due to seasonal and other fluctuations, this ratio must also reflect the proportion of the year during which the average labourer of working age is engaged in wage employment; as indicated in Table 38.

TABLE 38

ANNUAL PROPORTION OF WAGE EMPLOYMENT PERIOD (BASED ON NET WAGE PARTICIPATION RATIO) AS AT JULY, 1960

Labour Force Designation	Male	Female	Total
Highveld	.46	.08	.26
Middleveld	.33	.05	.18
Lowveld	.44	.03	.22
Lebombo	.39	.04	.21
Total Rural	.40	.06	.22
Urban and Peri-Urban	.68	.22	.49
Border Areas	.44	.10	.27
Special Areas	.31	.04	.16
Total	.44	.09	.26

For convenience the above figures may be styled 'employment Proportion Ratios' (hereinafter designated as E.P.R.)[1]

Though the Net Wage Participation Ratio expresses the proportion of the year spent in wage employment by the <u>average</u> Swazi of working age, this concept may appear nebulous. Accordingly, the original calculation, based on the records of those persons who have been employed at least twice, is reverted to. Table 39 sets out the length of 'Y' employment expressed as a percentage of 't' where 't' is the length of the second last employment plus the job interval or the time span from the commencement of one employment 'Y' to the commencement of the next employment ('X'). The percentage 'd' is the period employed 'e' expressed as a percentage of 't'.

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1) The E.R.P. may be briefly defined as the proportion of the year during which the <u>average</u> subject engages in wage employment.

TABLE 39

PERIOD EMPLOYED ('E') EXPRESSED AS AN ANNUAL TIME PERCENTAGE (MALE SAMPLE EMPLOYED AT THE TIME OF SURVEY)

Period Employed ('e')	No of * Subjects	Percentage Annual Time Employed $=\frac{E}{T}$ X 100				
		High-veld	Middle-veld	Low-veld	Leb	All Areas
- 1	275	23.41	19.39	26.52	18.97	21.44
1 - 2	171	32.11	35.73	40.74	35.21	34.85
2 - 3	85	53.19	28.06	50.27	35.83	39.10
3 - 4	32	49.12	66.03	62.68	62.20	55.89
4 - 5	26	62.19	96.93	62.35	33.14	56.36
5 - 6	16	60.86	67.37	-	85.63	64.92
6 - 7	9	80.99	73.27	37.28	-	63.33
7 - 8	5	56.59	92.78	-	-	66.81
8 - 9	4	92.06	-	95.05	98.97	94.42
9 - 10	7	67.12	46.58	-	79.71	65.99
10 -20	18	85.95	97.20	52.10	53.64	80.05
20 +	1	-	84.22	-	-	84.22
Total	649	50.42	38.35	43.00	37.33	43.48

* Excludes, of course, those who had had only one employment.

The rural total (43.48% or a ratio of .43) is roughly comparable with the Employment Proportion Ratio of .40 indicated in table 38.

Yet another calculation may be made by taking all rural male 'Y' employments into consideration. It then appears that the average duration of the 'Y' employment was almost exactly 2 years while the duration of the job interval was found to be 3.23 years. The sum of these periods indicates that the average cycle[1]) from the beginning of one employment to the beginning of the next employment (i.e. the 'Y' employment plus the subsequent job interval)

1) See also Chapter VIII section 7.5.

amounted to 5.23 years. Proportionately the period employed represented 38% and the 'unemployed' job interval 62% of the total period. Considering the fact that the earlier Employment Proportion Ratios were based on 'X' employments actually uncompleted at the time of the survey, and moreover, derived from a different employment sample, the present 38:62 ratio is reasonably close [1] to the earlier ratios of 40:60 and 43:57.

It is stressed once again, however, that these ratios are dependent upon the definition of employment used. The average rural male does not, in effect spend 60% of his year in idleness, but rather in self-employment in the subsistence sector of the economy.

4.3.2 The Job Interval:

Table 40 represents an attempt to ascertain whether any correlation exists between the length of employment and the period of inter-employment 'rest'. It was immediately clear that some correlation existed since the longer the 'Y' employment, the smaller the percentage of labourers who enjoyed a job interval of less than one year. Further analysis of the intervals of less than one year's duration, however, revealed a reverse tendency i.e. where the job interval is less than one year, there is a tendency for those who had been employed for a long stretch to re-enter employment sooner than those whose previous employment was shorter [2].

Thus, apart from the reverse tendency revealed in the breakdown of the short intervals, it appears that the longer employed persons also tend to take longer rests.

4.3.3 Conclusions:

The regional differences on the whole follow the trends indicated by Table 38 the employment proportion ratios of the Highveld and the Lowveld being somewhat higher than those of the Middle-veld and Lebombo.

From Table 39 it is apparent that as the length of a preceding employment increases, so does the proportion of the subsequent period within the work-rest time cycle. This suggests that though there is a slight correlation between the length of a preceding employment and the rest period which follows, it is not of great significance.

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1) Allowance should also be made for possible margins of error.

2) It is possible that these persons could be psychologically more suited to wage employment than the average, or may have become more dependent on wage employment than the average because of longer absence from farming activities.

Both the periods of employment and inter-employment 'rests' have a tendency to be considerably longer than expected. This is illustrated by the fact that well under half of the total number of first employments lasted less than one year (75% and more of the urban area first employments exceed 12 months). This pattern is indicated throughout the tables and is in sharp contrast to the fairly common belief that the rural labour force (if not the urban labour force) is very largely migratory, working on contracts of about 6-8 months. In fact this view is true of less than half the labour force. Moreover, less than 45% of the job intervals of rural male labourers were less than a year in duration[1].

4.4 Duration of Current[2] Employment:

Thus far the duration of first employments have been analysed, with special emphasis to trends over time, the proportions of the average year spent in wage employment have been considered. The duration of the current employment of those actually employed at the time of the survey will now be examined.

The average duration of current male employment is lowest in the rural areas (± 3 years) and highest in the urban and peri-urban areas (±4.3 years). The figure for the Border areas (± 3.6 years) falls almost exactly midway between[3].

The age variation is such that the older groups (though not without exception) tend to show a longer duration of employment. This can be partly attributed to the fact that the younger subjects have not yet had time to experience a long period of employment, but it is likely that this tendency is, to a significant extent, due to the greater maturity and stability of the older persons.

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1) It might, in this context, be more realistic to regard the E.P.R. as being the proportion of a 5 or 10-year period worked by the average Swazi, rather than a proportion of only 12 months.
2) Continuing or uncompleted employment.
3) See Annexure Tables 4 - 6 for details.

TABLE 41

LENGTH OF CURRENT EMPLOYMENT

Age Group	Maximum* length of time (in class intervals) for which 75% of each age group has been employed		
	Rural	Border	Urban
	(Years)	(Years)	(Years)
0 - 9	1 - 2 **	-	-
10 - 14	2 - 3	2 - 3	1 - 2
15 - 19	2 - 3	2 - 3	2 - 3
20 - 24	2 - 3	3 - 4	2 - 3
25 - 29	3 - 4	3 - 4	4 - 5
30 - 34	4 - 5 **	10 - 14	5 - 9
35 - 39	5 - 9	4 - 5	15 - 19
40 - 44	10 - 14	4 - 5	10 - 14
45 - 49	15 - 19	15 - 19	10 - 14
50 - 54	5 - 9	10 - 14	15 - 19
55 - 59	10 - 14	15 - 19	10 - 14
60 - 64	4 - 5	10 - 14	15 - 19
65 - 69	2 - 3	15 - 19	15 - 19
70 +	-	-	15 - 19
Total	4 - 5	5 - 9	10 - 14

* i.e. 75% of the members of each age group have been employed for <u>less than</u> the class intervals listed.

** Categories correspond to Tables 40, 41 and 42.

*** Discretion was exercised in certain of these placings.

Table 41, condensed from Tables 4, 5 and 6 in the Annexure to this chapter shows the length of time for which 75% of the subjects in the various age groups have been employed for less than the length of the class interval indicated. It appears from this table

that the longer average duration of employment in the urban areas is not due so much to the number of employments of long duration, as to the fact that there are relatively few very short employment periods. It is noteworthy also, that urban and peri-urban youth enters employment for the first time a year or two later than rural youth. A suggested cause of this is the longer period which may be spent on education in the urban areas.

4.5 Comparison of 'X', 'Y' and 'Z' Employment Periods[1]:

Table 42 sets out in summary form a comparison of the relative average lengths of the three employment periods selected from the labour histories of Swazi males.

TABLE 42.

DURATION OF EMPLOYMENT: CONSOLIDATED AVERAGES:

MALES

Area	Very first Employment	'Y' Employment	Present Employment
Rural	2.50	2.00	2.99
Border	3.22	-	3.65
Urban	3.89	-	4.30

While first employments show little tendency to increase over the years, current employments, even though unfinished, exceed first employments in length. This does not mean that the length of employments has increased over the years, but rather that, as people are employed more often and gain in experience and maturity, their periods of employment lengthen. In this table the expected regional variations are again apparent.

In general, employment duration tendencies may be said to fluctuate about a relatively constant mean, which tends to increase for individuals as they occupy successive jobs.

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1) See Section 4.1 above for definitions of these employment periods.

4.6 Female Employment:

TABLE 43

FEMALE ENTRY INTO EMPLOYMENT

Date commenced Wage Employment	Percentage of Females in total Labour Force entering Wage Employment in each time interval		
	Rural	Border	Urban
1955 - 60	32.64	36.25	45.50
1950 - 54	31.58	39.34	43.70
1940 - 49	24.11	25.11	44.81
1930 - 39	15.80	19.23	30.58
1920 - 29	16.94	12.24	17.65
1910 - 19	12.16	14.29	36.36
1900 - 09	18.75	11.11	16.67
Before 1900	10.00	-	-
Total	25.32	28.45	40.11

Table 43 indicates that progressively more and more females are entering wage employment, not only in absolute numbers but also relative to the number of males entering employment. In the urban areas almost as many females as males now enter wage employment. Their much lower net wage employment participation ratio, however, can be attributed to the more spasmodic nature, and the relative brevity and small numbers of their employments (in other words due to their long job intervals, very often of indefinite length, the subject has been employed only once).

Of the 624 rural female subjects covered, only 258 have had two or more employments, and 366 only one. The value of the job interval as an indication of unemployed periods is thus reduced since in the majority of cases, the interval being indefinite, is not included in the calculation. The result is that the job interval, as calculated, is very much lower than the true unemployed period, and the Employment Proportion Ratio is correspondingly distorted. The E.R.P. calculated on the basis of the Net Wage Employment Participation Ratio is considerably higher than that which takes the job interval into account as the following calculation shows :-

Average length of 'Y' employment (rural females)	1.35 years
Average length of job interval (rural females)	2.60 years
Total	3.95 years

This gives an employment proportion ratio of .34 for those rural females who had more than one employment period. While E.P.R. calculated from the net wage employment participation ratio is only .06.

4.7 Correlation between Number and Duration of Employments:

In this section all 'X' employments[1] are considered, whether completed or not. All persons ever employed are therefore included in this sample.

Table 44 emphasises the validity of the statement made earlier that the great majority of the females who were ever employed, have had only one or two jobs. It indicates also that rural males with approximately five employment periods each, are the most frequently employed group of the subjects[1a]. Their employment periods are, of course, somewhat shorter than those of other male groups. The rural male group also has a noticeably smaller proportion of those who had had only one or two employments at the time of the survey.

In considering the correlation between the length of employment and the number of employment periods, it is found that, on average persons having had many employment periods, necessarily had short employments. It is apparent also that the sample is likely to have included two broad categories of subjects, those who preference was for steady employment and those who exhibited a preference for the migrant type of employment.

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1) See section 4.1 for definition

1a) For this reason the calculation of the Employment Proportion Ratio, involving the job interval for these subjects, is likely to be more accurate.

TABLE 44

NUMBER OF EMPLOYMENTS (PERCENTAGES)

Number of Employments	Rural		Border		Urban	
	Male	Female	Male	Female	Male	Female
1	18.18	58.49	25.66	63.20	22.48	43.36
2	15.46	22.28	21.55	23.81	20.61	28.32
3	11.49	9.78	11.21	7.79	15.69	13.29
4	10.45	3.53	7.93	2.16	9.13	6.99
5	11.49	2.24	9.31	2.16	9.84	1.75
6	8.33	1.28	8.45	.43	5.85	2.45
7 and over	24.60	2.40	16.89	.45	16.40	3.84
Total %	100.00	100.00	100.00	100.00	100.00	100.00
Total number of employments	1,837	624	580	231	427	286
Average number	5.00*	1.86	4.03	1.60	4.23	2.27

* approximate only

TABLE 45

CORRELATION BETWEEN LENGTH AND NUMBER OF EMPLOYMENTS

Number of Employments	Percentage of total frequency in each class with present (or last) employments exceeding 5 years' duration					
	Rural		Border		Urban	
	Male	Female	Male	Female	Male	Female
1	24.55	12.33	33.57	21.92	35.42	18.55
2	22.89	2.88	19.20	14.55	26.14	14.81
3	12.32	3.28	20.00	-	32.84	13.16
4	12.50		13.04		25.64	15.00
5	12.32		12.96		19.05	
6	6.54		20.41		16.00	
7	9.57	5.08		16.67		13.04
8			3.08		17.65	
9	7.12					
10 - 20			6.06			
20 +					16.67	
Total %	14.59	8.65	19.30	17.75	26.70	16.08
Total absolute number	268	54	112	41	114	46

The above table indicates that 24.55% of the rural males with only one employment period, had been in that particular employment for more than five years at the date of the survey. The current (or last) employment of 14.59% (268) of all rural male subjects ever employed had exceeded five years. Columns in respect of rural females indicate the proportions applicable to those regions and sexes.

These correlations reveal the expected general tendency for these employments to shorten as the number of employments per worker increases.

In respect of sex and regional differences the characteristic tendencies are evident. Female subjects have considerably lower proportions of employment over five years than have the male subjects, while the highest percentages are recorded in the urban areas and the lowest in the rural areas. The Border females, however, constitute an exception, since they have a higher percentage of employments over five

years than do the urban female subjects. Table 44, however, shows that the border areas have the greatest proportion of females with only one employment period, and these employments may be presumed to be comparatively longer.

5. SUMMARY OF MAIN CONCLUSIONS: INDUSTRIAL, OCCUPATIONAL AND WAGE STRUCTURE OF THE WAGE LABOUR FORCE:

5.1 General:

(i) Using the 'industrial' classification it has been found that farming and forestry (36.51%) and mining (31%) are the major employers of rural male(and border male) labour. (Section 2.1.2) When distinction is drawn between those employed in Swaziland and those employed beyond its borders, farming and forestry (52.07%) is the dominant domestic absorber of rural labour, while (64.66%)is the main external absorber (Section 2.1.8).

(ii) In respect of urban and peri-urban males this 'industrial' classification shows that mining (7.25%) and farming and forestry (8.76%) absorb far less labour than Government enterprise (37.46%) and trading (16.92%). The lower rate of employment in mining is to a certain extent explained by the smaller proportion of urban and peri-urban males employed outside Swaziland (7.55%) as compared with the rural average of 43.51% (Section 2.1.2).

(iii) Both rural (61.15%) and urban/peri-urban (65.09%) females find employment mainly in domestic service (Section 2.1.3.).

(iv) Examining the 'occupational' structure, the great majority of rural males are found to be manual labourers (80.83%), but amongst the urban and peri-urban males the numbers on the sample engaged in manual labour is found to be considerably lower (40.48%) (Section 2.1.5).

(v) A brief analysis of the wage structure reveals a similar pattern, the urban and peri-urban males being paid a higher wage than the rural males (R21.29 as against R13.30) (Section 2.1.10).

5.2 The Labour Force of Selected Concerns:

(i) Certain employers of labour within Swaziland draw a considerable proportion of their labour forces from beyond the borders of Swaziland, particularly from Portuguese East Africa (36.03% of the employees in mining activities originate in Portuguese East Africa)(Section 2.2.2). There are relatively few women and children amongst these immigrant workers and only in sugar cultivation do women and children amount to more than 10% of

the workers from Portuguese East Africa (Section 2.2.4).

(ii) No definite tendency is shown for immigrant workers to be employed for shorter or longer periods than local workers, nor is there any really significant differences in the employment duration of Swazi males and females (Section 2.2.5).

(iii) There is a considerable variation in the labour turnover between various industries employing Swazi labour. Cotton cultivation showed a turnover of over 90% and mining of less than 20% over a period of three months (January - March, 1960)(Section 2.2.6).

(iv) No definite tendency is descernible for immigrant labour to be better or worse paid than local Swazi labour. Amongst the Swazi, married males earn the highest wages, followed by single males, females and juveniles (Section 2.2.7).

(v) While it is found that there is a positive correlation between length of employment and the wage level of workers, the casual relationship is not clear-cut (Section 2.2.8).

5.3 Labour Potential and Labour Utilization and the Age/Sex Structure of the Labour Force (Section 3):

(i) When compared on an international basis the work participation ratios of the Swaziland African population are shown to be extremely low (the gross work participation ratio is in the region of .13 as against .4 and more in more advanced countries)(Section 3.2.1). There is a marked difference between male and female ratios in Swaziland, males being more active wage-employment participants than females (Section 3.2.1). Regionally, urban and peri-urban dwellers tend to be more active wage-employment participants than rural dwellers. (The urban and peri-urban male gross work participation ratio is .383 as against .224 in the Highveld which shows the highest rural ratio (Section 3.2.1).

(ii) In respect of the age/sex structure, the difference between urban and rural work participation ratios become more marked in the higher age groups.

e.g.	Males	25 - 29	Urban employed	84.25%
	Males	25 - 29	Rural employed	58.5%
	Males	60 - 64	Urban employed	62.5%
	Males	60 - 64	Rural employed	21.1%

Urban males thus work more regularly in wage employment and for longer periods of their lives, than do rural males. The female pattern (as between areas, and by age) is similar, though the figures for females are considerably lower (Section 3.3.2).

(iii) In terms of the three categories used in the survey, the 'never employed' persons comprise principally the youth of the population, the 'employed' persons are principally in the 20 - 40 years age group. while the 'have been' but are not currently employed persons are generally in the higher age groups (Section 3.3.3).

5.4 The Duration of Wage Employment:

(i) Analysis of the lengths of the first employments of subjects in the sample over the years indicates that there is no descernible long run tendency for the length of first employments to increase. At times, in fact, an opposite tendency seems to operate (Section 4.2).

(ii) The Net Wage Employment Participation Ratio is found to be a reasonably accurate indicator of the Employment Proportion Ratio, which is defined as the proportion of the year during which the average subject engages in wage employment (Section 4.3).

(iii) The actual absolute lengths of employment periods and periods of inter-employment rest tend to be longer than is generally realised. Generally, less than half of the various working forces had employment periods of less than a year's duration (Section 4.3)

(iv) While no distinct long-run changes in the duration of employment can be descerned, it appears that, for the individual, employment durations tend to increase in proportion to the number of employment periods already undergone (Section 4.5).

A P P E N D I X

APPENDIX - CHAPTER 1X

HLATIKULU: AN ADMINISTRATIVE DISTRICT CASE STUDY

1. INTRODUCTION:

It is the not uncommon belief that the labour force of administrative district of Hlatikulu has developed to a greater degree than the labour forces of the other administrative districts of Swaziland in that at any time there may be found more persons employed for longer periods and in occupations requiring more skill in the Hlatikulu district, than are found in Swaziland as a whole. To test the veracity of this belief, the following figures have been extracted :-

2. PROPORTION EMPLOYED:

Table 1 reflects the number and percentage of Hlatikulu males who were actually employed at the time of the survey.

TABLE 1

PERCENTAGE OF HLATIKULU MALES WHO HAVE BEEN EMPLOYED BEFORE AND WHO WERE EMPLOYED AT THE TIME OF THE SURVEY : SWAZILAND, 1960

Status	Number	Percentage
Employed	132	40.24
Not Employed	196	59.76
Total	328	100. 00

The 40% of Hlatikulu males who were, or had been employed at the time of the survey, however, is lower than the comparable figure for the total rural sample (47%) indicated in Table 11.

The comparable figures for the urban and border areas were, respectively 77.52% and 55.42%.

TABLE 11

PERCENTAGE OF RURAL MALES WHO HAVE BEEN EMPLOYED BEFORE AND WHO WERE EMPLOYED AT THE TIME OF THE SURVEY : SWAZILAND, 1960

Region	Percentage
Highveld	54.81
Middleveld	41.70
Lowveld and Lebombo	44.42
Total Rural	46.96

TABLE 111

PERCENTAGE OF THE TOTAL MALE POPULATION OVER 18 YEARS OF AGE WHICH WAS EMPLOYED AT THE TIME OF THE SURVEY: SWAZILAND,1960

Region	Percentage
Highveld	46.28
Middleveld	32.95
Lowveld	41.53
Lebombo	38.07
Total	39.33

Since Hlatikulu lies in the Middleveld and Lowveld areas, Table 111 serves to bear out that the characteristics of employment in this district does not differ substantially from that in other districts of Swaziland.

3. NUMBER OF EMPLOYMENT PERIODS:

Table Vl compares the number of employment periods of Hlatikulu males with the average rural males in Swaziland.

TABLE 1V

NUMBER OF EMPLOYMENT PERIODS: MALES

No. of Employments	H L A T I K U L U		Average Rural %
	No. who have been employed	Percentage	
1	64	19.63	18.18
2	33	10.12	15.46
3	26	7.98	11.49
4	26	7.98	10.45
5	30	9.20	11.49
6	30	9.20	8.33
7	22	6.75	6.26
8	32	9.82	18.35
9	15	4.60	
10 - 20	45	13.80	
20 +	3	.92	
Total	326	100.00	100.00

Apart from those who have had only one period of employment, there is a tendency for the Hlatikulu male labourers to have had more employments than the average Swazi. Approximately 29% of the Hlatikulu males who have been employed at any time, have had eight or more employments as against a general rural average of 18%, so that the average Hlatikulu labourer may be said to have had on average more migratory employments than his counterpart in other districts.

4. JOB INTERVALS:

Table V indicates the length of respite between present employment and immediately preceding employment.

TABLE V

Years (of job interval)	No. in each category	Percentage	Further sub-division		
			Months under 1 year	No.	Percentage
- 1	150	57.03	- 1	24	16.11
1 - 2	46	17.49	1 - 2	17	11.41
2 - 3	19	7.22	2 - 3	12	8.05
3 - 4	12	4.56	2 - 4	11	7.38
4 - 5	9	3.42	4 - 5	16	10.74
5 - 6	4	1.52	5 - 6	16	10.74
6 - 7	2	.76	6 - 7	9	6.04
7 - 8	5	1.90	7 - 8	12	8.05
8 - 9	2	.76	8 - 9	6	4.03
9 - 10	0	-	9 - 10	6	4.03
10 - 20	11	4.18	10 - 20	10	6.71
20 +	3	1.14	11 +	10	6.71
Total	263 *	100.00		149 **	100.00

* 64 had only one employment
** 1 unknown

From the above table it is apparent that the job intervals of Hlatikulu males tend to be shorter than the rural average. Whereas the rural average for an inter-employment rest period under one year is in the neighbourhood of 40%, in Hlatikulu approximately 57% of the males, as indicated by the sample, take a respite of less than one year.

5. WAGES:

Examination of the wages paid to Hlatikulu males indicates that Hlatikulu labourers are paid wages which are above average. The modal wage of Hlatikulu males is in the region of R8 per month, while that of the 268 rural males whose present employment duration exceeds five years is in the neighbourhood of R6.

6. INDUSTRIAL AND OCCUPATIONAL STRUCTURE:

In respect of the industrial and occupational structure of Hlatikulu males, it is found that a greater proportion of them are employed in mining and a corresponding smaller number in other industries, than elsewhere. Occupationally, they are almost entirely in manual labour which is attributed in a large measure to the extent to which they are employed in mining activities, since on the Witwatersrand, at least, the mines employ Africans almost exclusively as unskilled manual labourers.

TABLE V1

PERCENTAGE OF MALES EMPLOYED IN VARIOUS TYPES OF INDUSTRY: SWAZILAND, 1960

EMPLOYMENT 'X' *

Industry	Hlatikulu	Average Rural
Farming & Forestry	33.64	36.51
Mining	59.33	31.00
Manufacturing	2.45	3.79
Trading	.92	5.40
Transport	-	1.84
Government	1.83	8.96
Domestic	1.22	6.66
Religious & Welfare	-	2.07
Other	.61	3.44
Unknown	-	.34
Total	100.00	100.00
Persons	328	871

* The present or most recent employment in and out of Swaziland.

TABLE V11

PERCENTAGE OF MALES EMPLOYED IN VARIOUS OCCUPATIONS: SWAZILAND, 1960

EMPLOYMENT 'X'

Occupation	Hlatikulu	Average Rural
Professional	.30	3.90
Clerical	.30	2.99
Salesmen	.31	2.76
Manual	96.95	80.83
Craftsmen	.30	1.61
Service	1.83	7.46
Other	-	.11
Unknown	-	.34
Total Persons	100.00 328	100.00 871

7. PLACE OF EMPLOYMENT:

Table V111 indicates the distribution of the sample of Hlatikulu males by place of employment.

More than 75% of the Hlatikulu males in the sample spent their present or immediately past employment outside the borders of Swaziland, as against a corresponding rural total figure of 40%, indicating that Hlatikulu males are more prone to seek employment outside Swaziland than are their counterparts in other districts.

TABLE V111

PLACE OF EMPLOYMENT OF HLATIKULU MALES : SWAZILAND, 1960

EMPLOYMENT 'X'* (PERCENTAGE OF MALES EMPLOYED IN THE VARIOUS PLACES)

Place of Employment	Percentage
Pigg's Head Dist.	3.67
Mbabane Dist.	0.00
Mankaiana Dist.	0.00
Manzini Dist.	2.14
Hlatikulu Dist.	13.15
Stegi Dist.	5.81
Total in Swaziland	24.77
Total in :	
Witwatersrand	58.72
Natal	13.46
Port. East Africa	. 31
Others	2.75
Total	100.00

* The present or most recent employment in and out of Swaziland.

A N N E X U R E S

TABLE 1 - LENGTH OF EMPLOYMENT - RURAL MALES - FIRST EMPLOYMENT

Date Commenced Work	No. Commencing Work	Duration of first employment in years; percentage of the total commencing work in each category in each length group, and a cumulative percentage												Average Duration of Employment
		- 1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-20	20 +	Unknown	
1955/60	489	52.15 52.15	26.99 79.14	10.02 89.16	4.70 93.86	2.04 95.90	1.02 96.92	 96.92	 96.92	 96.92	 96.92	1.02 96.95	 96.92	3.08 3.08	1.41
1950/54	273	33.33 33.33	29.67 63.00	16.12 79.12	4.76 83.88	2.56 86.44	2.20 88.64	4.03 92.67	2.20 94.87	1.83 96.70	1.47 98.17	1.83 100.00	 100.00	 	2.41
1940/49	447	34.00 34.00	28.19 62.19	13.65 75.84	6.71 82.55	4.25 86.80	2.46 89.26	1.57 90.83	1.12 91.95	.45 92.40	.89 93.29	6.49 99.78	 99.78	.22 .22	2.78
1930/39	325	39.08 39.08	23.08 62.16	12.93 75.08	7.08 82.16	2.77 84.93	2.46 87.39	2.46 89.85	2.77 92.62	.92 93.54	.92 94.46	2.46 96.92	3.08 100.00	 	3.04
1920/29	206	39.81 39.81	23.30 63.11	12.14 75.25	7.77 83.02	3.40 86.42	1.46 87.86	.97 88.85	1.94 90.79	2.43 93.22	 93.22	5.34 98.56	1.44 100.00	 	2.94
1910/19	65	26.15 26.15	15.38 41.53	15.38 56.91	13.85 70.76	9.23 79.99	3.08 83.07	1.54 84.61	 84.61	6.15 90.76	1.54 92.30	4.62 96.92	3.08 100.00	 	4.05
1900/09	26	34.62 34.62	15.38 50.00	11.54 61.54	11.54 73.08	15.38 88.46	 88.46	 88.46	3.85 92.31	 92.31	 92.31	7.69 100.00	 100.00	 	3.23
- 1899	9	55.56 55.56	 55.56	1.11 66.67	 66.67	 66.67	 66.67	 66.67	 66.67	 66.67	 66.67	2.22 88.89	1.11 100.00	 	6.67
Total	1,840	40.11 40.11	25.87 65.98	12.77 78.75	6.36 85.11	3.37 88.48	1.90 90.38	1.58 91.96	1.36 93.32	1.03 94.35	.65 95.00	3.53 98.53	.87 99.40	.60 .60	2.50

TABLE 2 - LENGTH OF EMPLOYMENT - BORDER MALES - FIRST EMPLOYMENT

Date Commenced Work	No. Commencing Work	Duration of first employment in years; the percentage of the total starting in the respective periods falling in the various duration categories, and a cumulative percentage												Average Duration of Employment
		- 1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-20	20+	Unknown	
1955/60	160	41.25 41.25	33.13 74.38	9.38 83.76	5.63 89.39	3.75 93.14	3.75 96.89	.63 97.50	97.5	97.5	97.5	97.5	97.5	2.5 2.5	1.59
1950/54	74	14.86 14.86	31.08 45.94	22.97 68.91	4.05 72.96	2.70 75.66	8.11 83.77	4.05 87.82	1.35 89.17	4.05 93.22	5.41 98.63	98.63	98.63	1.37 1.37	3.09
1940/49	167	19.76 19.76	25.15 44.91	15.57 60.48	10.18 70.66	5.99 76.65	4.19 80.84	1.80 82.64	1.20 83.84	.60 84.44	.60 85.04	13.17 98.21		1.79 1.79	4.09
1930/39	105	25.71 25.71	25.71 51.42	12.38 63.80	6.67 70.47	2.86 73.33	3.81 77.14	4.76 81.90	1.90 83.80	2.86 86.66	2.86 89.52	8.57 98.09	1.90 100.00		4.12
1920/29	43	27.91 27.91	18.60 46.51	20.93 67.44	9.30 76.74	9.30 86.04	86.04	2.33 88.37	2.33 90.70		2.33 93.03	6.98 100.00			3.28
1910/19	24	16.67 16.67	29.17 45.84	16.67 62.51	4.17 66.68	8.33 75.01	75.01	75.01	75.01	4.17 79.18	79.18	4.17 83.35	4.17 87.50	12.50 12.50	3.98
1900/09	8	12.50 12.50	12.50	12.50	62.50 75.00	75.00	75.00	12.50 87.50	12.50 100.00	100.00	100.00	100.00	100.00		4.00
- 1899															
Total	581	26.51 26.51	27.54 54.05	14.46 68.51	7.92 76.43	4.65 81.08	3.96 85.04	2.41 87.45	1.20 88.65	1.38 90.03	1.55 91.58	6.02 97.60	.52 98.12	1.89 1.89	3.22

TABLE 3 - LENGTH OF EMPLOYMENT - URBAN MALES - FIRST EMPLOYMENT

Date Commenced Work	No. Commencing Work	Duration of first employment in years; percentage of the total starting in the respective periods falling in the various duration categories and, finally a cumulative percentage												Average Duration of Employment
		- 1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-20	20+	Unknown	
1955/60	121	42.98 42.98	25.62 68.60	9.92 78.52	4.13 82.65	7.44 90.09	2.48 92.57	92.57	92.57	92.57	.83 93.40	93.40	93.40	6.60 6.60	1.65
1950/54	67	17.91 17.91	22.39 40.30	14.93 55.23	4.48 59.71	11.94 71.65	7.46 79.11	2.98 82.09	8.96 91.05	2.98 94.03	2.99 97.02	2.99 100.00	100.00		3.75
1940/49	101	8.91 8.91	19.80 28.71	13.86 42.57	11.88 54.45	10.89 65.34	1.98 67.32	1.98 69.30	4.95 74.25	2.97 77.22	2.97 80.19	17.82 98.01	. 99 99.00	.99 .99	5.72
1930/39	84	23.81 23.81	20.24 44.05	13.10 57.15	13.10 70.25	8.33 78.58	78.58	3.57 82.15	82.15	3.57 85.72	1.19 86.91	10.71 97.62	97.62	2.38 2.38	3.93
1920/29	42	21.43 21.43	23.81 45.24	14.29 59.53	9.52 69.05	2.38 71.43	7.14 78.57	11.90 90.47	90.47	90.47	90.47	2.38 92.85	7.15 100.00		4.57
1910/19	7	-	28.57 28.57	14.29 42.86	14.29 57.15	57.15	14.29 71.44	71.44	71.44	71.44	71.44	28.57 100.00	100.00		6.36
1900/09	5	20.00 20.00	20.00	20.00	20.00	20.00 40.00	20.00 60.00	60.00	60.00	60.00	60.00	20.00 80.00	20.00 100.00		10.1
- 1899															
Total	427	24.12 24.12	22.25 46.37	12.65 59.02	8.43 67.45	8.67 76.12	3.51 79.63	2.81 82.44	2.58 85.02	1.87 86.89	1.64 88.53	7.73 96.26	1.17 97.43	2.57 2.57	3.89

In explanation of Annexure, Tables 1 - 3, attention is drawn to the fact that the first column gives the date when the subjects commenced work, and the second indicates the absolute number of subjects entering wage employment for the first time in each period. Thereafter the table is presented in percentage form (the absolute figure should be borne in mind while reading the percentages). The upper percentage indicates the proportion of the total number entering work in each period whose very first employment lasted for under one, one to two years, and so on. (As pointed out earlier a large number of employments, especially in the 1955/60 category, were unfinished as at the date of the survey). The lower percentage is merely a "less-than" cumulative figure (that is, X% were employed for less than the next category). The average duration figure, which will be called upon to play a central role in the study of the duration of employment, was calculated as follows :-

The duration of employment class intervals (namely 0 -1, 1 - 2, etc.) were taken at their central value (namely .5, 1.5, etc., and 20+ was assumed to be 25) and this figure was multiplied by the frequency in each class. This gave a total number of "man years" for each class interval. These were then summed for each commencement date class interval, which yielded the total number of man years resulting from all first employments in that interval. This figure was then divided by the total number who commenced work (for the first time) in that date interval, yielding the average number of years of employment per entrant.

TABLE 4 - RURAL MALES : AN ANALYSIS OF THE DURATION OF THE PRESENT EMPLOYMENT OF THOSE EMPLOYED AT THE TIME OF THE SURVEY

Age-Group	Des-cription	Duration of present employment in years											Average Duration in years
		-1	1-2	2-3	3-4	4-5	5-9	10 -14	15-19	20-24	25+	Unknown	
0 - 9 (1)	A	100.0											.5
	B												
10 - 14 (11)	A	72.7	90.9									9.1	.7
	B		18.2									9.1	
15 - 19 (64)	A	64.1	86.0	86.0	90.7	92.3	93.9					6.1	1.07
	B		29.8	7.9	7.9	3.2	1.6					6.1	
20 - 24 (146)	A	65.1	80.9	88.4	91.1	93.2	93.9					6.1	1.02
	B		28.8	13.0	5.5	2.8	.7					6.1	
25 - 29 (179)	A	57.0	69.8	80.4	85.4	87.6	96.0	100.0					2.14
	B		42.9	30.1	19.5	14.5	12.3	3.9					
30 - 34 (134)	A	55.2	68.6	71.6	75.3	79.0	84.2	92.4	93.9	93.9	94.6	5.4	2.91
	B		39.4	26.0	23.0	19.3	15.6	10.4	2.2	.7	.7	5.4	
35 - 39 (103)	A	46.4	58.3	65.1	69.0	74.8	86.5	97.2	98.2			1.8	3.42
	B		51.6	39.9	33.1	29.2	23.4	11.7	1.0			1.8	
40 - 44 (64)	A	43.8	56.3	64.1	65.7	65.7	76.6	89.1	92.2	93.8		6.2	4.2
	B		50.0	37.5	29.7	28.1	28.1	17.2	4. 7	1.6		6.2	
45 - 49 (74)	A	36.5	50.0	55.4	59.5	62.2	69.0	75.8	82.6	92.1	94.8	5.2	6.61
	B		58.3	44.8	39.4	35.3	32.6	25.8	19.0	12.2	2.7	5.2	
50 - 54 (40)	A	42.5	50.0	62.5	70.0	72.5	77.5	87.5	92.5			7.5	3.80
	B		50.0	42.5	30.0	22.5	20.0	15.0	5.0			7.5	
55 - 59 (26)	A	30.8	46.2	61.6	69.3	69.3	77.0	84.7	84.7	88.5	96.2	3.8	5.98
	B		65.4	50.0	34.6	26.9	26.9	19.2	11.5	11.5	7.7	3.8	
60 - 64 (18)	A	33.33	50.0	66.7	77.8	88.4	89.0	100.0					4.28
	B		66.7	50.1	33.4	22.3	22.3	16.7	11.1				
65 - 69 (5)	A	60.0	100.0										.9
	B		40.0										
70+ (6)	A		16.7	16.7	16.7	16.7	33.4	50.0	66.7	66.7	100.0		16.5
	B		100.0	83.4	83.4	83.4	83.4	66.7	50.0	33.3	33.3		
Total (871)	A	52.6	66.7	73.8	77.9	80.4	86.6	92.3	94.0	95.0	95.8	4.2	2.99
	B		43.2	29.1	22.0	17.9	15.4	9.2	3.5	1.8	.8	4.2	
Absolute Figures		458	123	62	36	22	54	50	15	9	7	35	871

TABLE 5 - BORDER MALES : AN ANALYSIS OF THE DURATION OF THE PRESENT EMPLOYMENT OF THOSE EMPLOYED AT THE TIME OF THE SURVEY

Age-Group	Des-cription	Duration of present employment in years											Average Duration in years
		-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25+	Unknown	
0-9 (0)	A												
	B												
10-14 (2)	A	50.0	100.0										1
	B		50.0										
15-19 (21)	A	52.4	85.7	90.5	90.5	90.5	100.0						1.60
	B		47.6	14.3	9.5	9.5	9.5						
20-24 (50)	A	57.1	73.2	78.6	85.7	85.7	94.6	96.4	96.4	98.2	98.2	1.8	2.25
	B		41.1	25.0	19.6	12.5	12.5	3.6	1.8	1.8		1.8	
25-29 (58)	A	53.4	70.6	75.8	79.2	86.1	96.4	100.0					2.29
	B		46.4	29.2	24.0	20.6	13.7	3.4					
30-34 (56)	A	41.1	60.7	67.8	71.4	71.4	87.5	94.6	100.0				3.84
	B		58.9	39.3	32.2	28.6	28.6	12.5	5.4				
35-39 (47)	A	42.5	63.8	68.1	76.6	83.0	87.3	95.8	97.9			2.1	3.04
	B		55.4	34.1	29.8	21.3	14.9	10.6	2.1			2.1	
40-44 (26)	A	53.8	65.3	73.0	76.8	76.8	88.3	92.1	95.9	100.0			3.65
	B		45.9	34.4	26.7	22.9	22.9	11.4	7.6	3.8			
45-49 (26)	A	30.8	53.9	53.9	53.9	57.7	65.4	76.9	88.4	92.2	96.0	4.0	6.73
	B		65.2	42.1	42.1	42.1	38.3	30.6	19.1	7.6	3.8	4.0	
50-54 (17)	A	35.3	35.3	47.1	47.1	58.9	76.5	76.5	82.4	94.2	100.0		7.77
	B		64.8	64.8	53.0	53.0	41.2	23.6	23.6	17.7	5.9		
55-59 (7)	A	-	14.3	28.6	28.6	28.6	28.6	85.7	100.0				10.21
	B		100.0	85.7	71.4	71.4	71.4	71.4	14.3				
60 - 64 (4)	A	-	25.0	50.0	50.0	50.0	75.0	75.0	100.0				7.25
	B		100.0	75.0	50.0	50.0	50.0	25.0	25.0				
65 - 69 (2)	A	-	50.0	50.0	50.0	50.0	50.0	100.0					7.00
	B		100.0	50.0	50.0	50.0	50.0	50.0					
70+ (0)	A												
	B												
Total (322)	A	45.3	63.9	69.8	73.8	76.9	87.1	93.3	96.7	98.3	98.9	1.1	3.65
	B		53.6	35.0	29.1	25.1	22.0	11.8	5.6	2.2	.6	1.1	
Absolute Figures		146	60	19	13	10	33	20	11	5	2	3	322

TABLE 6 - URBAN MALES : AN ANALYSIS OF THE DURATION OF THE PRESENT EMPLOYMENT OF THOSE EMPLOYED AT THE TIME OF THE SURVEY

Age-Group	Des-cription	Duration of present employment in years											Average Duration in years
		-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25+	Unknown	
0-9 (0)	A												
	B												
10-14 (2)	A	100.0											.5
	B												
15-19 (18)	A	72.2	83.3	88.9	88.9	94.5						5.5	1.03
	B		22.3	11.2	5.6	5.6						5.5	
20-24 (45)	A	66.7	75.6	77.8	86.7	93.4	100.0						1.63
	B		33.4	24.5	22.3	13.4	6.7						
25-29 (56)	A	30.4	55.4	69.7	75.1	82.2	94.7	98.3				1.7	2.83
	B		67.9	42.9	28.6	23.2	16.1	3.6				1.7	
30-34 (40)	A	17.5	32.5	47.5	67.5	77.5	95.0	100.0					3.78
	B		82.5	67.5	52.5	32.5	22.5	5.0					
35-39 (43)	A	25.6	44.2	46.5	55.8	58.1	72.1	88.4	93.1	95.4		4.6	5.57
	B		69.8	51.2	48.9	39.6	37.3	23.3	7.0	2.3		4.6	
40-44 (44)	A	50.0	59.1	61.4	65.9	70.4	79.5	90.9	100.0				4.5
	B		50.0	40.9	38.6	34.1	29.6	20.5	9.1				
45-49 (37)	A	29.7	45.9	51.3	56.7	56.7	75.6	91.8	97.2			2.8	5.25
	B		67.5	51.3	45.9	40.5	40.5	21.6	5.4			2.8	
50-54 (15)	A	26.7	33.4	33.4	40.1	46.8	60.1	80.1	86.8	100.0			8.43
	B		73.4	66.7	66.7	60.0	53.3	40.0	20.0	13.3			
55-59 (16)	A	37.5	50.0	50.0	56.3	62.6	75.1	81.4	87.7	87.7	94.0	6.0	5.93
	B		56.5	44.0	44.0	37.7	31.4	18.9	12.6	6.3	6.3	6.0	
60-64 (10)	A	10.0	30.0	40.0	40.0	40.0	60.0	80.0	80.0	80.0	100.0		10.6
	B		90.0	70.0	60.0	60.0	60.0	40.0	20.0	20.0	20.0		
65-69 (1)	A	-	-	-	-	-	-	100.0					12.5
	B		100.0	100.0	100.0	100.0	100.0	100.0					
70+ (4)	A	-	-	-	-	-	50.0	75.0	75.0	100.0			12.5
	B		100.0	100.0	100.0	100.0	100.0	50.0	25.0	25.0			
Total (331)	A	37.5	52.3	58.6	66.2	71.3	84.0	93.1	96.1	97.3	98.2	1.8	4.30
	B		60.7	45.9	39.6	32.0	26.9	14.2	5.1	2.1	.9	1.8	
Absolute		124	49	21	25	17	42	30	10	4	3	6	331

NOTES TO TABLES 4-6

(1) The figures bracketed in the age-group pockets are the total number of persons in that age-group.

(2) "A" is a cumulative percentage showing that percentage of the various age-groups had been employed in their present employment as at the time of the Survey (June, 1960), for less than the next length category. The windows left blank on the right are, strictly, all 100% (allowance should be made for the inevitable unknowns).

"B" is another cumulative percentage, showing the percentage of the various age groups which had been engaged in their present employment, as at the time of the Survey, for more than the preceding length category. Here, strictly, all the -1 windows could be taken as 100% since all these persons have been employed for longer than no time.

(3) Where there were unknowns, the calculations were still based on the total absolute figures, not on the total known figure. However, the unknown percentages are indicated.

(4) The average duration of employment figures were calculated by multiplying the number in each length category by that length (.5 year, 1.5, 2.5, etc., and plus 25 taken as 30). The total number of years of employment for each age-group was thus obtained. This figure was then divided by the total number of persons in the age-group. Only persons whose length of employment was known were considered in this analysis.

This calculation is, of course, the same as that which has been applied through this section.

CHAPTER X

URBANIZATION

J.F. Holleman

1. INTRODUCTION:

In recent years a growing number of studies have dealt with the phenomenon of urbanization of African peoples in Southern Africa, and elsewhere[1]), and efforts have been made to distinguish and define various criteria according to which the state of urbanization of a given community could be assessed during its process of transition from a rural (tribal) condition to an urban (and presumably westernized) existence[2]). In the present survey both the depth of analysis and the statistical scope are necessarily limited. One reason is that although the survey took account of some 21,000 Swazi living at the time under non-rural conditions (i.e. at urban, peri-urban and industrial centres) within Swaziland, it was only in respect of an estimated 9,310 of them that our enumeration could involve more than a simple head-count and sex breakdown, and of the latter, only a random sample totalling 1,744 could be extracted, spread over sixteen urban and five peri-urban localities in the country.

This multiplicity of small and spatially and often widely separated groups (and then even smaller sample populations) places severe limitations on detailed statistical analyses. Apart from this, there was little or no time to collect supporting qualitative evidence which would have given greater depth to the few quatifications which could justifiably be made from our sample. For these reasons, the aspect of urbanisation could only be examined in bare outline, namely, the degree of stability of urban residence and the extent to which the urban communities have served or retained socio-economic ties with the rural area.

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1) For a survey of studies inAfrica South of the Sahara, see 'Social Implications of Industrialization and Urbanization in Africa South of the Sahara' (Ed.D. Forde) Unesco, 1956. Among the more recent studies, Ph. Mayer's 'Townsmen or Tribesmen', Oxford, 1961, must be mentioned.

2) See, for instance, J.C. Mitchell: 'Urbanization, Detribalization and Stabilization'in the Unesco publication.

The process of African urbanization involves not merely a continuation of residing and earning a living in an urban (or peri-urban) environment, but also a change in mental orientation: a forsaking of 'rural' (i.e. mostly traditional) values, and the adoption of 'urban' (i.e. largely western) values.

Some idea of this process may be gauged from the responses to two small sets of questions which we posed: one dealing with the length of urbanized[1)] residence and the concrete effort of establishing a home there; the other dealing with rural ties and some concrete efforts to maintain these.

Regarding the first aspect, trends emerging from figures relating to length of urbanized residence (in the present locality and elsewhere) can be compared with the returns with regard to home-ownership, and the amounts invested in an urban house or shack.

With regard to the second aspect, the existence of a dual domicilium among urban residents was checked with the question of whether the respondent had 'another home' in the (rural) Swazi Area or elsewhere. Since the answer to this question may reflect a respondent's sentiments rather than the reality, the physical act of visiting these rural homes for cultivation purposes during any or all of the three years preceding the survey was taken as a measure of the weight and persistence of rural contact. Information as to whether the respondent (adult, male) happened to be the head of such another home, served a similar purpose.

A quantification of these data, together with employment and education statistics, and some distinctive demographic features, provide an objective if elementary basis on which a broad assessment of Swazi 'urbanization' can be attempted.

2. ANALYSIS:

In July, 1960, the following groups of Swazi lived (inside Swaziland) outside the ordinary rural communities in socio-economic environments dominated by wage economy :

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1) The term 'urbanized' is used in this Chapter to cover both urban and peri-urban. The latter two terms are used when the distinction of the two types of community is relevant.

in urban - peri-urban areas	:	9,110
in urban European premises	:	1,729
with major employers	:	10,040
Total		21,079[1)]

This is less than 10% of the total Swazi population. Not all these reside in an 'urban' environment! Among the last group, for instance, are employees and their families employed at afrostation, and farming estates, and a large proportion of the first group live in peri-urban environments. The above total, therefore, does not so much represent an estimate of the 'urbanized' Swazi population, as that of the numbers absorbed within Swaziland in the various spheres of western industrial enterprise, away from the rural subsistence economy.

2.1 The Sample:

The population used for analysis in this chapter is that of the first group, in which both urban and peri-urban population elements are represented in roughly similar proportions. Their distribution (in numbers of homesteads and size of random sample) over the twenty-one areas of enumeration is set out below :

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1) An under-enumeration, since the second and third figures making up this total are based on incomplete returns.

Code Number (A- urban B - peri-urban)	Name of Area	Number of Homesteads			
		Total		In Sample	
A01	Stegi, urban	54		20	
B02	Stegi, peri-urban	204		26	
A10	Manzini, urban	138	) 170	27	) 37
A11	Manzini, Moneni	32		10	
B12	Kwaluseni - Logoba	400	) 451	48	) 63
B13	Mzimnene	51		15	
A20	Hlatikulu	48		18	
A30	Goedgegun	73		25	
A40	Pigg's Peak, Mangwaneni	52	)	8	)
A41	Pigg's Peak, Macambeni	30	)	3	)
			) 163		) 18
A42	Pigg's Peak, Malandalahle	39	)	4	)
A43	Pigg's Peak, Government	42	)	3	)
A50	Mbabane, Mangwaneni	36	)	9	)
A51	Mbabane, Msunduza	92	)	18	)
A52	Mbabane, Kelly's (Sunlight)	34	)	9	)
			) 277		) 68
A53	Mbabane, Summerlea	44	)	11	)
A54	Mbabane, Police	29	)	7	)
A55	Mbabane, Sandhla	36	)	11	)
A58	Mbabane, Residency	6	)	3	)
B56	Mbabane, Sidwashini	75	)	20	)
			) 249		) 55
B57	Mbabane, Msunduza	174		35	
	Totals for urban areas	785		186	
	Totals for peri-urban areas	904		144	
	GRAND TOTAL	1,689		330	

This population does not represent the full range of urbanized dwellers, since it excludes those (mainly servants and some of their dependants) living on European urban premises, as well as the relatively large group of employees and their dependants accommodated by the employers at such industrial centres as Havelock and Pigg's Peak (Peak Timbers). The above sample does, however, represent the more or less

spontaneous aggregation of Swazi communities in and around the urban centres of Swaziland, since the residential and domestic patterns of their population have not or hardly been made to conform to any formal town planning[1].

Having developed virtually unhindered by artificial restrictions with regard to entry or accommodation, these settlements do, perhaps, reflect more truly the state of urbanization of the Swazi urban and peri-urban communities than do the other groups of urban or industrial dwellers.

2.2 Main Demographic Features:

Treating, for the time being, this urban/peri-urban population as a whole, its main demographic characteristics may be compared with those of the rural population sample :-

		Urban Peri-Urban	Rural
	Persons per homestead	5.3	7.6
*	Sex ratio : overall	98.4	90.5
	population over 18	101.8	85.3
	population under 18	94.8	96.0
**	Age group ratio :		
	-18/18+ (M & F)	91.2	102.7
	-18/18+ (M)	88.0	109.3
	-18/18+ (F)	94.5	97.1
	Percentage employed (July,1960):		
	of males over 18	69.8	39.3
	of females over 18	22.8	5.0
***	Percentage Literacy :		
	among males over 4	56.9	23.4
	among females over 4	54.4	22.7
		N = 1,744	N = 9,272

* i.e. number of males per 100 females.
** number of persons under 18 per 100 persons over 18.
*** includes literacy in Swazi language only.

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1) At Msunduza. (Mbabane) and Kwaluseni (near Manzini) there is clear visible evidence of some town planning.

The reduced average size of homestead units is a phenomenon of socio-economic transition, and is, as such, not confined to urbanized communities. In rural communities, too, there is a tendency for larger domestic groupings to break up, as the growing reliance on wage earnings fosters the self-sufficiency and independence of individual family units. In our urban/peri-urban sample this figure is, however, further depressed on account of the fairly large proportion (over 20%) in the urban sectors of single-men's establishments, which constitute only a fraction of the number of homesteads in the rural and peri-urban areas. The table below compares the distribution of homesteads of various sizes in the urban, peri-urban and rural areas :

Size of homestead (Urban, Peri-Urban and Rural Areas)				
Number of persons in Homestead	Urban Areas	Percentage of Homesteads		
		Peri-Urban Areas	U and P-U Combined	Rural Area
1	20.97	4.17	13.64	2.46
2	13.98	9.03	11.82	5.09
3	10.22	11.81	10.91	7.30
4	9.68	13.19	11.21	9.27
5	9.14	13.19	10.91	10.75
6	7.53	11.11	9.09	11.65
7	9.14	6.95	8.18	10.66
8	6.99	5.56	6.36	10.58
9	5.38	9.03	6.97	7.47
10	1.07	4.17	2.42	5.66
11	1.07	3.47	2.12	3.86
12	3.76	2.08	3.03	4.18
13	1.07	2.08	1.52	2.30
14	-	1.39	0.61	1.80
15 - 19	-	2.08	0.91	5.17
20 - 24	-	0.69	0.30	0.98
25 +	-	-	-	0.82
Total Homesteads	186 = 100%	144 = 100%	330 = 100%	1,219 = 100%

The tendency towards smaller domestic groupings is further revealed by the fact that, while homesteads of not more than five persons constitute about one-third of the total in the rural areas, they amount to nearly two-thirds of the total homesteads in the urban areas (58.5% in the urbanized sectors as a whole). Moreover, while in the rural areas some 25% of the homesteads are fairly large groupings of ten persons and more, this category has dropped to 13% and 7% in the urbanized and urban sectors, respectively.

An examination of the composition of the homesteads in the urbanized sectors revealed that the great majority (nearly 70%) had one adult male, presumably as the principal breadwinner of the family. Homestead units with more than one male adult were comparatively uncommon (13.4% with two adult males; less than 6% with more than two). There was, however, a small (12.2) percentage of homesteads without adult males. In these, therefore, a woman (widowed, deserted or unmarried) was the head of the homestead or family provider. The majority of these domestic units were small (a little more than half of them comprising three persons and less), but a few contained more than six people.

The comparatively large proportion of single-man domestic units in the urbanized areas may give the wrong impression of an unduly large male element in this population. This group of bachelors in our sample is numerically small (45) and amounts to less than 3% of the total sample population in these sectors. The overall sex ratio of 98.4 males per 100 females reveals, in fact, a remarkably balanced population, and indicates a fair degree of social stability. In this respect, it is useful to make a comparison with the other 'industrial' Swazi communities accommodated by major employers of labour in Swaziland. The returns provided by thirteen large employers account for a total accommodated population of nearly 13,000 of whom an estimated 10,040 are Swazis (employees and their dependants). The overall sex ratio is 26.4. For the Swazi element alone the ratio is estimated to range from 208.2 to 265.0[1], which is indicative of a highly unstable population.

In the sampled urbanized communities the increased sex ratio in the over 18 group corresponds with a decreased figure in the same group in the rural area, which reflects an expected influx of males of working age into urbanized environments. The same tendency is reflected in the comparatively greater urban-rural difference in the ratio of males under and over 18 years old, than of females of the same age groups.

On the whole, however, these fluctuations do not appear large enough to disturb the essentially balanced character of the population in the urbanized communities.

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1) Both figures are estimates. The proportion of the Swazi and non-Swazi employees is known. With regard to their dependants, however, no indication of nationality is given. The sex ratio of 265.0 is based on the assumption that the proportion of Swazi dependants is the same as the proportion of Swazi employees, the sex ratio of 208.2 is based on the most favourable but unlikely assumption that all dependants are Swazi.

Two other comparisons between our urbanized and rural population samples give a useful indication of the socio-economic transition in the urbanized communities. There is a striking increase in the percentage of both male and female urban adults engaged in wage employment, and although the percentage among males (69.8) is much higher than among females (22.8), it is especially among the latter that proportionably the largest increase has taken place.

In a balanced community this reliance on wage employment is an indication that the great majority of the population have broken with the traditional rural basis of their economy[1]. Corroboration of this trend towards the acceptance of western values is the much larger literacy rate in these communities. In this respect there is little difference between males and females, and the urbanized communities emerge from our samples with a literacy rate (approximately 55% of the population over 4 years old) more than twice as high as that of the rural areas.

How decisive is that change in orientation, and how well established this urbanized pattern ?

A partial answer to these questions is found in the figures relating to the length of residence in the urbanized areas.

2.3 Length of Urbanized Residence:

It is considered that the more meaningful statistics with regard to the length of urbanized residence are those referring to the adult population (i.e. over 18 years old). The following tables reflect the situation with regard to males and females separately. The periods noted involve the total length of residence in any urban or peri-urban area, and not necessarily only in the locality in which the respondents resided at the time of enumeration.

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1) In largely migratory (unbalanced) labour communities a high degree of participation in wage employment is fully compatible with an otherwise rural orientation.

Length of Residence
Urban and Peri-Urban Adult M A L E S

Total length of Urban or Peri-Urban Residence	Urban Areas		Peri-Urban Areas		Combined Urban Peri-Urban	
	No.	%	No.	%	No.	%
Less than 1 year	11		11		22	
1 - 2 years	30	38.8	28	25.1	58	29.3
3 - 4 years	35		20		55	
5 - 6 years	19		12		31	
7 - 8 years	14	24.9	15	18.3	29	21.5
9 - 10 years	23		16		39	
11 - 20 years	47		58		105	
21 - 30 years	27	41.3	43	56.6	70	49.1
21 years and over	19		32		51	
TOTAL	225	100%	235	100%	460	100%

Length of Residence
Urban and Peri-Urban F E M A L E S

Total length of Urban or Peri-Urban Residence	Urban Areas		Peri-Urban Areas		Combined Urban Peri-Urban	
	No.	%	No.	%	No.	%
Less than 1 year	16		13		29	
1 - 2 years	27	36.3	30	28.1	57	32.0
3 - 4 years	35		23		58	
5 - 6 years	27		12		39	
7 - 8 years	16	25.6	13	17.9	29	21.6
9 - 10 years	12		17		29	
11 - 20 years	38		54		92	
21 - 30 years	26	38.1	33	54.0	59	46.4
31 years and over	18		40		58	
TOTAL	215	100%	235	100%	450*	100%

* Excluding 2 unknown.

The first observations that can be made about these tables is that, to-day, one-half of an adult population, both male and female has lived in an urbanized environment for more than ten years. This is considerably longer than we had expected. Moreover, the fact that in both the urban and peri-urban sectors the female proportions on the over ten years' residence group are very similar to the male proportions, appears to indicate that these communities have been stable for some time.

Perhaps even more remarkable is that in the peri-urban sector the proportion of adults of both sexes in the long residence group is considerably larger than in the urban sector. This trend is confirmed by a correspondingly smaller percentage of peri-urban than urban adults with less than five years residence. There is a median length of urbanized residence of 13.3 years of adults in the peri-urban communities, as against 8.3 years in the urban communities.

2.4 Home Ownership in Urbanized Areas:

The length of urbanized residence of the Swazi communities in the urban and peri-urban area appears to show that a substantial proportion of this population are established urbanized settlers.

To what extent is this evidence of urbanization borne out by the concrete efforts of the people to acquire their own homes ?

The following tables are of interest in this connection :

Home Ownership : Urban and Peri-Urban M A L E S

Length of Urbanized Residence	Adult Male Residents		Male Owners Urban		Male Owners Peri-Urban	
	Urban	Peri-Urban	No.	%	No.	%
0 - 4 years	176	59	18	23.7	20	33.9
5 - 10 years	56	43	24	42.9	17	39.5
11 years and longer	93	133	49	52.7	64	48.1
All residence categories	225	235	91	40.4%	101	43.0%

Home Ownership : Urban and Peri-Urban FEMALES

Length of Urbanized Residence	Adult Female Residents		Female Owners Urban		Female Owners Peri-Urban	
	Urban	Peri-Urban	No.	%	No.	%
0 - 4 years	78	66	2	2.6	2	3.0
5 - 10 years	55	42	4	7.3	6	14.3
11 years and Longer	82	127	9	11.0	23	18.1
All residence Categories	215	235	15	7.0%	31	13.2%

The first observation is that about two out of five adult males in both the urban and peri-urban areas are home owners. This is a substantial figure, even when it is taken into consideration that subsidized housing schemes are lacking, and that urbanized Swazi residents are therefore often obliged to provide their own roof over their heads in order to make it at all possible to live there.

The figure for females is much lower, as could be expected, since this category will involve mainly those who do not live with husbands or other male relatives.

The second observation is that, in both areas, and in respect of both males and females, the incidence of home ownership rises with the length of urbanized residence, resulting in a situation in which about one out of every two adult males of eleven years residence or longer has his own home. Comparatively speaking, it appears that peri-urban dwellers acquire their own houses sooner than urban dwellers, and on the whole the former group has a slightly higher proportion of house-owners.

The evidence with regard to home-ownership is, however, far from conclusive, and may indeed not indicate more than that, for the duration of their urbanized tenure, a substantial proportion of the wage-earners has found it necessary to provide some sort of accommodation for themselves and their dependants, without necessarily committing themselves to a permanent urbanized existence.

We shall return to this point later in this chapter. At this stage it must be stated that our information on capital investment in these dwellings is indicative of the temporary rather than permanent nature of this accommodation. A little more than half the owners spent less than R60.00 on their houses, and only some 7% spent more than R500.00. Moreover, the physical development of these urbanized settlements has on the whole been so haphazard that there is in the majority of cases no certainty about the rights pertaining to the individual plots upon which these structures have been built.

2.5 The Dual Home:

We inferred earlier that 'urbanization' involves a state of mind in which it is important not only to examine the evidence which bears out an orientation towards an urbanized way of living, but also to look for evidence which shows to what extent these urbanized dwellers have turned their backs upon rural society and its way of living. In other words, in this state of socio-economic transition there is a question of a dualistic basis of existence, both 'rural' and 'urban'. It is the extent to which the latter gains and the former loses in importance, that is pertinent to our inquiry into the state of Swazi urbanization.

The following table is designed to give some idea of the relationship between length of urbanized residence and the importance of rural ties.

The A group gives the total males over 18 years old in the various length of residence categories in both urban and peri-urban areas. The figures in groups B - D are expressed as percentages of the A figures within each residence category.

Group B contains those who alleged to have another home elsewhere in the rural Swazi area.

Group C are those who alleged that they cultivated fields elsewhere.

Group D gives the numbers of those who actually went back during 1957, 1958 and 1959 to cultivate their fields at their rural homes [1].

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1) Of the 35 urbanized dwellers involved in this category, all except two went to cultivate every year during their three-year period. These two cultivated during one year or two years only.

Attachment to Rural Home Adult MALES

Length of Urbanized Residence

		Years 0 - 4		Years 5 - 10		Years 11 & Over		Total	
A	Adult Male Residents : Urban	76		56		93		225	
	Peri-U	59		43		133		235	
		No.	%	No.	%	No.	%	No.	%
B	*Rural Home Interests : Urban	47	61.8	29	51.8	26	28.0	102	45.3
	Peri-U	16	27.1	10	23.3	20	15.0	46	19.6
C	Alleged Rural Culti-vators : Urban	11	14.5	5	8.9	7	7.5	23	10.2
	Peri-U	3	5.1	2	4.7	10	7.5	15	6.4
	Returned for Culti-vation 1957 - 1959 : Urban	11	14.5	4	7.1	7	7.5	22	9.8
	Peri-U	1	1.7	2	4.7	10	7.5	13	5.5

* The figures in this category refer to rural homes in the Swazi area only. There were in the urbanized sample some 30 adult males who claimed to have an 'other house' outside the rural Swazi area. The large majority of these referred to homes outside the Swaziland border, e.g. 9 in Natal and 12 in Portuguese East Africa. In this connection it should be remembered that the ethnic distribution of the Swazi people is not confined to the official boundaries of the Protectorate.

An anlysis of the B group reveals that in the urban sector alone nearly half the adult male population considers it has substantial roots in the rural area, but this attachment grows markedly less as the period of urban residence lengthens (from 61.8% among those with less than five years residence, to 28.0% of those with more than ten years residence).

The same tendency is clearly revealed among the peri-urban males, but in this sector the proportions of those with a dual home basis are very much smaller than in the urban sector. This tends to show that the peri-urban communities on the whole are more 'urbanized' than the urban communities, a deduction which at first sight may surprise us.

The responses of the B Group, may, to some extent, be based on sentiment rather than reality. This group, however, includes 55 men (38%, the large majority of whom are urban) whose rural commitments are real enough, because they are the heads of their rural homes. Perhaps the best evidence of the strength of rural ties is to be found in the periodic returns of an urbanized dweller to his rural home in order to help cultivate the family fields. These are the people that appear in groups C and D of the above table. Group C are those that professed to have such interests, while group D are the numbers that regularly returned during the three-year period preceding the survey. The two groups in the sample are, in fact, almost identical.

As a general observation it can be said that these groups of cultivators are but a small minority (ten per cent or less) of the urbanised residents. Their proportion is, morever, significantly smaller in the peri-urban than in the urban sector, which seems to confirm our earlier impression of a comparatively more 'urban-oriented' peri-urban population.

The relationship between lengthening urbanized residence and lessening rural ties is only to some extent recognisable in the urban group, but is lost in the peri-urban group of cultivators. This may partially be due to the fact that the numbers in some categories are too small to be statiscally meaningful. It is likely, however, that this small group of regular cultivators is largely composed of the core of urban dwellers who remain rooted in rural society no matter how long they reside in an urbanized environment. They may be the Swazi counterpart of the red Xhosa in East London, described by Mayer[1], the 'incapsulated' traditionalist whose entire urban tenure, regardless of length, is devoted to a single aim: to gather the financial means for an ultimate, undisturbed retirement at his rural home in the society whose morals and values he has never forsaken.

We suggested earlier in this chapter that the fairly high incidence of home-ownership among urbanized dwellers did not itself indicate the intention to settle permanently in the locality. It might signify no more than that, for a substantial portion of this population, the only way in which they can find a roof over their heads is to provide this necessity themselves. The extremely modest capital outlay which this involved in the majority of cases (even considering the low income levels) seems to support this argument. To test this hypothesis, we examined the records of those who claimed to have cultivating interests in the rural area, and found that the percentage among them who had their own dwellings in the urban and peri-urban area, was actually higher than of the urban adult male population as a whole. Moreover, the amount of money which the majority of this group of home-owners had invested in their urban quarters[1a], though modest, was higher than that of

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1) Townsmen or Tribesmen, Oxford, 1961.

1a) Included in this group is the owner of one of the only three houses in our sample to which a value of more than R5,000.00 was attached.

the majority of urban and peri-urban residents. Therefore, whatever value may be attached to urban home-ownership as a factor in the process of urbanization in Swaziland at the present time, it does not appear to interfere with the retention of strong ties with the rural home area[2].

In summarizing our conclusions, we must again draw attention to the balanced composition of the Swazi communities in these urban and peri-urban settlements (in contrast with those accommodated by major employers elsewhere in Swaziland). Moreover, considering that the development of these settlements in largely a post-war phenomenon, the median period of urbanized residence of this population of between about eight and thirteen years, is evidence of its considerable stability. These characteristics tie together with clear evidence that, except for a small minority of less than ten percent, prolonged residence in the urbanised environment and participation in its avenues of wage employment, has resulted in a progressive detachment from the rural home areas, and its way of life and work, and strongly suggests that these communities are in a much more advanced state of 'urbanization' than one might have expected them to be. These conclusions seem to apply even more strongly to the peri-urban than to the urban communities. This may well be due to the very nature of peri-urban settlement, in that to a rural derived, but urban oriented people, it appears to offer the best of two worlds.

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2) In fact, the figures from our sample even appear to indicate the opposite tendency, as there is a greater proportion of urbanized house-owners than non-house-owners cultivating lands in the rural area, and this difference is significant at the 2½% level (chi-square = 5.20 for the 2 x 2 contingency table).

Dbn
Dup