THE PHYSICAL, DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS OF SINIA: A SQUATTER SETTLEMENT IN NDOLA.

By FACKSON S. NYANGA

TO MY PARENTS, BROTHER, AND SISTERS

WITHOUT WHOSE LOVE AND ENCOURAGEMENT I WOULD

NEVER HAVE REACHED UNIVERSITY

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DECLARATION

I, Fackson Stephen Nyanga, do declare that this project was composed by me and all the work recorded herein is my own. All Maps and Diagrams were drawn by me, and all Quotations have been distinguished by quotation marks. The sources of all materials used have been specifically acknowledged and the project has not been previously submitted for an academic award.

Signature.....12-07-1982

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ABSTRACT

This dissertation was submitted to the Department of Geography of the University of Zambia in fulfilment of a Single Subject Geograph Course Major degree programmes on ..13:07:'82..

Much research work has been done on various residences of low income groups. In industrialised and more densely populated countries much of the work has mainly been conducted in slums. In less developed and generally less densely populated countries, the concentration of people in Urban areas and the short fall in housing units to meet these numbers has led to the springing up of squatter settlements in various parts of the cities of these countries. Research surveys conducted in these settlements have mainly been for the purpose of development programmes. This survey, more geographical than sociological in approach is intended as an introduction to Sinia, one on which much more intensive surveys may be based.

Any Scholar interested in squatter settlements in Zambia will notice the big disparity in the availability of literature on squatter settlements in Lusaka and those of elsewhere in the country. Not less than 60 percent of the research surveys conducted on squatter settlements in Zambia are on settlements in Lusaka. This study is ment to add on to the little that exists on squatter settlements on the Copperbelt. It probably is the first such study on Sinia.

Because of limitations of space it has been necessitated that a lot of data be discarded and only the very most fundamental aspects of the settlement be tackled.

1.0 LITERATURE REVIEW

1.1 DEFINITIONS:

A 'squatter' as defined by H. J. Simons (1979, P17) is "a settler without right of title, or, more rarely, a person who settles on public land with a view to acquiring title under government regulation." Stren (1978, P169) states that it is conventional to assume that any person who 'resides on property with no legal tenancy or express permission' is a squatter. These definitions of 'squatters' are now not suitable in Zambia in so far as these settlements have acquired legal status and recognition of the authorities. The official term has remained 'Squatter Settlements' and it is for this reason that the term has been adopted for this study. This calls for a redefinition of the term; In this study the term 'squatter settlements' refers to all those settlements in Urban areas which in their origin had no approval of the local authorities and had no legal status to the land. The late recognition of these settlements by authorities is reflected in the absence of the necessary Urban Utilities and Services in the settlements. In this line, settlements which, through eventual change in government policy, have acquired legal status and have been involved in development programmes leading to improved service and facility provision, have in this study been referred to as 'upgraded squatter settlements'.

Other writers have used in association with such settlements the terms 'unauthorised settlements'; This term is often used interchangeably with 'squatter settlements.' The term, however, is misleading in that it implies that these settlements are still illegal or unauthorised which is not true as is manifested in government recognition of these settlements and the keen interest being shown by the authorities in developing the settlements. On the same token the use of 'unofficial housing area' is unsuitable; Other writers choose to use 'slums' or 'shanty towns.' The problem with these terms is that they have connotations of degeneration in the settlements. Squatter Settlements may in fact in their initial stage be areas of better sanitation and low density. Slums and shanty towns have, by definition, to have poor sanitation, be overcrowded, with dilapidated housing structures. One wonders if such settlements exist in Zambia as yet.

When all is said however, no one definition is suitable for universal use. The conditions prevailing in any country should determine what term is to be used.

1.2 SQUATTER SETTLEMENTS IN THE THIRD WORLD

Literature on squatter settlements has increased to comforting levels. Squatter settlements are, however, a dynamic phenomenon and therefore research work has to continue.

The increase in literature is indeed one way in which much official concern over squatter settlements has been aroused. Research reports have induced a lot of seminars and debates on squatter settlements which culminated into the seminar on "improvements of slums and uncontrolled settlements" held between 15th February and March 1st 1970 at the University of Antioquia, Medellin, Columbia. Thirty-three official delegates from twenty-seven third world countries and numerous observers from the world over, attended the seminar. The number of participant countries manifests the magnitude of the slum/squatter problem. Statistics on squatters are alarming. For instance 1970 estimates of squatters/slum contribution to total housing stock of Asia and the far east stood at between 15 and 47 percent! (Improvement of slums and uncontrolled settlements 1971). The data provided below on a selected number of cities in the third world indicates the seriousness of the problem.

Table 1:

SELECTED DATA ON SLUMS/SQUATTER SETTLEMENT CONTRIBUTION TO CITY POPULATION

COUNTRY	CITY	YEAR	% POPULATION IN SQUATTER SETTLEMENTS
AFRICA			
TANZANIA	DAR-ES-SALAAM	1967	34
ZAMBIA	LUSAKA	1967	27
AMERICA			
BRAZIL	BELO HORISONTE	1965	14
CHILE	SANTIAGO	1964	25
ASIA & FAR EAST			
AFGHANISTAN	KABUL	1968	21
CHINA	TAIPEI	1966	25
REP. OF KOREA	SEOUL	1970	30

Source: SEMINAR ON IMPROVEMENT OF SLUMS AND UNCONTROLLED SETTLEMENTS, 15th February to 1st March, 1970, U.N.,1971.

1.3 CAUSES OF SQUATTER SETTLEMENTS

Squatter settlements are, of necessity, an urban phenomenon. They grow as a result of an increased concentration of people in Urban areas with a consequence of shortages of suitable living accommodation ("Improvement ..."; U.N. Seminar Report 1971, P4).

In many countries particularly those in Africa, squatter settlements arise as a result of rural-urban migration. The inadequate job opportunities and relatively low incomes of the rural areas compel these people to leave their villages for urban areas where they hope to find life a lot easier. More often, these people do manage to find menial jobs but are unable to find accommodation. The housing authorities are totally unable to meet the demand for houses. The migrants become desperately in need of accommodation and there being none they can afford, are forced to 'squat'. Their houses are often firstly crudely made by using the cheapest materials they can lay hands on mainly because their accommodation is at first considered temporary. Later, these are joined by relatives and friends and the settlement grows.

1.4 CHARACTERISTICS OF SQUATTER SETTLEMENTS

To a casual observer, squatter settlements are "unplanned residential areas crowded with small, flimsy dwellings that are irregularly spaced along

winding uneven dirt roads and alleys." (Simons 1975 P33). Whereas squatter settlements do seem to be unorganised and houses chaotically built, they however do show some orderliness and logical pattern if closely studied. For instance in their study of George, A and T Schlyter have shown the logical arrangement of doors of houses in relation to wind direction etc. (1979, P89 - 90).

There is a relatively greater variety of building styles in squatter settlements than in council houses - the reason is obvious. However, even in these differences there are some similarities that can be identified as peculiar to houses in squatter settlements - The building materials used, the windowless houses etc.

Squatter-settlements comprise mainly people of low school education standards. Their incomes are also low. Despite the popular belief that squatter settlements harbour loafers, researches are repeatedly revealing that in fact the vast majority of the residents are in employment (A and T Schlyter, 1979, P33; Muller, 1978, P28; Sichalwe, 1975, P10).

1.5 TRENDS IN POLICY

Early official policy on squatter settlement was to refuse them recognition as they were regarded as a 'sore to the eye'. Demolition of buildings was considered the solution until it was discovered that this was not in fact solving the problem as it "merely results in

movement of the slum-dwellers (squatters) to another ..., usually without facilities and detached from the mainstream of urban life ("Improvement...." U.N. Seminar Report 1971, P4). The official policy had to change and a compromise reached with the situation.

The initial attempts to 'help squatters' involved the resettlement of the squatters while the old settlement was demolished. This proved formidably expensive. Besides, there is a general tendency for squatters to show reluctance to move propably because of the extra costs which would be incurred in moving.* Squatters "usually reject any form of control since this might imply the setting-up of standards beyond their means" ("Improvement..." U.N. Seminar Report 1971, P28). "Housing projects in Brazil, Chile, Zambia and elsewhere have known significant arrears and outright default in rental payments. Tenant deliquences occur principally as a result of excessively high standards that imply rents beyond the capacity of most tenants to pay ..." (Grimes, 1976, P52).

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* A. Schlyter and T. Schlyter in their study of George found that ¾ of their respondents harboured no wishes to move out of George (1979, P47).

A study by the Department of Country and Town Planning in 1973 of Mwaziona (formerly George) indicated similar results with 83.6 percent not wishing to move, (MWAZIONA, P131).

Limited National resources lured many policy makers to the idea of Site and Service Schemes. This involved the provision of serviced plots on which people could build their houses. The main idea behind being to make people participate in the schemes. The schemes were quite popular among third world countries. By 1973, Site and Service Schemes had been integrated in at least thirteen countries. In Ndola, Zambia, 10 percent of the housing stock in 1973 were on Site and Service plots (Grimes, 1976, P19).

Of late, many countries have started upgrading the squatter settlements instead of demolishing them. This follows the growing awareness among policy makers of the fact that squatter settlements contribute to the total housing stock of cities and their residents make important contribution to the economic and social welfare of the cities. As settlements in urban areas, they should be provided with the necessary urban social amenities and utilities. This change in policy does not in the least mean that squatter settlements are being encouraged; On the contrary, control of squatter settlements growth still continues. In Zambia, none other than the prime minister himself recently ordered district councils to "halt illegal settlement" expansion (Times of Zambia, February 26th, 1982, P1).

One of the biggest problems of squatters is their lack of title to the land on which they have settled. In some instances this has been a hindrance to government participation in squatter development schemes. In Zambia for instance, "previously the government was hampered from making improvements on stateland."[1] An act had to be passed which facilitated government financing of the schemes and by which squatters acquired legal land tenure. Some countries have gone a long way in this land tenure aspect. In Peru, the establishment of the "Oficina Nacional Desarrolo de Pueblos Jerenes" in 1969 accelrated the legalization of land tenure for squatters and increased private investment in housing (Grimes, 1976, P21).

1.6 SQUATTER SETTLEMENTS IN ZAMBIA

Zambia is a rapidly urbanising country in which "the rise and growth of squatter settlements is one of the palpable developments within the field of housing, building and planning" (Schlyter and Schlter 1979, P7).

Urbanization in Zambia commenced with the opening of the mines in Kabwe (then Broken Hill) and the copperbelt. The introduction of 'hut Tax' forced many young-men to leave their villages to work in the mines. By the 1930s many rural areas had lost most

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1. National Report: Zambia (to) Habitat: United Nations Conference on Human settlements, 1975.

of their young males to the 'towns'. The system of 'circulatory labour migration' was devised by which workers had to go back to their villages when their contract expired. This controlled the number of people who drifted to the towns. Squatter settlements started when farmers and contructing companies provided land on which employees could rent a plot to build a hut. It became difficult to check the influx of relatives especially wives of the workers.

In the Post-Independence period all controls on rural-urban migrations were abandoned. The increased job opportunities and freedom of movement acquired after independence attracted greater numbers of males and even females to towns. This accelerated pace of urbanisation necessited an increase in the number of dwelling-units to house the people. This, however, the authorities were unable to do. Hence, the squatter settlements grew because of the people's frantic efforts to accommodate themselves. Between 1963 and 1969 in Lusaka, the proportion of people in squatter settlements rose from 16 percent to 35 percent (Narrowing the gaps, 1977, P143). By June 1972, twenty-two thousand families were on the Lusaka City Council waiting list* (Department of Town and Country Planning, 1975, P119). J.T. Robertson (1975, P45)

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* A similar situation arose in Nairobi, Kenya, where they had 30,000 persons on their Council waiting list - Harris, P39 in URBAN CHALLENGE IN EAST AFRICA, East African Publishing House, 1970).

postulated that "the majority of urban requirements, 60% or more are met by constructions in unauthorised areas."

The trend in policy as regards squatter settlements in Zambia is not much different from that earlier discussed for the third world as a whole. Concern over the housing problem started as early as the 1950s, but it was not until 1964 that "surveys were made to identify policy requirements which resulted in the making of some recommendations in the field of housing" (Schlyter and Schlyter 1979, P16). 1965, saw for the first time, the establishment of an official housing programme and local authorities were instructed to demarcate and service plots by April 1967. Since it was feared that the funds for these housing requirements would not be easy to come by, it was decided that the burden be shifted to the private sector. Hence, the proportion of conventional council houses in the urban housing programme was reduced from 70 percent in 1965 to nil in 1971 (Muller, 1979, P6). In 1974 a multi-million kwacha (26 million) squatter-upgrading programme, partially to be financed by a World Bank Loan, was lauched.*

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* The settlements covered in this project are well reviewed in LOW COST RESIDENTIAL DERT. IN LUSAKA: THE DEVELOPMENT AND CHARACTERISTICS OF OFFICIAL AND UNAUTHORISED LOW COST HOUSING IN LUSAKA: Department of Town and Country Planning, Research Unit, Lusaka, 1975.

Perhaps the best move in the solution of the squatter settlement problem was President Kaunda's 30th June 1975 'Watershed' speech by which squatters acquired legitimate occupation of land. Large pieces of undeveloped vacant land became state land and freehold titles were convented into leasehold for 99 years. These squatters became 'tenants of the State' (Simons, 1979, P17). This move facilitated participation of the government in squatter settlement programmes.

1.7 SQUATTER SETTLEMENTS IN NDOLA

At 14.7 percent, Ndola has the highest proportion of serviced site dwelling-units (Robertson, 1975, P44) in Zambia. But then Ndola's squatter settlement problem has never been, ab initio, as serious as has been found in other cities; Hence 'Ndola has the most manageable problem' among the major towns of the country. Despite this, however, squatter upgrading programmes in Ndola have not had the same success as those in Lusaka.

Earlier in the late 1960s and early 1970s, squatter settlements such as Chibwe were demolished. The current policy has involved the provision of utilities such as water taps to settlements such as Chipulukusu, Chibolele and now Sinia. Perhaps the most successful of these was the Chipulukusu resettlement scheme in which 3,000 plots were set along side the railway line in 1973. Chipulukusu is a much older

settlement than Sinia and unlike Sinia the original Chipulukusu was on damp low land. The council planned up on dry land an area for the resettlement of the Chipulukusu residents. The settlement was ready for occupation by 1974.

Ironically enough, these efforts by the local authorities little solved the Chipulukusu problem. People who moved to the better drier settlement either left their old house to other relatives, sold it or offered it for rent. Currently, old Chipulukusu is almost as densely populated as it were before the resettlement scheme.*

Other housing projects including the Pamodzi and Mushili Site and Service Schemes have apparently been less effective in as far as the squatters are concerned. These are shunned probably because of the high costs involved. Considering the income levels of the squatters, this should be understandable.

Currently, very little is being done about the squatters in Ndola mainly because of a shortage of funds. Plans long standing (Sinia Upgrading Scheme set as early as 1974) are yet to be implemented. Meanwhile, the situation gets worse in the squatter settlements. A look at Airphotographs taken at different time periods reveals great growth of squatter settlements a warning of the squatter problem to come.

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* The population of Chipulukusu as a whole according to 1980 Census is 15,943 (PRELIMINARY REPORT OF 1980 CENSUS OF POPULATION AND HOUSING, CENTRAL STATISTICAL OFFICE 1981).

1.8 CONCLUSION

As the squatter settlement problem heightened, governments the world-over became aware of the need for a change in policy towards squatter settlements. Through time, authorities have come to learn that demolition of squatter settlements is not the best solution. As a result of this realisation, the official policy of many countries has been that of squatter-upgrading. In the process squatter settlements have acquired legal status and get provided with Urban utilities and services.

Lack of funds, though, has held a lot of would be projects. The rate of growth of the settlements beats the cash that flows in for these projects. Even with outside help from such organizations as the World Bank, it appears it would take a very long time before many of the plans may be put into practice.

PART TWO

A. FIELD SURVEY

2.0 INTRODUCTION

The field survey of the study could basically be divided into three parts:-

(1) The physical survey of the study area in which its geographical extent and characteristics were identified.

(2) The interviewing of a selected number of household heads of the settlement.

(3) An interview of council officials.

2.1 AIMS:

The major aims of the study was to find out the various basic characteristics of the settlement particularly the socio-economic and demographic characteristics. Hopefully, this would lead to realisation of the major aim of the whole study; To assess the problems of the settlement and explore possibilities of upgrading and future development.

2.2 HYPOTHESES:

In the light of the aims of the project and review of available literature on squatter settlements, the following research hypotheses were formulated for verification:-

(1) The growth of the settlement has been most rapid during the past five years.

(2) Most residents are migrants from rural area.

(3) Residents of Sinia are in the main young people between the ages 15 and 35 years.

2.3 RATIONAL FOR THE HYPOTHESES

For a long time Sinia, like many other squatter settlements in Zambia, was considered an illegal settlement until President Kaunda's 'Watershed Speech' in 1975 when it acquired legal status. Following this, Ndola City Council released some more plots for occupation. This might have led to an increase in population and extension in area and is the rationale behind hypothesis 1.

Hypothesis 2 is dependent on available literature. Schlyter and Schlyter 1979, P42; Muller 1979, P23; and the Department of Town and Country Planning (1972, P127) for instance have shown in their various studies that the majority of residents in squatter settlements come from rural areas.

3.0 METHODS

3.1 THE PHYSICAL SURVEY

In this early stage of the study, the researcher took two days (21st and 22nd August 1981) to familialize himself with the settlement. The different paths were carefully noted and so were the differences in density within settlement. The major aim behind this was to try to form a basis for sampling groups.

3.2 SAMPLING AND INTERVIEWS

With over 11,000 people, Sinia is a big settlement and an ideal sample of a settlement of this size should be equally large. Unfortunately given the available time and resources such a sample would not have been easily manageable. For this reason a sample of 80 was thought large enough, manageable and convenient.

Four divisions of the settlement based on population density or to be more precise density of settlement were made whereby the less dense areas were larger, making up for the few people. Twenty people were selected from each group for interview. (See Fig. A Appendix A).

Ideally only heads of households were to be interviewed. This however, proved impractical in the field and so it was decided that wives in case of married men, could be interviewed in the absence of their husbands. In order to interview as many household heads as possible, interviews were mainly carried out over weekends; which explains the long time taken to finish all interviews (Sunday 23rd August to 9th September 1981).

Interviews were conducted in Bemba and Nyanja two local languages with which the writer is conversant. Hence the problem of communication never arose during the interviews.

3.3 THE AUTHORITIES

The visit to the council offices was on Monday 14th September 1981. An interview and discussion with Mr Teskeredzic, the Chief Towns Planning Officer was most informative. He brought to surface the many projects undertaken by the Ndola City Council and the pressing problems the Council is facing in implementing its policies and plans.

3.4 SOURCES OF ERROR

This study did not involve real random samplying methods and is therefore subject to bias. Secondly, the sample is rather small to be trully representative of the population. These aside however, it should be treated as a fairly reliable study as all figures and calculations are based on reliable primary and secondary data sources.

It will also be observed that most comparisons with other settlements are based on 1969 census figures. No comprehensive Report of the 1980 Census had been produced at the time of writing. The differences in the times when the data was collected should thus always be kept in mind.

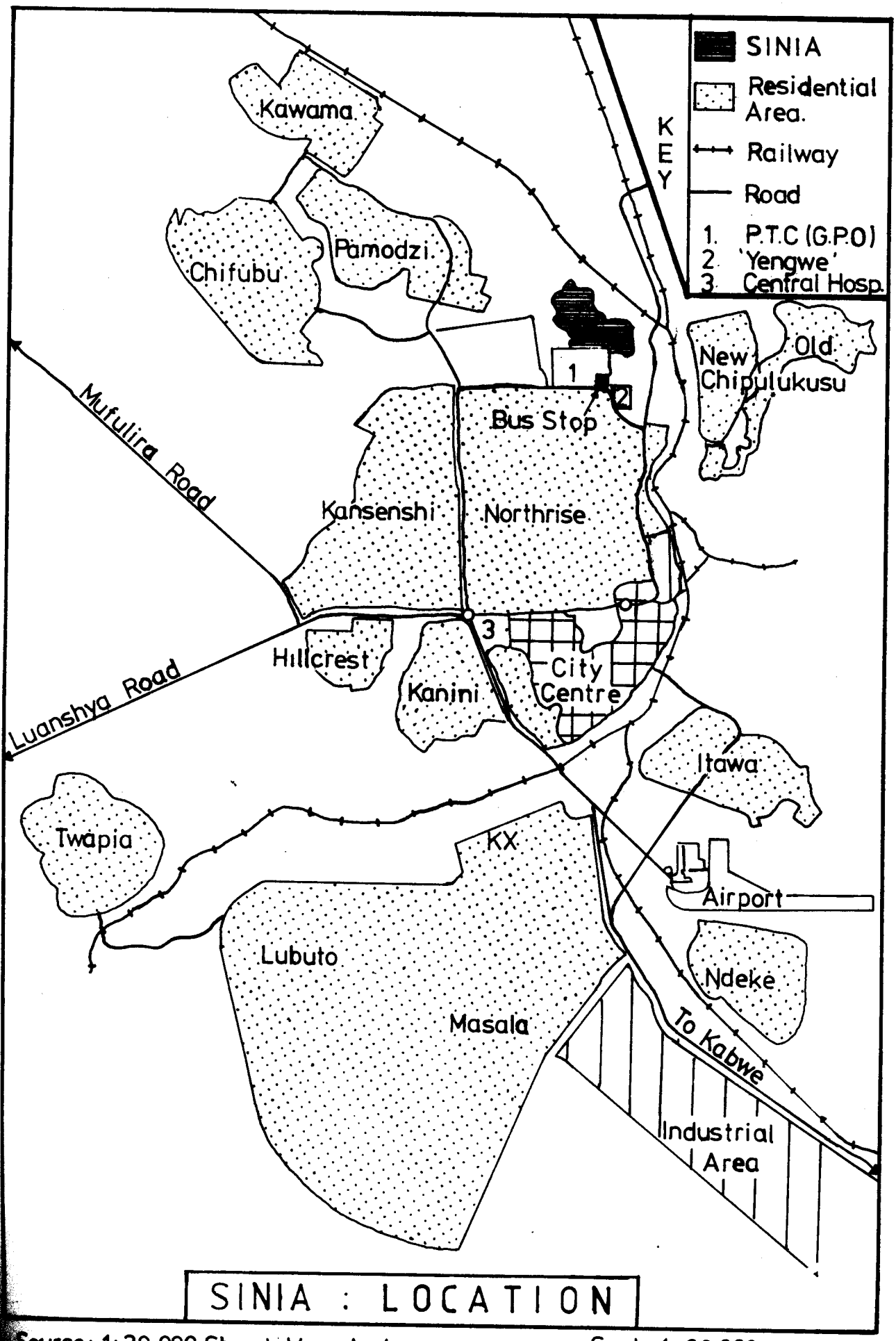
4.0 THE STUDY AREA: SINIA

4.1 LOCATION:

The study area, Sinia, as is clearly indicated in Figure 1 marks the north-eastern geographical boundary of the city of Ndola. Conveniently placed at about three kilometres from the Central Business District (C.B.D.), Sinia's Location appears to comform to the third world model of city structure as postulated by Macgee (1967) and the Zambian model by Mweshi (1969) which locate slums and squatter settlements at the edges of the city as opposed to the Burgess model of western city structure with these settlement occupying the area in the immediate proximity of the C.B.D.

Sinia is bound to the South by a Posts and Telecommunications Corporation Staff College (previously General Post Office - G.P.O.) which has made it completely impossible for the settlement to expand in this direction. On the South-Western and Western edges, Sinia is flanked by a Zambia Flying Doctors' Village. On the North-Eastern across the rail line is a forest plantantion. The North is bound by an extensive uncultivated semi-barren land which but for the authorities would most likely long have been settled on.

Figure 1



SINIA : LOCATION

Source: 1:20,000 Street Map And Airphotographs.

Scale 1: 60,000

4.2 EVOLUTION

In 1962, on the site on which Sinia now stands, were some quarry works being carried out by the Northern Rhodesia Lime Company Limited. As early as that year "an assistant Company Manager of the then Northern Rhodesia Lime Company, drew the attention of the District Commissioner to the 'huts' illegally built by loafers between the Lime Works Compound and the railways at the abbatoir..."[1] Five people, including Mr Sinia* whom the settlement is named after had illegally built their huts close to the Lime Company Worker's Compound.

By 1965, Quarry Works had ceased. About this year, Sinia, now left to the pioneer five, began to grow in number and geographical extent. These early 'squatters' took it upon themselves to appoint Mr Sinia as chief and whoever wished to settle in that area had to get permission from him until when the council took over.

4.3 GROWTH OF THE SETTLEMENT

Information pertaining to the growth of the settlement was mainly acquired through the study of Air-photographs of the settlement of the years 1968, 1974 and 1980.

The 1968 Air-photograph of Sinia shows the settlement in its rudimentary stage with less than twenty scattered houses. At this time Sinia was about 3.5 hectares ** in area. Figure 2 shows the areal growth of the settlement between 1968 and 1980

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1. Annual Report of the Director of Housing and Social Services, Ndola City Council, 1967, P6.

* Mr Sinia still lives but efforts to contact him were futile.

** Estimates of the area of the settlement was calculated by using the averages of 5 successive measurements for each of the Air-photographs by use of a Planimeter.

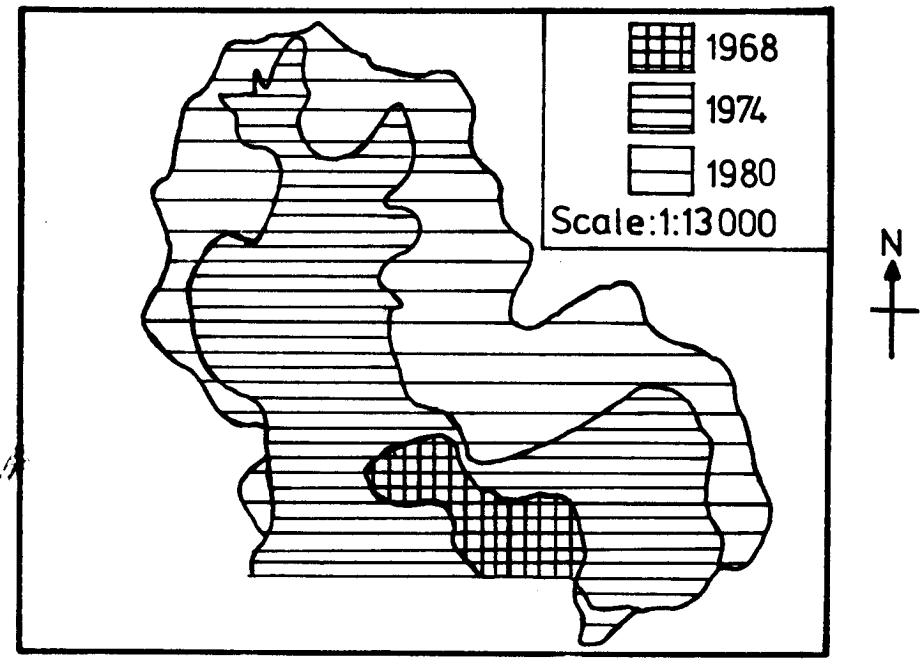
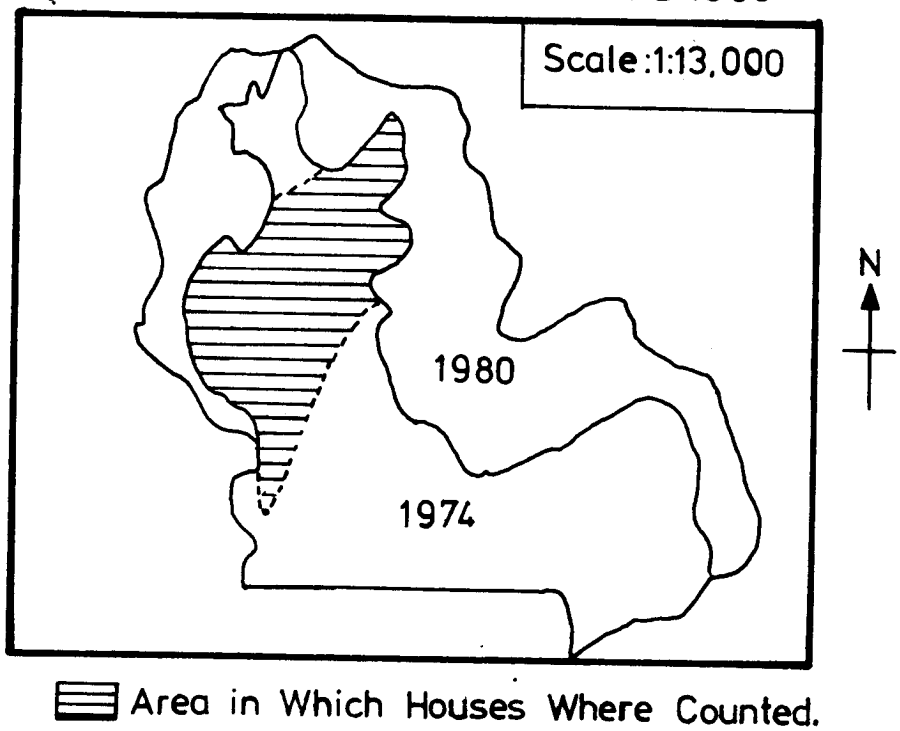


Fig. 2. SINIA : GROWTH (1968 - 1980)
Drawn From Airphotographs ZAM./4625/1968; NDO./348/1974; And NDO./018/1980

Fig.3. GROWTH BETWEEN 1974 AND 1980



as depicted by Airphotographs. The settlement had grown to an area of 66.31 hectares by 1980; a big increase over the 1968 3.5 hectares.

Owing to the fact that Sinia was not previously recognised by the authorities, population data on Sinia lacks. However, there is no doubt that the 11,749 people reported in the Preriminary Report by the Central Statistical Office of 1980 Census is an equally large increase over what could not have been more than 400 people in 1968.

But for stringent measures taken by the council, the settlement would have been expected to expand on the Northern and Eastern side. (See under 'Pattern of Growth' below. Despite these efforts to check the growth of the settlement however, there are a lot of manifestations of growth within the settlement so that though the areal boundary is maintained, the settlement still continues to grow in population and density.

HYPOTHESIS ONE: The growth of the settlement has been most rapid in the last 5 years.

Seeing that this hypothesis falls under growth of the settlement, it has been decided to deal it here. Growth here means both in population and area and the last five years refers to the period 1975 to 1980. The verification of this hypothesis has been largely made difficult by a scarcity of data, particularly on population. On areal growth, there is a lack of enough Airphotographs to allow proper definite conclusions to be achieved. Under these circumstances only tentative generalisations and observations based on rather shaky measurements my be postulated.

If we divided time periods according to available Airphotographs, we would have between

beginning of the settlement (Around 1964) and 1968, between 1968 and 1974, and between 1974 and 1980.

As earlier pointed out, the area of Sinia in 1968 was 3.5 hectares. This means from its beginning up to 1968 the settlement had grown by that much. Between 1968 and 1974 the settlement grew from 3.5 to 43.84 hectares; An extension in size of more than 12 times. By 1980 the area of the settlement was 66.3 hectares; Having grown not even double its 1974 size. It would appear therefore, that on the basis of area the Hypothesis is nagated since it grew at a faster rate between 1968 to 1974.

Areal growth alone cannot be enough to study the growth of the settlement. There is need to look at the density of housing if comparisons of growth between the time periods has to be made. For this, a study of a piece of the settlement which can be clearly defined on both the 1974 and 1980 Air-photographs was taken as a sample (Figure 3). The houses in the shaded piece of the settlement were counted on the 1974 and the 1980 Airphotographs. This revealed that whereas in 1974 there were about 308 houses, in 1980 the same area had 511 houses (both figures excluded what writer thought were latrines hence the question of increased building of toilets does not arise). The difference is 303, making the 1980 number almost double the 1974 figure. The significance of this is that though we cannot measure the differences in population density between the two periods, we can nevertheless note that apart from the extension in area of the settlement, there is a lot of in-filling within the settlement. These observations with no concrete data to sustain them makes the verification of the first hypothesis very difficult indeed.

4.4 PATTERN OF GROWTH

A prior knowledge of the topography of Sinia is a necessity to understanding fully the pattern of growth the settlement has followed; Sinia is on a high ridge which slopes rather rapidly on its Eastern side. On the slope are three quarry-pits, manifestations of the Northern Rhodesia Lime Company's past works.

Sinia started on the platue-like surface just by the G.P.O. (P.T.C.) Staff College Site, well detached from the quarry-pits on the slope. The growth of the settlement continued to be more or less along the edge of the college site leading to the almost perfectly straight south boundary of Sinia discernible on airphotographs and maps. By 1974 Sinia had extended northwards still maintaining the ridge. A few people had settled on the slope but the quarry-pits were clearly avoided (Plate 1 Appendix B). By 1980, the slope had been 'invaded' and the area close to the quarry-pits occupied. Areas spersely settled in 1974 had become filled in.

The pattern could be generalised; First, best areas in terms of proximity to:-

1. Hospital
2. Bus stop
3. Sources of water, e.t.c., were settled;

In this case the southern end of the settlement. As soon as a point was reached at which people felt building farther would not bring forth these stated advantages; Shortage of space would compel the next settlers to occupy the marginal areas, a 'critical point of expansion' would be reached and further infilling would take place. Thus making a cycle of expansion of the settlement.

Infilling would occur

Seeing that Sinia's latest area of expansion is the northern end, and no further growth outside the boundaries is being allowed, we would expect in-filling to begin in that end soon being the current least densely settled.

B. RESULTS

5.0 INTRODUCTION

The information on the physical characteristics was obtained through direct observation during the initial field survey of Sinia. Some information was elicited from residents interviewed and the study of Airphotographs covering the settlement.

5.1 LAYOUT

As has been observed in many other squatter settlements Sinia is typified with a pattern which, on the surface appears random and chaotic. A closer study reveals that quite to the contrary, there is a logical pattern in settlement. It becomes clear for instance that there is a tendence for more people to build along the road and paths than farther from them. On the other hand near the quarry-pit areas and near places of steep slope settlement is very sparse. The Southern and Western ends of the settlement are more densely populated. This is not mere coincidence. The following could be the underlying factors influencing this difference in density with the South having higher densities than the Northern.

1. Proximity to hospital and bus stop - both of these are about 150 metres South of Sinia.

2. The south-western and southern end of settlement have a mini-Commercial Centre which includes a market, a number of grocery shops and bottlestores, and the largest tavern in the settlement. This aside, this side of the settlement has the highest number of grocery

shops in Sinia (See Figure 4). The major roads that pass through the region makes it the most accessible part of the settlement. Which explains the relatively high concentration of business activities in the region in as much as supplies can more easily be brought in.

3. The southern/south-western edge of the settlement has also the highest number of water taps. In fact it is almost the only area from which the whole settlement obtains wanter.

As a result of the different advantages and benefits of staying in the southern end, the settlement is much densely settled and wider in area than the northern end.

5.2 ACCESSIBILITY

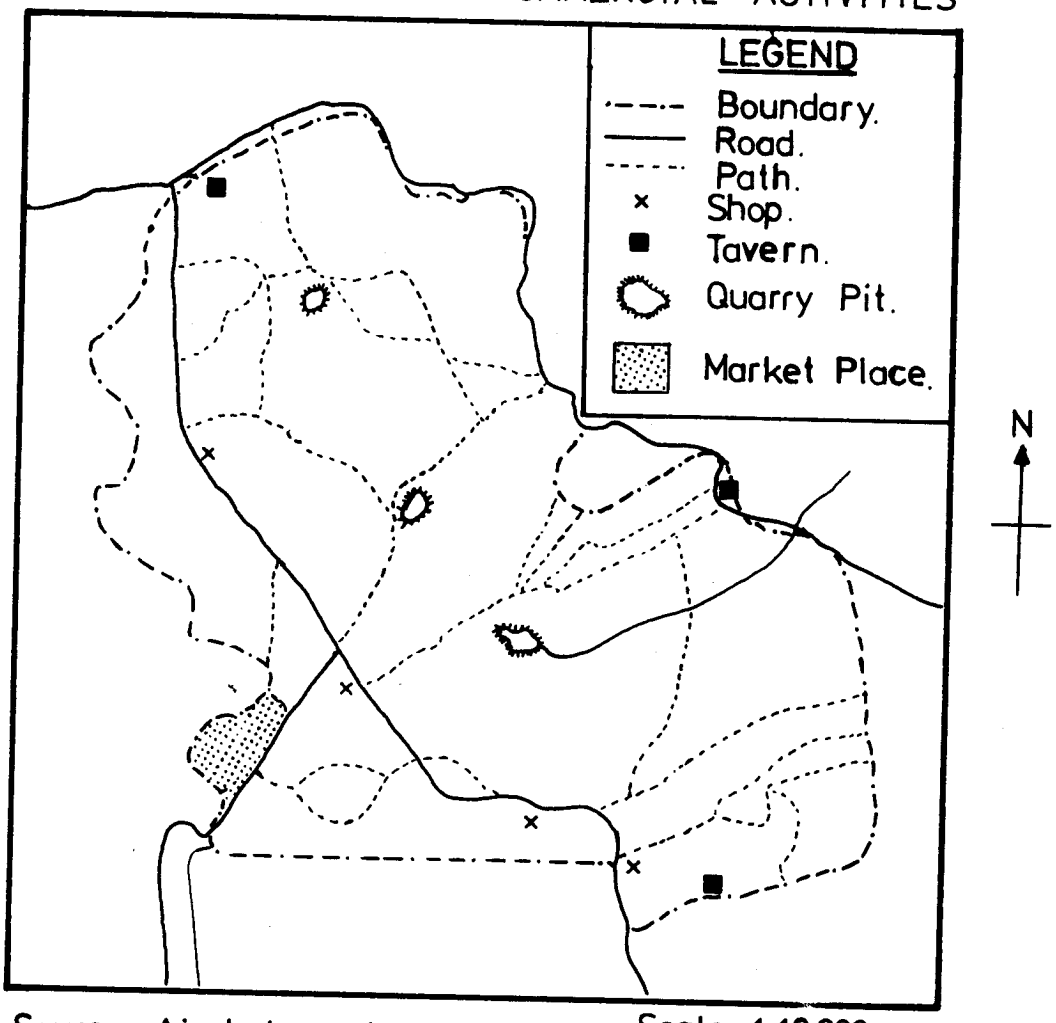
The question of accessibility has already been touched though only in passing in the previous paragraph. Accessibility to Sinia is poor. Figure 4 clearly shows the various major routes of Sinia. Two route types have been identified:-

(a) Roads which can be utilized by vehicles.

(b) Paths that may or may not be used by bicycle but could definitely not be used by vehicles, either because they are too narrow or have deep gullies by storm water which inhibit accessibility.

Sinia has only two major routes of the former category. One traverses the western edge of the settlement while the other marks the Eastern and Northern boundary of the settlement. The problem is that none passes through the interior of the settlement and this leaves a large proportion of the settlement almost completely inaccessible by vehicle.

Fig. 4
SINIA: ROUTES AND COMMERCIAL ACTIVITIES



Source : Airphotograph
NDO/018/1980

Scale: 1:10 000

5.3 HOUSING DATA

Data pertaining to housing and the provision of services was acquired through interviews and personal observations.

Dwelling Units:

It is rather difficult to generalise the various characteristics of dwelling units in Sinia since their variety is vast. Table 2 below shows the number of rooms per household.

TABLE 2. NUMBER OF ROOMS PER HOUSING UNIT N = 80

Number of Rooms	Number of Units	Percent
1	7	9
2	16	20
3	29	36
4	16	20
5+	12	15
TOTAL	80	100

The majority (76%) of the dwelling units comprised between 2 and 4 rooms. The mode room number was 3. Only 15 percent had more than 4 rooms while 9 percent had one room mostly owned by singlemen.

The average number of rooms per household was 3.2 and the mean number of individuals per room 1.4 which, surprisingly enough, was below the United Nations figure of room over crowdedness of 3. Of course in this case one has to consider the fact that the rooms in Sinia are relatively very small in size.

5.4 BUILDING MATERIALS USED

Table 8 (Appendix A) gives a break down of the different materials commonly used in house-building in Sinia. An over whelming majority (91%) of the respondents' houses were made of sun-dried mud brick (kimberly). Only 9 percent were built of burnt brick or concrete block.

For roofing material, a dimunitive percentage (7%) of the respondents' houses had corrugated, galvanized or asbestos roofs. 40% of the roofs were made of carboard paper covered with plastic while 52 percent were made of scrap metal pieces beaten into flat-sheets and then covered with plastic material.

Comparisons with other unauthorised settlements show that Sinia's housing standards are of lower quality. For instance much lesser proportions of Kimberley brick (which is very susceptible to erosion leading to collapsing of houses in the rainy season) were recorded in the 1969 census for George (78.8%), Chumandapodi (73.5%) and Quarries (74.8%). As for roofing materials, the disparity is more pronounced; In George (alias Kapwepwe Compound, alias Mwaziona) a survey by the department of town and country planning in 1973 showed that 93 percent of the houses had corrugated and galvanized iron roofs.

The situation as regards floor materials is no better. Where as in Sinia, 72 percent of the respondents' floors were made of stamped mud, and 28 percent of a layer of concrete. In Mwaziona only 56 percent had stamped mud floors, and well over 30% had concrete floors.

One possible explanation of this disparity lies in the increased prices of building materials and the general inflation of the economy. Prices

of building materials and other commodities have become so exorbitant that the poor squatter finds it very difficult to save for building materials. Not only have building materials become dear, but they have also become difficult to find.

Richard Martin (1975, P72) says of squatter settlements "... one of the most impressive features of housing in squatter housing is the rate of improvements every year ...". This study's findings are to the contrary. Only 25 percent of the respondents had ever made improvements to their houses since occupancy. These were mainly those who had just bought their houses or those who upon some of their children reaching adolescence or adulthood build extra rooms for more privacy. Other common improvements were the changing of roofing material, for instance Paper replaced by galvanised iron. In answer to the question why they did not bother to make improvements to their houses, some respondents said they were expecting Sinia to be upgraded and some houses would be demolished in the process. Others didn't because they were just renting the houses, the largest number however said they would require loans from the government as the prices of building materials were too high.

It is possible however that the question: 'Have you ever made any changes or improvements to your house since you started living in it?" Could have been misunderstood. The fact that the older part of the settlement has more houses with galvanized iron roofs could be a manifestation of improvement - but then, it could just be another indication of the more favourable prices of the past.

5.5 SANITATION

The importance of sanitation to the overall health of a population needs no emphasis. In Sinia, almost all residents use pit-latrines. 64 percent of the respondents had their own pit-latrines while the rest used either a neighbours or a relative's.

Garbage collection services are not provided to the settlement and residents merely heap rubbish at different points (Plate 2) in the settlement or throw it in the quarry pits, the same quarry-pits women sometimes wash their cloths in. The implications of this situation to health are clear. Epidemics can easily break in the settlement.

5.6 SUMMARY

We started this chapter by looking at the layout of the settlement; Sinia. We discovered that despite its haphazard appearence, there is an orderly pattern which can be observed in the settlement of people. We saw for instance that there are some areas and points which are more favoured and how these have influenced the pattern of settlement.

Then we looked at accessibility and noted that despite the numerous paths in the settlement, Sinia is highly inaccessible by car. There are two major routes useable by car and these are at the edges of the settlement leaving a large part of the settlement very inaccessible.

The last part of this chapter looked at housing and sanitation. It was found that 76 percent of the housing units of the respondents comprised between 2 and 4 rooms. We also discovered that a typical house in Sinia is built of Kimberley brick walls,

a roof made either of paper or metal pieces wrapped in plastic, and a floor of stamped mud. When housing data of Sinia was compared with that of housing in other squatter settlements, it was found that Sinia housing standards are much lower.

6.0 POPULATION AND HOUSEHOLD DATA

6.1 POPULATION STRUCTURE

Figure 5 compares the population pyramid of the Sinia sample and that of the country as a whole. 47 percent of the Sinia population are children below the age of 15. In Mwaziona 1973, the same cohort constituted 49 percent[1] while the 1969 Census put the national percentage of the cohort at 46 percent. From these figures we can deduce that the difference is so far as this cohort is concerned is minimal.

Our third hypothesis states that residents of Sinia are mainly young people between the ages 15 and 35. In our attempts to verify this hypothesis, greater emphasis, should be laid on comparing the Sinia Pyramid to that of the country in relation to the age Cohorts of interest, in this case 15-35.

The national population is such that there is a progressive decrease in proportion from the 0 - 4 years cohort towards the 60^{+} cohort. The age structure of Sinia does not show the same consistent progressive decrease. After the sharp decrease from 0 - 4 to 10 - 14, there is a change in trend. Between the ages 15 (inclusive) and (35 exclusive), there is a bulge; An indication of increased proportions of people in the population. The Sinia 15 - 34 year cohort contitutes 39 percent of the population; The Cohort constitutes about 30 percent in the National population.

The 15 - 34 age group obviously does not constitute the majority of Sinia's population seeing that it is the under 15 years group that dominates.

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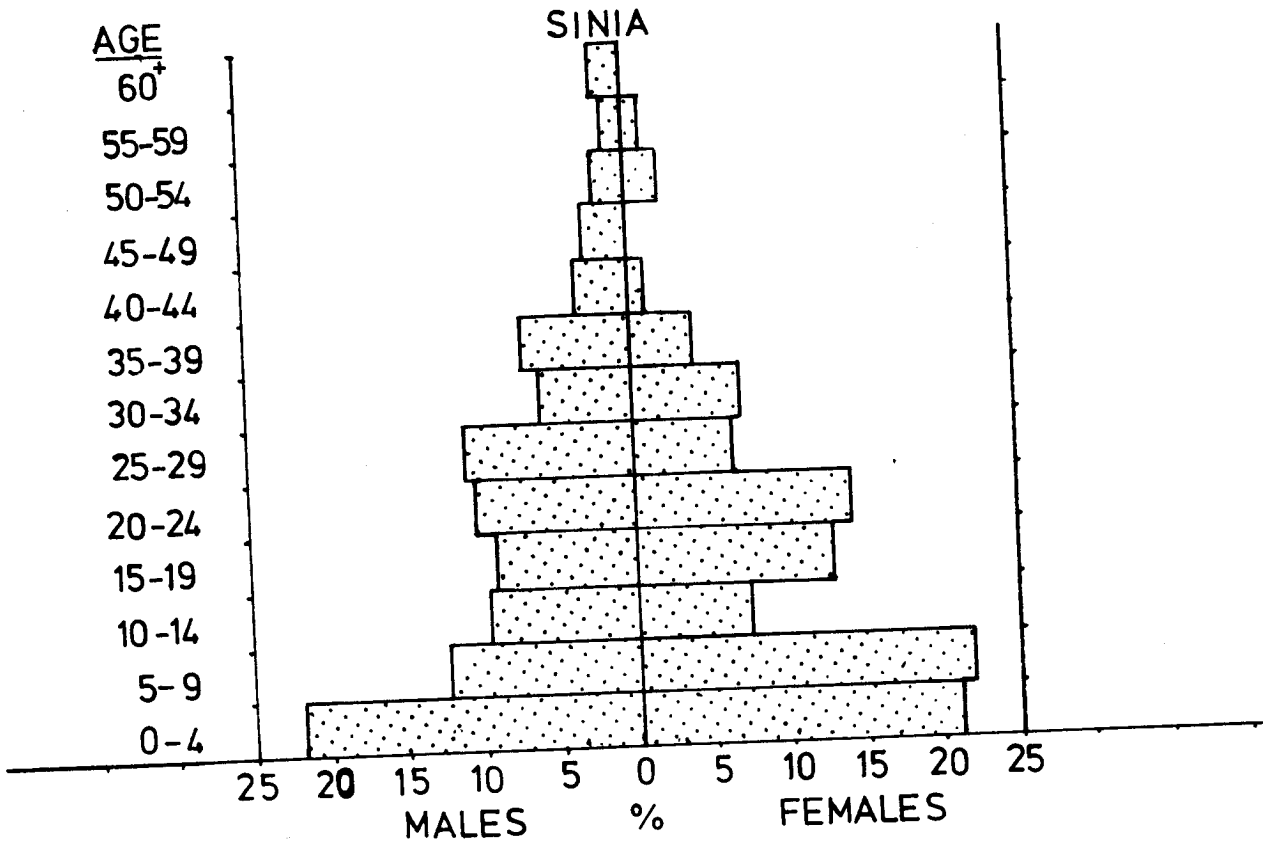
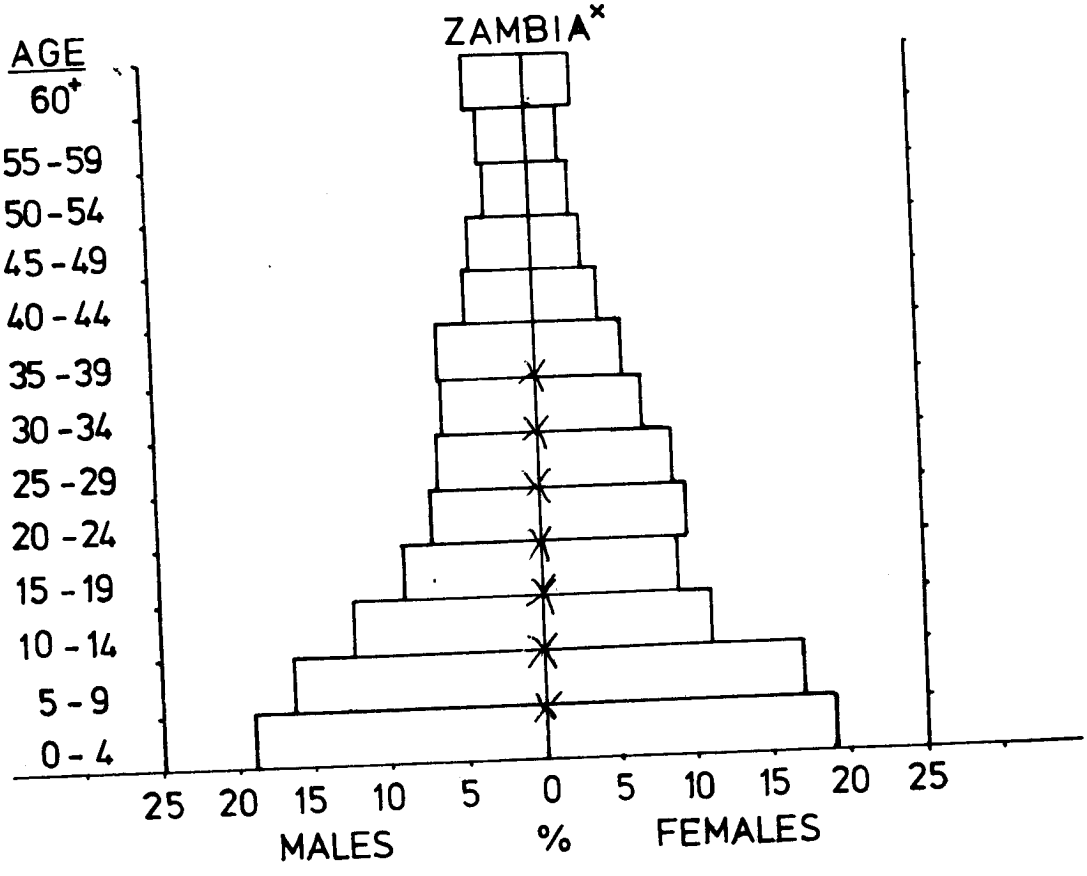
1. Mwaziona, Department of Town and Country Planning, Lusaka 1979.

Fig. 5 AGE - SEX COMPOSITION





×. 1969 Census.

However, the 15 - 34 age group is signifant as it clearly stands out to indicate a departure from the National structure. It probably manifests the migration of young people who move to towns to look for employment and educational opportunities.

6.2 HOUSEHOLD SIZE

Table 3 gives the household sizes of the respondents. Over 61 percent of the households comprise 5 and more members. The average household size was 5.6 which was higher then the National average of 4.7.* Close to 38 percent of the respondents had relatives staying with them, 60 percent of these relatives were above the age of fifteen. This could be an indication of the general tendency for people to stay with relatives when they come to urban areas from rural areas. On the other hand it may be nothing out of the ordinary seeing that traditionally Zambian families are extended. However, Sinia's figure is still higher than that found in Kalingalinga (23%), George (24%), Ngulube (18%) [1969 Census].

Table 3 HOUSEHOLD SIZE

No. of People per Household	Number of Households	Percentage
2 & below	11	13.75
3 to 4	20	25.00
5 & 6	31	38.75
7 & above	18	22.50
TOTAL	80	100

* 1969 Census

6.3 ORIGIN OF RESPONDENTS

In Zambia, origin is one of those cencepts which a researcher must be very careful about. To some, origin refers to place of birth while to others it refers to the home area of the parents. In the latter case, an individual born on the Copperbelt and has never been to Southern Province where his parents came from will write 'Southern Province' as his origin. This happens to be the general notion of origin in Zambia. In this study it was made clear to the respondents that origin refered to place of birth where the respondent was in residence for sometime before moving to another area.

Table 4 below indicates the different Origins of the respondents. Over 50 percent came from Northern and Luapula Provinces alone. None came from Lusaka Province. 32.5 percent came from

Table 4 ORIGIN OF RESPONDENTS

PROVINCE	NUMBER	PERCENTAGE
Copperbelt	5	6.25
Central	13	16.25
Northern	25	31.25
Eastern	17	21.25
North-Western	5	6.25
Lusaka	-	-
Southern	1	1.25
Western	1	1.25
Luapula	13	16.25
TOTAL	80	100.00

Eastern and Central provinces. Hence over 80 percent came from the 4 provinces Northern, Eastern, Luapula and Central Provinces. Whereas the high proportions of Luapula and Northerners may adequately be explained by the theory of proximity, that of the Eastern province which is very far is a puzzle and so is the low representation of North-Western Province. This relatively high proportions of people from Eastern Province has been observed in Mwaziona (Department of Town and Country Planning, 1972) and Chainda (Sichalwe, 1975). It might be a result of over population and land problems that have been the nightmare of Eastern Province originating in the colonial days of Native Reserves.

An attempt was made to compare the four different parts of the settlement used for sampling (Fig. A appendix A) to find out the differences in areas of origin. It was found that 44 percent of the respondents from Northern Province lived in the Southern end of the settlement (Marked 1 in Fig. A Appendix A). There were no significant differences for the other provinces. Those from Eastern province were slightly more in the new part (4 in Fig. A) than in the old (1 in Fig. A).

Contrary to the popular belief that squatter settlements harbour foreigners, no respondent was non-Zambian. However, seeing that the field survey coincided with the period when some foreigners were being repatriated out of the country, fear may have forced some foreigners to hide their true identity.

6.4 PREVIOUS RESIDENCE

The study of residents' previous residence is of vital importance in the study of his movements and to some extent his background. We may for instance find out whether he comes from better residential

areas or areas of equal footing with Sinia. From this we may learn whether he has been forced by circumstances to come to Sinia or has come willingly.

Below is table 5 to illustrate the respondents immediate residence before moving into Sinia. An overwhelming majority of 77.5 percent had lived in residences within the Copperbelt. 47.5 percent of these were resident in Ndola itself. Of those from Ndola, nearly 37 percent were from Kawama Site and Service Scheme alone. 22.5 percent came from other provinces. Few of the respondents came from rural Ndola. Of the 47.5 percent from around Ndola, 75 percent were renting a room or two, 21.5 percent

TABLE 5 RESPONDENTS IMMEDIATE RESIDENCE BEFORE SINIA

AREA		NUMBER	PERCENTAGE
NDOLA			
Chipulukusu	(7)	(8.75)	
Kawama	(14)	(17.50)	
Chifubu	(8)	(10.00)	
Masala	(6)	(7.50)	
Others	(3)	(3.75)	
		38	47.50
OTHER TOWNS ON THE COPPERBELT		24	30.00
NORTHERN PROVINCE		7	8.75
LUSAKA		4	5.00
CENTRAL		7	8.75
TOTAL		80	100.00

were staying with relatives while 3 percent had their own houses provided by their employers or council. Comparison with Table 4 for origin of respondents

should illustrate the fact that these immediate previous residences are mere stop overs of the people before they move into Sinia from rural area.

6.5 LENGTH OF RESIDENCE

Of the sample of household heads interviewed, over 65 percent have come to the settlement only during the last 5 years. Less than 8 percent of the respondents have lived in Sinia for more than 10 years (see Table in Appendix A). The figures may suggest that Hypothesis 1 of growth is true. But this only holds so long as the number quitting the settlement is relatively smaller.

6.6 SUMMARY

This chapter has revealed results obtained by process of data elicited from interview schedules regarding Demographic and household information.

The population structure of Sinia scarcely differs from that of the Nation as a whole in general except for the age group 15 - 35. For the Nation there is progressive decrease in proportions but for Sinia there is an increase at this age group. This suggests 'selective migration'. The population is mainly migrant from rural areas. The majority come from Northern, Luapula, Eastern and Central Provinces, in that order.

The average household size is five, though over 60% of the families are nuclear.

Respondents' immediate previous area of residence was, for the vast majority (77.5%) around the copperbelt. Over 47 percent came from townships in Ndola mainly from Kawama, a relatively new Site and Service Settlement.

7.0 EMPLOYMENT, INCOME, AND EDUCATION

Employment, income and education are important influences on a communitiy's values and attitudes. These interrelated indices of socio-economic development are important for planning in any modern community. It is for this reason that the whole of this Chapter is left for the discussion of the three.

7.1 EMPLOYMENT

Earlier studies on employment in squatter settlements have crashed the popular belief that squatter settlements are the homes of unemployed people (Schlyter and Schlyter, 1979, P33; Sichalwe, 1975 P10; Muller, 1978, P28). The Department of Town and Country Planning goes so far as to say that "there is in fact a slightly higher proportion of men working in the unauthorised areas than in the official areas".[1]

In Sinia, 94 percent of the respondents were in gainful employment of some sort or other. Of these, 34 percent were self-employed which is remarkably higher than 15 percent in George (Schlyter and Schlyter 1979, P30), but close to 30 percent in Chawama (Muller, P33). Self-employment for many is charcoal selling (8.75%), hawkers (8.75%) and for women, marketeering (6.25%). For those in wage-employment tailors (10%) and labourers (12.5%), security guards (7.5%) dominated. Other jobs in the formal sector of the economy included soldiers, office clerks, (and a bank clerk) and drivers. Five heads of household were not in any form of employment. These earned their living by offering some of their rooms for rent or on their children's incomes.

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1. Low Cost Residential Development in Lusaka, Department of Town and Country Planning, Lusaka, August 1972 P129.

To supplement their husbands' incomes, quite a good number of housewives, 48.4 percent, are involved in informal sector activities, none were in wage employment. Most of these women who worked were marketeers and fishmongers. Other activities included the selling of 'Munkoyo'*, and commodities such as cooking oil, sugar, etc., which they sell in smaller amounts.

Other supplements to the income of the households were from their older children and relatives they were staying with. 45 percent of this group were found in gainful employment and hence contributed to the general financial welfare of the households. Shockingly, however, over 50 percent were unemployed.** It is this group which probably leads to the view that squatter settlements harbour unemployed people.

7.2 INCOMES

Incomes are generally subject to the type of employment and educational qualifications; more so in wage-employment. Undoubtedly, Sinia comprises low income group people. Amazing results, however, came to surface. Some individuals earn very high amounts. One respondent (self-employed tailor and mechanic) claimed he earned about K500 per month! The overall average monthly income was K111. The distribution is not as impressive however; The majority of the respondents (63%) earned less than K100 per month. The distribution of monthly incomes is shown in Table 6. As can be seen from the Table few respondents

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* Traditional drink.

** Unemployed numbers refers to those above the age of 15, neither at school, nor in any form of gainful employment.

Table 6. MONTHLY INCOMES N = 54

INCOME/MONTH	NUMBER OF PEOPLE	PERCENTAGE
K50 or less	9	16.7
51 - 100	25	46.3
101 - 150	8	14.8
151 - 200	6	11.1
200	6	11.1
TOTAL	54	100.00

told their incomes either because they just did not want to or, in the case of the self-employed, they couldn't tell since they lived hand to mouth.

Comparisons to incomes studied in other similar settlements appear to suggest that incomes in Sinia are much higher. Table 7 shows the distribution of income in Ng'ombe, Lusaka 1972.

Table 7 INCOMES IN NG'OMBE 1972

INCOME/MONTH	PERCENTAGE
K20 and Below	4
21 - 30	35
31 - 40	18
41 - 60	30
K60 and above	7
not given	6
TOTAL	100.00

Source: MWAZIONA, 1973, a study of an unofficial Housing Area, Department of Town and Country Planning, P38

Muller (1974, P33) in her study of Chawama, Lusaka, found that over 80 percent of the people earned less than K100 per month. The Schlyters (1979, P47) showed that average income for George in 1977 was K90 per month. The differences may just be artificial. The purchasing power of the Kwacha for instance went down by 40% between 1972 and 1980. The cost of living in general has gone up so that in real terms the incomes in Sinia are lower than they really appear.

7.3 EDUCATION

About 60 percent of the respondents have never attended school, nearly 30 percent have acquired Primary School education while only 10 percent have attained Secondary School education or better.

46 percent of the children of school going age (Aged 7 to 15) were not attending school at the time of the study. This is better than the situation recorded for squatters in a survey by the Ministry of Education, 64 percent (Narrowing the Gaps, P161).

Sinia has no school of its own. Table 8 below gives various townships to which respondents' children go for school.

Table 8. TOWNSHIPS IN WHICH SINIA CHILDREN ENROL FOR SCHOOL

TOWNSHIP	NUMBER OF CHILDREN	PERCENTAGE
CHIFUBU	22	48.9
PAMODZI	12	26.7
CHIPULUKUSU	2	4.4
KALEWA/NORTHRISE/ KANSENSHI	5	11.1
OTHERS	4	8.9
TOTAL	45	100.00

It is interesting to note that 48 percent of the children go to schools in Chifubu while only 11 percent go to nearby Northrise, Kansenshi and Kalewa all together. Understandably Kalewa is for soldiers' children but one wonders why there are very few children attending school at near by Northrise Primary, a few metres from Sinia.

Kansenshi Primary and Northrise Primary used to be segregated schools for whites (Kansenshi) and Indians/'coloured' (Northrise) before independence. Some respondents claimed that their children are 'rejected' at these schools on the basis of their poverty. Nearby Chipulukusu has two schools but these are not enough even for its own population therefore first priority is given to Chipulukusu residents.

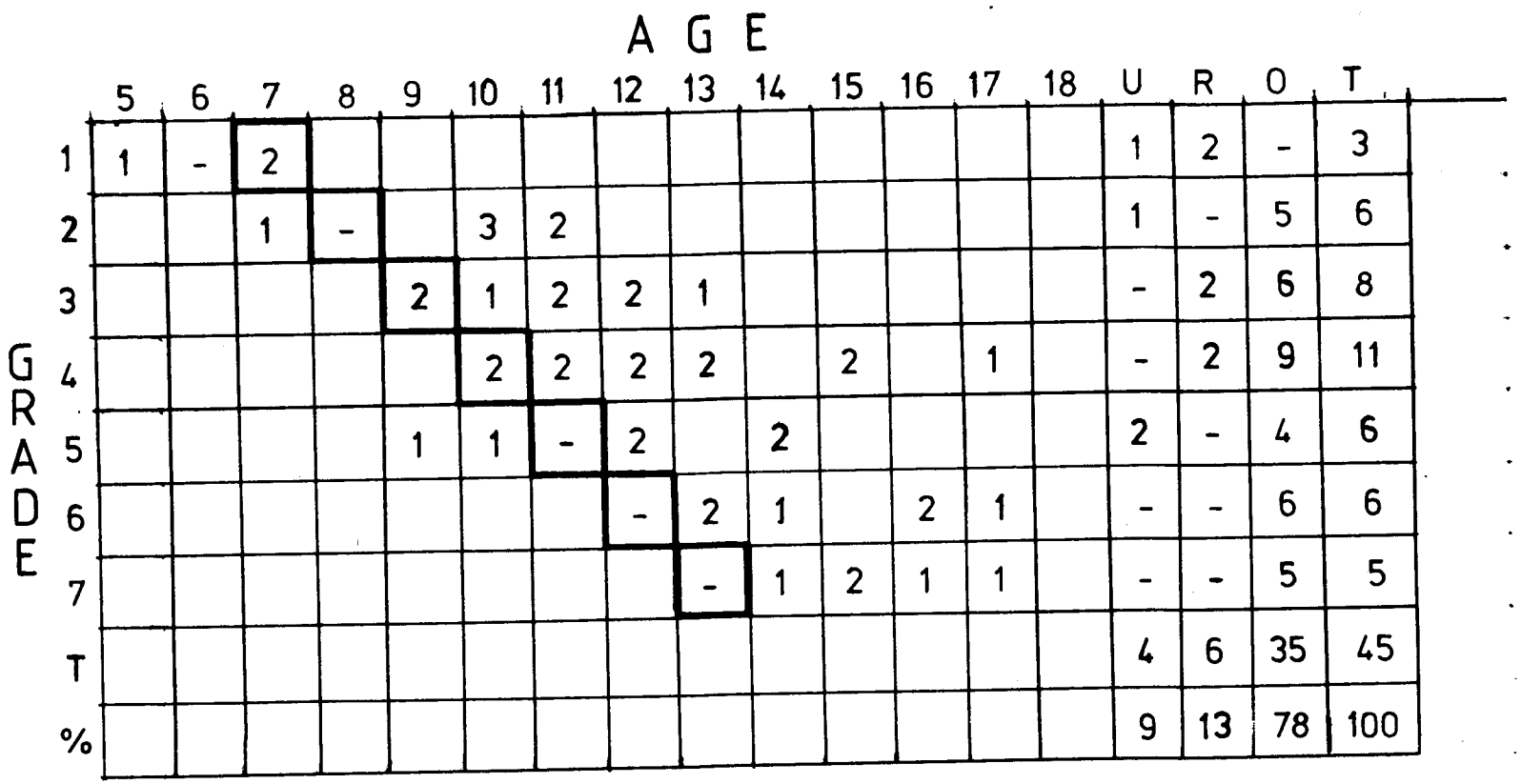
Figure 6 and Table 9 indicate another unfortunate aspect of education in Sinia. 78 percent of the respondents' children were found in lower grades than ideal for their age. Other studies elsewhere have shown similar results. Mwaziona compared in table below is in a slightly worse position. For Sinia there are much fewer

Table 9 CHILDREN AT A LOWER GRADE THAN IDEAL FOR THEIR AGE

Number of Years Below	% MWAZIONA*	% SINIA
1	19.2	22.9
2	24.4	28.6
3	17.1	25.7
4	17.4	11.4
5	7.9	8.6
5+	14.0	2.8
TOTALS	100.00	100.00

* SOURCE: MWAZIONA Department of Town and Country Planning P38.

Figure 6. AGE - GRADE TABLE



U- Younger than is Ideal for Grade.

R- Ideal for Grade.

O- Above Ideal Age.

T- TOTAL

Ideal Age Box

proportions 4 years and above behind in school. For Mwaziona the proportions are still quite high even at 5^{+} years below ideal grade. All these problems might be indications of the difficulties experienced by 'squatters' in acquiring school places for their children.

7.4 HEALTH

Health has been partially discussed under sanitation in Chapter 5 in which we learnt the precarious condition under which Sinia residents live. Fortunately enough for the residents, there is a hospital just nearby. The Arthur Davison's Hospital popularly locally known as 'Yengwe' is a children's hospital. Adults normally walk across to Chipulukusu Clinic for their treatment. In cases where the ailment is serious they go to the Central Hospital.

About 42 percent (See Table A, Appendix A) of the respondents mentioned the need for a clinic in the settlement. Incidentally, there were quite a number of times when wives would rule out the need for a clinic when the husbands suggested. It appears the womenfolk are quite happy with the present arrangement. This is probably because children's health as their prime sorce of worry is taken care of by the proximity of 'Yengwe'.

7.5 SUMMARY

Previous studies in squatter settlements have shown that squatter settlements are 'workers' homes. Similar conclusions were reached in Sinia where 94 percent of the respondents were found in employment. The source of the view that there are a lot of 'loafers' could well be in the children and relatives of the head of household. It was discovered over half of these in the working age are unemployed.

Average income in Sinia is K111 per month. The distribution of income earnings is not as impressive though. Over 50 percent earn below K100.00. There is a greater proportion of people self-employed in Sinia than has been found elsewhere. The popular jobs include charcoal selling, tailoring, and guarding.

Over 60 percent of the respondents have never been to school. Few have been at primary, let alone secondary school. 47 percent of the respondents children of school going don't go to school because, inter alia, Sinia does not have its own school. For those who manage to find places they are often in lower grades than ideal for their ages. This is not peculiar to Sinia alone - it has been observed in many other settlements in Lusaka.

For treatment, residents use 'Yengwe' if their children fall ill. The adults use Chipulukusu Clinic and Ndola Central Hospital. About 42 percent of the respondents mentioned the need for a clinic in the settlement.

8.0 RESPONDENTS ATTITUDES AND PROBLEMS

8.1 ATTITUDES:

Questions 14 to 18 (See Appendix C) of the questionnaire were designed so as to elicit information on whether the respondents wished to move out of Sinia. Surprisingly, 80 percent said they did not wish to move to other settlements. Similar results have been obtained in Mwaziona 83.6 (Mwaziona, Department of Town and Country Planning, P131). Asked what they liked about Sinia, 80 percent said they cherished the warm, friendly atmosphere of their neighbourhood. Other advantages of Sinia mentioned included its relative proximity to the C.B.D., and the advantage of having a personal house without having to pay for rent, water bills and other bills one settles in Council townships. For those renting, they claimed rent in Sinia was almost half that of other areas such as Pamodzi.

On what they disliked 46 percent mentioned illicit beer brewing which some said brought noise and fights in the settlement. 14 percent said they hated the general state of housing particularly the abominable 'paper roofs'. 6 percent thought prostitution was rife. One married female respondent went so far as to suggest that all unmarried women not working should be sent back to the rural areas.

Asked how they felt development of the settlement could be achieved, 37 percent thought the government should provide loans so that they may be able to purchase proper roofing material or that the building materials should be subsidized. Very few showed willingness to participate in a Site and Service Scheme. They feared it was expensive and, of course, introduces the problem of paying rent, water bills, etc.

8.2 DEVELOPMENTAL NEEDS AND PROBLEMS

The problem of utilities in squatter settlements is often critical. Sinia is no exception. Water taps are only confined to a very small part of the settlement (Area shaded for 1974 in Fig. 2). Since 1974, the settlement has grown so much that the taps have become pathetically inadequate. The magnitude of the problem is displayed in Table A in Appendix A which points out that 80 percent mentioned water as a major problem. People down slope and farther north have to climb up slope to obtain their domestic water.

As if this is not enough, water supply itself is poor. With its position on the upraised ridge, Sinia requires much more water pressure for the water to reach its taps. In the dry season, the situation becomes so critical that residents are forced to go to Northrise to get their drinking water. At this time the Quarry-pits become handy (see plate 4).

31 percent of the respondents felt streets should be built in the settlement to make it more accessible. Respondents usually pointed out that they currently can't utilise the services of an ambulance because there was no way it could get in the heart of the settlement. Not divorced from the idea of building streets is the idea of unlining-up houses to facilitate the provision of services.

18 Percent mentioned the need for ~~the~~ a bus stop within Sinia. Residents currently use Arthur Davison's Bus stop. Almost all the 18 percent live in the Northern end of the settlement farthest from the Bus stop.

8.30 FACTORS LIMITING DEVELOPMENT

Like any other settlement, Sinia has some physical, socio-economic factors which may inhibit development. This information following was derived from the interview of Mr Teskerdzic, Ndola's Chief Town Planning Officer and personal observations in the field.

8.31 PHYSICAL LIMITS

Even a casual look at Sinia would be enough to reveal the topographical disadvantages for development of the settlement. The rather steep slòpe and the quarry-pits suggest that some considerable amount of levelling of the land would be required if any effective development is to be achieved. This would reduce gullying, and facilitate the construction of streets and buildings.

It is the opinion pf the Chief Town Planning Officer that though taps may be increased in Sinia, the position of Sinia on the high-land would continue to make supply poor.

8.32 SOCIO-ECONOMIC LIMITS

The problem of funds has many times held the implementation of plans. The Ndola City Council has a plan to develop Sinia which they have had since 1975. Figure 8 in Appendix A shows the plan. The sad part of it is the residents are unable to contribute financially to the project owing to their low incomes. With the present state of the National economy, the waiting for financial assistance can be very long.

Sinia as it stands now is overcrowded. Any programme of development really aimed at improving living standards in the settlement will have to involve resettlement of some of the residents. Not only will land for these have to be found, but it will also require some persuasion for some residents to move because of their attachment to Sinia.

Unfortunately for Sinia, Local Councils are loosing faith in these programmes because of default in rental payments (Grimes, 1976, P52) and thefts (Ndola Council Minutes 821/72; 1572/72; 443/75) experienced in these programmes before.

The absence of data on the settlement is a factor which would necessitate pre-survey before implementing the plan. There has been no proper study of the settlement and hence the council still relies on the 1974 boundary of Sinia. Readers will have observed the magnitude of the difference since 1974 in the limits of the settlement.

9.0 DISCUSSION OF RESULTS AND RECOMMENDATIONS FOR IMPROVEMENT

The major aim of this study was to assess the problems of Sinia and explore possibilities of its upgrading. For this to be achieved, three major aspects of the settlement were studied; The physical, the Demographic, and the socio-economic characteristics.

9.1 PHYSICAL

The first question we should ask ourselves here is whether there is any need for us to consider developing the physical aspect of the settlement at all.

Sinia as has already been seen has these quarry pits now being filled with rubbish but also sometimes being used as sources of water. They are breeding places for mosquitoes and attract flies. They are therefore a danger to the community. For this reason these quarry-pits need to be buried.

Secondly, Sinia's housing standards are very low. This is not by the making of the residents' own accord but rather because the residents find the cost of building materials too high for them to afford on their meagre incomes. The high percentage of Kimberley brick walled houses, which as we have seen is very susceptible to erosion; and the poor material makes life a hazard in Sinia during the rainy season. If the government were to subsidise and facilitate the provision of materials, the problem

would be lessened. On the other hand the government could make available, loans for the purchase of building materials.

The provision of better building materials suggests a degree of permanency in the resultant house. The question therefore arises whether to provide these credit facilities to the people knowing fully well of the plan to upgrade the area which might involve demolishing of some houses, or to let people continue living in their delapidated, not so reliable houses until the funds become available. The longer it takes to effect the plan, the worse the conditions in the settlement become.

Thirdly, the lack of proper roads in Sinia has made the settlement highly inaccessible. This has had some repercussions on the socio-economic welfare of the community; They have had to forgo using ambulance service, and cannot hire a taxi or any other vehicle to help them carry their things if they stay in the heart of the settlement. The apparent absence of shops within the settlement may as well be explained in terms of the problem of accessibility. A tavern or bottlestore whose bulky commodity has to be brought by vehicle cannot be set-up in the heart of the settlement. Hence, as we have seen all taverns and shops are at the edges of the settlement.

9.2 DEMOGRAPHIC

At a population of over 11,000 Sinia deserves to be recognised as a large enough settlement of people that should be provided with the necessary facilities and utilities. The rapid rate of expansion as has been seen from Figure 2 should arouse people into necessary action.

Sinia's population indicates a large proportion of young people. This suggests a continuity in the settlement and is ground enough for Sinia to be upgraded.

9.3 SOCIOECONOMIC

The provision of social services and facilities in Sinia is inadequate. Despite the large numbers of school going aged children, Sinia has no school of its own. Efforts were made by the residents to build a school on self-help basis. Residents donated money towards the cause and the end result has been an unfinished building which the authorities could easily complete.

The present limbo in which the residents exist as regards education has its own implications. With poor education, there is little hope of upward-social mobility for the residents. Education in Zambia has become synonymous with a better job and pay. From this it follows that unless something is done to offset the trend Sinia residents will be caught up in a

viscious circle of backwardness which they and their children may fail to disengage from.

9.4 CONCLUSIONS

Despite numerous upgrading programmes in Lusaka, settlements an the Copperbelt now equally advanced in crowdedness, poor provision of facilities etc., remain largely neglected. The growing rate of Sinia is an in sight into the growing squatter settlement problem on the Copperbelt. For this reason it is of vital importance that there be a shift in studies of squatter settlements in Lusaka to those of the Copperbelt.

Almost all studies carried out on squatter settlements in Zambia seem to come to the conclusion that 'squatters' come from rural areas. This means that in essence, the squatter problem is a rural-urban migration phenomenon. No amount of work or finance can ultimately solve the squatter settlement problem if everything is only being done in the urban areas. The problem has got to be looked at both the National and regional level and Rural-Urban migration simultaneously looked at with the squatter settlement problems.

In our observation and study of squatter settlements, we should also be aware of the limitations of the local authorities materially and financially.

A perusal in the minutes and reports of committee meetings of the Ndola City Council reveals an impressive record of concern for squatter settlements. Much has been said and done on paper but little is achieved in reality. A situation most unfortunate. Though the funds for implementing the programmes are genuinely not available, this should not serve as an excuse for the files to be gathering dust.

What we first need to do is to heavily publicise the squatter problem. The government has tended to look for external sources for funds rather than internal. This tendency should be changed. Much could be achieved through local resources. Secondly, authorities have tended to overlook and underestimate how much could be done by the residents themselves. A good example are the various self-help projects that have been carried out in Lusaka. In George, for instance, they couldn't find enough tools for the many willing hands (Schlyter and Schlyter P49). In Chaisa, Chipata and Paradise settlements people dug "miles and miles of trenches... and money was raised for water pipes..." (Action, Vol. 1, No.3 1973, P3). The best way of improving squatter settlements is to try to involve the residents themselves as much as possible.

9.5 FURTHER RESEARCH

This study should only be considered as basic. More protracted research in various avenues should be taken to enrichen the much required information on squatter settlements on the Copperbelt.

Further research should be directed at a comprehensive study of housing measurements and other physical characteristics. Not to be forgotten are the attitudes of the residents as regards their problems and how they feel the problem can best be solved. More often, authorities have tended to think and feel for the people and this has led to rejection of the programmes in some cases. By surveying the views of the people, it is ensured that when programmes are finally launched there will be fewer cases of rejection.

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REFERENCES

ACTION, Lusaka Development News; SAIL. Vol. 1 No.3 November 1973.

Annual Report of the Director of Housing and Social Services; Ndola City Council, 1967.

CENSUS of Population and Housing, 1969, Government of the Republic of Zambia.

CENSUS of Population and Housing, 1980, Preliminary Report; Government of the Republic of Zambia, January 1981.

Davies, D. H.; Lusaka, Zambia; Some Town Planning Problems in an African Capital City at Independence, Zambia Urban Studies, Number 1; University of Zambia, Institute of Social Research, Lusaka; 1969.

Grimes, O ; Housing for Low Income Urban Families; Economics and Policy in the Developing World. Baltimore Publishers for the World Bank; 1976.

Gwebu, T, (ed); Chainda, Lusaka: Portrait of a Peri-Urban Settlement; Urban Community Reports, Urban Community Research Unit; Institute for African Studies; University of Zambia, 1975.

Habitat: United Nations Conference on Human Settlements. Vancouver 31 May to 11 June 1976, New York.

Heisler, H, Urbanisation and the Government of Migration; C. Hurst and Company, London, 1974.

Human Settlements in Zambia; Report of the Workshop held at the University of Zambia 12th to 14th September 1975, Lusaka, 1975.

Hutton, J, (ed) Urban Challenge in East Africa, East African Publishing House; Nairobi, 1970.

Improvement of Slums and uncontrolled settlements, Report on Interregional Seminar in Colombia, 1970, Department on Economic and Social Affairs; New York, 1971.

Low Cost Residential Development in Lusaka; Department of Town and Country Planning. Development Planning and Research Unit; Lusaka; 1971.

Lundgren, T, et al; Kapwepwe Compound; A study of an unauthorised settlement; University of Lund; Department of architecture; 1969.

Macgee, T. G.; The Southeast Asian City; G. Bell and Sons Limited, London; 1967.

Martin, R.J.; Gardens and Outdoor living. Land use in Low Cost Housing Areas in Lusaka. National Housing Authority; Research Study No. 1; Lusaka; 1972.

- Urbanisation, squatter settlements and upgrading in; Human Settlements in Zambia. Report of a workshop at the University of Zambia, Lusaka, 1975 PP67-68.

Minutes and Reports of the proceedings of the Ndola City Council meetings:-

482/71; 1230/71; 223/72; 821/72; 1572/72; 443/75

798/75; 853/75.

Mwaziona: A study of an Unofficial Housing Area, Department of Town and Country Planning; Lusaka; 1973.

Mweshi, J; Lusaka's comformity with and Divergence from Western theoretical models of City Structure in; UNZAGA Magazine No. 2, University of Zambia; 1979, PP 15 - 24.

Muller, M. S.; Chawama, Development Planning Unit (D.P.U.) working Paper Number 8, Bartlett University College, London, 1979.

National Report: Zambia (to) Habitat: United Nations Conference on Human Settlements, for the Ministry of Local Government and Housing by the National Housing Authority, Lusaka, 1975.

Narrowing the Gaps: Planning for Basic Needs and Productive Employment in Zambia; JASPA Employment Advisory Mission's Report to the Zambian Government for ILO, January 1977.

Robertson, J.T.; The Urban situation: Shelter; in Human Settlements in Zambia. Report of the Workshop held at the University of Zambia 12th - 14th September 1974, Lusaka 1975. PP 41 - 66.

Schlyter A, and Schlyter T; George: The Development of a squatter settlement in Lusaka; Zambia; Swedish Council for building Research Stockholh; 1979.

Sichalwe, G; Socio-economic Aspects of Chainda in Gwebu, T, (ed), Chainda, Lusaka: Portrait of a Peri-Urban Settlement; Urban Community Reports; Urban Community Research Unit; Institute for African studies, University of Zambia, 1975 PP8 - 17.

Simons, H.J. Zambia's Urban situation in: Turok, B, (ed); Development in Zambia, Zed Press, London, 1979, PP1 - 25

Stren, R. E; Housing the Urban Poor in Africa; Institute of International Studies; Berkeley; 1978.

Tordoff, W; Administration in Zambia; Manchester University Press; Manchester; 1980.

APPENDIX 'A'

APPENDIX 'A'

TABLES AND FIGURES

Table A. DEVELOPMENTAL NEEDS EXPRESSED BY RESPONDENTS

Needs	Number of times mentioned	Percentage
UTILITIES AND SERVICES		
Water	64	80.00
Roads	25	31.25
Electricity	9	11.25
Police Post	5	6.25
SOCIAL FACILITIES		
Schools	30	37.75
Community Centre	5	6.25
Clinic	34	42.50
COMMERCIAL FACILITIES		
shops	2	2.05
Council Tavern	5	6.25
OTHERS		
Bus Stop	14	17.05
Provision of Larger Plots	13	16.25
Enline Houses	32	40.00
Flush toilets	3	3.75

Table B. BUILDING MATERIAL USED IN SINIA

Type of Material	Number of Dwelling Units	Percentage
WALL MATERIAL		
Kimberley brick	73	91.25
Burnt brick Concrete	7	8.75
TOTALS	80	100.00

TABLE B_2

ROOF MATERIALS		
Galvanised/Corrugated Iron & Asbestos	6	7.50
Cardboard covered with Platic	32	40.00
Metal Pieces	42	52.50
TOTALS	80	100.00

Table C. THE AGE-SEX PROPORTIONS OF SINIA

AGE GROUP	MALES %	FEMALES %
0 - 4	21.9	21.00
5 - 9	12.8	22.2
10 - 14	9.7	7.6
15 - 19	9.2	13.0
20 - 24	10.2	14.0
25 - 29	11.2	6.5
30 - 34	6.1	7.0
35 - 39	7.1	4.3
40 - 44	3.6	1.1
45 - 49	2.6	0
50 - 54	2.0	2.2
55 - 59	1.5	1.1
60 - 64	1.5	-
65 - 69	0.5	-
TOTALS	100.00	100.00

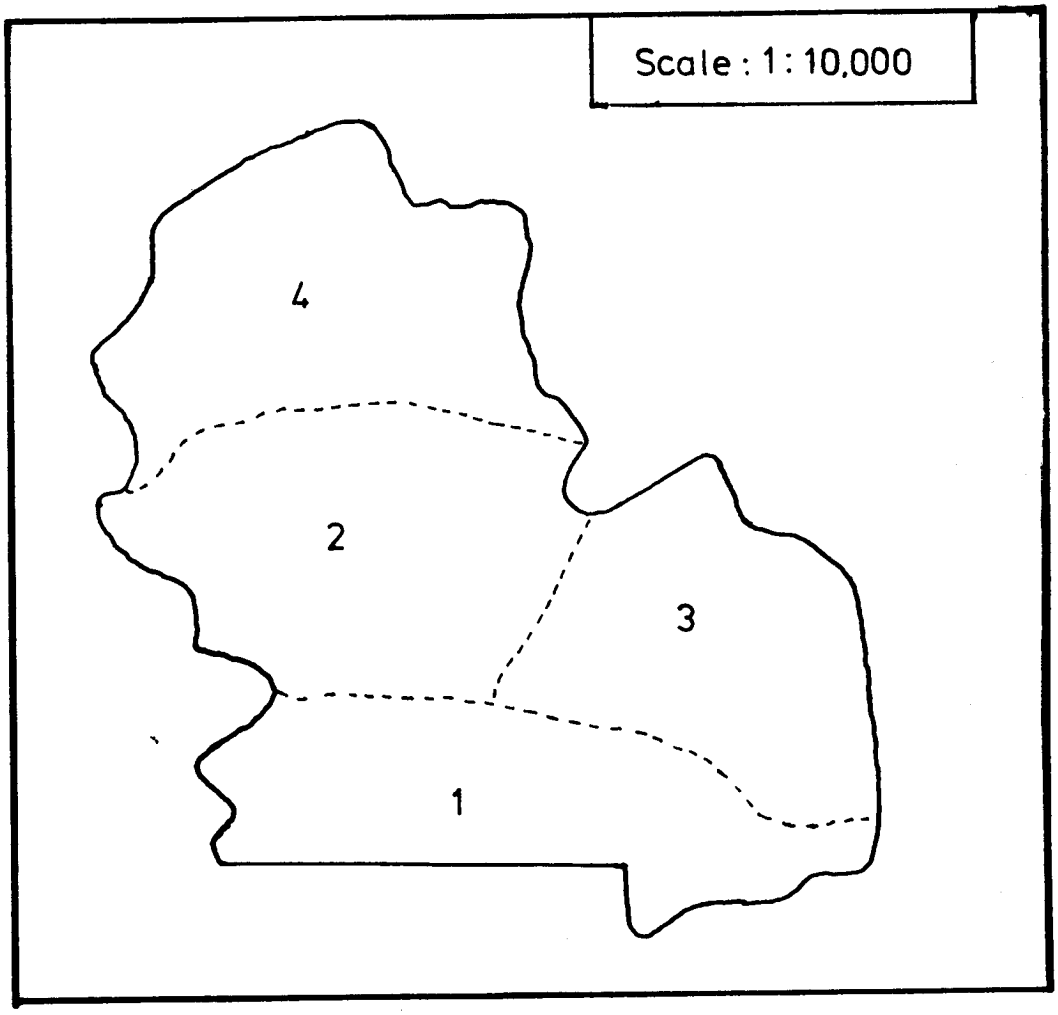
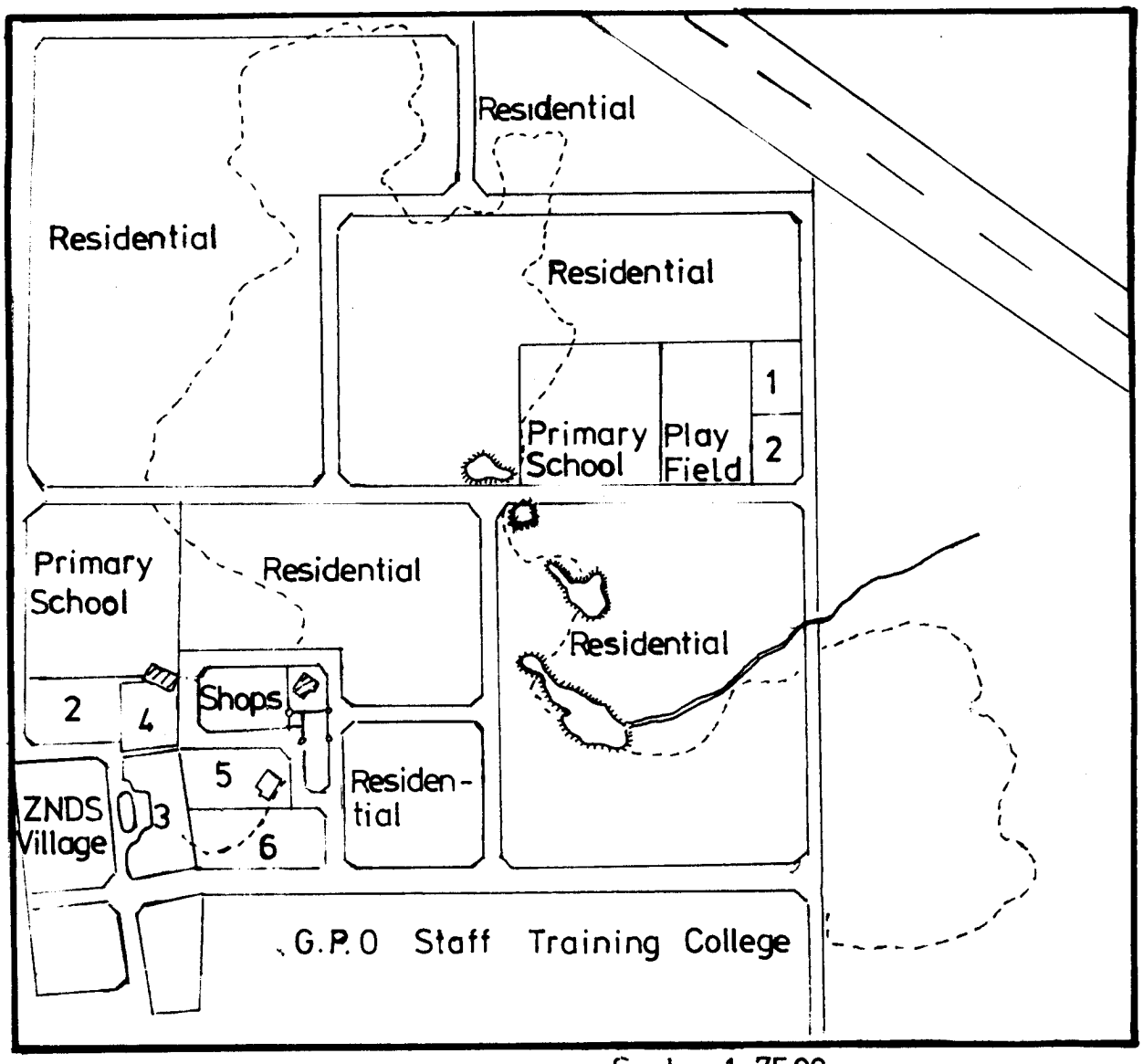


Fig. A. Divisions Made for Purpose of Sampling

Fig. B. DEVELOPMENT PLANNED FOR SINIA



Scale: 1:7500

LEGEND

- 1974 Limit Of Sinia
- Planned Street
- Road (tarred)
- Old Quarry Pits

1. Church 2. Community Centre
3. Bus Stop 4. Clinic 5. Market
6. Open Space

Source: DRG NO. 5/5/176/0 (COUNCIL MAP)

APPENDIX 'B'

PLATE 3: The densely settled flat
Notice the metal sheets
sheets for roofs. Notic
Kimberley brick and the

PLATE 4: Manifestation of the wat
dry season - women in th
one of the old quarry-pi
and clothes.

Plate 5: These Sinia residents are very happy to find these black plastic sheets dumped by one of Ndola's companies. The plastic is to be used in the making of roofs.

Plate 6: The Northern end of Sinia. Notice the less dense settlement here. Notice also the 'paper' roofs.

Plate 7: The market-place on a Saturday Afternoon.

Plate 8: Gullying: Impediment to accessibility.

Plate 9: The only road passing through Sinia.

UNIVERSITY OF ZAMBIA

Department of Geography

A STUDY OF PHYSICAL, DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF SINIA

AREA OF STUDY .....

SECTION ..... HOUSE NO. .....

INSTRUCTIONS: THIS QUESTIONNAIRE SHOULD BE ANSWERED BY THE HEAD OF HOUSEHOLD ONLY.

PART ONE.

BASIC INFORMATION

1. Age _____ 2. Nationality _____

3. If Zambian state District ..... Province ..... of Origin 4. Sex F ☐ M ☐

5. Marital status
(a) single (b) married (c) divorced (d) windowe

6. HOUSEHOLD COMPOSITION

HOUSEHOLD MEMBERS STARTING WITH	RELATIONSHIP TO HEAD OF HSHOLD	AGE OF MEMBER	SEX OF MEMBER	LEVEL OF ED. ATTAINED	CONTRIBUTI THE WELFAR HOUSE HOLD
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

7. EDUCATIONAL LEVEL ATTAINED

(a) None .....(b) Primary (Grade) .....(c) Seconda (Form) (d) Tertiary (Specify) _____

8. What is your occupation? .....PLACE OF WORK .....

9. How much do you earn per month from your occupation mentioned in &?

10. Do you have other source(s) of income? Yes ☐ No ☐

11. Name these other source(s).....

RESIDENCE AND HOUSING

(a) Residence

12. When did you come to live in Sinia? .....

13. Where were you staying beofre coming to Sinia? .....

14. When you first settled in Sinia, did you intend to stay.

(a) Permanently ☐ (b) Temporary ☐ (c) Other (specify).....

15. Do you intend to move from Sinia? Yes ☐ No. ☐

16. Give reasons for your answer .....

17. If you intend to move, where would you like to go? .....

18. Give reasons for your choice.....

B. HOUSING

19. What is the number of rooms in your house?.....

20. Do you have any spare room in your House? Yes ☐ No. ☐

21. Is the House.

(a) Owner occupied? (b) Rented? (c) Bomowed? or (d) Bought

22. What materials were used to build your house?.....

.....

23. Have you ever made any changes to your house since you started living in it? ☐ Yes No ☐

24. If yes what changes have you made? .....

.....

25. If no, why have you not made changes? .....

.....

26. If rented, how do you pay monthly? .....

27. Do you think the rent is (a) Too high ☐ (b) High ☐ (c) Fair ☐ (d) ☐

28. What is the source of your water.....

(a) well ☐ (b) Own top ☐ (c) shared ☐ (d) Other (specify).....

29. Give reasons for your answer .....

.....

UNIVERSITY OF ZAMBIA

Department of Geography

A STUDY OF THE PHYSICAL, DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTER OF SINIA: A SQUATTER SETTLEMENT IN NDOLA

SERI

INSTRUCTIONS: THIS QUESTIONNAIRE SHOULD BE ANSWERED BY THE LOCAL AUTHORITIES OF NDOLA.

OFFICE (POST) _____

1. What is the offical policy on squatter settlements in Ndola?

_____

_____

_____

2. What measures have been taken to stop the growth of squatter settlements?

_____

_____

_____

3. What methods have been used to improve squatter settlements

_____

_____

_____

4. Have these methods been

(a) very successful (b) successful (c) very unsuccessful successful (e) Other (specify).....

5. Which method of these mentioned in 3 has been the most succ

_____

_____

6. List the settlements in which each approach has been used.

Name od Settlement		Method Use
1. _____	-	_____
2. _____	-	_____
3. _____	-	_____
4. _____	-	_____

7. What are the criteria used to select a settlement for upgrad

_____

_____

8. Are there any settlements being considered for upgrading?

Yes ☐ No ☐

9. If yes, Name them?

Questions on Sinia

10. Are there any approaches which have been considered to improve Si

Yes ☐ No ☐

11. If Yes, What are the approaches?

12. If No, Why not?

13. Are any services/facilities provided to Sinia by the local author

Yes ☐ No ☐

14. If yes, list down the facilities and services provided

(1) (4)
(2) (5)
(3) (6)

15. If No, Why are services not provided?

16. Are there any plans to provide Sinia with social services (in fu

Yes ☐ No ☐

17. If yes, what are the services?

18. Please write in the space provided any information which you feel may help us with this study.

Thank you very much, your co-operation is greatly appreciate

30. Give reasons for your answer .....
.....
.....

31. Type and Quality of toilet facilities

Type _____ adequate _____ inadequate _____

32. Do you have any children that go to school? Yes ☐ No ☐

33. If yes, which schools do they go to? .....
.....
.....

34. Are there any medical facilities in your area? Yes ☐ No ☐

35, If No, where do you go for treatment? .....
.....
.....%.....

37. Are there any recreational facilities in Sinia? .....

38. If yes, (specify .....

39. What transport you use to and from town?.....

40. List below facilities provided by the Council to your area .....
.....
.....

41. List down facilities which you feel should be provided by the local authorities.

1. 3.

2. 4.

Others

42. What do you like about Sinia?.....

43. What do you hate about Sinia?.....

44. If the government where to improve Sinia, What would you suggest it do?
.....

45. Please write in space provided information you feel may be help to the study?.....
.....

Thank you very much for your co-operation.