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**LEVELS OF WELFARE PROVISIONS IN THE
RURAL AREAS OF THE JOS PLATEAU-
NIGERIA**

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LEVELS OF WELFARE PROVISIONS IN THE RURAL AREAS
OF THE JOS PLATEAU-NIGERIA.

BY

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B.Sc. (Hons.) Jos; M.Sc. Jos.

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THESIS SUBMITTED IN FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE
OF DOCTOR OF PHILOSOPHY (Ph.D)

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UNIVERSITY OF JOS, JOS-NIGERIA.

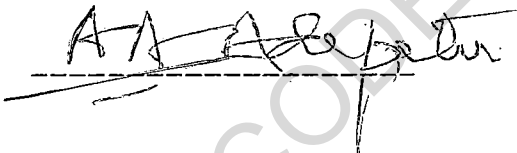
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CERTIFICATION

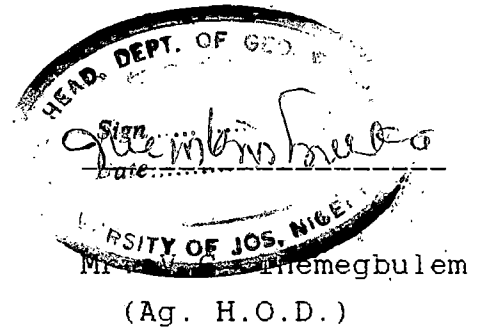
I certify that this study was carried out under my supervision in the Department of Geography and Planning, University of Jos, Jos, Nigeria.

By

Bala Dogo



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Date 14/12/92

Date 14/12/98

DEDICATION.

Of all things God ever gave me, the gift of our daughter SALAMA (Peace) is special. This thesis is therefore dedicated to her and to the glory of God.

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ACKNOWLEDGEMENTS.

This thesis came as a result of the many help and contributions I received from many persons and bodies. In fact, I can not mention all of them. But every person that assisted me in one way or the other should be assured that the Lord will never forget their good deeds and labour of love (Hebrews 6:10); and will surely bless them in return.

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maps I used the computer to plot. In fact, Dave Byrne, Dave Robinson and other members of staff of the Department of Geography, University of Durham were never tired of answering my questions. To all of them, I am very much impressed, and thankful.

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Finally, TO GOD BE THE GLORY GREAT THINGS HE HAS DONE.

ABSTRACT

Defining and measuring levels of rural development has remained unsatisfactory. Hence a new approach of measuring rural development has been put forward in this study using certain surrogates and proxy-surrogates, to arrive at rural development indices (RUDEVIs). Thus, through the use of RUDEVIs a rural development typology of the Jos Plateau has been produced.

A combination of pre-coded questionnaires and field observations were used for data collection. Field surveys of varying intensities were conducted in 1989, 1990 and 1991, while the main field survey was conducted from May to July, 1991.

In all, 86 rural settlements were studied, based on a sampling covering more than 70 per cent of the Jos Plateau, of at least one settlement in a 20 km by 20 km grid cell. At least one community was studied from all the districts on the Jos Plateau.

The data collected from the field were coded using an SPSS(x) file. They were later transferred into QUATRO-PRO spreadsheet to produce tables showing the distribution of social facilities in the study area. Based on this, the levels of welfare provision were also determined. These information were further fed into the MAPICS computer software to produce the rural development typology and maps showing the levels of welfare provision in the study area. The map of the Jos Plateau was digitised using ISIS.

The study has revealed that only about 10 per cent of the studied settlements enjoy a very high degree of rural development, shown by RUDEVI of 70 and above. The 86 rural settlements were classified into seven categories and their RUDEVIs were subjected to analysis of variance. An F-ratio of 3.47 was obtained. This led to the rejection of the null hypothesis at both 5% and 1% significance levels. This implies that the levels of welfare provisions as well as the levels of rural development vary significantly over the Jos Plateau.

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INTRODUCTION1.1 Background To The Study Problem.

The rural space of Nigeria and the problems of the people living there, have remained issues of concern to governments at local, state and federal levels, non-governmental-organizations (NGOs), as well as international bodies, community development associations, individuals and researchers. These problems of the rural dwellers continue to manifest themselves in various forms. Most of the people live in deplorable human conditions. Their social welfare is not properly looked after. Abject poverty and the absence of life-sustaining social services are visible in most of the communities.

Thus, improving the living conditions and the lot of the rural dwellers in Nigeria has been a major task to policy-makers, social and economic planners. In spite of all the efforts made to improve the living conditions of the rural people of Nigeria, it appears their problems have defied planning solutions for the rural areas remain undeveloped.

The Jos Plateau, which has been called the 'California' of Nigeria-due to its distinct physiographic and climatic conditions, is no exception to the general picture of the rural development landscape described in the two foregoing paragraphs. Apart from its distinct physiographic and climatic set-up the region is also known for its tin mining activities.

Reconnaissance surveys conducted in the tin mining areas of the Jos Plateau in 1989 and 1990, and other documentary sources reveal that tin mining activities which started about 100 years ago, and are now on the decline, have left a big scar on the physical environment, and the social well-being of the rural dwellers in the region. It appears that the rural communities and particularly the mining settlements/camps are worse hit by the numerous problems arising from the decline of tin mining activities. In fact, this area is called a 'disaster area' by the Plateau State Government (Alexander, 1984).

From the reconnaissance surveys, it is evident that most of the social facilities and services once provided by the tin mining companies for their workers are undergoing a process of decay. Most of the mining settlements and camps visited now wear a picture of neglect and decay. For example, Bisichi, Gana-Ropp, Gidin-Akwati, Manjo-Pota and Sabon-Gidan-Kanar all have some dilapidated residential buildings and workshops, and pieces of heavy equipment used in mining tin. A large number of houses for example at Bisichi, Barkin-Sho and Pasakai appear deserted and a sizeable proportion of these are about collapsing, and dangerous to live in.

In fact, in some communities like Tiga and Barkin-Sho there lived only very few ex-tin miners, who have become old and looked rather emaciated when the researcher visited them. Yet, these were settlements that once enjoyed a wide range of economic activities, and were full of life. Incidence of degraded landscape, as a result of mining activities, abound in the out-skirts of Jos, Sabon-Gidan-Kanar, Rayfield and Naraguta Village. The roads leading to Gidin-Akwati, Gana-Ropp and Maitumbi are in bad condition.

traditional/indigenous communities within and outside the mining region which might not have been provided with any of such social facilities before. Not much is known about the latter category since not much study has been carried out here, compared with the former.

Ajaegbu and Morgan (1986) observed that, generally, the rural area of the Jos Plateau Tin Mining Region of Nigeria (JPTMRN) is now characterised by numerous social problems, settlement stagnation/decay as well as visible poverty. This is because the decline in tin mining activities has led many mining companies to fold up, thereby laying off many workers. Thus, the mining region is experiencing serious unemployment problems, and falling standards of living.

Many researchers too have revealed, through their investigations, the existing deplorable conditions in which the people of the JPTMRN live. Adepetu *et al.*, (1989), observed that apart from the scarred landscape of barren mining dumps and dangerous pits, tin mining activities left behind a heritage of a raging soil erosion—since most of the original vegetation was destroyed. Themegbulem (1990) asserted that the level of unemployment among the labour force in the settlements of the JPTMRN in the mid-80s was 31%. The unemployment was even higher for some settlements like Korot where it was 37%. He also opined that with further decline in the fortunes of the tin mining industry, the situation in the region was likely going to deteriorate.

Ofong (1986) found that out of the 222 housing units counted in Sabon-Gidan-Kanar, over 10% were not habitable and had been abandoned. She also observed that most of the settlements in the tin mining region lack access to basic health facilities; many people live in poor physical conditions of, and high level of poverty— not meeting certain levels of basic needs—as exemplified by not having certain household possessions. Sunmaila (1986: 1989) also indicated that physical access to most of the rural areas in the JPTMRN is poor. Olaniyan (1986) noted that some of the social services provided by the mining companies have been withdrawn.

From the foregoing, it is obvious that the rural areas of the Jos Plateau, especially the tin mining region, are plagued with many development problems which are physical, economic and social in nature. The collapse of commercial and large scale tin mining activities on the Jos Plateau for example has thrown many people out of jobs. This has further led to inadequate provision of social services to the former tin mining workers and areas.

This neglect also applies to the other types of communities on the Jos Plateau. These rural areas, as has been noted in section 1.1, lack basic social amenities and services. The absence of these life-sustaining facilities in the rural areas has generated a number of problems and needs. The lack of social amenities, is impinging on the development of the local people in the region. This has led to among other things rural stagnation and underdevelopment of the region.

The central problem of this research therefore, is on determining the levels of welfare provision, and using the same information to depict the rural development landscape of the Jos Plateau with an appropriate, and innovative technique. It is necessary to identify the development status of welfare provision of the region in order to determine what is to be planned for in the future.

It is often common to associate high level of development with physical infrastructure. For example, an area is often said to be developed if it has a variety of social amenities. Yet hardly is there any analytical and systematic study carried out to depict (rural) development levels of welfare provision of social facilities and services in a given region. Clark (1991) contends that development in the broadest sense means quite simply "improving the society"; and one of the ingredients of this is the development of social infrastructure, since this will open up the place or region to trade and prosperity.

Nowadays, a large amount of geographical information is being generated from various social surveys and advanced technology. A major task confronting geographers therefore is on how to handle the large amount of data by capturing, collating, interpreting and making them meaningful and relevant to policy. The relevant computer softwares, especially those of the geographic information systems (GIS) are seen as the major solution. Consequently, applying the GIS in many development studies is receiving a great deal of attention. The GIS approach has never been adopted in describing the levels of rural development on the Jos Plateau.

Unwin (1992) reviewed the works of Peuquet and Marble (1990) on GIS application and contends that:

"Although its roots lie deep in the spatial tradition of geography, the rise of the GIS industry presents academic geography with a number of difficult challenges."

He draws attention to the rise of teaching a proportion of students of geography in sufficient depth to enable them to contribute to the theory and practice of the spatial information science on which GIS draws. This also includes the need to teach them in sufficient depth to see how the use of GIS technology might enable them do better geography.

It therefore follows that the major challenge posed by this study vis-a-vis the problems highlighted above is on how to apply the GIS to a social survey conducted on among others, the nature of the distribution of social facilities, and levels of welfare provisions serving as indices of rural development of the Jos Plateau region of Nigeria.

1.3 The Various Aspects of the Study Problem.

For an in depth study of the problem highlighted above, this research intends to approach the study from the following perspectives:

Using certain surrogates and proxy-surrogates as measures of welfare provision to provide a reliable data-base. The scope of the areas of welfare provision includes:

1. Health-care
2. Educational
3. Shelter and housing
4. Places of worship
5. Potable water
6. Rural roads and
7. General welfare in the rural areas of the Jos Plateau.

Incidentally, a survey of this nature is of great interest to various disciplines, most especially **social planning**. Navas (1976) in his foreword to Scheff's (1976) asserts that "... a social planning process is a design in which global social orientations toward goals and values is articulated to the subsidiary instrumental goals of the social services."

The overall aims of this study are twofold. Firstly, to evolve a method of determining levels of rural development from the distribution pattern of social facilities, and other welfare provision measures in the rural areas of the Jos Plateau. Secondly, to demonstrate how social planning could be applied in achieving rural development using the GIS.

In order to achieve these aims the following study objectives will be pursued:

1. To generate, describe, categorise, analyze and present relevant data on the types, location and spread of social facilities in the rural areas of the Jos Plateau.
2. To determine levels of welfare provision in the rural areas of the study area. Areas of welfare provision to be investigated include those outlined in 1.3.
3. To compare the status of each of the communities in either having or not having given social facilities- and the degree to which one category of the communities compares with others in the region. It is hoped that this inventory will reveal communities which need immediate or long term interventions.
4. To produce a rural development typology (surfaces) on the Jos Plateau based on 1 and 2.

1.5 Basic Considerations and Major Assumptions of the Study.

This study assumes the following:

1. That the absence and/or the inadequacy of social facilities and services in the rural areas of the Jos Plateau is one of the major manifestations of the poor living conditions of the rural dwellers in the region. Hence, development could be made possible by providing social facilities. It is assumed that these facilities are accessible to the rural dwellers.
2. It is possible to measure the levels of welfare provisions in the rural areas by using some surrogates and proxy-surrogates, and the distribution of social facilities using the GIS. It is assumed that this technique will give a better and a modern description of the rural development typology compared with the previous approaches.

1.6 An Outline of The Study.

This study is divided into ten chapters. Chapter one is the introduction. Chapter two describes the Jos Plateau Region of Nigeria: its physical and socio-economic background and the people. Chapter three is the literature review.

Chapter four deals with the theoretical formulation of the problem. Chapter five discusses the materials and methods of the study. Chapter six presents primary information on the rural communities studied.

Chapter seven analyses the distribution of social facilities and services in the rural areas of the Jos Plateau. Chapter eight describes the levels of welfare provisions in the study area.

Chapter nine discusses the rural development surfaces on the Jos Plateau. Chapter ten contains the summary and conclusions.

CHAPTER TWO.

THE JOS PLATEAU: ITS PHYSICAL AND SOCIO-ECONOMIC BACKGROUND AND THE PEOPLE.

2.1 Introduction.

The Jos Plateau Region which is the study area for this research has received quite a substantial amount of description and discussion from among others; the reports of the Land Resource study of central Nigeria of the Ministry for Overseas Development by Alford et al (1974) which have been edited by Morgan (1979); Ajaegbu and Morgan (1986), Shoeneich et al. (1989), Sunmaila (1989); and the various interim reports of the phases one and two activities of the JPERDP.

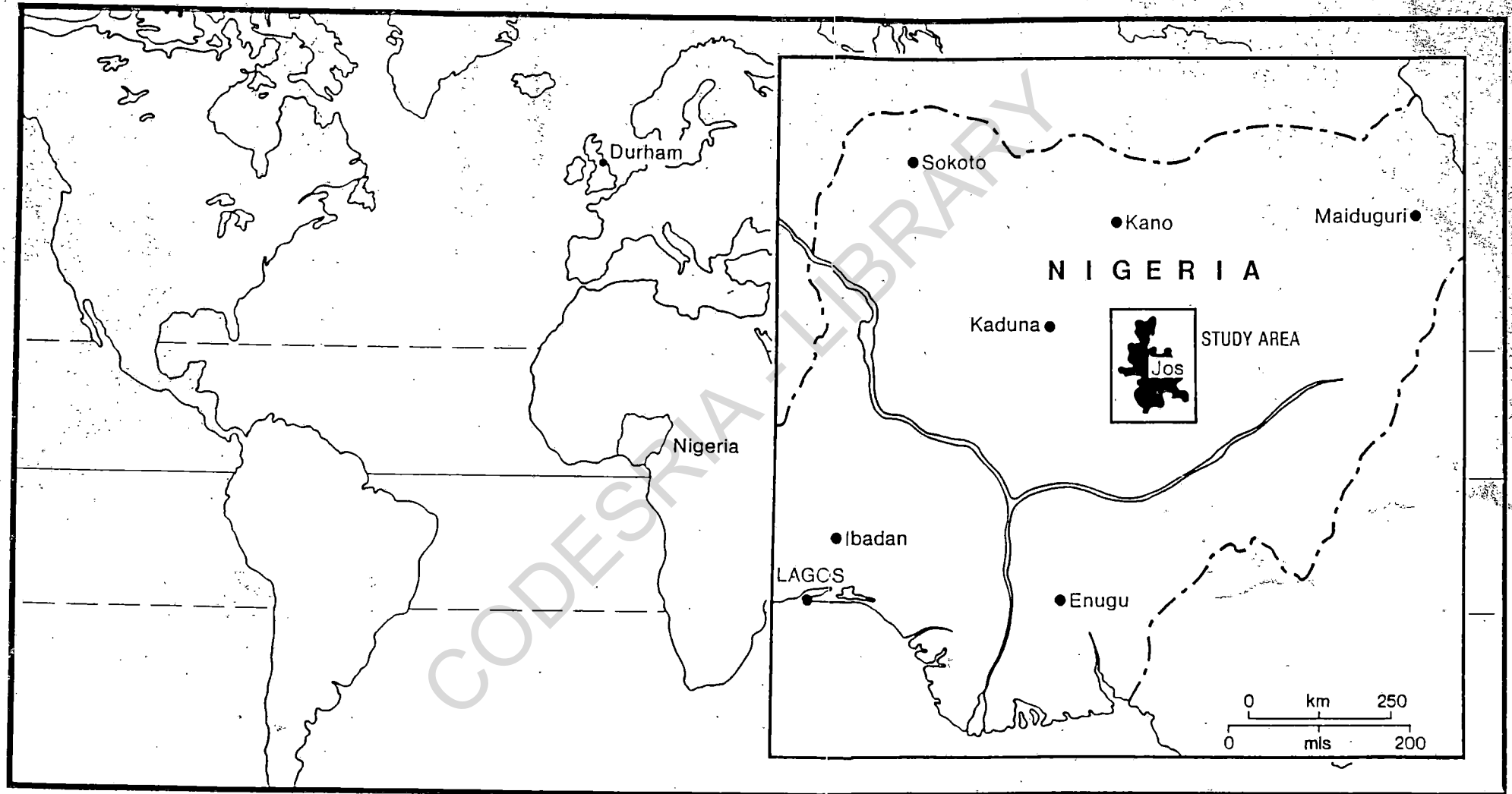
Highlights of some of the major physical characteristics of the region (like the geology, physiography, vegetation, climatic conditions, soil types, relief and drainage pattern; the socio-economic activities of the people on the Jos Plateau, especially the rural dwellers), are however recapitulated here in order to gain a deeper in-sight into the nature of the research.

2.2 The Physical Characteristics of The Jos Plateau Region

2.2.1 The Location And Delimitation of The Jos Plateau.

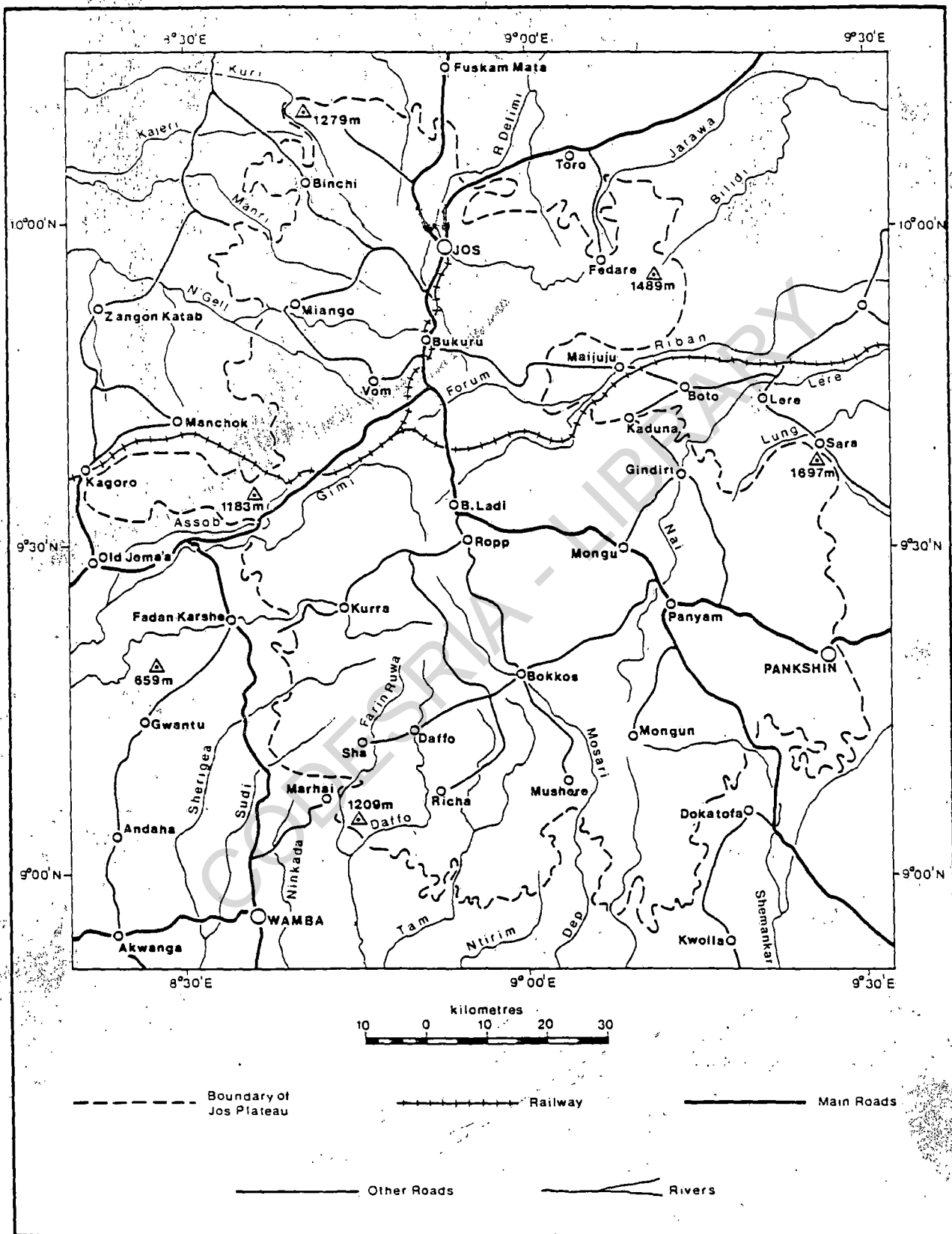
The Jos Plateau is a clearly defined highland area in the central part of Nigeria. This extends about 100 km from the north to the south and 80 km from east to west. It is contained within the area of 8° 22'E to 9° 30'E and 8° 50'N to 10° 10'N (See Figs.1 & 2) (Morgan, 1979; Shoeneich et al 1989 and Sunmaila, 1989.).

Figure 1 The location of the study area.



After Department of Geography, University of Durham.

Figure 2 General location of the Jos Plateau



After Morgan, 1979.

2.2.2 The Geology, Physiography, Relief And Drainage of the Jos Plateau Region of Nigeria (JPRN).

The Jos Plateau is a distinct physiographic region which covers about 9400 sq km of the crystalline complex in central Nigeria. Its average elevation is about 1,250 metres above mean sea level (amsl), with the average elevation of Jos town rising to 1,150 amsl, and the highest peak some 20 km eastwards from Jos-Shera hills rising to 1,777m amsl (Shoeneich et al 1989). The relief, drainage pattern, geology and the physiography of the JPRN are described and summarised in Figs. 3-6.

The main characteristics of the surface relief of the Jos Plateau, according to Alford et al (1974) results from the resistant cores of younger and older granites which constitute the plateau along with, in plains, areas of new basalt flow. The JPRN is the hydrographic centre of northern Nigeria. Most of the rivers in this part of the country take their source from the Jos Plateau. The drainage pattern of the JPRN is dendritic. Many of the rivers in the northern part of Nigeria also take their source from the Jos Plateau.

2.2.3 The Soil And Vegetation of the Jos Plateau.

The Vegetation type on the Jos Plateau is, basically the guinea savannah type. However, five categories of vegetation on the Jos Plateau have been identified (Morgan, 1979). They include the Toro complex, the plateau complex (which covers a greater proportion of the JPRN), the east escarpment complex, the west escarpment complex and the south-west escarpment types of vegetation.

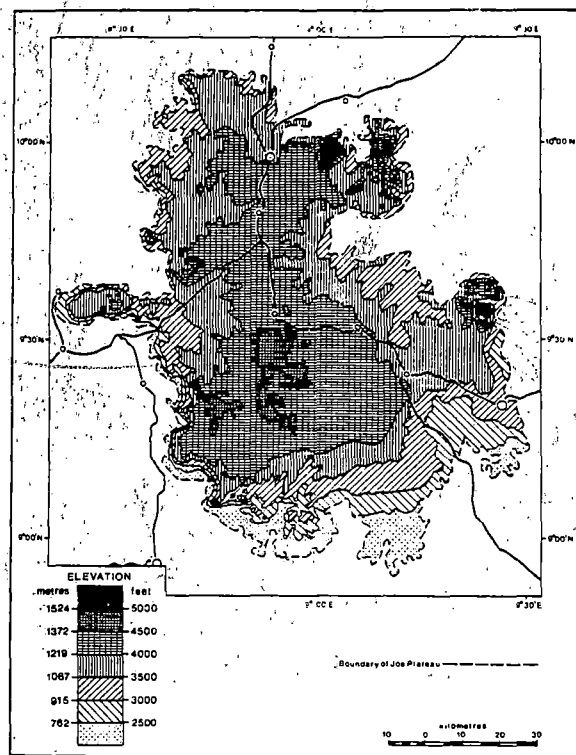


Figure 3 Relief

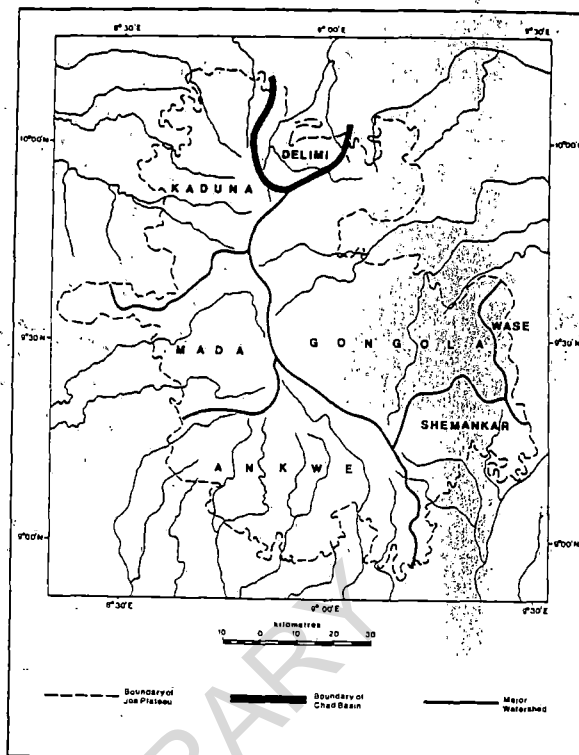


Figure 4 Drainage

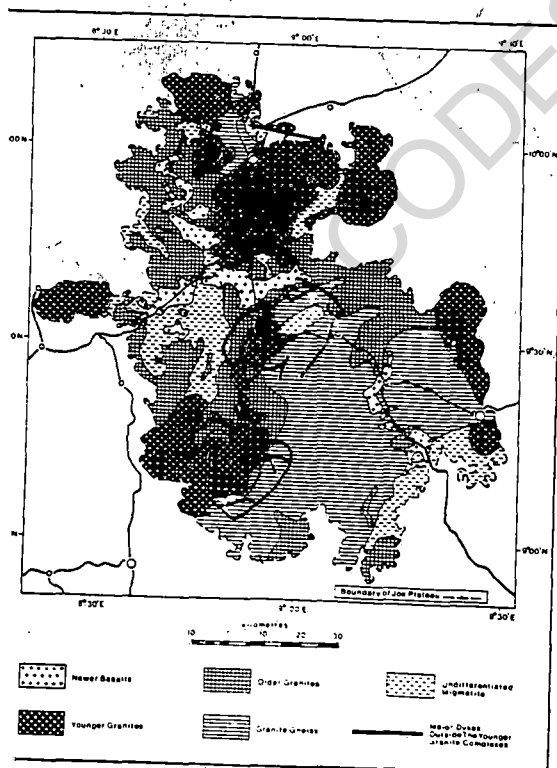


Figure 5 Geology

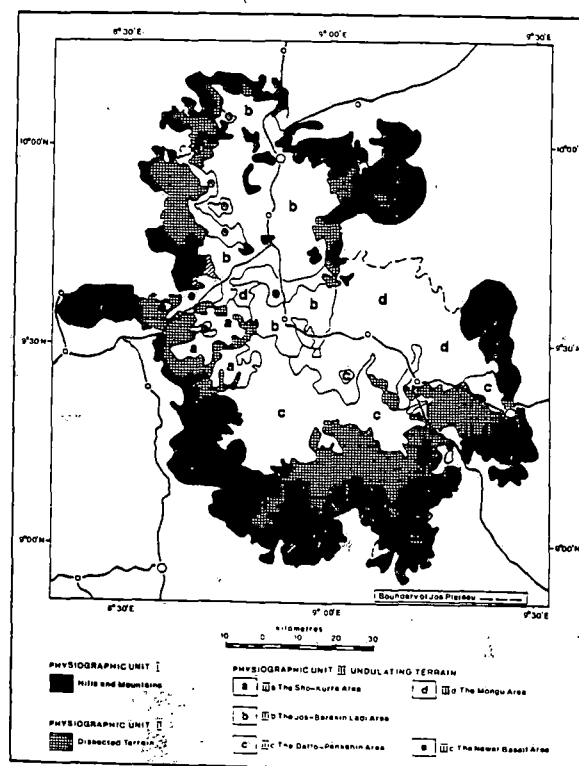


Figure 6 Physiography

The soils on the Jos Plateau are quite patchy in their distribution. Nevertheless, Alexander (1984) has observed that as a result of many contributory factors (of parent materials, climate, flora and fauna, time and the activities of man, especially that of agriculture, tin mining and grazing), four associations of soil could be seen in the region. These are the soils on unconsolidated deposits, newer basalt, the granite and soils on the basement complex.

Man's interference with the natural vegetation on the Jos Plateau has impoverished the distribution of the cover of the earth's surface in the region. This has given rise to sparse vegetation and accelerated soil erosion in the region. Many gully sites and mining paddocks could be seen in the major localities where active mining took place. Soil erosion sites could be found at Bokkos, Heipang, Naraguta Bukuru and Gindin-Akwati.

2.2.4 The Climate of the Jos Plateau.

The Jos Plateau region of Nigeria is very famous for its climatic conditions. It is considered to be one of the coldest area in the country. This is due to its height amsl.

The seasonal movement of the Inter-Tropical-Convergence-Zone (ITCZ) makes the region experience the wet and dry season type of climate. The dry season usually lasts from October-April. The wet season lasts from May-September. The dry seasons are usually cold and dusty-as a result of harmattan dust blown from the sahara. The highest temperatures, according to Sunmaila (1989) occur in March and April when the mean monthly temperatures reach 24° C. This drops to about 20°C in December. In most parts of the region, the mean annual rainfall is about 1600 mm. It however decreases to less than 1200mm in the north-eastern region. The western facing communities like Miango however tend to be wetter than the eastern facing ones like Pankshin.

2.3 The Socio-Economic Back-ground And The People Of the Jos Plateau Region.

2.3.1 The Geo-Political Situation of the Jos Plateau Region.

The Jos Plateau region is contained mainly in the Jos North, Jos South, Bassa, Mangu, Bokkos, Barkin-Ladi, and part of Pankshin Local Government Areas (LGAs) of Plateau State.

However, the Jos Plateau extends to Kagoro which is in Kaura Local Government Council of Kaduna State.

The capital of Plateau State is Jos. The Local Government Head-quarters of these LGAs, the rural and urban population estimates in 1985 (according to the projections made by Ihemegublem, 1990), their 1991 census figures, the number of districts and their community structures (as made by Gyuse *et al*, 1990) are illustrated in table 1.

Table 1 Population figures and the community structure of the LGCs in the Jos Plateau region.

LGA	LGA HQ	Popn. est.	Popn. est.	1991 Popn.	No. of Dist	No. of Comm
		Urban 1985	Rural 1985			
Bassa	Bassa	5033	197476	112793	9	28
B/Ladi	B/Ladi	13110	230251	152808	8	55
Jos North & South	Jos & Bukuru	407500	146907	622873	11	43
Mangu & Bokkos	Mangu & Bokkos	12291	256590	273121	18	55
Pankshin	Pankshin	N.A	N.A	160718	11	55

N.A=Not available.

Source: Adapted after Ihemegbulem, 1990 & Gyuse *et al* 1990 and the 1991 census figures of Plateau State, NPC, Jos.

2.3.2 The People of the Jos Plateau.

2.3.2.1 The Population Size and distribution in the JPRN.

Ihemgbulem (1990) has described the population structure of the Jos Plateau. Some of his findings have been presented in table 1. the Population density and distribution in the region are presented in Fig.7. Ihemgbulem op cit estimates that in 1980 the population size of the tin mining region of the Jos Plateau which consists mainly of Jos North, Jos South, Bassa, Mangu an B/Ladi LGCs was about 1,084,300. This figure rose to 1,329,252 in 1985 -which is 30% of the total population of Plateau State. The 1991 census figures puts the population of the Jos Plateau at 1,342,313. That is, including Pankshin LGA. The total population figures for Plateau State is 3,283,704.

2.3.2.2 The Rural-Urban Population in the JPRN.

Ihemgbulem (1990) based on the state statutory definition of regarding all LGC Head-quarters and Airport Towns as urban areas said that about 62% of the population in the tin mining area of the Jos Plateau is rural, while the remaining 38% is urban. This shows that the greater majority of the rural dwellers on the Jos Plateau reside in the rural areas.

In this study the LGC Head-quarters in the JPRN are considered as urban areas, but Heipang is considered as a rural area.

2.3.2.3 The Demographic Characteristics of the Rural Population on the Jos Plateau.

Ihemgbulem op cit found the distribution of the population of the rural areas in the tin mining region of the Jos Plateau to be truncated-with large concentration of the people in the young age groups-resulting in high maintenance burden on the active population. This is illustrated in Fig.8.

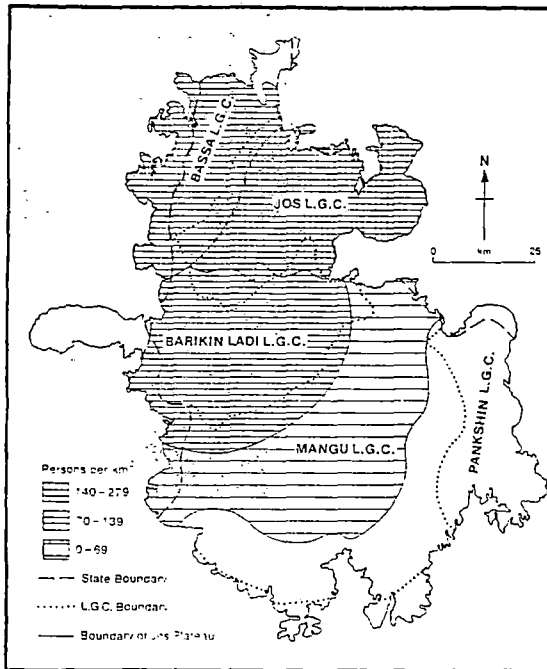


Fig. 7 Population density and variations in the JPRN.

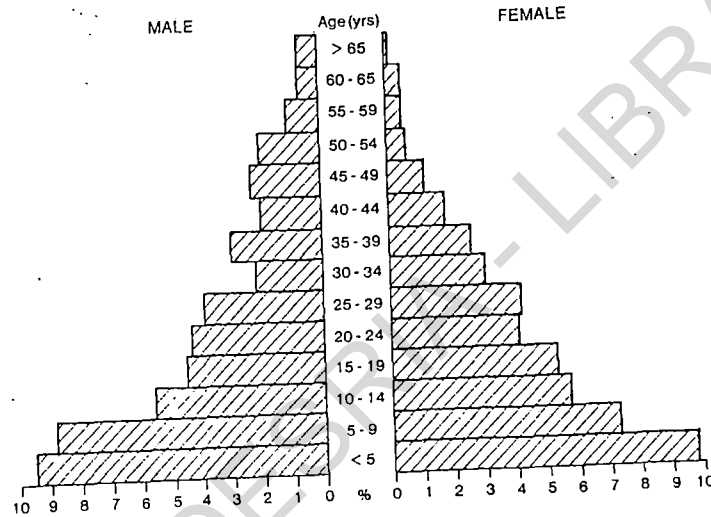


Fig. 8 Rural population by age and sex in the JPRN.

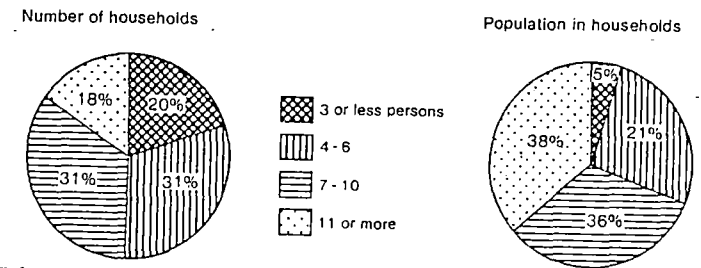


Fig. 9 Percentage distribution of household sizes in rural areas by number of households and by the population contained in each category.

After Ihemegbulem, 1990.

Higher female population was also recorded in the rural areas of the region. There were many old people also. The rural household sizes in the rural areas ranged from 1 to 30 persons. This is shown in Fig.9. About 57% of the household heads were migrants. High rates of unemployment were also recorded as stated else-where. Very little is however known about the life expectancy of the rural dwellers in the region. With the present situation of poor quality of life as was observed by Ihemegbulem this is expected also to be low.

2.3.3 The Socio-Economic Activities of the People on the JFRN

The Jos Plateau is known for its tin mining activities which has been taking place for nearly a hundred years in its modern form. The history of tin mining on the Jos Plateau has been accounted and narrated in great depth by Morgan, 1979; Freud,1981; Grace,1982; Gonyok,1986; Olaniyani,1986 and Sunmalla,1989.

In fact, it is held that Jos and Bukuru towns owe their origin and growth to tin mining activities. The same thing applies for several other communities on the Jos Plateau. The tin mining activities brought people from all walks of life to live on the Jos Plateau as traders, miners and administrators.

Tin production on the Jos Plateau reached 15,300 tonnes in 1929 (Olaniyani, 1986). In 1943, Nigeria's cassiterite production reached its peak of 17,403 tonnes. In the early part of the 20th century, many companies for mining tin on the Jos Plateau were incorporated. From 1902 to 1912 for example the total number of private commercial tin mining companies on the Jos Plateau increased from 1 to 40. Some of them included the Bisichi-Jantar, Gold-and-Base and Amalgamated Tin Mines (ATMN). These mining companies built a wide range of social amenities, and provided many social services, like building houses, schools, hospitals, and roads and clubs for their workers (Sunmalla,1989).

But with the collapse of large scale commercial tin mining especially in the mid-70s most, if not all of these companies folded up. Consequently, many people were thrown out of job. The Services which they provided were also with-drawn and even the structures they raised are now looking rather un-maintained (Ajaegbu and Morgan, 1986). All these have led to a wide range of problems now in the region.

The impact of these problems is much felt by the rural communities- a majority of whom do not have skilled labour; and the migrant population do not have access to land for agricultural production.

The rural dwellers on the Jos Plateau are currently involved in many other socio-economic activities. Aguigwo (1991) reported that many of the them now are small scale informal tin miners. Boyles (1990) has reported that many of the rural dwellers in the region also keep honey-bees.

The rural dwellers on the Jos Plateau are also known for their farming activities. The climatic condition on the Jos Plateau makes it possible for a wide variety of crops to be grown, and for livestock production. Crops grown in the area include Irish-potatoes, wheat and barley, sorghum, millet, maize and acha. A large number of nomadic cattle Fulani also raise their cattle in the region. This is because the region is very conducive for pastoral activities (Dogo,1988).

CHAPTER THREE.

THE REVIEW OF RELEVANT LITERATURE

3.1 Introduction.

This chapter is devoted to the review of literature which is pertinent to the problem under investigation, and the goal and objectives of this study as a whole. The purpose here is to give a bird's eye view of how this study was approached; and the rationale for, and the gaps or lacunae in knowledge which the research intends to bridge.

The chapter is divided into ten sections. The division of the literature into several sections was for convenience purposes. This is because the various sections are not mutually exclusive. The first part introduces the whole chapter of the review of literature. The second part deals with the subject matter of Social Planning. The third part looks at the various themes and foci on the social aspects of development. The fourth part critically examines the Basic Needs Approach (BNA) to development—what it is all about, the various criticisms, and issues raised by this approach. The fifth part deals with the concepts of Social Needs, Social Policy, Social Action and Praxeology and shows how they all fit into the whole realm of Social Planning and this research in particular.

The sixth part of the literature review examines the various attempts of measuring 'development'. The seventh section looks at the various definitions of, and approaches to rural development.

The eighth part of the literature review examines the Nigerian experience and approaches to rural development. The distribution of social services in the rural areas of the country is also discussed here. The ninth part of the review examines the needs-based studies already carried out on in the rural areas of the Jos Plateau of Nigeria.

The major high-lights of the review of literature are summarised in the tenth section. Portion of the major gaps in the review which this study seeks to bridge is also pinpointed here.

3.2 What is Social Planning?

As a summary, most of the literature review indicate that, like Geography, Social Planning claims to do a lot of things but does not have a universally acceptable definition. For example, Pahl(1970:206) contends that depending from which angle it is looked at 'all planning is Social Planning.' Hardiman and Midgley (1982) asserted that "... the nature of Social Planning as a subject is still confused and there is a serious lack of relevant literature." In the same vein, Broady (1975:50) observed that:

"... the adjective 'social' always appears to be singularly imprecise by contrast with comparable terms such as 'economic' and 'political'. To the English ear, 'the economy' is undoubtedly real... In Britain, the term 'Social Planning' does not have a clear meaning".

Booth (1988:1) also notes that "Social Planning is a term overloaded with meanings." Similarly, Conyers (1982:5) observes that:

"Like 'Planning', the word 'Social' is used very widely, and with very, many meanings."

Falk and Lee (1978) points out that "... the word 'planning' is a bit like having a holiday, it means different things to different people and its value depends on the circumstances. Almost all the meanings of the word have some relevance to those concerned with decision-making, although some applications are more important than others."

Consequently,, the amalgamation of the two words- 'social' and 'planning' poses a number of philosophical, polemical and methodological questions. In view of the many different uses of the word 'social', Conyers (1982:7) observes that "... it is hardly surprising that there are many different , although related interpretations of the term 'Social Planning".

And to compound the problem of definition, Lomas (1974) points out that:

"Social Planning is still weak both as a body of knowledge and as a theoretical structure...."

Nevertheless, at the risk of over-generalisation, Conyers (1982) defined Social Planning as concerned in general terms with planning for and by people and, some-what more specifically, with the 'non-economic' aspects of development and the attainment of certain rights and objectives (especially those related to equality) and with people's direct involvement in the processes of planning and development. Central in this definition of Social Planning by Conyers is the idea of considering the social aspects of development to be very crucial in the development planning process.

The Encyclopedia for Social Sciences, vol. 12, edited by Sills (1978) states that:

"Social Planning involves the drawing up of plans for future action in regard to social institutions and resources... Social Planning means the planning of a society's non-economic activities."

What constitutes the 'non-economic' activities- the encyclopedia does not tell us. Apthorpe (1970:14) observed that quite often, Social Planning is understood simply as a collective name for planning in the sectors of governmental activity that conventionally are called 'social', for example, education, health, housing, social security, social welfare, and community development.

Jones and Eyles (1977) specifically noted that

"Social Planning is the 'real world' counterpart of our concern for social justice and a fair society. Social Planning is planning for people in space, rather than people in it".

But this kind of definition is defective in the sense that it conjures the idea that the so-called 'experts' and technocrats are the right ones to plan for the people. It does not give room for the participatory approach to development, which is a fashionable word in current emphasis of making development sustainable.

More so, the act of leaving the planning process only in the hands of planners has been equated with leaving a war only in the hands of generals (Falk and Lee, 1978). This of course is a very dangerous thing to do. If the battle is to be won the other segments of the army must be involved.

From another perspective, Higgins (1971) said that Social Planning is simply the application of economic principles to decision-making about budgetary allocation to the social services. Perhaps, it is in this sense that Hardiman and Midgley (1980) described a Social Planner as an economist with a social conscience.

Morris et al (1974) says that:

"...social Planning relate to the concerns of social welfare improvement... Collaboration between economic and social planning is still in the amorphous state, but there is growing recognition that the two areas are closely related and that both economic and social questions need to be brought into a common planning framework.... There is some agreement, however, on the general nature of the problem-solving approach to planning, which increasingly is called 'Social Planning'".

The above definition and/or description of Social Planning is also supported by Cherry (1973:169 and 177) who said that "the keynote to Social Planning is social evolution... physical, social, and economic planning is a trilogy whose component parts only make sense in a total context."

Mayer (1972:20) believes that Social Planning is a synthesis of

- (1) the provision of organized services to individuals to help them overcome deficiencies in their environment, or handicaps to their advancement within the present system
- (2) the integration of all programmes designed to improve living conditions in the city in terms of some overriding consideration of their enhancement of the welfare of the residents involved and

(3) the equipping of disadvantaged groups with the technology and organization to exert pressure on centres of power for a more favourable distribution of resources."

Walker (1984) saw Social Planning as a Planning that is directed at the distribution of resources, status and power, in other words, it is Social Policy Planning. Walker contends that Social Planning has been defined and practised in many different ways. These range from the societal level development planning aimed at bringing about social change and achieving social objectives which are found in some third world countries (Conyers,1982; Hardiman and Midgley,1982) to the concentration of the planning of public social services, characteristic of advanced capitalist societies (Booth,1979).

Furthermore, Walker op cit contends that in recent years the tendency is for Social Planning to be like development planning (Conyers,1982). In Britain, in practice, then, Social Planning has been equated with Social Services Planning.

Jones and Eyles (1977:242) opines that there are three aspects of Social Planning:

- (a) The monitoring of the social implications of physical planning or social engineering;
- (b) The identification of areas of social malaise and the attempt to ameliorate such conditions, or remedial planning, or social problems perspective;
- (c) The promotion of social welfare facilities to meet defined social needs, or Social Development Planning.

In all, the (social) planner is concerned with even distribution of scarce resources- be it in a region or an area.

Conyers (1982) pointed out that the various fields of social planning include:

- (i) Planning social services;
- (ii) taking account of social priorities and considerations in development planning; and
- (iii) ensuring popular participation in planning.

By way of summary, and in spite of the various definitions of Social Planning stated above, Cullingworth (1972:13) believes that the central theme of Social Planning is in analyzing what the people need and to take measures to provide them. Hardiman and Midgley (1982:22) also observes that a synthesis of the various approaches to Social Planning suggest that: "... In the context of development planning, Social Planning is a process of policy formulation, plan design and implementation which attempts to meet basic human needs, solve specific social problems and bring about equity and social justice."

The whole concept of Social Planning and its applicability to the planning process can best be summarised using the words of Goodman (1974:210) who wrote that "we are, in effect, the client for all our projects, for it is our own society we are affecting through our actions." On how social planners go about doing their work, Hardiman and Midgley (1982:25) said that in the formulation of policies and plans, Social Planning applies the knowledge of different social sciences; and this inter-disciplinary approach is necessitated by its subject matter.

To identify need, understand social problems and formulate social policies appropriate to this task requires, as Titmus (1968:21) put it 'the methods, techniques and insights of the historian, the economist the statistician, the sociologist or, on occasions, the perspective of the philosopher'. And one can add the skill of geographers- who in recent years are fond of delving into 'new' frontier areas hitherto not considered as core Geography (Forbes,1982).

3.3.1 Social Aspects of Development.

In recent years, the social aspects of development have gradually received greater attention than before. And this has affected the nature of development planning and contributed to the rise of Social Planning in its various forms, (Conyers,1982:59). The impact of this emphasis could be seen from the national development strategies of Tanzania's Arusha declaration of 'man-centred' development which puts into consideration human dignity (Nyerere, 1968:316).

Few other examples include Papua New Guinea's goal for every person to be dynamically involved in the process of freeing himself or herself from every form of domination... each woman or man having the opportunity to develop as a whole person in relationship with others, and for all citizens to have equal opportunity to participate in, and benefit from, the development of our society, (Papua New Guinea,1975:2).

The Zambian ideology of 'Humanism' was initiated, and geared towards reversing the situation and attention in Planning issues from property-centredness to man-centredness (Kadenke, 1977:93). The Indian third national development plan was geared towards '...to build up by democratic means... rapidly expanding and technologically progressive economy and a social order on justice and offering equal opportunity to every citizen.' Indian Planning Commission,1961:4.

The famous Cocoyac declaration vividly stated that:

"Our first concern is to define the whole purpose of development. This should not be to develop things but to develop man. Human beings have basic needs: food, shelter, clothing, health, education. Any process of growth that does not lead to their fulfilment- or even worse, disrupts them is a travesty of the idea of development" (Anon. The Declaration of Cocoyac,1974).

Similarly, in "What Now-Another Development" (1975) The Dag Hammorskjold Foundation stressed that satisfying the basic needs of the poor and the less-privileged-ones in general should be the main core of the development process. the views above were strongly supported by Jan et al (1976) in their "Reshaping the International Order" that 'to achieve a life of dignity and well-being' should be the fundamental aims of the world community for all citizens.

Most of the ideas expressed above came as a result of the profound realisation that the hitherto economic growth oriented development planning with the anticipated "trickle-down" effects on the poor have failed to yield positive results.

Rather, the observation was that market forces only served to concentrate the benefits of economic growth in the hands of a few; and income did not "trickle-down" to the poor. The welfare of a vast majority of the people remained rather poor. There were many unsatisfied needs. This was in spite of the economic growth. It was against this back-ground that the emphasis had to shift from economic growth to other 'styles' of development which are suitable in the third world countries especially. Examples include 'redistribution with growth' and the 'Basic Needs Approach' to development (Chambers,1983).

In Nigeria, the quest for incorporating the social aspects of development into the national development plans could be seen from the 1979 Constitution, for example, which had its pre-amble as trying to form a 'just and egalitarian' nation. The most recent National Social Policy (1989) also notes that:

"... in the past, development planning in Nigeria has not given adequate emphasis to social development... and this neglect has created or, at least, exacerbated many social problems which have over the years become more chronic which now pose a definite threat to the socio-political orientation, welfare of the people and the security of the nation. Among such problems are...rural stagnation."

Consequently, at present there is a mobilization of the citizens of Nigeria to building a free and democratic society where 'sovereignty belongs to the people', economic recovery and social justice (MAMSER,1989).

It is now generally believed among development workers, experts and in government circles that the improvement in the living conditions for majority of the population of any country constitutes an important aspect of the development process. (Chambers,1983 and 1987; Chenery et al,1974; Todaro,1980; Griffin,1990; Dixon,1990 and ILO,1977).

Since putting into consideration the social dimensions of development is very important, as has been established above, the role of Social Planning in this regard can not be overemphasized. To this effect, Conyers (1982) out-lined some of the various ways a Social Planner can/should go about ensuring that social factors are taken into account in national or regional development as the case may be:

1. Monitoring social change;
2. Formulating social policies and programmes;
3. Examining the social impact of the national/regional development programmes;
4. Incorporating social considerations into routine planning procedures;
5. Allocating resources for social development.

3.3.2 Geographers And The Social Aspects of Development.

Immediately after the first and the second world wars the various disciplines in the social sciences were called upon to find practical strategies of solving humanity's problems instead of getting involved in mere academic and mental polemics. Geographers came to make their own contributions. Consequently, in the 1960s and 1970s there was an explosion of literature by Geographers on the subject of poverty, social inequality, social justice, regional im-balance, social development and rural development issues in the third world countries.

The works of Smith,1975; Smith,1985; Harvey,1973 readily come to mind. Geography was thus applied to solve social problems and addressing social issues.

If recent years too, Geographers have made several contributions in the rural development debate. Among others, Forbes,1982; Bell,1986; Momsen and Townsend 1987; Richards, 1985 and Dixon,1990 have made significant contributions in demonstrating alternative ways of looking at some of the problems facing the third world countries like rural development and how such problems could be tackled from a geographical perspective. Most of these works were however rather broad and general.

In Nigeria too, the works of Ajaegbu,1976; Onokerhoraye,1984; Mabogunje,1980; Gana,1989 and Mortimore et al, 1989 are some of the contributions made by Geographers in issues relating to various social aspects of development in the country. Some Geographers too were involved in the ILO/JASPA survey of 1981, (First Things First-Meeting The Basic Needs of The People of Nigeria, 1981).

3.4 The Basic Needs Approach (BNA).

In 1976, the International Labour Organization came up with what is now called the Basic Needs Approach (BNA) to development. The main appeal of the BNA is its central emphasis on meeting the basic needs of the poor masses within the shortest possible period, (ILO,1977).

Basic needs, here, according to ILO,1977:9 are defined to include several elements:

"First, they include certain minimum requirements of a family for private consumption: adequate food, shelter, and clothing... and certain household equipment and furniture. Second, they include essential services provided by and for the community at large, such as safe drinking water, sanitation, public transport, and educational facilities."

The major tenet of the BNA seems to be that the achievement of a certain minimum requirements of adequate food, shelter and clothing should be the target of development planning. Thus, the BNA has received wide publicity, and acceptance as an answer to some of the development problems of the third world countries, criticisms and comments.

Streeten et al (1981) believes in the efficacy of the BNA because "... the BNA makes poverty, a direct focus of attention, specifically designed to improve first, the income-earning opportunities of the poor; second the public services that reach the poor, third, the flow of goods and services to meet the needs of all members of the household, fourth, participation of the poor in the ways in which their needs are met." Wisner (1988) too argued that "... the famine, environmental destruction, aid-dependency and the lack of any progress for women do not mean that need-oriented development policies failed in Africa- they were never seriously tried..."

Many critics and proponents of the BNA have also surfaced. Among the critics, Rougemont (1980:70) points out that the precise definition of basic needs, in the first place, is elusive; he warns against confusing needs with wants. He points out for example, that the drug addict's need is not drug and the western civilization energy requirement is not its needs.

In an intuitive manner, Wisner (1988) asserts that:

"Every one can attach a meaning to 'basic human needs'. ... but a closer look at the verb 'to need', which is an experience of deprivation that has been created socially, is a relative concept which varies from place to place, from one person to another. In fact, one can add that one man's need in the same community is another one's nuisance. So, the stratification and/or categorisation of basic human needs into compartments presents a problem".

Morawetz (1977:44) observes that the basic needs concept faces the problem of precise definition- because it is largely subjective and varies according to the climate, culture and income levels of the country concerned.

Similarly, Conyers (1982:29) observed that many problems arise when any attempt is made to translate the general principles of the basic needs into specific development policies and programmes. She asked:

"Who should determine what is and what is not a basic need? Is it possible to identify a set of basic needs which can be applied to many countries- or even to all people in one country?... What happens if the meeting of basic needs conflicts with other national goals? And what happens if the more affluent sectors of the population try to obstruct the implementation of a basic needs Policy?".

The researcher agrees no less with her that these are no easy questions to answer.

Nevertheless, a closer look at the BNA will show that there is a general concern for the improvement of the living conditions of the poor. The need for grass-roots participation in decision-making process, by the local people is also stressed by the BNA. In fact, Szal (1979:27) asserts that the cornerstone of the BNA is the participation of the people in decision making in organisations of their own choice.

From the foregoing discussion so far, it is obvious that there are a lot of arguments, scepticism and ambiguity about the BNA. However, Conyers (1982:28) opines that the BNA is of particular significance to the Social Planners because it considers the various aspects of the social dimensions of development.

3.5 The Concepts of Social Needs, Social Policy, Social Service, Social Action And Praxeology.

3.5.1 Social Needs.

The definition and/or description of certain terms like: social needs, social policy, social action and praxeology are of prime importance in this study. But here also, there is no universally acceptable definition. For example, just like basic human needs, the definition of social needs poses a number of problems. A closer look at literature reveals that the question of what is a social need, who defines it and where, has not yet been settled. Nevertheless, the consensus among development experts and government circles is that the satisfaction or meeting of the social needs of the people should be a top priority goal of development planning in general.

Bradshaw (1972) distinguished four categories of social needs:

1. Normative need. This is the expert's or the professional's definition of a need in a given situation.
2. Felt need. This is the need felt by the individual in terms of want.
3. Expressed need. This is the need that becomes a demand.
4. Comparative need: The principle on which for example, if X and Y have similar characteristics and Y is in receipt of a service not received by X then X is said to be in need.

It could be deduced from this categorisation that such a taxonomy does not seek to define what is meant by 'need' but to indicate the elements that are included in the attempts of others to define it. Kathleen et al (1978). Harvey (1973) identified nine areas where there could be possible need: food, housing, medical care, education, social and environmental services, consumer goods, recreational opportunities, neighbourhood amenities, and transport facilities.

Maslow (1954 and 1970:80-102) has provided a hierarchy of basic human needs. While Maslow does not claim that the hierarchy is rigidly the same for every person, he orders needs as follows:

- * Physiological needs, especially hunger.
- * Safety needs.
- * Belonging-ness and love.
- * Esteem needs which involve two elements:
 - (i) Competence and confidence, giving independence and a sense of personal achievement.
 - (ii) Reputation and prestige as a result of other's esteem.
- * Self-actualization-using one's abilities and carrying out one's ideas to the full.
- * Aesthetic needs-about which little is known.

Maslow has suggested that these needs are arranged hierarchically, such that more basic needs must be satisfied before higher ones arise, even though these higher ones are ultimately more satisfying and their fulfilment leads to greater healthiness. This arrangement essentially involves the development from basic physiological requirements through to a full flowering of self-fulfilment.

The works of Maslow have subsequently been modified by Alderfer (1972) and Mussen et al (1974). Basic needs according to Mussen et al op cit include employment, income, food, shelter, clothing, marriage and sex, education and health. Alderfer op cit divides basic human needs into three broad categories. These are: existence, relatedness and growth needs. Alderfer's existence needs include the various forms of material and physiological desires including food, water, and good working conditions.

Galtung (1980:66) proposes a useful typology of human (social) needs:

- * Security needs like the avoidance of violence such as war, assault and torture;
- * Identity needs such as the avoidance of alienation through self-expression, affection, understanding of the world around one, sense of purpose; and

* Freedom needs like the avoidance of repression through choice in receiving and expressing information, choice of occupation, choice of confrontations, choice of spouse, and choice of place to live.

Harris (1976) notes that every human being has need and goals. Forder (1974:39-57) asserts that the definition of need presents a central problem for the social services since this defines the objective of the services. To speak of a need according to Forder, implies a goal, a measurable deficiency from the goal and a means of achieving the goal.

In spite of the lack of agreement on the definition of social needs, it is however pertinent to reinstate a quotation by Adlai Stevenson as was quoted by Robinson (1989)

"Understanding human (social) needs is half the job of meeting them. Perhaps, the other half is the ability to meet them."

And not only that one can inadvertently add that the literature is silent on 'how to meet' these needs.

3.5.2 Social Policy.

Walker (1984) observes that the definition of Social Planning derives from that of Social Policy. Both Social Planning and Social Policy are concerned with the distribution of welfare. However, Morris et al (1974:1361) notes that '...social policy is not a technical term with exact meaning'. For many, social policy has meant social welfare programmes dealing with the poor, the alienated, the handicapped. It is taken to refer to the policy of governments with regard to action having a direct impact on the welfare of citizens, by providing them with social services or income; for example, social insurance, public/national assistance, the health and welfare services and housing programmes, education, the treatment of crime and juvenile delinquency.

At the risk of over-simplification, in the literature, social policy is most often associated with the systematic and coordinated interventions designed to bring about some change, usually improvement, of certain malaise aspects of the society. For example, it is the proposition of this study that the provision of essential services in the rural areas of the Jos Plateau will bring about a tremendous improvement in the living conditions of the people. In this regard, social policy is seen here as the principles that govern actions directed towards given ends. Another example is the present Social Development Policy of Nigeria (1989) which is geared towards effecting a sustained social development in the country.

3.5.3 Social Services

Byrne and Padfield (1990) said that " A service is 'social' if its aim is the enhancement of the individual or the community's welfare, either through personal action or by collective effort." Most often, the term social services is used inter-changeably with essential services, welfare services and human services; and in some instances with social infrastructure.

These are programmes and activities designed to enhance people's development and well-being. They are organised to promote social welfare of the people; and particularly the less-privilege or the incapacitated ones in the society like the sick ones, destitute, the aged, the unemployed and generally, disadvantaged groups in the society (Gove,1981; Barker,1991).

Some of the rural dwellers of the Jos Plateau region are seen as incapacitated group of communities in this study. And the social services include housing, educational, housing and general social infrastructural amenities are considered as social services.

Marshall (1984) states that social action covers a wide range of things. Its core meaning however seems to be on helping those in need, especially those in physical needs. In social action, deliberate actions are taken. And these actions, taken collectively, usually aim at correcting imbalance, for example social inequality, injustice, redistributing uneven income.

Weber (1964) defines social action as 'a form of human conduct...consisting of an internal or external attitude which is expressed by acting or refraining from action'. Social actions are usually taken in order to effect some changes in a situation or condition for the better. Morris *et al* (1974) observes that crusading for social justice, and bringing social services to the poor, could be seen as social action. Social action in this case is seen as a method of intervention designed to achieve changes in human relationship and social institution. As a summary, Barker(1991:217) said that social action could be seen as a coordinated effort to achieve institutional change to meet a need, solve a social problem, correct an injustice, or enhance the quality of human life.

3.5.5 Praxeology.

Of recent, the need for integrating pure and applied researches in the social sciences in order to make them not only knowledge-driven but also policy relevant has been identified by Wenger, (1987). Praxeology, which is the science of application is being proposed here to be one of the most useful approaches of integrating pure and applied research, which, this study is one; or intends to be.

The praxeological approach, according to Nas *et al* (1987) is situated between basic and applied research. This approach is essentially directed towards the application of theory, the study of intervention strategies and the study of the research process in relation to the use of results. It is from this perspective that the various and central themes of the subject matter of Social Planning were put into consideration for the development of the rural Jos Plateau of Nigeria.

This implies therefore that this study is directed towards the application of the central themes of the subject matter of Social Planning for the development of the rural Jos Plateau.

3.6 Various Attempts at Measuring 'Development'.

Various attempts have been made by different bodies and individuals to evolve some yard-sticks for measuring development, poverty, and levels of satisfaction of what they term as basic human needs. Composite indices like social indicators, social accounting systems and proxy-surrogates too have been used to depict social phenomenon over space.

The Gross National Product, GNP, has been used to measure the development of different nations. But the GNP per capita has been criticised by several persons for its inadequacies in measuring the social aspects of development.

Boskin, quoted by the Newswatch Feb.12,1990:7 says that "The GNP is better designed to measure the economy of the 1950s when manufacturing was more important." The various inadequacies of the GNP has led the proposition of other indices.

Some attempts have been made to build composite development indices such as 'the level of living' or the 'Development-Index' proposed by the UNRISD (Drewnowski and Scott,1966); the 'Physical quality of life index' PQLI, proposed by Morris and Liser, 1977; and the 'Equivalent Length of Life' ELL by Silber, 1983. Igoche(1991) adopted this method in assessing the basic needs situation in Bassa LGA.

Some attempts too have been made to measure poverty, and levels of basic needs satisfaction, (ILO, 1977:96).

Quite appealing and convincing as some of these indices might appear their application in the rural areas of developing countries like Nigeria poses a number of difficulties. For-example, Morris and Liser's PQLI argues that development, especially social development could best be measured by

capturing the 'results' of the development. They also said that the PQLI is another indirect way of measuring the level of attaining basic needs.

All that is required in computing the QPLI are the life-expectancy, the infant mortality and literacy level of a given community, nation or region as the case may be. But it is evident that some of the data required in computing for-example life-expectancy is life-table. These are no easy data to come by in many rural areas, and especially on the JPRN.

Hence, this study is also geared towards advancing yet another way of depicting the rural development landscape. It is intended that the inventory and description of the social facilities in the rural areas of the JPRN will not only show the level of rural development of the community but also serve as an indirect manifestation of some of the social needs of the rural people in the region in terms of the availability of adequate social services.

3.7 Rural Development, Sustainable Rural Development And Approaches To Sustainable Rural Development.

3.7.1 What is Rural Development?

Rural Development has been defined and described in many ways. Nevertheless, a working definition of rural development, emanating from the United Nations Development Programme (UNDP,1979), describes it as a process of socio-economic change involving the transformation of agrarian society in order to reach a common set of development goals based on capacities and needs of people. These goals include a nationally determined growth process that gives priority to the reduction of poverty, unemployment and inequality, and the satisfaction of human needs, and stresses self-reliance and the participation of all the people, particularly those with the lowest standard of living.

The World Bank Sector Policy paper defines rural development as a strategy designed to improve the economic and social life of a specific group of people; the rural people. It involves extending the benefits of development to the poorest among those who seek a livelihood in the rural areas (World Bank, 1975:1). Van-Asseldonk (1979) defines rural development as complex activities leading to the fulfilment of the basic needs of the rural poor.

The Joint Inspection Unit of the United Nations defines rural development as "...activities aimed at meeting the needs of either all the rural population, or the specific basic needs of its poorest segments" (Zaman, 1989).

Lele (1975) defines rural development as improving the living standards of the masses residing in the rural areas and making the process of their development self-sustaining. Mabogunje (1980) sees rural development as a systematic attempt at re-organising and mobilising the rural masses so as to improve their capacity to cope effectively with their daily tasks and with the concomitant changes.

3.7.2 The Concept of Sustainable Rural Development.

Conroy and Litvinoff (1988:i) observes that there is a new jargon phrase in the development business- 'sustainable development'. It stems from a concern that the hitherto many activities undertaken in the name of development have actually squandered the resources upon which development is based. In fact, this argument was also advanced in Spore 24 (1989) "... it does not make sense to meet the needs of people today if this leaves no tomorrow for their children." In effect, development must be sustainable.

The World Commission on the Environment And Development, (WCED) better known as the Brundtland Commission of 1987, made it perfectly clear that from now on-wards development must be lasting or sustainable: and economic progress must be matched by the management of resources.

The WCED defines sustainable development as "development that meets the needs of the poorest without compromising the ability of future generation to meet their own needs" (WCED, 1987).

WCED particularly stresses that sustainable development must be participatory in approach; issues of poverty, equity and meeting the social needs of the vulnerable groups in the society should be addressed. Note that these are all issues earlier on pin-pointed in the discussion on the social aspects of development in 3.3.1.

Redcliff (1987) argues that if the work of the WCED is to be taken seriously, we need to direct the development process itself, to give greater emphasis to indigenous knowledge and experience of the local people; and to take effective political action on behalf of the environment.

This need of using the indigenous knowledge of, and involving the local people in the development process on issues pertaining to their well-being has been strongly supported by Conroy and Litvinoff (1988), Brokensha et al (1985), Richards, 1985, Kidd and Phillips_Howard (1992) and Chambers (1989).

They all point out that most development projects in the past have failed because of the 'mind-set' of the so-called development professionals who designed and managed such programmes. The local people were not involved in the decision-making process, nor in the execution nor evaluation of such projects.

More-so, Chambers (1983: 1989) observes that most of the development professionals tend to share certain biases which add up to what he terms as 'normal professionalism'. These biases, according to Chambers, start with things rather than with people. Poor rural children, women and men have been treated as residuals. Consequently, the normal professionals have often mis-understood the 'problem' and mis-specified the 'solution'.

Very central in the sustainable development debate is the idea of the 'bottom-up' approach in decision-making process which affects the local people as opposed to the technocratic 'top-down' procedures exemplified in governments provision of social infrastructures to the rural people, in Nigeria for example. In traditional literature of planning, the 'top-down' procedure/approach is synonymous with the lump-it-or-leave-it, while the 'bottom-up' is more or less like the participatory democracy and/or de-centralised mode of planning (Weaver, 1984 and Glasson, 1978). Oakley and Marsden (1984) referred to the bottom-up approach as a "people-based" development from below.

Okoye (1991) has pointed out that the thrust of the incumbent government programmes and approaches to rural development in Nigeria is based on the realisation that the continued existence of rural squalor vis-a-vis the urban affluence in the country is undesirable, unjustifiable and anti-development. Okoye maintains that the past sectoral 'top-down' strategies, models/theories of rural transformation so far adopted in the country have failed to produce the desired results. Hence, the attempt in recent years to adopt the 'bottom-up' approaches to development which is an attempt to transform the condition of the rural population through the mobilisation of their resources.

From the foregoing, it is evident that of central importance in the major approaches and emphasis to rural development in general nowadays is the need to make it lasting. Grass-roots participation of the rural populace should be encouraged. The various aspects of development should be put into consideration in planning with, and for the local people. The need therefore for the involvement of the rural dwellers on the JPRN in planning for their social needs provision can not be over-emphasized.

3.7.3 Rural Development Agencies.

It is important to look at the various types of agencies involved in the rural development on the JPRN because their reasons for being involved in rural development in the region, as well as their approaches to rural development vary considerably. These range from social gospel of the church organisations, social contract of the government agencies, activities of different types of NGOs and Community Development Associations and multi-lateral cooperation of international organisations.

Edwards and Hume (1991) points out that generally, local NGOs and other popular movements within a given community tend to be more involved in small and handy projects that are adaptable in the local areas. Most of the government agencies and the those of International bodies are involved in capital intensive projects which are high energy input and high technology dependent; and sited indiscriminately as a result of political and economic factors. Consequently, the consensus therefore is that the NGOs tend to be more effective when it comes to helping subsistent farmers and smaller communities (Holloway, 1989).

In most of the rural development agencies of the International Organizations, government agencies, and to a great extent some NGOs, the local people are never involved in evaluating the effectiveness or failures of projects. Rather, these agencies do the evaluation by themselves and come out with figures to prove 'their story of success' (Dixon, 1990).

In Nigeria, the roles of Community Development Associations, cultural organizations and unions in developing their localities are enormous. In the northern part of Nigeria, for example, it is also known that the local communities come together under different emblems like the weekly or monthly contributory organizations (adashi groups), and through self and mutual supporting activities of pooling resources together like through gaiya to help one-another. By so doing,

immediate and genuine needs of the individuals and their immediate families are met.

Onokerhoraye (1984:148) notes that the extended family system provided different types of personal services in the pre-colonial Nigeria and it is still doing so today. The importance of mobilizing the rural people in Nigeria for self-help development projects has been identified and documented by the works of among several others Mabogunje,1990; Aguda,1989; Gana,1989 and Adejunmobi,1990. On the JPRN Dashe,1990 has demonstrated the efficacy of the Mwaghavul Community Development Association in carrying out many self-help projects.

3.8.1 Rural Development-The Nigerian Experience.

As noted in several sections of our previous discussion, Nigeria has a long history of community and rural development. Self-help initiation, according to Onokerhoraye (1984:171), dates back to earlier times before the colonial era.

Different types of solution and approaches have been adopted in carrying out rural development by different administrations. The tendency however has been to equate rural development with agricultural development. Hence the implementation of the green revolution programmes, the operation feed the nation (OFN) campaign, the agricultural development programmes (ADP) and the river basin development authorities.

Land reform through the land-use act of 1978 could be seen as another step in addressing rural development issues in the country. Attempts were also made to explore other ways of addressing the social needs of the rural people in the country in the 1970s (Roy,1988).

The trend in the rural development policy in Nigeria has been that each administration could be easily associated with a type of rural development package peculiar only to that regime. The military administration of President Babangida, for-example, came out with the National Directorate for Food, Roads and Rural Infrastructure (DFFRI), the Better-Life programme for rural women and the Mass Mobilization for Social Justice and Economic Recovery (MAMSER) and other task forces and ministries. These are vested with special responsibilities which are geared towards improving the lot of the rural dwellers.

How effective these agencies of the government have been in improving the lot of the rural dwellers in the country, and particularly on the Jos Plateau is yet to be empirically investigated and documented.

3.8.2 The Distribution of Social Amenities And Services in The Rural Areas of Nigeria.

The importance of having life-sustaining amenities and services in any given community can not be over-emphasized. Lack of these basic social services and facilities in the rural areas of the country is seen as one of the major problems facing the rural dwellers in the country (Gana, 1989). Perhaps, it is this awareness that led the government to come out with DFFRI. The need therefore, for base-line data on the range and condition of social services in the rural areas of the country for planning purposes and for social services provision in the rural areas of the country can not be over-stressed.

Except for the general study by Onokerhoraye (1984) on Social Services in Nigeria-An Introduction and a survey of social infrastructure in the rural areas conducted by Idachaba et al (1985) a closer look at existing literature will reveal the paucity of data on the nature and condition of even the available social infrastructures in the rural areas of the country.

The problem is even worse for such an area like the rural communities on the JPRN. The need for such data on the JPRN is very important. This should be done very urgently as this would have obvious policy planning implication for the region.

3.9 Needs-Based Studies Already Carried out in The Rural Areas of The JPRN.

As pointed out else-where, especially in the introductory paragraphs, quite a few needs-based studies have been conducted on certain areas of the JPRN. The tin mining region especially has attracted some attention from studies by Ofong, 1986; Makanjuola, 1988 and Dingsan, 1989. Studies by Olaniyin, 1986, Sunmaila, 1989 and Ihemgbulem (1990) have also highlighted some of the social needs, and causes in the rural areas of the tin mining region. The other communities on the JPRN which are not in the tin mining region and indeed, some smaller communities inside the tin mining region have not received due attention.

The tendency however in most of the studies has been to investigate the normative needs of the rural people in this area. And based on these normative needs, planning proposals were recommended. The rural people themselves did not say these were their needs. Neither also did they have the opportunity to express what their needs are and how such needs could be met. Obviously, some of the normative needs identified by the researchers are likely not the genuine needs of the local people. Invariably, most of these studies did not make use of the indigenous knowledge of the local people.

Ofong (1986), for-example, undertook a study on the assessment of the basic needs of the inhabitants of the mining settlements on the Jos Plateau. Certain indicators and variables, like the number of household possessions, levels of health attainment and the eating of different types of food were used in measuring different levels of poverty in the area. Yardsticks put forward by international organizations

were adopted in computing the basic needs of the people.

But this approach is highly subjective and therefore unacceptable because the local people's genuine and pressing needs might have gone un-perceived by the 'experts.' More so, the catalogue of the needs as identified by the 'experts' might not necessarily reflect the true needs of the rural dwellers. In fact, some of the local people can, and might have a deeper and fuller insight into what their social needs are and how best to go about solving some of their problems.

Dingsan (1989) looked at the performance of the Home Economics Extension Programme (HEEP) in the former Mangu LGA in helping the rural women in the area meet some of their basic needs. He concluded from his studies that the HEEP has helped the rural women in the area in cultivating better habits in waste disposal, food storage, acquisition of domestic skills and water treatment. The data collected for his study and the manipulation of the data that led to Dingsan's conclusion were not very clearly shown.

Makanjuola (1988) examined some aspects of the socio-economic needs of the inhabitants of Sabon-Gida-Kanar in the areas of education, employment (income), land, material possession, health, food, housing and household sizes. He found that the level of living or socio-economic well-being of the inhabitants of Sabon-Gidan-Kanar was significantly influenced by needs arising from income, education, land, health, food, housing and family sizes.

But again, the normative-needs approach adopted by Ofong, op cit was employed in Makanjuola's study. He did not necessarily investigate the socio-economic needs of the people but rather, he chose what he termed as socio-economic needs and investigated the factors influencing such needs.

Other needs in the mining settlements have been identified by among others Olaniyan (1986) who reported that several of the social services once provided by the mining companies in the region have been with-drawn. He however did not specify which ones have been with-drawn, where and the rate of the withdrawal of such services. The problem of accessibility to remote areas like Maitumbi, Nding and Barkin-Sho has also been identified by Sunmaila, 1989. The need for jobs for the youths especially in the mining settlements has been identified by Ihemegbulem, 1990.

3.10. Summary And Conclusions of The Literature Review.

3.10.1 Hight-lights of, And Gaps, in The Literature Search.

The various aspects of the literature review indicate that 'Social Planning' is a very broad and as such a vague term. Indeed, it is so broad and vague that one could argue that there is no such thing as Social Planning, merely 'social dimensions' of other forms of planning in general. And these social dimensions of development are increasingly seen as crucial issues in development planning.

Nevertheless, there are obvious objectives very common to all the definitions and descriptions of Social Planning considered in the review. Most of the definitions tend to associate Social Planning with Social Policy Planning and/or Social Services Planning. The central objective of Social Planning however is generally to help especially vulnerable groups in the society and people in general satisfy their social needs.

Perhaps it is in this sense that Scheff (1976) identifies six overlapping concepts of Social Planning. They include:

Sectoral or welfare provision

Human resources planning

As a residual from physical and economic planning

As identification of societal objectives for all planning

As interactional and

As a theoretical base for all planning.

It is thus envisaged that these acts will bring about improvement of the lot and quality of life of the people. Thus leading to the socio-economic development of an area like the rural areas of the JPRN.

The reviews have revealed quite clearly that the participatory or 'bottom-up' approach to rural development is purported to be a prerequisite in any sustainable rural development process. No study has however been carried out in the rural areas of the JPRN to substantiate or validate this claim. Most of the needs-based studies already carried out in the region have rather adopted the style of planning for the rural dwellers in the region and not with them. Thus, the genuine needs of the rural people might not have been taken care of.

From the fore going review of existing literature the following facts are obvious:

1. The levels of welfare provision in the rural areas of the JPRN is yet to be investigated and documented. No study has been carried out to associate levels of welfare provision in the study area with levels of rural development.
2. Although the social needs of other areas have been categorised generally there is no such categorisation of the social needs of the rural dwellers of the JPRN. Especially, social needs as perceived by the local people themselves.
3. Even where the social needs of the rural communities have been identified no study has been carried out on practical ways of how best to go about tackling such needs. No study has been carried out on testing viable and potential solutions of improving the lot of the rural dwellers on the JPRN.
4. And more seriously, no attempt has been made to explore and relate the relative successes achieved by the various organizations trying to meet the social needs of the rural dwellers on the JPRN to their method of operations and approaches to rural development in the region.

In other words, no work has been carried out in the evaluation of approaches, and the implications of the different strategies adopted by the agencies for rural development on the JPRN. No study has been carried out in using the local people in the rural areas of the JPRN to evaluate the contributions of the different agencies for rural development (on JPRN) in improving their lot.

These are the major gaps identified in existing literature. This study however intends to focus attention on bridging the gap in the first item.

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CHAPTER FOUR

THEORETICAL FORMULATION OF THE PROBLEM.4.1 Introduction.

This chapter is on the theoretical formulation of the problem and it is divided into three sections. The first part is the introduction. The second part makes a theoretical exposition of some of the causal factors, and some of the expected social needs in the rural areas of the JPRN.

The major issues to be tested (hypothesis) are high-lighted in the the third section of this chapter.

4.2 A Theoretical Exposition of some of the social needs of the rural dwellers on the Jos Plateau.

For subsequent empirical investigation and verification in the field, a rigorous and logical formulation of the research problem for this study is necessary. The general premise for this formulation is : The problem is first of all identified, its various aspects spelt-out; and how these aspects are related one to the other; how the relationships of these aspects or variables are expected to behave shown. It is from this formulation that major issues, propositions (hypotheses) would emerge for subsequent testing using appropriate statistical techniques.

To this effect, an understanding of the historical development of, particularly tin mining activities on the JPRN and its effects on both the physical environment and the rural people of the region is very important. The slump in the tin market led to many mining companies folding up; withdrawal of the social services they provided, mass retrenchment and hence unemployment.

As has been noted else where, the tin mining companies provided a lot of social services which benefited their workers and their immediate families. The withdrawal of such services as a result of the drastic decline in tin mining activities is expected to have plunged the people who were benefiting from the social services provided into difficulties. The withdrawal of such social services implies that most of the communities that once had such amenities became less and less attractive; and not developed. This led to out-migration from the tin mining region.

The high level of unemployment among the bread-winners of the families is expected to have handicapped their purchasing power for adequate health and educational services and general social needs requirements of the family. And with inadequate basic needs provision, it would be expected that the quality of life of the family whose bread-winners are unemployed to be inadequately met. It is also expected that the anastomosis of the various issues raised above have generated series of other needs and complicated social problems in the tin mining region of the Jos Plateau.

Consequently, one can attribute the current lack of adequate social needs provision in the tin mining region to the withdrawal and/or neglect and decay of some of the social services previously provided by the mining companies. It is however very important to add that some of the indigenous communities which are not in the tin mining region did not enjoy the same level of social services provisions made by the mining companies. Though, it is also expected that some of their social needs might not be unconnected with the lack of efficient net-work of basic life-sustaining facilities in their localities.

Furthermore, the socio-cultural settings of the rural environment and the demographic characteristics of the rural dwellers on the JPRN as discussed in 2.3.2.2 are expected to have a tremendous influence on the types and ranges of needs of the local people. Given the fact that most of the households in the rural areas of JPRN according to Ihemegbulem, 1990 and illustrated in Figs. 8 and 9 live in large households of 11 persons or even more; very young population with a high dependency ratio, more female dominated population, it is expected that needs associated with housing, distribution of scarce resources to meet the needs of every member of the household to, abound in the area.

Some of the social services were provided a long time ago and for fewer persons. They might therefore have undergone some decay. The population now might have exceeded the capacity of the social facility.

The same argument could be applied to the other parts of the JPRN. Given the young-age nature of the population, the insufficient supply of services to most of the rural dwellers, majority of whom live in poor housing conditions, drink untreated water and trek several kilometres to get medical attention is expected to be a serious issue of concern among the rural dwellers of the JPRN.

Furthermore, it is expected that government's policies and programmes- at the national, state and local government councils level in Plateau State generally are expected to have a direct bearing on the nature of social needs provision of the rural dwellers on the JPRN. The benign neglect of the rural sector of Nigeria, the lop-sided nature of development planning in general where the urban sectors have been at the advantage, and the recent Structural Adjustment Programme (SAP) in the country is expected too to have considerable effects on the quality of life of the rural dwellers of the country. Including the rural dwellers on the Jos Plateau.

One can also argue that the culmination of the various policies of the government have resulted to a kind of situation whereby there is an inadequate supply of drugs and associated facilities and the required work-force in any social service provided in even the rural areas where such services are found in Nigeria. Scarce resources mainly exploited in the rural areas have been spent developing the rural sector. Most of the rural areas lack basic infrastructure. On the Jos Plateau, the fringes of the Plateau like Jipal, Chakfem and the Ron-Kulere area are literally cut off from the mainstream of development. This is because they lack most of the social facilities.

It follows therefore that the general inadequate provision of social services in the rural areas of the JPRN has generated a number of social problems, thereby leading to many social needs like needs for adequate shelter, employment, education and training, good transportation network and good medical care.

It therefore follows that communities which have human and natural resources; where a variety of social amenities are present, and with the required work-force and associated facilities to enjoy a higher level of (rural) development compared with the others which have none or relatively few ones. Communities which have new facilities for-example, and those ones that are close to urban centres, teaching hospital and other health services with the proper work-force, good quality of roads, good houses and, social and recreational facilities are expected not only to have fewer of social needs associated with social services provision but a higher level of development.

It is therefore expected that the levels of distribution of social services in the rural areas and hence, the levels of rural development on the Jos Plateau to vary from one community to another, and indeed, from one category of rural community on the JPRN to another. This is the basis for the null hypothesis (H_0) of this research. These amenities might have been provided by the government, private organizations, mining companies or through communal self-help.

The local people too, with their labour, skills and experiences could be seen as human resources which if harnessed, provided for, and trained would go a long way in improving not only the quality of life of the rural dwellers but also the socio-economic development of the JPRN. It is therefore expected that the provision of welfare amenities in the rural areas of the Jos Plateau will improve the welfare of the local people. Thus, leading to the development of the human potentials of the region.

4.3 Summary of the theoretical formulation and major hypothesis.

4.3.1 Summary of the theoretical formulation of the problem.

From the foregoing discussion, it is evident that the lack of social amenities in the rural areas of the JPRN is re-enforcing rural stagnation and poor human resources development in the area. It has led to low productivity, economic and social stagnation, low quality of life for the rural dwellers and hence, a poor rural development level for the region. It follows that the lack of an efficient network of life-sustaining services in the rural areas of the JPRN is bound to have some socio-economic implications for the region.

It is expected on the other hand that the provision of such social services will make the rural areas not only attractive, reduce out-migration from the rural areas of the region and enhance the social needs provisions for the local people. This of course, is expected to enhance the socio-economic development of the region.

This position was supported by Clark (1991) who observes that though social infrastructures do not make development per se but they make development possible. He further suggests that just development therefore, must concentrate infrastructural development on the needs of the most vulnerable groups of the society.

4.3.2 Null hypothesis to be tested.

From the foregoing discussion, it would be possible to test this hypothesis using the appropriate statistical techniques.

Ho: There is no significant variation in the rural development surfaces on the Jos Plateau based on the levels of welfare provision.

Hi: There is a significant variation in the rural development surfaces on the Jos Plateau based on the levels of welfare provision.

CHAPTER FIVE

MATERIALS AND METHODS.5.1 Introduction.

This chapter is devoted to the discussion of the nature, sources, methods of collecting and analyzing the data needed in this study.

5.2 The Nature and Sources of Data.

Basically, the data requirements of this study can be broadly divided into two. These are the primary and the secondary data. The primary data are those which hitherto did not exist from any archival source and therefore, had to be freshly collected, analyzed and documented by the researcher. The secondary set of data include any other printed material relevant to this study which already exist.

Data of primary origin was collected from the rural areas of the Jos Plateau Region of Nigeria. A recording schedule/questionnaire was used in collecting the data for this study. See Appendix 1.

The secondary sources of data include published reports, maps, journals and other literature which have some materials for this study. These were obtained from the map-libraries of the University of Jos, Jos, Nigeria and University of Durham and other materials sited in the literature search (See chapter three).

5.3 The Data Needs of The Study.

A wide range of data are required for this study. The specific set of information is related to the various aspects of the study already out-lined in 1.3 and the aim and objectives of the study enumerated in 1.4.

The data needs of this study therefore include the following:

1. Background information about the rural communities on the Jos Plateau- the people and some of the physical resources in the region.

2. Data on the types, number and distribution of health, educational, rural housing, types and physical quality of rural roads, general welfare facilities and services in the rural areas, potable water supply, places of worship, and other institutional and welfare amenities in the rural areas of the Jos Plateau.

3. The physical quality of such amenities. The kind of services these services are presently capable of handling as a result of having the required work-force and associated facilities.

5.4 The Nature of The Recording Schedule and The Questionnaire.

The major tool used in collecting primary data is the recording schedule and/or questionnaire. The recording schedule sought to make an inventory of the social amenities in the rural areas of the Jos Plateau.

The recording schedule and/or questionnaire were framed in such a way that all the various aspects of the data needs of the study were covered. It was however separated into these categories only for convenience purposes. See Appendix 1. The information from the recording schedule was supplemented with participant's observation in the field; and field notes.

5.5 Field Work.

Three field surveys of varying intensities and significance were conducted in this study. These included the reconnaissance survey conducted in May, 1989; the pilot study which was conducted in Barkin Ladi LGA in September and October, 1990 and the main field work in May, June and July of 1991.

The purpose of the reconnaissance survey was to get acquainted with the nature of the rural communities in the study area and to determine the sample size for the study. The pilot survey was undertaken specifically to pre-test the instrument of data collection. The questionnaire was subsequently modified taking into considerations some of the problems posed by the earlier version. The bulk of the primary data were collected during the main field survey.

5.6 Questionnaire Administration.

The bulk of the data for this study were collected by the researcher and through the help of the field assistants. The researcher's role was mainly that of supervising the field assistants. Areas thought to be difficult by the field assistants were handled by the researcher.

Before going to the field, a two-day session of training was conducted with the field assistants. The field assistants were told what the research was all about and what the major objectives of the study were.

With the problem of the research lucidly explained to the field assistants, and the aim and objectives of the study clearly spelt out for them in Hausa language, two communities in the study area, Amo-Katako and Panyam were visited in the first week of data collection. During the visits, all the field assistants worked together in questionnaire administration. How each of the field assistants performed was closely monitored by the researcher; and the parts of the questionnaire which they did not understand very clearly were carefully re-explained to them.

5.7 Sampling Area.

One of the objectives of the pre-field survey exercise for this study was to determine the sample area. It was then decided that at least 70% of the districts on the Jos Plateau should be covered. The map of the Jos Plateau was divided into 20Km by 20Km grid cells. 86 cells representing 70% of the grid cells were sampled, and a community was selected from each of the 86 cells. (See Fig.10).

The structure of all the rural communities in Plateau State by Gyuse et al (1990) provided a frame-work for choosing the communities to be studied. See Fig.10 showing how the 86 communities studied were sampled. In all 924 persons were interviewed from the 86 sampled communities. (See table 3.) The respondents were chosen based on availability sampling. The summary of information concerning the communities studied are shown in table 2.

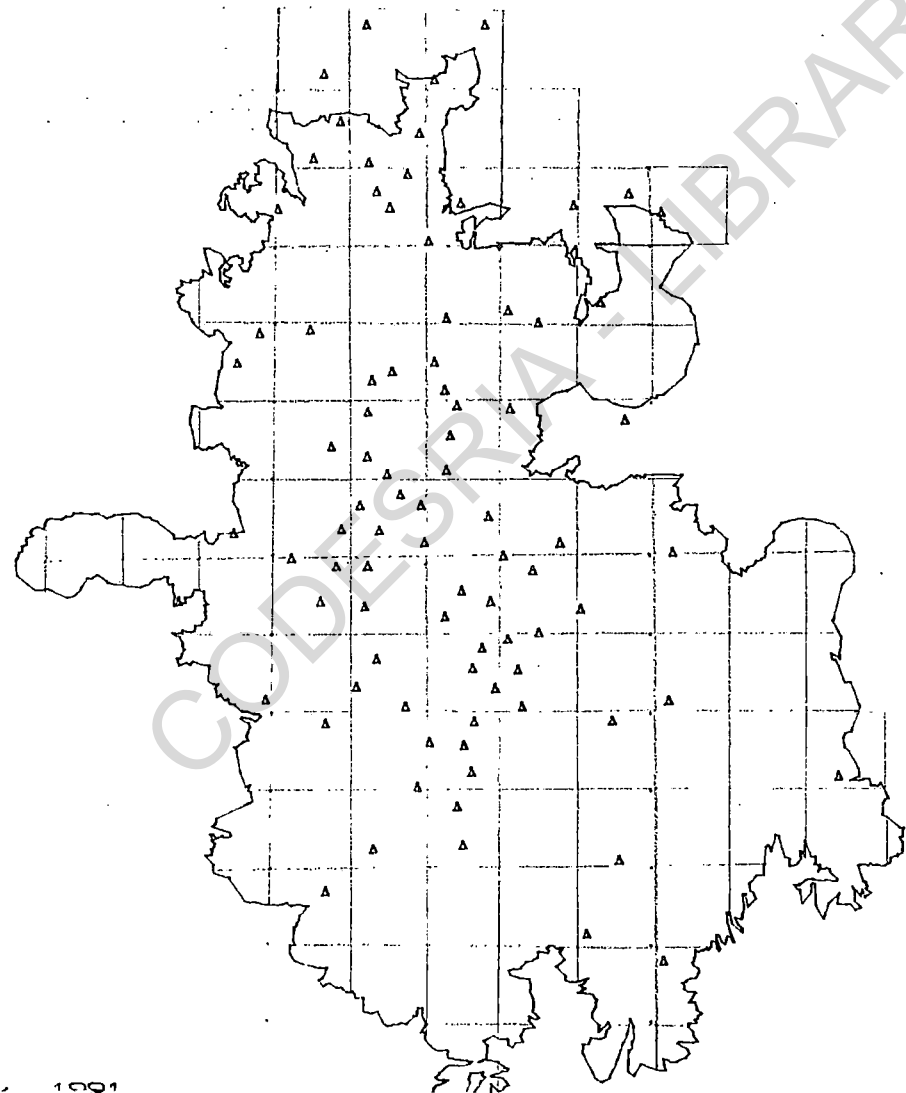
Table 3 Distribution of Questionnaires in the study area.

SERNO	COMMNA	NOQ	NGI	NSR	NFR	NMR	TOTALR
1	Jengre	11	7	11	4	7	18
2	Fuska-Mata		5	0	0	0	5
3	Bakin-Kogi	2	2	1	1	0	3
4	Binchin	8	0	6	1	5	6
5	Kissi	7	7	6	2	4	13
6	Kwadi	8	8	0	0	0	8
7	Jebu-Miang	10	10	10	3	7	20
8	Miang	7	15	7	2	5	22
9	Tiga	3	0	3	0	3	3
10	Sabo-Tarya	3	3	0	0	0	3
11	Runfan-Gw	3	3	0	0	0	3
12	Gunum	6	6	0	0	0	6
13	Mista-Ali	2	10	0	0	0	10
14	Majeja	1	4	0	0	0	4
15	Katak-Ari	21	9	20	3	17	29
16	Naraguta-VI	2	10	0	0	0	10
17	Babje	9	3	8	2	6	11
18	Mai-Gemu	4	9	3	1	2	12
19	Rondon-Wg	1	3	0	0	0	3
20	Gada	3	3	0	0	3	3
21	Federe	2	8	0	0	0	8
22	New-Fobur	3	17	2	0	2	19
23	Lamingo(a)	3	12	2	0	2	14
24	Fusa	3	9	0	0	0	9
25	Maijuju	19	12	19	5	14	31
26	S/Gida-Kan	34	8	34	10	24	42
27	Sot	1	7	0	0	0	7
28	Gyel	13	0	13	8	5	13
29	Delimi	3	15	3	1	2	18
30	Rayfield	5	8	5	1	4	13
31	Zawan	2	6	0	0	0	6
32	Du	2	6	0	0	0	6
33	Pasakai	1	2	0	0	0	2
34	Kuru-Jenta	4	14	2	1	1	16
35	Vom	2	4	0	0	0	4
36	Kuru-Babba	1	3	0	0	0	3
37	Ganawuri	2	4	0	0	0	4
38	Assop-Falls	1	13	0	0	0	13
39	Bangan	2	6	0	0	0	6
40	Sharubutu	4	10	2	1	1	12
41	Kassa	1	4	0	0	0	4
42	Rim-Makafo	2	12	1	0	1	13
43	Jol	2	2	1	0	1	3
44	Werreng-Bir	16	8	16	3	13	24
45	Werreng-Ca	27	10	27	7	20	37
46	Sho	1	4	0	0	0	4
47	Sho-Kampa	2	8	0	0	0	8
48	Heipang	1	5	0	0	0	5
49	Forom	1	3	0	0	0	3
50	Bisichi	37	0	37	11	12	37
51	Nefan-Dreji	3	9	0	0	0	9
52	Rafan	1	3	0	0	0	3
53	Dorowa-Tso	4	16	0	0	0	16
54	Gindin-Akw	17	3	16	6	10	19
55	Yelwa-Edan	1	5	0	0	0	5
56	Kurra-Falls	10	2	9	3	6	11
57	Nding	1	4	0	0	0	4
58	Lobiring-Ro	1	4	0	0	0	4
59	Dorowa-Ba	11	4	10	3	7	14
60	Gana-Ropp	12	8	12	3	9	20
61	Gana-daji	12	3	11	2	9	14
62	Buka-Bakw	1	3	0	0	0	3
63	Manjo-Pota	7	2	7	2	5	9
64	Kantoma	11	6	11	4	7	17
65	Maitumbi	1	4	0	0	0	4
66	Mangu-Hall	8	0	8	2	6	8
67	Panyam	3	9	0	0	0	9
68	Gindri	1	13	0	0	0	13
69	S-B-Roboi	6	15	5	1	4	20
70	Gamajigo	1	3	0	0	0	3
71	Kuba	11	10	11	1	10	21
72	Maiyanga	11	4	11	4	7	15
73	Tenti	14	12	14	2	12	26
74	Maikatako	12	5	11	3	8	16
75	Dan-Bukuru	1	2	0	0	0	2
76	Kunnet	1	13	0	0	0	13
77	Butura-Kam	1	4	0	0	0	4
78	Mbar	2	16	0	0	0	16
79	Yelwa-Nono	2	6	0	0	0	6
80	Sha	1	2	0	0	0	2
81	Daffo	2	8	0	0	0	8
82	Chakfem	1	2	0	0	0	2
83	Mangun	2	4	0	0	0	4
84	Jipal	2	5	0	0	0	5
85	Kombun	2	2	1	0	1	3
86	Tukun	0	0	0	0	0	0
TOTAL		484	548	376	103	262	924

Source: Field Work, 1991.

KEY
SERNO Serial Number of the Community
COMMNA Name of the Community/Settlement
NOQ Number of questionnaires/interviews
NGI Total number of persons respondents interviewed in groups
NSR Number of individual respondents
NFR Number of individual female respondents
NMR Number of individual male respondents
TOTALR Total number of respondents

Grid cells illustrating how the 86 communities were sampled.



[]
20KM

In most instances, the local chiefs were consulted on arrival in each of the communities studied. The reasons were to brief them on the purpose of the study and to request for their permission and assistance. Community development leaders were also contacted. Leaders of women organizations, youth organizations in the locality were also contacted and interviewed. These were the key informants for this study. Interviews were done by visiting the local people in their homes. In some instances too, the local people were interviewed in groups. Such interviews were conducted in the mornings and in the evenings.

5.8 Laboratory Work, Data Analysis And Presentation.

The data collected from the field were coded and fed into the computer. This was achieved through coding the data into an SPSSX file named 'socialserv'. A complementary SPSSX command file 'socialserv.com' was created. The command file was used in labelling the coded data. Preliminary analysis were carried out on the data by tabulating them and calculating the frequencies. Summarised data were subsequently fed into the computer to do further analysis and mapping.

The map of the Jos Plateau showing the communities visited was digitized using the ISIS mapping package. The data resulting from the preliminary data analyses were subsequently fed into a Spread-sheet (QUATTRO PRO), and another mapping package called MAPICS to draw the various maps and graphs. QUATTRO PRO was used in making tables 2 to 12. See appendix II for an 'Obey' file used in the construction of one of the maps.

A combination of the MINITAB, STATA and SPSSX statistical packages were used in testing the null hypothesis; and in drawing some of the figures. F-test command was used in testing the H_0 . All computations were done by the University of Durham main-frame computer. See appendices.

5.9 Data Collection Problems.

A number of problems were encountered during the field data collection exercise. Appropriate attempts were however made to over-come or at least minimise these problems so as to enhance the quality of data.

Similarly, the researcher did not have a prior knowledge of how to use the computer before going to the field for data collection. Consequently, the recording schedule/questionnaire was not framed in such a way to facilitate easy coding of data and subsequent input into the computer. This problem was however solved through condensing some of the information collected from the field; and making-shift of the available data.

It was not possible to visit some communities because they were not accessible. For example it was not possible to visit Mafara in Bassa LGA. Neighbouring communities were therefore substituted. It was during the second attempt that it was possible to reach Sho-Kampani. The road was not motorable. The researcher and the field assistants had to walk to Sho-Kampani.

The map of the Jos Plateau had to be digitised for the second time using ISIS. ARC/INFO was the first method that was used in digitising the region. Later on the researcher found that though ARC/INFO is the most widely used Geographical Information System (GIS) it could not draw pies at specific locations. In MAPICS it took the computer 20-30 minutes to draw some of the maps.

CHAPTER SIX.

BACKGROUND INFORMATION OF THE COMMUNITIES STUDIED.

6.1 Introduction.

Data collected from field work and subsequent analyses in the laboratory are presented in this, and subsequent chapters. The information is presented in tables and maps. This chapter is divided into six sections.

The first section is the introduction to the chapter on data presentation. The second part gives the background information about the 86 communities\settlements studied. This is summarised in table 2. The names of the communities, their districts, LGAs, sub-region, type of settlement and their estimated population sizes are given in this section. Table 3 gives a summary of the number of respondents interviewed.

6.2 Background information of the communities studied.

6.2.1 Location of the communities.

All the communities studied were first of all assigned serial numbers for coding purposes (See Fig.11). The names of these communities were however indicated in the labelling of the coded information. The same thing applies to the naming of the districts, local government areas, subregion of the settlement, the type of settlement and the population distribution of all the communities studied. Their locations were indicated in the process of digitizing the map of the study area. In this study each community could be identified by its serial number.

Table 2 Background Information of The Rural Communities Studied.

SERNO	COMMNA	DIST	LGA	SUBREG	SETTYPE	POPSIZE
1	Jengre	1	1	3	7	5
2	Fuska-Mat	1	1	2	7	4
3	Bakin-Kog	1	1	2	7	3
4	Binchin	2	1	2	7	4
5	Kisi	2	1	2	7	2
6	Kwall	3	1	1	4	5
7	Jebu-Mian	4	1	1	4	4
8	Miango	4	1	1	4	5
9	Tiga	5	1	1	2	1
10	Sabo-Tariy	5	1	1	4	3
11	Rumfan-G	5	1	2	7	3
12	Gurum	5	1	1	3	4
13	Mista-Ali	5	1	1	4	5
14	Majeja	6	1	2	7	3
15	Katako-A	6	1	3	7	4
16	Naraguta-	7	2	1	6	5
17	Babale	7	2	3	2	4
18	Mai-Gemu	8	2	3	7	4
19	Rondon-VI	8	2	3	7	1
20	Gada	8	2	3	7	4
21	Federe	9	2	2	7	4
22	New-Fobu	10	2	2	7	5
23	Lamingo(a	10	2	1	4	5
24	Fusa	11	2	2	7	3
25	Maijuju	11	2	3	7	5
26	S/Gida-Ka	12	2	1	1	5
27	Sot	12	2	1	4	3
28	Gyel	12	2	1	4	4
29	Dellim	13	2	1	1	5
30	Rayfield	13	2	1	2	4
31	Zawan	13	2	1	2	5
32	Du	13	2	1	4	4
33	Pasakai	14	2	1	2	1
34	Kuru-Jenta	14	2	1	1	5
35	vom	15	2	1	5	5
36	Kuru-Babb	15	2	1	2	1
37	Ganawuri	16	3	2	7	4
38	Assop-Fall	17	3	2	7	3
39	Bangan	17	3	1	1	4
40	Sharubutu	17	3	1	4	4
41	Kassa	17	3	1	4	4
42	Rim-Makaf	18	3	1	1	5
43	Jol	18	3	1	4	3
44	Wemreng-B	18	3	1	4	4
45	Wemreng-C	18	3	1	2	4
46	Sho	18	3	1	4	4
47	Sho-Kamp	18	3	1	3	1
48	Heipang	19	3	1	5	4
49	Forom	20	3	1	4	5
50	Bisichi	20	3	1	1	5
51	Nafan-Drej	21	3	1	2	3
52	Rafan	21	3	1	5	4
53	Dorowa-Ts	21	3	1	5	4
54	Gindin-Ak	22	3	1	1	5
55	Yelwa-Exda	22	3	1	2	3
56	Kurra-Falls	22	3	1	6	5
57	Ndir	23	3	1	2	1
58	Lobling-R	23	3	1	4	4
59	Dorowa-B	23	3	1	2	5
60	Gana-Rop	23	3	1	1	4
61	Gana-hajl	23	3	1	3	4
62	Buka-Bak	23	3	1	2	2
63	Manjo-Pot	23	3	1	3	4
64	Kanterna	24	4	1	1	4
65	Maitumbi	24	4	1	3	3
66	Mangu-Ha	24	4	1	4	5
67	Panyam	25	4	2	7	5
68	Gindiri	26	4	2	7	5
69	S-G-Roboi	27	4	1	3	4
70	Gamajigo	27	4	1	3	4
71	Kuba	27	4	1	4	5
72	Maiyanga	27	4	1	3	4
73	Tenti	27	4	1	1	5
74	Maikatako	27	4	1	2	5
75	Dan-Bukur	27	4	1	1	3
76	Kunnet	27	4	1	4	4
77	Butura-Ka	27	4	1	3	4
78	Mbar	27	4	1	4	4
79	Yelwa-Non	27	4	1	3	3
80	Sha	28	4	2	7	4
81	Daffo	28	4	1	4	5
82	Chakdem	30	4	2	7	4
83	Mangun	31	4	2	7	4
84	Jipal	32	4	2	7	4
85	Kombun	33	4	2	7	5
86	Tukun	34	5	1	6	3

KEY

SERNO Serial Number of the Community Studied

COMMNA Name of the Community

DIST District of the Community

1	Jere	2	Kishikak	3	Kwall	4	Miango
5	Buji	6	Amo-Kata	7	Gwong	8	Mai-Gemu
9	Federe	10	Fobur	11	Forsun	12	Gyel
13	Du	14	Kuru	15	Vwang	16	Ganawuri
17	Bacht	18	Riyom	19	Heipang	20	Forom
21	Fan	22	Gashish	23	Ropp	24	Mangu
25	Panyam	26	Gindiri	27	Bokkos	28	Sha
29	Daffo	30	Chakdem	31	Mangun	32	Jipal
34	Kombun	34	Pankshin				

LGA Local Government Area of the Community

- 1 Bassa
- 2 Jos North And South
- 3 Barkin Ladi
- 4 Mangu And Bokkos
- 5 Pankshin

SUB-REG Sub-Region

- 1 Inside the Tin Mining Region of the Jos Plateau
- 2 On the Jos Plateau but outside the Tin Mining Region
- 3 On the fringes of the Jos Plateau

SETTYPE Type of Settlement/Community

- 1 A Complete Mining Settlement/Community
- 2 Not a complete Mining Settlement/Community
- 3 A Mining Labour Camp/Ghetto (Barki)
- 4 An indigenous Community where mining took place
- 5 An indigenous Community where mining did not take place
- 6 Other types of Community/settlement
- 7 Pure indigenous Communities/Settlement

POPSIZE Population Size of the Community

- 0 None
- 1 Less than 500 persons
- 2 500 to 1000 persons
- 3 1001 to 2000 persons
- 4 2001 to 4000 persons
- 5 4000 and above persons

This has to be the case because MAPICS does not recognise letters when it is reading any data set. Consequently, all the information concerning any community studied was stored in its corresponding serial number cell.

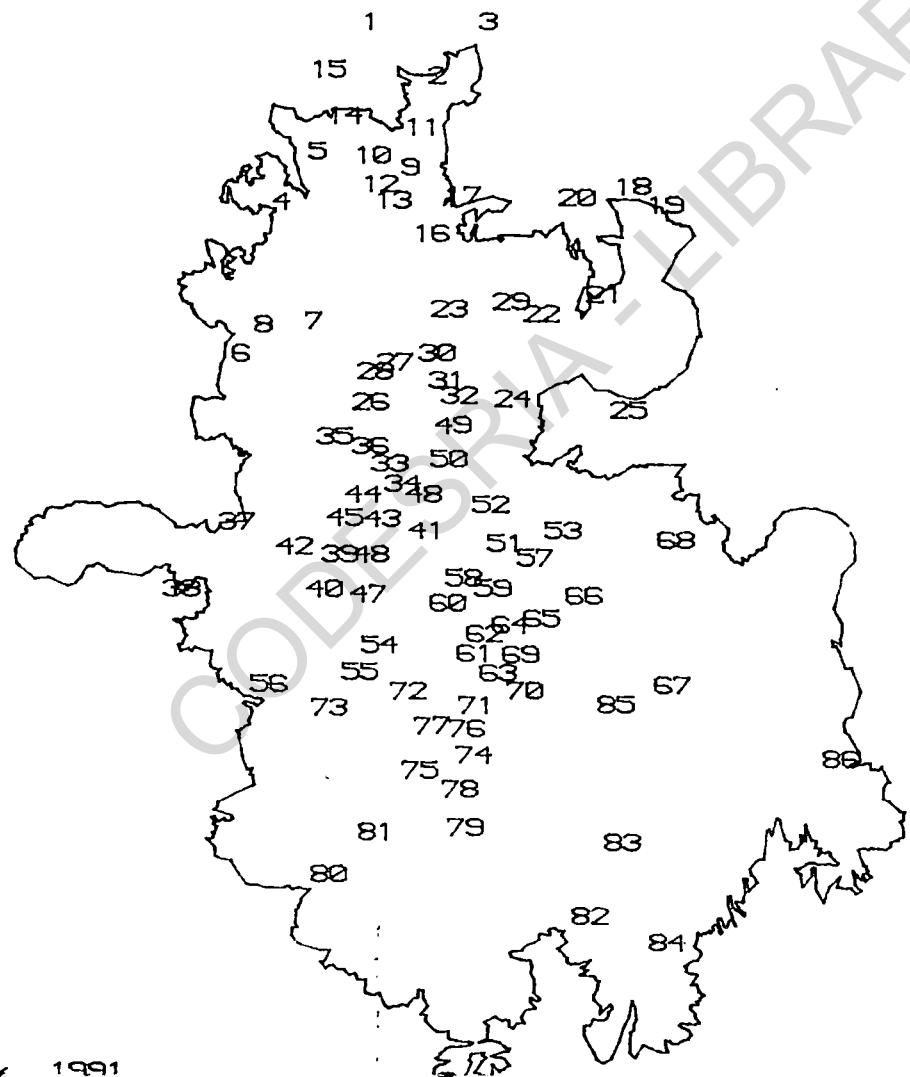
The summary of the background information about the communities studied is presented in table 2 and Figs.11-15. This table is also supplemented with maps indicating the districts, local government areas, sub-region, settlement type and the population distribution of the area. Other general information about the JPRN is contained in chapter 2. The names of the various communities, their districts, LGAs are given in table 2.

6.2.2 Districts and Local Government Areas.

According to table 2, in all 86 communities were studied. 15 of these communities were from Bassa LGA, while 21, 27, 22 and one were from Jos North and Jos South, Barkin-Ladi, Mangu and Bokkos, and Pankshin LGAs respectively. See Fig.12 which is on the map of the LGAs of the communities. Bokkos district had the highest number of communities studied. 11 communities studied were from Bokkos district. This was followed by Ropp Riyom and Buji which had seven, six and five in that order. Bachit and Du districts, each had four. While Jere, Mai-gemu, Gyel, Fan, Gashish and Mangu districts each had three. Two communities from each of the following districts were also studied: Kishikak, Miango, Amo-Katako, Gwong, Fobur, Forsun, Kuru, Vwang, and Forom. Other districts like Kwall, Federe, Ganawuri, Heipang, Panyam, Gindiri, Sha, Daffo, Chakfem, Mangun, Jipal, Kombun and Pankshin had only one. Tukun was the only community in Pankskin LGA that was studied. See Fig.13.

Fig. 11a

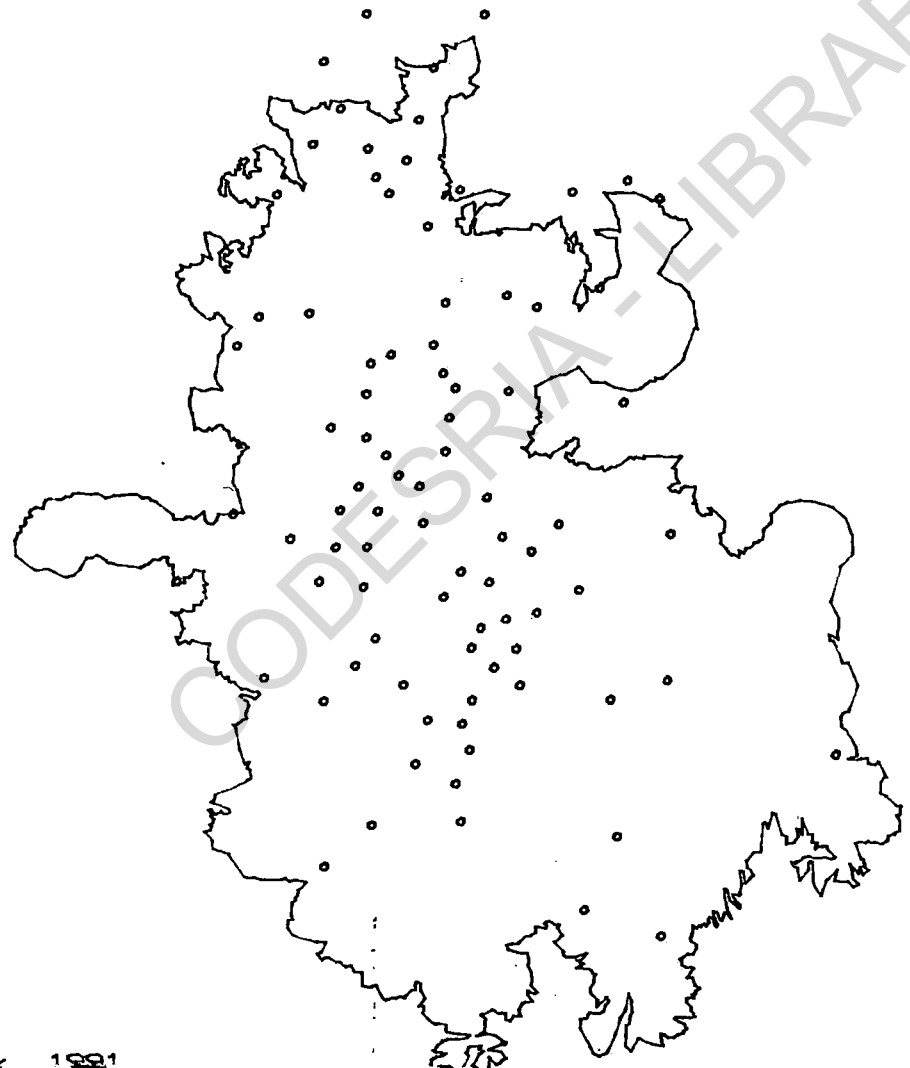
Location of the 86 Rural Communities Studied in the JPRN



20km

Fig. 11b

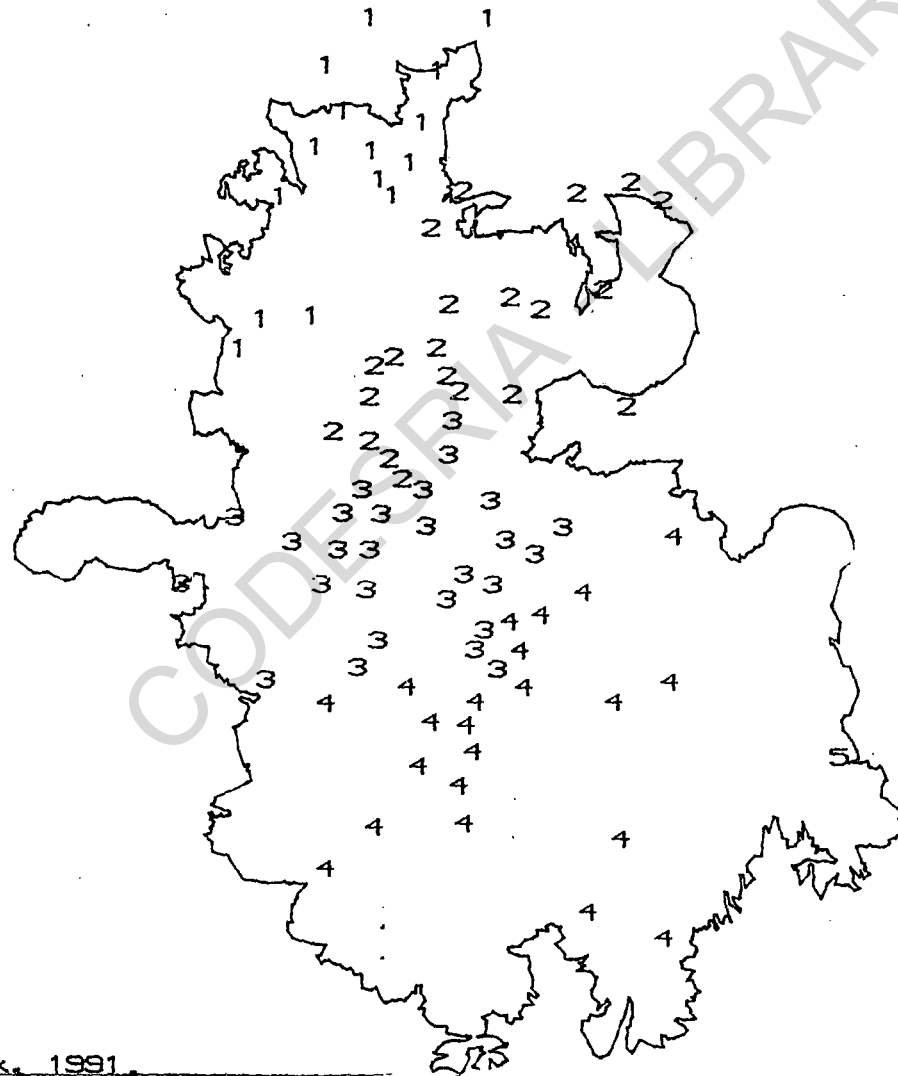
Location of the 86 Rural Communities Studied in the JPRN



20KM

Fig. 12

Local Government Area of the 86 Communities studied

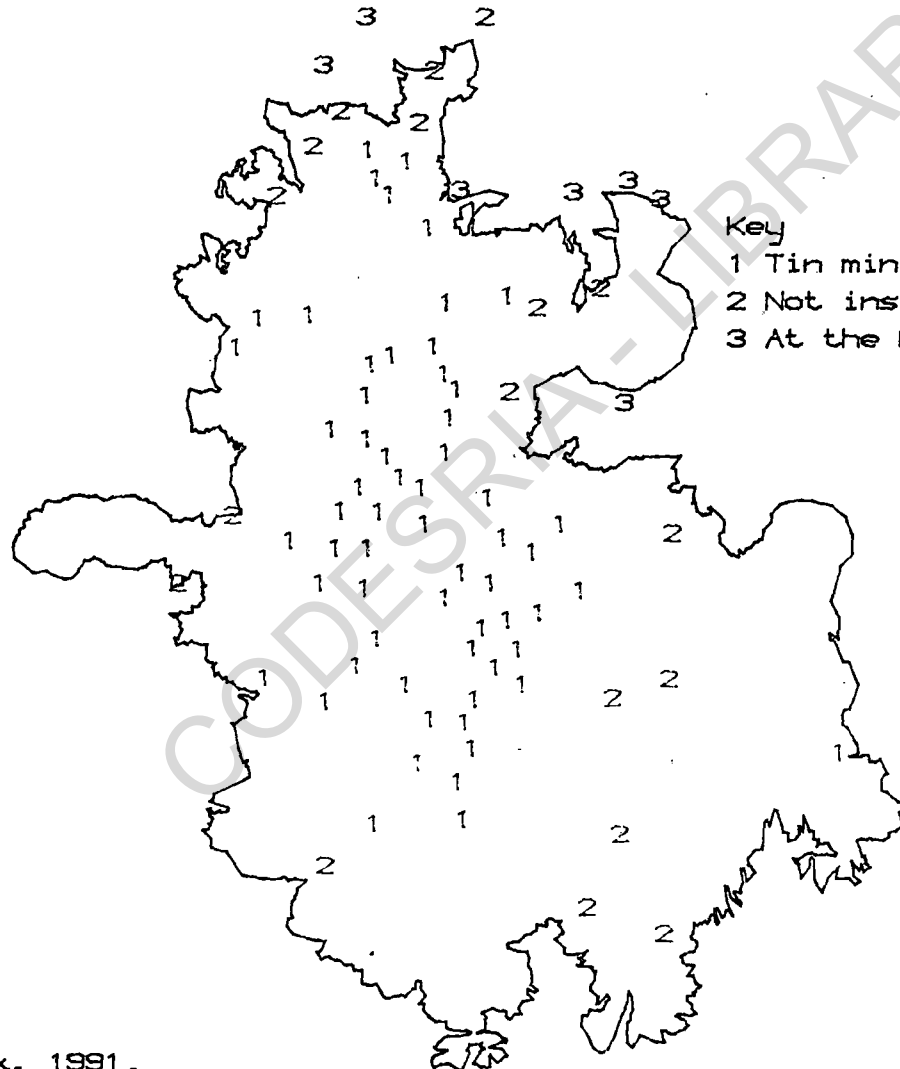


Key

- 1 Bassa
- 2 Jos North/South
- 3 Barkin Ladi
- 4 Mangu/Bokkos
- 5 Pankshin

20 Km

Sub-region of the Communities studied



- Key
- 1 Tin mining region of JPRN
 - 2 Not inside the tin mining region
 - 3 At the Fringes of the Jos Plateau

6.2.3 Sub-regions.

For the purpose of classification the study area was broadly divided into three sections: The core of the Jos Plateau which is the tin mining region, the other communities which are on the Jos Plateau but not inside the tin mining region and those communities at the fringes of the plateau. See Fig.14. From table 2 and Fig.14 it could be deduced that, about 70% of the communities studied were in the tin mining region of the Jos Plateau. On the other hand in every five of the communities studied were on the plateau but not in the tin mining region. Seven out of the 86 communities studied were located at the fringes of the plateau surface.

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6.2.4 Settlement types.

Based on the broad classification of the whole of the JPRN in 6.2.3 the various communities were further subdivided into seven categories. See Fig.15. These seven types of communities/settlements are distinguishable in the study area:

*Complete mining settlements like Rim (Makafo), Bisichi and Sabon-Gidan_kanar which had work-shops and quarters both for the officers and foremen with adjacent shanty settlement for the labourers in the mining fields. Such settlements have more than 4000 persons.

*Not a complete mining settlement like Mai-Katako and Kantoma- where there are work-shops. Most of the settlements in this categories have houses mainly for the foremen and along side a shanty settlement for the labourers. Such settlements have between 2001 to 4000 persons.

*A mining ghetto like Gurum, Sabo-Barki-Roboi, Gamajigo Yelwa-nono- which are the concentration of labourers of the tin mining fields. There are no quarters for miners in this category. Most of the communities in this categories just sprang-up rather sporadically. The streets look un-planned.

*Indigenous settlements like Du, Kunnet and Daffo where mining took place.

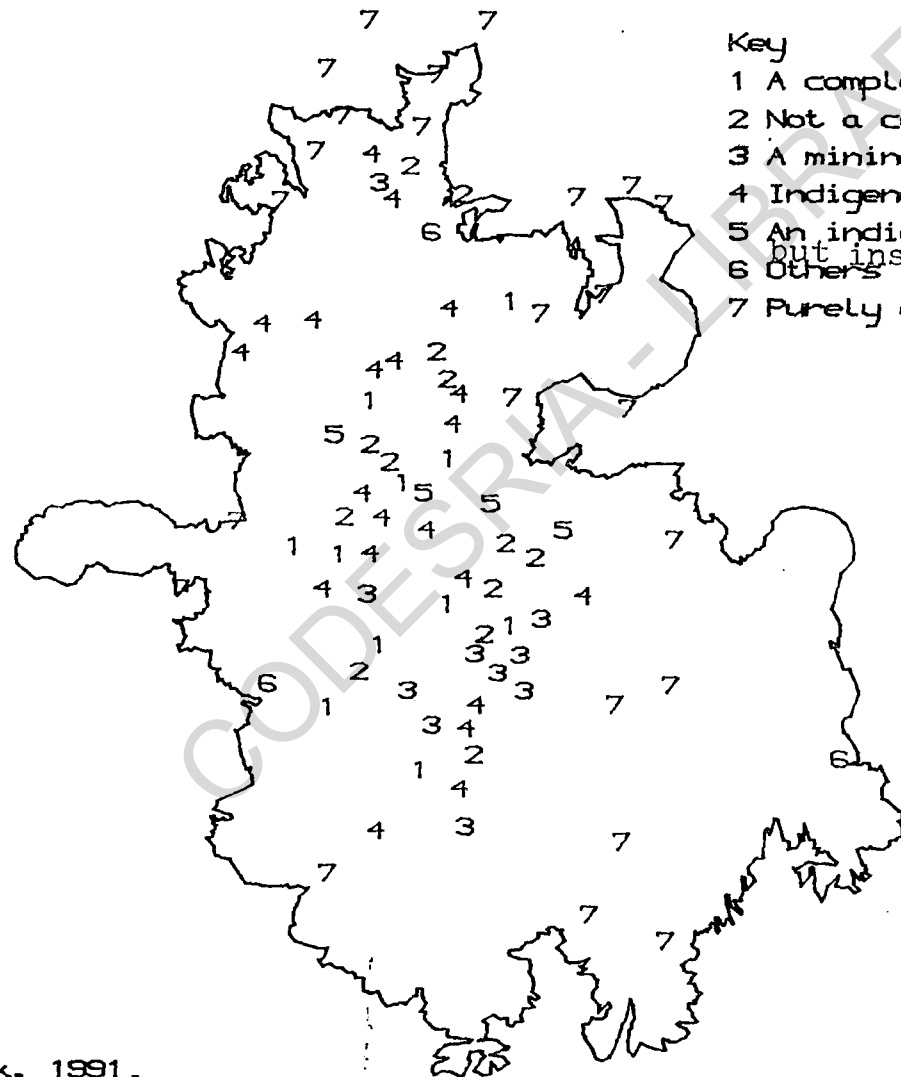
*indigenous settlements in the tin mining region where mining did not take place- like Rafan and Vom.

*Other types of communities like Naraguta-Village and Tukun which located very close to LGA head-quarters;

*The pure indigenous settlements which are mainly at the fringes of the Jos Plateau.

This classification was done primarily to compare the performance of the various categories of settlements above- to observe which set are better off in terms of the distribution of social facilities and the levels of welfare provision.

Types of Communities Settlement studied



Key

- 1 A complete mining settlement
- 2 Not a complete mining settl
- 3 A mining ghetto / Baraki
- 4 Indigenous community with mining
- 5 An indigenous comm- no mining but inside the tin mining region
- 6 Others
- 7 Purely an indigenous community

20 Km

Based on the classification of the various settlements above four out of every five of the communities studied had experienced mining activities. 24 out of the 86 communities studied were purely, indigenous settlements. 10 of the communities were mining ghettos/labour camps.

6.2.5 Population Distribution.

The population distribution of the study area is presented in table 12. About 40% of the communities studied had between 2001-4000 persons. In several of the former tin mining settlements like Nding, Yelwa-Exland, Sho-Kampani and Tiga the population at the time of the field survey for this study was less than 500 persons. More than 30% of the communities studied had a population of 4000 persons and above.

DISTRIBUTION OF SOCIAL FACILITIES AND SERVICES IN THE RURAL
AREAS OF THE JOS PLATEAU.

7.1 Introduction.

Data collected from the field on the types and nature of distribution of social facilities and services in the rural areas of the Jos Plateau are presented in this chapter. The information is presented in the form of tables. This chapter is divided into nine sections.

The first section is the introduction. The second part of this chapter is concerned with the distribution of health-care facilities and services in the rural areas of the Jos Plateau. The third part provides information on educational services provision in the rural areas of the Jos Plateau. The fourth part of this chapter deals with provision for places of worship in the rural areas. The fifth section is concerned with housing provision in the rural areas.

The sixth section presents information on potable water provision in the study area. The seventh part of this chapter deals with the types and quality of roads leading to the communities studied. Section eight is concerned with the distribution of general welfare facilities and services in the rural areas.

Section nine provides information on some of the physical resources which could be used for development purposes, and are available in the rural areas of the study areas. The types, and some of the likely constraints associated with the exploitation of these resources are summarised in table 11.

The information on health-care provision and services in the rural areas of the JPRN is presented in table 4. In the 86 communities studied one out of every five did not have a health facility of any kind. Only Gindiri had a teaching hospital-which is a branch of the Jos University Teaching Hospital. Only Gyel had a general hospital. Specialist hospitals could be found only in Panyam and Miango- and these are hospitals owned by religious organizations. Most of the reputable private hospitals are also owned by religious bodies. Only Miango has a dental clinic.

Less than 10% of the communities studied had private hospitals. Nevertheless, 60% of the communities had some sort of private clinics. Just half of the communities had dispensaries which have been provided by the Plateau State government. Four out of every five of the communities studied did not have any ante-pre-natal-clinic and/or maternity. This could be a serious problem for JPRN because of the young-age nature of the population. Pregnant women have to travel to other places to receive medical attention. Less than 10% of the communities had ambulance.

Settlements like Kwall, Naraguta-Village, Amo-Katako, Ganawuri and Dorowa-Tsofo have a health centre. It was however discovered that most of these health centres have severe shortage of drug supplies. Most of them do not have doctors. Among the communities studied, four out of every five did not have a resident medical doctor. Only four out of the 86 communities had dentists. Only eight of them had qualified pharmacists.

Key To Table 4.

SERNO	Serial Number of the Community
COMMNA	Name of the Community
HEALTHF	Presence of a health care facility in the Community.
TEACHOS	The Community has a teaching hospital
GEHOS	The Community has a general hospital
SPELHOS	Has a specialist hospital
PVHOS	Has a private hospital
PVCLC	Has a private clinic
DISPEN	The Community has a dispensary
ANTCMAT	Has an ante-natal/pre-natal clinic/maternity
HEALTHC	The Community has a health centre
DOCTORS	Presence of a medical doctor in the community
DENTIST	Presence of a dentist in the community
PHARCST	Presence of a pharmacist in the community
NURPAM	Presence of nurses, mid-wives and other para-medical personnel
LABTEST	Presence of a laboratory-technologist
AMBULNC	Any ambulance in the community
DRUGAV	Present stage of drug availability
HSOP	Operation of patients services available
HSFPLN	Availability of family planning/ante-natal care services
HSDISD	Dispensing of drugs only
HSMAT	Maternity services available
HSOTHERS	Other health services like immunization
PHYDECAY	Signs of physical decay seen on the health facility
DSPHARM	Presence of a pharmacy in the community
RECHEM	Presence of a retailer chemist in the community
QPHARMS	Presence of a qualified pharmacist in the chemist
DISURCT	Distance of the community to the nearest urban centre
DISHCGH	Distance of the community to the nearest general hospital and maternity

DISTH	Distance of the community to the nearest teaching hospital
DISDC	Distance of the community to the nearest dental clinic
MWFPI	Scores made from the total number of medical personnel work force = (DOCTORS + DENTIST + PHARCST + NURPAM + LABTEST + QPHARMS)
HCFAQI	Scores made from health-care facilities provision, and the physical quality of the medical infrastructure = (HEALTHF + TEACHOS + GEHOS + SPELHOS + PVHOS + PVCLC + DISPEN + ANTCMAT + HEALTHC + AMBULNC + PHYDECAY)
MSAIRAI	Scores made from the range of medical services available in the community = (HSOP + HSFPLN + HSDISD + HSMAT + HSOTHERS)
DRUGSAI	Scores made from the availability of drugs and, drugs services in the community = (DSPHARM + DRUGAV + RECHEM)
EOATMSI	Scores made from the ease of access to medical facilities and services in the community = (DISURCT + DISHCGH + DISTH + DISDC)
TOTALHI	Computed index of total Scores made from health-care provision = (MWFPI + HCFAQI + MSAIRAI + DRUGSAI + EOATMSI)
VALUE LABELS FOR TABLE 4	<p>HEALTH TO HEALTHC 1 'YES' 2 'NO'</p> <p>DOCTORS TO AMBULNC 1 'YES' 2 'NO'</p> <p>DRUGAV 0 'GROSSLY INADEQUATE'</p> <p>1 'INADEQUATE'</p> <p>2 'ADEQUATE'</p> <p>3 'VERY ADEQUATE'</p> <p>HSOP TO HSOTHERS 1 'YES' 2 'NO'</p> <p>PHYDECAY 0 'YES' 1 'NO'</p> <p>DSPHARM TO QPHARMS 1 'YES' 2 'NO'</p> <p>DISURCT TO DISDC 5 '0-5KM'</p> <p>4 '6-10KM'</p> <p>3 '11-15KM'</p> <p>2 '16-20KM'</p> <p>1 '20+KM'</p>

Source: Field Work, 1991.

In most of them only nurses and mid-wives and medical laboratory technologists attend to patients. Four out of every five in most of the settlements with some sort of medical facilities had nurses and other para-medical staff. In most cases too, the prescribed drugs had to be bought in the places like Jos. Most of the rural people resolve to buying drugs from petty drug sellers in the villages who might be selling expired drugs. 50 of the communities studied had some retailer chemist; and most of the people who sell these drugs are not qualified pharmacists.

About 20% of the communities were located more than 20Km away from the LGA head-quarters where most of the health facilities and services are located. 14 of these communities were located more than 20Km away from a general hospital. About 70% of the settlements were located very far away from a teaching hospital, and a dental clinic. About 50% of the health facilities looked rather old and not maintained at the time of this survey. Generally, medical/health facilities/services were inadequate in terms of quality.

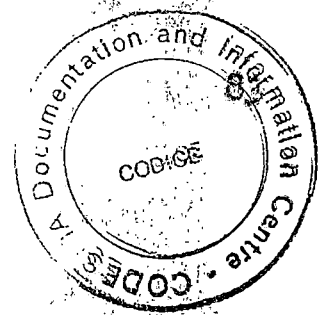
Table 5 Educational Services Provision in the rural areas of the LFRN

SERNO	COMMNA	EDUCNLS	EDUPRM	EDUSSNS	EDUADK	EDUVTC	EDUPP	EDUPSRs	DECAYED	TOTALI
1	Jengra	1	3	0	2	0	1	0	0	7
2	Fuaka-Mata	0	1	0	1	0	1	0	1	4
3	Badr-Kogi	0	1	0	1	0	0	0	1	3
4	Binchin	0	1	0	0	0	1	0	0	2
5	Kilai	0	1	0	0	0	0	0	0	1
6	Kwai	0	1	0	1	1	1	0	1	5
7	Jebu-Mango	0	1	1	0	0	0	0	0	2
8	Mango	1	7	1	1	0	2	0	1	13
9	Tiga	0	0	0	0	0	0	0	0	0
10	Sabo-Tary	0	1	0	0	0	0	0	1	2
11	Rumth-Gw	0	1	0	0	0	1	0	0	3
12	Gurui	0	1	0	0	0	0	0	1	3
13	Mista-All	0	1	0	0	0	1	0	1	5
14	Mojala	0	1	0	0	0	0	0	0	1
15	Katako-Arn	0	2	0	0	0	0	0	1	6
16	Nanguta-VI	1	1	0	0	0	1	1	1	6
17	Bobale	0	1	0	0	0	1	0	0	3
18	Mel-Gomu	0	1	0	0	0	0	0	0	1
19	Pondori-Vig	0	0	0	0	0	0	0	0	0
20	Gada	0	1	0	0	0	0	0	0	1
21	Federa	0	1	0	0	1	0	0	0	3
22	New-Fobur	0	2	0	1	0	1	0	1	5
23	Lamingo(a)	0	1	0	0	1	0	0	0	2
24	Fusa	0	1	0	0	0	0	0	0	1
25	Makaju	0	1	0	0	1	0	0	0	3
26	S/Gida-Kan	0	1	0	0	1	0	0	0	3
27	Sot	0	1	0	0	0	0	0	0	1
28	Cyrel	0	3	0	1	0	0	0	0	4
29	Delmi	0	0	0	0	0	0	0	0	2
30	Rayfield	0	1	0	0	1	0	1	0	7
31	Zawan	0	1	0	1	1	3	1	1	8
32	Du	0	3	0	0	0	1	0	0	4
33	Pasakol	0	0	0	0	0	0	0	0	0
34	Kuru-Jenta	0	1	0	0	0	0	0	0	1
35	Vom	2	3	0	1	0	2	9	1	17
36	Kuru-Babb	0	0	0	1	0	0	0	0	1
37	Ganawur	0	2	0	1	0	1	0	0	4
38	Assop-Fats	0	0	0	1	0	0	0	0	1
39	Bangan	0	2	0	1	0	1	0	0	4
40	Shanubutu	0	1	1	0	1	0	1	0	5
41	Kassa	0	1	0	0	0	0	0	0	1
42	Rim-Makoto	0	2	1	0	0	1	0	0	5
43	Joi	0	1	1	0	0	0	0	0	2
44	Worong-Bir	0	0	0	0	0	0	0	0	1
45	Worong-C	0	1	0	1	0	0	0	0	2
46	Sho	0	1	0	0	0	1	0	1	3
47	Sho-Kamoa	0	0	0	0	0	0	0	0	0
48	Heoding	1	1	0	0	1	1	0	1	5
49	Foorn	1	1	0	1	0	1	0	0	4
50	Bischi	0	1	0	0	0	0	0	0	1
51	Nafan-Drej	0	0	0	0	0	0	0	0	0
52	Rafan	0	1	0	0	0	1	0	0	2
53	Dorowa-Ts	0	1	0	0	0	0	0	0	1
54	Ginda-Akwa	0	2	0	1	0	0	0	1	4
55	Yelwa-Ekian	0	1	0	0	0	1	0	0	2
56	Kuru-Fats	0	2	1	0	0	1	0	0	4
57	Nang	0	0	0	0	0	0	0	0	0
58	Lobring-Ro	0	1	0	0	0	1	0	1	3
59	Dorowa-Ba	0	2	0	1	0	0	0	0	3
60	Gana-Ropp	0	1	0	1	0	0	0	0	2
61	Gana-Daji	0	1	1	1	0	0	0	1	4
62	Buka-Bakw	0	0	0	0	0	0	0	0	0
63	Manku-Pota	0	1	0	0	0	0	0	0	1
64	Kantoma	0	1	0	0	0	0	0	0	1
65	Manumol	0	0	0	1	0	0	0	0	1
66	Mangu-Hal	0	2	0	1	0	1	0	1	5
67	Panyam	2	2	0	1	0	2	0	1	8
68	Gindri	2	3	1	1	1	1	1	0	10
69	S-Q-Kantar	0	1	0	0	0	0	0	0	1
70	Gamaigo	0	1	0	0	0	0	0	1	3
71	Kuta	0	1	0	0	0	0	0	0	1
72	Melyanga	0	0	0	0	0	0	0	0	0
73	Tari	0	1	0	0	0	0	0	0	1
74	Makabako	0	1	0	0	0	1	0	0	2
75	Dan-Bukuru	0	1	0	0	0	0	0	0	1
76	Kunnet	0	1	0	0	1	1	0	1	4
77	Bulura-Kari	0	1	0	0	0	1	0	0	2
78	Mbar	0	1	0	0	0	1	0	0	2
79	Yelwa-Non	0	1	0	0	0	0	0	0	1
80	Sha	0	1	0	0	0	1	0	0	2
81	Dafa	0	2	0	1	1	1	0	0	5
82	Chaktem	0	1	0	0	0	1	0	0	2
83	Mangun	0	1	0	0	1	0	1	0	4
84	Jopal	0	1	0	0	0	1	0	0	2
85	Kombun	0	1	0	1	0	1	0	0	3
86	Tukun	0	1	0	0	0	1	0	0	3

KEY

- SERNO Serial number of the Community
- COMMNA Name of the Community/Settlement
- EDUCNLS Number of nursery schools in the Community
- EDUPRM Number of primary schools in the Community
- EDUSSNS Number of special/nomadic schools in the Community
- EDUADK Number of adult-literacy classes/ koranic/ arabic schools
- EDUVTC Number of vocational schools, vocational training centres
- EDUPP Number of post-primary institutions in the Community
- EDUPSRs Number of tertiary research institutions in the Community
- DECAYED Signs of physical decay seen on the educational institutions?
0 'YES' 1 'NO'
- TOTALI Index of total scores made from educational services provision
= (EDUCNLS + EDUPRM + EDUSSNS + EDUADK + EDUVTC + EDUPP + EDUPSRs + DECAYED)

Source: Field Work, 1991.



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7.3 Educational Services and Infrastructures.

Information on the types, and distribution of educational facilities in the rural areas of the JPRN is presented in table 5. According to the table only major settlements like Jengre, Miango, Naraguta-Village, Vom and Panyam had a nursery school. About 90% of the communities studied did not have any primary school. Most of the nursery schools were owned by private bodies. That of Vom and Gindiri are staff schools of the tertiary institutions in the area.

A majority of the communities however, had primary schools. 11 of the communities did not have any primary school. Only 58 of the settlements had only a primary school in spite of the large number of people living in such areas. Most of the primary schools looked dilapidated. Table 11 shows that in some communities like Mai-gemu school children were seen taught under trees. Most of the classes in the primary schools of Werreng, Manjo-pota and Kissi lack chairs for the pupils.

Less than 20% of the communities studied had more than one primary school. Two percent of the primary schools were owned by religious bodies. Such primary schools looked better than most of the primary schools operated by the local education authority. 70% of the primary schools in the area of study had some signs of physical decay. Pupils in the primary school in Manjo-pota were taught in an-almost-collapsing building.

Some communities like Gana-Daji have other types of primary schools like the nomadic fulani school. In Gindiri there is a vocational school for blind children. Adult literacy classes organized by religious bodies could be found in most of the communities. An adult literacy class by MAMSER was found at Majeja. Koranic schools are mostly found in settlements like Delimi, Sabon-Gidan-Kanar and Gana-Daji. Islamic adult literacy classes for women were also found to exist at Daffo and Delimi.

About 50% of the communities did not have a post-primary school. In settlements like Werreng-Camp, Werreng-Birom, Delimi and Gindin-Akwati students had to walk a distance of seven to 10 Km to their schools. Most of the post-primary schools appeared devastated. Only 42 out of the 86 communities studied had post-primary schools.

Among the settlements studied, Vom had the highest concentration of tertiary institutions. Gindiri and Vom had varieties of educational institutions of nursery, primary, post-primary and tertiary levels of education.

7.4 Distribution of places of worship.

Table 6 contains the relevant information on the distribution of places of worship in the rural areas of the JPRN. The table shows that 27% of the communities studied did not have any mosque. 62 of the communities had one or even more mosques.

About seven percent of the communities studied did not have any church. 67% of the communities had two to four churches. Big churches with modern architectural designs are found in Rim, Kassa, Mangun and Kombun. On the average there is one mosque to every four churches in the rural areas of the JPRN.

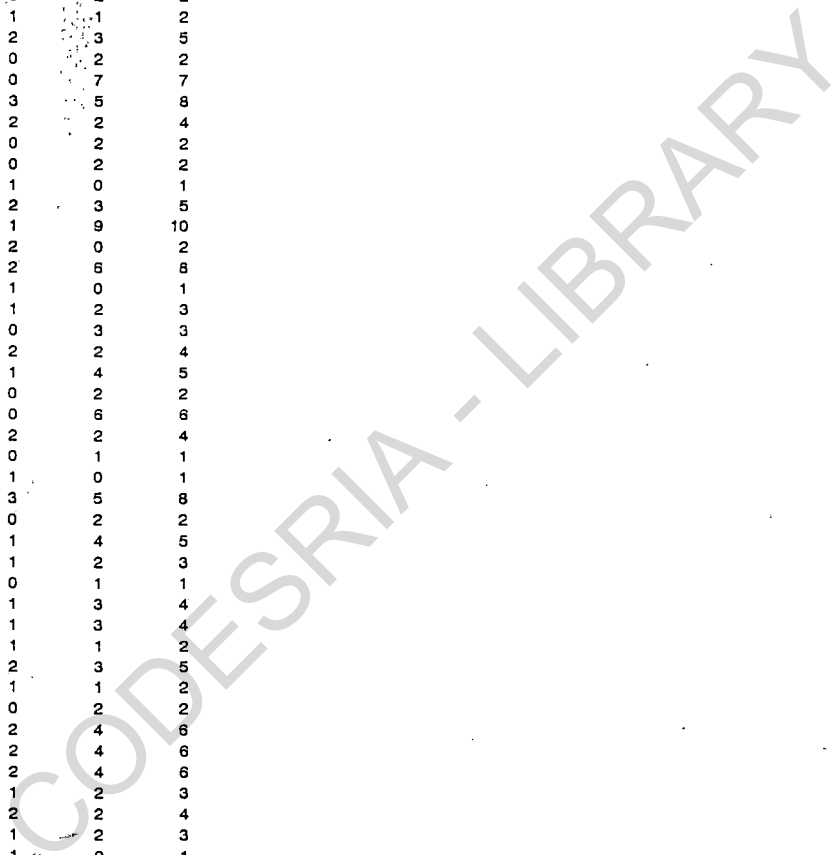
Table 8 Distribution of places of worship in the rural areas of the JPRN.

SERNO	COMMNA	NOMOS	NOCHUR	TOTALPW
1	Jengre	1	8	9
2	Fuska-Mata	4	4	8
3	Bakin-Kogi	1	2	3
4	Binchin	1	2	3
5	Klissi	0	2	2
6	Kwall	2	3	5
7	Jebu-Miango	1	3	4
8	Miango	3	7	10
9	Tiga	0	0	0
10	Sabo-Tariya	1	3	4
11	Rumfan-Gwamna	1	2	3
12	Gurum	4	2	6
13	Mista-Ali	2	5	7
14	Majeja	0	3	3
15	Katako-Amo	0	3	3
16	Naraguta-Vlg	4	3	7
17	Babale	2	2	4
18	Mai-Gemu	1	3	4
19	Rondon-Vlg	0	1	1
20	Gada	2	2	4
21	Federe	2	4	6
22	New-Fobur	2	5	7
23	Lamingo(a)Z	2	4	6
24	Fusa	0	2	2
25	Maijuju	1	1	2
26	S/Gida-Kanar	2	3	5
27	Sot	0	2	2
28	Gyel	0	7	7
29	Delimi	3	5	8
30	Rayfield	2	2	4
31	Zawan	0	2	2
32	Du	0	2	2
33	Pasakai	1	0	1
34	Kuru-Jenta	2	3	5
35	Vom	1	9	10
36	Kuru-Babba	2	0	2
37	Ganawuri	2	6	8
38	Assop-Falls	1	0	1
39	Bangan	1	2	3
40	Sharubutu	0	3	3
41	Kassa	2	2	4
42	Rim-Makafo	1	4	5
43	Jol	0	2	2
44	Werreng-Birom	0	6	6
45	Werreng-Camp	2	2	4
46	Sho	0	1	1
47	Sho-Kampani	1	0	1
48	Heipang	3	5	8
49	Forom	0	2	2
50	Bisichi	1	4	5
51	Nafan-Dreji	1	2	3
52	Rafan	0	1	1
53	Dorowa-Tsofuwa	1	3	4
54	Gindin-Akwati	1	3	4
55	Yelwa-Exland	1	1	2
56	Kurra-Falls	2	3	5
57	Nding	1	1	2
58	Lobiring-Ropp	0	2	2
59	Dorowa-Babuje	2	4	6
60	Gana-Ropp	2	4	6
61	Gana-Daji	2	4	6
62	Buka-Bakwai	1	2	3
63	Manjo-Pota	2	2	4
64	Kantoma	1	2	3
65	Maitumbi	1	0	1
66	Mangu-Halle	2	3	5
67	Panyam	3	3	6
68	Gindlri	2	3	5
69	S-G-Kanar	2	4	6
70	Gamajigo	1	1	2
71	Kuba	3	3	6
72	Maiyanga	1	1	2
73	Tenti	2	5	7
74	Maikatako	2	5	7
75	Dan-Bukuru	0	2	2
76	Kunnet	0	3	3
77	Butura-Kampani	1	3	4
78	Mbar	1	3	4
79	Yelwa-Nono	1	4	5
80	Sha	0	2	2
81	Daffo	2	5	7
82	Chakfem	0	2	2
83	Mangun	0	2	2
84	Jipal	0	3	3
85	Kombun	1	2	3
86	Tukun	0	3	3

KEY

- 1 SERNO Serial Number of the Community
- 2 COMMNA Name of the Community
- 3 NOMOSQ Number of Mosques
- 4 NOCHUR Number of Churches
- 5 TOTALPW Total scores made from the provision of places of worship index = (NOMOSQ + NOCHURCH)

Source: Field Work, 1991.



7.5 Types, and nature of houses in the rural areas.

Information on the types, and physical quality of houses in the rural areas of the Jos Plateau is presented in table 7. According to the table, in 50% of the communities studied the most predominant types of houses are the ones built with mud blocks but roofed with zinc. This was followed by the traditional mud-thatch houses. It was only in about 30% of the communities that the traditional type of the mud-thatch houses were more predominant. Such communities include Yelwa-nono and Nding. Communities with predominant fulani ruga camps could be found at Tiga, and some other areas between Kantoma and Maitumbi.

Some of the houses built by mining companies for their workers are still habitable in Mai-Katako, Kantoma, Rayfield, Bisichi, Pasakai, Gana-Ropp, Buka-Bakwai and Dorowa-Babuje. Some of these buildings are still in good conditions. Some of them, like the ones in Dorowa-Babuje, Dan-Bukuru and Rayfield still have electricity supply. However, a majority of such houses were no longer habitable.

Some of the settlements like Dorowa-Tsofo, Vom and Miango have housing facilities for some of the government and church workers. These houses look very good. In most of the mining ghettos and/or labour camps like Gurum, Sabo-Barki-Roboi however a number of the houses look rather un-maintained.

Houses in most of the indigenous areas like Sabo-Tariya, Mbar, Maiyanga, Kunnet and New-Fobur though made of mud-thatch appeared neater, than in the labour camps.

Table 7 Types and physical quality of houses in the rural areas of the JPRN.

SERNO	COMMNA	HOUSEC	PHYQLH	TOTALCHI
1	Jengre	3	2	5
2	Fuska-Mata	2	1	3
3	Bakin-Kogi	2	2	4
4	Binchin	3	1	4
5	Kissi	2	1	3
6	Kwall	3	2	5
7	Jebu-Miango	3	1	4
8	Miango	3	2	5
9	Tiga	1	0	1
10	Sabo-Tariya	2	2	4
11	Rumfan-Gwamna	2	1	3
12	Gurum	3	1	4
13	Mista-Ali	3	2	5
14	Majeja	2	2	4
15	Katako-Amo	3	2	5
16	Naraguta-Vlg	4	2	6
17	Babale	3	1	4
18	Mai-Gemu	2	2	4
19	Rondon-Vlg	2	2	4
20	Gada	2	1	3
21	Federe	2	1	3
22	New-Fobur	3	2	5
23	Lamingo(a)Z	4	3	7
24	Fusa	2	1	3
25	Maijuju	3	1	4
26	S/Gida-Kanar	3	1	4
27	Sot	3	1	4
28	Gyel	4	2	6
29	Delimi	3	1	4
30	Rayfield	4	2	6
31	Zawan	4	3	7
32	Du	3	2	5
33	Pasakai	3	0	3
34	Kuru-Jenta	3	1	4
35	Vom	4	2	6
36	Kuru-Babba	2	0	2
37	Ganawuri	3	1	4
38	Assop-Falls	3	1	4
39	Bangan	3	1	4
40	Sharubutu	3	1	4
41	Kassa	4	2	6
42	Rim-Makafo	3	0	3
43	Jol	3	2	5
44	Werreng-Birom	2	2	4
45	Werreng-Camp	2	0	2
46	Sho	2	2	4
47	Sho-Kampani	1	0	1
48	Heipang	3	2	5
49	Forom	4	2	6
50	Bisichi	3	1	4
51	Nafan-Dreji	3	2	5
52	Rafan	3	2	5
53	Dorowa-Tsofuwa	3	1	4
54	Gindin-Akwati	3	1	4
55	Yelwa-Exland	2	1	3
56	Kurra-Falls	4	2	6
57	Nding	2	0	2
58	Lobiring-Ropp	4	2	6
59	Dorowa-Babuje	3	1	4
60	Gana-Ropp	4	2	6
61	Gana-Daji	2	0	2
62	Buka-Bakwai	3	1	4
63	Manjo-Pota	3	0	3
64	Kantoma	3	0	3
65	Maltumbi	1	0	1
66	Mangu-Halle	3	2	5
67	Panyam	4	2	6
68	Gindiri	4	2	6
69	S-G-Kanar	2	0	2
70	Gamajigo	2	0	2
71	Kuba	3	2	5
72	Maiyanga	2	2	4
73	Tenti	3	2	5
74	Maikatako	3	2	5
75	Dan-Bukuru	3	2	5
76	Kunnet	3	2	5
77	Butura-Kampani	3	1	4
78	Mbar	2	2	4
79	Yelwa-Nono	1	0	1
80	Sha	2	2	4
81	Daffo	3	1	4
82	Chakfem	2	2	4
83	Mangun	3	2	5
84	Jipal	2	2	4
85	Kombun	3	1	4
86	Tukun	4	2	6

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KEY
 5 SERNO Serial number of the Community
 4 COMMNA Name of the Community/Settlement
 4 HOUSEC Predominant types of houses in the Community
 1 Mostly Fulani ruga camps followed by mud-thatch houses
 2 Mostly mud-thatch houses followed by mud-zinc roofing houses
 3 Mostly mud-zinc houses followed by mud-thatch then concrete buildings
 4 Mostly concrete buildings followed by mud-zinc then mud-thatch houses
 6 Concrete structures only
 PHYQLH Physical quality of most houses in the Community
 1 Very repulsive
 2 Repulsive
 3 Appealing
 4 Very appealing
 TOTALCHI Total scores from housing provision index
 = (HOUSECON + PHYQLH)

Source: Field Work, 1991.

7.6 Mode of Drinking Water Supply.

Table 8 summarises information on potable water supply in the rural areas of the JPRN. According to the table about 90% of the communities studied depend on rivers, springs and hand-dug wells for their drinking water. Only large settlements like Vom and Naraguta-Village have treated water supply.

In Gindin-Akwati remains of the pipes provided by the mining companies for water supply were seen. The water supply to this settlement was un-treated. A majority of the communities with DFRRI wells were left uncovered. Most of the bore-holes constructed by DFRRI had gone into dis-use at the time of this field work. DFRRI boreholes that had gone into dis-use at the time of this survey were seen in Mista-Ali, Federe, Maigemu and Fusa. DFRRI were still constructing some wells for Nafan-Dreji and Sabo-Barki-Roboi at the time of this field work. DFRRI was also constructing a borehole at New-Fobur during the field work.

7.7 Types and quality of rural roads.

The types and the physical quality of roads leading to the communities studied at the time of field work is presented in table 9. The table shows that about 40% of the communities had laterite earth-surface roads. While communities like Tiga, Rondon-Village, Gamajigo and Nding had motorable tracks that could be used only during the dry seasons.

Less than 30% of the communities were linked by all-weather tarred roads. Large settlements like Daffo and Federe are inaccessible during the rains. In fact, the situation is even worse for communities like Barkin-Sho and Mafara (Bassa LGA). The researcher could not go to Mafara because there was no road. The Land-Rover used for field work got stuck on the way to Barkin-Sho.

Table 3 Drinking water provision in the rural areas of the JPRN.

SERNO	COMMNA	WATER	PUBWELL	TOTALPWPI
1	Jengre	2	1	3
2	Fuska-Mata	1	1	2
3	Bakin-Kogi	1	0	1
4	Binchin	2	1	3
5	Kissi	1	0	1
6	Kwall	3	1	4
7	Jebu-Miango	1	0	1
8	Miango	2	0	2
9	Tiga	1	0	1
10	Sabo-Tariya	2	1	3
11	Rumfan-Gwamna	1	1	2
12	Gurum	2	1	3
13	Mista-Ali	2	1	3
14	Majeja	1	0	1
15	Katako-Amo	2	0	2
16	Naraguta-Vlg	3	1	4
17	Babale	2	1	3
18	Mai-Gemu	2	1	3
19	Rondon-Vlg	1	0	1
20	Gada	1	0	1
21	Federe	2	1	3
22	New-Fobur	2	1	3
23	Lamingo(a)Z	3	1	4
24	Fusa	1	0	1
25	Maijuju	1	0	1
26	S/Gida-Kanar	2	0	2
27	Sot	2	1	3
28	Gyel	3	1	4
29	Delimi	1	0	1
30	Rayfield	2	1	3
31	Zawan	2	0	2
32	Du	2	1	3
33	Pasakai	1	0	1
34	Kuru-Jenta	2	1	3
35	Vom	3	1	4
36	Kuru-Babba	1	0	1
37	Ganawuri	2	1	3
38	Assop-Falls	1	0	1
39	Bangan	2	1	3
40	Sharubutu	2	1	3
41	Kassa	1	0	1
42	Rim-Makafo	2	1	3
43	Jol	1	0	1
44	Werreng-Birom	1	1	2
45	Werreng-Camp	1	0	1
46	Sho	2	1	3
47	Sho-Kampani	3	1	4
48	Heipang	2	1	3
49	Forom	2	1	3
50	Bisichi	2	0	2
51	Nafan-Dreji	2	0	2
52	Rafan	1	0	1
53	Dorowa-Tsofuwa	1	0	1
54	Gindin-Akwati	2	1	3
55	Yelwa-Exland	1	0	1
56	Kurra-Falls	3	1	4
57	Nding	1	0	1
58	Lobiring-Ropp	1	1	2
59	Dorowa-Babuje	2	0	2
60	Gana-Ropp	2	0	2
61	Gana-Daji	2	1	3
62	Buka-Bakwai	1	0	1
63	Manjo-Pota	1	0	1
64	Kantoma	1	1	2
65	Maitumbi	1	0	1
66	Mangu-Halle	1	0	1
67	Panyam	2	0	2
68	Gindiri	3	1	4
69	S-G-Kanar	1	0	1
70	Gamajigo	1	1	2
71	Kuba	1	1	2
72	Maiyanga	1	0	1
73	Tenti	2	1	3
74	Maikatako	2	0	2
75	Dan-Bukuru	1	1	2
76	Kunnet	1	0	1
77	Butura-Kampani	1	0	1
78	Mbar	1	0	1
79	Yelwa-Nono	1	0	1
80	Sha	1	1	2
81	Daffo	1	1	2
82	Chakfem	1	0	1
83	Mangun	2	0	2
84	Jipai	1	0	1
85	Kombun	2	1	3
86	Tukun	2	0	2

KEY

2 SERNO Serial number of the Community

1 COMMNA Name of the Community

2 WATER Major mode of drinking water supply in the Community

1 Wells, springs, rivers- no pipe-borne water supply

2 Mainly from wells, springs and rivers than from bore-hole/pipe-borne

3 Mainly from pipe-borne water supply than wells and rivers

1 PUBWELL Availability of public wells/bore-holes in the Community

1 'YES' 0 'NO'

1 TOTALPW Total scores made from portable water provision index.

= (WATER + PUBWELL)

Source: Field Work, 1991.

Table 9 Types and quality of roads leading to rural areas in the JPRN.

SERNO	COMMNA	ROAD	QROAD	TOTALRPI
1	Jengre	3	3	6
2	Fuska-Mata	2	3	5
3	Bakin-Kogi	1	2	3
4	Binchin	2	2	4
5	Kissi	1	2	3
6	Kwall	2	2	4
7	Jebu-Miango	3	1	4
8	Miango	3	2	5
9	Tiga	1	0	1
10	Sabo-Tariya	1	2	3
11	Rumfan-Gwamna	3	3	6
12	Gurum	2	2	4
13	Mista-Ali	3	3	6
14	Majeja	1	0	1
15	Katako-Amo	2	2	4
16	Naraguta-Vlg	3	2	5
17	Babale	3	3	6
18	Mai-Gemu	1	2	3
19	Rondon-Vlg	1	0	1
20	Gada	2	2	4
21	Federe	2	0	2
22	New-Fobur	2	2	4
23	Lamingo(a)Z	1	3	4
24	Fusa	2	3	5
25	Maljuju	2	1	3
26	S/Gida-Kanar	2	2	4
27	Sot	1	2	3
28	Gyel	3	3	6
29	Delimi	2	2	4
30	Rayfield	3	3	6
31	Zawan	3	2	5
32	Du	2	3	5
33	Pasakai	2	3	5
34	Kuru-Jenta	2	2	4
35	Vom	3	1	4
36	Kuru-Babba	3	3	6
37	Ganawuri	2	0	2
38	Assop-Falls	3	3	6
39	Bangan	2	2	4
40	Sharubutu	1	0	1
41	Kassa	3	3	6
42	Rim-Makafo	2	2	4
43	Jol	1	1	2
44	Werreng-Birom	1	1	2
45	Werreng-Camp	1	1	2
46	Sho	1	1	2
47	Sho-Kampani	1	0	1
48	Heipang	3	3	6
49	Forom	3	2	5
50	Bisichi	2	0	2
51	Nafan-Dreji	1	1	2
52	Rafan	2	2	4
53	Dorowa-Tsofuwa	1	2	3
54	Gindin-Akwati	2	2	4
55	Yelwa-Exland	1	1	2
56	Kurra-Falls	3	3	6
57	Nding	1	0	1
58	Lobiring-Ropp	2	3	5
59	Dorowa-Babuje	3	3	6
60	Gana-Ropp	2	1	3
61	Gana-Daji	2	1	3
62	Buka-Bakwai	1	0	1
63	Manjo-Pota	2	1	3
64	Kantoma	2	2	4
65	Maitumbi	1	0	1
66	Mangu-Haile	3	3	6
67	Panyam	3	3	6
68	Gindiri	3	2	5
69	S-G-Kanar	1	0	1
70	Gamajigo	1	0	1
71	Kuba	3	1	4
72	Maiyanga	2	1	3
73	Tenti	2	1	3
74	Maikatako	3	1	4
75	Dan-Bukuru	2	2	4
76	Kunnet	3	0	3
77	Butura-Kampani	2	1	3
78	Mbar	2	2	4
79	Yelwa-Nono	1	0	1
80	Sha	1	1	2
81	Daffo	2	1	3
82	Chaktem	1	1	2
83	Mangun	2	2	4
84	Jipal	1	1	2
85	Kombun	2	1	3
86	Tukun	1	1	2

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KEY

SERNO Serial number of the Community

COMMNA Name of the Community

ROAD Type of major road leading to the Community/Settlement

3 A tarred road

2 An earth-surface road

1 A motorable track

QROAD Physical quality of the road leading to the Community

0 Very bad

1 Bad

2 Good

3 Very good

TOTALRR Total scores made from rural roads provision index

= (ROAD + QROAD)

Source: Field Work, 1991.

About 45% of the communities had heavily eroded roads at the time of this study. The roads once provided by the mining companies to settlements like Sabon-Gida-Kanar was being re-constructed by DFRRI. The Plateau Agricultural Development project has constructed an an earth surface road from Fusa to Zarazon Village and from Dan-Bukuru to Mai-Katako.

7.8 General welfare facilities and services.

The nature of the distribution of general welfare facilities and services in the rural areas of the JPRN is shown in table 10. About 90% of the communities had foot-ball fields. Most of these foot-ball fields belong to the educational institutions and the churches in the area. MAMSER provided television viewing centres at Butura-Kampani and New-Fobur.

There is electricity supply in 55 out of the 86 communities studied. NESCO supplies most of the electricity in the tin mining region. Constant disruption of electricity, according to table 11, is however experienced in some of the settlements. Smaller communities like Pasakai and Dan-Bukuru have electricity supply from NESCO. It was however noted that the electricity supply to Pasakai and Tenti have been cut at the time of field work. It has not been possible to restore electricity supply to Tenti because of lack of co-operation among the residents. Electricity supply to Dan-Bukuru which is a very small community is attributed to a strong community development association in the area, however most of the wooden poles bearing the cables are not strong enough.

Less than 10% of the communities enjoyed banking facilities and services. Only eight out of the 86 communities had a post-office/postal agency. Most of the communities rely on the messengers of nearby educational institutions to help them buy stamps and post letters. About 80% of the communities however had local-beer selling houses. This is because local beer brewing is a lucrative business in the study area.

Table 10 General welfare facilities and services in the rural areas of JPN

SERNO	COMANA	SOSPOL	SOSCOUR	SOSSES	SOSBANK	SOSELEC	SOSPOA	SOSGCM	SOSTEL	SOSOPD	SOSBAR	SOSRECA	SOSHOT	SOSGRW	SOSND	SOSMECH	SOSOTHE	SOSOTR2	FOOTBF	TOTALGFS
1	Jengra	1	1	0	1	1	1	0	0	0	1	1	1	1	1	0	0	1	1	12
2	Fuska-Mata	1	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	5
3	Bahin-Kogi	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	1	4
4	Binchn	1	1	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	1	7
5	Kisa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
6	Kwat	1	1	0	0	1	0	0	0	0	1	1	0	1	1	0	0	0	1	9
7	Jebu-Mango	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	1	5
8	Mango	1	1	1	0	1	1	1	0	0	1	1	0	0	1	0	0	0	1	12
9	Tiga	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
10	Sabo-Tanya	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
11	Purnan-Owama	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	6
12	Gurun	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	1	1	8
13	Mesta-Ali	1	0	1	0	1	0	0	0	0	1	1	0	1	0	1	0	1	1	10
14	Majeja	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	3
15	Katako-Amo	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	5
16	Naraguta-Vig	1	0	0	0	1	0	1	0	1	1	1	1	1	1	1	0	0	1	13
17	Babae	1	0	1	0	1	0	0	0	0	1	1	0	1	0	0	0	1	1	8
18	Mai-Genu	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	3
19	Pondon-Vig	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
20	Gada	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	4
21	Federe	1	1	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	10
22	Naw-Fobru	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	1	8
23	Lamngo(a)Z	0	0	0	0	1	0	1	0	1	1	1	0	1	1	0	0	0	1	10
24	Fusa	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
25	Maitu	0	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	7
26	S/Gida-Kanar	1	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	0	1	7
27	Sot	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	8
28	Gyal	0	0	0	0	1	0	1	0	0	1	1	0	1	1	0	0	0	1	9
29	Delma	1	0	1	0	1	0	1	0	0	1	1	0	1	0	0	0	0	1	8
30	Rayloid	1	0	1	0	1	0	1	1	0	1	1	0	1	1	0	0	0	1	11
31	Zawan	0	0	1	0	1	0	1	0	1	1	0	0	1	1	0	0	0	1	10
32	Ou	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	4
33	Passaka	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	1	3
34	Kurik-Jetta	1	0	1	0	1	0	1	0	0	1	1	0	1	1	0	0	0	1	9
35	Vom	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1	1	14
36	Kuru-Babba	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	0	3
37	Ganawuri	1	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	1	7
38	Assop-Falls	1	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	1	1	7
39	Bangan	1	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	1	7
40	Shanuburu	1	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	5
41	Kassa	1	0	1	0	0	0	1	0	0	1	1	0	1	0	1	0	1	1	9
42	Rin-Makalo	1	0	1	0	1	0	1	0	0	1	1	0	1	0	0	0	0	1	8
43	Joi	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	6
44	Wereng-Brom	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	4
45	Wereng-Camp	1	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	7
46	Sho	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	2
47	Sho-Kampari	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
48	Hepang	1	0	1	0	0	0	1	0	0	1	1	1	1	0	0	0	0	1	9
49	Furum	1	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	1	7
50	Bisichi	1	0	1	0	1	0	1	0	0	1	1	1	1	1	0	0	0	1	10
51	Nalan-Drej	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	6
52	Ralan	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	4
53	Dorowa-Tsoluwa	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	1	6
54	Gindin-Akwat	1	0	1	0	1	0	1	0	0	1	1	0	1	1	0	0	0	1	10
55	Yewa-Exland	0	0	1	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	7
56	Kura-Fats	1	1	1	0	1	1	1	1	0	1	0	1	0	0	0	1	1	1	13
57	Ndirig	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	4
58	Lobring-Popp	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	7
59	Dorowa-Babue	1	0	1	0	1	0	1	0	0	1	1	0	1	1	0	0	1	1	11
60	Gana-Popp	1	0	1	0	1	0	1	0	0	1	1	0	1	1	0	0	1	1	10
61	Gana-Oaji	1	0	1	0	1	0	1	0	0	1	1	0	1	1	0	0	1	1	10
62	Buka-Bakwa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
63	Maryo-Pota	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
64	Kantama	1	0	1	0	1	0	1	0	0	1	1	0	1	0	0	0	0	1	9
65	Maitumbi	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
66	Mangu-Halle	1	0	1	0	1	0	1	0	0	1	1	0	1	1	0	0	0	1	9
67	Panyam	1	0	1	1	1	1	1	1	0	1	1	1	1	1	0	0	1	1	13
68	Gindri	1	1	1	1	1	1	1	0	0	1	1	1	1	1	0	0	1	1	14
69	S-G-Kanar	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	4
70	Gamayo	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	4
71	Kuba	0	1	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	1	7
72	Mayanga	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	5
73	Terr	1	0	1	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	9
74	Makatako	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	1	1	6
75	Dani-Bukuru	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	0	1	5
76	Kurmat	0	0	1	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1	8
77	Butura-Kampari	0	0	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	6
78	Mbar	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	5
79	Yewa-Nono	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
80	Sha	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	5
81	Dallo	1	1	1	0	0	1	1	0	0	1	1	0	1	0	0	0	1	1	10
82	Chakem	0	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	5
83	Mangun	1	1	1	0	0	0	1	0	0	1	1	0	1	0	0	0	1	1	9
84	Jipal	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	4
85	Kombun	1	0	1	0	0	0	1	0	0	1	1	0	1	0	0	0	0	1	7
86	Tukun	0	0	1	0	1	0	1	0	0	1	0	1	1	0	0	0	0	1	7

Key to Table 10

SERNO	Serial number of the Community
COMMNA	Name of the Community
SOSPOL	Has a police station
SOSCOURT	Has a court
SOSSMS	Has a retailer\ super-market
SOSBANK	Has a bank
SOSELEC	Has electricity supply
SOSPOA	Has a post-office\ postal agency
SOSGQM	Has government \ expatriate \ mining quarters
SOSTEL	Has telephone services
SOSOPO	Has an old-people's home \orphanage
SOSBAR	Has a bar \local gin (<u>Burukutu</u>) parlour
SOSRECAN	Has a canteen\ eating place
SOSHOT	Has a hotel
SOSGRM	Has a grinding mill
SOSIND	Has an industry
SOSMECHF	Has a mechanized farm
SOSOTHER	Has other social infrastructure like HEP station
SOSOTH2	Other social amenities\ infrastructure
FOOTBF	Has a foot-ball field

Value label : From SOSPOL to FOOTBF 1 'YES' 0 'NO'

TOTALGFSI Total scores made from general welfare facilities/services in the rural areas of the JPRN.
= Summation of points from SOSPOL to FOOTBF.

Source: Field Work, 1991.

Table 11 Types of physical resources in the rural areas of the JPRN.

SERNO	COMMNA	POTFIRST	POTSEC	FOTCOM	SOTCOMM
1	Jengre	1	1	1	1
2	Fuska-Mala	0	2	2	0
3	Bakin-Kogi	2	2	0	0
4	Birchin	3	3	0	0
5	Kisi	4	2	3	0
6	Kwall	5	2	4	2
7	Jebu-Miango	6	0	0	2
8	Miango	7	0	4	0
9	Tiga	8	4	4	0
10	Sabo-Tariya	2	2	4	2
11	Rumfan-Gwamna	4	1	0	2
12	Gurum	2	5	5	3
13	Mista-Ali	5	1	1	1
14	Majeja	4	2	4	2
15	Katako-Amo	4	3	1	0
16	Naraguta-Vlg	2	5	6	3
17	Babale	5	1	1	4
18	Mai-Gemu	9	2	1	5
19	Rondon-Vlg	0	0	0	0
20	Gada	1	1	4	3
21	Federe	4	3	4	0
22	New-Fobur	9	1	1	4
23	Lamingo(a)Z	5	1	0	0
24	Fusa	6	1	2	0
25	Maijuju	1	6	4	0
26	S/Gida-Kanar	5	5	4	6
27	Sot	0	5	2	3
28	Gyel	5	1	5	3
29	Delimi	2	5	7	3
30	Rayfield	0	5	1	1
31	Zawan	5	5	5	0
32	Du	2	5	4	0
33	Pasakai	5	5	0	1
34	Kuru-Jenta	5	5	0	3
35	Vom	0	7	8	3
36	Kuru-Babba	2	5	0	6
37	Ganawuri	0	2	1	0
38	Assop-Falls	6	1	6	7
39	Bangan	2	5	1	6
40	Sharubutu	0	0	2	0
41	Kassa	0	1	3	3
42	Rim-Makafo	2	4	1	6
43	Jol	4	8	2	2
44	Werreng-Birom	0	5	5	8
45	Werreng-Camp	4	5	2	2
46	Sho	0	7	4	0
47	Sho-Kampani	8	4	4	2
48	Heipang	0	1	9	8
49	Forom	7	4	8	3
50	Bisichi	5	4	0	6
51	Nafan-Dreji	8	4	4	0
52	Rafan	0	0	0	0
53	Dorowa-Tsofuwa	2	5	4	0
54	Gindin-Akwati	5	4	5	6
55	Yelwa-Exland	4	4	7	7
56	Kurra-Falls	6	1	0	7
57	Nding	2	5	4	0
58	Lobiring-Ropp	0	1	0	0
59	Dorowa-Babuje	8	5	0	3
60	Gana-Ropp	5	4	5	6
61	Gana-Daji	5	4	4	2
62	Buka-Bakwai	0	4	4	0
63	Manjo-Pota	0	4	5	0
64	Kantoma	5	4	5	1
65	Maitumbi	0	4	4	2
66	Mangu-Halle	1	3	6	3
67	Panyam	7	6	7	0
68	Gindiri	7	3	8	3
69	S-G-Kanar	4	9	4	2
70	Gamajigo	0	4	4	2
71	Kuba	4	9	5	9
72	Maiyanga	4	0	0	0
73	Tenti	2	4	4	1
74	Maikatako	1	0	0	9
75	Dan-Bukuru	2	5	7	3
76	Kunnet	4	7	0	0
77	Butura-Kampani	4	9	0	2
78	Mbar	4	7	4	2
79	Yelwa-Nono	0	4	0	2
80	Sha	8	3	7	0
81	Daffo	1	8	4	2
82	Chakfem	8	3	4	0
83	Mangun	0	9	0	7
84	Jipal	4	0	4	0
85	Kombun	7	1	0	0
86	Tukun	4	0	0	3

Source: Field Work, 1991.

The distribution of other social amenities like police stations, courts, retailer shops, grinding mills and hotels is contained in table 10. Some of the physical resources which could be harnessed for rural development purposes and some of the constraints involved in utilizing these resources are also summarised in table 11.

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CHAPTER EIGHT.

LEVELS OF WELFARE PROVISION IN THE RURAL AREAS OF THE JOS PLATEAU8.1 Introduction.

In this chapter an attempt is made to depict the levels of social facilities and service provisions in the rural areas of the Jos Plateau using surrogates and proxy-surrogates. The chapter is a product of , and further analysis of the data, previously presented in tabular form to reveal the nature of the distribution of social facilities and services, and consequently, the levels of welfare provision in the study area.

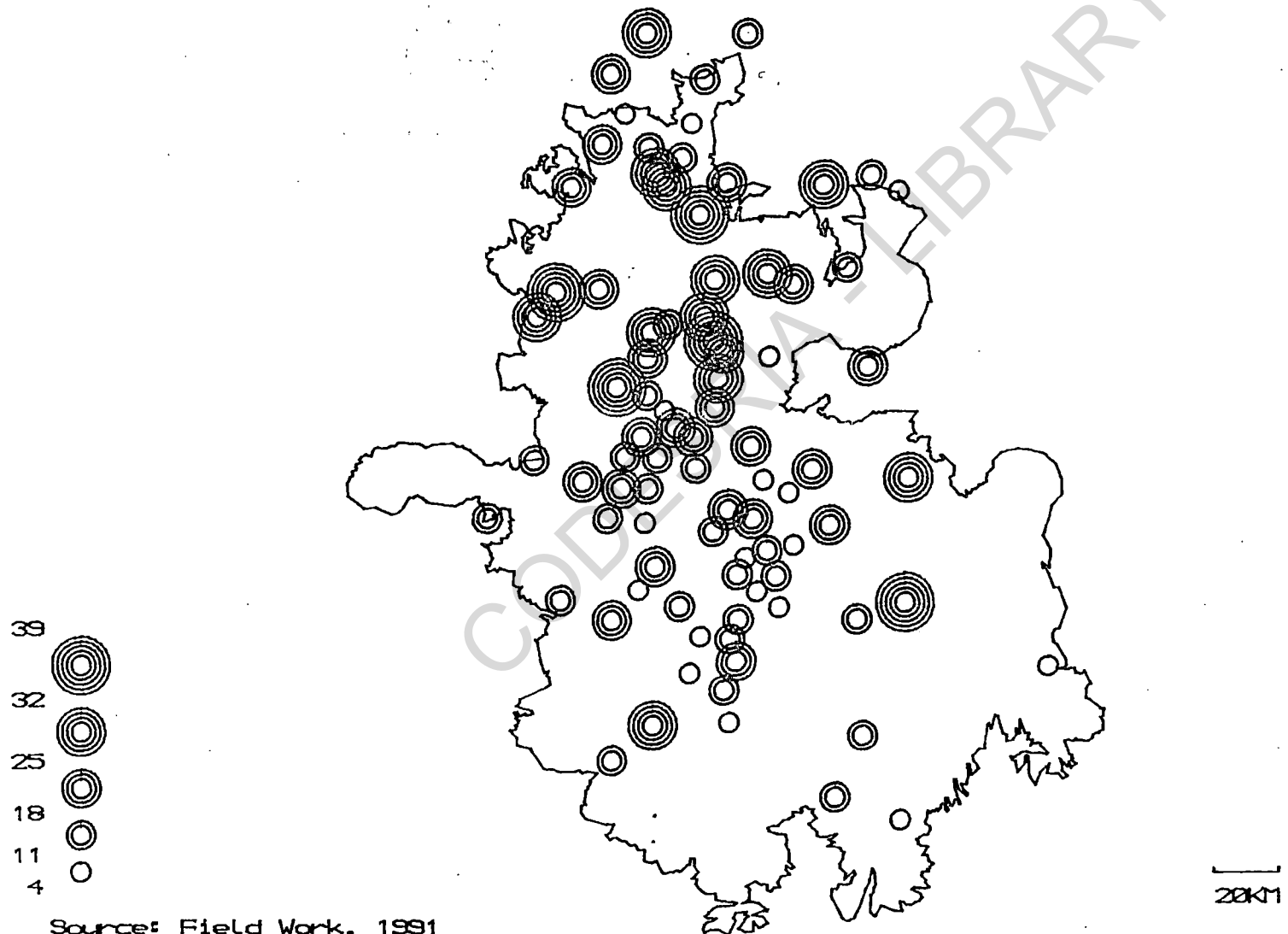
Areas of social facilities and services covered, include health-care provision, educational services, places of worship, shelter and rural housing, potable water, rural roads and general welfare facilities provision in the rural areas of the JPRN.

In order to achieve the above stated objective, information is presented in the form of figures. A map is presented in each case to depict the level of each of the welfare provisions stated above in a given settlement studied.

8.2 Levels of Health-Care Provisions.8.2.1 Surrogates employed in Determining the Levels of Health-care Provisions.

The types of indicators used in determining the levels of health-care provisions in the rural areas of the JPRN are shown in table 4. According to the table in all, 34 variables were employed in determining the levels of health-care provision in the study area. These 34 variables were later sub-divided into five proxy-surrogates. These five proxy-surrogates were then added up to obtain an index of total scores made from health-care provision (TOTALHI) in the study area.

Levels of health-care provision in the rural areas of the JPRN



The proxy-surrogates include the scores made from the total number of medical personnel work-force in the rural areas. They include: number of medical doctors, dentists, qualified pharmacists, nurses and other para-medical staff in the rural areas. The second proxy-surrogate were the scores made from the types of health-care facilities and services, and the quality of the medical infrastructures in the communities studied.

The third proxy-surrogate was based on the scores made from the range of medical services available in the rural areas of the JPRN; while the fourth were the scores made from the availability of drugs, and general drug services. The fifth proxy-surrogate were the scores made from the relative ease of access of each of the communities to medical facilities and services. The scores allocated to each surrogate have been presented in table 4. The sub-addition of these individual variables into proxy-surrogates are also contained in table 4.

8.2.2 Summary of the Levels of Health-Care Provision.

The last column of table 4 gives the index of the performance of each of the communities studied in terms of health-care provision using the five proxy-surrogates discussed in 8.2.1. Fig.16 gives the summary of the development surfaces in the study area in terms of health-care provisions.

According to table 4 and Fig.16 settlements like Naraguta-Village enjoy a high level of health-care provision. In fact, Naraguta-Village scored the highest point of 39. This is followed by Miango, Jengre, Zawan, Vom and Panyam. Settlements like Jipal (which is at the fringe of the Jos Plateau), Sho-Kampani (a former mining community) and Rondon_Village (which is an indigenous community where mining did not take place) scored the least points. Each of the them scored only four points in terms of health care provision.

The mean scores for health-care provision in the study area is 17.48. A box-plot and other statistical summaries of TOTALHI are contained in table 14 and Fig.25. A correlation matrix of the index for health-care provision in the study area and other provisions are contained in table 13.

8.3 Levels of Educational Services provisions.

8.3.1 Surrogates employed in Determining Levels of Educational services Provisions.

A total of eight variables were employed in determining the levels of educational services and facilities in the study area. These variables were the types and number of educational institutions in the rural areas; and the physical quality of the institution. Schools with no sign of decay attracted more points than those with dilapidated structures. The points allocated to each of the surrogate is contained in table 5. The points were then summed up to obtain an index of the level of educational services provision (TOTALEI).

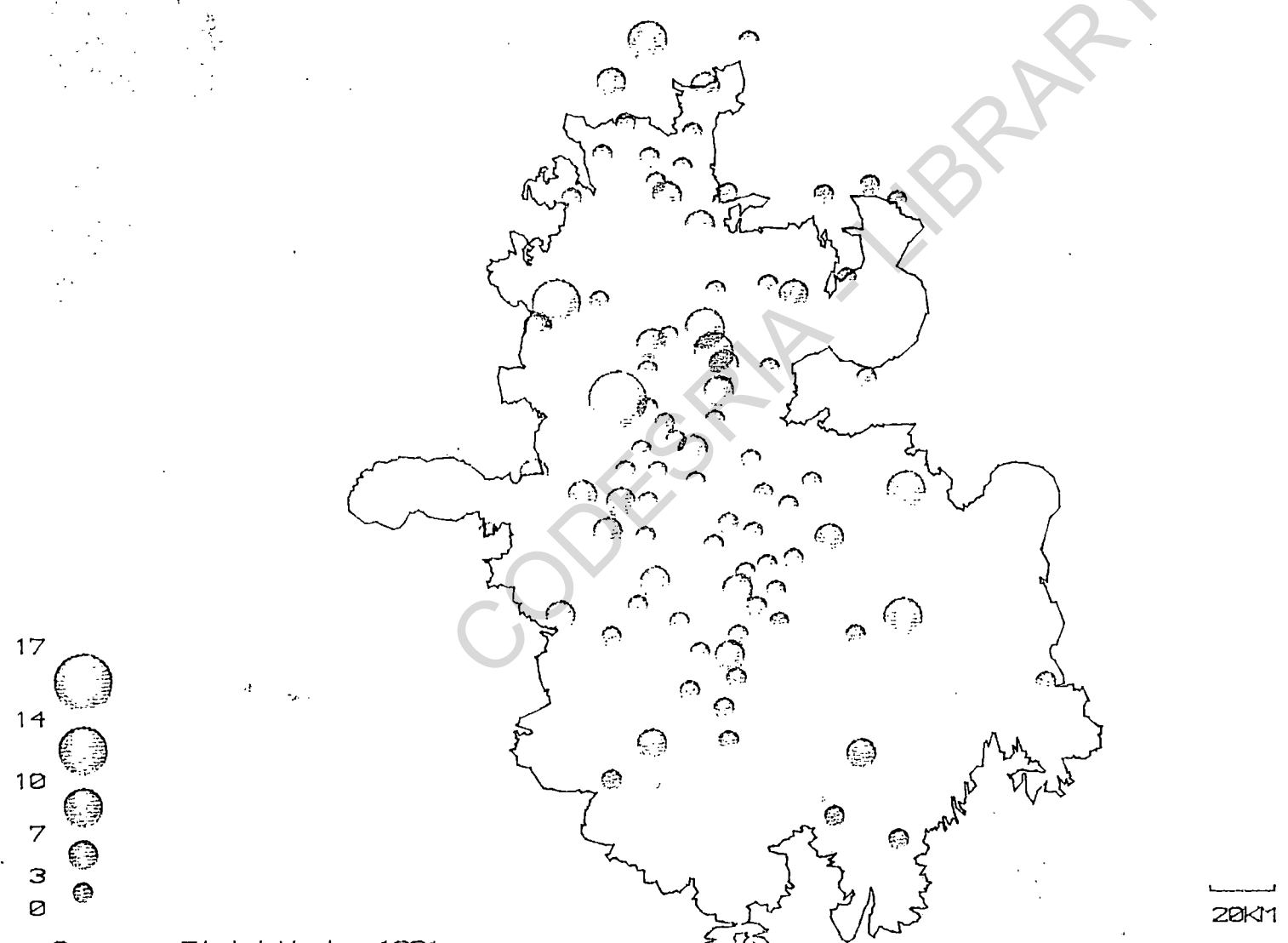
8.3.2 Summary of the levels of Educational Services provision.

The last column of table 5 gives the index of the level of educational services provision in each of 86 settlements studied. The information contained in this column was employed in drawing Fig.17 which is on surfaces of the levels of educational services provision in the rural areas of the Jos Plateau.

Both table 5 and Fig.17 shows that Vom, with a score of 17 enjoys the highest level of educational services provision. Vom was followed by Gindiri and Miango. Some communities like Maiyanga (an indigenous settlement, though mining took place there), Buka-Bakwai, Nding, Sho-Kampani, Pasakai and Tiga (all mining communities) scored zero. The mean score for TOTALEI was 3.00. See table 14 and Fig.25.

Fig. 17

Levels of educational provision in the rural areas of the JPRN



8.4 Levels of Places of Worship provisions.

8.4.1 Surrogates used in Determining Levels of Places of worship.

The total number of mosques and churches were the surrogates employed in determining the levels of places of worship provisions in the rural areas. The summary of this information is presented in table 6. The two variables were then added up to obtain an index of levels of places for worship provision (TOTALPW). The TOTALPW was used in producing Fig.18.

8.4.2 Summary of the levels of provision for Places of Worship.

According to table 6 and Fig 18 Vom and Miango enjoy very high levels of provision for places of worship. A small community like Tiga did not have any church or mosque. The mean score of TOTALPW was four. See table 14 and Fig 25.

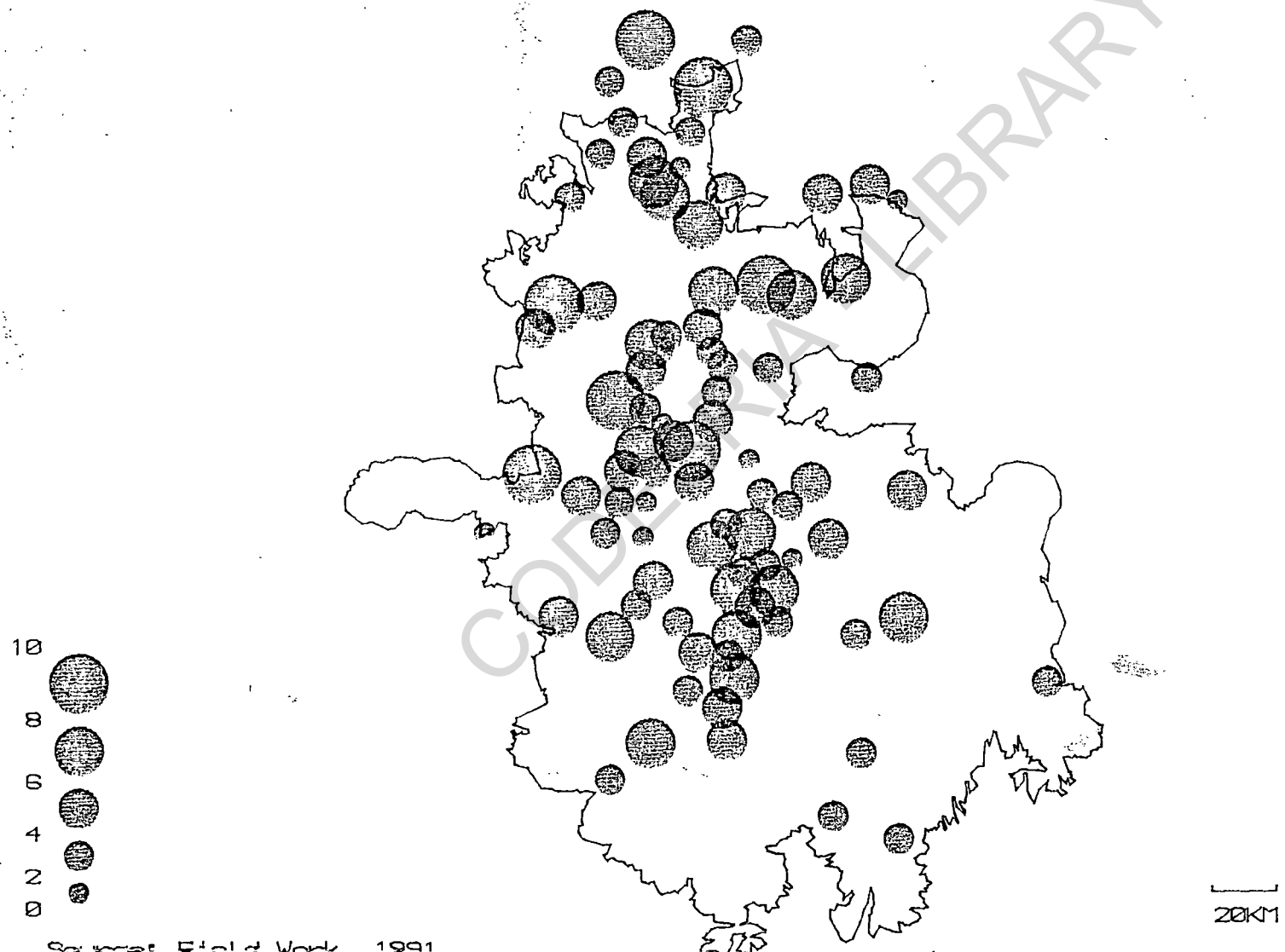
8.5 Levels of adequate Shelter and Housing provisions.

8.5.1 Surrogates used in Determining Levels of Shelter and Housing Provisions.

Table 7 contains information on the types and physical quality of houses in the rural areas of the JPRN. A stratified random sampling of the houses was carried out to achieve this. The points allocated to each of the surrogates are also shown in table 7. Two variables were used to determine the levels of adequate shelter provision in the study area. These surrogates are: the predominant types and nature of houses in the settlement and the physical quality of these houses.

Scores made from the two surrogates were added up to obtain a single index of adequate housing provision in the rural areas of the study area (TOTALCH).

Provision for places of worship in the rural areas of the JPRN



8.5.2 Summary of Shelter and Housing Provision.

Scores made by each of the communities studied in adequate housing provision is contained in the last column of table 7. These figures were used in drawing Fig.19. The performance of the 86 communities varied from a minimum of one to a maximum of seven. The mean score for TOTALCH was four. The box-plot of Fig.25 shows that both the upper and lower quartiles were around 4.8.

Settlements with higher levels of housing provisions include Lamingo(a) and Zarazon area, Zawan, Kurra-Falls, Panyam, Gindiri, Rayfield, Kuru-Jenta and Naraguta-Village. Settlements like Yelwa-nono, Maitumbi, Sho-Kampani, Nding and Tiga had very low level of adequate housing provision.

8.6 Levels of Potable Water Provision.

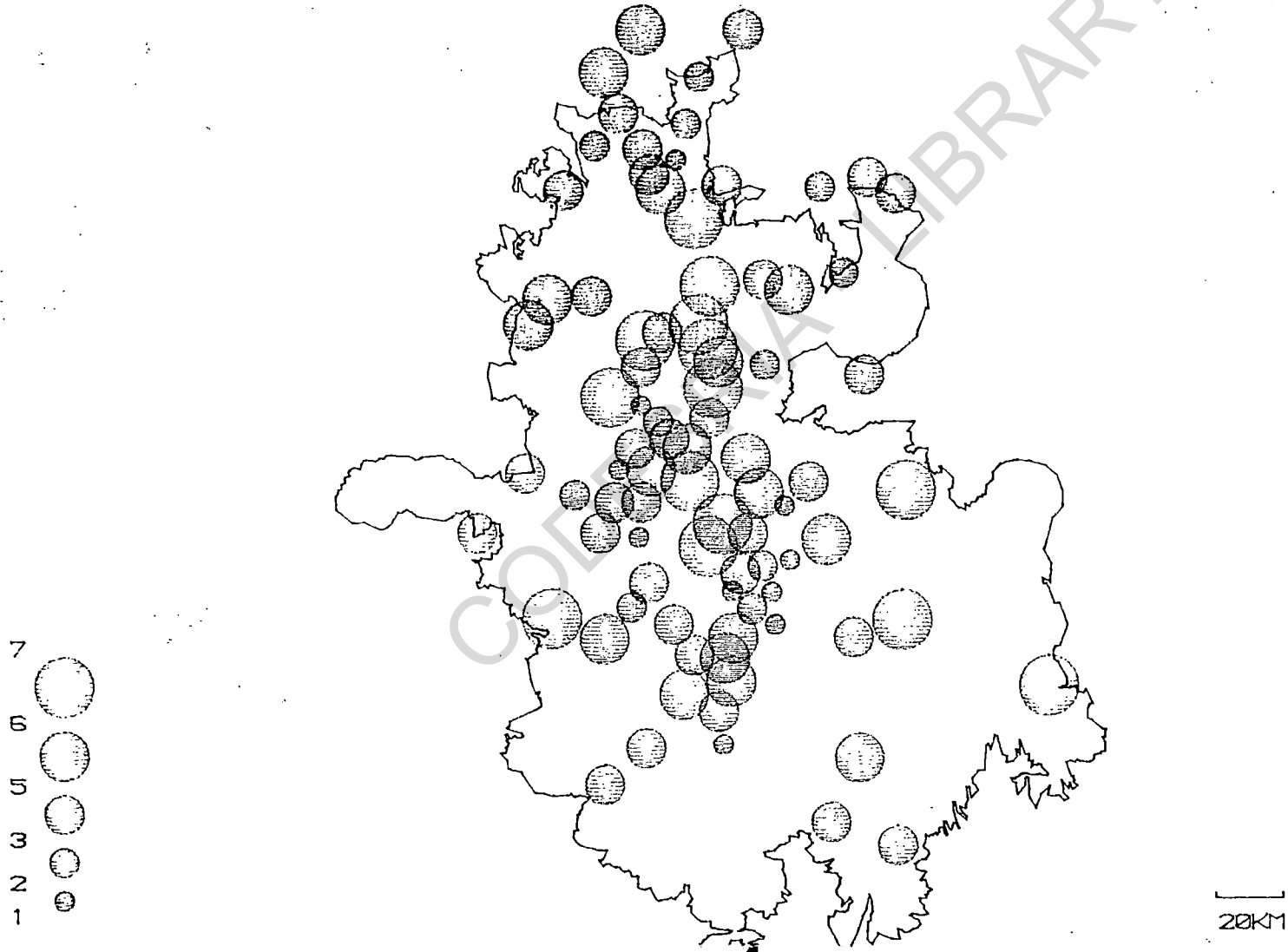
8.6.1 Surrogates Employed in Determining Levels of Potable Water Provision

The mode of drinking water supply and the number of public wells and/or boreholes were the surrogates used in determining the levels of potable water provision in the study area. This is shown in table 8. These two indicators were used to obtain an index of potable water provision (TOTALDW).

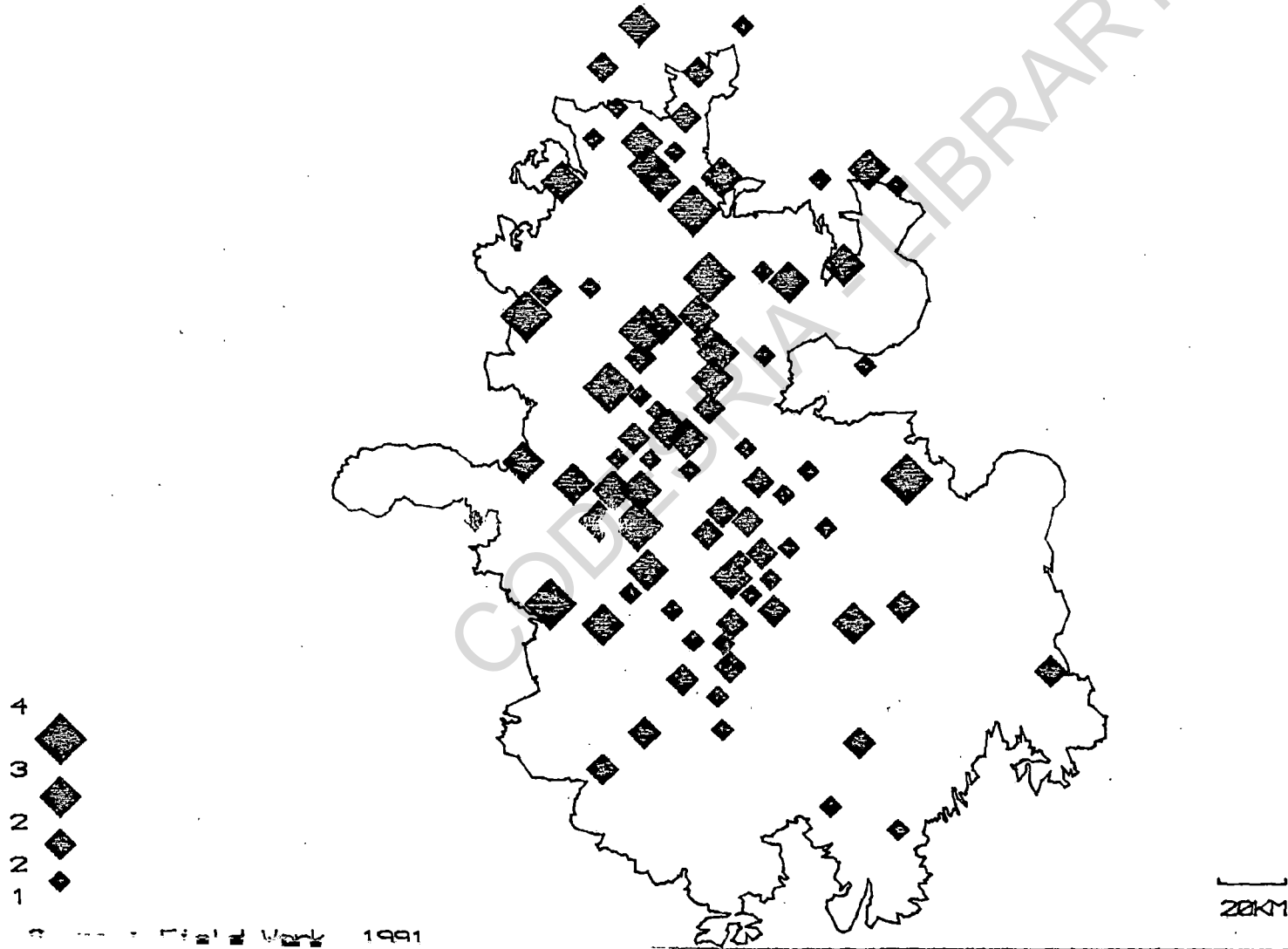
8.6.2 Summary of Potable Water Provision.

The summary of TOTALDW is shown in tables 8 and 14, and Fig.20. More than 50% of the communities scored more than two points. Settlements which scored very high points in terms of potable water provision include Kwall, Lamingo(a) area, Gyel, Vom and Gindiri.

Scores made from housing provision in the rural areas of the JPRN



Scores made from potable water provision in the rural areas



8.7 Levels of Rural Roads Provision.

8.7.1 Surrogates used in Determining Levels of Rural Roads Provision

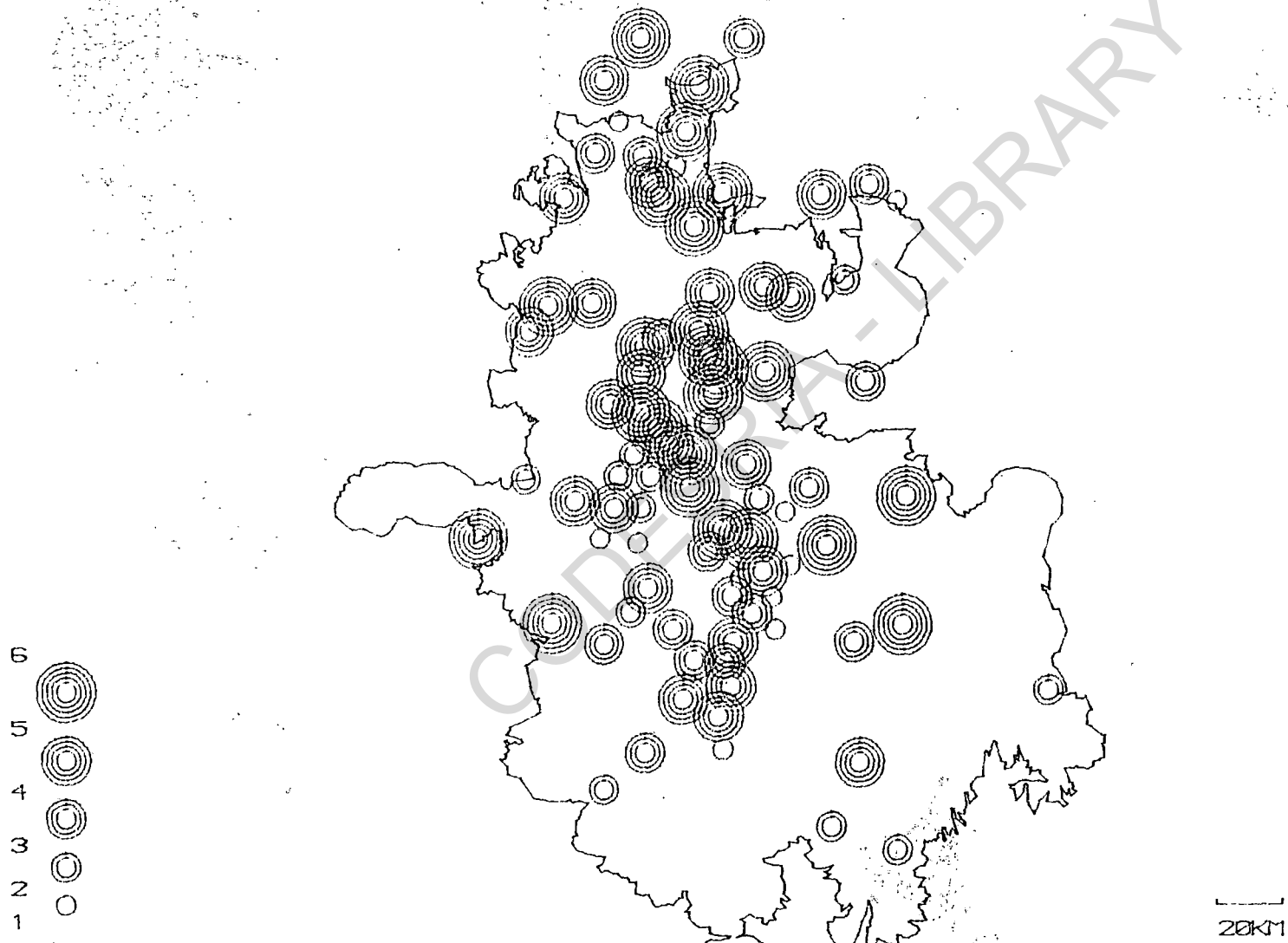
The category of the major road leading to a community and the physical quality of the road at the time of field survey are the two indicators used in determining the levels of rural roads provision in the study area. The two indicators were summed up to obtain an index of rural road provision (TOTALRR) in each of the community studied. This information is contained in table 9 and Fig.21.

8.7.2 Summary of Rural Roads Provision.

The last column of table 9 and Fig.21 show that settlements like Jengre, Rumfan-Gwamna, Mista-Ali, Babale, Rayfield, Kuru-Babba, Assop-Falls, Kassa, Heipang, Kurra-Falls, Dorowa-Babuje, Mangu-Halle and Panyam scored very high points in terms of roads provisions. Each of them scored six points.

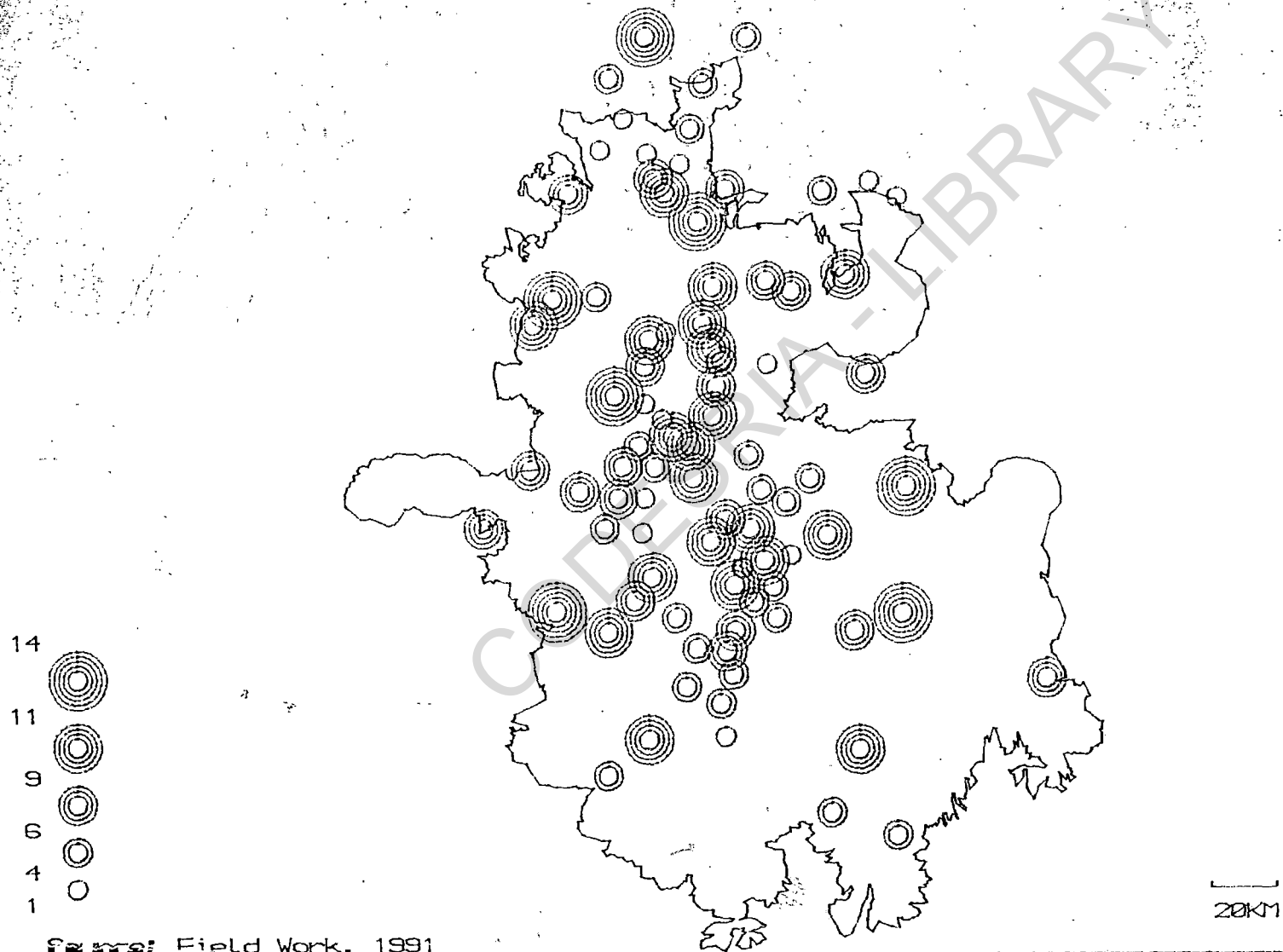
Settlements which scored very low points in rural roads provision include Yelwa-nono, Gamajigo, Maitumbi, Buka-Bakwai, Nding, Sho-Kampani, Sharubutu, Rondon-Village, Majeja and Tiga. Most of these are former tin mining settlements who had once enjoyed very high levels of rural roads provision. The mean score for TOTALRR according to table 14 and Fig.25 is 3.57.

Levels of rural roads provision in the rural areas of the JPRN



Source: Field Work, 1991

General welfare facilities and services in the rural areas



8.8 Levels of other General Welfare Facilities and Services Provision.

8.8.1 Surrogates Used in Determining Levels of General Welfare Facilities and Services Provisions

A total number of 18 indicators were used to find out the range of other social facilities and services that are available in the rural areas of the Jos Plateau. The presence of any of the 18 facilities makes a settlement to score a point. These points were later summed up to obtain an index of other general welfare facilities and services provision (TOTALGFS). This is contained in table 10.

8.8.2 Summary of other General Welfare and Services Provision.

The summary of TOTALGFS is presented in table 10 and Fig.22. According to the table and the figure, a variety of other general welfare facilities and services are available in the rural areas of the Jos Plateau.

Vom scored the highest points in terms of having a variety of other general welfare facilities and services. Vom was followed by Naraguta-Village, Kurra-Falls, Jengre, Miango, Bisichi and Daffo. Communities which lack these other general welfare facilities and services include Yelwa-nono, Tiga, Bakin-Kogi, Sabo-Tariya, Majeja, Rondon-Village, Du, Werreng-Birom, Sho, Sho-Kampani and Buka-Bakwai. The average score for TOTALGFS is 6.73.

RURAL DEVELOPMENT SURFACES ON THE JOS PLATEAU.9.1 Introduction.

This chapter is concerned with providing a typology of the rural development surfaces on the Jos Plateau, based on the levels of welfare provisions. Invariably, the chapter is the summation of the levels of welfare provisions for the rural dwellers in the study area, earlier presented in chapter eight.

It would be recalled that in the previous chapter surrogates and proxy-surrogates were employed to determine the levels of health-care, educational, religious, shelter and housing, potable water supply, rural roads and other general welfare facilities provisions in the rural areas of the Jos Plateau. The indices of the welfare provisions were computed and represented by TOTALHI, TOTALEI, TOTALPW, TOTALCH, TOTALDW, TOTALRR and TOTALGFS respectively. The statistical summaries of these indices are presented in table 14 and Fig.25.

The indices for the range of welfare provisions were summed up to produce for each settlement a rural development index (RUDEVI), proposed for the first time in this project by the Author (see table 12 and Fig 23). These indices transformed into proportional levels of the different welfare provisions are shown in Figs. 26 and 27. A correlation matrix of these indices is presented in table 13.

It is however important to add that the surrogates used in computing the indices mentioned above, were awarded points in order to facilitate their coding in an SPSS(X) file. The points were not based on their weighting importance. Nevertheless, all the settlements studied were subjected to the same weighting.

9.2 Rural Development Surfaces on the Jos Plateau.

Table 12 summarises the levels of welfare provisions in each of the settlements studied. This table also contains some background information concerning each of the 86 settlements studied. In addition, it has the computed indices of rural development for each of the settlement studied. The RUDEVIs were used to produce the rural development typology of the Jos Plateau (see Fig.23).

According to table 12, Vom has the highest rural development index (RUDEVI) of 90. In the order of magnitude this is followed by Miango (84), Naraguta-village (80), Gindiri (75), Panyam (73), Jengre (73), Rayfield (68), Zawan (67), Gyei (66), Mista Ali (65), Lamingo, Laminga and Zarazon area (60), Daffo (58), Kwali (57), Mangu-Halle (55), Kurra-Falls (55), Heipang (55), Gurum (54), Delimi (54), Forom (52), Babale (51), Dorowa-Babuje (50) and New Fobur (50). Then Kuru-Jenta (49), Rim-Makafo (48), Gindin-Akwati (47), Du (47), Tenti (47), Bangan (45), Bisichi (45), Gana-Ropp (45), Binchin (44), Lobiring (44), Sabon Gida Kanar (44), Ganawuri (44), Federe (44), Jebu-Miango (44), Maikatako (44), Gada (43), Gana Daji (43), Fuskan-Mata (42), Kuba (42), Kassa (42), Mangun (41), Maijuju (41), Katako-Amo (41) and Kunnet (41). This shows that 46 of the studied settlements have a RUDEVI index equal to, or above the mean which is 41.12.

Table 12 Summary of social facilities and services provision in the rural areas of the JPRN.

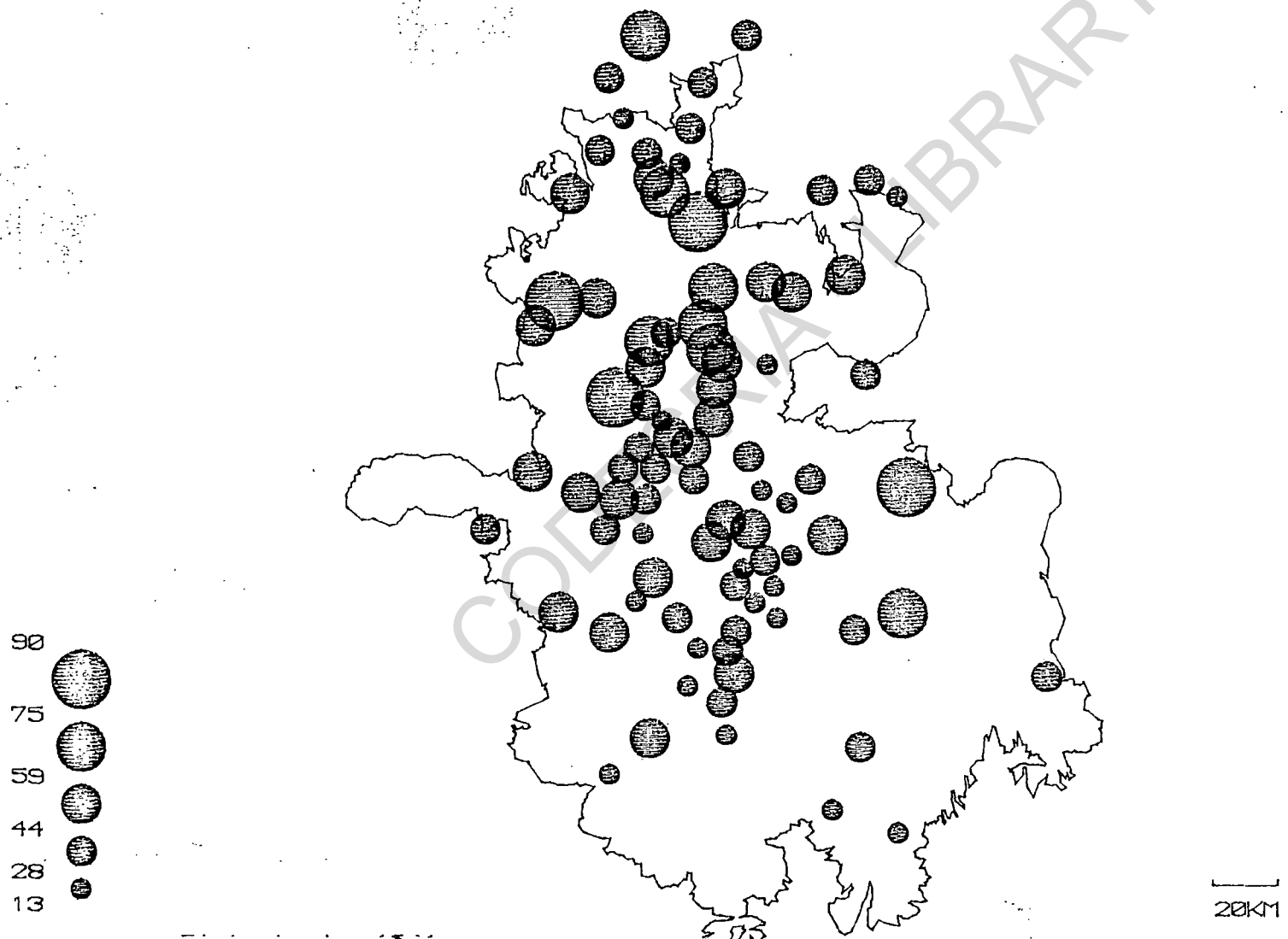
SERNO	COMMNA	DIST	LGA	SUBREG	SETTYPE	POPSIZE	TOTALHI	TOTALEI	TOTALPW	TOTALCH	TOTALPW	TOTALPR	TOTALGFSI	RUDEVI
1	Jengre	1	1	3	7	5	31	7	9	5	3	6	12	73
2	Fuska-Mat	1	1	2	7	4	15	4	8	3	2	5	5	42
3	Bakin-Kogi	1	1	2	7	3	11	3	3	4	1	3	4	29
4	Binchin	2	1	2	7	4	21	2	3	4	3	4	7	44
5	Klssi	2	1	2	7	2	19	1	2	3	1	3	2	31
6	Kwall	3	1	1	4	5	25	5	5	5	4	4	9	57
7	Jebu-Mian	4	1	1	4	4	24	2	4	4	1	4	5	44
8	Miango	4	1	1	4	5	37	13	10	5	2	5	12	84
9	Tiga	5	1	1	2	1	12	0	0	1	1	1	1	16
10	Sabo-Tariy	5	1	1	4	3	14	2	4	4	3	3	2	32
11	Rumfan-G	5	1	2	7	3	9	3	3	3	2	6	6	32
12	Gurum	5	1	1	3	4	26	3	6	4	3	4	8	54
13	Mista-Ali	5	1	1	4	5	29	5	7	5	3	6	10	65
14	Majeja	6	1	2	7	3	4	2	3	4	1	1	3	18
15	Katako-Am	6	1	3	7	4	18	4	3	5	2	4	5	41
16	Naraguta-	7	2	1	6	5	39	8	7	6	4	5	13	80
17	Babale	7	2	3	2	4	23	3	4	4	3	6	8	51
18	Mai-Gemu	8	2	3	7	4	11	1	4	4	3	3	3	29
19	Rondon-VI	8	2	3	7	1	4	0	1	4	1	1	2	13
20	Gada	8	2	3	7	4	26	1	4	3	1	4	4	43
21	Federe	9	2	2	7	4	17	3	6	3	3	2	10	44
22	New-Fobu	10	2	2	7	5	18	5	7	5	3	4	8	50
23	Lamingo(a	10	2	1	4	5	27	2	6	7	4	4	10	60
24	Fusa	11	2	2	7	3	10	1	2	3	1	5	2	24
25	Maijuju	11	2	3	7	5	21	3	2	4	1	3	7	41
26	S/Gida-Ka	12	2	1	1	5	18	3	5	4	2	4	8	44
27	Sot	12	2	1	4	3	17	1	2	4	3	3	3	33
28	Gyel	12	2	1	4	4	30	4	7	6	4	6	9	66
29	Delimi	13	2	1	1	5	27	2	8	4	1	4	8	54
30	Rayfield	13	2	1	2	4	31	7	4	6	3	6	11	68
31	Zawan	13	2	1	2	5	33	8	2	7	2	5	10	67
32	Du	13	2	1	4	4	24	4	2	5	3	5	4	47
33	Pasakai	14	2	1	2	1	6	0	1	3	1	5	3	19
34	Kuru-Jenta	14	2	1	1	5	23	1	5	4	3	4	9	49
35	vom	15	2	1	5	5	35	17	10	6	4	4	14	90
36	Kuru-Babb	15	2	1	2	1	14	1	2	2	1	6	3	29
37	Ganawuri	16	3	2	7	4	16	4	8	4	3	2	7	44
38	Assop-Fall	17	3	2	7	3	11	1	1	4	1	6	7	31
39	Bangan	17	3	1	1	4	20	4	3	4	3	4	7	45
40	Sharubutu	17	3	1	4	4	15	5	3	4	3	1	5	36
41	Kassa	17	3	1	4	4	15	1	4	6	1	6	9	42
42	Rim-Makaf	18	3	1	1	5	20	5	5	3	3	4	8	48
43	Jol	18	3	1	4	3	15	2	2	5	1	2	6	33
44	Werreng-B	18	3	1	4	4	19	1	6	4	2	2	4	38
45	Werreng-C	18	3	1	2	4	15	2	4	2	1	2	7	33
46	Sho	18	3	1	4	4	16	3	1	4	3	2	2	31
47	Sho-Kamp	18	3	1	3	1	4	0	1	1	4	1	2	13
48	Heipang	19	3	1	5	4	19	5	8	5	3	6	9	55
49	Forom	20	3	1	4	5	25	4	2	6	3	5	7	52
50	Bisjichi	20	3	1	1	5	21	1	5	4	2	2	10	45
51	Nafan-Drej	21	3	1	2	3	7	1	3	5	2	2	6	26
52	Rafan	21	3	1	5	4	21	2	1	5	1	4	4	38
53	Dorowa-Ts	21	3	1	5	4	21	1	4	4	1	3	6	40
54	Gindin-Ak	22	3	1	1	5	18	4	4	4	3	4	10	47
55	Yelwa-Exla	22	3	1	2	3	6	2	2	3	1	2	7	23
56	Kurra-Falls	22	3	1	6	5	17	4	5	6	4	6	13	55
57	Nding	23	3	1	2	1	8	0	2	2	1	1	4	18
58	Lobiring-R	23	3	1	4	4	19	3	2	6	2	5	7	44
59	Dorowa-Ba	23	3	1	2	5	18	3	6	4	2	6	11	50
60	Gana-Flop	23	3	1	1	4	16	2	6	8	2	3	10	45
61	Gana-Daji	23	3	1	3	4	15	4	6	2	3	3	10	43
62	Buka-Bak	23	3	1	2	2	6	0	3	4	1	1	2	17
63	Manjo-Pot	23	3	1	3	4	8	1	4	3	1	3	5	25
64	Kantoma	24	4	1	1	4	15	1	3	3	2	4	9	37
65	Maitumbi	24	4	1	3	3	6	1	1	1	1	1	2	13
66	Mangu-Hai	24	4	1	4	5	24	5	5	5	1	6	9	55
67	Panyam	25	4	2	7	5	32	8	6	6	2	6	13	73
68	Gindiri	26	4	2	7	5	31	10	5	6	4	5	14	75
69	S-G-Roboi	27	4	1	3	4	13	1	6	2	1	1	4	28
70	Gamajigo	27	4	1	3	4	7	1	2	2	2	1	4	19
71	Kuba	27	4	1	4	5	15	3	6	5	2	4	7	42
72	Maiyanga	27	4	1	3	4	17	0	2	4	1	3	5	32
73	Tenti	27	4	1	1	5	19	1	7	5	3	3	9	47
74	Maikatako	27	4	1	2	5	18	2	7	5	2	4	6	44
75	Dan-Bukur	27	4	1	1	3	6	1	2	5	2	4	5	25
76	Kunnet	27	4	1	4	4	17	4	3	5	1	3	8	41
77	Butura-Ka	27	4	1	3	4	7	2	4	4	1	3	6	27
78	Mbar	27	4	1	4	4	17	2	4	4	1	4	5	37
79	Yelwa-Non	27	4	1	3	3	4	1	5	1	1	1	1	14
80	Sha	28	4	2	7	4	11	2	2	4	2	2	5	28
81	Daffo	29	4	1	4	5	27	5	7	4	2	3	10	58
82	Chakfem	30	4	2	7	4	12	2	2	4	1	2	5	28
83	Mangun	31	4	2	7	4	15	4	2	5	2	4	9	41
84	Jipal	32	4	2	7	4	4	2	3	4	1	2	4	20
85	Kombun	33	4	2	7	5	16	3	3	4	3	3	7	39
86	Tukun	34	5	1	6	3	10	3	3	6	2	2	7	33

Key to Table 12

SERNO	Serial number of the Community
COMMNA	Name of the Community/Settlement
DIST	District (As given in table 2)
LGA	Local Government area (As given in table 2)
SUBREG SETTYPE	Sub-region (As given in table 2) Type of Settlement/Community (As in table 2)
POPSIZE	Population size of the Community 0 None 1 Less than 500 persons 2 500 to 1000 persons 3 1001 to 2000 persons 4 2001 to 4000 persons 5 4000 and above persons
TOTALHI	Total scores made from health-care provision and services in the rural areas- Summary of Table 4
TOTALEI	Total scores made from educational services provision in the Community- Summary of Table 5
TOTALPWPI	Total scores from places of worship provision- Summary of Table 6
TOTALCHI	Total scores from housing and shelter provision- Summary of Table 7
TOTALPWP	Total scores from drinking water provision in the rural areas- Summary of Table 8
TOTALRRPI	Total scores from rural roads provision in the rural areas- Summary of Table 9
TOTALGFSI	Total scores from general welfare facilities and services in the rural areas- Summary of Table 10
<u>RUDEVI</u>	Computed rural development index for the Community = (Summation of TOTALHI to TOTALGFSI).

Source: Field Work, 1991.

Rural Development levels in the rural areas of the JPRN



Levels of rural development in terms of performance in the distribution of social facilities and services in the JPRN



The remaining 40 settlements with the RUDEVI index below the mean, include the following: Dorowa Tsofo (40), Kombun (39), Rafan (38), Werreng-Birom (38), Kantoma (37), Mbar (37), Sharubutu (36), Jol (33), Sot (33), Werreng-Camp (33), Tukun (33), Rumfan Gwamna (32), Sabo-Tariya (32), Maiyanga (32), Assop-Fails (31), Sho (31), Kissi (31), Mai-Gemu (30), Bakin-Kogi (29), Kuru-Babba (29), Sabon Gida Roboi (28), Sha (28), Chakfem (28), Butura-Kampani (27), Nafan-Dreji (26), Dan-Bukuru (25), Manjo-Pota (25), Fusa (24), Yelwa-Exland (23) and Jipal (20). To this group belong also 10 communities with a RUDEVI of less than 20. They are: Pasakai (19), Gamajigo (19), Majeja (18), Nding (18), Buka Bakwai (17), Tiga (16), Yelwa-Nono (14), Maitumbi (13), Sho-Kampani (13) and Rondon-Village (13). Except for Rondon-Village and Majeja, both of which are at the fringe of the Jos Plateau, these communities, with a RUDEVI below 20, are associated with mining activities.

Further data analyses show that the highest value for RUDEVI is 90; and the lowest is 13. The mean RUDEVI is 41.12. Only five out of the 86 studied communities have a RUDEVI more than 70. The modal RUDEVI is between 30 and 44. The lower and upper quartiles of RUDEVI are 29 and 50 respectively (See Figs 24 and 25).

9.3 Correlation Matrix and Statistical Summary of Indices.

Table 13 shows a correlation matrix for TOTALHI, TOTALEI, TOTALPW, TOTALCH, TOTALDW, TOTALRR, TOTALGFS and RUDEVI. These parameters, have been defined in sections 9.1 and 9.2. The matrix shows a very strong and positive correlation between health-care provision and rural development index, of 0.94. The next very strong positive correlation of 0.86 is obtained between general welfare facilities provision and RUDEVI. This is followed by general welfare facilities and health-care of (0.70), and educational services provision versus health-care equal to (0.69). The next positive correlation of 0.47 is obtained between potable water and health-care provisions. The least, though still positive correlation of 0.28 is obtained between rural roads and potable water provisions.

The summary statistics for TOTALHI, TOTALEI, TOTALPW, TOTALCH, TOTALDW, TOTALRR, TOTALGFS and RUDEVI have been discussed elsewhere. Nevertheless, table 14 and Fig. 25 gave a bird's-eye view of the summary statistics.

There is a strong positive correlation between population size and RUDEVI of 0.80; population size and general welfare facilities of 0.74; and population size versus health-care provisions of 0.72. However, it seems that there is a little correlation between population size and housing (0.49), potable water (0.45) and rural roads provision (0.40), as shown in appendix 4.

----- PEARSON CORRELATION COEFFICIENTS -----

	TOTALHI	TOTALEI	TOTALPW	TOTALCH	TOTALDW	TOTALRR	TOTALGFS	RUDEVI
TOTALHI	1.0000 (.86) P= .000	.6891 (.86) P= .000	.5574 (.86) P= .000	.5686 (.86) P= .000	.4693 (.86) P= .000	.5758 (.86) P= .000	.7013 (.86) P= .000	.9399 (.86) P= .000
TOTALEI	.6891 (.86) P= .000	1.0000 (.86) P= .	.5503 (.86) P= .000	.4969 (.86) P= .000	.4640 (.86) P= .000	.4146 (.86) P= .000	.6875 (.86) P= .000	.8130 (.86) P= .000
TOTALPW	.5574 (.86) P= .000	.5503 (.86) P= .000	1.0000 (.86) P= .	.2969 (.86) P= .003	.4006 (.86) P= .000	.3130 (.86) P= .002	.6240 (.86) P= .000	.6940 (.86) P= .000
TOTALCH	.5686 (.86) P= .000	.4969 (.86) P= .000	.2969 (.86) P= .003	1.0000 (.86) P= .	.3790 (.86) P= .000	.5025 (.86) P= .000	.6019 (.86) P= .000	.6647 (.86) P= .000
TOTALDW	.4693 (.86) P= .000	.4640 (.86) P= .000	.4006 (.86) P= .000	.3790 (.86) P= .000	1.0000 (.86) P= .	.2793 (.86) P= .005	.5043 (.86) P= .000	.5727 (.86) P= .000
TOTALRR	.5758 (.86) P= .000	.4146 (.86) P= .000	.3130 (.86) P= .002	.5025 (.86) P= .000	.2793 (.86) P= .005	1.0000 (.86) P= .	.5456 (.86) P= .000	.6478 (.86) P= .000
TOTALGFS	.7013 (.86) P= .000	.6875 (.86) P= .000	.6240 (.86) P= .000	.6019 (.86) P= .000	.5043 (.86) P= .000	.5456 (.86) P= .000	1.0000 (.86) P= .	.8608 (.86) P= .000
RUDEVI	.9399 (.86) P= .000	.8130 (.86) P= .000	.6940 (.86) P= .000	.6647 (.86) P= .000	.5727 (.86) P= .000	.6478 (.86) P= .000	.8608 (.86) P= .000	1.0000 (.86) P= .

(COEFFICIENT / (CASES) / 1-TAILED SIG) " . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED

PRECEDING TASK REQUIRED 0.14 SECONDS CPU TIME; 0.82 SECONDS ELAPSED.

63 0 condescriptive totalhi to rudevi

here are 1022720 bytes of memory available.
The largest contiguous area has 1022704 bytes.

MTB > NAME C1 'DISTRICT'
 MTB > NAME C2 'LGA'
 MTB > NAME C3 'SUBREG'
 MTB > NAME C4 'SETTYPE'
 MTB > NAME C5 'POPSIZE'
 MTB > NAME C6 'TOTALHI'
 MTB > NAME C7 'TOTALEI'
 MTB > NAME C8 'TOTALPW'
 MTB > NAME C9 'TOTALCH'
 MTB > NAME C10 'OTALDW'
 MTB > NAME C11 'OTALRR'
 MTB > NAME C12 'OTALGFS'
 MTB > NAME C13 'OTALDEVI'
 MTB > DESCRIBE C6

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
TOTALHI	86	17.477	17.000	17.218	8.293	0.894

	MIN	MAX	Q1	Q3
TOTALHI	4.000	39.000	11.000	23.000

MTB > DESCRIBE C7

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
TOTALEI	86	3.000	2.000	2.692	2.753	0.297

	MIN	MAX	Q1	Q3
TOTALEI	0.000	17.000	1.000	4.000

MTB > DESCRIBE C8

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
TOTALPW	86	4.093	4.000	4.000	2.268	0.245

	MIN	MAX	Q1	Q3
TOTALPW	0.000	10.000	2.000	6.000

MTB > DESCRIBE C9

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
TOTALCH	86	4.151	4.000	4.192	1.342	0.145

	MIN	MAX	Q1	Q3
TOTALCH	1.000	7.000	3.750	5.000

MTB > DESCRIBE C10

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
OTALDW	86	2.093	2.000	2.051	1.013	0.109

	MIN	MAX	Q1	Q3
OTALDW	1.000	4.000	1.000	3.000

MTB > DESCRIBE C11

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
OTALRR	86	3.581	4.000	3.590	1.590	0.171

	MIN	MAX	Q1	Q3
OTALRR	1.000	6.000	2.000	5.000

MTB > DESCRIBE C12

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
OTALGFS	86	6.733	7.000	6.654	3.226	0.348

	MIN	MAX	Q1	Q3
OTALGFS	1.000	14.000	4.000	9.000

MTB > DESCRIBE C13

	N	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN
JDEVI	86	41.12	41.00	40.44	16.89	1.82

	MIN	MAX	Q1	Q3
JDEVI	13.00	90.00	29.00	50.00

MTB > BOX PLOT C6-C13

9.4. Analysis of Variances of the RUDEVIs (Testing of Ho).

Table 12 contain the RUDEVIs of the 86 rural settlements or communities. These 86 villages were further sub-divided into seven categories. This sub-classification is meant mainly for the purpose of convenience and might not be strictly taken to be the norm. This sub-classification is given in tables 2 and 12.

The analysis of variance of the RUDEVI of the different categories of settlements are summarised in appendix 3. According to it, the mean RUDEVI is 41.12. There are 11 settlements in the first category with a mean RUDEVI of 44.18. The second category with 13 settlements has a mean RUDEVI of 35.46. The third category has 10 settlements with a mean RUDEVI of 26.80. The fourth category with 21 settlements has a mean RUDEVI of 47.48. The fifth category has only four settlements with a RUDEVI of 55.75; while the sixth category of settlements containing only three settlements has a RUDEVI of 56.00. The last, seventh, category with 24 cases has a RUDEVI of 39.88.

The analysis of variances between the RUDEVI of these seven categories were made, using University of Durham main frame computer (see appendix 3). An F-ratio of 3.74 was obtained. This shows that the variations of RUDEVIs between the seven different categories of the studied settlements are statistically significant at both 5% and 1% levels. Hence, the null hypothesis (Ho) that there is no significant variation in the rural development surfaces on the Jos Plateau based on the levels of welfare provisions is rejected; and the alternative hypothesis (Hi) accepted.

CHAPTER TEN

SUMMARY AND CONCLUSION.10.1 An Overview of the Study

It is common to associate 'development' with the presence of physical infrastructure. This project is a pioneer effort in evolving yet another new method of determining levels of rural development. This method is based on using some surrogates and proxy-surrogates as indicators of the levels of, and distribution of health care, educational, rural housing, places of worship, potable water, rural roads and general welfare provisions and services in the rural areas of the Jos Plateau. Over 60 variables or surrogates, 10 proxy-surrogates and seven indicators were used to provide a rural development typology of the Jos Plateau.

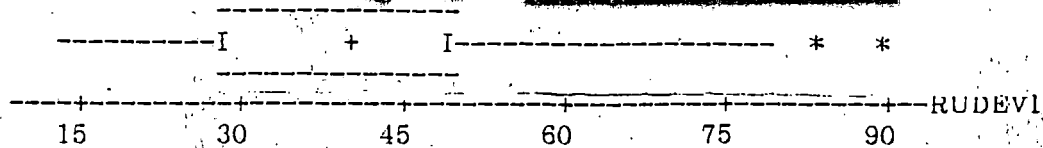
In all, 86 rural settlements were studied. This is based on a sampling of at least one settlement in a 20 km by 20 km grid cells of more than 70% of the Jos Plateau Region of Nigeria. At least one community was studied from all the districts on the Jos Plateau.

A well structured questionnaire (see appendix 1) was the main instrument for data collection. Field surveys of varying intensity and significance were conducted in 1989, 1990 and 1991. The main field survey was carried out from May to July, 1991.

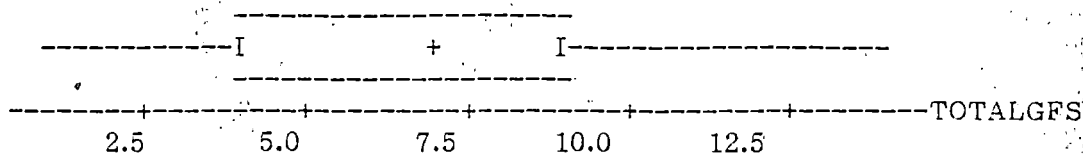
B > BOXPLOT C1-C13

B > BOXPLOT C13

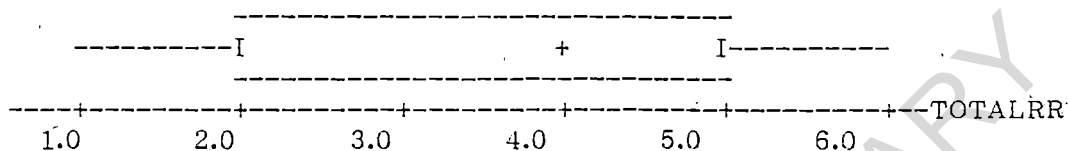
FIG. 25 BOX PLOT OF INDICES



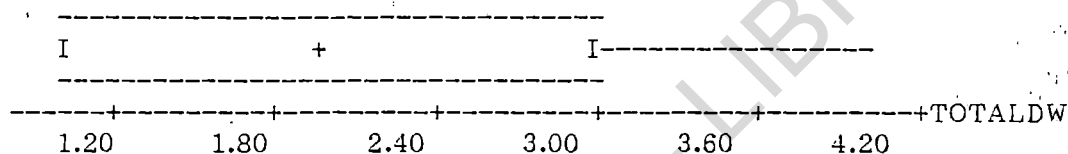
B > BOXPLOT C12



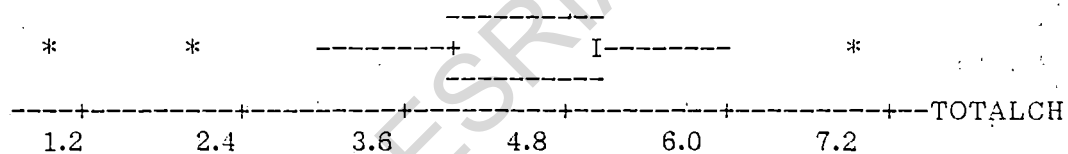
B > BOXPLOT C11



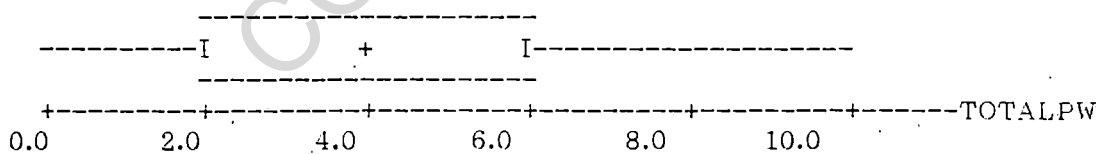
B > BOXPLOT C10



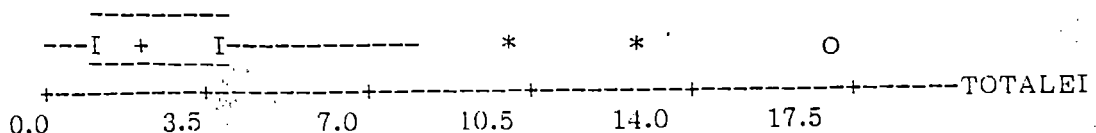
B > BOXPLOT C9



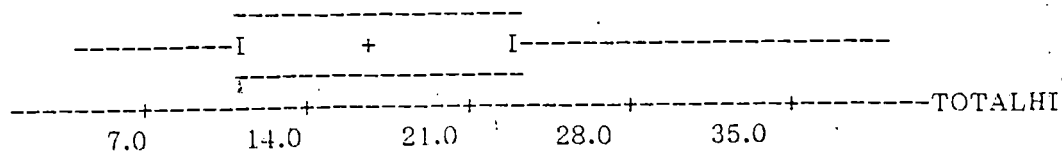
B > BOXPLOT C8



B > BOXPLOT C7



B > BOXPLOT C6



B > STEM C13

Stem-and-leaf of RUDEVI N = 86

Unit = 1.0

Fig. 27

Welfare provision as an index of rural development on the JPRN

(Clock-wise The red is For health provision, education, places of worship, housing, potable water, rural roads and general social facilities and services in the rural areas.)

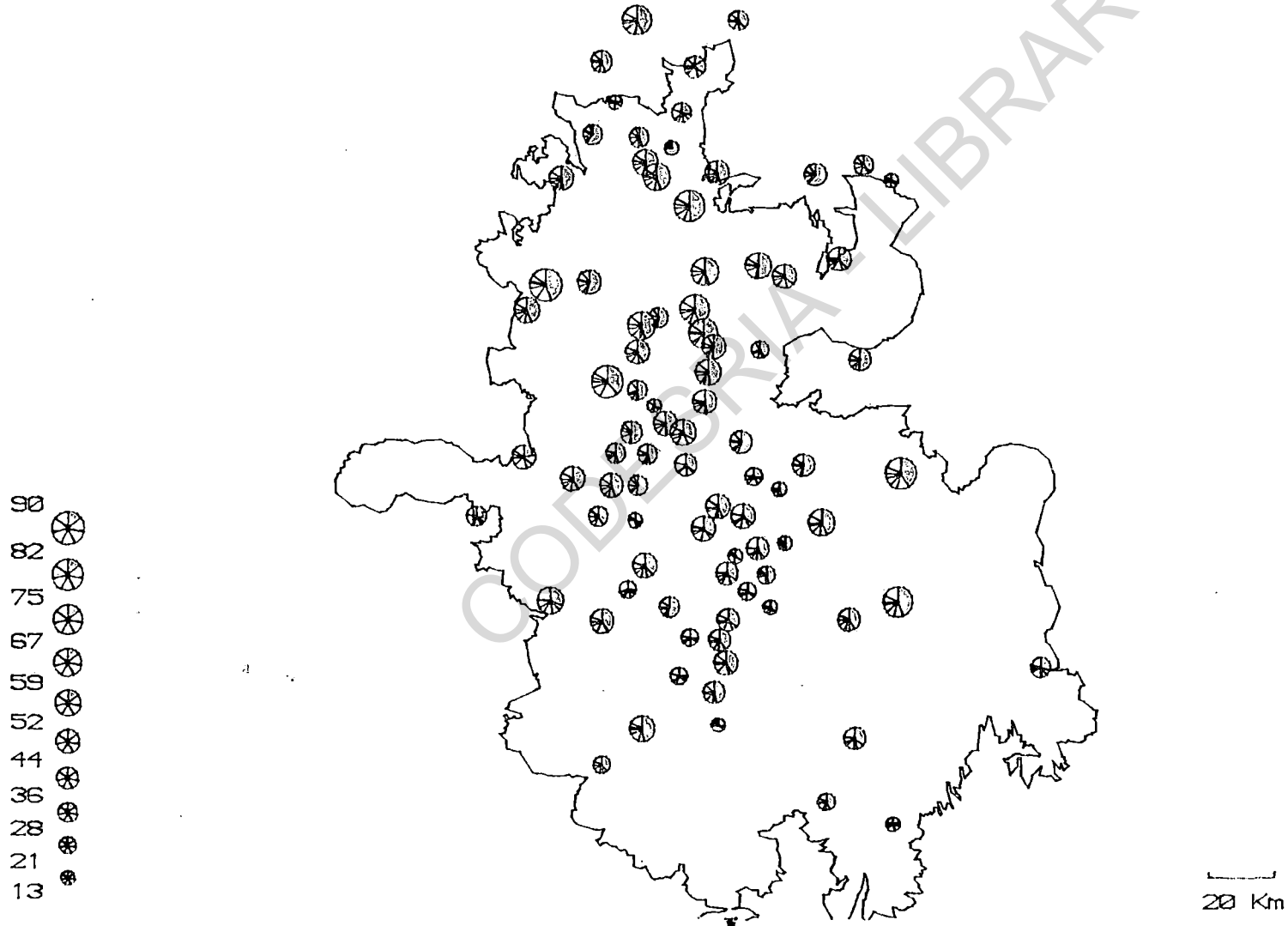
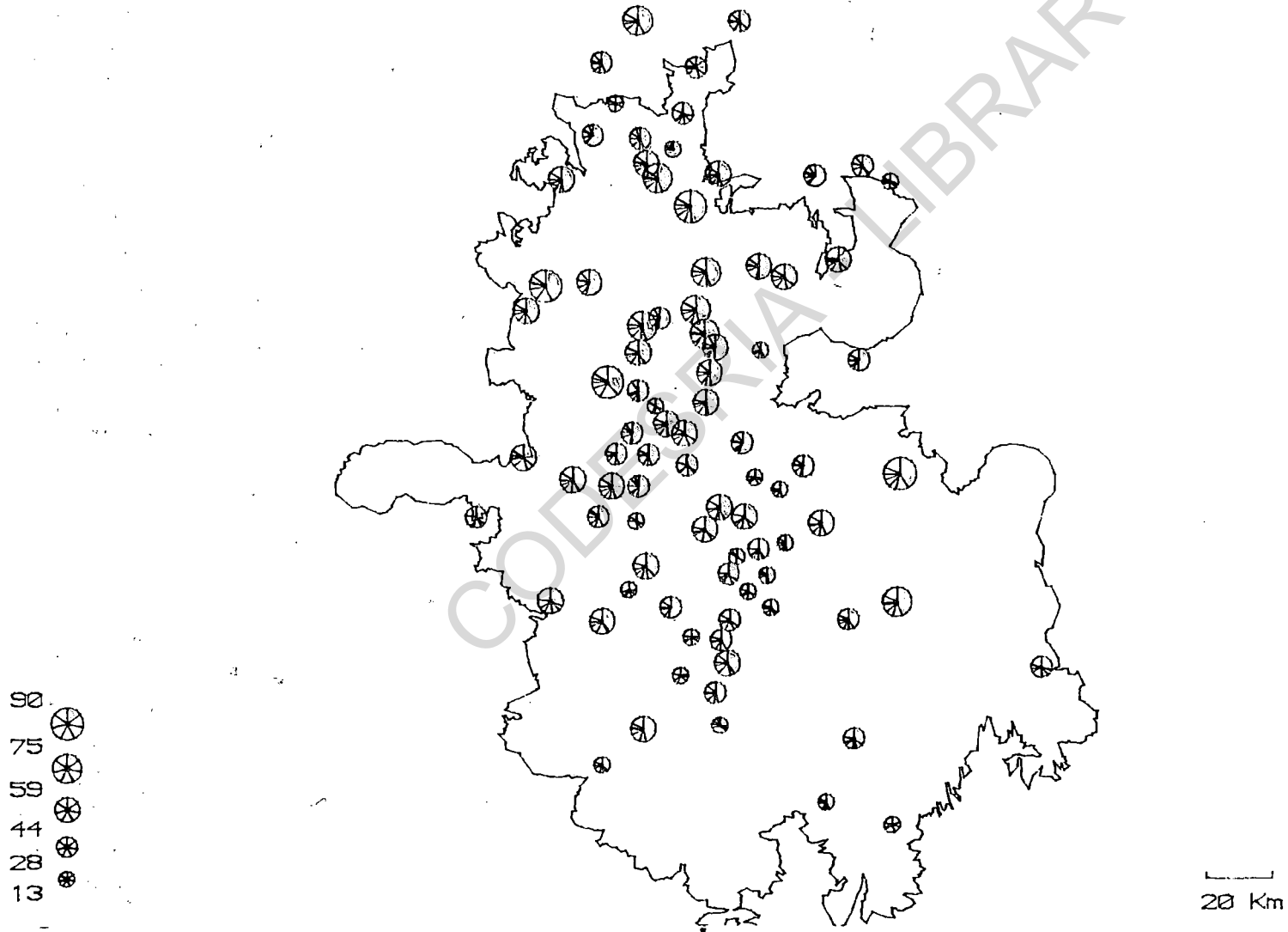


Fig. 26

Welfare provision as an index of rural development on the JPRN
(Clock-wise The red is for health provision, education,
places of worship, housing, potable water, rural roads and
general social facilities and services in the rural areas.)



Subsequent data analyses were carried out using the appropriate computer softwares. The data collected from the field were coded. Preliminary data analyses were carried out using SPSS(X). These were later transferred into a QUATTRO-PRO spreadsheet to form all the tables. These tables were later fed into the MAPICS mapping package to draw all the maps. The map of the Jos Plateau was digitized using ISIS.

This study has succeeded in generating a data-base which can serve as planning inputs geared towards improving the social conditions and welfare of the rural dwellers on the Jos Plateau. The study has also demonstrated how Social Planning and Geographical Information System (GIS) could be employed and integrated for rural development studies by social scientists and geographers in particular.

Very strong and positive relationships were recorded between levels of rural development, welfare provisions and population distribution. The highest relationship of 0.94 was obtained between levels of rural development and health-care provisions. This was followed by general welfare facilities and services equal to 0.86; educational 0.81; places of worship 0.69; rural housing 0.66; rural roads 0.64; and potable water provision in the rural areas 0.57. The least relationship of 0.28 was observed between potable water and rural roads provisions.

A positive relationship of 0.80 was observed between levels of rural development and population distribution. This was followed by general welfare facilities provisions equal to 0.74; health-care provisions 0.72; places of worship 0.62; educational services 0.61; rural housing 0.49; drinking water 0.45 and 0.41 for rural roads.

Out of the 86 rural settlements or communities studied, Vom scored the highest number of points of 90 in the rural development continuum, while 13 was the least. The mean rural development index (RUDEVI) is 41.12, with a standard deviation of 16.89. The modal class in the rural development scale recorded is 30 to 44. Only five out of the 86 rural areas studied, had a RUDEVI of 70 and above. As much as 46 communities studied had more than the mean RUDEVI. Out of the remaining 40 communities that had less than the mean RUDEVI, over 70% of them are associated with tin mining activities; the remaining 30% are mainly indigenous communities that are located at the fringes of the Jos Plateau.

The 86 rural settlement studied were classified into seven categories and their RUDEVIs were subjected to analysis of variance. An F-ratio of 3.47 was obtained. This led to the rejection of the null hypothesis at both 5% and 1% significance levels. This implies that the levels of welfare provisions as well as the levels of rural development vary significantly over the Jos Plateau Region of Nigeria.

10.2 Areas for Further Studies

Since this study is a pioneer effort in evolving a new technique of measuring rural development in terms of welfare provisions, it is recommended that similar studies should be carried out. This will enable us to re-assess the problems posed by this approach of determining rural development with a view to finding solutions.

The relevant computer softwares, especially MAPICS, were unable to shade the different segments of the pie in Figs. 25 and 26. Other GIS softwares like the ARC/INFO should be employed in further studies so as to enhance the shading of the segments into different colours. The MAPICS software was rather slow in drawing some of the maps. For example, it took it 40 to 45 minutes to plot Figs. 25 and 26. Possibilities should be looked into producing faster softwares.

In this study only 70% of the Jos Plateau was covered. Attempts should be made to cover the whole of the Jos Plateau; and more variables should be added to the ones used for this study. These variables should also be weighted according to their importance in further studies.

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APPENDIX IQuestionnaireA. Background information about the settlement

1. Name of the settlementDistrict.....LGA.....
2. Sub-region ; ; Inside the tin mining region (JPTMRN)
 ; ; On the Jos Plateau but outside the JPTMRN
 ; ; At the fringe of the Jos Plateau
3. Type of settlement
 ; A complete mining settlement
 ; Not a complete mining settlement
 ; A mining ghetto (Baraki) Labour Camp
 ; An indigenous community with tin mining activities
 inside the JPTMRN
 ; An indigenous community with no tin mining activities
 but inside the tin mining region
 ; Others
 ; Purely an indigenous settlement outside JPTMRN
4. Population size of the settlement
 ; Less than 500 persons
 ; From 501 to 1,000 persons
 ; From 1,001 to 2,000 persons
 ; From 2,001 to 5,000 persons
 ; More than 5,000 persons

B. Health-care Provisions

- 1a. Any health facility in the settlement ? ; Yes ; No
- 1b. If 'Yes' state whether it is a teaching hospital, a general hospital, a specialist hospital, antenatal clinic, a dispensary, a health centre or a private clinic
..... Number
- 1c. Medical personnel workforce in (1b): number of doctors, dentists, pharmacists....., nurses, lab technologists
- 1d. Medical facilities in (1b): number of ambulances, number of beds, borehole, generator, any specialist equipment
- 1e. Present state of the availability of drugs:
; Grossly inadequate ; Inadequate
; Adequate ; Very adequate
- 1f. Range of services offered in (1b):
; Operation ; Family planning advice
; Only drug dispensing ; Others (specify)
- 1g. Any sign of physical decay on the infrastructure ?
; Yes ; No
- 2a. Is there any drugstore in the settlement ? ; Yes ; No
- 2b. If 'yes' in (2a), is there any qualified pharmacists in the drugstore ? ; Yes ; No
3. Distance of the settlement to the nearest

	< 5km	5 -10km	11-15km	16-20km	> 20km
Urban Centre					
General Hospital					
Specialist Hosp.					
Dental Clinic					

C. Educational Provisions

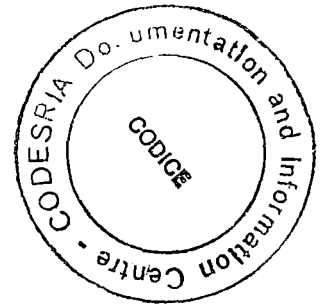
TYPE	NUM- BER	PROPRIETOR	ANY SIGN OF PHYSICAL DECAY?	
			YES	NO
Nursery School				
Primary School (state whether TC, Voc., Sec..)				
Other Special Schools				
Nomadic School				
Literacy Classes				
Rehabilitation School				
Others (specify)				
Others (specify)				

D. Institutional

1. Number of mosques
2. Number of churches
3. Types of social clubs
4. Types and number of community self-help projects
5. No. of agricult. extension workers (Malamai-aikin-gona).....
6. Number of community health inspectors (Duba-gari)

E. Shelter and Housing Provisions

1. Predominant nature of houses in the settlement
 - : Mostly Fulani ruga camps followed by mud-thatch houses
 - : Mostly mud-thatch houses followed by mud-zinc roofings
 - : Mostly mud-zinc houses followed by mud-thatch then some concrete buildings
 - : Mostly concrete buildings followed by mud-zinc then mud-thatch houses
 - : Mostly concrete structures
2. Physical quality of most houses
 - : Very repulsive : Repulsive
 - : Appealing : Very Appealing
3. Major method(s) of refuse disposal
 - : No definite way : Burning
 - : Burying : Collected by L.G.C.

F. Potable Water Provisions

1. Major mode of drinking water supply
 - : Wells, springs, rivers (no pipe-borne water supply)
 - : Mainly from wells and springs though there are pipe-borne or borehole water supply
 - : Mainly from pipe-borne then from wells and springs
2. Number of public taps or boreholes, if any

F. Other General Welfare Facilities and Services Provisions

1. Social facilities

- | | |
|--|--|
| <input type="checkbox"/> Police Station | <input type="checkbox"/> Court |
| <input type="checkbox"/> Supermarket | <input type="checkbox"/> Slaughtering houses |
| <input type="checkbox"/> Government Quarters | <input type="checkbox"/> Bank |
| <input type="checkbox"/> Electricity | <input type="checkbox"/> Telephone |
| <input type="checkbox"/> Post Office | <input type="checkbox"/> Remand Homes |
| <input type="checkbox"/> Old People's Home | <input type="checkbox"/> Bar and Restaurant |

Other types of social facilities (specify)

2. What are some of the recreational activities of the people seen in the area ?

3. Is there any standard size football field in the area ?

- | | |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

4. Where do they bury the dead people ?

- | | |
|--|--|
| <input type="checkbox"/> Family burying ground | <input type="checkbox"/> Cemetery provided by the Government |
| <input type="checkbox"/> No specific place | <input type="checkbox"/> Others (specify) |

H. Rural Roads Provisions

Type of main road leading to the settlement

- | | |
|--|---|
| <input type="checkbox"/> Major highway | <input type="checkbox"/> Earth surface road |
| <input type="checkbox"/> Motorable track | |

I. List any Potential Resources Seen in the Settlement which could be Harnessed for Development Purposes

J. Other Comments or Observations

A Sample of an OBEY (Oby) File used in drawing

Fig. 26.

```
read rurcoms.dat c1 to c16
device hpgl
origin 0 0 0 -35
scale 6 6
strings sg.tmp
class c16 5
```

```
$ Set the size of the largest symbol, the smaller ones will be scaled
$ accordingly
proportional 5
```

```
$ Different colours for pie segments
```

```
shading 1 1 2 0 0
shading 2 1 3 0 36
shading 3 1 4 0 72
shading 4 1 5 0 108
shading 5 1 6 0 144
```

```
pies c1 c2 c9 c10 c11 c12 c13 c14 c15
```

```
barscale 200 20 10 '20 Km'
```

```
text 20 10 'Source: Field Work, 1991.'
```

```
text 20 170 'Welfare provision as an index of rural development on the JPRN'
```

```
text 20 164 '(Clock-wise The red is for health provision, education,'
```

```
text 21 159 'places of worship, housing, potable water, rural roads and'
```

```
text 21 154 'general social facilities and services in the rural areas.)'
```

```
frame 10 250 10 180 draw
```

APPENDIX III

ANOVA FOR TESTING Ho

... user's guide. Third Edition for more information on these features.

1 FILE HANDLE T120AT /NAME=TABLE12
2 DATA LIST FILE=T120AT RECORDS=1
3 77 COLUMNS 11 A1 DIST 13-14 LGA 14 SUBREG 18 SETTTYPE 20 POPPSIZE 72
4 TOTALCH 24 25 TOTALCI 27 29 TOTALRW 30-31 TOTALCW 33 TOTALSD 35 TOTALDD 37
5 TOTALGFS 39-40 RUDEVI 42-43.

THE COMMAND ABOVE READS 1 RECORDS FROM TABLE12

Table with columns: VARIABLE, REC, START, END, FORMAT, WIDTH, DEC. Lists variables like SERNO, COMNA, DIST, LGA, SUBREG, SETTTYPE, POPPSIZE, TOTALHI, etc.

END OF DATALIST TABLE

6 VARIABLE LABELS
7 SERNO *SERIAL NUMBER* COMNA *NAME OF THE COMMUNITY* DIST *DISTRICT*
8 *LOCAL GOVERNMENT AREA* SUBREG *SUB-REGION OF THE COMMUNITY*
9 SETTTYPE *TYPE OF SETTLEMENT|COMMUNITY* POPPSIZE *POPULATION SIZE OF THE COMM*
10 TOTALHI *TOTAL SCORES FROM HEALTH CARE PROVISION*
11 TOTALEI *TOTAL SCORES FROM EDUCATIONAL SERVICES PROVISION*
12 TOTALDI *TOTAL SCORES FROM PLACES OF WORSHIP PROVISION*
13 TOTALCH *TOTAL SCORES FROM HOUSING PROVISION*
14 TOTALDW *TOTAL SCORES FROM DRINKING WATER PROVISION*
15 TOTALRR *TOTAL SCORES FROM RURAL ROADS PROVISION*
16 TOTALGFS *TOTAL SCORES FROM GENERAL WELFARE FACILITIES|SERVICES*
17 RUDEVI *TOTAL RURAL DEVELOPMENT INDEX*
18 VALUE LABELS
19 SERNO 1 *JEHGRE* 2 *FUSKA-MATA* 3 *BAKIN-KOGI* 4 *BINCHIN* 5 *KISSI* 6 *K WALL*
20 7 *JEBU-MTANGO* 8 *MIANGO* 9 *TIGA* 10 *SABO-TARIYA* 11 *RUMFAN-GWAMNA*
21 12 *GURUM* 13 *MISTA-ALI* 14 *NAJEJA* 15 *KATAKO-AMO* 16 *NARAGUTA-VLG*
22 17 *GABALE* 18 *MAI-GENU* 19 *RONDON-VLG* 20 *GADA* 21 *FEDERE* 22 *NEW-FORUR*
23 23 *LAMIINGO(A) ZARAO* 24 *FUSA* 25 *MAIJUU* 26 *SIGIDA|KANAR* 27 *SOT*
24 28 *GYEL* 29 *OELIMI* 30 *RAYFIELD* 31 *ZAMAN* 32 *DU* 33 *PASAKAI*
25 34 *KURU-JENTA* 35 *VOM* 36 *KURU-BABBA* 37 *GANAWURI* 38 *ASSOP-FALL*
26 39 *BANGAN* 40 *SHARUBUTU* 41 *KASSA* 42 *RIM-KAKAPO* 43 *JOL* 44 *W RIWOM*
27 45 *CAMP* 46 *SHO* 47 *SHO-KAMPANI* 48 *HEIDNA* 49 *FOROM* 50 *DISICHI*
28 51 *NAFAN-DREJI* 52 *RAFAN* 53 *DOROWA-TSOFUWA* 54 *GINDIRI-AKWATI*
29 55 *YELWA-EXLAND* 56 *KURRA-FALLS* 57 *NDING* 58 *LOBIRING-ROPP* 59 *D-BABUJE*
30 60 *GANA-ROPP* 61 *GANA-DAJI* 62 *BUKA-SAKMAI* 63 *MANJO-POTA* 64 *KANTIMA*
31 65 *MARBUMI* 66 *MANGU-HALLE* 67 *PANYAM* 68 *GINDIRI* 69 *SABO-GARI-ROBOI*
32 70 *GAMAJIGO* 71 *KUBA* 72 *MAIYANGA* 73 *TENTI* 74 *NAIKATAKO* 75 *DAN-RUKURU*
33 76 *KUNNET* 77 *BUTURA-KAMPANI* 78 *MBAR* 79 *YELWA-NONO* 80 *SHA* 81 *DAFFO*
34 82 *CHAKFEM* 83 *MANGU* 84 *JIPAL* 85 *KOMRUM* 86 *TUKUN//
35 87 *JERE* 88 *KISHAK* 89 *K WALL* 90 *MIANGO* 91 *BUJI* 92 *AMO-KATAKO*
36 93 *GWONG* 94 *MAI-GENU* 95 *FEDERE* 96 *FORUR* 97 *FORUN* 98 *GYEL* 99 *DU*
37 100 *KURU* 101 *VMANG* 102 *GANAWURI* 103 *BACHIT* 104 *RIYOM* 105 *HEIPANG*
38 106 *FOROM* 107 *FAN* 108 *GASHIM* 109 *RODD* 110 *MANGU* 111 *PANYAM* 112 *GINDIRI*
39 113 *BOKKOS* 114 *SHA* 115 *DAFFO* 116 *CHAKFEM* 117 *MANGU* 118 *JIPAL* 119 *KOMBUN*
40 120 *PANKSHIN//
41 LGA 1 *BASSA*
42 2 *JOS NORTH AND SOUTH*
43 3 *HARKIN LADI*
44 4 *MANGU AND BOKKOS*
45 5 *PANKSHIN//
46 SUBREG 1 *INSIDE THE TIN MINING REGION OF THE JOS PLATEAU*
47 2 *NOT INSIDE THE TIN MINING REGION OF THE JOS PLATEAU*
48 3 *AT THE FRINGES OF THE JOS PLATEAU REGION//
49 SETTTYPE 1 *A COMPLETE MINING SETTLEMENT*
50 2 *NOT A COMPLETE MINING SETTLEMENT*
51 3 *A MINING GHETTO LABOUR CAMP BARAKI*
52 4 *AN INDIGENOUS SETTLEMENT THOUGH MINING TOOK PLACE THERE*
53 5 *AN INDIGENOUS COMMUNITY WHERE MINING DID NOT TAKE PLACE*
54 6 *OTHER TYPES OF COMMUNITY|SETTLEMENT*
55 7 *PURE INDIGENOUS COMMUNITY|SETTLEMENT//
56 POPPSIZE 1 *LESS THAN 500 PERSONS*
57 2 *500-1000 PERSONS*
58 3 *1001-2000 PERSONS*
59 4 *2001-4000 PERSONS*
60 5 *4000 AND ABOVE PERSONS*
61 anova rudevi by setttype(1,7)
62 statistics 3

ANOVA PROBLEM REQUIRES 815 BYTES OF MEMORY.

24 Mar 92 SPSS-X RELEASE 3.0 FOR IBM MTS
13:22:43 University of Durham

*** CELL MEANS ***

Table showing RUDEVI and TOTAL RURAL DEVELOPMENT INDEX by SETTTYPE. Includes columns for population and mean values.

24 Mar 92 SPSS-X RELEASE 3.0 FOR IBM MTS
13:22:43 University of Durham

*** ANALYSIS OF VARIANCE ***

Table showing ANOVA results for RUDEVI. Columns include Source of Variation, Sum of Squares, DF, Mean Square, F, and Sig of F.

97 cases were processed.
1 cases (1.1 pct) were missing.

24 Mar 92 SPSS-X RELEASE 3.0 FOR IBM MTS
13:22:43 University of Durham

PRECEDING TASK REQUIRED 2.10 SECONDS CPU TIME; 2.53 SECONDS ELAPSED.

63 COMMAND LINES READ.
64 ERRORS DETECTED.
65 WARNINGS ISSUED.
66 SECONDS CPU TIME.
67 SECONDS ELAPSED TIME.
68 END OF JOB.

(04249)

University of Durham Computing Centre

Time: 13:22:41 Tue Mar 24/92

APPENDIX IV

***** WORKSPACE ALLOWS FOR 21294 CASES FOR NONPARAMETRIC CORRELATION PROBLEM *****

CORRELATION BETWEEN POPULATION SIZE AND OTHER INDICES

4 Mar 92 SPSS-X RELEASE 3.0 FOR IBM MTS
3:18:45 University of Durham

	S P E A R M A N C O R R E L A T I O N C O E F F I C I E N T S							
	TOTALHI	TOTAL EI	TOTALPW	TOTALCH	TOTALDW	TOTALRR	TOTALGFS	RUDEVI
OPSIZE	.7192	.6142	.6222	.4848	.4473	.4083	.7325	.7975
	N(86)	N(86)	N(96)	N(86)	N(96)	N(86)	N(86)	N(86)
	SIG .000	SIG .000	SIG .000	SIG .000	SIG .000	SIG .000	SIG .000	SIG .000

. " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED.

4 Mar 92 SPSS-X RELEASE 3.0 FOR IBM MTS
3:18:45 University of Durham

RECEDING TASK REQUIRED 0.11 SECONDS CPU TIME; 1.39 SECONDS ELAPSED.

62 0

62 COMMAND LINES READ.
0 ERRORS DETECTED.
0 WARNINGS ISSUED.
0 SECONDS CPU TIME.
6 SECONDS ELAPSED TIME.
END OF JOB.

(UN289).

University of Durham Computing Centre

Time: 13:19:56

Job Name: QGG01
Job Number: 156666
Host: DUR
User: GGG1
Project: DGG0

Pages printed: 3
Lines printed: 125

Form: NONE
Devicetype: LINE

Entered from DUR. at: 13:19:56 Tue Mar 24/92
Printed on PIR1 at: 13:18:57 Tue Mar 24/92

End job 156666 * QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 *****
End job 156666 * QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 *****
End job 156666 * QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 *****
End job 156666 * QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 *****
End job 156666 * QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 ***** QGG01 *****

End job 156666 * QGG01 *****