WORKING PAPER 507

REGIONAL VARIATIONS IN THE PROVISION OF
EDUCATIONAL AND HEALTH SERVICES IN ZIMBABWE

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February 1988

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Author's Note

## 1. INTRODUCTION

This paper attempts to describe and analyse regional variations in the provision of two public services in Zimbabwe. These are education and health. Recently, statistical data has become available which enables analysis of regional inequalities at the provincial and district levels. The 1982 Population Census, whose first report appeared in 1984 and the second in 1985, plus the Statistical Yearbook for 1985 are the main data sources for this analysis. Other sources include the various national development plans and the reports from ministries.

Simon (1986) poses the question; what are the dominant manifestations of regional inequalities in the provision of social and economic services in Zimbabwe? The question he asks is addressed with regards to the provision of health and educational services within the country. Secondly, it is important to investigate whether the use of national aggregate data masks differences at the regional scales such as the province and the district. The extent to which provinces or districts vary from the national averages might provide a useful indicator for the equity goals of the government, especially in the allocation of resources to achieve these (Ridell 1984; Government of Zimbabwe 1981 and 1982).

The paper is divided into two major sections. The first examines the provision of health services and gives some background on the development of these facilities within the country. Variations in the provision of health services at the provincial and district levels are analysed. The second does a similar analysis for education. The conclusion notes that regional inequalities exist at various spatial and sectorial scales in the provision of health and educational services. The government is aware of their existence and is striving to reduce them by proper planning over time, space and sectors.

## 2. HEALTH SERVICES PROVISION: INDICATORS OF VARIATION

### 2.1 Some background information

Health services in Zimbabwe are provided by five main organisations or institutions. The main provider and supporter of health services is the Ministry of Health (MoH), which runs most government owned hospitals and clinics. It is also the policy maker for the health system as a whole and sets the standards to be followed by the other organisations providing health services. Closely associated with the MoH are the local authorities, such as municipalities, district and rural councils, which provide health services mostly at the community level. These local authorities are partly financed by MoH through grants and partly by their own funds raised as fees and taxes from those who consume the services they provide (MoH 1985; CSO 1985b; Agere 1986).

Mission churches provide health services largely for the rural communities. They therefore fill an important gap between provision from the MoH and the local authorities at the rural community level. As a realisation of the importance of mission churches in the provision of health services for rural areas, the MoH provide a more comprehensive grant aid package to them. Some of them are financed wholly by the MoH

(CSO 1985b; Agere 1986).

The importance of mission churches in providing health service is shown in Table 1 which compares outpatient figures by type of hospital in 1982 and 1983. Mission church health services treat more outpatients annually than any other type of health service. In 1983, they treated almost one and a half times more patients than the government hospital services. This confirms their importance in the health service system as a whole and, in particular, for rural areas though no detailed figures of the distribution of mission hospitals are given in the statistics available. However, Agere (1986) does indicate that mission hospitals are predominant in rural districts.

Certain industrial organisations also provide health services mainly for their workers and their dependents. The funding of these services come from the industrial organisations concerned. Their location is therefore mainly urban except for those located on huge estates like Triangle and Hippo Valley in the south-eastern part of the country. The estate hospitals tend to serve their workers and their dependents but cases from non-estate workers are handled through the referral system. Thus, mission churches and local authorities can refer patients to the industrial hospitals (MoH 1985). Other types of industrial health services are those located on mines, which as Table 1 shows, also treat a significant number of outpatients.

Private medical services exist in most urban centres in the country for those who can afford them. These are mainly funded by private individuals and organisations. They tend to charge high rates of fees for treatment within them and are seen as a serious obstacle to the development of a National Health Service. This is because their higher rates of pay attract most of the qualified doctors and nurses leaving the public sector poorly serviced. Furthermore, their urban bias means that rural services suffer even more. Hence, in 1983, the four medical doctors working in Mudzi and Mutoko districts in Mashonaland East Province were all expartriates when Harare which is close to these rural districts had 357 doctors who were in the main locally qualified and citizens of Zimbabwe (CSO 1985b; MoH 1985; GoZ 1982 & 1986). Private medical services carter for a small clientele of high income families within the urban centres. The chief example of the private medical service is Avenues Clinic in Harare which charges very high fees for treatment as well as paying its staff higher than public services salaries. Parerenyatwa Central Hospital has been reported in the local media as losing a lot of nurses and medical doctors who are mostly trained at public expense to this clinic. This situation illustrates the existence of inequalities on a sectorial scale within the health services as well as variations in the quality and quantity of both health personnel and services or care provided.

The range of health services in Zimbabwe is great varying from the public to the most exclusive and private. This range implies questions of access and availability with public services being generally more accessible to the majority of the people but perceived as delivering lower quality services when compared to private services. The urban to rural inequalities can also be inferred from the distribution of medical services and personnel implied by the various organisations that provided

Table 1 Outpatient attendances by hospital service type 1982-1983

| Hospital Service Type | Outpatient attendances | |
| --- | --- | --- |
| | 1982 | 1983 |
| Government | 2 991 387 | 2 898 920 |
| Mission churches | 3 586 812* | 4 167 812 |
| Mine hospitals | | 550 202 |
| Mine clinics | | 830 868 |
| Other industrial and clinic | | 431 552 |

Source: CSO 1985b: Tables 3.8 & 3.14
       *MoH 1985: Table 24

or delivered health services to the population.

The implications of the various organisations that provide health
care to the nation can be evaluated in terms of the long term goals of
government with regards to health care. Reference has already been made
to the governments goal of establishing a national health system. The
other objective of government is to provide health for all by the year
2000 or within the foreseeable future (CSO 1985b; MoH 1985; GoZ 1982 &
1986). It is with these goals in mind that the government of Zimbabwe
enabled free access to health facilities for all those whose income is
below Z$150 per month since 1981 (Ridell 1984). However, inequalities
still exist and these will be examined in greater detail below.

## 2.2  The concept of health and some conventional indicators

Health is a difficult concept to define. Two main approaches to
health have been used in determining its definition. Agere (1986)
classified the first  approach as 'contagionism' (p. 355). Within this
approach, health is defined as 'the absence of disease'. Baylies (1986)
also identifies this approach to health and agrees with Agere that the
definition is inadequate. It seeks to confine health to only a biological
or physical condition without due regards as to the social and economic as
well as political factors under which the health care delivery system
operates. For example, Anker (1978) analysing factors influencing the
decline in fertility rates found that the date of attainment of
independence was a significant factor. The main reason for this was that
colonial regimes were notorious for promoting health policies that were
not directed at the masses of the population, a factor that is relevant to
Zimbabwe (see Agere 1986).

The second approach Agere terms 'anticontagionism' (p. 355). The
approach places emphasis on improving the social, economic and political
conditions of the masses of the people as a means of improving the total
well-being of the nation. This approach, adopted by the Wolrd Health
Organisation in 1977, defines health as 'a state of complete physical,
mental and social well-being' (Baylies 1986, p. 65; Agere 1986). The
definition escapes the narrow confines of the first. The core of its
argument is that health is more than merely the absence of disease or
illness. The social and economic conditions play a vital role in
determining the health status of a population. Improvements in these
spheres will therefore enhance the health status of the whole nation.

The second approach calls for measures that are different from the
conventional measures of health currently in operation. Conventional
measures of health are still dependent on the first definition of health.
These include such measures as infant and child mortality rates, life
expectancy at birth, and nutritional status (measured in calories intake).
Other measures to be discussed below include the ratios of doctors per
population or nurses per population. These conventional indicators suffer
from data defiencies, especially in the developing parts of the world
(Baylies 1986). They often are national aggregates and mask regional
variations. In this respect they are viewed as only partial measures of
health status. Despite the criticism leveled at these conventional
indicators the second approach has found it hard to break away from them.

This is due to the fact that some of them are very sensitive indicators of improvements in the social and economic spheres. Chief among these is the infant and child mortality rate which responds readily to improvements in things like wholesome water supplies and sanitation.

For our discussion the indicators that are available to us are the ratio of population per physician and that of population per village health worker. The World Bank has used the ratio of population per physician in measuring the development and quality of services provided within given countries (World Bank 1986). A similar approach will be adopted here in examining regional inequalities in the provision of health services in Zimbabwe. Two types of health personnel are considered. These are medical doctors and village health workers. Because of the lack of appropriately disaggregated figures the ratio of population per nurse can not be used. The use of the ratio of population per village health worker is substituted. Village health workers are at the grassroots of the primary health care delivery system. They are an important element of the government's preventive primary health approach. The success of the primary health care system depends on the ability of the village health workers in combating disease at the grassroots. It also depends upon their ability to motivate people to improve their water supply systems as well as their sanitary facilities. Thus the primary duty of the village health worker is to ensure that social conditions in the villages are improved as a means of preventing disease and improving the health status of the villages under them (Agere 1986).

National ratios of health personnel are worked out and presented in Table 2. The purpose for this is to compare provincial and district ratios to the national ones as a means of assessing regional variations as well as the extent to which national ratios conceal regional imbalances. The national ratio of medical practioners seems to have improved between 1982 and 1983 when the ratio dropped by some 600 people. It must be borne in mind that the higher the ratio, the worst the health status of the population under consideration. Between 1983 and 1984 there seems to have been a general worsening of the population per medical practioner. This might be a result of differences in the data sources used or the classification of what constitutes a medical practioner. The ratio of population per nurse behaves in a similar manner again as a result of the use of two different data sources (CSO 1985b).

The different organisations providing the figures were interested in different aspects of health personnel. For example, the Medical, Dental and Allied Professions Council figures relate to personnel registered with them as opposed to the figures provided by the Health Professional Council which relate to staff in post in 1984. The MoH (1985) gives 1 : 8000 as the ratio for medical doctors to population for the nation. This would indicate a continued improvement in this ratio from 1984. However, the ratio for medical doctors for 1984 will be used in this analysis as the national average as it is in line with the data available. It is also probably that a worsening of ratios is possible due to the increase in population outstripping the increase in the training of medical personnel. The migration of white medical personnel out of the country might also have had an impact on these ratios as in the pre-independence era, most medical personnel especially in the practioner and doctor categories,

Table 2 Ratios of health personnel to population 1982-1984

| Health personnel | 1982 | Ratio | 1983 | Ratio | 1984 | Ratio |
|---|---|---|---|---|---|---|
| Medical practioners* | 1 511 | 4 900 | 1 733 | 4 300 | 1 250+ | 6 000 |
| Medical doctors** | | | | | 705 | 11 000 |
| Nurses (SRN only)* | 5 672 | 1 300 | 6 179 | 1 200 | 5 079+ | 1 400 |
| Village health workr. | | | 2 859 | 1 600** | | |

Notes: * Medical, Dental and Allied Professions Council figures
   ** Ministry of Health figures
   + Health Professional Council figures
Source: CSO 1985b: Tables 3.2, 3.3, 3.4 & 3.6

trained were white.

## 2.3 Village Health Workers

The training of village health workers (VHWs) is a post-independence phenomena in Zimbabwe occassioned by the government's policy of providing preventative rather than curative health care at the community level. VHWs are the first rung in the provision of health services to the rural community. They are selected by a group of villages to undergo training at the provincial training centre. This is done on the understanding that later they will be assigned to work in the villages that chose them (MoH 1985; CSO 1985b; GoZ 1982; Agere 1986). Once back in the villages that chose them they are supplied with a bicycle. On this they are expected to visit each village and distribute things like anti-malarial tablets, help in the immunisation programmes through the teaching and distribution of awareness literature, supervise the construction of ventilated pit latrines as well as covered or protected wells for cleaner water supplies. They teach women about the proper care for children especially infants as well as the proper diets to be given. Because they were chosen by the villages their message is likely to be accepted instead of that provided by people from outside the region. The target ratio of population per village health worker given by the MoH plans is 500 by the year 1993 (MoH 1985).

The national ratio of village health workers to the population in 1982 was 3936 people per VHW. Table 3 produces inter-provincial comparisons of ratios of VHWs and their distribution in 1982 and 1983. The 1982 figures show that four provinces operated with worse ratios than the national average. This means that they had a less favourable share of the VHWs than the nation. This is especially so when they are contrasted to Matebeleland North which had the best ratio. In 1983 these four provinces were still operating with ratios worse than the national average. These are the provinces of Manicaland, Mashonaland West, Midlands and Masvingo. The reasons for their poor performance might be found in their large share of the rural populations. This means that more resources need to be expanded on these provinces in order that they be brought into line with the rest of the country.

Consideration of the index of variation need to be taken into account. This index measures the distance which the various provinces must move were they to operate at the national average. Figures above the national average show an unfavourable distribution of VHWs vis-a-vis the nation while those below show a more favourable capturing of the share of national VHWs. Comparison of 1982 to 1983 in this index show that only Masvingo, of the provinces operating with ratios worse than the national average, moved further away from the average. The rest were able to improve their positions with Manicaland remaining static. The other provinces also moved closer to the national average except for Matebeleland North which was able to maintain itself as the province with the most favourable share of VHWs in the nation.

On a temporal scale, the provinces have moved closer to an equitable distribution of VHWs in 1983 compared to 1982. This is shown by the fall in both the standard deviation and the range. Both are now smaller than

Table 3  Variation in the ratio of village health workers:
Zimbabwe 1982 & 1983

| PROVINCE | VILLAGE HEALTH WORKERS | | RURAL POPULATION | | POPULATION TO VHWs | | INDEX OF VARIATION | |
|---|---|---|---|---|---|---|---|---|
| | 1982 | 1983 | 1982 | 1983 | 1982 | 1983 | 1982 | 1983 |
| Man.land | 197 | 382 | 1027009 | 1054960 | 5213 | 2762 | 132 | 132 |
| Mas.East | 207 | 390 | 647154 | 661212 | 3126 | 1695 | 79 | 81 |
| Mas.Cent | 171 | 313 | 563407 | 581259 | 3295 | 1857 | 84 | 89 |
| Mas.West | 144 | 286 | 752263 | 769178 | 5224 | 2689 | 133 | 128 |
| Mat.North | 147 | 296 | 408582 | 417387 | 2779 | 1410 | 71 | 67 |
| Mat.South | 169 | 312 | 519415 | 529325 | 3073 | 1697 | 78 | 81 |
| Midlands | 220 | 439 | 959567 | 987641 | 4362 | 2250 | 111 | 107 |
| Masvingo | 231 | 441 | 1000276 | 1027134 | 4330 | 2329 | 110 | 111 |
| Zimbabwe | 1486 | 2859 | 5848249 | 5995034 | 3936 | 2097 | - | - |

Notes:
1. the mean for 1982 population to village health workers = 3925.4
2. the mean for 1983                                        = 2086.1
3. the standard deviation for 1982                          =  983.8
4. the standard deviation for 1983                          =  495.7
5. the range for 1982                                       = 2444.6
6. the range for 1983                                       = 1351.6
7. the rural population for 1983 was obtained by projecting the 1982
   population forward  using a constant growth rate for each province
   based on its 1969 and 1982 population.
Source:  CSO 1984: Table 2 & 4
         CSO 1985b: Table 3.4

they were in 1982 showing an overall move towards a more equitable distribution. This is so despite some provinces moving away from the national average. If the trend continues then it appears possible that the MoH's goal of a ratio of 500 people per VHW by 1993 nationally may be achieved.

The analysis of distribution of VHWs for districts to bring out intraregional inequalities can only be performed for a single province, that of Mashonaland West. It is the only province with data for VHWs by districts as well as communal lands or district councils. Some of the figures provided seem to cover communal lands only. In such cases two figures are given: one for the district as a whole and the other for the communal lands referred to in the MoH report from which the data was obtained.

The Table 4 illustrates the intraregional imbalances in the distribution of village health workers within a single province. These range from an actual ratio of 4 000 for Hurungwe to only 500 for Ngezi Communal Land and the 360 for Nyaminyami CL. It means that in 1983, at least two communal lands operated at or below the national average targeted for 1993. At the same time some other districts were twice above the national average for 1983 and at least eight times above the target national ratios. This too reveals uneven spread of health personnel at the village level which will have to be tackled vigorously if the national targets are to be met. Of interest too is the fact that most of the targets for VHWs in this province will operate below the national targeted average. It would have been interesting to compare these targets with those of other provincial districts to see how many of them expect to achieve targets below the national average.

A further point to note with these data is the effect of the inclusion of urban districts in the calculation of the ratios. These generally tended to give worse ratios than when rural districts are computed on their own as was done for the communal lands in the table. The figures for the communal lands without their urban areas needed to be accepted as the more valid figures because the village health worker is serving a rural population. Overall, VHW ratios are more likely to achieve a more equatable distribution than those of medical doctos considered in the next sub-section.

## 2.4  Medical doctors

Table 2 above gave the national ratio of medical doctors to population as 1 : 11 000 or if the Ministry of Health's figures are followed 1 : 8 000. The absolute data show that certain districts lack a medical doctor. These are serviced by doctors from neighbouring districts or patients have to make the journey to the nearest centre with a doctor (MoH 1985). This has implications for the accessibility and availability of urgent medical attention for the residents of these districts. It also implies a cost in both time as well as money even though the service provided in the end might be free. As most districts without a medical doctor are rural as well as being remote, in terms of distance from the nearest urban centre, this worsens the access to health services of these districts as well as increasing the cost of medical services available to

Table 4 VHW per population in the districts of Mashonaland West

| District | Population 1982 | Village Health Workers 1983 | | | |
|---|---|---|---|---|---|
| | | Target | | Actual | |
| | | No. | Ratio | No. | Ratio |
| Hurungwe | 217 890 | 456 | 480 | 53 | 4 000 |
| Kadoma | 111 760 | 394 | 300 | 87 | 1 300 |
| Sanyati CL. | 22 312 | 167 | 130 | 31 | 700 |
| Ngezi CL. | 26 891 | 227 | 120 | 56 | 500 |
| Kariba | 25 920 | 167 | 200 | 27 | 960 |
| Nyaminyami CL. | 9 823 | " | 60 | " | 360 |
| Chinhoyi | 319 940 | 385 | 800 | 43 | 790 |
| Chirorodziva CL. | 65 869 | " | 170 | " | 1 500 |
| Chegutu | 147 790 | 244 | 600 | 80 | 800 |
| Mhondoro CL. | 59 790 | " | 250 | " | 750 |

Note: " Means figure for whole district was used to calculate ratios for
       the communal land
Sources: MoH 1985: p. 31
         CSO 1984: Table 2 p. 20
         CSO 1985a: Table III.10 p. 70

them.

A more meaningful way of analyzing access or availability of medical personnel is to compare the ratio of population per medical doctor by the rural/urban division. Table 5 presents figures for such an analysis. First, the national mean for 1984 is calculated as 11369 persons per doctor. This was arrived at by projecting forward the population for 1982 by a constant inter-censal growth rate from the 1969 and 1982 censuses. Comparison of the provinces show that only the two provinces containing the largest urban centres operate below the national average. These are the provinces of Mashonaland East and Matabeleland North, containing Harare and Bulawayo, respectively. The rest exhibit averages varying from 27254 persons per doctor in Masvingo Province to 107943 in Matabeleland South. The high ratio for Matebeleland South is due to its lack of significant urban centres (Simon 1986). This means that it is not a very attractive province for people in the medical profession and also illustrates the bias towards urban areas in the distribution of medical personnel. Maybe a better way of bring out the regional variation brought out by these ratios is to compare and contrast the percentage share of the population to the percentage share of doctors. Mashonaland East, because it contains Harare, has the highest percentage share of the population at 20.8% (Table 6). However, this factor does not seem to justify its share of the medical doctors. This is more than half the national total at 53.3%, illustrating the primacy of Harare in the national system. This is even more so when it is realised that Harare captures 95.7% of all the doctors located in Mashonaland East leaving a miserly 4.3% to the rest of the provincial population. Matebeleland South on the other hands captures 6.7% of the population but only manages a mere 0.7% of the national share of doctors. Thus the percent share of doctors is a function of the size of urban centre within the province. Those that boast a municipial council tend to capture a greater share of doctors than those that have a town council or no urban centre at all.

At the national level, the dominance of the municipalies is clearly illustrated by the percentage share of population and medical doctors (Table 6). The rural areas represented by the term 'rest of Zimbabwe' capture about 76.9% of the population. However, when it comes to doctors, their share is only 23.1%. In other words, about a fifth of the national population in urban areas enjoys 86.5% of the national medical doctor cake while the four-fifth get only 13.5%. This is a gap so large that it needs some serious redressing.

The intra-provincial picture is hardly any better. In fact, one finds that it is worse than the inter-provincial and national picture. If the provincial ratio of population per medical doctor is taken as the average then in most instances, the urban ratios are below the provincial average while those of rural areas are way above. This is inspite of the fact that, except for Mashonaland East and Matebeleland North which have the majority of the population living in urban centres, the majority of the population are in rural areas. For example, an analysis of the districts of Midlands based upon some of the raw data show that the urban district of Gweru has a below national average ratio while Gokwe to the north-west has one of the worst ratios. On average a doctor in Gokwe treats 268 times more patients than the one in Gweru. In percentage

Table 5 Analysis of population per medical doctor: Zimbabwe 1984

| Province | Population in 1982 | Population in 1984 | Medical doctors 1984 | Population per medical doctor 1984 |
|---|---|---|---|---|
| Zimbabwe | 7546071 | 8029671 | 705 | 11369 |
| Municipalities | 1673057 | 1857079 | 610 | 3044 |
| R. Zimbabwe | 5873014 | 6172592 | 95 | 64975 |
| Manicaland PROV. | 1099202 | 1162180 | 31 | 37481 |
| Mutare Mun. | 69621 | 75259 | 8 | 9407 |
| R. Manicaland | 1029681 | 1086921 | 23 | 47257 |
| Mash.Central PROV. | 563407 | 599723 | 16 | 37480 |
| Bindura TC | 18243 | 19914 | 8 | 2489 |
| R. Mash.Central | 545164 | 579809 | 8 | 72476 |
| Mash.East PROV. | 1495984 | 1667315 | 376 | 4317 |
| Harare Mun. | 656011 | 718117 | 360 | 1995 |
| Chitungwiza TC | 172556 | 251345 | 3 | 83782 |
| Marondera TC | 20263 | 22279 | 5 | 4456 |
| R. Mash.East | 647154 | 675574 | 11 | 61416 |
| Mash.West PROV. | 858962 | 905262 | 19 | 47566 |
| Chegutu TC | 19621 | 22264 | 1 | 22264 |
| Chinhoyi TC | 24322 | 26670 | 9 | 2963 |
| Kadoma TC | 44613 | 48776 | 4 | 12194 |
| Kariba TC | 12387 | 14774 | 2 | 7387 |
| R. Mash.West | 758019 | 792778 | 3 | 264259 |
| Mat.North PROV. | 885339 | 946953 | 181 | 5222 |
| Bulawayo Mun. | 413841 | 451062 | 168 | 2685 |
| Hwange TC | 47316 | 52647 | 7 | 7521 |
| R. Mat.North | 424209 | 443244 | 6 | 73874 |
| Mat.South PROV. | 519636 | 539668 | 5 | 107934 |
| Midlands PROV. | 1091844 | 1156294 | 37 | 31238 |
| Gweru Mun. | 78918 | 85703 | 12 | 7142 |
| Kwekwe TC | 69622 | 75827 | 4 | 18957 |
| Shurugwi TC | 13351 | 14340 | 4 | 3585 |
| R. Midlands | 929953 | 980424 | 17 | 57672 |
| Masvingo PROV. | 1031697 | 1091158 | 40 | 27254 |
| Masvingo Mun. | 30642 | 35686 | 18 | 1983 |
| R. Masvingo | 1001055 | 1055472 | 22 | 47976 |

Source: CSO 1985b: Table 3.6
Notes: R    — rest of
     Mun.   — municipality
     TC    — town council
     PROV. — province

Table 6: Percentage distribution of population and medical doctors: 1984

| Province | Percentage Population | Percentage Med. Doctors |
|---|---|---|
| Zimbabwe | 100.0 | 100.0 |
| Municipalities | 23.1 | 86.5 |
| R. Zimbabwe | 76.9 | 13.5 |
| Manicaland PROV. | 14.5 | 4.4 |
| Mutare Mun. | 25.8 | 6.5 |
| R. Manicaland | 74.2 | 93.5 |
| Mash.Central PROV | 7.5 | 2.3 |
| Bindura TC | 3.3 | 50.0 |
| R. Mash.Central | 96.7 | 50.0 |
| Mash.East PROV. | 20.8 | 53.3 |
| Harare Mun | 43.1 | 95.7 |
| Chitungwiza TC | 14.5 | 0.8 |
| Marondera TC | 1.3 | 1.3 |
| R. Mash.East | 40.5 | 2.9 |
| Mash.West PROV. | 11.3 | 2.7 |
| Chegutu TC | 2.5 | 5.3 |
| Chinhoyi TC | 2.9 | 47.4 |
| Kadoma TC | 5.4 | 21.1 |
| Kariba TC | 1.6 | 10.5 |
| R. Mash.West | 87.6 | 15.8 |
| Mat.North PROV | 11.8 | 25.7 |
| Bulawayo Mun. | 47.6 | 92.8 |
| Hwange TC | 5.6 | 3.9 |
| R. Mat.North | 46.8 | 3.3 |
| Mat.South PROV. | 6.7 | 0.7 |
| Midlands PROV. | 14.4 | 5.2 |
| Gweru Mun. | 7.4 | 32.4 |
| Kwekwe TC | 6.6 | 10.8 |
| Shurugwi TC | 1.2 | 10.8 |
| R. Midlands | 84.8 | 46.0 |
| Masvingo PROV. | 13.6 | 5.7 |
| Masvingo Mun. | 3.3 | 45.0 |
| R. Masvingo | 96.7 | 55.0 |

Source: Table 5 above.

Table 7: Rural-urban distribution of health manpower 1984

| Staff category | Government | | Mission industry & private | Total |
|---|---|---|---|---|
| | Rural | Urban | | |
| Doctors | 29 | 403 | 59 | 491 |
| Clinical officers | 16 | - | - | 16 |
| General/psychiatric nurses | - | 1 954 | 201 | 2 155 |
| Community nurses | - | 105 | 2 | 107 |
| Nurse tutors/clinical instructors | - | 48 | - | 48 |
| Medical assistants | 1 390 | 1 501 | 546 | 3 437 |
| Pharmacists | 4 | 32 | 2 | 38 |
| Pharmacy assistants | - | 17 | 4 | 21 |
| Radiographers | 3 | 55 | 2 | 60 |
| X-ray operators | 3 | 5 | 11 | 19 |
| Medical lab. technicians | - | 57 | 5 | 62 |
| Lab. assistants | 21 | 59 | 37 | 117 |
| Physiotherapists | - | 24 | 2 | 26 |
| Occupational therapists | - | 6 | - | 6 |
| Rehabilitation assistants | - | 20 | 3 | 23 |
| Hospital administrators | - | 9 | 22 | 31 |
| Health inspectors | - | 29 | 1 | 30 |
| Health assistants | - | 239 | 4 | 243 |
| Health education officers | - | 5 | - | 5 |
| Nutritionists | - | 6 | - | 6 |
| Tuberclosis officers | - | 4 | - | 4 |
| Dentists | - | 10 | 2 | 12 |
| Dental surgery assistants | - | 3 | - | 3 |
| Dental assistants | 4 | 14 | 1 | 19 |
| TOTAL | 1 470 | 4 605 | 904 | 6 979 |

Source: CSO 1985b: Table 3.5

terms, Gweru has 32.4% of all medical doctors in the province compared with only 2.7% for Gokwe. These imbalances are repeated in all the other provinces with significant urban centres in them. Bindura in Mash. Central takes 50% of all the doctors in the province while Marondera takes 31.25% of those in Mash. East when Harare district is excluded. In Masvingo, Chiredzi and the town of Masvingo together account for 77.5% of all medical doctors in the province. These figures illustrate clearly, not only the regional variation between the provinces but also within the them.

It is important to point out that there are inter-provincial and intra-district flows which reduce some of the disadvantages suffered by the rural districts. Zinyama (1986) works out an accessibility index which show that the rural districts are not as worse off as might be suggested by the figures. However, as was pointed out at the beginning of this section, there rural population suffers from an added cost of having to travel to urban centres to receive treatment. This adds to the cost of utilising public services which might not be incurred by populations in urban centres.

Table 7 illustrates further the theme of urban to rural inequalities. The 1983 health manpower survey showed that on average there was 1 rural doctor for every 14 in the urban areas under government service. Unfortunately the figures for mission churches, industrial and private are not presented by rural to urban divisions. In terms of total health manpower, there was 1 health personnel in the rural areas for every 4 in urban ones. Taken together and ignoring the fact that some health manpower in mission hospitals will be working within the rural areas, rural areas only managed to attract 21.1% of all health manpower in 1984. This means that 75% of the population is only capturing a fifth of the national share of health manpower while 25% captures the remaining four fifths (MoH 1985; CSO 1985a).

The dominance of urban districts over rural ones is a well established factor of the uneven development in the socio-economic space of the country and one which national and regional planners will have to grapple with for some time to come. It is a challenge to some of the equity goals and policies of government outlined above. To reduce these imbalances and achieve some of these equity goals, planners will have to address the imbalances at the national, provincial and district scales as well as temporal and sectorial ones.


## 3.0 EDUCATIONAL PROVISION: INDICATORS OF VARIATION

### 3.1 Some background information

Education in Zimbabwe begins with seven years of primary schooling, followed by four years of secondary schooling, leading to the 0 level certificate. For those who do not drop out, a further two years of secondary schooling is possible leading to University after passing the A level examinations. This only relates to formal education. Informal education as well as adult and vocational education are also provided on both a public and private basis. Formal education is also provided on a

private and public basis. In fact the provision of education is similar to that of health services with government footing the lions share of the educational budget mainly in the form of teacher salaries (Ridell 1984; CSO 1985b). This paper will confine itself to the examination of regional differences in the formal education system at the primary and secondary school levels. This is not to underplay the importance of the informal, adult and vocational education but is mainly dictated by the data.

The inherited educational system showed inequalities in the quality and quantity of educational facilities at a number of different scales. There was the racial bias which favoured the non-black population. For example, in 1978, the state was spending 11 times more on each white pupil than on a black one (GoZ 1982). They were differences too in the physical and equipment levels of the non-black and the black schools with the latter generally having poorer facilities as well as less qualified teachers. The bias was further expressed at the rural to urban scale. Urban schools on the whole had better facilities as well as better trained teachers than rural schools. This can be seen in the examination of average class sizes in both primary and secondary education as expressed in the teacher:pupil ratios (CSO 1985b).

Four aspects of educational services will be investigated. These are the distribution of schools and teachers by provinces and districts and the teacher to pupil ratios and variation in the male/female dropout rates as indicated by increases in the sex ratios with increases in the level of education attained. Table 8 provides a major summary of some of these aspects.

## 3.2 Distribution of schools and teachers

Three provinces seem to dominate both the primary and the secondary school systems in terms of absolute numbers of teachers and schools. These are Manicaland, Midlands and Masvingo. When Mash. East includes Harare district, then the number rises to four with Mash. East taking the largest share of all schools and teachers. The reasons for this distribution seem to lie in the population distribution and densities. The four provinces mentioned record some of the highest population densities in the country. The national population density is about 19 persons per square kilometre. Mash. East including Harare has a population density of 60/sq. km. Manicaland stands at 31/sq. km, Masvingo 23.3/sq. km while Midlands has a density of 18.5/sq. km which is below the national average but still higher than that of Mat. South at 7.8 or Mat. North at 12/sq. km (CSO 1985a & 1985b).

Other possible causes for the dominance of these four provinces might relate to the historical patterns of settlement and development. For example, education in most rural areas was provided largely by mission churches before the late 1970s (GoZ 1982). This means that the pattern of mission distribution would determine the number of school a district or province could have. Masvingo, Manicaland and Mashonaland East have histories of early settlement by mission churches and some of the oldest schools in the country are located within them. It might be illuminative, provided the right kind of data can be found, to investigate the strength of the relationship between population density, distribution of mission

churches and the number of schools at the district and provincial levels.

A comparison of primary and secondary schools at the district levels reveals the dominance of Harare, yet again. For example, Gokwe district has 166 primary schools compared to Harare's 161. The difference is not much until the teachers are compared. Harare has an incredible 3 085 teachers compared to only 1 909 for Gokwe district. In percentage terms both Gokwe and Harare capture similar shares of the primary schools at the national level, i.e. 4.1%. However, Harare manages to attract 6.1% of the national teachers compared to only 3.8% for Gokwe. This difference illustrates clearly the rural urban imbalances mentioned under the provision of health.

Kariba district has the poorest performance both at the national and provincial levels. It only contains 0.15% of the national total of primary schools and about 2% of the provincial total. Its share of teachers in the primary school system is only 0.2% at the national level and 1.9% at the level of the province. Consequently, it also registers a poor performance at the secondary school level were it attracts only 0.13% of the national share of secondary schools and 0.11% of teachers. Provincially, its share does not improve as it manages to capture only 1.4% of the schools and 1.43% of the teachers.

### 3.3 Pupils per teacher ratios

The national average for pupils per teacher or teacher to pupil ratios is 40.6 for the primary school system and 28 for the secondary schools. The provincial averages are shown in Table 8 against the name of the province concerned. Only three provinces operate above the national average at the primary school level. These are Mashonalnd Central, which contains the district of Guruve, with the highest ratio for any district in the country at 48.8 pupils per teacher. Furthermore, all the districts in this province operate above the national average except for Shamva. This indicates that the province has a poor distribution of teachers and schools.

Matebeleland North also operates above the national average but in a slightly better position than Mash. Central. The three districts of Binga (44.9), Buli and Tsholotsho (44.1 apiece) are responsible for this higher than national average ratio for this province. In fact, the provincial average is moderated by the two urban centres of Hwange and Bulawayo. This moderation masks the overall seriousness of the teacher:pupil ratio in the province.

Masvingo is the third province with a ratio higher than the national average. This is so despite the fact that Masvingo performs well on the absolute level in terms of schools and teachers. Unlike the other two provinces though, Masvingo has some districts which operate below the national and provincial ratios. These are the districts of Gutu and Chivi which have some of the oldest and most established schools in the province. Its average is pushed up by the two districts of Chiredzi and Mwenezi with ratios of 43.4 and 45.4, respectively. An element of remoteness and late development might help explain why these two districts have such high ratios. This element also operates in Binga and some of the districts of Matebeleland North and South plus Mashonaland West.

Table 8: Number of schools, teachers and pupils per teacher, by province and district, 1983

| Province/ District | Primary school Schools | Teachers | Ratio | Secondary school Schools | Teachers | Ratio |
|---|---|---|---|---|---|---|
| HARARE | 184 | 3 833 | 40.4 | 48 | 1 966 | 25.8 |
| Harare | 161 | 3 805 | 37.5 | 40 | 1 655 | 24.4 |
| Chitungwiza | 23 | 748 | 43.2 | 8 | 311 | 27.2 |
| MANICALAND | 706 | 8 849 | 40.3 | 111 | 1 424 | 28.4 |
| Buhera | 121 | 1 530 | 40.9 | 22 | 220 | 27.2 |
| Chipinge | 90 | 1 387 | 40.0 | 10 | 175 | 29.9 |
| Chimanimani | 61 | 618 | 41.3 | 8 | 103 | 27.0 |
| Mutasa | 68 | 853 | 39.8 | 8 | 68 | 29.5 |
| Makoni | 148 | 1 804 | 40.6 | 30 | 310 | 29.7 |
| Mutare | 147 | 1 996 | 38.8 | 19 | 417 | 26.2 |
| Nyanga | 71 | 661 | 40.7 | 14 | 131 | 29.2 |
| MASH. CENTRAL | 245 | 3 265 | 43.2 | 51 | 486 | 30.5 |
| Bindura | 31 | 362 | 41.1 | 4 | 59 | 30.3 |
| Centenary | 20 | 146 | 45.8 | 2 | 23 | 26.6 |
| Darwin | 57 | 795 | 41.5 | 10 | 69 | 35.4 |
| Mazowe | 51 | 632 | 43.1 | 14 | 128 | 33.3 |
| Guruve | 43 | 532 | 48.8 | 8 | 51 | 30.7 |
| Rushinga | 20 | 375 | 42.2 | 4 | 24 | 32.6 |
| Shamwa | 23 | 423 | 39.8 | 9 | 132 | 24.8 |
| MASH. EAST | 391 | 5 309 | 39.7 | 102 | 1 190 | 31.5 |
| Marondera | 82 | 916 | 38.1 | 23 | 311 | 27.5 |
| Mudzi | 40 | 630 | 43.3 | 6 | 25 | 38.4 |
| Murewa | 97 | 1 478 | 40.6 | 25 | 276 | 29.5 |
| Mutoko | 54 | 870 | 38.6 | 12 | 107 | 34.0 |
| Wedza | 46 | 494 | 37.7 | 13 | 138 | 28.1 |
| Goromonzi | 72 | 921 | - | 23 | 333 | - |
| MASH. WEST | 298 | 4 144 | 40.5 | 73 | 840 | 29.1 |
| Chegutu | 74 | 906 | 39.2 | 24 | 239 | 29.0 |
| Kadoma | 67 | 927 | 39.4 | 15 | 213 | 27.2 |
| Kariba | 6 | 79 | 41.0 | 1 | 12 | 31.7 |
| Hurungwe | 65 | 970 | 42.1 | 9 | 65 | 31.1 |
| Lomagundi | 86 | 1 262 | 41.0 | 24 | 311 | 26.7 |
| MAT. NORTH | 507 | 5 390 | 41.8 | 59 | 1 320 | 36.7 |
| BULAWAYO | 88 | 1 704 | 36.8 | 26 | 1 009 | 26.0 |
| Binga | 50 | 355 | 44.9 | 3 | 7 | 51.0 |
| Buli | 33 | 315 | 44.1 | 6 | 66 | 28.8 |
| Lupane | 93 | 696 | 40.8 | 5 | 73 | 30.7 |
| Hwange | 60 | 560 | 39.6 | 6 | 80 | 35.9 |
| Nkayi | 79 | 849 | 42.2 | 8 | 37 | 46.5 |
| Tsholotsho | 104 | 911 | 44.1 | 6 | 48 | 37.9 |

| Province/ | Primary school | | | Secondary school | | |
| District | Schools | Teachers | Ratio | Schools | Teachers | Ratio |
|---|---|---|---|---|---|---|
| MAT. SOUTH | 391 | 4 095 | 38.4 | 54 | 529 | 32.7 |
| Beitbridge | 39 | 371 | 46.5 | 4 | 19 | 45.3 |
| Bulalima Mangwe | 90 | 1 116 | 40.5 | 13 | 149 | 28.3 |
| Gwanda | 84 | 885 | 40.6 | 13 | 142 | 29.5 |
| Insiza | 70 | 574 | 38.7 | 6 | 58 | 27.3 |
| Matobo | 72 | 767 | 37.0 | 10 | 62 | 38.9 |
| Umzingwane | 36 | 382 | 27.0 | 8 | 99 | 27.0 |
| MIDLANDS | 640 | 8 068 | 39.9 | 168 | 1 932 | 29.3 |
| Charter | 91 | 976 | 39.7 | 27 | 235 | 29.3 |
| Chilimanzi | 42 | 432 | 40.1 | 11 | 139 | 30.0 |
| Gokwe | 166 | 1 909 | 39.4 | 24 | 186 | 29.0 |
| Gweru | 65 | 930 | 40.5 | 26 | 479 | 27.9 |
| Kwekwe | 96 | 1 364 | 42.6 | 23 | 287 | 29.4 |
| Mberengwa | 92 | 1 356 | 38.6 | 23 | 218 | 31.4 |
| Shurugwi | 43 | 536 | 39.0 | 20 | 204 | 28.9 |
| Zvishavane | 45 | 585 | 39.6 | 14 | 184 | 28.7 |
| MASVINGO | 606 | 7 608 | 41.5 | 123 | 1 483 | 31.2 |
| Bikita | 85 | 1 088 | 42.7 | 17 | 180 | 34.5 |
| Chiredzi | 77 | 796 | 43.4 | 5 | 74 | 29.0 |
| Ndanga | 78 | 1 112 | 41.3 | 18 | 215 | 30.4 |
| Gutu | 142 | 1 569 | 39.4 | 33 | 373 | 27.5 |
| Masvingo | 108 | 1 309 | 39.1 | 25 | 378 | 31.5 |
| Mwenezi | 38 | 540 | 45.4 | 15 | 43 | 35.4 |
| Chivi | 78 | 1 194 | 39.2 | 20 | 220 | 29.8 |

Source: CSO 1985b: Table 5.12

However, despite the inter-province and intra-provincial difference noted above, the primary school system seems to be in a better position than that of secondary schools. The system of screening students after seven years of primary education meant that only a few students went on to enter the secondary school system. This meant that the number of secondary schools were fewer than that of primary schools and this gave poor ratios (CSO 1985b; GoZ 1982). Since independence in 1980 the government has tried to implement a program of four years of secondary education for all those who enter and complete the primary school system. This initially worsened even further the ratios of teacher to pupils and this situation is reflected in the data for 1984 contained in Table 8.

All provinces are above the national average by varying degrees. Manicaland is the closest to the national average with a ratio of 28.4. Matebeleland North comes out as having the furthest ratio from the national average at 36.7. The reasons for this is found in the variations at the district level. All the districts except Bulawayo operate above the national ratio. Furthermore the district of Binga is almost twice above the national ratio. In other words, the class size in Binga is twice the average class size of the nation. It is more than twice the size of a secondary class in Harare City and a number of other urban districts. Binga together with Nkayi, Tsholotsho and Hwange are responsible for the high provincial ratio for Mat. North. Other districts which have a poor performance above the national average are Beitbridge and Matobo in Mat. South, Mudzi in Mash. East and Darwin in Mash. Central.

On the positive side, Manicaland seems to have the most equitable distribution of teachers among its secondary schools as reflected in the pupils per teacher. Four out of the seven districts operate above the national and provincial ratio but the differences are so slight as to be insignificant. Another unique feature of the province is that two rural districts have more schools than the urban one of Mutare. These are Makoni and Buhera with 30 and 22, respectively. However, this said the urban dominance comes out in the fact that Mutare still manages to attract more teachers than either district and therefore has a lower ratio of teachers to pupils.

Midlands is the only other province to exhibit a near equitable distribution of secondary schools and teachers though not to the same extent as Manicaland. Its district ratios do not vary greatly from the national or even the provincial means. It also contains one rural district, Charter, with more secondary schools than the urban districts as well as the district of Gokwe with more primary schools than the urban ones. However, the urban districts still manage to have better ratios than the rural ones. Thus, Gweru manages to attract more teachers than Charter in the secondary school system to give it better ratios than the latter.

The reasons for the more equitable distribution of schools within Midlands might be found in the number of urban centres and small towns it contains. Gweru and Kwekwe are the major urban centres, but because of a lot of mining activities in this province, almost all the districts contain some small town or urban settlement. For example, Mberengwa, Shurugwi and Zvishavane contain a number of mining towns. These would be responsible for moderating the influence of the more rural parts of the

districts. It also confirms further the role played by urban settlements in the provision of better quality or even quantity of public services. It also implies that the national and provincial ratios or averages mask the major imbalances within districts and between urban and rural areas.

### 3.4 Variations in sex ratios

Sex ratios in the educational system are of interest as they measure the extent to which the system is wasting persons of educational age. They also measure the difference between male and female drop out rates. Sex ratios below 100 would indicate higher rates of school leavers among males while those above that figure would indicate that females are leaving school earlier than boys. In the case of the figures presented in Table 9, the indications are that females have higher dropout rates than males. These vary from province to province. (Note that, for most purposes, educational figures are collected on the basis of six educational provinces). It must be borne in mind that the government views female advancement in all spheres of national life as of great importance (GoZ 1986). Education is acknowledged as a vehicle for social change (Zvobgo 1986) and as such it would be in the interest of government to retain females in the educational system as long as possible in order that their goal of female advancement is fulfilled. Thus, the female dropout rates illustrated by Table 9 are a cause of concern for the government (CSO 1985b).

In Harare, the sex ratios in the primary school system are more or less even throughout. Indeed at certain grades the females tend to dominate the educational system. However, the picture is rather different for the other provinces. While there are equal numbers of males and females at the start of the primary school years, the females tend to drop out as they progress toward higher grades. The critical point seems to be reached in the fourth to fifth year of primary schooling. From this point onward, the educational system become predominantly male.

This becomes even more evident when the secondary school system is reached. The fewer number of secondary schools alluded to above meant that the number of females entering the educational system was further reduced. Thus, while ending primary education with ratios varying between 107 male students per 100 females ones in Harare to 134 in Manicaland, the secondary school systems starts with ratios of 112 for Harare to 160 in Mashonaland. After four years of secondary education, the ratios have worsened to 127 for Harare and 165 for Mashonaland. It must be remembered that the government aims to give every child at least four years of secondary education. The figures here would suggest a greater success for the male child than the female one.

As for education in the high school system, females get an even lesser share of that. Here, between 60% to 90% of pupils are male compared to between 50% and 60% in secondary school and 50% to 55% in the primary school system. Thus, the educational system is dominated by males. However, in Harare, the male dominance is less pronounced than in the other five educational provinces. This is an indication of the educational facilities available in Harare as well as a probabaly change in parental attitudes towards educating their female offspring. For, one

Table 9: Sex ratios in primary and secondary school
by grade/form and region, 1983

| Grade/<br>Form | Harare | Matebel<br>-and | Mashona<br>-land | Manical<br>-and | Masvingo | Midlands |
|---|---|---|---|---|---|---|
| Primary | | | | | | |
| One | 100 | 105 | 101 | 103 | 99 | 103 |
| Two | 96 | 104 | 100 | 105 | 102 | 101 |
| Three | 97 | 102 | 102 | 106 | 104 | 102 |
| Four | 100 | 103 | 110 | 109 | 110 | 107 |
| Five | 102 | 112 | 126 | 121 | 115 | 112 |
| Six | 105 | 110 | 132 | 123 | 120 | 113 |
| Seven | 107 | 114 | 141 | 134 | 129 | 122 |
| Seondary | | | | | | |
| One | 112 | 117 | 160 | 150 | 150 | 137 |
| Two | 113 | 122 | 596! | 153 | 169 | 155 |
| Three | 119 | 126 | 177 | 163 | 180 | 163 |
| Four | 127 | 113 | 165 | 138 | 159 | 142 |
| High School | | | | | | |
| Five | 123 | 178 | 215 | 60 | 133 | 120 |
| Lower Sixth | 185 | 209 | 316 | 174 | 223 | 488 |
| Upper Sixth | 171 | 241 | 187 | 156 | 285 | 867 |

Source: CSO 1985b: Tables 5.4 & 5.6

of the reasons for the worse performance of girls in the educational
system must lie in the attitude of parents towards educating sons or
daughters. Indications are that sons are much preferred and when parental
resources are limited then, they will probably educate a son rather than a
daughter. The other cause which is complimentary to this, is the fact
that the figures quoted reflect differential enrollment between the sexes
several years back. This was a result of the educational policies of the
colonial era (CSO 1985b; Mudhani & Ridell 1981; Zvobgo 1986). It remains
to be seen whether the current government efforts at evening out the
differences between the sexes are successful. As Zvobgo (1986) points
out, the greatest constraint to that sussess might lie in the government's
ability to provide the required resources (financial, material and
manpower) as well as overcoming parental prejudice towards educating their
female offspring.

In summary, it can be said that, major variations exist in the
quantity of schools and teachers at the provincial and district level.
The variations seem to stem from some historical patterns of development
as well as population density and the degree of urban influence. Future
research should attempt to measure through statistical tests the strength
of these factors in influencing the distribution of schools. With regards
to variation in the sex ratio by educational level and regions, there is a
need to focus on the role of parental attitudes and the way they
contribute to the poor share of females in the educational system.
Regional variation will need to be examined in terms of the roles that
parents see their children performing both in childhood as well as in
future life. Also to be investigated would be the implications of these
relationships to the equity goals which the government is persuing.

## 4.0  CONCLUDING REMARKS

The Government of Zimbabwe in its development plans notes the
existence of inequalities in socio-economic  conditions among its
administrative regions. These inequalities are found at varying scales
and degrees of intensity. They are expressed in spatial terms, temporal
and sectorial scales. This paper has attempted to provide an analysis of
some of these inequalities at two major spatial scale, that of the
province and the district. It has also shown that the social systems of
the country are still dominated by the urban areas which capture up to 80%
of public services though they only contain 25% of the population.

Several issues of equity are raised but without adequate data on the
temporal and spatial distribution of the public services examined it is
not possible to make definitive statements on them. The mapping out of
the distribution of these services in terms of both quality and quantity
would enable evaluations to be made of the equity issues and goals of the
government. However, it has been shown that national figures and
statistics tend to mask more significant and fundamental differences or
inequalities at lower levels of the spatial scales. Probably an
examination of intradistrict variations in the provision of public
services would be even more illuminating and rewarding.

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