

# WHERE HAVE ALL THE FLOWERS GONE?

## *A Preliminary Analysis of the Decline in First Year School Enrolment in KwaZulu Natal and Possible Links to HIV/AIDS*

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### Introduction

The issue of school enrolment lies at the heart of almost all education policy and planning decisions and defines the demand for educators, and hence the largest line item in the education budget, educator salaries. It is the key statistic collected from schools early in every school year, and is the basis for calculating local educator supply and almost all other service ratios. In short, enrolment is the single most important statistic in education, given its impact on every other element of demand and supply.

In normative terms, enrolment or demand for education should be fairly simple to predict from one year to the next, within acceptable levels of accuracy; influenced primarily by fertility rates, institutional access, policy, national and home economics and various social issues, the national or provincial education systems can, so to say, see what's coming. In the KwaZulu Natal Province of South Africa for example, the five education systems then in place grew by a consolidated rate of about 4,9% through the 1980s (3,7% at the primary level and 9,1% at the secondary level<sup>1</sup>); during the 1990s, this rate of growth slowed somewhat, averaging about 3,5% through to 1998, as will be shown.

This decline in growth reflects some degree of normalization following the expansion of the 1980s, the consolidation of the five Provincial education systems following political transition, and a decline in the fertility rate to its present estimated level of 2,9%<sup>2</sup>.

It is therefore reasonable, policy decisions notwithstanding, to anticipate a continuing level of reduced growth plateauing in the new millennium. What then are we to make of a sudden decline in first year enrolment, unrelated to the policy decision of 2000 (precluding children under 7 from entry), and evident to a varying degree in both genders and almost all the districts of KwaZulu Natal?

In summary, Provincial Grade 1 enrolment went from 3% growth in 1998, to a 12% decline in 1999, and a further 24% decline in 2000, according to the annual Snap Survey data. It must immediately be said however that the extraordinary decline in 2000 is exacerbated by a national policy decision, effective from the beginning of that year, precluding the entry

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<sup>1</sup> Source: Dr Luis Crouch, Research Triangle Institute and Senior Economic Advisor to the National Department of Education

<sup>2</sup> Source: The State of South Africa's Population 2000: Population, Poverty and Vulnerability (National Population Unit)

of children under 7 into Grade 1; while the pruning from the system of under-aged learners can clearly be expected to have an affect, it nevertheless does not explain the full extent of this decline, coming as it does on the heels of a dramatic decline in the preceding year. *(Additional data for 2001 have been added to the summary analyses in this paper, but have not been examined in more detail due to their very late arrival. However it is important to note that it is estimated that enrolment into Grade One would have had to grow by about 30% in 2001 in order to capture those children held back by policy change in 2000, and those 'missing' in 1999. In fact, enrolment only grew by 20% in 2001, suggesting a real further decline of 10%. As will be seen below, this means that in 2002 enrolment will have to grow by 24% simply to return to 1998 levels).*

This paper sets out to demonstrate the extent of this impact, which is over 40% in 2000 in three districts but averages 24%, and show that while there is a limited difference in this decline between urban and rural districts, there is a fairly significant difference in the decline of male and female learners in Grade 1 in many districts, with an unsurprising greater decline for girls; (however, at a Provincial level, female participation rates are remarkably constant). The purpose of the analysis is to explore possible reasons for this situation, and suggest that the impact of HIV/AIDS *may* be a significant factor. It will also argue that if indeed HIV/AIDS is partially or even largely responsible for the decline, it is first and foremost a management issue of the greatest importance, irrespective of the problem's source. In other words, that HIV/AIDS must be seen as a long-term, exacerbating factor in traditional education management issues, and not treated as an intrusive health issue of passing concern.

## **The Data**

The data used in this preliminary analysis are drawn from the annual Snap Survey, undertaken by the KwaZulu Natal Department of Education & Culture's EMIS Unit on the tenth school day of every year, to facilitate planning and provisioning. This is followed later in the year by the Department's Annual Survey, a somewhat more detailed undertaking; it would be true to say that the data from this second Annual Survey may differ quite markedly from that of the Snap Survey. Reasons for this include variable rates of drop-in and dropout in the first term, and other systemic adjustments peculiar to the school system, as it settles into the calendar year.

However there is no indication that one survey is any more or less accurate than the other; they are both snapshots of the system at a given point in time, and both have more or less the same potential for error. The fact is that they are the most reliable sources available, and it is simply the earlier availability of the Snap Survey and its use in provisioning and planning that commends its use.

Data is available for every grade in the system, by sex and age. In this instance, the data for entry into Grade 1 have been examined; that is, for those children enrolling to enter primary school for the first time, or even the second, third or fourth time if they are repeating<sup>3</sup>. Data for Grade R (the Pre-Primary year) was deliberately not used, since only limited access is available to this preparatory year, mainly to affluent urban dwellers; this limited enrolment and distortion was regarded as sufficient reason to preclude its use.

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<sup>3</sup> In 1999, there were 19 308 male and 14 130 female first-time repeaters in Grade 1; there were also 1 640 and 1 076 female second-year repeaters, and 296 male and 309 female third-time repeaters. Source KZNDEC EMIS Unit.

In this paper, four years of data has been analyzed, for the period 1997 to 2000, for four of the Province's eight Regions; Vryheid in the north; North Durban in the eastern central coastal area; Ladysmith in the west; and Port Shepstone in the south. In each of these Regions, two districts (of four or five options) have been selected to provide some measure of urban/rural differentiation; care has also been taken over the irregular movement of circuits from one district or Region to another and the effect of these has been factored and discounted where necessary.

To give depth to this selective analysis, we have also included a table (*Table 1* below) reflecting the patterns of Grade 1 enrolment for each of the 41 districts in KwaZulu Natal, and linked this to a map pinpointing antenatal HIV-infection rates in clinics and hospitals across the Province. The table of Grade 1 enrolment by district confirms the trends evidenced in the selected districts analyzed, and shows that the greatest declines in 2000 came in the districts of Chatsworth (43%), Phoenix (42%), Umlazi South (40%) and Nkandla (35%). As noted below, there is some evidence that internal migration patterns are to some extent responsible for at least two (Chatsworth and Phoenix) of these exceptional declines, but of equal interest is the fact that three of the four districts lie within the boundary of the Durban Metro, with only the southern Ulundi district of Nkandla categorized as rural. By comparison with the three Durban Metro districts, Nkandla is also desperately poor; it falls within the worst category of socio-economic deprivation, and borders Msinga, classified as the worst-off district in South Africa<sup>4</sup>.

It is noteworthy too that the greatest declines in 1999 do not coincide with those found in 2000: These were recorded in Maphumulo (26%), Ingwavuma (24%), Ndwedwe (22%) and Umbumbulu (19%); of interest is the fact that of these, Maphumulo (highest decline) and Ndwedwe (third highest decline) are neighboring districts, and that all four are rural or deep rural and fall within the category of the second poorest school districts in KwaZulu Natal<sup>5</sup>. In terms of comparative socio-economic deprivation, it is also interesting that both Maphumulo and Ingwavuma fall within the worst-off category, while Ndwedwe and Umbumbulu fall within the second worst-off category<sup>4</sup>.

## **The Decline in Enrolment**

### ***The Provincial Level***

First, at a Provincial level, the pattern of decline in 1999 and 2000 is illustrated in *Figure 1*. The increase in Grade 1 enrolment in 1998 of 3% over 1997 enrolment of 329 379 to 340 401, reflects a continuation of the trend in the early and mid-1990s, albeit showing a slight decline in growth. In 1999, this trend is comprehensively reversed by a decline of 12% in enrolment to 299 356; the decline in the enrolment of female learners at 12,5% was marginally higher than the male decline at 11,7%, but this Provincial statistic masks the extent of this gender bias by Region and district, as will be seen below. (To contextualize the gender issue discussed in this paper, it is useful to note that the gender

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<sup>4</sup> Source: *The Education Atlas of South Africa 2000*, Education Foundation/EduAction 21-23

<sup>5</sup> Source: *The Education Atlas of South Africa 2000*, Education Foundation/EduAction 107-109

split in the South African population for the age group 0 to 10 is calculated as 49,2% male and 50,8% female<sup>6</sup>).

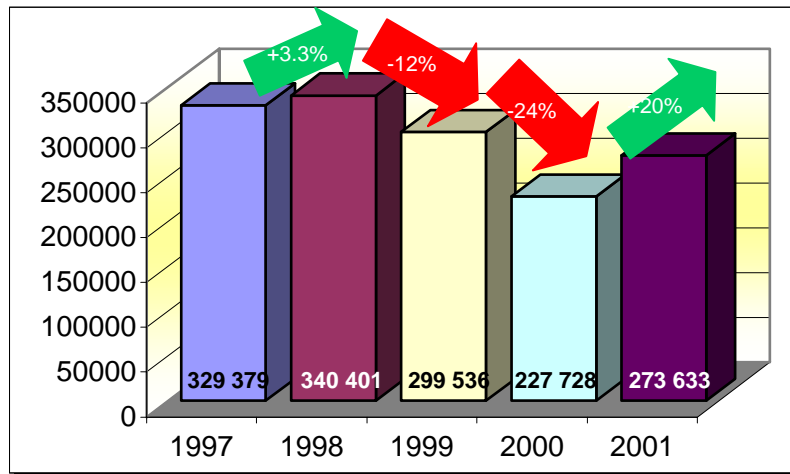


Figure 1: Grade 1 Enrolment in KwaZulu-Natal, 1997-2001

This gender bias was more marked in 2000 over 1999 however, when female enrolment declined by 26% as against a 22% decline in male enrolment, for a gross Provincial drop of 24%, to 227 728 (see Table 1 below). Of interest is the fact that in 2000 there were 29% fewer boys in Grade 1 than in 1997, and 32% fewer girls, for a gross decline in numbers of 31%, from 329 379 to 227 728. However females constituted some 48% of the gross Grade 1 enrolment from 1997 through 1999, before dropping to 47% in 2000; this suggests that females under-participated to a significant degree relative to their estimated 51% share of the 0 to 10 age group. Though statistically insignificant at this point, their decline to 47% of gross Grade 1 enrolment in 2000 may signal the beginning of an HIV/AIDS related trend, as will be discussed below.

### **The Regional Level**

Second, in Figures 2,3,4 and 5, the Regional patterns appear to confirm that the drop is variably evidenced across the Province. In Figure 2, the largely rural Vryheid Region shows a 6% growth in Grade 1 enrolment for 1998 to 23 579 over 1997's enrolment of 22 273, and then a decline of 13% - equal for both male and female – in 1999 to a Grade 1 enrolment of 20 453. In 2000, the decline extends to 18% over the 1999 enrolment, to 16 807, with a 19% drop for female learners compared to a 17% drop for males. In gross terms, there were 25% fewer learners enrolled in Grade 1 in 2000 than there were in 1997, with 21% fewer male learners and 28% fewer female learners.

<sup>6</sup> Source: The State of South Africa's Population 2000: Population, Poverty and Vulnerability (National Population unit)

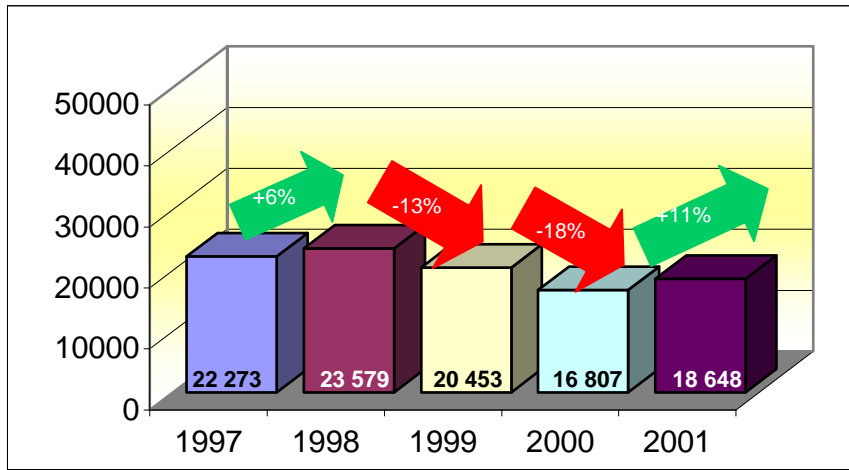


Figure 2: Grade 1 Enrolment in the Vryheid Education Region, 1997-2001

In *Figure 3*, the North Durban Region, a mix of urban, peri-urban and rural districts, the Grade 1 enrolment of 43 753 in 1998 shows a 1% decline over the 1997 figure of 44 299, occasioned by a 3% drop in the number of female learners versus a 1% rise in the number of male learners. In 1999 however, the enrolment shows a 16% decline to 37 774, made up of 18% males and 14% females. This drop continued in 2000 over 1999, with a gross decline of 40% to 27 035, made up of a decline in male learner numbers of 37% and females of 43%. This means that in 2000 there were 38% fewer males and 40% fewer females in Grade 1 than there had been in 1997, for a gross decline of 39%.

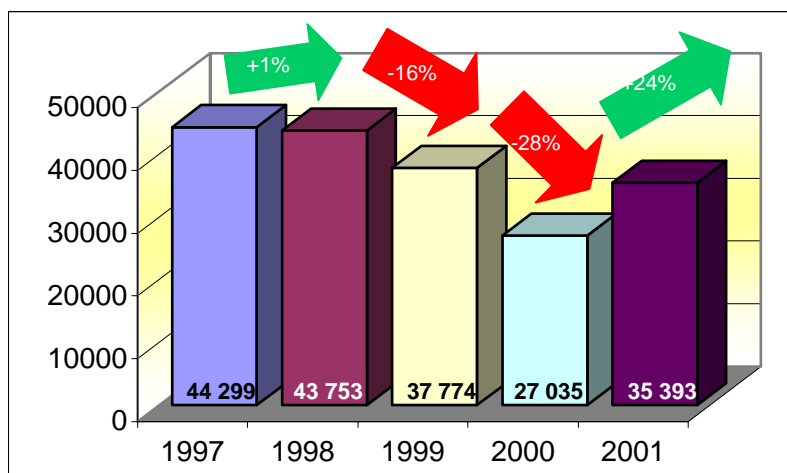


Figure 3: Grade 1 Enrolment, North Durban Education Region, 1997-2001

In *Figure 4*, the rural Ladysmith Region, showed a similar decline. Grade 1 enrolment of 48 307 in 1998 shows a 3% growth over 1997's enrolment of 47 096, with a 4% growth in female enrolment as against a 1% growth in male enrolment. With 43 354 in 1999, this reverses to a 10% decline, made up of a 9% decline in male enrolment and a 12% decline in female enrolment. Dropping to 30 495 in 2000, it declines to 30% over 1999, made up of a 28% decline in male enrolment and a 31% decline in female enrolment. Again, this equates to 34% fewer males and 37% fewer females in Grade 1 in 2000 compared to 1997.

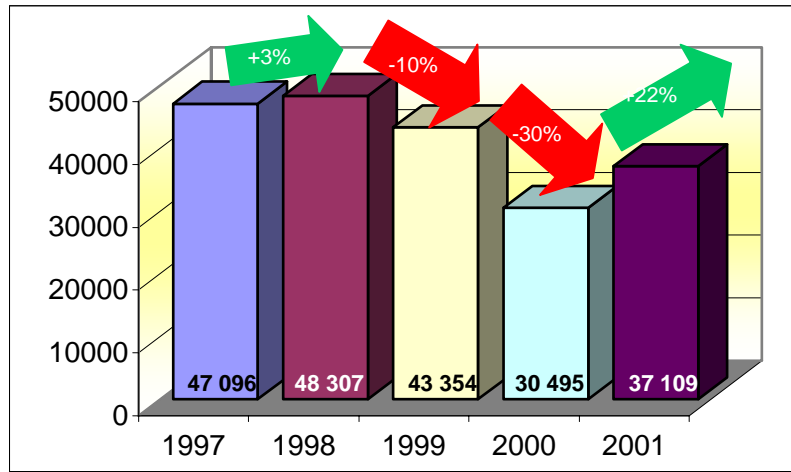


Figure 4: Grade 1 Enrolment in the Ladysmith Education Region, 1997–2001

In *Figure 5*, the Port Shepstone Region in the south combines a semi-industrialized center with large areas of rural land. In 1998, Grade 1 enrolment of 38 220 dropped markedly over 1997's enrolment of 42 084 by 10%, with 11% fewer male learners and 9% fewer female learners enrolled. Interestingly, at 30 582, this decline dropped in 1999 over 1998, with a gross drop of 25% over the previous year, made up of 24% less male and 26% less female learners. From 1999 to 2000 however, there was a decline of 29% in gross Grade 1 enrolment to 23 669, split with 12% fewer males and 15% fewer females. This had the effect of reducing the number of male learners enrolled in Grade 1 in 2000 over 1997 by 43% and females by 44%.

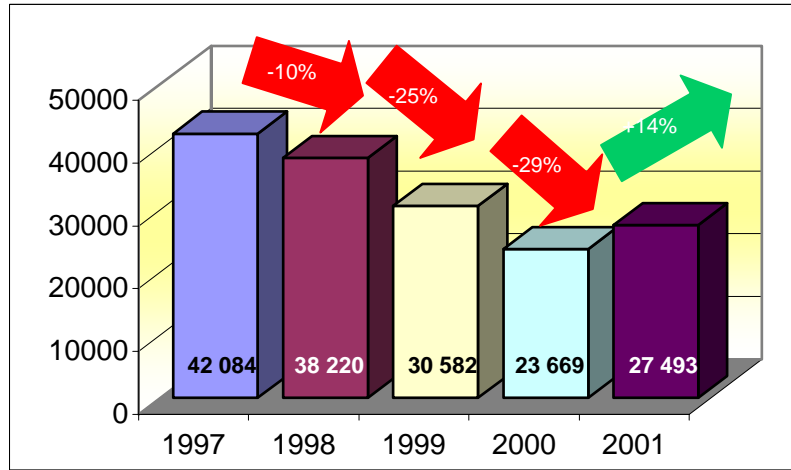


Figure 5: Grade 1 Enrolment in the Port Shepstone Education Region 1997-2001

## The District Level

It is at the District level that the data becomes even more interesting: *Figure 6* shows the decline in Grade 1 in the Dundee District of the Vryheid Region, designated a rural area by the Census Authority. In gross terms, the decline of 16% to 1 501 in 1999 was greater than the 11% decline to 1 338 in 2000; in total there were 26% fewer Grade 1 learners enrolled in 2000 (1338) than in 1997 (1798). Year on year, the number of females in Grade 1 declined faster than males until 1999, when the male decline was greater than female by 2%; overall, the female participation rate in Grade 1 declined from 48% in 1997 to 47% in 2000.

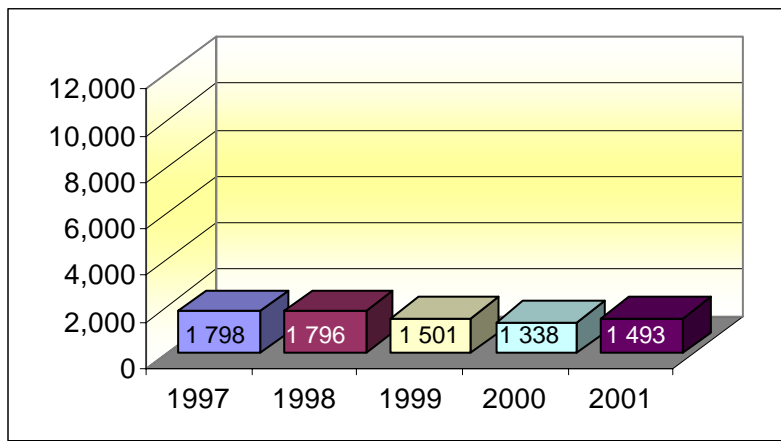
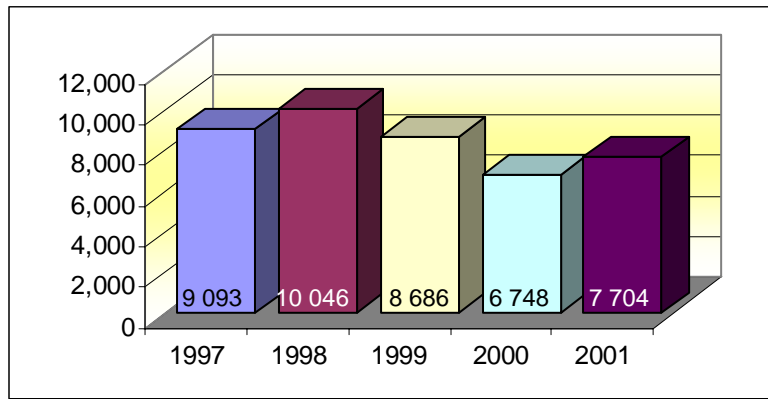


Figure 6: Grade 1 Enrolment in the Dundee Education District, 1997 - 2001

Dundee Education District		
1997	Schools	40
	Gr 1 - Male	939
	Gr 1 - Female	859
	<b>Gr 1 - Total</b>	<b>1,798</b>
1998	Schools	38
	Gr 1 - Male	946
	Gr 1 - Female	850
	<b>Gr 1 - Total</b>	<b>1,796</b>
1999	Schools	39
	Gr 1 - Male	782
	Gr 1 - Female	719
	<b>Gr 1 - Total</b>	<b>1,501</b>
2000	Schools	39
	Gr 1 - Male	709
	Gr 1 - Female	629
	<b>Gr 1 - Total</b>	<b>1,338</b>
2001	Schools	39
	Gr 1 - Male	807
	Gr 1 - Female	686
	<b>Gr 1 - Total</b>	<b>1,493</b>

In *Figure 7*, the Nquthu district of the Vryheid Education Region, classified rural, shows a trend more typical of the Provincial and Regional picture in *Figures 1* and *2*: Grade 1 enrolment grew by 10% in 1998 (9 093 to 10 046), before declining 14% in 1999 to 8 686, and then falling by a further 22% in 2000, to 6 748. Male learner enrolment grew faster in 1998, at 11% versus 7% for females, before also declining marginally faster in 1999, at 13% versus 12%. Over the period, female participation rates declined from 48% to 46%, and in 2000, female enrolment dropped 5% more than that for males.

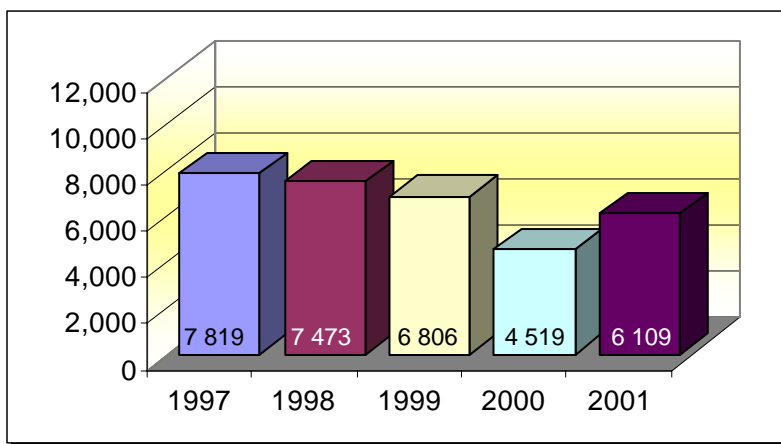


*Figure 7: Grade 1 Enrolment in the Nquthu Education District, 1997 - 2001*

Nquthu Education District		
1997	Schools	92
	Gr 1 - Male	4723
	Gr 1 - Female	4370
	<b>Gr 1 - Total</b>	<b>9,093</b>
1998	Schools	101
	Gr 1 - Male	5338
	Gr 1 - Female	4708
	<b>Gr 1 - Total</b>	<b>10,046</b>
1999	Schools	102
	Gr 1 - Male	4567
	Gr 1 - Female	4119
	<b>Gr 1 - Total</b>	<b>8,686</b>
2000	Schools	104
	Gr 1 - Male	3662
	Gr 1 - Female	3086
	<b>Gr 1 - Total</b>	<b>6,748</b>
2001	Schools	105
	Gr 1 - Male	4030
	Gr 1 - Female	3674
	<b>Gr 1 - Total</b>	<b>7,704</b>



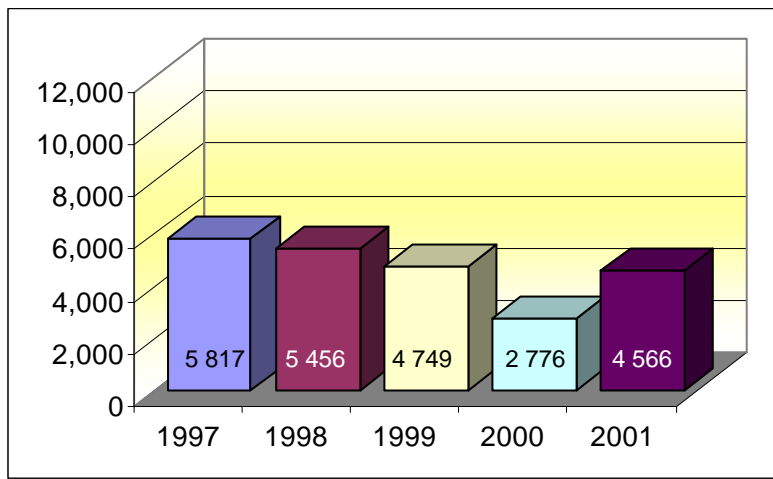
In *Figure 8*, a considerably more dramatic sequence of decline is evident in the largely urban and often high-density KwaMashu district, now part of the Durban Metro, and falling into the North Durban Education Region. In this district, decline has been in evidence since 1998, when Grade 1 gross enrolment dropped by 4%, from 7 819 to 7 473; this drop continued in 1999, with a 9% decline from 7 473 to 6 806, before dipping by 34% in 2000 to 4 519 – 41% fewer Grade 1 learners than had been enrolled in 1997. Again, the gender disparity is in evidence, though limited until 2000; in 1998, the drop at 4% was the same for both sexes, extending to an 8% decline for males in 1999 against a 10% decline for females. In 2000 however, female numbers declined by 36% versus 31% for males. In overall terms, the female participation rate declined from 48% in 1997 to 46% in 2000.



*Figure 8: Grade 1 Enrolment in the KwaMashu Education District, 1997 - 2001*

KwaMashu Education District		
1997	Schools	44
	Gr 1 - Male	4074
	Gr 1 - Female	3745
	<b>Gr 1 - Total</b>	<b>7,819</b>
1998	Schools	45
	Gr 1 - Male	3893
	Gr 1 - Female	3580
	<b>Gr 1 - Total</b>	<b>7,473</b>
1999	Schools	44
	Gr 1 - Male	3580
	Gr 1 - Female	3226
	<b>Gr 1 - Total</b>	<b>6,806</b>
2000	Schools	44
	Gr 1 - Male	2460
	Gr 1 - Female	2059
	<b>Gr 1 - Total</b>	<b>4,519</b>
2001	Schools	43
	Gr 1 - Male	3165
	Gr 1 - Female	2944
	<b>Gr 1 - Total</b>	<b>6,109</b>

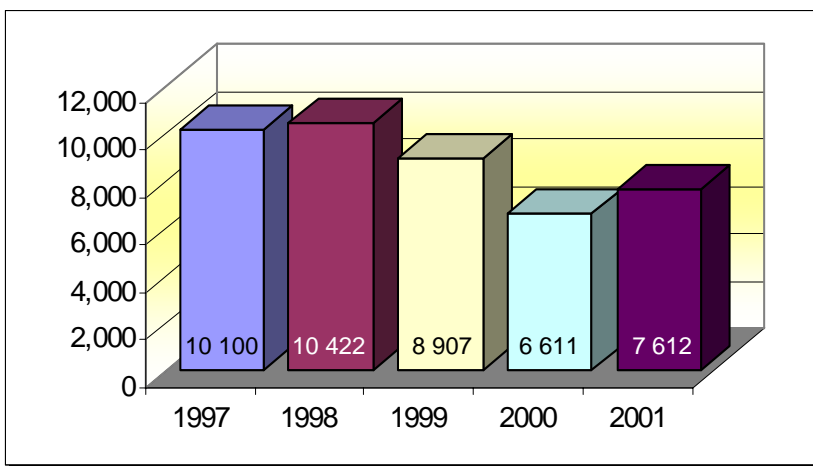
As will be seen in *Figure 9*, and in *Table 1* below, Phoenix, in largely urban North Durban, shows the second largest district enrolment decline for 2000 of the Province's 41 districts. As will be seen, decline was already evident in 1998, when the Grade 1 enrolment slipped by 6% from 5 817 to 5 456; the drop in 1999 again mirrored the Provincial picture at 13%, with gross Grade 1 enrolment declining to 4 749. These figures then literally plummet in 2000, when the enrolment declines by 42% to 2 776, or a drop of 52% of the equivalent Grade 1 enrolment in 1997. While year on year female enrolment declined by 9% in 1998 as against male enrolment of 4%, this trend was reversed in 1999 when male enrolment declined by 17% versus a female decline constant at 9%. In 2000, the gap narrows to insignificance and there were 54% fewer males enrolled in Grade 1 in Phoenix than there had been in 1997 as against 51% fewer females. Overall, female participation rates *climbed* from 50% in 1997 (and a low of 48% in 1998) to 51% in 2000.



*Figure 9: Grade 1 Enrolment in the Phoenix Education District, 1997 - 2001*

Phoenix Education District		
1997	Schools	66
	Gr 1 - Male	2930
	Gr 1 - Female	2887
	<b>Gr 1 - Total</b>	<b>5,817</b>
1998	Schools	63
	Gr 1 - Male	2815
	Gr 1 - Female	2641
	<b>Gr 1 - Total</b>	<b>5,456</b>
1999	Schools	63
	Gr 1 - Male	2350
	Gr 1 - Female	2399
	<b>Gr 1 - Total</b>	<b>4,749</b>
2000	Schools	65
	Gr 1 - Male	1358
	Gr 1 - Female	1418
	<b>Gr 1 - Total</b>	<b>2,776</b>
2001	Schools	65
	Gr 1 - Male	2248
	Gr 1 - Female	2318
	<b>Gr 1 - Total</b>	<b>4,566</b>

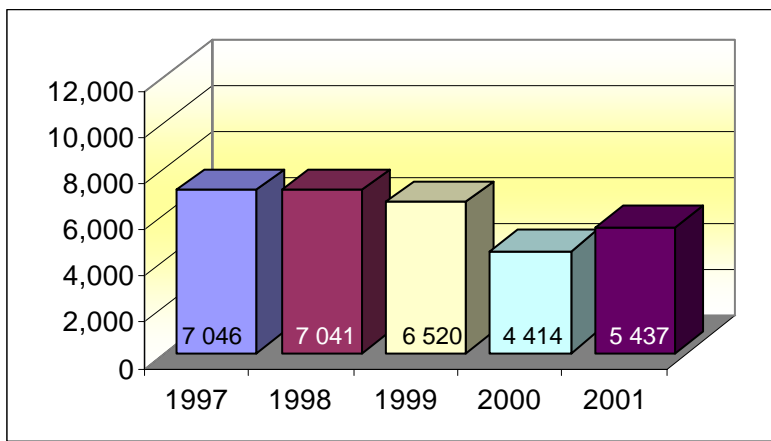
In *Figure 10*, the first of the districts in the Ladysmith Region reviewed is rural Msinga, widely regarded as one of the most under-resourced and dysfunctional in the Province. However, the declines are not anywhere near as dramatic as those evidenced, for example, in Phoenix (see *Figure 9* above). In 1998, there was an increase in gross Grade 1 enrolment of 3%, with enrolment rising from 10 100 in 1997 to 10 422 in 1998; in 1999, this dropped by 15% to 8 907. In 2000, the decline was a further 26%, from 8 907 to 6 611. In gender terms, there are again contradictions: In 1998, year on year female enrolment grew by 6% versus a growth of only 0,4% for males, yet in 1999, female enrolment declined by 17% as against 12% for males. The disparity narrowed and reversed itself in 2000 however when male enrolment declined by 27% as against 25% for females. Overall, female participation rates remained fairly constant at 47% over the period, with a rise to 48% in 1998. In 2000, at 6 611, there were 35% fewer Grade 1s enrolled in Msinga than the 10 100 in evidence in 1997.



*Figure 10: Grade 1 Enrolment in the Msinga Education District, 1997 - 2001*

Msinga Education District		
1997	Schools	93
	Gr 1 - Male	5354
	Gr 1 - Female	4746
	<b>Gr 1 - Total</b>	<b>10,100</b>
1998	Schools	94
	Gr 1 - Male	5375
	Gr 1 - Female	5047
	<b>Gr 1 - Total</b>	<b>10,422</b>
1999	Schools	102
	Gr 1 - Male	4743
	Gr 1 - Female	4164
	<b>Gr 1 - Total</b>	<b>8,907</b>
2000	Schools	105
	Gr 1 - Male	3483
	Gr 1 - Female	3128
	<b>Gr 1 - Total</b>	<b>6,611</b>
2001	Schools	106
	Gr 1 - Male	4028
	Gr 1 - Female	3584
	<b>Gr 1 - Total</b>	<b>7,612</b>

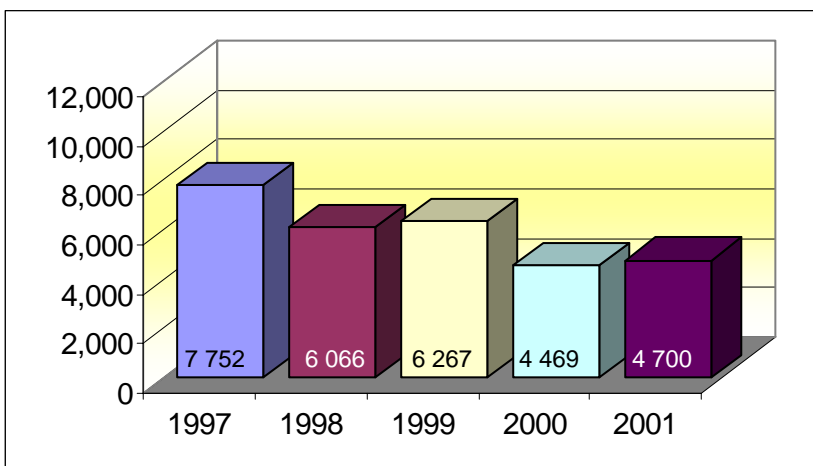
In *Figure 11*, the Newcastle district of the Ladysmith Region is classified urban, with a semi-industrial hub, surrounded by large areas of rural farmland. There is almost no change in the enrolment pattern between 1997 and 1998, when Grade 1 drops by 5 from 7 046 to 7 041; in 1999 however, a substantial decline in gross terms of 7% is registered, with enrolment going from 7 041 to 6 520. This drop increases significantly in 2000 when it declines by 32% from 6 520 to 4 414; this suggests that there are 37% fewer learners enrolled in Grade 1 in 2000, at 4 414, than there were in 1997 at 7 046. Gender disparity is limited in 1998, with male enrolment down by 1% and females up by 1%; in 1999, this reverses with male enrolment drops by 7% and female enrolment by 8%, year on year. In 2000, there is a much more marked gap when female enrolment declines by 36% as against a drop in male enrolment of 29%, and over the period, female participation rates declined from 47% to 45%.



*Figure 11: Grade 1 Enrolment in the Newcastle Education District, 1997 - 2001*

Newcastle Education District		
1997	Schools	49
	Gr 1 - Male	3713
	Gr 1 - Female	3333
	<b>Gr 1 - Total</b>	<b>7,046</b>
1998	Schools	53
	Gr 1 - Male	3681
	Gr 1 - Female	3360
	<b>Gr 1 - Total</b>	<b>7,041</b>
1999	Schools	53
	Gr 1 - Male	3415
	Gr 1 - Female	3105
	<b>Gr 1 - Total</b>	<b>6,520</b>
2000	Schools	55
	Gr 1 - Male	2422
	Gr 1 - Female	1992
	<b>Gr 1 - Total</b>	<b>4,414</b>
2001	Schools	56
	Gr 1 - Male	2831
	Gr 1 - Female	2606
	<b>Gr 1 - Total</b>	<b>5,437</b>

In *Figure 12*, the Ixopo district of the Port Shepstone Education Region is a largely rural area with scattered towns, limited commercial activity and farmland. It exhibits a contradictory pattern in which the 1997 gross enrolment of 7 752 drops by 22% to 6 066, and then rises again in 1998 by 3%, to 6 267. However, in 2000, it again reflects the Provincial picture by dropping 29% to 4 469. This means that there were 42% fewer learners in Grade 1 in 2000, at 4 469, than there were in 1997, at 7 752. Female Grade 1 enrolment kept pace with male enrolment through the period: In 1998, the number of females dropped by 22% versus 21% for males; in 1999, female enrolment grew by 4% against male enrolment which grew by 3%. In 2000, this growth reversed to a 30% decline for females and 28% decline for males. Overall, the female participation rate stayed constant at 46% throughout the period.



*Figure 12: Grade 1 Enrolment in the Ixopo Education District, 1997 - 2001*

Ixopo Education District		
1997	Schools	93
	Gr 1 - Male	4149
	Gr 1 - Female	3603
	<b>Gr 1 - Total</b>	<b>7,752</b>
1998	Schools	78
	Gr 1 - Male	3263
	Gr 1 - Female	2803
	<b>Gr 1 - Total</b>	<b>6,066</b>
1999	Schools	103
	Gr 1 - Male	3362
	Gr 1 - Female	2905
	<b>Gr 1 - Total</b>	<b>6,267</b>
2000	Schools	103
	Gr 1 - Male	2422
	Gr 1 - Female	2047
	<b>Gr 1 - Total</b>	<b>4,469</b>
2001	Schools	102
	Gr 1 - Male	2508
	Gr 1 - Female	2192
	<b>Gr 1 - Total</b>	<b>4,700</b>

Finally, in *Figure 13*, the Scottburgh district of the Port Shepstone Region, a coastal district combining small seaside towns and a rural interior, and classified rural, shows evidence of a progressive decline. The 1997 enrolment of 10 116 is seen to drop by 6% to 9 564 in 1998; in 1999, this decline extends to 15%, reducing enrolment to 8 109. And in 2000, this number drops by a further 25% to 6 078. In gross terms, this means that there were 40% fewer learners enrolled in Grade 1 in 2000, at 6 078, than there were in 1997, at 10 116. Again there was little disparity between year on year female and male enrolment, with 7% male and 5% female decline in 1998, a 15% decline for both in 1999, and 26% decline for males as against a 24% decline for females in 2000. Overall, the female participation rate improved from 47% to 48% over the period.

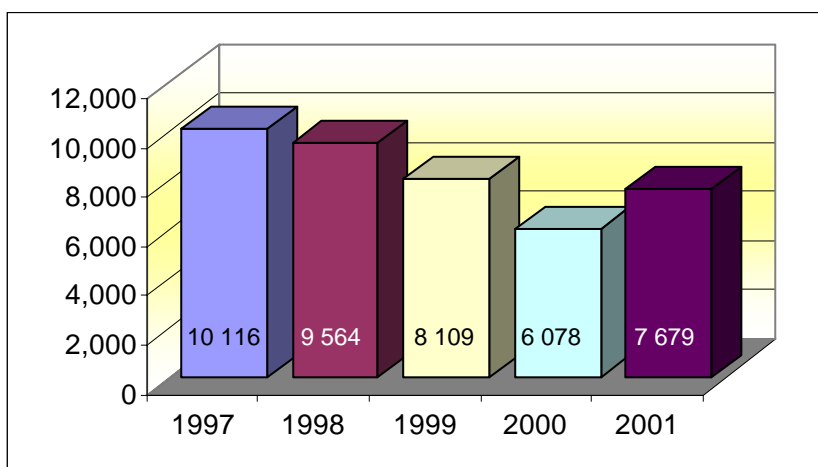


Figure 13: Grade 1 Enrolment in the Scottburgh Education District, 1997 - 2001

Scottburgh Education District		
1997	Schools	100
	Gr 1 - Male	5313
	Gr 1 - Female	4803
	<b>Gr 1 - Total</b>	<b>10,116</b>
1998	Schools	102
	Gr 1 - Male	4983
	Gr 1 - Female	4581
	<b>Gr 1 - Total</b>	<b>9,564</b>
1999	Schools	102
	Gr 1 - Male	4226
	Gr 1 - Female	3883
	<b>Gr 1 - Total</b>	<b>8,109</b>
2000	Schools	105
	Gr 1 - Male	3141
	Gr 1 - Female	2937
	<b>Gr 1 - Total</b>	<b>6,078</b>
2001	Schools	106
	Gr 1 - Male	3913
	Gr 1 - Female	3766
	<b>Gr 1 - Total</b>	<b>7,679</b>

### District Analysis

*Table 1* demonstrates that the decline in Grade 1 enrolment, by district, is apparently erratic and unrelated to any obvious pattern of association; the decline is as pronounced in urban and peri-urban districts as it is in rural districts, for example. Only seven of the 25 districts that showed declines greater than the average of 24% in 2000 were categorized as falling into the worst category of socio-economic deprivation. The fact that there is no correlation between declines in 1999 and 2000 is also puzzling: Of the 24 districts that had declines greater than the 1999 average of 12%, only ten had matching declines in 2000, higher than the average for that year. Furthermore, there was no correlation between the four districts with the worst declines in 1999 and 2000. Finally, as will be seen in the maps shown below, while there is a distinct pattern of greater enrolment decline in the eastern and central districts of the Province in 1999, the pattern peaks in the west of the Province, from north to south, in 2000, and in less densely populated districts. There is no obvious explanation for this shift, other than the point that the entire province is more or

less affected by 2000, perhaps due in large measure to the legislated preclusion of under-age learners.

We then examined the spatial association of those districts with higher than average declines, in relation to antenatal HIV prevalence data for 1998, being the latest available in spatial relation to clinics and hospitals (see map below). The method used was to plot the location of clinics and/or hospitals within the boundaries of education districts and apply the antenatal prevalence rate to that district; where more than one clinic or hospital existed in a given district, the average rate was calculated. We recognize that this is a very crude indicator, but argue that it serves to provide some useful insights for the purpose of this preliminary analysis; one of the obvious problems is that it suggests extremely high average rates for whole districts, where in fact there is no supporting evidence at present to confirm that this is the case. In short however, the outcome of this simple analysis was as puzzling as other aspects of this enquiry: Of the 20 districts whose prevalence rates exceeded the average, and ranged from 30% to 52%, only 11 had any clear correlation with the 2000 decline in Grade 1 enrolment. For example, the district with the highest crude prevalence rate (Mahlabathini at 52%) had an enrolment decline in 2000 of 20%, 4% lower than the Provincial average, while the Nkandla district, the second highest with a crude prevalence rate of 50%, had a 35% decline in Grade 1 enrolment, some 11% above the average.

On balance, it may be argued that the sheer scale of these indicators make the exercise somewhat academic; while it would be useful indeed to establish some comforting correlation, the order of magnitude inherent in a given district exhibiting crude prevalence rates as high as 52%, makes it necessary to review research priorities and think in terms of moving on planning counter-measures.

We went on to examine the possible correlation between the rate of decline and the percentage of households in poverty, by Magisterial District<sup>7</sup>. This poverty analysis, undertaken by the Bureau of Market Research and based on the 1996 Census, measures the number of households whose income falls below the Minimum Living Level (MLL). While we found a varying degree of correlation, in one striking example of coincidence, one district – Pholela – evidenced the highest household poverty rate in South Africa at 93%, a 27% decline in enrolment in 2000 and a crude HIV prevalence rate of 46%, based on 1998 data. It has to be said that the extent of household poverty across the Province, the enormity of the 1999/2000 enrolment decline, and the magnitude of the prevailing HIV prevalence rates, are so profound that we are tempted to suggest flagging the *entire* area a development disaster in the making. As the maps that follow will show, spatial analysis allows us to see these patterns of impact and need; however they also raise difficult questions for management, as to whether they should target intervention resources at areas of *greatest* risk, or at those (few) still *comparatively* unaffected – or indeed develop strategies for both.

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<sup>7</sup> Source: *The Education Atlas of South Africa 2000*, Education Foundation/EduAction, 19 - 21

Table 1: Table of Snap enrolment by Education District, 1997 – 2001

District	Area	1997				1998				% InceDec 1997 - 1998	1999				% InceDec 1998 - 1999	2000				% InceDec 1999 - 2000	2001				% InceDec 2000 - 2001
		Schools	Gr 1-M	Gr 1-F	Gr 1-Tot	Schools	Gr 1-M	Gr 1-F	Gr 1-Tot		Schools	Gr 1-M	Gr 1-F	Gr 1-Tot		Schools	Gr 1-M	Gr 1-F	Gr 1-Tot		Schools	Gr 1-M	Gr 1-F	Gr 1-Tot	
Bhekuzulu	Rural	139	3493	3403	6896	142	3675	3267	6942	1%	142	3237	2828	6065	-13%	143	2863	2480	5343	-12%	146	3059	2873	5932	11%
Camperdown	Rural	76	4373	4048	8421	73	4219	3896	8115	-4%	73	3634	3391	7025	-13%	73	2877	2447	5324	-24%	72	3345	3222	6567	23%
Chatsworth	Urban	80	4110	3788	7898	76	3377	3272	6649	-16%	79	3282	3157	6439	-3%	79	1874	1770	3644	-43%	82	2758	2735	5493	51%
City Of Durban	Urban	101	4505	4376	8881	96	4345	4157	8502	-4%	102	4140	4046	8188	-4%	104	2914	2771	5685	-31%	104	4050	3920	7970	40%
Dannhauser	Rural	53	3181	2875	6056	57	3615	3266	6881	14%	57	3266	2879	6145	-11%	57	2318	1884	4202	-32%	57	2887	2636	5523	31%
Dundee	Rural	40	939	859	1798	38	946	850	1796	0%	39	782	719	1501	-16%	39	709	629	1338	-11%	39	807	686	1493	12%
Esthove	Rural	103	5375	5020	10395	111	5745	5147	10892	5%	115	4921	4362	9283	-15%	115	3776	3281	7057	-24%	117	4351	4075	8426	19%
Estcourt	Rural	154	6634	6109	12743	161	6466	6227	12693	0%	161	5910	5332	11242	-11%	163	4997	3784	8781	-27%	164	4975	4615	9590	17%
Harding	Rural	112	4190	3752	7942	114	3626	3456	7284	-8%	113	3416	3030	6446	-12%	110	2804	2489	5293	-18%	110	3274	2981	6255	18%
Hlabisa	Rural	92	5633	5244	10877	107	5973	5656	11629	7%	113	5274	4891	10165	-13%	113	4565	3935	8500	-16%	113	5159	4664	9823	16%
Inanda	Urban	44	3756	3306	7062	44	3937	3551	7488	6%	45	3545	3205	6750	-10%	45	2773	2305	5078	-25%	45	3023	2881	5904	16%
Inyavuma	Rural	81	4091	3914	8005	126	7366	7044	14410	80%	128	5570	5277	10847	-25%	130	4687	4086	8773	-19%	132	5461	4921	10382	18%
Ixopo	Rural	93	4149	3603	7752	78	3263	2803	6066	-22%	103	3362	2905	6267	3%	103	2422	2047	4469	-29%	102	2508	2192	4700	5%
Kwamashu	Urban	44	4074	3745	7819	45	3893	3580	7473	-4%	44	3580	3226	6806	-9%	44	2460	2059	4519	-34%	43	3165	2944	6109	35%
Lower Tugela	Rural	55	2529	2440	4969	68	2889	2546	5435	9%	64	2335	2192	4527	-17%	66	1752	1606	3358	-26%	65	2168	2186	4354	30%
Lower Umtfolozi	Rural	139	7543	6888	14431	143	7445	7041	14486	0%	145	6498	5906	12404	-14%	148	5907	5312	11219	-10%	150	6703	6031	12734	14%
Mahlabathini	Rural	78	3912	3541	7453	101	4488	4124	8612	16%	103	3862	3406	7268	-16%	103	3164	2621	5785	-20%	103	3560	3226	6786	17%
Maphumulo	Rural	81	3911	3687	7598	86	4522	3688	8210	8%	91	3223	2882	6105	-26%	93	2444	2194	4638	-24%	96	2962	2626	5588	20%
Midlands	Rural	119	3683	3341	7024	124	3406	3212	6618	-6%	121	3034	2758	5792	-12%	118	2124	1895	4019	-31%	113	2783	2515	5298	32%
Mnambithi	Rural	127	5836	5315	11151	131	5914	5356	11270	1%	138	5510	5030	10540	-6%	144	3807	3280	7087	-33%	143	4624	4323	8947	26%
Msinga	Rural	93	5354	4746	10100	94	5375	5047	10422	3%	102	4743	4164	8907	-15%	105	3483	3128	6611	-26%	106	4028	3584	7612	15%
Mthunzini	Rural	70	4443	4196	8639	80	4702	4327	9029	5%	77	4097	3600	7697	-15%	85	3756	3224	6980	-9%	87	3996	3647	7643	9%
Ndvedwe	Rural	96	3682	3440	7122	88	3480	3144	6624	-7%	89	2708	2468	5176	-22%	90	2326	2013	4339	-16%	90	2765	2555	5320	23%
Newcastle	Urban	49	3713	3333	7046	53	3681	3360	7041	0%	53	3415	3105	6520	-7%	55	2422	1992	4414	-32%	56	2831	2606	5437	23%
Nkandla	Rural	117	4966	4471	9437	128	4924	4597	9521	1%	127	4251	4137	8388	-12%	126	2852	2588	5440	-35%	129	3424	3281	6705	23%
Nongoma	Rural	138	6844	6137	12981	120	5599	5103	10702	-18%	121	4906	4476	9382	-12%	121	4342	3874	8216	-12%	102	3682	3274	6956	-15%
Nquthu	Rural	92	4723	4370	9093	101	5338	4708	10046	10%	102	4567	4119	8686	-14%	104	3662	3086	6748	-22%	105	4030	3674	7704	14%
Paulpietersburg	Rural	103	2242	2244	4486	107	2509	2286	4795	7%	111	2251	1950	4201	-12%	110	1785	1593	3378	-20%	110	1936	1583	3519	4%
Phoenix	Rural	66	2930	2887	5817	63	2815	2641	5456	-6%	63	2350	2399	4749	-13%	65	1356	1418	2776	-42%	65	2246	2318	4566	64%
Pholela	Rural	85	2868	2513	5381	82	2658	2464	5122	-5%	85	2464	2071	4535	-11%	84	1820	1511	3331	-27%	84	2372	2016	4388	32%
Pietermaritzburg	Urban	80	4354	3813	8167	81	3933	3463	7396	-9%	84	3925	3750	7675	4%	86	2983	2772	5755	-25%	91	3726	3312	7038	22%
Pinetown	Urban	60	4067	3570	7637	71	4503	4137	8640	13%	74	4197	3846	8043	-7%	75	3258	2869	6127	-24%	76	4101	3810	7911	29%
Pongola	Rural					50	2208	2195	4403		50	2069	1850	3919	-11%	51	1912	1662	3574	-9%	52	1879	1752	3631	2%
Sayidi	Rural	105	5635	5258	10893	102	5162	5022	10184	-7%	107	5082	4678	9760	-4%	108	4172	3657	7829	-20%	107	4643	4227	8870	13%
Scottburgh	Rural	100	5313	4803	10116	102	4983	4581	9564	-5%	102	4226	3883	8109	-15%	105	3141	2937	6078	-25%	106	3913	3766	7679	26%
Ubonbo	Rural	52	2598	2432	5030	89	4437	4137	8574	70%	92	3908	3641	7549	-12%	92	3246	2896	6144	-19%	113	4680	4306	8986	46%
Umkumbulu	Rural	107	6292	5702	11994	113	6210	5679	11889	-1%	113	5044	4597	9641	-19%	112	3534	3192	6726	-30%	114	4221	3999	8220	22%
Umlazi North	Urban	28	3305	2989	6294	27	3122	2826	5948	-5%	27	2816	2478	5294	-11%	26	2084	1735	3819	-28%	26	2484	2168	4652	22%
Umlazi South	Urban	34	2733	2573	5306	31	2572	2649	5221	-2%	33	2524	2356	4880	-7%	33	1608	1300	2908	-40%	32	2167	1990	4157	43%
Umvoti	Rural	168	5606	5121	10727	171	5872	5439	11311	5%	174	4924	4573	9497	-16%	178	4317	3832	8149	-14%	178	4720	4314	9034	11%
Vullindlela	Rural	117	4221	3721	7942	114	3691	3349	7040	-11%	116	3594	3350	6944	-1%	113	2666	2208	4874	-30%	115	3003	2728	5731	18%
Grand Total	Rural	3571	171806	157573	329379	3790	177084	163295	340379	3%	3878	156442	142915	299357	-12%	3914	121366	106362	227728	-24%	3940	142471	131162	273633	20%



## Where Have All the Flowers Gone: Explaining the Decline?

The point of departure in this preliminary analysis is to establish that this decline is a management problem in the first instance, irrespective of the reasons why it is occurring; it does not set out to prove that the decline is caused *solely* by HIV/AIDS, but to examine whether or not this might be *one* of the contributory reasons for it.

One of the difficulties in attempting to analyze the decline at all is that there is no hard data on many of the issues linked to it; for this reason, and flowing from the perspective of the district analysis above, we have very simply examined ten related issues below, and attempted to establish common-sense probability and degree. We hope that this may create a platform for further research and identify issues for a future prioritized research agenda. Moreover, the 2001 Snap Survey in KwaZulu Natal, due in February 2001, may establish whether this observed decline is a statistical anomaly, a phenomena linked specifically to new legislation, or a trend of greater concern. Whichever the case, the fact is that there will be a dramatic narrowing of the cohort flow over the coming decade, and some quite significant implications at many levels of the system.

In attempting to rationalize the decline, two obvious questions present themselves: First, are there *really* any “missing” children, or have we been dealing with historical exaggeration for years, that has only now been corrected? And second, if indeed they exist, or existed, *where* are they? In an attempt to answer these questions, the following issues have been considered:

- *Data Quality:* The first question that must be asked is about the quality of data. In fact, KwaZulu Natal has comparatively good and reliable data, but more to the point, whatever their inevitable margin of error, the data used are precisely the same as those used for annual planning and provisioning. In other words, these *are* the data that inform Provincial education thinking and budgeting, and are the basis for calculating educator demand and related service ratios.

The data are captured through a process involving the completion of detailed collection forms by school principals, on the tenth school day of the first term, and the onward transmission and capture of this data for analysis by the KZNDEC's EMIS unit. The data capture and cleaning process involves some degree of continuity checking and the identification of obvious anomalies in relation to historical data from the same school; there is also an assumption that school inspectors responsible for circuits have combed and checked the data. In short, both the principal and the inspector concerned are required to sign the capture form, confirming its accuracy and accepting fairly considerable penalties for falsification or misrepresentation. While these are hardly failsafe mechanisms, they have contributed to what is regarded as fairly reliable data, supported by cross checks and analyses at various levels.

- *Improvement in Collection Techniques and Quality:* Notwithstanding the comments above, it has been postulated that improved collection and analysis may be responsible for the apparent plunge in enrolment reflected in the data; in other words, that up to 1999, the numbers were distorted by school principals anxious to protect (through inflation) their staffing and resource positions, and that this

distortion was *suddenly* remedied in 1999 and 2000. There is certainly a possibility that improved data collection and – more importantly – the increased application of penalties for falsification, have contributed to this change.

However, while this might explain a simple if erratic drop in numbers, it does not adequately explain the increased gender gap in the enrolment decline, which is simply too consistent to be explained by anything other than a sophisticated conspiracy across the Province. Discounting this last point, the weight of probability is that while improved data collection may be a contributory factor, it is by no means the sole or even main explanation.

- *Normalization of Enrolment and Schooling:* Prior to 1994, the KwaZulu Natal education system comprised five separate and independent departments, racially based and quite differently resourced and managed. The comparative degree of disadvantage meant that in at least two of the five departments, age/grade norms and appropriate service ratios simply did not apply in any real measure; as a result, in many schools, Grade 1 was effectively a holding system for children and young adults ranging in age from three to twenty-three<sup>8</sup>, for example. The integration of these departments and the sustained application of new policies and budgeting norms has meant that the system has experienced a considerable degree of “normalization” over the last five to six years; in effect, this has reduced the number of inappropriately aged learners in the classroom, Grade 1 included. The prohibition of children under the age of seven entering Grade 1, effective in 2000, is a policy case in point. It has undoubtedly also reduced repetition, consequently reducing the number of learners enrolling in Grade 1 for the second, and third and even fourth time.

But does this factor, alone, explain the sudden fall in Grade 1 enrolments? While it certainly explains a large part of the profound decline in 2000 – as discussed above – it does not however explain the plunge in 1999. Normalization, like most change processes, is irksomely gradual, and it is difficult to accept that it could have had the effect of reversing a 3% growth into a 12% decline in one calendar year, without the sort of exacerbating legislation that followed a year later. There can be no doubt though that normalization was a contributory factor, to some extent in 1999, and to a much larger extent – possibly measurably so – in 2000.

- *Decline in Female Participation Rates:* The data confirms that female participation rates are declining faster than those for males. The reasons for this accelerated and disproportionate decline are uncertain, but it is reasonable to conjecture that a combination of other factors – economic pressures and home care responsibilities, for example – would tend to disadvantage girls more than boys. Whatever the reasons, the fact is that females were already under-enrolled in 1997, relative to gender split for the 0 to 10 age group, since which point their comparative share of enrolment has declined further. The net effect of this is that these reducing female participation rates are a contributing factor to the general decline, to a measurable degree.

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<sup>8</sup> AIDS Brief for Education Sector Planners, P Badcock-Walters, HEARD

- *Migration Patterns:* It has also been postulated that internal migration patterns may be responsible for the decline, at least in some districts. It is certainly clear that there are examples of this – the Phoenix district discussed above is a case in point – where the process of post-1994 integration and rationalization has resulted in the wholesale movement of populations. In the case of Phoenix, large numbers of Indian families have moved out as African families have moved in, resulting in markedly different enrolment profiles; in Phoenix, for example, it is likely that the extraordinary 42% decline in 2000 evidenced there was indeed exacerbated by these migratory patterns. This is certainly the view of officials close to the district.

However, this can only be a factor in a limited number of districts and does not alter the fact that the aggregated data – in other words, the Provincial position – still reflect a 12% and 24% decline over the last two years. Another possibility is that inter-provincial migration patterns might be responsible; but although there is no comparative data available from other provinces to confirm or deny this possibility, neither is there any hard evidence to support it, and a good deal of intuitive conviction that this is not the case. Finally, international migration – emigration – may also play a role; however, it is common cause that this is likely to impact a very small proportion of the population, mainly white and perhaps Indian, and cannot be considered as a serious factor relative to the enrolment profile of the Province.

- *Decline in Fertility:* Apart from the general decline in fertility rates, noted above, there are three further dimensions to this issue<sup>9</sup>, directly related to HIV/AIDS: First, the number of births will decline if women die before reaching the end of their child bearing years. Second, HIV and AIDS are known to reduce fertility between 10% and 40%, through physiological means. And third, AIDS awareness (though limited in the early 1990s), use of condoms and the empowerment of women also combine to reduce the birthrate. Looking specifically at the second point, widely accepted estimates suggest that HIV-positive women may be up to 30% less likely to fall pregnant: We would argue, given the observed antenatal HIV-infection rates of between 10% and 19% in the early to mid-1990s, (the point at which children entering school in 1999/2000 would have been conceived), that this might indeed suggest a connection. Theoretically, at least, this could account for as much as a 4% to 5% reduction in births for the Province as a whole in that period; thus it would be hardly surprising to confront a significant decline in the number of children of school-going age by the end of the decade. However, this crudely calculated connection is by no means conclusive: It merely suggests that reduced fertility, driven by declining rates in general terms, and by HIV-infection in particular, may have had some contributory effect.
- *Infant Mortality:* Between 13% and 45% of children born to HIV-infected mothers will be themselves HIV-infected; this percentage will vary with the stage of the epidemic, but most HIV-infected infants develop AIDS and die within a few years of birth<sup>10</sup>. While nutrition, environment and access to appropriate healthcare may alter this position to an extent, the general rule of thumb is that this group of infants will not live to enter school. Data for the period in question is limited, but infant mortality in 1998, for example – factoring for AIDS – was projected at a rate of 96

<sup>9</sup> *AIDS: The Challenge for South Africa*, A Whiteside and C Sunter, Human & Rousseau Tafelberg, 77

<sup>10</sup> *AIDS: The Challenge for South Africa*, A Whiteside and C Sunter, Human & Rousseau Tafelberg, 75

per 1000<sup>11</sup> for South Africa as a whole, as against 70 per 1000 without AIDS. For the sake of conjecture, the rate for KwaZulu Natal is likely to have been significantly higher, but could certainly not, on its own, be responsible for the decline in Grade 1 enrolment; however, it is clear that the issue of HIV/AIDS related child mortality could be a contributory factor.

- *Economic Impact:* Far more complex is the issue of economic impact, from the Provincial development level, all the way down to that of the individual household. As long ago as 1993, an Economic Landscape Survey<sup>12</sup> confirmed that the collective South African family paid as much as 32% again as the State towards the cost of education. This confirmed the extent to which access and participation relied on the private pocket, and also showed that the rural poor paid a proportionately larger percentage of their resources than their comparatively more affluent urban cousins.

Given that this situation probably still obtains in large measure, the capacity of the family to subsidize the cost of their children's education remains a crucial issue; the key difference is that the average KwaZulu Natal family is now *also* paying a share of their resources for HIV/AIDS-driven health care, funerals and extended-family responsibilities – often in the face of the loss of one or more bread-winners. Apart from the drain on the Provincial economy and the net effect on development, this means that families may be confronted by stark choices: To care for a loved one in sickness and death or pay school fees; cover the usurious cost of a funeral or buy school uniforms and books. These are decisions that no-one could want to face; yet households all over KwaZulu Natal are facing them daily.

The net effect of this additional stress on household income may result in appropriately aged children being kept out of school, accelerated drop out rates (to work or help in the home), increased institutional rejection of non-fee paying learners (in spite of Government policy to admit them), reduced expenditure on uniforms, text books, stationery and transport, and reduced expenditure on foodstuffs, leading to malnutrition and illness. Thus children may be held back from initial entry to school for reasons of economic circumstance, or removed from it at any point for the same reason. On balance, therefore, it seems likely that the decline could indeed be directly or indirectly impacted by these growing financial pressures on the household; there is however no suggestion that these economic pressures are exclusively HIV/AIDS-driven, and noted that they may vary widely from area to area, and community to community.

- *Home Care:* While the issue of drop-out has been discussed earlier, it is important to understand that learners not only drop out of school for many reasons, only some of which are related to HIV/AIDS, but that they may be precluded from initial entry for the same reasons: Family finances, rural cropping and other seasonal demands, pregnancies, illness, exam failure and over-age to name a few. In terms of Grade 1 enrolment, impact may be felt on at least two levels: Children as young as six and seven may be required to stay at home to nurse or mind younger siblings, or to perform other household chores or agricultural tasks; second, and as

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<sup>11</sup> Department of National Health and Population Development, *Epidemiological Comments*, Vol.19, No.5

<sup>12</sup> Education Foundation, commissioned research and analysis, 1993

a more direct consequence of the HIV/AIDS pandemic, children of this age may also be required to stay at home to nurse and care for sick parents, grandparents or other family members – and effectively replace them in their various roles in the home. One pertinent example is the number of child-headed households that are now regarded as almost commonplace, notwithstanding the fact that there might in fact be sick adults in the home. The net effect of these phenomena is that increasing numbers of children may not reach school, or may be delayed for long periods of time in starting their school careers. While this too will impact the decline under consideration, and notwithstanding the certain increase in incidence, it can only be considered one of several contributory factors.

- *Orphaning*: South Africa currently has a high proportion of children who are not continually cared for by either parent, and very high rates of care by aunts and grandmothers<sup>13</sup>. Due in large measure to the history of apartheid, this fragile family environment is now additionally confronted by the looming impact of HIV/AIDS. It has been estimated that KwaZulu Natal already had 65 000 AIDS orphans by 2000, and will have over 500 000 more by the end of the decade. While there is no reliable age profile available, this group will certainly include very large numbers of children in the age group due to enter Grade 1 at the beginning of every year. More to the point, large numbers of orphans (and other children aged 7 to 18) are *already* out of school; how many of these should have entered the classroom for the first time at the beginning of 1999 and 2000 may never be known, but it is likely that their exclusion has been a significant contributory factor in the declines we now see. While it may for the purposes of this analysis remain only a contributory factor, orphaning alone may however account for a very substantial decline in Grade 1 enrolment over the coming decades, and will impact the education system, society and the economy in ways that we can only guess at for the moment.

### **Summary:**

Two obvious questions were identified at the outset: First, are there *really* any “missing” children, or have we been dealing with historical exaggeration for years, that has only now been corrected? And second, if indeed they exist, or existed, *where* are they?

Reviewing the evidence, it is clear that there are no obvious or complete answers to either of these questions: In the first instance, the examination above of several contributory factors has not ruled out the possibility of historical exaggeration over the years to 1999; but it has to be said that the sheer scale of the trend reversal in that year makes it an unlikely single cause. There is no doubt that data quality and verification is and will remain a vexed issue, and that there are and have been any number of statistical anomalies and inaccuracies – whether intentional or accidental; but to suggest that the resolution of these phenomena in a single year is likely, much less possible, is to go too far. At best, data and analytical improvement in 1999 can only be considered a contributory factor, and might, in our view, be responsible at most for 5% to 10% of the reported decline. If a pattern of historical exaggeration or misinformation, and its sudden correction, is not largely responsible for the apparent decline, then the question arises as to where these “missing children” might be?

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<sup>13</sup> *AIDS: The Challenge for South Africa*, A Whiteside and C Sunter, Human & Rousseau Tafelberg, 80

The answer to that question is confused by the fact that there are already, according to current estimates<sup>14</sup>, over 260 000 children between the ages of 7 and 18 out of school in KwaZulu Natal. While it is quite conceivable that the apparent loss of around 120 000 children (allowing for continued declining growth as opposed to the observed decline), over the two-year period in question, would be hard to detect in these circumstances, it has to be recognized that we are talking about children concentrated in a six to eight year age band. For this reason, we would suggest as one possibility that some proportion of these “children” may simply not exist, for reasons of reduced fertility and increased infant mortality over the period; an alternative possibility is that the ranks of children out of school have swollen alarmingly over the last two years, in the sort of orphan-led explosion evidenced in countries like Zambia and Uganda. Once again, however, we are left uncertain either of the true position or even of its likely cause; what *is* clear is that there are a number of possibilities, which include the effects of both HIV and AIDS, and the possibility that while these children might not have been infected, they might well have been *affected* to some degree by the disease.

The continuing normalization of the system has undoubtedly had an effect: The reduction in repetition rates in Grade 1 alone will have had the effect of reducing the number of under-age children literally recycling in that grade; given that repetition rates for Grade 1 were estimated at around 35% in the early 1990s<sup>15</sup>, the potential for decline through improved transition rates and better policing of under-age admission will have had a considerable – but gradual – effect. Thus, while this may go some way to explaining aspects of the decline, it does not explain the suddenness of the drop in 1999, *ahead* of the age legislation introduced in 2000. Reducing female participation rates will also have made a significant contribution to the decline: Although this too has been fairly gradual, it is however arguable that it may have contributed to around 5% of the decline. The underlying point, however, is that reducing female enrolment may be directly linked to both the direct and indirect effects of HIV and AIDS, and should be flagged for further attention.

Internal migration patterns may be largely discounted, given the extent of the decline at a Provincial level, as too may be inter-provincial and international migration. Declining fertility however, whether general or HIV/AIDS specific, will undoubtedly have had some effect, and will continue to do so; while the crude estimate of a 4% to 5% reduction in births over the period concerned may be dismissed as conjectural, it is nevertheless a significant factor, as indeed is infant mortality, which may also be considered a contributory, and increasingly important, factor. Economic pressure on the family and community is a profoundly complex equation; what is anecdotally clear is the extraordinary increase in the number, and cost, of funerals and the share of expenditure going to health care and extended family responsibilities. Given that these stresses often coincide with the demise of a bread winner, it is reasonable to suggest that economic pressure may be a very significant factor, and may be directly linked with children – particularly girls – being held-back from, or withdrawn from school to act as home care givers or domestic helpers. In a related sense, orphaning may account for a significant proportion of the decline; there is as yet no age profile available for the number already orphaned in the period under review (estimated at 65 000 in 2000), but it is reasonable to suppose that a substantial

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<sup>14</sup> Source: *The Education Atlas of South Africa 2000*, The Education Foundation/EduAction 33/34

<sup>15</sup> Analysis by Dr Luis Crouch, RTI and Senior Economic Advisor to the National Department of Education and the RTI/Education Foundation APEX model (circa 1992)

percentage of these are in the age band who should have been entering school for the first time in 1999 and 2000.

### ***Lessons for Education System Management?:***

Where then does this leave us? With only guesses, intuitive estimates and crude calculations available to us, we are no nearer conclusive answers to the questions posed by this paper. What we *do* know is that there is a basket of more or less significant factors that together have contributed to the decline, as well as others we may not as yet recognize or acknowledge.

Two key themes *do* emerge from this preliminary analysis however: The first is the obvious identification of HIV and AIDS as exacerbating factors in almost every one of the issues considered. While the doubtful may be tempted to dismiss this observation, we would argue that they have contributed directly or indirectly to the decline, and that their impact will become more obvious, and indeed prominent, in the coming years. For now, we are confronted with an early warning signal that in our view is not the result of a simple statistical aberration, or any single contributing factor; but we have little doubt that the impact of the HIV/AIDS pandemic is embedded in every issue considered in this preliminary analysis, and that we are seeing only the beginning of its long-wave effect.

It is a signal that we ignore at our peril, and one that begs us to review our cursory approach to the analysis of school level data: If indeed the school system is the most logical ground on which to engage and counter the spread of HIV/AIDS infection<sup>16</sup>, we have to do better than pay limited attention to year-old statistics, and instead apply our minds to the *regular* collection of pertinent indicators that both provide a live Education Management Information System (EMIS) *and* the means to measure the impact of HIV/AIDS on enrolment, educators and management. We would argue strongly that there is a case for the development of a system of more regular data capture to address this problem, with the emphasis on information of use at the district level that may also yield data pertinent to the early detection of HIV/AIDS impact at the school. Without this kind of management information and the wisdom and will to respond to it, we risk the collapse of teaching and learning in very real terms, and a bleak development future.

The second theme that emerges is that whatever the effect of HIV/AIDS, its primary impact lies in its ability to explode the scale of existing, even historical, education management problems and issues. It cannot be seen as an unrelated threat, intruding on education, but as an intrinsic and exacerbating factor in every traditional management problem: Enrolment, drop-out, attrition, transition, learner/educator and learner/classroom ratios, educator qualification and experience, quality and even access – to name a few. While HIV/AIDS may not *yet* present the basic education system with the problem of learner mortality, it most certainly will decimate the ranks of educators and strike at the heart of the system's ability to deliver quality education and learning. For these reasons, we would argue that HIV/AIDS should as a matter of course be factored in *every* aspect of management and planning, and be integrated in the training and thinking of every system administrator, at every level. This may be sensibly and effectively achieved through a process of review of current management procedures and training curricula, and may,

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<sup>16</sup> *AIDS Brief for Education Sector Planners*, P Badcock-Walters, HEARD

ironically, also lead to better management practice and the improved address of the many historical education-provisioning problems described in this paper.

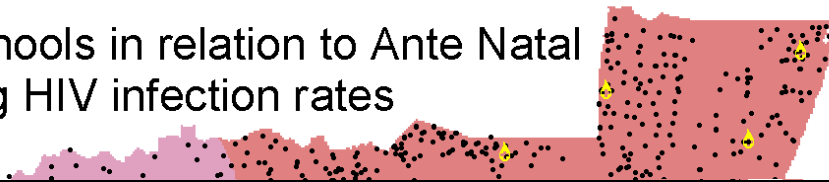
Finally, we are moved to make what we regard as an important observation, and one that has the most profound importance for education system management: While HIV/AIDS arguably represents the most significant and over-arching threat ever faced by the system, it also represents the most unique *opportunity* for positive change and reform. Crisis breeds chance, and in this instance, the overwhelming human tragedy that faces us brings with it the opportunity to review – in the face of the likely decimation of educator and management ranks – the way we see, train and prepare our education professionals. We are confronted, for example, with the need to reconsider how *long* we will be able to train educators, given that the demand for replacement stock will grow exponentially in the years ahead; if so, we have an opportunity to also reconsider *what* we train them to teach and *why*. We also have a chance to reconsider the role of the school as a social institution in changing socio-economic times, the way schools are organized and clustered, and the way they are managed. Management skills, traditionally provided by school principals acceding upward to supervisory and management posts, must also be reconsidered and perhaps taken more seriously.

If indeed we are to effectively manage a system that employs around 80 000 professionals and serves literally millions of clients, perhaps this is the moment to engage with a new generation of professional administrators or at least reconsider the skills base of those we have. We are faced with the reality, albeit masked by its almost invisible early presence, of a pandemic that will indelibly mark education for decades to come; we owe it to the children who are the present and future clients of this system, and the social economy it serves, to seize the opportunity to offset the negative impact of HIV/AIDS with positive reform while we can.

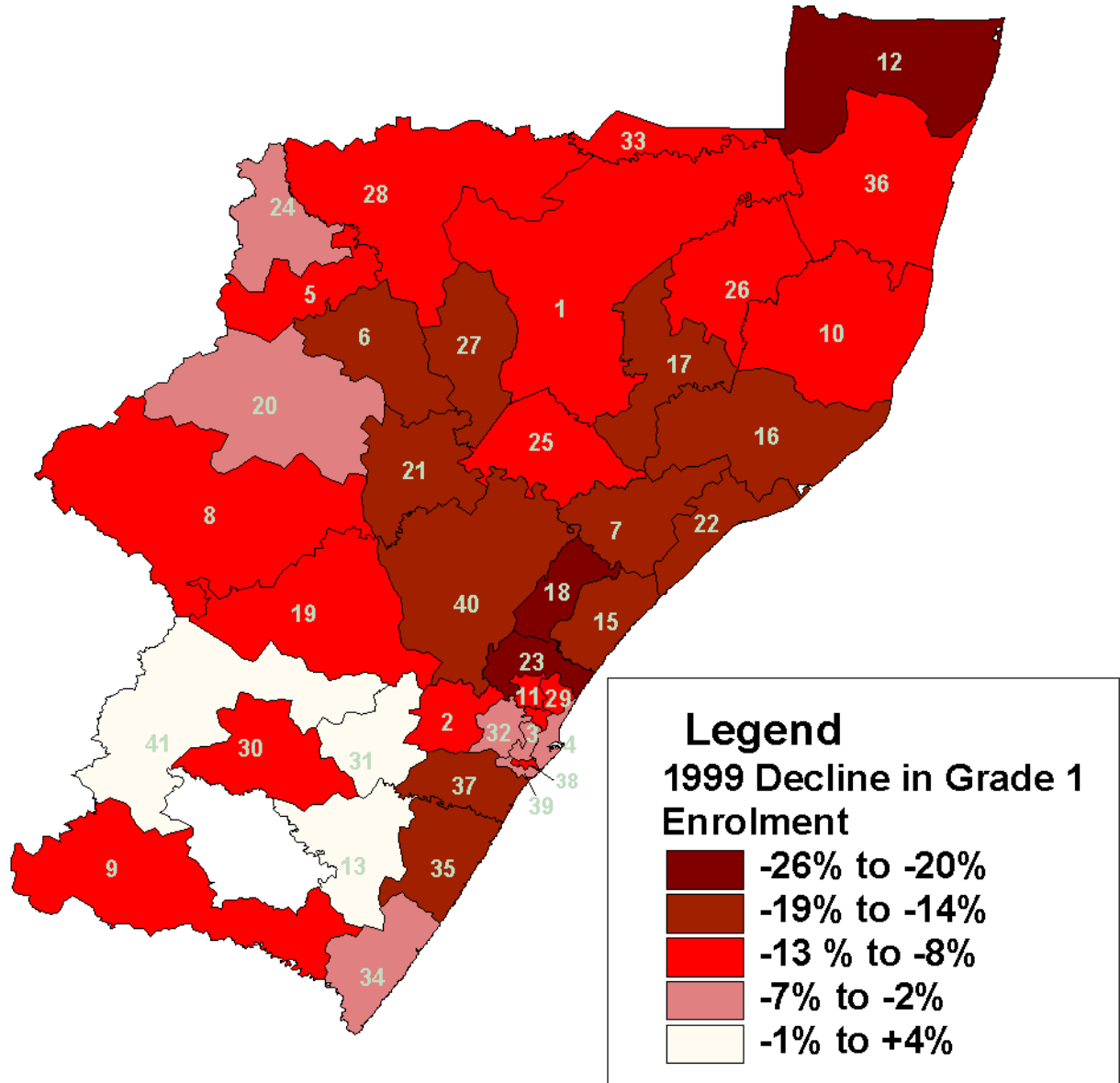
This said, we await the availability of new enrolment data for 2001 with keen anticipation, in the hope that it will shed more light on the puzzle examined in this paper and motivate further research and analysis. For now, we are left certain that there is a problem of declining Grade 1 enrolment, but perhaps only slightly less uncertain than when we began of the specifics of its cause; we commend this paper to education system managers, in the hope that they will recognize here the seeds of an action checklist and research agenda, and, at the very least, reason to take *extremely* seriously the threat of HIV/AIDS to the education system.



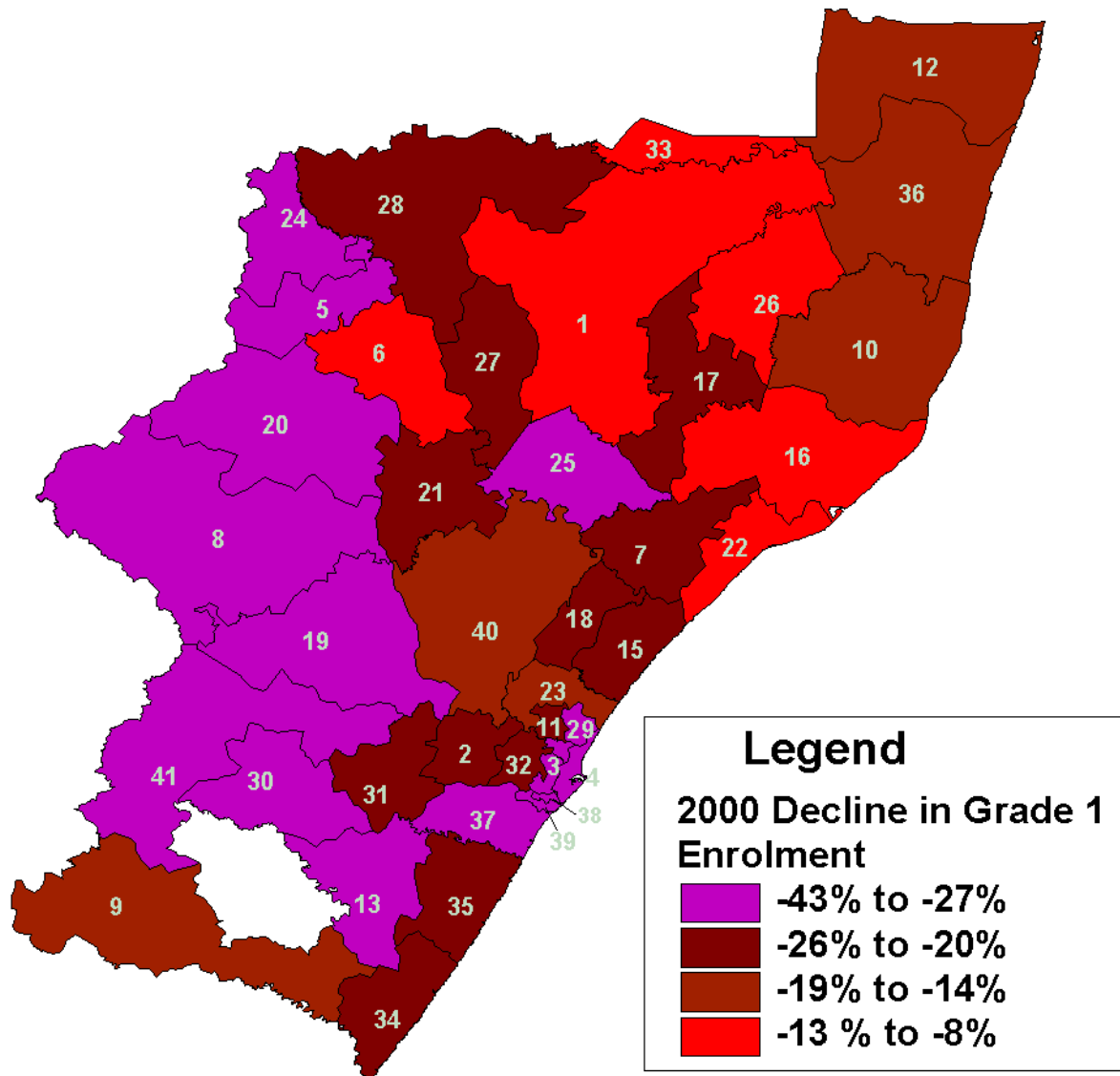
Distribution of schools in relation to Ante Natal Clinics monitoring HIV infection rates



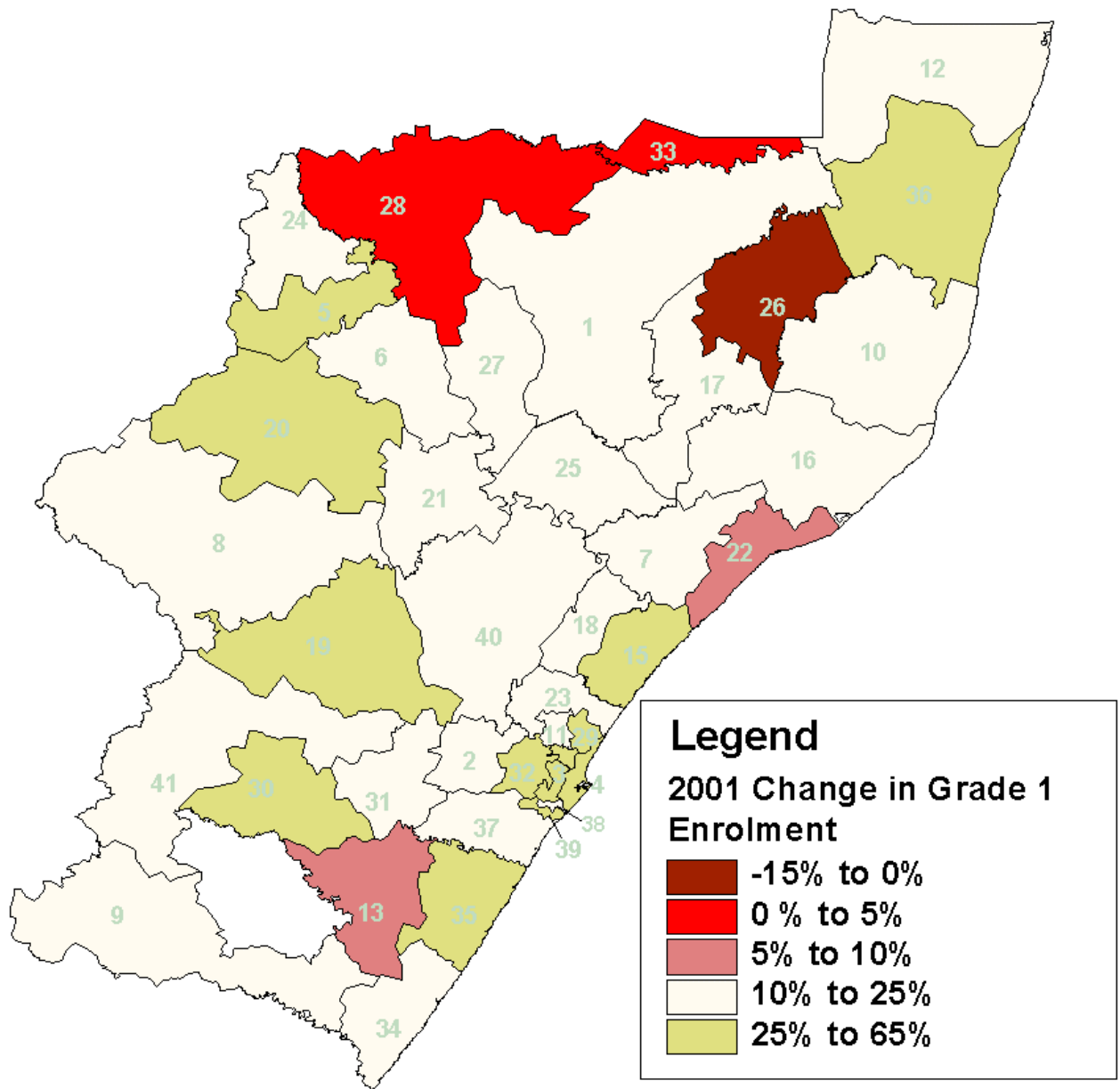
# 1998 - 1999 Change in Grade 1 Enrolment



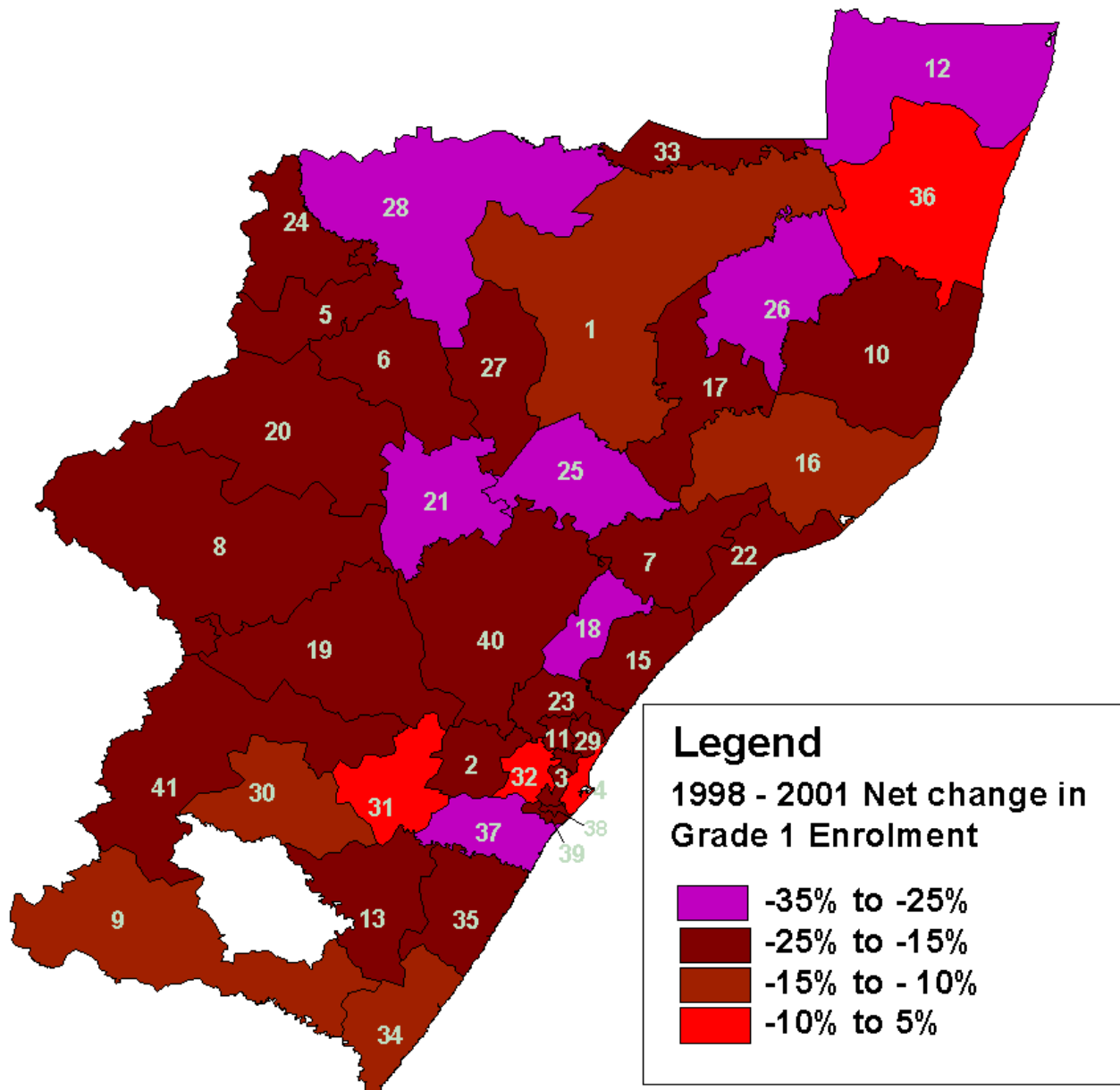
# 1999 - 2000 Change in Grade 1 Enrolment



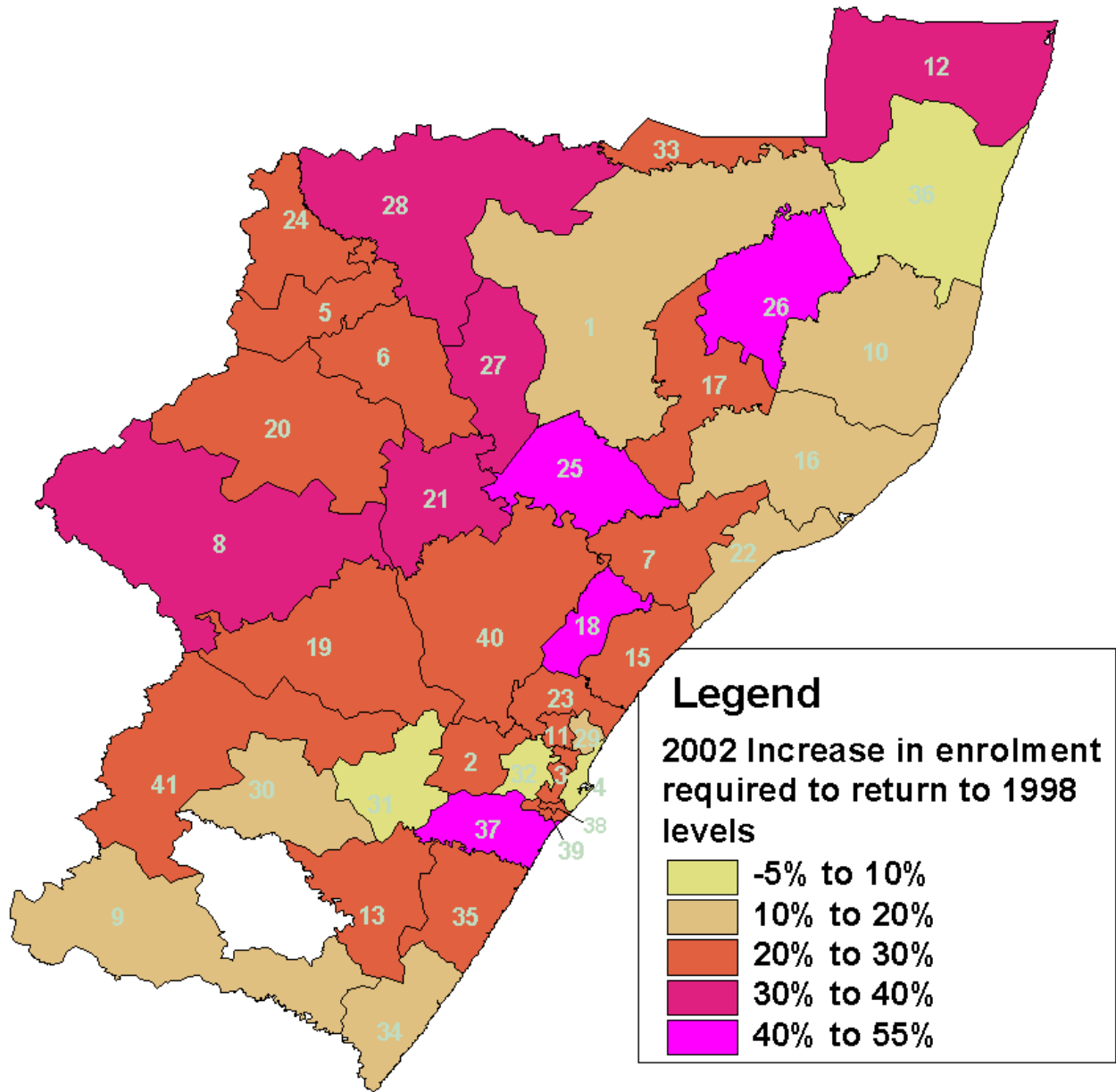
## 2000 - 2001 Change in Grade 1 Enrolment



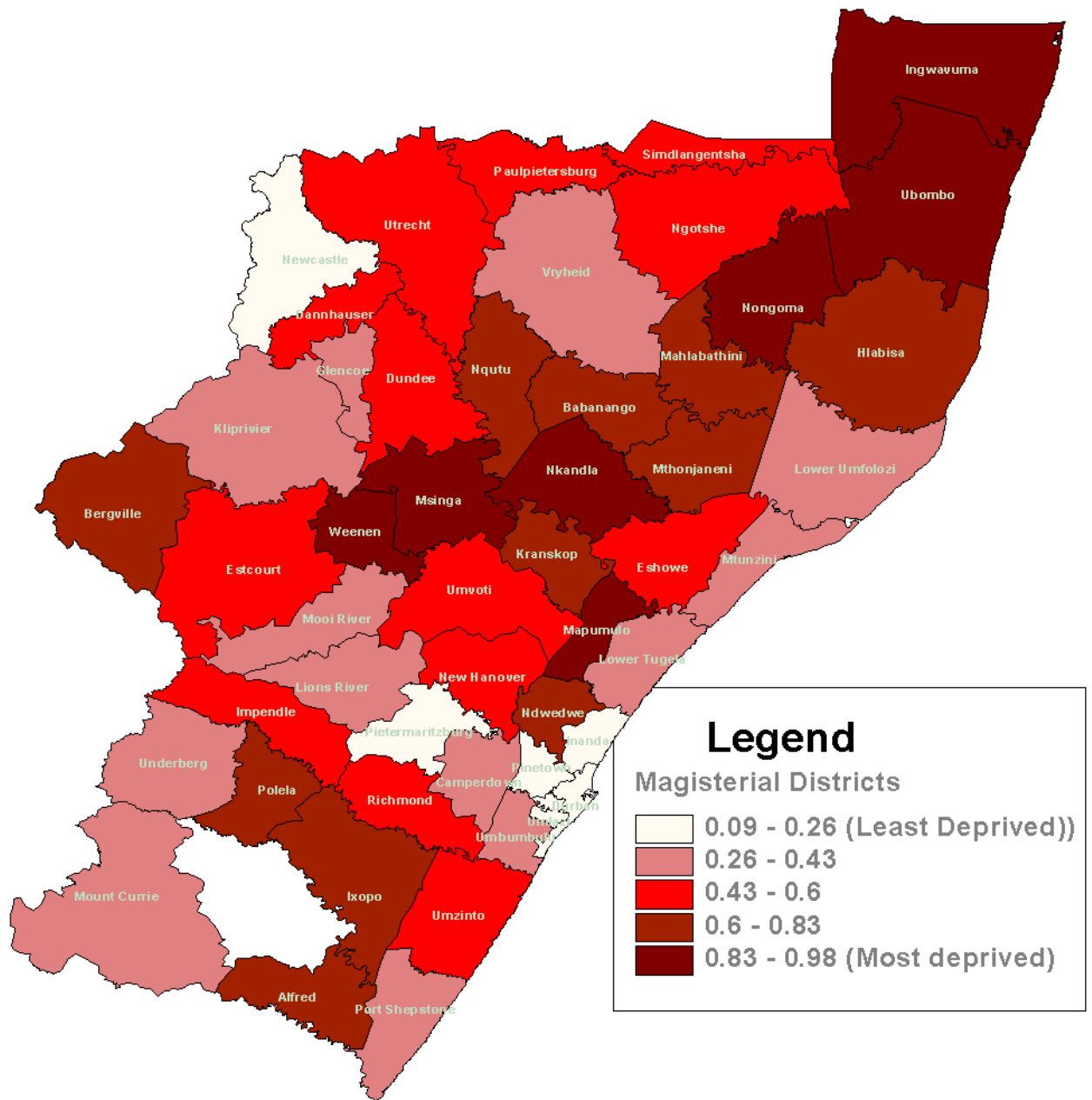
## 1998 - 2001 Net Change in Grade 1 Enrolment



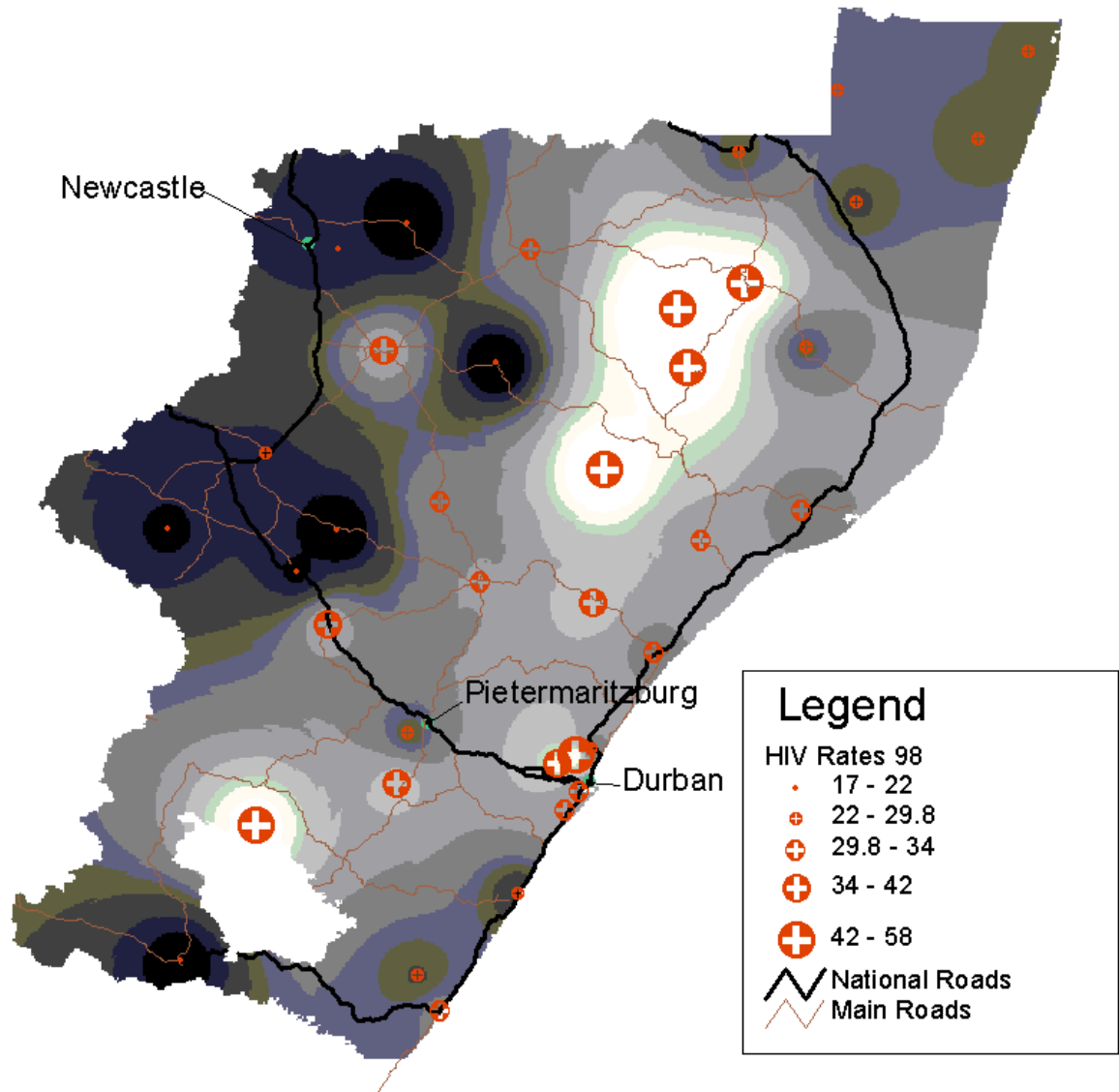
**Increase in enrolment required in 2002 to return to 1998 levels of Grade 1 enrolment**



# Index of socio-economic deprivation



# The location of Ante Natal Clinics in relation to Transportation Routes





**Key to Codes for Education District maps (1999 and 2000 Decline in Grade 1 Enrolment)**

<b>District</b>	<b>Code</b>
Bhekuzulu	1
Camperdown	2
Chatsworth	3
City Of Durban	4
Dannhauser	5
Dundee	6
Eshowe	7
Estcourt	8
Harding	9
Hlabisa	10
Inanda	11
Ingwavuma	12
Ixopo	13
Kwamashu	14
Lower Tugela	15
Lower Umfolozi	16
Mahlabathini	17
Maphumulo	18
Midlands	19
Mnambithi	20
Msinga	21

<b>District</b>	<b>Code</b>
Mthunzini	22
Ndwedwe	23
Newcastle	24
Nkandla	25
Nongoma	26
Nquthu	27
Paulpietersburg	28
Phoenix	29
Pholela	30
Pietermaritzburg	31
Pinetown	32
Pongola	33
Sayidi	34
Scottburgh	35
Ubombo	36
Umbumbulu	37
Umlazi North	38
Umlazi South	39
Umvoti	40
Vulindlela	41