

Spatial inequality: Persistent patterns of child deprivation

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Maps are a useful way to illustrate spatial inequalities and how children's socio-economic status and access to services differs depending on where they live. This essay presents key findings from recent studies which measured child deprivation across the whole of South Africa.¹ The analysis used a child-focused perspective and was an attempt to put into practice a model of multi-dimensional child poverty in South Africa.²

The essay addresses the following key questions:

- Why is spatial mapping important?
- What is the Index of Multiple Deprivation for Children?
- What do the maps show?

Why is spatial mapping important?

It is widely recognised that high levels of deprivation not only impact on the lives of children during their childhood but also on their prospects as adults. In South Africa, the spatial patterns of deprivation and the resultant spatial inequalities are historically entrenched.³

By using municipality-level data about child deprivation, a 2009 study has demonstrated that child deprivation in South Africa in 2001 was spatially concentrated in the former "homeland" areas.⁴ This essay explores whether this remains the case if one drills down to below municipality level.

When analysing children's deprivation at the very small datazone levelⁱ – which could be viewed as an approximation to a neighbourhood – it is clear that child deprivation was still most prominent in the former homeland areas.⁵ Furthermore, at this spatial scale, pockets of deprivation in urban areas, particularly in informal settlements, are also identifiable – a nuance that is disguised by provincial or municipality-level analysis. A further advantage of a small area index of multiple deprivation is that it identifies areas with the most severe deprivation which can then be prioritised for policy interventions.

Using more up-to-date data from the 2007 Community Survey, it has been shown that the spatial legacy of apartheid continued for the general population.⁶ Changes in the spatial distribution of relative deprivation experienced by children between 2001 and 2007 show that this was also the case for children.

What is the Index of Multiple Deprivation for Children?

The South African Index of Multiple Deprivation for Children 2001⁷ (SAIMDC 2001) comprises five domains of deprivation which each contain one or more indicators relating to that domain of deprivation. The domains of deprivation are:

- Income and material deprivation – children in households below a relative poverty line or who live in a household without certain material possessions, such as a refrigerator.
- Employment deprivation – children living in households where no-one is in paid work.
- Education deprivation – children who are not in school or who are in the wrong grade for their age.
- Biological parent deprivation – children whose biological parents have both died, or who live in a child-headed household.
- Living environment deprivation – children living in poor quality environments such as without adequate sanitation and water supply.

Further details about the indicators, the methodology for combining them into domain scores and for combining the domain scores to produce the SAIMDC are described in detail elsewhere.ⁱⁱ

What do the maps show?

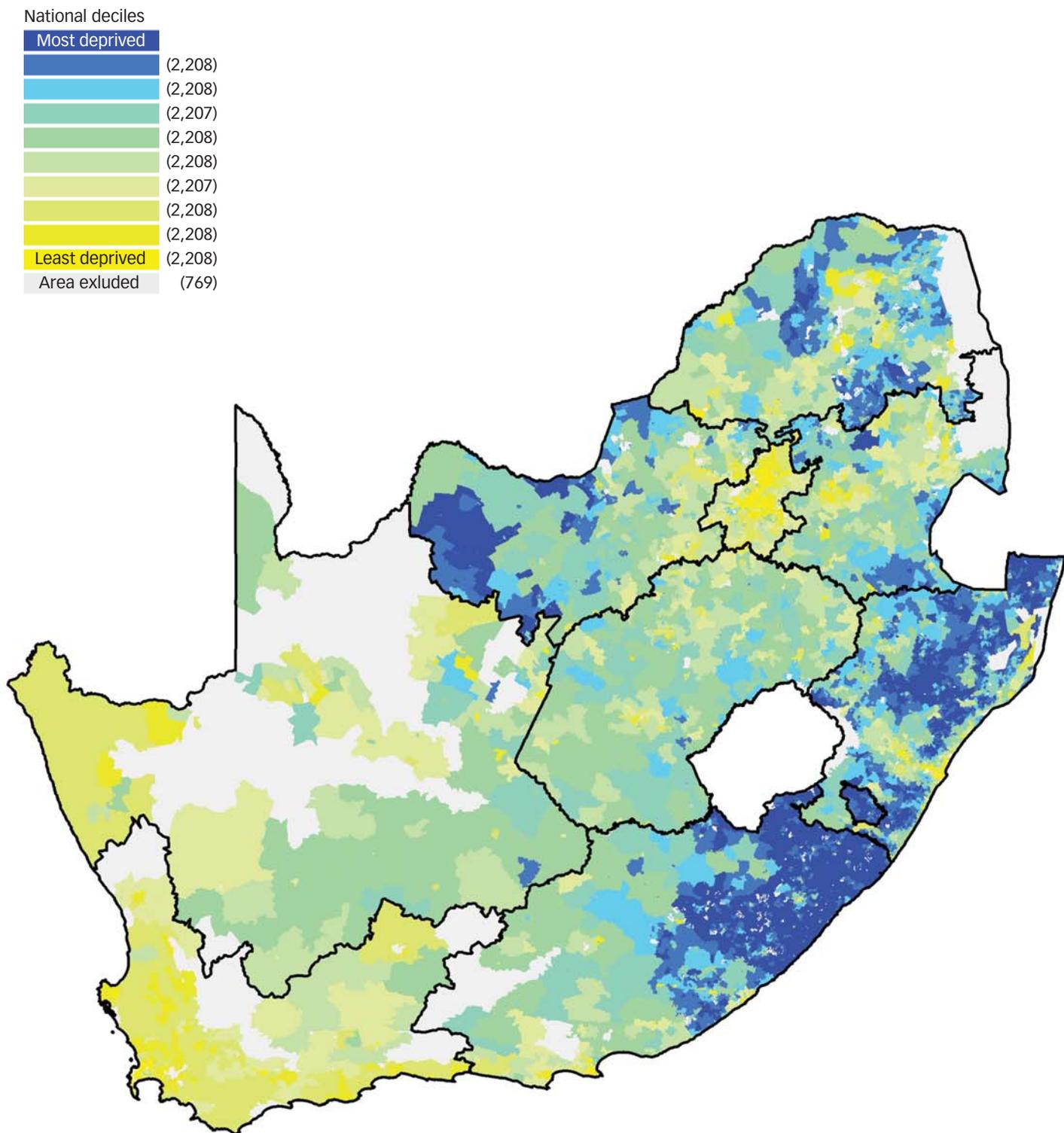
Figure 6 on p. 39 presents the SAIMDC 2001 at datazone level for the whole of South Africa. The datazones were sorted in order of deprivation, and ranked into 10 equal groups. The most deprived areas are shaded deep blue, and the least deprived areas are shaded yellow. Areas in the least deprived category are not without deprivation; they are simply relatively less deprived than other areas.

Figure 6 highlights the prominence of deprived children within the former homeland areas. In fact, at this fine-grained level of detail, the spatial echo of the former homeland boundaries are even more evident than at municipality level. If one "zooms in" to urban areas using the datazone-level maps, pockets of severe deprivation are identifiable, eg in informal settlements in parts of Nyanga and Khayelitsha in Cape Town, and Orange Farm and Lenasia in Johannesburg. Nevertheless, even though deprivation in townships is severe, it is deeper and more extensive in the rural former homeland areas.

ⁱ Datazones are small area level statistical geographical units which contain an average population of 2,000 people. The datazones nest within municipal boundaries and were constructed from Census enumeration areas.

ⁱⁱ For the datazone-level SAIMDC 2001, see reference no. 1 (Wright et al, 2009a); for the municipality-level SAIMDC 2007 see reference no. 1 (Wright et al, 2009b).

Figure 6: South African Index of Multiple Deprivation for Children, 2001, at datazone level



Source: Centre for the Analysis of South Africa Social Policy, University of Oxford.

Figure 7: South African Index of Multiple Deprivation for Children, 2001, at datazone level, Eastern Cape

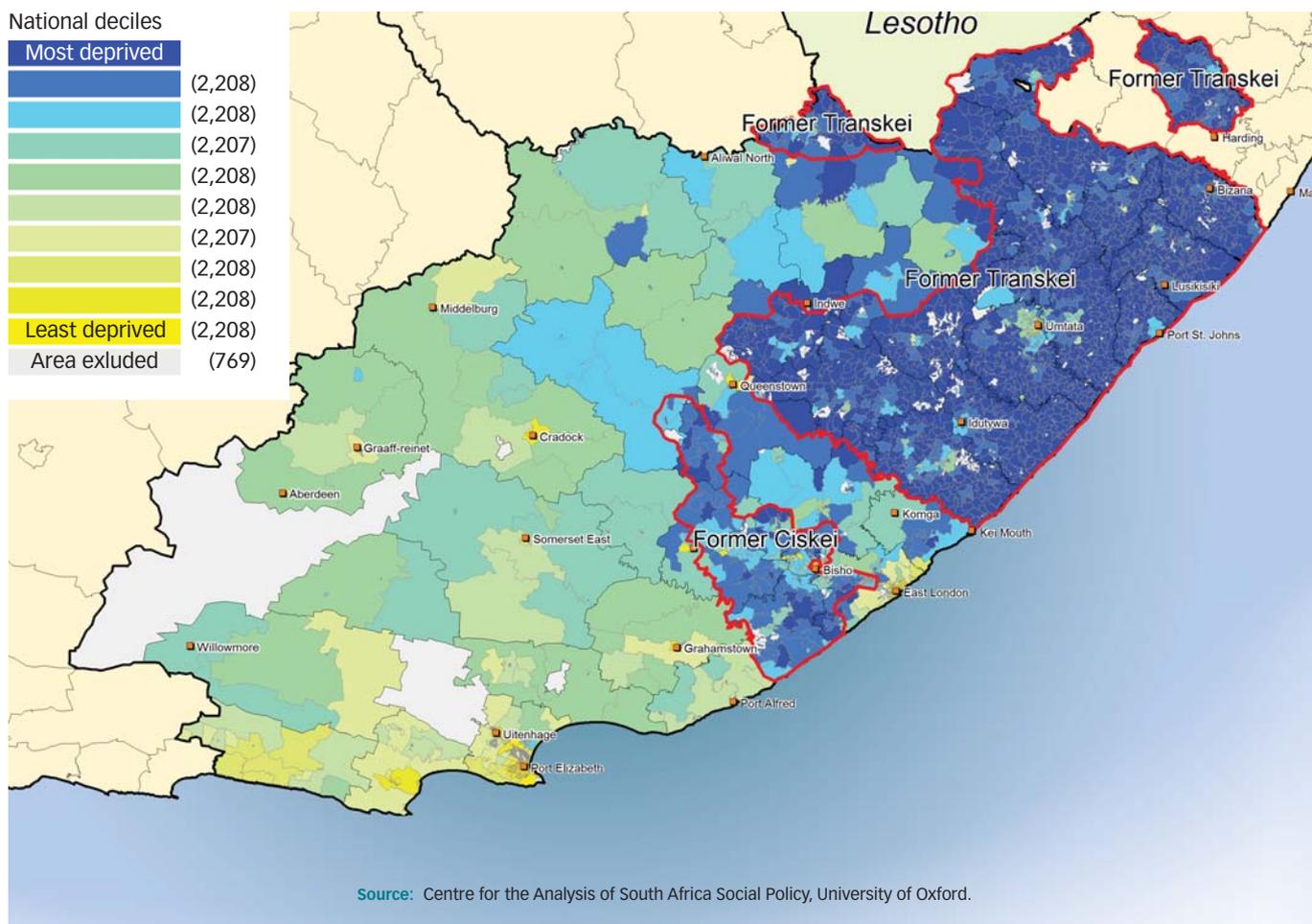


Figure 7 shows the spatial distribution of child deprivation in the Eastern Cape province, using the same data. Digitised boundaries of the former Ciskei and Transkei have been overlaid (the thick red lines) and it is evident that the areas with the highest levels of child deprivation fall within these former homeland areas.

Child deprivation across South Africa at municipality level in 2001 and 2007 was analysed by producing a SAIMDC for each time point, using the same indicators and the same 2001 boundaries.⁸ Figure 8 on the next page shows that spatial deprivation was concentrated in the same areas in both 2001 and 2007. Municipalities have been sorted in order of deprivation and ranked into five equal groups. Again, the most deprived areas are shaded in deep blue and the least deprived areas are shaded in yellow.

There has been very little change in the location of the most relatively deprived municipalities, and the former homeland areas are still most prominent.

It should of course be noted that municipality-level analysis disguises the presence of pockets of deprivation, as the domain scores in a larger area will average out the presence and absence of smaller areas with high levels of child deprivation. It is therefore very important that the datazone-level SAIMDC is updated once

the 2011 Census data have been released to enable the more fine-grained analysis of child deprivation to be brought more up to date.

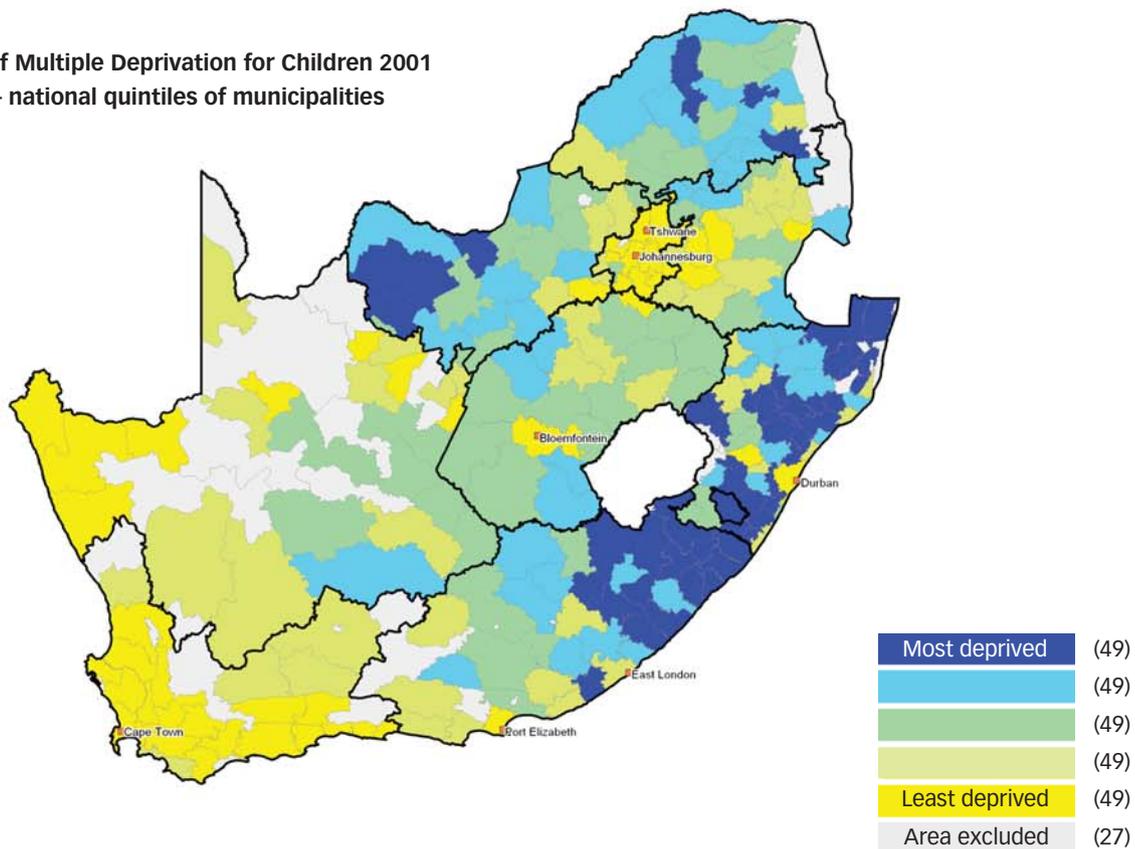
It is important that, when looking at spatial inequality, one does not regard equality as the only goal. Figure 9 on p. 42 shows Lorenz curves using the income deprivation domain of the SAIMDC 2001 at datazone level.ⁱⁱⁱ The straight blue line represents a situation of perfect equality; the closer a curve is to this straight line, the more equal the distribution of income deprivation affecting children, and the further a curve is from the straight line the more unequal is the distribution.

The pink curve furthest from the line of equality shows the area with the most unequal distribution of income deprivation affecting children in the Eastern Cape (Nelson Mandela Bay Municipality). The yellow line, closest to the line of perfect equality, represents the former Transkei where the levels of deprivation are at their highest. For comparison, the black curve represents all datazones in South Africa and the purple line above it represents the Eastern Cape. Although inequality is lowest in the former Transkei (because people are “equally poor”) the levels of deprivation are uniformly high. It is therefore important to consider not only inequality but also the levels of deprivation that people are enduring.

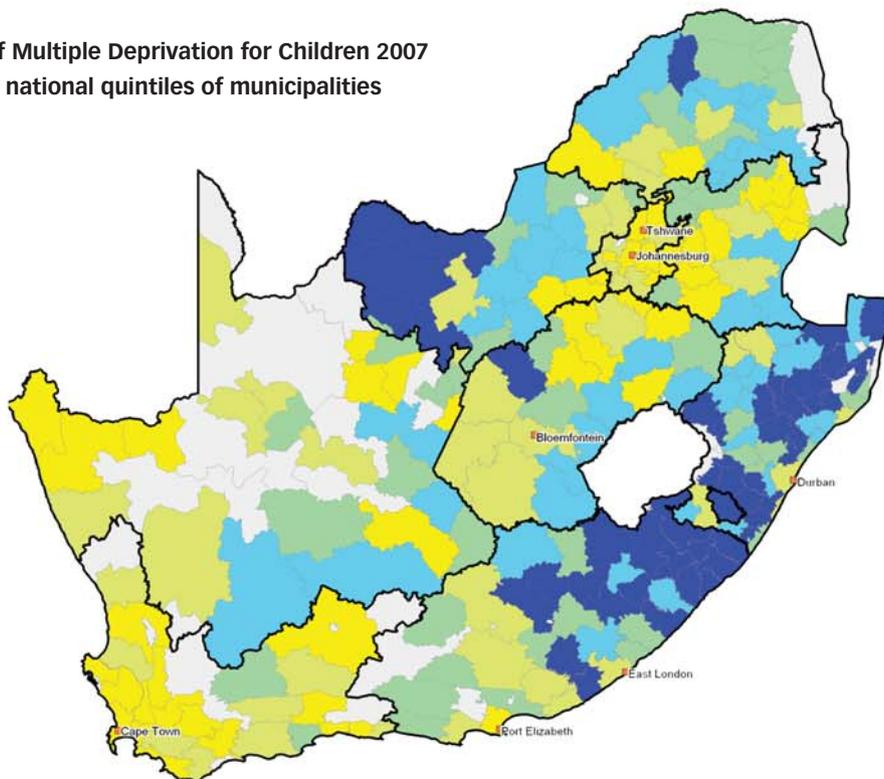
iii For more information about the Lorenz curve, see box 3 on p. 35.

Figure 8: Relative change in child deprivation, 2001 – 2007, at municipality level (2001 municipal boundaries)

South African Index of Multiple Deprivation for Children 2001
at municipality level – national quintiles of municipalities

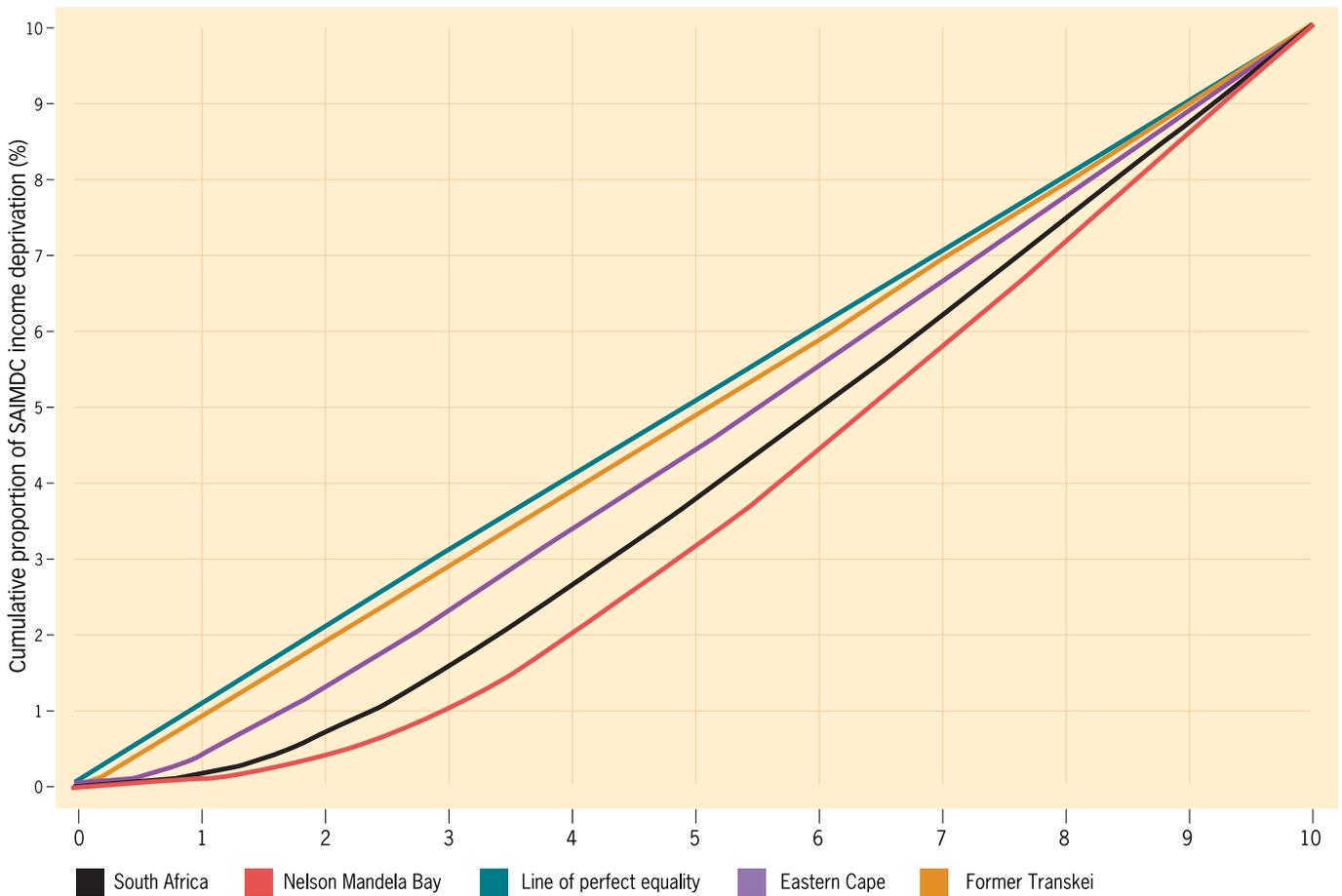


South African Index of Multiple Deprivation for Children 2007
at municipality level – national quintiles of municipalities



Source: Centre for the Analysis of South Africa Social Policy, University of Oxford.

Figure 9: Lorenz curves for SAIMDC income deprivation at datazone level, for South Africa, Eastern Cape, Nelson Mandela Bay Municipality and the former Transkei



Source: Centre for the Analysis of South Africa Social Policy, University of Oxford.

What are the conclusions?

Small area level data highlight spatial inequalities across South Africa. This essay has demonstrated that child deprivation is distributed unequally across the country and that the most deprived areas continue to occur within the former homeland areas.

A mapping of child deprivation in 2001 and 2007 shows that there has been very little change in the spatial distribution of relative deprivation.

The distribution of deprivation in South Africa raises important questions such as:

How can the standard of living of children in relatively deprived areas be improved effectively? And, how can the legacy of apartheid in such areas be interrupted to create a more equal society?

References

- 1 Barnes H, Noble M, Wright G & Dawes A (2009) A geographical profile of child deprivation in South Africa. *Child Indicators Research*, 2 (2): 181-199; Wright G, Barnes H, Noble M & Dawes A (2009a) *The South African Index of Multiple Deprivation for Children 2001 at Datazone Level*. Pretoria: Department of Social Development; Wright G, Noble M, Barnes H & Noble S (2009b) *The South African Index of Multiple Deprivation for Children 2007 at Municipality Level*. Pretoria: Department of Social Development.
- 2 Noble M, Wright G & Cluver L (2006) Developing a child-focused and multidimensional model of child poverty for South Africa. *Journal of Children and Poverty*, 12 (1): 39-53. Also see: Leatt A (2006) Child poverty – its meaning and extent. In: Monson J, Hall K, Smith C & Shung-King M (eds) *South African Child Gauge 2006*. Cape Town: Children's Institute, UCT.
- 3 See for example: Terreblanche SJ (2002) *A History of Inequality in South Africa, 1652 – 2002*. Pietermaritzburg: University of Natal Press; Christopher AJ (1994) *The Atlas of Apartheid*. London: Routledge.
- 4 See no. 1 above (Barnes et al).
- 5 See no. 1 above (Wright et al, 2009a).
- 6 Noble M & Wright G (2012) Using indicators of multiple deprivation to demonstrate the spatial legacy of apartheid in South Africa. *Social Indicators Research*. DOI: 10.1007/s11205-012-0047-3.
- 7 See no. 1 above (Wright et al, 2009a).
- 8 See no. 1 above (Wright et al, 2009b).