Chronic and Transitory Poverty in Post-Apartheid South Africa:
Evidence from KwaZulu-Natal

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ABSTRACT

This article examines the rationale for a dynamic perspective of poverty in South Africa and analyses the magnitude and characteristics of those in chronic versus transitory poverty using data from the KwaZulu-Natal Income Dynamics Study. The results show that the incidence and depth of poverty have increased steadily between 1993 and 1998, a trend that is pronounced in rural localities and for female-headed households. Though the majority of households (30.7%) were found to be experiencing transitory poverty, a significant proportion of households, in lieu of the expected small minority suggested by previous empirical research, were chronically poor (22.3%). *[98 words]*

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Declaration of Original Work

Except where specific reference is made to the work of others, this work is original and has not been already submitted either wholly or in part to satisfy any degree requirement at this or any other university.

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Intention to Submit Article for Publication

This article was designed for submission to the Journal of Poverty Studies. The publication requirements of this journal are attached in Appendix A. The article consists of *10081* words.

Contents

1. INTRODUCTION: THE DYNAMICS OF POVERTY IN SOUTH AFRICA - A RESEARCH OVERSIGHT

> 'No political democracy can survive and flourish if the majority of its people remains in poverty, without land, without their basic needs being met and without tangible prospects for a better life. Attacking poverty and deprivation will therefore be the first priority of the democratic Government' (Government of National Unity, 1994: 5)

> 'To overcome the problem of poverty will require that local government adopts and pursues a consistent programme of poverty relief, without discrimination on the basis of race or colour. Our Government is ready and willing to support this effort.' – President Thabo Mbeki, at the Opening of Parliament: National Assembly, Cape Town. (Office of the President, 25 June 1999)

Since the inception of the post-apartheid dispensation in the early 1990s, poverty alleviation has come to represent an increasingly significant developmental concern in South Africa. This mirrors the international poverty agenda that gained momentum with the publication of the World Development Report 1990 and that has come to characterise the nineties. A concomitant response has been a reconfiguration of the contours of poverty research in South Africa, one that reflects this commitment to understanding the nature and causes of impoverishment and formulating appropriate policy interventions.

A critical milestone in this new poverty research agenda occurred in late 1993 with the Project for Statistics on Living Standards and Development (PSLSD) under the auspices of the South African Labour and Development Research Unit (Saldru).[1] This study was the first fully representative household income and living standards survey in South Africa, incorporating approximately 8800 households nation-wide (of which 4259 were rural African households), and is generally considered the benchmark for comprehensive poverty-related data in the country.[2] The results from the survey revealed, *inter alia* that:

* With a Gini coefficient of 0.58, South Africa has one of the highest levels of inequality in the world.
* Apartheid policies, by engendering a situation of inequitable access to employment, services and resources to the African population, have resulted in poverty being characterised by a strong racial dimension.

* Poverty is geographically concentrated, with the largest share of the poor (72%) residing in rural areas, especially the former homelands.
* There is a marked tendency for poverty to be more prevalent among female-headed households and among children.

(Klasen, 1997; Donian and Humphries, 1998; May, 1998a).

Supporting evidence for this pernicious deprivation, inequality and insecurity experienced by rural households has since emerged through the South African Participatory Poverty Assessment (SA-PPA, 1997; May, 1996, 1998b) and the Speak Out On Poverty Hearings (1998), which were phenomenological processes whereby the poor and marginalised voiced and analysed their own experiences.[3]

Although great strides have been made in poverty research in South Africa in the 1990s, notably by addressing the paucity of inclusive and experiential studies on poverty, the omission of the salient measurement issue of poverty dynamics signifies a problematic lacuna. The debate that underpins this issue revolves principally around the respective benefits of static versus dynamic poverty studies. This theoretical-cum-methodological debate originates in the USA in the 1970s, when the conception of a permanent 'culture of poverty' as developed in the work of Michael Harrington (1962), Edward Banfield (1968) and Oscar Lewis (1959, 1966) began to be challenged by the results of longitudinal poverty surveys, notably the Panel Study on Income Dynamics.[4] The culture of poverty thesis viewed the poor primarily as an underclass who would live in squalor even if their incomes were doubled or in spite of policy interventions, owing to their radically present-oriented outlook that attached no value to work, sacrifice, self-improvement or service to friends or community. The results of the panel data started to reveal a more nuanced perspective of poverty, particularly in respect of an understanding that the poor were a heterogeneous group and that only a small minority were in fact permanently poor. To some extent this was also echoed by Michael Lipton's conceptualisation in developing countries of the ultra poor (Lipton, 1988).

The PSLSD, predicated upon a cross-sectional analysis of poverty, is exemplary of static poverty studies. In spite of the importance of the survey, it suffers from the fact that it is essentially a snapshot portrayal of poverty and welfare in South Africa. Although static, cross-sectional analyses of poverty "are able to distinguish the depth of poverty at a certain moment in time and the characteristics which prevail in the detected group of the poor...they are not able to explain the distribution across households of the duration of poverty or the reasons which pushed a certain household to enter or exit a poverty situation" (Cantó-Sánchez, 1996, p.1). The implication, according to Baulch (1996), is that it informs policy minimally about the causes of poverty, which serves to complicate the formulation of appropriate interventions.

Three fundamental research questions present themselves in the case of South Africa. Firstly, how has the magnitude of poverty changed between 1993 and 1998? Secondly, to what extent is the chronic-transitory taxonomy of poverty manifest in the country? Thirdly, if this classification does prove to be apposite, what household characteristics distinguish these groupings from one another?

The remainder of the paper is structured as follows. Section 2 provides an overview of the literature pertaining to poverty dynamics. Section 3 then introduces the KwaZulu-Natal Income Dynamics Study (KIDS) dataset, with particular attention being afforded to survey design, the data collection process, as well as the limitations of the study. In exposing the extent of poverty in South Africa, section 4 presents a suite of single poverty measures for both 1993 and 1998. Section 5 examines poverty transitions and mobility within the income distribution by means of transition matrices. It also disaggregates the matrix into expenditure sequence patterns which allows for the classification of households into chronically, transitorily and never poor cohorts. Drawing upon the findings of this analysis, section 6 constructs a poverty profile by separating out the characteristics of each of the three poverty classes. Section 7 gives brief attention to policy issues related to the poverty findings of earlier sections. Finally, section 8 concludes by

summarising the key findings of the article and suggesting directions for future research on the dynamic conception of poverty in South Africa.

2. AN INTERNATIONAL REVIEW OF RESEARCH INTO POVERTY DYNAMICS

Studies of the persistence of poverty are relatively rare. A key publication was Bane and Ellwood (1986) who, using longitudinal or panel data from the Panel Study of Income Dynamics (PSID) in the United States, noted that those identified as poor at any point in time include two very distinct groups – those whose incomes quickly rise above the poverty lines and those who experienced prolonged spells of poverty. More recently, there has come to exist a small but burgeoning body of literature documenting the findings of research into poverty dynamics in developing countries, a sample of which is illustrated in Table 1.

Table 1: Profile of Poverty Dynamics Research in Developing Countries

Dataset	Sample Size	Time Span	No. Waves	Reference
Africa				
Côte d'Ivoire	714 hholds	1985 – 1986	2	Grootaert and Kanbur (1995)
	693 hholds	1986 – 1987	2	Grootaert et al. (1995, 1997)
	701 hholds	1987 – 1988	2	
Rural Ethiopia	213 hholds	1989 – 1994	2	Dercon and Krishnan (1998, 1999)
	1411 hholds	1994 – 1995	3	
Rural Rwanda	270 hholds	1982 – 1983	4	Mueller (1997)
Asia				
India	4118 hholds	1968/9 – 1970/1	3	Gaiha (1989)
	170 hholds	1975/6 – 1983/4	9	Gaiha and Deolalikar (1993)
				Lanjouw and Stern (1991)
	103 hholds	1976 – 1983	8	Chaudhuri and Ravallion (1994)
Pakistan	800 hholds	1986 – 1991	5	Baulch and McCulloch (1998, 1999)
	800 hholds	1986 – 1989	3	Alderman and Garcia (1993)
China	38,951 persons	1985 – 1990	6	Jalan and Ravallion (1998)
				Chen and Ravallion (1996)
Latin America				
Chile	155	1967/8 – 1985/6	2	Scott (1999)
Peru	699	1985/6 – 1990	2	Glewwe and Hall (1998)

Source: Adapted from Yaqub (1999)

Through the findings of these developing country case studies, the observations initially made by Bane and Ellwood (1986) have become a common trait of poverty dynamics studies, specifically the distinction made between persistent (or chronic) and transitory poverty. There are effectively two fundamental and interrelated reasons why the measurement of the persistence of poverty is of

import (Rodgers and Rodgers, 1993; Jarvis and Jenkins, 1998; Duncan et al., 1984). Firstly, it lends itself towards the construction of more realistic models of causation and persistence. Popular belief has long dictated that poverty is a long-term phenomenon, but there is mounting statistical proof from longitudinal surveys in industrialised countries and developing countries that poverty is not only dominated by an underclass of permanently impoverished people. It also contains a sizeable contingent of people who enter poverty due to transitory shocks (for instance, morbidity or unemployment) that are reversed within a couple of years (Baulch and McCulloch, 1998; Jalan and Ravallion, 1998; Gaiha and Deolalikar, 1993). Actually, most research on poverty dynamics since the seventies has tended to illustrate that the bulk of the impoverished are poor for only several years with only a small minority of persistently poor.

This leads us to the second reason, one that has already been mentioned, namely the design of cost-effective poverty alleviation strategies. In a macroeconomic context dominated by neoliberal policy and manifold competing social needs, an imperative exists for poverty alleviation strategies that are well designed and financially sustainable. Given that transitory and persistent poverty are likely to have divergent causes and thus require different sets of preventative measures, their measurement is paramount to the development, targeting and evaluation of poverty programmes (Toye, 1999).

This dualistic rationale is highly relevant in the South African context. The country is presently at a critical juncture, one which reflects a tension between the essentially pro-poor stance originally adopted by the first democratically elected government as enshrined by the Reconstruction and Development Programme (RDP)[5] and the neoliberal agenda which has gradually emerged as a significant development trajectory (Marais, 1998; Habib and Padayachee, 2000; Lund, 1998). In consequence, an environment of competing social needs has arisen, one that generates an explicit need to effectively target anti-poverty interventions. In order for this to be attained, a good understanding of the nature of poverty becomes a fundamental prerequisite. However, the static nature of previous poverty research acts as a hindrance in the fulfilment of this objective, and thus

necessitates the more pragmatic and detailed conceptualisation of poverty that a study into poverty dynamics can deliver.

Even though there have not previously been any large sample longitudinal poverty studies in South Africa, John Iliffe (1987) in his book *The African Poor* makes the following noteworthy remarks on the antecedence of the notion of poverty dynamics in Africa:

> Examination of the sources [of poverty] suggests that two levels of want have existed in Africa for several centuries. On one level have been the very large numbers – perhaps most Africans at most times – obliged to struggle continuously to preserve themselves and their dependants from physical want. These will be called the poor. On another level have been smaller numbers who have permanently or temporarily failed in that struggle and have fallen into physical want. These will be called the very poor or destitute. Of course, there was no sharp dividing line between them. Yet the distinction has cross-cultural validity. (p.2)

This lends credence to the possibility of there being a persistent-temporary taxonomy of poverty in South Africa.

3. THE KWAZULU-NATAL INCOME DYNAMICS STUDY (KIDS)

In this section a concise overview of the PSLSD survey, which forms the first wave of the panel study,[6] will be provided, followed by an articulation of the nature of the recontact survey. The second part of this section will outline the descriptive and econometric strategies for addressing the primary questions of interest. Reference will also be made to the limitations of the study, especially as it pertains to the determination of the appropriate methodology for meeting the research objective. For those interested in a more thorough discussion of the project's conceptualisation, implementation and shortcomings, reference should be made to May et al. (1999).

The Project for Statistics on Living Standards and Development (PSLSD), undertaken in the last half of 1993, was the country's first nationally representative, multi-purpose household survey. The Survey was conducted by a consortium of South African survey groups and universities,

under the co-ordination and management of the Southern Africa Labour Development Research Unit (Saldru) in the School of Economics at the University of Cape Town, with funding and technical support provided by the World Bank. The sample consisted of approximately 9000 households in 360 clusters. The survey was undertaken in the nine months prior to the country's first democratic elections in April 1994, and as such signifies an important baseline against which to monitor the progress of the government in its determination to reduce poverty and inequality (Klasen, 1997). The principal purpose of the survey was:

> To collect hard statistical information about the conditions under which South Africans live in order to provide policy makers with the data required for planning strategies to implement such goals as those outlined in the Government of National Unity's Reconstruction and Development Programme (RDP). (PSLSD 1994: p.I)

The principal survey instrument, a comprehensive household questionnaire, was modelled upon a Living Standards Measurement Survey (Grosh and Munoz, 1996; Deaton, 1997), and contained information on a series of subjects, *inter alia* household demographics, household environment, education, fertility, food and non-food expenditures, remittances, employment and income, agricultural activities, health and anthropometry. A community questionnaire was also administered in each sample cluster to garner information on the general environment in which the sampled households resided, such as schools, health-care facilities, infrastructure, and prices for various commodities.

The 1993 sample was selected using a two-stage self-weighting design. In the first stage, clusters were chosen proportional to size from census enumerator subdistricts (ESDs) or approximate equivalents where not available. In the second stage, all households in each chosen cluster were enumerated and then a random sample of them selected (see PSLSD 1994 for further details). The process of collecting these data and their subsequent analysis have been immensely useful in both the capacity strengthening of the South African policy research community and ultimately in guiding South African policies since the first national elections.

The KwaZulu-Natal Income Dynamics Study (KIDS), the second wave of the panel study, was developed in response to the perceived neglect of poverty dynamics studies in South Africa. The re-survey was directed by a consortium including the University of Natal, the University of Wisconsin-Madison, and the International Food Policy Research Institute. In brief, the objective of the study is to collect and analyse follow-up data on an important subset of the households in the 1993 PSLSD survey, namely those in the KwaZulu-Natal province, in order to understand the dynamics of poverty. The choice of KwaZulu-Natal was in part the result of practical considerations. This included a confluence of research interests, resources, and the feasibility of locating the households interviewed in 1993. The decision was also predicated upon an understanding that the 1993 survey identified rural Africans living in KwaZulu-Natal as the most severely deprived grouping, using a multi-dimensional definition of poverty (Klasen, 1997).[7]

The resurveying process, which occurred between March and June 1998, has led to the creation of a longitudinal or panel data set. Recognising the importance of maintaining continuity and comparability with the PSLSD statistical output, the original survey instrument was adopted, but with some modifications. Firstly, four new sections were added to the household questionnaire, including economic shocks (both positive and negative), social capital (including group membership, kin networks, civic engagement, and trust), assets brought to marriage, and household decision. Retrospective techniques were utilised in order to control for the absence of 1993 data on specific issues and to be able to form asset and 'shock' histories for the interviewed households. Secondly, there was a greater focus on the individual, especially in terms of ownership of assets and control over their use. Finally, there was an expanded emphasis on the set of individuals not living in the household but economically linked to it.

In 1993, the KwaZulu-Natal sample was representative at the province level, conditional on the accuracy of the 1991 census used as the sampling frame, and contained 1558 households. It was decided not to re-survey white and coloured households in 1998. While there were advantages to retaining these groups, namely the maintenance of overall sample size and the political cover

provided by sampling all ethnic groups in the province, the sample size of these two sets of households was small (112 white and 53 coloured), thus precluding comparative ethnic analyses. Moreover the households in these groups are entirely located in a small number of clusters (due to the general lack of spatial integration of the population), which appear to be non-representative at the ethnic group level (Maluccio et al., 1999).

Of the 1389 KwaZulu-Natal households[8] in the PSLSD sample, a total of 1178 were re-interviewed, equating to 85% of the original sample.[9] In addition, 41 split-offs (those households in which at least one core person has left to establish a new household) were interviewed, yielding in all 1219 total observations. Some may argue that an attrition rate of 15% may be problematic in that this missing grouping could well represent the most vulnerable households in the sample, thereby introducing bias into the survey results. While recognising the validity of such an argument, it should be realised that:

> In fact, in the African context, characterised by high mobility and difficult conditions of survey field work, retaining 85-90 percent of households for a panel survey can be considered quite a success. (Grootaert and Kanbur, 1995, pp. 606-7)

In theory, three factors underlie the level of attrition in a panel survey: the mobility of the target population, the success with which those who move are followed and interviewed, and the number of refusals (Maluccio et al., 1999). In the context of the KIDS, it is exceptionally difficult to ascribe this attrition to any particular factor. Nevertheless three definite influences should be elucidated here. The first pertains to the manner in which the 1993 survey was conducted. In generating a household roster for each household, first names only were taken and not surnames, which may have ultimately led to a number of households being 'lost' in the KIDS identification process. However, the importance attributed to this factor is not very high, as most of the households were identified, even in instances where they had left their village sometime during the past five years.

A more significant determinant of the attrition appears to be the fact that a substantial number of households had left their former places of residence without leaving any forwarding address with neighbours or friends. The stipulated causes of this migration were variegated, ranging from violence (both domestic and political) to evictions from, and bankruptcy of, white-owned farms. There were even instances where households had disappeared overnight without warning or any apparent justification. A final factor which affected the rate of attrition was the problem of cheating in the 1993 sample. Although, for the most part, the households captured in 1993 were able to be retraced, there were several instances where households were non-existent and where cheating is likely to have occurred.[10]

4. EXTENT OF POVERTY IN SOUTH AFRICA

4.1. Measurement Issues

Normatively speaking, the measurement of poverty involves three contentious decisions, namely the choice of an indicator of living standards, the selection of a poverty line and the choice of an aggregate poverty measure (Lipton and Ravallion, 1995; Ravallion, 1996; Leibbrandt and Woolard, 1999). These decisions or assumptions are significant for they have a direct bearing at the policy-making level.

Most poverty studies begin by selecting a single monetary indicator of household welfare, usually either total expenditure on consumption or total income over a certain period. However, expenditure is the generally preferred of the two indicators, as decades of research prompted by Friedman's (1957) permanent income hypothesis has revealed that income is a poor proxy for standard of living, even in low-income households (Slesnick, 1993). The fundamental reasoning for this is that expenditure is often more reliably reported and more stable than income. The aforementioned rationale resulted in the adoption of expenditure as the living standards indicator of choice for the analysis of the KIDS data, in concert with the desire for conformity with the 1993 analysis, which also used expenditure figures.

Yet, in spite of this preference for using expenditure to measure welfare and poverty, a problem arises when endeavouring to compare households, owing to their varied size and demographic composition. Converting expenditure from a household to an individual level by dividing total expenditure by number of people in the household (i.e., *per capita* expenditure) is widespread, but it is flawed by the spurious assumption that everyone in the household receives equal allocation of resources, the failure to consider that not everyone in the household has the same needs, as well as by the ignoring of the economies of scale of living together. This has led to the introduction of 'equivalence scales', the origins of which date back to the work of Ernst Engel (1857). Equivalence scales consist of:

> A system of weights, whereby children count as some fraction of an adult, with the fraction dependent on age, so that effective household size is the sum of these fractions, and is measured not in numbers of persons, but in numbers of *adult equivalents*. Economies of scale can be allowed for by transforming the number of adult equivalents into "effective" adult equivalents, so that if two [single adults] cannot live as cheaply as one, four adult equivalents can perhaps live as cheaply as three single adults. (Deaton, 1997, p. 242)

Although this method does have its detractors,[11] it is an unquestionably better measure than *per capita* expenditure. Following May et al. (1995) and Woolard and Barberton (1998), the equivalence scale used for the KIDS data assumes that children younger than 15 have half the consumption requirements of an adult and small economies of scale are allowed for, as illustrated by the following equation:

$$ADEQ = (A + 0.5 \times C)^{0.9} \qquad \text{Equation 1}$$

> Where A represents the number of resident adult household members older than 15 years of age, C the number of children, and 0.9 is the scaling parameter which reflects modest economies of scale. Dividing total household expenditure by ADEQ results in scaled per capita measures (May et al., 1999).

In order to account for inflation between the two waves, the poverty threshold was adjusted using a community-level consumer price index (CPI). This was constructed by means of the data extrapolated from the community questionnaire, which included a section on the prices of certain publicly supplied goods both within the sample cluster and at the nearest town or business centre.

Therefore, the preferred indicator of living standards that has been selected to analyse the KIDS data can be described as CPI-deflated total expenditure per equivalent.

Initially, a suite of poverty cut-off points or poverty lines were specified for the analysis of the KIDS data. Firstly, use was made of one of the better known poverty lines applied in South Africa, namely the household subsistence level (HSL) developed by the Institute for Planning Research at the University of Port Elizabeth. The IPR poverty line was, for the purposes of the study, converted into a scaled, per-capita basis, resulting in a value of R237 per-adult equivalent expenditure per month (Carter and May, 2000). Secondly, in order to facilitate international poverty comparisons, the crude international poverty line used by Chen, Datt and Ravallion (1996) that was based on the purchasing power parity-adjusted equivalent of 1 US-$ per capita per day (in 1985 prices) was selected. This was also converted into a per-scaled-adult equivalent total real monthly expenditure (1993 rands). However, the resultant cut-off point so closely approximated a value equal to half the adjusted ISR poverty line (R118.5) that it was decided any household falling below this particular poverty line would be considered ultra-poor, whilst those households with an expenditure level less than the IPR poverty would be classified as poor.

The final two poverty lines chosen were derived from Klasen's (1997) analysis of the 1993 survey data, according to which the poorest 40 percent of households are considered poor and the poorest 20 percent of households are considered ultra-poor. In 1993 terms, these stood at approximately R300 and R178 monthly expenditure per adult equivalent respectively. However, during the course of the analysis, it was found that the statistics generated using Klasen's poverty lines were similar to those generated using the ISR and ½ x ISR poverty lines. As a consequence, this paper provides a poverty analysis based upon the ISR-based cut-off points only.

The appropriate aggregate measures for ascertaining the incidence, depth and severity of poverty in the sample are now briefly discussed. In keeping with the seminal axioms that Amartya Sen (1974) posited as fundamental requirements for a good poverty measure,[12] the *Foster-Greer-*

Thorbecke (FGT) or P-alpha class of poverty measures have been adopted for the KIDS analysis. The general equation for these measures is as follows:

$$P_\alpha = \frac{1}{n}\sum_{i=1}^{q}\left[\frac{z - y_i}{z}\right]^\alpha \qquad \text{Equation 2}$$

Where q is the number of poor households, z is the poverty line, y_i is the standard living indicator (i.e., expenditure) of the ith household, and α is the 'aversion to poverty' parameter.

When α=0, the *headcount ratio (H)* is produced, which is simply the proportion of the population for whom consumption is less than the poverty line (i.e., poverty incidence). When α=1, the *poverty gap* (PG) is given, which shows the aggregate shortfall of the expenditure of poor households from the poverty line (i.e., the depth of poverty). Finally, the *squared poverty gap* (SPG) is attained when α=2, and shows heightened sensitivity to the situation of the poorest households (i.e., severity index).

A fuller outline of the measures and the manner in which they reflect the depth of poverty through sensitivity to the expenditure distribution among the poor is presented in Appendix C, but reference should also be made to Foster et al. (1984), Woolard and Leibbrandt (1999), in addition to Leibbrandt and Woolard (1999).

4.2. Incidence, Depth and Severity of Poverty

Tables 2 and 3 provide estimates of poverty in South Africa for various poverty measures and for both poverty lines. By comparing the 1998 measures based on the same cohort of households interviewed in 1993, it is evident that poverty defined in terms of expenditure-based measures has increased. The basic headcount ratio or incidence of poverty between 1993 and 1998 for the sample is shown to have increased from approximately 34% to 42%, while the headcount using the lower poverty line, indicating extreme or ultra poverty, has risen from 5% to 9%. In addition, Table 2 reveals that, between the two waves, the depth of poverty has shown a marked increase

too. The same holds true for the lower poverty line, though the increase in depth is proportionally smaller for ultra poor households than for poor households as a whole.

Table 2: FGT Poverty Measures (Total and Gendered)

	Total		1993		1998	
	1993	1998	Male Headed HH	Female Headed HH	Male Headed HH	Female Headed HH
Headcount ratio						
HSL (R237/month)	33.7%	41.5%	30.2%	41.4%	38.7%	46.0%
1/2 x HSL (R118.5/month)	5.3%	9.4%	4.5%	6.5%	8.3%	11.1%
Poverty Gap ratio						
HSL (R237/month)	0.098	0.140	0.086	0.125	0.128	0.159
1/2 x HSL (R118.5/month)	0.014	0.020	0.012	0.019	0.016	0.026
Squared Poverty Gap						
HSL (R237/month)	0.042	0.063	0.037	0.055	0.056	0.073
1/2 x HSL (R118.5/month)	0.0062	0.0064	0.0053	0.0081	0.0048	0.0087
Number of Households	1169	1170	807	362	711	459

The $P\alpha$ values for both poverty lines are higher for female-headed households than male-headed households, which serves to reconfirm Klasen's (1997) finding that female-headed households are overrepresented amongst the poor. Although Shaffer (1998, p. 2131) stipulates that 'in Sub-Saharan Africa the evidence on the relationship between poverty and female headship is mixed and sensitive to choice of welfare metric (income consumption), welfare deflator (per capita, per adult equivalent) and poverty measure (P_0, P_1, P_2)', the majority of research in the sub-continent corroborates the finding of the KIDS panel data (cf. Lachaud, 1994; Haddad et al., 1995).

The poverty measures, disaggregated by location into rural, urban (small towns) and metropolitan households (Table 3), starkly portray the geographical concentration of poverty that exists within KwaZulu-Natal. In both 1993 and 1998 the risk of being a consumption poor household in a rural area is more than double that experienced by urban and metropolitan households. The headcount ratio shows that households in rural locations in the province have experienced a considerable increase in the incidence of poverty in the intervening five years between the waves, whereas urban households show a moderate increase and metropolitan households a slight reduction. However, the depth of poverty for all three locational groupings has risen. This implies that poverty is not only becoming more pervasive in rural areas, but that the severity of the poverty is

deepening too. Also, for the metropolitan areas, where there has been virtually no change in the level of poverty, those that are poor have become progressively more impoverished since 1993.

Table 3: FGT Poverty Measures (by Location)

	1993			1998		
	Rural	Urban	Metro	Rural	Urban	Metro
Headcount ratio						
PL = HSL = R237/month	43.9%	15.7%	16.3%	54.4%	21.2%	16.1%
PL = 1/2 x HSL = R118.5/month	6.9%	2.9%	2.0%	13.4%	2.9%	1.9%
Poverty Gap ratio						
PL = HSL = R237/month	0.131	0.044	0.035	0.191	0.057	0.043
PL = 1/2 x HSL = R118.5/month	0.020	0.005	0.003	0.028	0.006	0.003
Squared Poverty Gap						
PL = HSL = R237/month	0.057	0.018	0.014	0.087	0.022	0.017
PL = 1/2 x HSL = R118.5/month	0.009	0.001	0.001	0.009	0.002	0.001
Number of Households	742	274	153	741	274	155

5. POVERTY TRANSITIONS IN KWAZULU-NATAL, 1993-1998

Having completed a cross-sectional analysis of poverty for both waves, the issue of the dynamics of poverty during the course of the five years between the two surveys will now be addressed by generating tabulation statistics. The basic analytical tool that will be employed is the Markov chain. A Markov chain, as it pertains to poverty, describes a process that can be considered to be in exactly one of a number of 'states' of poverty at any given time. The heart of the Markov chain is the analysis of the transitions between the different poverty states.[13] The key is the so-called transition matrix, which is best described as follows:

> A poverty transition matrix shows the number of households in and out of poverty in a particular period, broken down by their poverty status in a previous period. Thus it is easy to see the number of households who have been poor and non-poor in both periods along with the number who have escaped poverty and those who have entered poverty. (Baulch and McCulloch, 1998, p.4)

This tabulation approach is often described as the simplest approach to the study of poverty dynamics, whereby the number of those who are poor and non-poor in consecutive time periods is tabulated in what is referred to as a transition matrix (Grootaeart and Kanbur, 1995; Glewwe and Hall, 1995; Walker and Ryan, 1990). The off diagonals of such matrices reveal the number who were poor in the one period but were non-poor in the previous period and vice versa.

Table 4 presents a transition matrix using the KIDS data. It consists of transition rates between four expenditure classes, where class membership is a function of the size of the household's CPI-deflated total expenditure per equivalent relative to three fixed expenditure thresholds. The pattern revealed by the matrix is one of significant mobility, albeit predominantly short-range in nature. Around 45 percent of the households in the sample remained in the same class between wave 1 and wave 2, with 23% moving to a higher class and 32% to a lower class. Nonetheless, the majority of those who have moved (79.7%) have ended up in the adjacent expenditure class. The mobility observed in the matrix in Table 4 is particularly pronounced in the lowest expenditure class, where more than 80 percent of households have moved to a higher expenditure class.[14]

Table 4: Poverty Transition Matrix, 1993-1998 (Expressed in Row Percentages)

Expenditure Classes, Wave 1 (1993)	Expenditure Classes, Wave 2 (1998)					
	0 – 0.5×PL	0.5×PL – PL	PL - 2×PL	> 2×PL	All	(Col. %)
0 – 0.5×PL	17.7	50.0	25.8	6.5	100	(5.3)
0.5×PL – PL	17.2	48.6	25.4	8.8	100	(28.3)
PL - 2×PL	8.0	32.4	36.8	22.8	100	(38.4)
> 2×PL	1.8	11.9	27.5	58.7	100	(28.0)
Row %	9.4	32.2	30.4	28.0	100	(100.0)

Table 5 reveals conceptually how expenditure sequence patterns[15] for the KIDS panel data, according to which households with expenditure falling below the poverty line are represented as P (poor) and as N (non-poor) if their expenditure exceeds that of the poverty line, can be extrapolated from the transition matrix presented in Table 4. As such, the table indicates the relative incidence of each of the four possible sequences, which can subsequently be classed into chronically, transitorily and never poor households.

Table 5: Conceptual diagram illustrating expenditure sequence patterns within the transition matrix

Expenditure Classes, Wave 1 (1993)	Expenditure Classes, Wave 2 (1998)			
	0 – 0.5×PL	0.5×PL – PL	PL - 2×PL	> 2×PL
0 – 0.5×PL	Poor in 1993; Poor in 1998 (Chronically poor)		Poor in 1993; Non-poor in 1998 (Transitorily poor)	
0.5×PL – PL				
PL - 2×PL	Non-poor in 1993; Poor in 1998 (Transitorily poor)		Non-poor in 1993; Non-poor in 1998 (Never poor)	
> 2×PL				

The expenditure sequence patterns themselves can be found in Table 6. The first row of the table shows that 22.3% of the households in the sample are characterised by chronic poverty. In other words, almost one quarter of the households surveyed had an expenditure below the poverty line in both 1993 and 1998. As for transitory poverty, 30.7% of the sampled households experienced poverty in one of the two waves.

Shifting emphasis now specifically to those households classified as poor in 1993, approximately 66% remained in poverty at the time of the 1998 interview.[16] Assuming that the sample is taken to be provincially representative, this indicates that just over two thirds of the *poor* households in KwaZulu-Natal are persistently or chronically poor. The remaining 34% of those households deemed poor in 1993 have managed to exit poverty by 1998.

Table 6: Expenditure Sequence Patterns by Poverty Line

	Expenditure Sequence Wave 1 – Wave 2	Low Expenditure Cut-off = R237 per month (1993 rands)	
		Percent	Cumulative Percent
1	PP	22.3	22.3
2	PN	11.4	33.7
3	NP	19.3	53.0
4	NN	47.0	100.0
All		100.0	
Base n		1168	

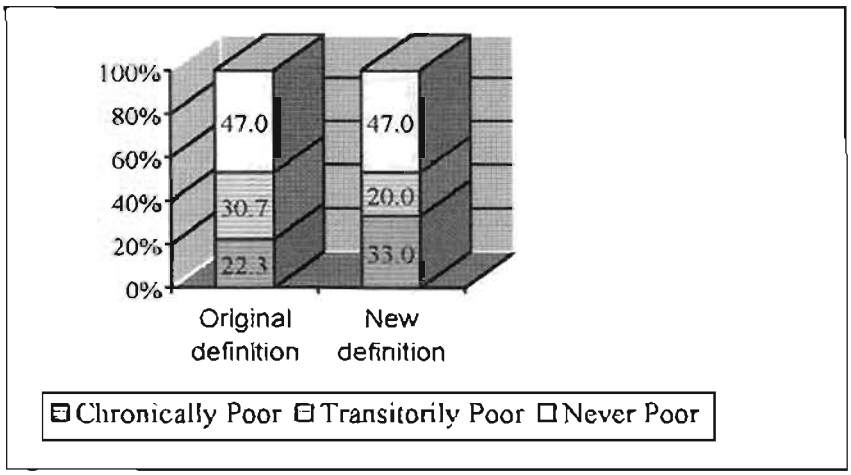
The tabulation approach, in the context of the KIDS dataset, does have its limitations. The poverty line chosen to distinguish between the poor and the non-poor is essentially arbitrary, which means the levels of persistent and transitory poverty vary according to the preferred cut-off point. Consequently, there is a need to gauge how robust the observed numbers of chronically poor, transitorily poor and never poor households in the KIDS sample are to definitional changes. This can be achieved by applying the definitions for each of the three groups that McCulloch and Baulch (1999) have employed in their research in Pakistan. They are as follows:

> A household is deemed to be chronically poor if its mean income is below the poverty line, while a household is transitorily poor if its mean income is above the poverty line but its annual income falls below the poverty line at least once during the period under consideration. Never poor households are simply those in which annual income is always above the poverty line. (p.5)

Therefore, the main distinction between the definitions used to classify poverty in Table 5 and the one presented here is the introduction of mean expenditure over the two waves.[17] Moreover, in line with McCulloch and Baulch (1999), it is assumed that a household must cross the poverty line and experience a change in expenditure equal to or greater than 10% before it is considered to have entered or exited poverty. This serves to eliminate those cases that merely 'straddle' the poverty line, rather than there being a consummate shift.

Figure 1 illustrates the effect that the new definition has upon the levels of the three poverty categories. In short, it has produced a moderate adjustment in the proportions of chronically and transitorily poor households in the sample, to the extent that the relative weighting is reversed. In other words, chronically poor households now constitute a greater proportion of the poor than do transitorily poor households. Chronic poverty has increased from 22.3% to 33.0%, whereas transitory poverty is reduced from 30.7% to 20.0%.

Figure 1: Comparative poverty shares (to test definitional robustness)



By applying the new definition, a substantial number of households classed as transitorily poor in the original estimate[18] have been recategorised as chronically poor. This owes to the fact that their mean expenditure is less than R237 per-adult equivalent expenditure per month. The share of households in the never poor category, however, remains unchanged.

Therefore, upon preliminary investigation, it seems that whilst classifying households into different poverty cohorts is useful as a heuristic device, at the same time caution needs to be exercised in the choice of definition, *for it can have an estimable influence on the robustness of outcomes.*

6. THE 'MOVERS AND SHAKERS': A POVERTY PROFILE

Having discussed the nature of poverty dynamics in the country, as revealed by the 1993 and 1998 waves of the KIDS panel dataset, this section makes a first attempt at determining some of the characteristics that differentiate the transitorily poor from the chronically poor, and these two cohorts from the never poor. In essence this involves the construction of a poverty profile, which may be considered a decomposition of an aggregate poverty measure to reveal how the measure varies across sub-groups of society (Lipton and Ravallion, 1995). Discerning whether chronically and transitorily poor households are associated with a particular set of characteristics is of immediate relevance to policy-makers, for the type of anti-poverty interventions that are required to address chronic poverty are distinct from those directed at alleviating transitory poverty (Lipton, 1988; Jalan and Ravallion, 1998; McCulloch and Baulch, 1999). This view is supported by Alderman and Garcia's (1993) work in rural Pakistan, which revealed that:

> Any measures aimed at improving the welfare of the rural population and at alleviating poverty – whether relative or absolute poverty – must begin with an understanding of the characteristics of poor households. (p.2)

This section cross-tabulates the chronically poor, transitorily poor and never poor cohorts against a set of correlates in order to unearth some of the traits that serve to distinguish the groupings from one another. The aforementioned correlates include characteristics relating to household structure, capabilities in the form of educational attainment, as well as access to productive assets (land, labour and capital). They are not intended to be exhaustive in scope, but merely serve as a first step in an ongoing process of refinement in explaining how the three cohorts differ from one other.

The poverty status definition used for this analysis is the one originally outlined in Table 5 rather than the Baulch and McCulloch (1999) definition.[19] This owes primarily to a concern that the latter definition appears to exaggerate the number of chronically poor households, but also because the relative ranking of chronically and transitorily poor households using the original definition corresponds to the findings of empirical research in other developing countries (cf. Section 2). However, a profile was also generated using the IDS definition, for both comparative purposes and to examine the effect of definitional changes upon the robustness of the poverty profile.

Subsequent observation has revealed that the characteristics of the chronically, transitorily and never poor households do not diverge to any significant degree between the two profiles. The only notable exceptions are with regard to household size and mean total expenditure, but even here the overall trends remain the same. It is only the direction of the change in these variables between 1993 and 1998 for the chronically poor households that differs between profiles. For example, while household size has marginally declined between 1993 and 1998 for chronically poor households in the profile using the original poverty status definition, there has been a modest increase in household size in the profile using the IDS definition. Nevertheless, in both profiles, the average household size for chronically poor households is still higher than for transitorily and never poor households respectively. The same is applicable in the case of mean total expenditure. Therefore, the poverty profile appears less sensitive and consequently more robust to the choice of definition of poverty status.

6.1. Spatial profile

Much of the literature on the measurement and nature of poverty in South Africa emphasises the disproportionate concentration of the poor in rural areas (see, for example, Wilson and Ramphele, 1989; May, 1996; Klasen, 1997). The spatial location of households in the KIDS sample

correspondingly emerges as a crucial factor separating the chronically from the transitorily poor and, in turn, these two groupings from the never poor (Table 7). Of the households designated chronically poor, 86.9% are found to be in rural locations, with only 8.8% in small towns and just over four percent in metropolitan areas. Transitorily poor households are still predominantly rural (76.9%), but a greater share are found to be residing in small towns and metropolitan areas. In contrast to the other two poverty status groupings, less than half of the never poor households are rurally based, with the largest share in small towns and metropolitan areas. This is likely to be ascribable, at least in part, to access to economic opportunities.

Table 7: Location of households by poverty class (expressed as percentages of households)

	Chronically Poor	Transitorily Poor	Never Poor
Rural	86.9	76.9	43.5
Urban (small towns)	8.8	15.3	35.7
Metropolitan	4.3	7.8	20.8
N	260	359	549

6.2. Demographic characteristics

In terms of household size and adult equivalency, the chronically poor tend to have larger households than the transitorily poor (Table 8). Both of the aforementioned poverty groupings have larger households than the never poor. With respect to the age dependency ratio, there exists a slight differentiation between chronically and transitorily poor households (the former being higher in both waves than the latter), though a more substantial gap exists between these two groupings and the never poor. The chronically poor households have, on average, more children than the transitorily poor. Similarly, the transitorily poor households are characterised by a noticeably higher mean number of children than never poor households.

On the whole, chronically poor households have a greater predisposition towards being female-headed than either the transitorily poor or the never poor, though it should be mentioned that the proportion of female headship in all three cohorts has increased steadily since 1993. Additionally, the average age of the household head is approximately three years older in chronically poor households as compared to transitorily poor households. The difference in the average age of

heads in transitorily and never poor households was four years. but it seems this has closed to just over two years in the intervening period between the two waves.[20]

Table 8: Demographic Characteristics by Poverty Class

Correlates	Chronically Poor		Transitorily Poor		Never Poor	
	1993	1998	1993	1998	1993	1998
Household size	8.56	8.45	6.40	6.52	5.01	4.93
Adult equivalency	5.43	5.53	4.17	4.39	3.46	3.56
Age Dependency Ratio	0.47	0.43	0.46	0.42	0.38	0.33
Avg. no. kids (age<15) in the household	3.91	3.40	2.91	2.54	1.97	1.57
Proportion of HH that are female headed	39.2	48.8	31.8	39.6	26.6	34.6
Mean age of household head	54.1	57.1	51.2	53.8	47.4	51.7
Sample size (HH)	**260** (22.3%)		**359** (30.7%)		**549** (47.0%)	

Most of the above trends are consistent regardless of whether one looks separately at the 1993 or 1998 data. or both in conjunction with one another. Nonetheless, it is worth noting that, with regard to the change in household size between the two waves. only the transitorily poor experienced an increase. The chronically poor and never poor households encountered marginal declines in household size. However, this trend does not appear to be related to increasing fertility rates in the transitorily poor households in contrast with the other two cohorts. The age dependency ratio and mean number of children younger than fifteen statistics exhibit downward trends between 1993 and 1998 for all three poverty groupings. This suggests that whilst fertility rates are declining,[21] there has been an increase in the number of adults (aged 15-64) living in transitorily poor households since 1993. Future research will need to investigate whether this observed pattern is attributable to factors such as increasing unemployment and the return of migrant workers to rural households, or if it is attributable to a life cycle effect (coupled with declining fertility).

6.3. Educational Characteristics

With regard to educational attainment, a clear pattern emerges which serves to distinguish the chronically from the transitorily poor (Table 9). Children in transitorily poor households tend to

be slightly better educated than those in chronically poor households. For never poor households, the proportion of children with primary education in 1993 was 2.5 times greater than that of chronically poor households, a situation which only marginally improved by 1998.

Table 9: Educational Status by Poverty Grouping

Correlates	Chronically Poor		Transitorily Poor		Never Poor	
	1993	1998	1993	1998	1993	1998
Proportion of kids with primary education	7.2	6.6	12.0	7.8	18.0	10.8
Proportion of adults who are illiterate (<5yrs of education)	35.8	26.8	28.7	19.4	13.7	9.9
Proportion of adults who are primary school educated (age 15-64)	49.4	59.9	56.5	67.0	76.3	81.8
Proportion of adults who are secondary school educated (age 15-64)	4.4	12.1	8.3	14.6	26.1	32.2
Sample size (HH)	**260** (22.3%)		**359** (30.7%)		**549** (47.0%)	

Levels of adult illiteracy are particularly high for chronically poor households, affecting a little over a quarter of adults in 1998. Transitorily poor households had a high adult illiteracy rate in 1993, though this seems to have declined significantly by 1998, while never poor households have a comparatively low illiteracy rate. Irrespective of poverty status, there has been a general reduction in adult illiteracy between 1993 and 1998. However, the variance in adult illiteracy rates between chronically and transitorily poor households has expanded somewhat, whilst the differential between transitorily and never poor households has narrowed. Levels of primary and secondary education amongst adults appear to be related to the poverty status of the household. In never poor households, the percentage of adults that have primary education is notably higher than in transitorily and chronically poor households. The same trend applies with regard to secondary education, where almost one-third of adults in never poor households have matric or above, as compared to less than one-sixth of adults in transitorily and chronically poor households.

6.4. Economic Characteristics

Table 10 presents some broad economic indicators for the three poverty status cohorts. As expected, given that a money-metric measure has been applied to define poverty, the suite of income and expenditure figures in the table are lower for chronically poor households than for transitorily and never poor households (in that order). The share of household expenditure devoted to food (food share) is a commonly applied indicator of welfare, the premise being that the share will be higher the poorer the household. In the KIDS sample, the food share for the chronically poor exceeds that of transitorily and never poor households. Nonetheless, the discrepancy in food share between chronically and transitorily households is not nearly as pronounced as between these groupings and never poor households.

Table 10: Economic indicators by poverty status, 1993-1998

Correlates	Chronically Poor		Transitorily Poor		Never Poor	
	1993	1998	1993	1998	1993	1998
Mean total household income	726.84	1210.54	900.10	1520.71	2117.10	3404.72
Mean per capita income	90.90	157.06	169.91	257.11	503.19	774.80
Mean total household expenditure	899.90	816.67	1250.45	1027.27	2025.08	2246.75
Mean per capita expenditure	109.13	103.56	228.72	179.77	483.18	533.15
Mean expenditure by adult equivalence	166.04	151.57	319.41	249.58	633.34	679.78
Food expenditure as a percentage of total expenditure (food share)	58.0	46.8	56.9	42.7	42.1	29.5
Proportion of households owning land	46.2	58.1	39.8	53.8	27.7	33.2
Mean total Cultivated land (ha)	0.95	0.63	0.96	0.79	3.85	1.02
Cultivated land per capita (ha)	0.12	0.08	0.17	0.13	0.77	0.24
Proportion of households owning livestock	40.4	43.8	35.7	39.3	19.7	23.9
Proportion of households with a migrant adult	45.4	55.0	49.0	45.1	34.3	28.6
Proportion of households with a pensioned income	35.0	42.7	32.0	38.7	21.3	24.8
Sample size (HH)	**260** (22.3%)		**359** (30.7%)		**549** (47.0%)	

In respect of access to land for the cultivation of crops, 58% of chronically poor households in the sample owned land in 1998, in contrast to 54% of transitorily poor and one quarter of never poor

households. There has been a slight increase in ownership for the three cohorts since 1993, though this has not altered the relative ranking. It is important to note that, in spite of the greater percentage of land owners amongst the chronically poor, the average size of the land possessed by chronically poor households is generally smaller than that owned by the households falling into the other two poverty classes. The ownership of livestock in chronically poor households, like land, is more widespread than in transitorily poor households, but not to a large extent. The difference in the proportion of households owning livestock is more tangible when contrasting chronically and transitorily poor with the never poor.

Chronically poor households are more inclined to have a migrant adult than either transitorily or never poor households, though in 1993 the proportion of transitorily poor households with a migrant adult was fractionally higher than for chronically poor households. Even though this is most probably related to the dearth of livelihood opportunities that exist in former KwaZulu and the consequent search for employment in either urban or other rural locales (Champion, 1995; Castles and Miller, 1993; Ardington and Lund, 1997; Lipton, 1995), recent research by Cross et al. (1998, p. 638) points to a wider set of influencing factors, such as "access to infrastructure, services and social networks which underpin security, help to resolve conflict over resources and facilitate refugee processes". Therefore, there seems to be a positive relationship between a household's vulnerability (or poverty status) and the extent of migration among adults.

Table 10 also reveals that the percentage of households in receipt of old-age pensions increases from never poor to chronically poor households in both 1993 and 1998. This suggests that public social spending in the form of old-age pensions is well targeted in KwaZulu-Natal.[22] Since 1993, the percentage of households with a pensioned income has increased for all three poverty cohorts, with the percentage change rising incrementally from never poor to chronically poor households. The cause of this upward trend is equivocal, though it could be associated with improvements in the coverage, and equalisation, of pensions during the nineties (Ardington, 1999).

6.5. Poverty Profile: A Summary

The poverty profile reveals that chronically poor households tend to reside in rural as opposed to urban or metropolitan localities, in addition to exhibiting larger (resident) family numbers and dependency burdens, a propensity towards being female-headed, and high illiteracy and low educational attainment levels. Moreover, they are not well endowed with financial capital, but have relatively high levels of access to physical capital (land and livestock) albeit in small quantities. A large proportion of the households receive a pensioned income, and have a migrant adult. Transitorily poor households share many of the same traits as the chronically poor households. In common with their chronically poor counterparts, households in this vulnerable poverty class are also predominantly rurally based, have a high dependency ratio and food expenditure share, and have amongst them a significant proportion of landowners (though with slightly larger average plot sizes than the chronically poor). They do, however, distinguish themselves from the chronically poor in that they have a lower mean household size, are less likely to be female-headed, have better educational attainment levels, in addition to having more financial capital and lower levels of livestock ownership.

Finally, the households designated never poor in the KIDS sample are identifiable from the other two poverty cohorts in that they are geographically concentrated in small towns and metropolitan areas, have a distinctly lower household size and average number of children, are comparably well educated, have significantly more financial capital and lower food shares, and are far less reliant on welfare and migration as livelihood strategies.[23]

To a certain extent, the above findings coincide with the identifiers of poverty class found to be significant in other poverty dynamics research in developing countries. For example, in Chile, Pakistan, semi-arid India and Cote d'Ivoire, low physical capital (land, livestock and farm equipment), larger family numbers, and residence in particular regions tended to be associated with increasing poverty levels (Scott, 1999; Scott and Litchfield, 1994; Baulch and McCulloch,

1998; Walker and Ryan, 1991; Grootaert et al., 1997). Other research in China, India and Hungary show chronically poor households as being overrepresented amongst certain occupational categories (e.g., agricultural labourers), such as the less educated, the landless and households with larger dependency burdens (Jalan and Ravallion, 1998; Gaiha, 1989; Chaudhuri and Ravallion, 1994; Galasi, 1998).

7. Policy Issues

The quotations at the beginning of the paper serve to illustrate, at least in the arena of political rhetoric, that the eradication of poverty and inequality and meeting of basic needs are primary concerns of the democratic government in South Africa. Nonetheless, translating this into appropriate policy interventions is a formidable challenge, especially given the extent of impoverishment and the limited public resources available. In this context, the design of well-targeted poverty alleviation strategies is of utmost importance. This section briefly highlights certain policy issues relating to the findings of the analysis of the KIDS. The intention is not to provide prescriptive policy advice, but rather to raise issues for future discussion.

Throughout the paper reference has variously been made to the relationship between a dynamic view of poverty and effective anti-poverty policies, the emphasis being on the differing, though not necessarily mutually exclusive, types of measures required to address chronically and transitory poverty. The poverty literature suggests that the transitorily poor households, a grouping that is considered prone to fluctuations in well-being following negative economic shocks, require policies that help them to avoid risk-reducing responses, such as asset depletion, that are ultimately costly to the house in the long-term. Examples of safety net policies that can assist such households in smoothing income and consumption over time include providing micro-credit, public works schemes, crop insurance and food price stabilisation schemes (Baulch and McCulloch, 1999; Lipton and Ravallion, 1995). Alternatively, it is recognised that chronic poverty is best addressed through policies directed at increasing the human and physical assets of

households falling within this category, the prime example being pure redistribution in the guise of land reform, but also investments in education, health and rural development (Jalan and Ravallion, 1998).

The core thrust of South Africa's poverty alleviation strategies since the coming into power of the democratic government in 1994 has been to increase budgetary expenditure on social services, with particular emphasis on education, health, social security and housing. The government also launched upon an ambitious land reform programme (May, 1998a). Whilst this conforms with the type of policy required to assist the chronically poor, analysis revealed that for the most part these activities are, as of yet, poorly targeted, reaching mainly the middle quintiles as opposed to the poorest quintile (May, 1998a, p.57). However, earlier examination of the magnitude of chronically and transitorily poor households in the KIDS sample revealed that not only is there a sizeable contingent of people who persistently remained in poverty, but there is an even greater proportion who are transitorily poor. The singular emphasis of pro-poor policy towards alleviating chronic poverty, to the neglect of the transitory poor, is a cause for concern, as it fails to address the existing risks to which this grouping is exposed.

This is not to say that there are not policy initiatives that are appropriate to the reduction of transitory poverty,[24] but rather that they are both insufficient and inadequate in their conceptualisation, planning and implementation. It is paramount that future poverty strategies adopted by government, be it national or provincial, adhere to a more inclusive approach, one that incorporates policies designed to target both chronic and transitory poverty, but that concomitantly seeks to maximise the complementarities between them.[25] The Poverty and Inequality Report (May, 1998c) was a milestone in this regard, for it identified over 50 programmes, pilot projects and grants relevant to both poverty groupings. The government has adopted its proposals and completed the preparatory work for most of these, but it still remains to be seen whether they can be effectively implemented.

8. CONCLUSION

The cross-sectional nature of previous poverty research in South Africa has precluded a dynamic understanding of how impoverishment is changing over time and has fostered inadequately designed poverty alleviation strategies. This paper has provided a preliminary analysis of the KwaZulu-Natal Income Dynamics Study data. In particular, the magnitude and severity of poverty between the two waves of the panel was explored using various measures. Moreover, the levels of chronic and transitory poverty were investigated, together with the characteristics that distinguish households within these groupings from one another.

Using an expenditure-based definition of poverty, the proportion of poor households in the sample is shown to have increased from 34% to 42% between 1993 and 1998. Subsequent application of the decomposable Foster-Greer-Thorbecke (FGT) measures revealed that, in addition to the rising *incidence* of poverty, the *severity* of poverty has also been deepening. These trends were found to be more pronounced in rural as opposed to urban and metropolitan localities, as well as for female-headed households. Transition analysis shows that in spite of significant mobility between expenditure classes, some two thirds (66.3%) of the households below the poverty line in 1993 remained poor in 1998. Moreover, relatively large numbers of households who were just above the poverty line in 1993 had fallen into poverty by 1998.

As was mentioned in the literature review section, poverty dynamics research has shown that the majority of the poor are so for several years, whereas only a minority are persistently poor. Analysis of the KIDS panel data exposed a slightly different situation. Though the majority of households (30.7%) were found to be experiencing transitory poverty, a significant proportion, in lieu of the expected small minority, of households were chronically poor (22.3%). Applying Baulch and McCulloch's (1999) definitions of transitory and chronic poverty as a robustness test had the effect of reversing the ranking, so that 33% of the sampled households were chronically

poor as opposed to the one fifth that were transitorily poor. Consequently, South Africa's problem is not only the poor *per se*, but the persistently poor.

The poverty profile reveals that household size, gender of the household head, educational attainment, financial capital and migrancy rates seemed to be key factors in distinguishing transitorily from chronically poor households. The finding that transitorily poor households share many of the same traits as the chronically poor households, such as a common propensity towards being rurally based, as well as high dependency ratios and food expenditure shares, suggests that future research explore regression analysis, perhaps in the form of Logit estimation. The variables that appeared to separate households classified as never poor in the KIDS sample from the other two poverty cohorts were geographic location, dependency ratio, average number of children, food share, land ownership, migrancy rates and access to a pensioned income.

Given that the principal emphasis of the paper is on exploratory research into poverty dynamics in South Africa, and not policy analysis, a comprehensive discussion of policy recommendations is not endeavoured here. Nevertheless, the relative degree of chronic and transitory poverty found in the data does raise one notable policy-related issue. While longer-term, redistributive interventions for the chronically poor are unquestionably significant[26] and have been the focus of pro-poor policy since the early nineties, it is clear that these will be insufficient to eradicate poverty in South Africa. There is thus a case for the development of more inclusive poverty alleviation strategies, ones that encompass short-term, insurance policies to assist the transitorily poor to smooth their income and consumption needs in the face of negative economic shocks.

ENDNOTES

[1] Saldru is a research unit based at the University of Cape Town.

[2] In spite of its importance, the PSLSD has its problems, for which it has been variously critiqued. For example, Prof. Pieter le Roux (1995) of the University of the Western Cape found there to be problems with pension data. Ardington and Lund (1997) found certain classifications used to categorise households in the sample unnecessarily reductionist. Standing, Sender and Weeks (1996) also provide useful commentary on the shortcomings of the study.

[3] For a useful discussion of the Speak Out On Poverty Hearings, reference should be made to Mthintso (1999).

[4] The Panel Study of Income Dynamics (PSID), conducted by the Survey Research Center in the Institute for Social Research at the University of Michigan, was initiated in 1968. It is a longitudinal study of a representative sample of American individuals (men, women, and children) and the family units in which they live. Further information on the PSID can be obtained through their website: http://www.isr.umich.edu/src/psid/index.html .

[5] The Reconstruction and Development Programme (RDP), introduced in 1994 by the African National Congress, is an ambitious developmentalist and regulatory economic vision for redressing the inequities in access to resources and economic opportunities that resulted from decades of discriminatory policies and practices. For a comprehensive analysis of the RDP and its progress, it is suggested that reference be made to Adelzadeh and Padayachee (1994), Adelzadeh (1996) and Marais (1998).

[6] A panel data set is defined by Hsiao (1986:1) as follows: "A longitudinal, or panel, data set is one that follows a given sample of individuals over time, and thus provides multiple observations on each individual in the sample".

[7] Klasen created a deprivation index, a composite indicator that included the variables of income, health, education, access to services, and perceptions of well-being.

[8] This figure incorporates the African and Indian population only, as was the case with the 1998 re-survey. If all the population groups in the 1993 survey are counted, then the total sample would be 1558 households. Four households in which all the household members have died prior to the 1998 re-survey are excluded from the 1389 total.

[9] Urban re-interview rates proved to be higher than the rural, where approximately 90% of the target households were contacted again.

[10] Maluccio, Thomas and Haddad (1999) provide a fuller account of the protocol that was developed to minimise attrition, whilst May, Carter, Haddad and Maluccio (1999) should be referred to for more detail on the survey process and the conceptualisation of the study.

[11] Lipton and Ravallion (1995) provide an outline of this critique.

[12] These are (i) the *monotonicity axiom*: a reduction in the expenditure of a poor household must increase the poverty measure (vice versa); and (ii) the *transfer axiom*: a pure transfer of expenditure from a poor household to any other household that is richer must increase the poverty measure (Sen, 1976; Foster et al., 1984).

[13] Singer and Spilerman (1976) provide an exhaustive review of Markov models and their application to the social sciences.

[14] The share of households remaining in the same expenditure class (45%) is the sum of the number of households contained in the main diagonal of the matrix (the cells in bold), expressed as a percentage of the total number of households in the sample. The percentage that moved to a higher class (23%) is the sum of the number of households falling in the cells of the matrix *above* the main diagonal, expressed as a percentage of the total number of households in the sample. Similarly, the percentage that moved to a lower class (32%) is the sum of the number of households falling in the cells of the matrix *below* the main diagonal, expressed as a percentage of the total number of households in the sample.

[15] The notion of generating expenditure sequence patterns owes primarily to the work of Jarvis and Jenkins (1997, 1998).

[16] The figure of 66% is derived from the sum of the number of households contained in the top-left block of Table 5 (the chronically poor), expressed as a percentage of the combined number of households contained in the top-left and top-right cells of the table.

[17] It should be noted that whilst Baulch and McCulloch use income as the preferred money-metric poverty measure (as opposed to expenditure in the case of KIDS), this does not affect the relevancy of their definitional tool to the analysis. They also rely upon annual figures whereas in the KIDS analysis, monthly expenditure is favoured.

[18] In other words, households with 1993 expenditure values *below* the poverty line and 1998 expenditure values *above* the poverty line, as well as those with 1993 expenditure values *above* the poverty line and 1998 expenditure values *below* the poverty line.

[19] Henceforth, this will be referred to as the IDS definition, owing to Baulch and McCulloch's affiliation to the Institute of Development Studies (IDS) at the University of Sussex, Brighton.

[20] Whether or not this is associated principally with changing headship between 1993 and 1998 is, as of yet, unresolved. Misspecification of the ages in one of the two surveys cannot be ruled out, though it is unlikely given the protracted data cleaning process involved.

[21] There is mounting evidence for a declining trend in South Africa's fertility data. For a fuller exposition on this issue, reference should be made to Caldwell and Caldwell (1993), Chimere-Dan (1997), and Sibanda and Zuberi (1999).

[22] In spite of this finding, social safety nets in South Africa, inclusive of old-age pensions, have traditionally been predicated upon discriminatory policies. Bhorat (1995) provides a useful history of these developments.

[23] To acquire a fuller and more precise understanding of the relative influence of various household characteristics on their poverty status, and to be able to clearly distinguish between the three classifications, Logit estimation is required. While this is beyond the scope of this paper, it is to be included in a forthcoming article by May and Roberts (2000).

[24] For example, micro- and agricultural credit schemes do exist in rural areas, but they tend to serve an 'elite'. Ardington (1999) gives an in-depth look at the nature and shortcomings of rural finance in KwaZulu-Natal.

[25] Lipton and Ravallion (1995) give a fairly detailed account of the policies required for chronic and transitory poverty, and suggest what some of these complementarities might be.

[26] Especially given the magnitude of chronic poverty found in the data.

9. REFERENCES

Adelzadeh, A., 1996, 'From the RDP to GEAR: The Gradual Embracing of Neo-Liberalism in Economic policy', Transformation, No.31, pp.65-95.

Adelzadeh, A. and V. Padayachee, 1994, 'The RDP White Paper: Reconstruction of a Development Vision?', Transformation, No. 25, pp.1-18.

Alderman, H. and M. Garcia, 1993, 'Poverty, Household Food Security and Nutrition in Rural Pakistan', IFPRI Report No 93, Washington DC: IFPRI.

Appleton, S., 1996, 'Problems of Measuring Changes in Poverty Over Time: the case of Uganda 1989-92', IDS Bulletin, Vol.27, No.1, pp.43-55.

Ardington, E.M., 1999, 'Demand or Support: What Counts in Rural Finance', Research Report No. 26, Durban: School of Development Studies.

Ardington, E. and F. Lund, 1997, 'Questioning Rural Livelihoods' in Lipton, M., Ellis, F. and M. Lipton (eds.), 1999, Land, Labour and Livelihoods in Rural South Africa Volume 2: KwaZulu-Natal and Northern Province, Durban: Indicator Press.

Bane, M.J. and D.T. Ellwood, 1986, 'Slipping Into and Out of Poverty: The Dynamics of Spells', Journal of Human Resources, Vol.21, No.1, pp.1-23.

Banfield, E.C., 1968, The Unheavenly City, Boston: Little, Brown.

Baulch, B., 1996, 'Neglected Trade-Offs in Poverty Measurement', IDS Bulletin, Vol.27, No.1, pp.36-42.

Baulch, B. and N. McCulloch, 1998, 'Being Poor and Becoming Poor: Poverty Status and Poverty Transitions in Rural Pakistan', IDS Working Paper No 79, University of Sussex, Brighton: IDS.

Bhorat, H., 1995, 'The South African social safety net: past, present and future', Development Southern Africa, Vol. 12, No.4, pp.595-604.

Caldwell, J.C. and P. Caldwell, 1993, 'The South African Fertility Decline', Population and Development Review, Vol.19, No.2, pp.225-261.

Cantó-Sánchez, O., 1996, 'Poverty Dynamics in Spain: A Study of Transitions in the 1990s', Distributional Analysis Research Programme Discussion Paper No 15, London School of Economics, London: STICERD.

Carter, M. and J. May, 2000, 'Getting Ahead or Falling Behind?: the Dynamics of Poverty in Post-Apartheid South Africa', forthcoming Department of Agricultural and Applied Economics (AAE) working paper, University of Wisconsin-Madison.

Castles, S. and M. Miller, 1993, The age of migration: international population movements and in the modern world, New York: Guildford.

Champion, A., 1995, 'International migration and demographic change in the developed world' in Paddison, R., Money, J. and B. Lever (Eds), International perspectives in urban studies 3, London: Jessica Kingsley.

Chaudhuri, S. and M. Ravallion, 1994, 'How well do static indicators identify the chronically poor?', Journal of Public Economics, No.53, pp.367-94.

Chen, S. and M. Ravallion, 1996, 'Data in Transition: Assessing Rural Living Standards in Southern China', China Economic Review, Vol.7, No.1, pp.23-56.

Chimere-Dan, O., 1997, 'Recent fertility patterns and population policy in South Africa', Development Southern Africa, Vol.14, No.1, pp.1-20.

Cross, C., Mngadi, T. and T. Mbhele, 1998, 'Constructing migration: infrastructure, poverty and development in KwaZulu-Natal', Development Southern Africa, Vol.15, No. 4, pp.635-659.

Deaton, A., 1997, The Analysis of Household Surveys, London: The Johns Hopkins University Press.

Demery, L. and L. Squire, 1996, 'Macroeconomic Adjustment and Poverty in Africa: An Emerging Picture', The World Bank Research Observer, Vol.11, No.1, pp.39-59.

Dercon, S. and P. Krishnan, 1998, 'Changes in Poverty in Rural Ethiopia 1989-1995: Measurement, Robustness Tests and Decomposition', Centre for the Study of African Economies Working Paper WPS/98-7 CSAE. Oxford: University of Oxford.

Dercon, S. and P. Krishnan, 1999, 'Poverty, seasonality and intra-household allocation', Paper presented at the IDS/IFPRI Workshop on Economic Mobility and Poverty Dynamics in Developing Countries, 7-8 April 1999, Institute of Development Studies, Brighton.

Donian, C. and R. Humphries, 1998, 'Poverty in South Africa: The challenge of changing the nature of the state and redressing poverty in a decentralised System of Governance', Paper presented at the International Conference on Poverty: Emerging Challenges, 9-11th February 1998, Dhaka, Bangladesh.

Duncan, G.J., Coe, R.D., Corcoran, M.E., Hill, M.S., Hoffman, S.D. and J.N. Morgan, 1984, Years of Poverty, Years of Plenty: The Changing Economic Fortunes of American Workers and Families, Michigan: Institute for Social Research, The University of Michigan.

Engel, E., 1857, 'Die productions- und consumtionsverhältnisse des Königsreichs Sachsen', in Ernst Engel, Die lebenkosten belgischer arbeiter-familien, Dresden: C. Heinrich.

Foster, J., Greer, J. and E. Thorbecke, 1984, 'A Class of decomposable Poverty Measures', Econometrica, Vol.52, No.3, pp.761-6.

Friedman, M., 1957, A Theory of the Consumption Function, Princeton, New Jersey: Princeton University Press.

Gaiha, R., 1989, 'Are the Chronically Poor Also the Poorest in Rural India?', Development and Change, No.20, pp.295-322.

Gaiha, R. and A.B. Deolalikar, 1993, 'Persistent, expected and innate poverty: estimates for semi-arid rural India, 1975-1984', Cambridge Journal of Economics, No.17, pp.409-21.

Galasi, P., 1998, 'Income Inequality and Mobility in Hungary 1992-1996', Innocenti Occasional Paper 64, Florence: UNICEF.

Glewwe, P. and G. Hall, 1998, 'Are some groups more vulnerable to macroeconomic shocks than others? Hypothesis tests based on panel data from Peru', Journal of Development Economics, No.56, pp.181-206.

Government of National Unity, 1994, 'RDP White Paper Discussion Document', Pretoria: Government Printers.

Grootaert, C. and R. Kanbur, 1995, 'The Lucky Few Amidst Economic Decline: Distributional Change in Côte d'Ivoire as seen through Panel Data Sets, 1985-88', Journal of Development Studies, Vol.31, No.4, pp.603-19.

Grootcart, C., Kanbur, R. and G.-T. OH, 1995, 'The Dynamics of Poverty: Why some people escape from poverty and others don't', World Bank Working Paper No . Washington DC: World Bank.

Grootaert, C., Kanbur, R. and G.-T. OH, 1997, 'The Dynamics of Welfare Gains and Losses: An African Case Study', Journal of Development Studies, Vol.33, No.5, pp.635-57.

Grosh, M.E., and J. Munoz, 1996, 'A Manual for Planning and Implementing the Living Standards Measurement Study Survey', Living Standards Measurement Study Working Paper No. 126, Washington D.C.: World Bank.

Habib, A. and V. Padayachee, 2000, 'Economic Policy and Power Relations in South Africa's Transition to Democracy', World Development, Vol.28, No.2, pp. 245-263.

Haddad, L. *et al*, 1995, 'Poverty and Nutrition within Households: Review and New Evidence', Washington, D.C.: IFPRI-WHO Collaborative Work on Intrahousehold Resource Allocation.

Harrington, M., 1962, The Other America: Poverty in the United States, New York: MacMillan.

Hsiao, C., 1986, Analysis of Panel Data, Cambridge: Cambridge University Press.

Iliffe, J., 1987, The African Poor: A History, Cambridge: Cambridge University Press.

Jalan, J. and M. Ravallion, 1998, 'Transient Poverty in Postreform China', Journal of Comparative Economics, No.26, pp.338-57.

Jarvis, S. and S. Jenkins, 1997, 'Low Income Dynamics in 1990s Britain', Fiscal Studies, Vol.18, No.2, pp.123-42.

Jarvis, S. and S. Jenkins, 1998, 'Low Income Dynamics in 1990s Britain', IDS Bulletin, Vol.29, No.1, pp.32-41.

Klasen, S., 1997, 'Poverty, Inequality and Deprivation in South Africa: An Analysis of the 1993 SALDRU Survey', Social Indicators Research, Vol.41, Nos.1-3, pp.51-94.

Lachaud, J.P., 1994, 'Pauvreté et marché du travail urbain en Afrique subsaharienne: Analyse comparative', Geneva: International Institute for Labour Studies.

Lanjouw, P. and N. Stern, 1991, 'Poverty in Palanpur', World Bank Economic Review, Vol.5, No.1, pp.21-55.

Leibbrant, M. and I. Woolard, 1999, 'A comparison of poverty in South Africa's nine provinces', Development Southern Africa, Vol.16, No.1, pp.37-54.

Le Roux, P., 1995, 'The Impact of Social Old Age Pensions on Household Income in South Africa: The Results of a Study Based on the South African Living Standards Survey', unpublished mimeograph.

Lewis, O., 1959, Five Families: Mexican Case Studies in the Culture of Poverty, New York: Basic Books.

Lewis, O., 1966, 'The Culture of Poverty', Scientific American, Vol.215, No.4, pp.19-25.

Lipton, M., 1988, 'The Poor and the Poorest: Some Interim Findings', World Bank Discussion Paper No. 25, Washington, D.C.: World Bank.

Lipton, M., 1995, 'Rural financial services, demography and migration: international experience', unpublished report to the Commission of Enquiry into Rural Financial Services.

Lipton, M. and M. Ravallion, 1995, 'Poverty and Policy' in Behrman, J. and T.N. Srinivasan (Eds), Handbook of Development Economics, Vol.3B, Amsterdam: Elsevier.

Lund, F., 1998, 'Who's in and who's out? The effects of poverty and inequality on participatory and institutional development', AVOCADO Series No. 2, Durban: Olive (OD and Training).

Maluccio, J., Thomas, D. and L. Haddad, 1999, 'The Mobility of Adults in Post-Apartheid South Africa: Levels, Determinants, and Consequences', International Food Policy Research Institute (IFPRI) mimeo.

Marais, H., 1998, South Africa: Limits to Change: The Political Economy of Transformation, London: Zed Books.

May, J., 1996, 'The South African Participatory Poverty Assessment – Synthesis Report', Data Research Africa Working Paper, Durban: DRA.

May, J., 1998a, 'Poverty and Inequality in South Africa', Indicator SA, Vol.15, No.2, pp.53-8.

May, J., 1998b (Ed), 'Experience and Perceptions of Poverty in South Africa', Durban: Praxis Publishing.

May, J., 1998c (Ed.), Poverty and Inequality in South Africa, Durban: Praxis Publishing.

May, J., Carter, M. and D. Posel, 1995, 'The composition and persistence of rural poverty in South Africa: an entitlements approach', Policy Paper No. 15, Johannesburg: Land and Agriculture Policy Centre.

May, J, Carter, M.R., Haddad, L. and J. Maluccio, 1999, 'KwaZulu-Natal income dynamics study (KIDS) 1993-1998: A longitudinal household data set for South African policy analysis', CSDS Working Paper No. 21, Durban: Centre for Social and Development Studies.

McCulloch, N. and B. Baulch, 1999, 'Distinguishing the Chronically from the Transitorily Poor: *Evidence from Pakistan*', Working Paper No. 97, Brighton: Institute of Development Studies.

Mthintso, V., 1999, 'The War on Poverty Forum', Development Update, Vol.2, No.4, pp.99-106.

Mueller, C., 1997, 'Transient Seasonal and Chronic Poverty of Peasants: Evidence from Rwanda', Mimeo, Oxford: Centre for the Study of African Economies.

Office of the President, 25 June 1999, 'Mbeki: Opening of Parliament', <http:\\www.gov.za\>.

PSLSD, 1994, 'Project for Statistics on Living Standards and Development: South Africans Rich and Poor: Baseline Household Statistics', University of Cape Town: South African Labour and Development Research Unit

Ravallion, M. and M. Huppi, 1991, 'Measuring Changes in Poverty: A methodological case study of Indonesia during an adjustment period', The World Bank Economic Review, Vol.5, No.1, pp.57-82.

Ravallion, M., 1996, 'Issues in Measuring and Modelling Poverty', The Economic Journal, Vol. 106, September, pp.1328-1343.

Rodgers, J.R. and J.L. Rodgers, 1993, 'Chronic Poverty in the United States', The Journal of Human Resources, Vol.28, No.1, pp.25-54.

SA-PPA, 1997, 'The Experience and Perceptions of Poverty: The South African Participatory Poverty Assessment', Durban: Praxis Publishing.

Scott, C.D., 1996, 'Peasantry, Property and Poverty: State, Markets and economic Institutions among the Rural Poor in Chile', London: London School of Economics and Political Sciences, First Draft.

Scott, C.D., 1999, 'Mixed Fortunes: A Study of Poverty Mobility Among Small Farm Households in Chile, 1968-1986', Paper presented at the IDS/IFPRI Workshop on Economic Mobility and Poverty Dynamics in Developing Countries, 7-8 April 1999, Brighton: Institute of Development Studies.

Scott, C.D. and J.A. Litchfield, 1994, 'Inequality, Mobility and the Determinants of Income Among the Rural Poor in Chile 1968-86', STICERD Development Economics Programme DEP 35, London: London School of Economics.

Sen, A.K., 1976, 'Poverty: An ordinal approach to measurement', Econometrica, Vol.44, No.2, pp.219-231.

Shaffer, P., 1996, 'Beneath the poverty debate: some issues', IDS Bulletin, Vol.27, No.1, pp.23-35.

Shaffer, P., 1998, 'Gender, Poverty and deprivation: Evidence from the Republic of Guinea', World Development, Vol.26, No.12, pp.2119-2135.

Sibanda, A. and T. Zuberi, 1999, 'Contemporary Fertility Levels and Trends in South Africa: Evidence from Reconstructed Census Birth Histories', Paper presented at the Third African Population Conference: The African Population in the 21st Century, 6-10 December 1999, Durban.

Singer, B. and S. Spilerman, 1976, 'The Representation of Social Processes by Markov Models', American Journal of Sociology, Vol. 82, No.1, pp.1-54.

Slesnick, D.T., 1993, 'Gaining Ground: Poverty in the Postwar United States', Journal of Political Economy, Vol.101, No.1, pp.1-38.

Standing, G., Sender, J. and J. Weeks, 1996, Restructuring the labour market: the South African challenge, Geneva: International Labour Organisation.

Toye, J., 1999, 'Nationalising the Anti-Poverty Agenda', IDS Bulletin, Vol.30, No.2, pp.6-12.

Walker, T. and J. Ryan, 1991, Village and Household Economies in India's Semi-Arid Tropics, Baltimore: John Hopkins University Press.

Wilson, F. and M. Ramphele, 1989, Uprooting Poverty: the South African Challenge, Cape Town: David Philip.

Woolard, I. and C. Barberton, 1998, 'The extent of poverty and inequality' in Barberton, C., Blake, M. and H. Kotzé, Creating Action Space: The Challenge of Poverty and Democracy in South Africa, Cape Town, IDASA and David Philip Publishers.

Woolard, I. and M. Leibbrandt, 1999, 'Measuring Poverty in South Africa', unpublished mimeograph.

World Bank, 1990, World Development Report 1990, Washington, D.C.: Oxford University Press.

Yaqub, S., 1999, 'Poverty Dynamics in Developing Countries – A Literature Review', Paper presented at the IDS/IFPRI Workshop on Economic Mobility and Poverty Dynamics in Developing Countries, 7-8 April 1999, Brighton: Institute of Development Studies.

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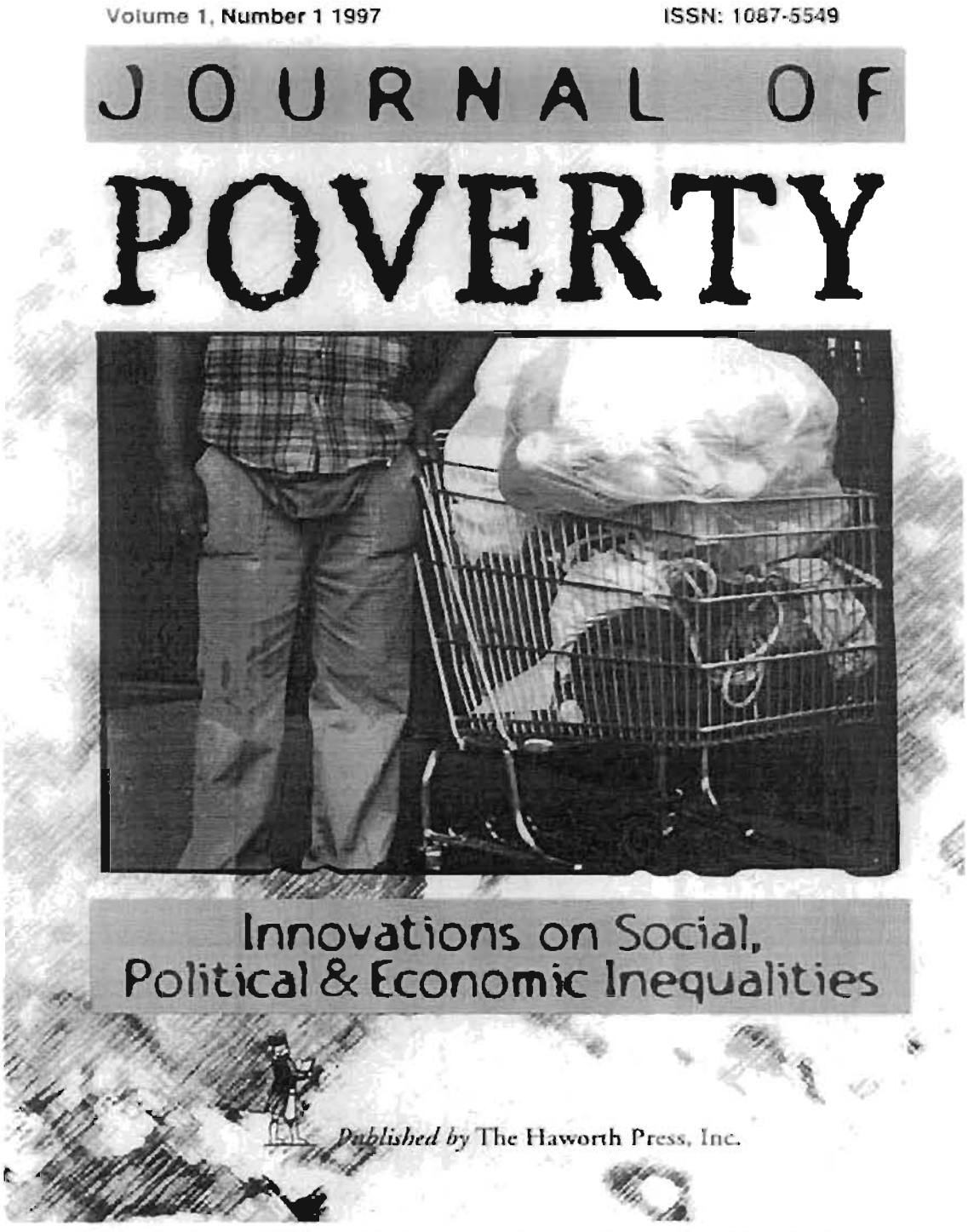

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APPENDIX B: OUTLINE OF PERSONAL INVOLVEMENT IN THE STUDY

Outline of Personal Involvement in the KIDS research

February 1998: My involvement with the KwaZulu-Natal Income Dynamics Study (KIDS) began when I was hired as research assistant to Julian May of the School of Development Studies. It was decided that I would be involved in the re-surveying process from March to June, during which time I would be subcontracted to Data Research Africa (DRA), the Durban-based development consultancy firm that was, along with the HSRC, responsible for the KwaZulu-Natal component of the PSLSD survey in 1993. Most of the month (13-28 Feb) was devoted to intensive training of the field teams, conducted by the International Food Policy Research Institute (IFPRI).

March-June 1998: There were, in total, five field teams. Each team comprised a quality controller, a team leader and three other fieldworkers. I was the quality controller for the team called the 'Zululand Rhinos', an apposite title given that a significant proportion of the clusters the team surveyed were in the Zululand Region. Table 1 provides a detailed breakdown of the clusters and villages that the team was allocated for re-surveying.

Table 1: Overview of Fieldwork for the Zululand Rhinos

Magisterial District	Village Name	Cluster Number	Start	End
Simdlangentsha	Ntumbane	237	1 March	9 March
Ngotshe		80	10 March	15 March
RETURN TO DUBAN TO DROP OFF QUESTIONNAIRES			16 March	16 March
Mahlabatini	KwaBrush	227	17 March	23 March
Nongoma	Maye	242	24 March	27 March
3 DAYS IN ULUNDI OWING TO CRASHED CAR			28 March	30 March
Nongoma	Buxetene	229	31 March	3 April
Nkandla		221	4 April	7 April
EASTER BREAK			8 April	15 April
Dundee	Sibongile Township	78	16 April	20 April
Emnambithi	Roodepoort	240	21 April	23 April
Ezakheni	Section E	206	24 April	25 April
Emnambithi	Roodepoort	240	26 April	29 April
Emnambithi	Peacetown	225	30 April	6 May
Ezakheni	Section E	206	7 May	8 May
2 DAYS OFF IN DURBAN			9 May	10 May
Okhahlamba	Goodhome	233	11 May	16 May
Okhahlamba	KwaMkhize	241	17 May	22 May
Ezakheni	Section E	206	23 May	24 May
2 DAYS OFF IN DURBAN			25 May	26 May
Nkandla		235	27 May	30 May

Apart from day-to-day project management at the team level, my principal responsibilities as quality controller were threefold. Firstly, there was the rather onerous task of tracking down the 1993 households. This process usually entailed spending one to two days acquiring

permission to work from the relevant tribal authorities, identifying the households and, in instances where some of the households or core persons within a household had moved in the intervening period, procuring follow-up details from former neighbours, relatives or friends. The only means available to the teams for tracking down the originally sampled households were hand-drawn, conceptual maps of each village from which the households were selected, and a list of first names of household members and their demographic characteristics (owing to the dictates of confidentiality and the fact that the PSLSD was not conceived as a longitudinal study, last names of families in the survey were not recorded in 1993).

The second responsibility was to meticulously check for inconsistencies in the information recorded during household interviews. The benefit of this in-site quality assessment was that it allowed for any problems to be resolved prior to departure from the area and thereby lend itself towards more accurate survey data. Finally, I was responsible for the organisation and execution of the community questionnaires, a survey instrument designed to acquire contextual information concerning the village from which the cluster households had been sampled.

July 1998 – November 1999: This was fundamentally a period of continuous and intensive data cleaning. Since completion of the fieldwork in June, there have been four releases of the dataset. Version 0 was released in November 1998, followed subsequently by version 0.1 in July 1999, version 0.2 in September 1999, and the latest version in November 1999. Much of the cleaning itself was conducted by IFPRI in Washington, D.C. However, I performed a role in checking the releases for wild codes and general capturing errors. Additionally, prior to the release of each version, John Maluccio of IFPRI would make a week-long visit to Durban in order to assess and eradicate various data inconsistencies by referring directly back to the questionnaires. I was intrinsically involved in these cleaning sessions.

In March, I began formulating possible research foci, and it was finally agreed upon that I undertake to provide a dynamic view of poverty using the KIDS sample, utilising transition matrices and poverty profiles. This has been a gradual process, which has required extensive searches for literature pertaining to panel studies in LDCs, as well as successive rounds of revision in concert with the release of the various versions of the data. Moreover, in order to facilitate a better understanding of statistical analysis of survey data, I attended the Institute of Survey Research's (ISR)[1] Summer Institute in Survey Research Techniques for the month of June 1999. More specifically, I partook in the *Analysis of Survey Data I* and *Computer*

[1] University of Michigan, Ann Arbor.

Analysis of Survey Data I courses. I presented some preliminary findings at a workshop held in the School of Development Studies (UND) in April 1999. In addition to this research on the dynamics of poverty I co-authored, along with Mary Arends-Kuenning[2] and Carol Kaufman[3], a paper entitled *'The Effect of the End of Apartheid on Women's Work, Migration, and Household Composition in KwaZulu-Natal'*. It was presented at the International Union for the Scientific Study of Population (IUSSP) Seminar on "Women in the Labour Market in Changing Economies: Demographic Issues", which took place in Rome in September 1999. The paper uses the KIDS dataset to describe some underlying trends in household composition and in employment.

Ongoing Work: Apart from intending to submit the attached paper to the Journal of Poverty after revisions have been made, I will be preparing, with Julian May, a conference paper to be presented in March at Oxford University. Moreover, the paper with Arends-Kuenning and Kaufman will be reworked using the latest version of the data. The intention is to attempt to disentangle some of the effects observed between household structure and employment decision by taking advantage of the panel nature of the data. Multivariate analysis will be conducted, where the outcome variable is female labour force participation and female employment, and the explanator variables include women's characteristics, the presence of other household members in certain gender-age groups, and husbands' employment status.

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APPENDIX C: AIDE-MÉMOIRE ON FOSTER-GREER-THORBECKE (FGT) POVERTY MEASURES

Note: This aide-mémoire was produced as part of my investigation into appropriate money-metric poverty measures for analysing the KIDS panel data. In essence it is a collation of concise definitions, from key poverty readings, pertaining to the Foster-Greer-Thorbecke (FGT) or p-alpha measures of poverty. It was subsequently used in the Poverty and Policy course that forms part of the Masters of Development Studies programme at the University of Natal-Durban.

P-Alpha (FGT) Class of Poverty Measures

"For alpha = 0, the index becomes simply the head count ratio (H = q/n). For alpha = 1, the index becomes HI, where I is the income (or expenditure) gap ratio ... Thus P_1 reflects both the incidence and depth of poverty. For higher values of alpha, the index becomes progressively more sensitive to the situation of the poorest" (Grootaert and Kanbur, 1995: 608).

"The headcount ratio or incidence of poverty (the proportion of the population defined to be poor, q/n) is obtained for the special case $\alpha=0$; when $\alpha=1$ the resulting index takes account of both the numbers in poverty and the average depth of poverty; and when $\alpha=2$ the index additionally takes account of distribution among the poor. Different values of α, the choice of which is ultimately a avalue judgement, reflect different definitions or concepts of poverty, increased values of α implying increased weightr given to the poorest" (Coulombe and McKay, 1996:1018).

"When $\alpha=0$, the Headcount Ratio (which measures the proportion of then population below the poverty line) is produced whereas $\alpha=1$ gives the Poverty Gap (which shows the aggregate shortfall of the poor's income/consumption form the poverty line). P_0 indicates the incidence and P_1 the depth of poverty. The severity index, P_2, is also in increasing use" (Baulch, 1996:37).

"The FGT class contains a number of other commonly used poverty measures as special cases. The most commonly used poverty measure has been the head-count index, which gives the proportion of the population with a standard of living below the poverty line. But it does not indicate *how* poor the poor are: it is unchanged if a poor individual becomes poorer. One index that does reflect changes in the degree of poverty among the poor is the poverty gap index. This is the average, over all the households, of the gaps between poor households' standards of living and the poverty line, as a ratio of the poverty line. This gives a good indication of the *depth* of poverty. But the poverty gap index is not sensitive to the distribution of the standard of living indicator among the poor, and so it does not capture the *severity* of poverty. The FGT class of measures subsumes these two measures, *and* provides a distributionally sensitive measure, through the choice of a parameter, α: the larger is α, the greater the weight given by the index to the severity of poverty. The FGT class of measures treats poverty as dependent on the poverty gap, the parameter α entering as a power of that ratio" (Ravallion and Huppi, 1991: 60-1).

Head-count Ratio (H)

$$H = \frac{q}{n}$$

"The widely used *head-count index* (H) is simply the proportion of the population for whom consumption (or another suitable measure of living standard) y is less than the poverty line...H is easily understood and communicated, but for some purposes (including analyses of

the impacts on the poor of specific policies) it has the serious drawback that it is totally insensitive to differences in the depth of poverty" (Lipton and Ravallion, 1995: 2578-9).

"Poverty incidence, represented as P_0, is the proportion of poor individuals in the total population or the head count ratio" (Shaffer, 1998: 2121).

"The most common procedure for handling problem (ii) [constructing an index of poverty using the available information on the poor] seems to be simply to count the number of the poor and check the percentage of the total population belonging to this category. This ratio, which we shall call the head-count ratio *H*, is obviously a very crude index. An unchanged number of people below the 'poverty line' may go with a sharp rise in the extent of the shortfall of income from the poverty line. The measure is also completely insensitived to the distribution of income among the poor. A pure transfer of income from the poorest poor to those who are better off will either keep *H* unchanged, or make it go down – surely a perverse response" (Sen, 1976:219).

"The 'head-count ratio' is the ratio of the number of people with income $y_i \leq z$, to the total population size n" (Sen, 1976:222).

"The most common measure is the headcount index, giben by the proportion of the population for whom yi/zi < 1. A seminal paper by Sen (1976) srew attention to the undesirable properties of this measure, such as the fact that when a poor person becomes poorer the headcount index of poverty will not increase (indeed, if the person dies, the index will fall!). A large literature has since proposed and studied enumerable alternative measures, though as yet no single measure has toppled the headcount index from public attention [the closest contender is the poverty gap index, though this is still neutral to inequality amongst the poor]" (Ravallion, 1996:1329).

"One might wonder why the headcount index has remained so popular, despite the trenchant critiques of Sen (1976) and others, in a long list of papers in *Econometrica* and elsewhere. Its simplicity is clearly the main reason; for something of such wide public interest as a poverty measure, the seemingly esoteric rationales and formulae of other measures can be difficult to digest. Nonetheless, policy analysis has started to become more aware of the need to consider impacts below the poverty line, and to allow a potentially wide range above and below. This is evident in the more widespread use headcount indices for multiple poverty lines, echoing both the emphasis of Lipton (1983) and others on the 'ultra-poor', as well as concerns about 'vulnerable' households just above the line" (Ravallion, 1996:1329-30).

"The FGT poverty measure for $\alpha=0$. This is simply the head-count index, given by the proportion of the population with a standard of living below the poverty line: $P_0 = q/n$. For example, if 40 percent of the population are deemed to be poor, then $P_0 = 0.4$" (Ravallion and Huppi, 1991:61).

"The headcount ratio is defined as the number of households whose members have per capita incomes below the poverty line expressed as a percentage of the total number of households. While this measure reveals the incidence of poverty, it gives no indication of its intensity. A household with an income per head just below the poverty line has the same weight in the headcount ratio as a household with a per capita income less than half the poverty line. This insensitivity to changes in the distribution of income amongst the poor is a weakness of the headcount ratio" (Scott, 1999:8).

Poverty Gap Index (PG)

$$P_1 = \frac{1}{n}\sum\frac{z - y_i}{z}$$

"The *poverty gap index* (PG) is obtained by setting p(y, z) = 1 – y/z (the proportionate poverty gap). This reflects the depth of poverty, in that it depends on the distances of the poor below the poverty line as well as the number of poor. PG indicates the potential for eliminating poverty by targeting transfers to the poor" (Lipton and Ravallion, 1995: 2579).

"In particular, PG can be interpreted as ratio of the minimum cost of eliminating poverty with perfect targeting to the maximum cost with no targeting" (Lipton and Ravallion, 1995: 2579).

"Poverty intensity, represented as P_1, measures the poverty gap, or average shortfall from the poverty line" (Shaffer, 1998: 2121).

"The so-called 'poverty gap'...is the aggregate short-fall of the income of all the poor taken together from the poverty line" (Sen, 1976:220).

"It is...completely insensitive to the *number* of people (or the percentage of people) who are poor, sharing a given poverty gap" (Sen, 1976:220).

"The measure for α=1. This is the average poverty gap in the population, expressed as a proportion of the poverty line...Thus a value of P_1 = 0.1 means that the aggreagte deficit of the poor relative to the poverty line, when averaged over all households (whether poor or not), represents 10 percent of the poverty line (P_1/P_0 is the mean poverty gap of the poor as a proportion of the poverty line)" (Ravallion and Huppi, 1991:61).

"The poverty gap expresses the summed proportionate income shortfall of the poor per head of the total population. It can be considered as an income gap ratio for the whole population in which the non-poor are assigned an income shortfall of zero. The poverty gap is equivalent to the product of the headcount ratio and the income gap ratio, ie. PG=HI" (Scott, 1999:8-9).

Income Gap Ratio (I)

"The poverty gap is silent on the number of people who share this gap, but can be easily normalized into a per-person percentage gap *I*, which we shall call the 'income-gap ratio'" (Sen, 1976:223).

$$I = \sum\frac{g_i}{qz} = \sum\frac{z - y_i}{qz}$$

"While the head-count ratio tells us the percentage of people below the poverty line, the income-gap ratio tells us the percentage of their mean short-fall from the poverty level. The head-count ratio is completely insensitive to the *extent* of the poverty short-fall per person, the income-gap ratio is completely insensitive to the *numbers* involved. Both should have some role in the index of poverty. But *H* and *I* together are not sufficiently informative either, since neither gives adequate information on the exact income distribution among the poor. Further, neither measure satisfies...the requirement of putting a greater weight on the income gap of the poorer person" (Sen, 1976:223).

"The widely used *income gap ratio* is I = I - μ^p / z = PG/H, where μ^p is the mean y of the poor: this measures the average proportionate shortfall below the poverty line. However, it can be a deceptive measure. If a poor person with a standard of living above μ^p escapes poverty then the income gap ratio will *rise*, yet no-one is worse off, and one of the poor is actually better off. PG is a better measure" (Lipton and Ravallion, 1995: 2579).

"A drawback of PG and I is that they neglect inequality among the poor; they may not capture differences in the *severity* of poverty. For example, consider two distributions of consumption for four persons: the A distribution is (1, 2, 3, 4) and the B is (2, 2, 2, 4). For a poverty line z = 3, A and B have the same value of PG = 0.25 (= [(3-1)/3 +(3-2)/3]/4 for A). However, the poorest person in A has only half the consumption of the poorest in B. The poverty gap will be unaffected by a transfer from a poor person to someone who is less poor. This will require that the poverty measure is not only decreasing in y, but is strictly convex from below (PG is only weakly convex)" (Lipton and Ravallion, 1995: 2579).

"The income gap ratio measures the average intensity of poverty. It expresses the income shortfall between the poverty line and the average per capita income of the poor as a proportion of the poverty line. Thus, the income gap ratio reveals how poor the average poor household is and complements the headcount ratio" (Scott, 1999:8).

Squared Poverty Gap (SPG)

$$P_2 = \frac{1}{n}\Sigma\left(\frac{z - y_i}{z}\right)^2$$

"The squared poverty gap (SPG) index of Foster-Greer-Thorbecke (FGT)(1984)...is strongly convex. In the above example of A and B distributions, SPG is $[(2/3)^2 + (1/3)^2]/4 = 0.14$ for A and 0.08 for B, indicating the greater severity of poverty in A" (Lipton and Ravallion, 1995: 2579).

"Poverty severity, represented as P_2, is a distributionally sensitive measure of the poverty gap so that greater weight is attached to larger poverty gaps" (Shaffer, 1998: 2121).

"P_2 is defined as the mean-squared proportionate gap in a population, where the proportionate poverty gap of a poor person is given by the distance they fall below the poverty line, expressed as a proportion of that line, while that of a non-poor person is defined to be zero...This is a distributionally sensitive poverty measure in that an income transfer from someone who is poor to someone who is poorer will decrease measured poverty; thus the measure satisfies the *Transfer Axiom*, introduced by Sen (1976)...With perfect information, the optimal transfer function for any distributionally sensitive poverty measure, such as P_2, is a *step-wise targeted transfer scheme*. Under such a scheme, transfers are allocated first to the poorest household until that household is raised to the level of the second poorest household (this, incidentally, is the approach to poverty alleviation (*antyodaya*) advocated by Mahatma Gandhi). Thereafter, transfers are equally distributed between the two households until both are raised to the level of third poorest household and so on until the transfer budget is exhausted. Each level of the transfer budget will therefore implicitly define a corresponding minimum post-transfer living standard to which all households whose perceived pre-transfer welfare levels lie below this minimum, are raised" (Chaudhuri and Ravallion, 1994:375-6).

"The measure for α=2. Unlike the other two, this measure is sensitive to the distribution of income among the poor. It satisfies the main axioms for a desirable poverty measure in the literature, including Sen's (1976) 'transfer axiom', which requires that when a transfer is made from a poor person to someone who is poorer, the measure indicates a decrease in aggregate poverty. Its desirable properties make it our preferred measure" (Ravallion and Huppi, 1991:61).

"The squared poverty gap sums the squares of the proportionate income shortfalls of the poor and normalises it by size of population. The P2 measure has two advantages. Firstly, the index staisfies a larger number of normative axioms than most other poverty indices. Unlike H and I, P2 is sensitive to changes in income distribution among the poor. Secondly, the P2 measure is additively decomposable. This is valuable for empirical work because it allows the extent of poverty in the overall sample to be expressed as the weighted sum of poverty in each locality" (Scott, 1999:9)

References

Baulch, B., 1996. 'Neglected Trade-Offs in Poverty Measurement', IDS Bulletin, Vol.27, No.1, pp.36-42.

Chaudhuri, S. and M. Ravallion, 1994, 'How well do static indicators identify the chronically poor?', Journal of Public Economics, No.53, pp.367-94.

Coulombe, H. and A. McKay, 1996, 'Modelling Determinants of Poverty in Mauritania', World Development, Vol.24, No.6 , pp.1015-1031.

Foster, J., Greer, J. and E. Thorbecke, 1984, 'A Class of Decomposable Poverty Measures', Econometrica, Vol.52, No.2, pp.761-766.

Grootaert, C. and R. Kanbur, 1995, 'The Lucky Few Amidst Economic Decline: Distributional Change in Côte d'Ivoire as seen through Panel Data Sets, 1985-88', Journal of Development Studies, Vol.31, No.4, pp.603-19.

Lipton, M. and M. Ravallion, 1995, 'Poverty and Policy' in Behrman, J. and T.N. Srinivasan (Eds), Handbook of Development Economics, Vol.3B, Amsterdam: Elsevier.

Ravallion, M., 1996, 'Issues in Measuring and Modelling Poverty', The Economic Journal, Vol. 106, September, pp.1328-1343.

Ravallion, M. and M. Huppi, 1991, 'Measuring Changes in Poverty: A methodological case study of Indonesia during an adjustment period', The World Bank Economic Review, Vol.5, No.1, pp.57-82.

Sen, A.K., 1976, 'Poverty: An ordinal approach to measurement', Econometrica, Vol.44, No.2, pp.219-231.

Scott, C.D., 1999, 'Mixed Fortunes: A Study of Poverty Mobility Among Small Farm Households in Chile, 1968-1986', Paper presented at the IDS/IFPRI Workshop on Economic Mobility and Poverty Dynamics in Developing Countries, 7-8 April 1999, Brighton: Institute of Development Studies.

Shaffer, P., 1998, 'Gender, Poverty and deprivation: Evidence from the Republic of Guinea', World Development, Vol.26, No.12, pp.2119-2135.