

DEPTH OF POVERTY IN AN INFORMAL SETTLEMENT IN THE VAAL REGION, SOUTH AFRICA

Authors:

Wilna Oldewage-Theron¹
Tielman J.C. Slabbert²

Affiliations:

¹Institute of Sustainable Livihoods, Vaal University of Technology, South Africa

²School of Economics, North-West University, Vaal campus, South Africa

Correspondence to:

Wilna Oldewage-Theron

email:

wilna@vut.ac.za

Postal address:

Institute of Sustainable Livihoods, Vaal University of Technology, Vanderbijlpark 1600, South Africa

Keywords:

household; food insecurity; informal settlements; poverty; socio-demographics

Dates:

Received: 22 May 2009

Accepted: 17 Nov. 2009

Published: 19 May 2010

How to cite this article:

Oldewage-Theron, W. & Slabbert, T.J.C., 2010, 'Depth of poverty in an informal settlement in the Vaal region, South Africa', *Health SA Gesondheid* 15(1), Art. #456, 6 pages. DOI: 10.4102/hsag.v15i1.456

This article is available at:

<http://www.hsag.co.za>

© 2010. The Authors.
Licensee: OpenJournals Publishing. This work is licensed under the Creative Commons Attribution License.

ABSTRACT

Despite the large number of people currently living in poverty in sub-Saharan Africa, the debate about the definition and meaning of poverty continues. Two distinct problems exist regarding the measurement of poverty, namely the difficulty of identifying the poor in a population and the difficulty in developing an index for the measurement of poverty. The main objective of the survey was to apply a poverty model for determining the depth of poverty in an informal settlement in the Vaal Region, as well as the impact of possible income-generating activities on the community. A questionnaire, which had been devised for measuring poverty indicators, was administered to 429 randomly selected households in the informal settlement, with the poverty model being applied to measure the degree of poverty. The results of the survey showed that 286 households lived in poverty at the time. The impact of extra income on the poverty levels of these 286 households was then determined. The results of the survey also showed that the unemployment level was 91% and that the mean monthly income was R612.50. The average poverty gap was R1017.21, with the poverty gap ratio being 56%. The poverty model showed that an increase of R500 in monthly household income resulted in a poverty gap ratio of 35%. The results indicated that the community was a poverty-stricken community, suffering from chronic food insecurity. The results of the study will be used to facilitate the planning and implementation of sustainable, income-generating, community-based interventions aimed at promoting urban food security and alleviating poverty in the community in question.

OPSOMMING

Ten spyte van die groot hoeveelheid mense wat steeds wêreldwyd in armoede leef, duur die debat oor die definisie en betekenis van armoede nog altyd voort. Daar word twee definitiewe probleme met die meting van armoede ervaar, naamlik die identifisering van die armes in 'n gemeenskap, en die ontwikkeling van 'n indeks vir die meet van armoede. Die hoofdoel van hierdie studie was om 'n armoedemodel vir die dieptemeting van armoede in 'n informele nedersetting in die Vaal-area toe te pas, en om die impak van maontlike aktiwiteite wat inkomste genereer in dieselfde gemeenskap te bepaal. 'n Vraelys wat ontwerp is om armoede aan te dui en te meet is ewekansig aan 429 huishoudings in die informele nedersetting uitgedeel om te voltooi en die armoedemodel is toegepas om die diepte van armoede te meet. Die resultate het getoon dat 286 huishoudings in armoede leef. Die impak van ekstra inkomste op armoedevlakke is in die 286 huishoudings bepaal. Die resultate het verder getoon dat die werkloosheidsvlak 91% was en dat die gemiddelde maandelikse huishoudelike inkomste R612.50 was. Die gemiddelde armoedegaping was R1017.21, met 'n armoedegapingverhouding van 56%. Die armoedemodel het getoon dat 'n verhoging van R500 in maandelikse huishoudelike inkomste die armoedegapingverhouding na 35% verlaag het. Die resultate het bewys dat hierdie 'n armoedige gemeenskap met kroniese voedselonsekerheid was. Die uitkoms van die studie sal gebruik word vir die beplanning en implementering van gemeenskapgebaseerde ingrypings om volhoubare inkomste te genereer om stedelike voedselosekerheid te bevorder en die armoede in hierdie gemeenskap te verlig.

INTRODUCTION

Although Millennium Development Goal (MDG) One aimed to halve the degree of poverty suffered at the time at which the Goals were compiled in the fifteen years from 1990 to 2015, during the 1990s the number of people in sub-Saharan Africa who had been found to be living below the poverty line of US\$1 per day, in fact, increased. Increasingly, more people in sub-Saharan Africa can, therefore, be seen to have come to suffer from hunger and undernourishment. The degree of poverty suffered is clearly on the increase in sub-Saharan Africa (Foeken & Owuor 2008:1978). Furthermore, it is expected that the health of the poor could be negatively affected by poor dietary intake, inadequate sanitation facilities and lack of effective access to health services (Armstrong, Lekezwa & Siebrits 2008:20). In South Africa in 2004, the Human Sciences Research Council reported that 'the proportion of people living in poverty in South Africa has not changed significantly between 1996 and 2001... [and] those households living in poverty have sunk deeper into poverty and the gap between rich and poor has widened' (Schwabe 2004:1).

Nevertheless, the debate about the definition and meaning of poverty continues (Bhorat *et al.* 2001:41; Ngwane, Yadavalli & Steffens 2001:201), as poverty has different meanings for different people, including the poor. The consensus is, however, that poverty is usually characterised by the inability of individuals, households or communities to attain at least an acceptable minimum standard of living, due to a lack of resources (Ngwane *et al.* 2001:201). The concept of poverty can, therefore, be defined as referring to several different forms of deprivation, such as a lack of resources, including the lack of income, housing and health facilities, as well as a lack of knowledge and education. Poverty is, furthermore, characterised by living in neighbourhoods with poor institutions and weak social norms, which might exacerbate the resultant poor levels of nutrition and health (Rosalina *et al.* 2007:135).

Poverty is usually measured in two different ways – namely, by (a) identifying the number of poor in a population and by (b) developing an index for measuring the degree of poverty suffered (Hargreaves *et al.* 2005:213; Ngwane *et al.* 2001:202). Several approaches have been followed in this regard, including either that of earnings or expenditure, allowing for the definition of a poverty line, or the use of resources as a measure of poverty, in terms of which ‘standard of living’ is used as a criterion for measurement (Bhorat *et al.* 2001:41–42; Hargreaves *et al.* 2005:213; Ngwane *et al.* 2001:202–203). Three measures are usually employed for the determination of the poverty line – namely, direct energy intake, food energy intake, and the cost of basic needs (Rosalina *et al.* 2007:135). Statistics South Africa (SSA) currently uses household income (or expenditure) data obtained from the 2001 census, in addition to a standard poverty line, to map out or measure the degree of poverty experienced in South Africa (SSA 2000b:9–13, 2003). In general, many of the inhabitants of the developing nations experience a low standard of living, which is manifested in the presence of a low income, poor health, illiteracy, and the experiencing of a general sense of hopelessness.

Recently, the degree of urban poverty existing in developing countries, including South Africa, has increased dramatically (Motloung & Mears 2002:531; Schwabe 2004:1). Such a degree of urban policy is particularly true for the Vaal Region, which is the industrial hub of Gauteng province. The Region, which is situated approximately 70 km south of Johannesburg, has a population of 794 599 people, of whom 48% are unemployed and where 46% of households live in poverty (McIlrath & Slabbert 2003). The results of a baseline survey conducted in 340 randomly selected households of a black informal settlement ($n = 1261$) in the Vaal Region showed that 90% of the households resided in a non-permanent zinc shack and had been living like this for more than five years (89%) (Oldewage-Theron *et al.* 2005:24; Oldewage-Theron & Slabbert 2008:93). Such a percentage is high, especially when it is compared to 25.3% of all households who live in informal settlements in the rest of South Africa (Armstrong *et al.* 2008:17). Furthermore, 94% of the female respondents and 80% of their spouses were found to be unemployed (Oldewage-Theron *et al.* 2005:24; Oldewage-Theron & Slabbert 2008:93). The majority of the respondents (59%) indicated that they had been unemployed for more than three years. Only a small percentage (10%) were of retirement age (60 years and older), thus indicating that the unemployed living in the community were, at the time of the study, capable of being economically active. The majority of the households (58%) in the area were found to earn an income of less than R1000 per month, which indicated that the members of such households were, at that stage, living in poverty (Oldewage-Theron *et al.* 2005:24; Oldewage-Theron & Slabbert 2008:93). This finding was consistent with the finding that 54.8% of blacks lived in poverty in South Africa at the time (Armstrong *et al.* 2008:12).

Most of the respondents in the above survey indicated that they bought food only once a month (62%), and that the food was mainly (56%) procured from the local spaza or tuck shop in the area. Most of the households (58%) concerned were found to spend less than R100 per week on food. Taking into consideration that the average household size was 4.9 people, on average less than R2.90 per person per day was found to be being spent, which was well below the World Health Organisation’s poverty guideline of \$US1 per person per day at the time (Oldewage-Theron *et al.* 2005:25; Oldewage-Theron & Slabbert 2008:93). Such lack of household food security, as a result of the poverty experienced in the community, resulted in the compromising of the health and nutritional status of most of the households concerned, which were found to consume a largely carbohydrate-based diet, which was deficient in nutrients, apart from carbohydrates (Oldewage-Theron *et al.* 2005:25; Oldewage-Theron & Slabbert 2008:93).

Globally, the data reflecting trends in urban nutritional status are scarce, with little research having been undertaken into issues of urban poverty, food insecurity and malnutrition. Such a paucity

of studies in this regard is mainly due to the fact that studies of the rural areas were prioritised in the past, because that is where poverty mainly occurred in the developing world. Furthermore, the data made available by long-term urban studies are scant, leading to a lack of understanding about the coping mechanisms that households adopt for dealing with shocks related to their fluctuating levels of poverty (Haddad, Ruel & Garrett *et al.* 2001:1).

For purposes of the current study, a confidentiality clause was included in the agreement signed between the community and the researchers concerned, which prevents the name of the settlement being mentioned in any publication; therefore, the community in question will be referred to as ‘an informal settlement’ existing within the Vaal Region. The current crisis in the South African health care situation has resulted from a combination of such factors as the legacy of apartheid, poverty and income inequality (Mooney & McIntyre 2008:637). In the study, the depth of poverty experienced in the informal settlement community was determined and the possible effect of planned interventions aimed at reducing the levels of poverty was measured by means of the application of a poverty model (Slabbert 2004:55–58). The study is aimed at providing sufficient data that will assist local government to reduce the amount of poverty, disease, malnutrition and illiteracy in the Region, as well as at hastening urban development in the Vaal Region.

The following research questions were posed in terms of the present study:

- Which specific poverty indicators, in the form of literacy levels, unemployment numbers and actual income figures, were found to contribute to poverty in the community under survey?
- What was the depth of poverty, measured in terms of the headcount index and the poverty gap, in the community under survey?
- How might income-generating activities positively influence the headcount index and poverty gap in the community under survey?

RESEARCH METHOD AND DESIGN

Population and sampling

Prior to the implementation of the study, the researchers arranged a public meeting with the community leaders, as well as with all the household members, to explain the objectives of the project, to acquire verbal consent for the project to be undertaken, and to introduce the fieldworkers to the participants in the study. A power calculation (in terms of the Survey System) was done to determine the sample size. The Survey System is a complete survey software package for all types of research and is available for use on internet without any costs. The study was found to require a total of 407 respondents to obtain statistically representative data at 95% confidence interval and 4% confidence level. The random selection of 429 households for inclusion in the study represented the selection of 34% of the informal settlement population under survey. The additional 22 households ($\pm 2\%$) were selected to provide for any possible dropout that might occur during the project. All the households in the settlement were included in the sample, with no exclusion criteria being used. A map for the informal settlement, which was obtained from the Sedibeng Municipality, was used. Every third household was selected for inclusion in the sample. The female participants in the study were required to complete the socio-demographic questionnaires, as they were responsible for the procurement and preparation of food for each household, as well as for the child care concerned (Oldewage-Theron *et al.* 2005).

Measuring instrument

The multiple-choice questionnaire, which was developed in English, included such specific poverty indicators as literacy



levels, unemployment numbers and actual income figures. The questionnaire was pilot-tested on 20 households, to which it was administered weekly over a period of four weeks. The data were captured and analysed for internal consistency by means of the application of a Cronbach's alpha statistical analysis. Based on an alpha ranging from 0.64 to 0.92, the internal consistency of the questionnaire was assumed, prior to its reproduction for purposes of data collection.

Data collection and statistical analysis

The questionnaire was completed during one-on-one interviews with the 429 caregivers (consisting of the mother or the grandmother) of the households concerned, who formed part of the random sample. The questionnaires were completed with the assistance of four trained fieldworkers who spoke the various indigenous languages of South Africa and who were recruited from among VUT postgraduate students. The data were captured on a Microsoft Excel® spreadsheet and analysed to obtain descriptive statistics (the means, standard deviations and frequencies) in terms of the Statistical Package for Social Sciences (SPSS), version 10.0. Slabbert's poverty model (2004:55–58), was then applied to the data that had been collected, in order to measure the degree of poverty experienced in the community under survey.

RESULTS

Determination of unemployment

SSA defines the unemployed as 'those people within the economically active population who (a) did not work during the seven days prior to the interview, (b) want to work and are available to start within a week of the interview and (c) have taken active steps to look for work or to start some form of self-employment in the four weeks prior to the interview' (SSA 2000a). Such broad criteria were translated into criteria that were statistically meaningful, namely (a) the population of potentially employable individuals (namely, those 15 years of age and older) in the community under survey, (b) the number of economically non-active people, who are those who do not want to, or those who cannot, work outside the home, such as housewives, retired people, and the disabled and (c) the economically active population, including all those who are fit to work, who wish to work, who are unemployed, and who are prepared to and who are actively looking for, work, as well as those who are either employed by someone else, or who are self-employed.

The unemployment rate (U_r) was then calculated according to the standard equation:

$$\frac{\text{Number of unemployed}}{\text{Economically active population (EAP)}} \times \frac{100}{1} = U_r \quad [\text{Eqn 1}]$$

The current study took only one factor into consideration in terms of seeking employment – namely, whether or not a person 'had the desire to work and was able to take up employment or self-employment'. The question that was asked to determine the outcome to such a factor was 'Do you want to work?' (Oldewage-Theron & Slabbert 2008:94). When applying the standard SSA definition and relaxing the strict criteria by excluding the economically active population from the definition of unemployment – as was carried out in the case of the current study – such a definition of unemployment is regarded as expanded (SSA 2000a:xv).

The term 'employed', as used in the current study, was used to refer to those who were found to have performed work for pay, profit or family gain during the seven days prior to the survey interview, or to those who were absent from work during the seven days of the duration of the study, but who returned to paid work after such time (SSA 2000a). The definition was also simplified, with the question that was asked to measure such a factor being: 'Do you work for a company (formal employment),

or for yourself or for your family (informal sector)?' (Slabbert & Slabbert 2002:17).

Determining the extent of poverty

The definition of a poor household, according to World Bank (1990) guidelines, is 'a household of which the combined income of all its members is less than a specific poverty line'. The fraction of the population below the poverty line is defined as the headcount index, which is described by the following equation:

$$H(y;z) = M/N \quad [\text{Eqn 2}]$$

Where: H = the fraction of households below the poverty line
 y = the household income
 z = the household poverty line
 M = the number of households with incomes less than z
 N = the total number of households.

SSA uses the household income (or expenditure) data obtained from the 1996 and 2001 censuses, together with a standard poverty line, to map out, or measure, the extent of poverty that is currently experienced in South Africa (SSA 2000b:9–13, 2003). The household income is calculated by accumulating the individual incomes (namely, the proxy value) of all the household members concerned. Such a result is then reallocated to an income category, in terms of which the proxy values of the household were calculated as being the income of the household concerned. To determine whether the household concerned was poor or not, the calculated household income was then compared to the poverty line, with the household being considered poor when its income was found to be under the poverty line. Applying such a methodology to the data that are available on a country-wide scale for the mapping of poverty (SSA 2000b:25–51) may provide reasonably accurate results. However, when such a methodology is applied at a micro level in order to analyse the extent of poverty experienced in a specific community (in terms of South Africa's second economy), inaccurate results are obtained. Such inaccuracy is due to households with a relatively high combined income being classified as non-poor, while, in reality, the household may be poor due to the large number of household members that exist. The opposite could also be true, in that a small household with a relatively low income may be classified as poor, whereas it is not so, due to the relatively low number of household members.

Relating the *actual* income of each household to where it stands in relation to the poverty line, *calculated for the specific household concerned*, based on the number of household members, their ages and gender, provides a more accurate way of assessing the degree of poverty experienced. Slabbert's (2004:55–58) method employs the household subsistence level (HSL), as defined by Potgieter (1980:4), for such a purpose. Based on the data collected at household level, the HSL can, in terms of such an approach, be determined for a specific household as follows: if the combined income of a household is described by y_i and the poverty line (in terms of the HSL) of the same household is described by z_i , the extent of poverty, P_i , of this household is described by $P_i(y_i; z_i)$ (Oldewage-Theron & Slabbert 2008:95).

The headcount index can be defined as the fraction of the households that fall below the poverty line that is determined in each case. Such a definition can be described by means of the following equation:

$$H_a(y_i; z_i) = M_a/N_a \quad [\text{Eqn 3}]$$

Where: H_a = the actual fraction of households below the poverty line
 y_i = the actual income of a household
 z_i = the poverty line of the household concerned
 M_a = the number of households with incomes less than z_i
 N_a = the total number of households.

In addition, the poverty gap measures the average deficit in the income of the poor in relation to the poverty line, whereas the poverty gap index measures the extent of the deficit of income below the poverty line. The methodology which is used by SSA, in terms of the above description does not lend itself to the measurement of the poverty gap as, in terms of such description, the household income is not accurate, but is rather the proxy value which is allocated for the category in which the household falls. The poverty gap index which is adapted to be the measure of a specific household is described by the following equation:

$$R_i(y; z) = (z_i - y_i) / z_i \quad [\text{Eqn 4}]$$

Where: R_i = the income shortfall of a household, which is expressed as a proportion of the household's poverty line
 y_i = the income of a specific household
 z_i = the poverty line of a specific household.

The poverty gap of an individual household (in monetary terms) can, in such terms, be calculated by means of applying the following equation:

$$G_i(y; z) = z_i - y_i \quad [\text{Eqn 5}]$$

Where: G_i = the income shortfall of a household
 y_i = the income of a specific household
 z_i = the poverty line of a specific household.

The three equations which are given above indicate that the poverty gap can only be reduced by increasing the household income concerned.

Measuring the impact of certain projects on levels of poverty and unemployment

The use of household or community income-generating and public work programmes for creating job opportunities could lead to such a supplementation of existing levels of household income that the headcount index for the population concerned might be significantly decreased. If the number of unemployed persons in a household is described by u_i , and they can earn an income from working on specific projects to the average monetary value of W , the poverty gap G_i of a single household could be reduced by the amount answering the following equation (Oldewage-Theron & Slabbert 2008:95):

$$G_i - (u_i W) \quad [\text{Eqn 6}]$$

or

$$z_i - (y_i + u_i W) \quad [\text{Eqn 7}]$$

Where: u_i = the number of unemployed members in a household
 W = the average wage earned by unemployed members of households, as the result of an employment creation scheme.

An income-generating project that is provided with seed-funding and which is aimed at the unemployed poor could have an immediate effect on the levels of poverty experienced, as the implementation of such a project would be likely to result in the reduction of the poverty gap concerned. In order to have a significant effect on the poverty levels concerned, the headcount index should also be reduced. The success of an employment creation or income-generating programme is measured by the extent to which the associated head-count index is reduced. To reduce the head-count index, the poverty gap of a household or households should be rendered zero or negative. Such a condition is described by the following equation of Oldewage-Theron and Slabbert (2008:96):

$$G_i - (u_i W) \leq 0 \quad [\text{Eqn 8}]$$

Where: G_i = the poverty gap of a single household
 u_i = the number of unemployed members in a household
 W = the average wage earned by unemployed members of households, as the result of an employment creation scheme.

The larger the number of households satisfying such a condition is, the smaller the headcount index is.

The data which were gleaned by means of the current survey in relation to the informal settlement concerned helped to determine the impact of household food gardens on the levels of poverty experienced in the community. The data provided all the information that was needed to test the models concerned, including the age and gender of the household members, which was required to enable the determination of the individual poverty line, in terms of z for each individual household; the combined income of each individual household (y); as well as the number of unemployed members in a household (u) (Oldewage-Theron & Slabbert 2008:96; Slabbert 2004:55).

ETHICAL CONSIDERATIONS

Ethics approval was obtained for the study from the Vaal University of Technology (VUT) Ethics Committee. The protocol was submitted in accordance with the existing policy governing research at the University of Technology. In addition, the South African Medical Research Council ethics guidelines for research on human beings were followed.

DISCUSSION OF RESULTS

The results of the study discussed in this article show that 286 households (67.7% of the total number of households) were found to be living in poverty. Most of the households were found to be female-headed (56%), with 24% of the households having no parent present, but only a caregiver, and with 10% of the total number of households being found to be grandparent-headed. The mean monthly income was found to be R612.50 per month. In 87% of the households, only one person contributed to the household income. The results further indicated that most of the respondents were illiterate, as 21% had never attended school, and 50% and 29% indicated that they had attended only primary or both primary and secondary school, respectively (Oldewage-Theron & Slabbert 2008:93).

When applying the equations described above, in the section on 'determination of unemployment', the degree of unemployment in the informal settlement was found to be 91% (Oldewage-Theron & Slabbert 2008:94). Out of a total of 429 households in the settlement, 286 were found to be earning less than their respective poverty lines, giving a headcount index of 0.67, indicating that 67% of the households concerned were found to be living in poverty (Oldewage-Theron & Slabbert 2008:95). The poverty gap index for the households in the informal settlement surveyed was determined at 0.56, indicating that the households, on average, had a 56% deficit in income in respect of maintaining a level of income that would have been equal to their respective poverty lines (Oldewage-Theron & Slabbert 2008:95). The amount of the average poverty gap in the settlement was R1017 per month (Oldewage-Theron & Slabbert 2008:95), indicating the average monthly deficit in income in respect of maintaining a level of income equal to the poverty line (Slabbert 2004: 56).

Measuring the impact of projects on the depth of poverty in the informal settlement surveyed, it was found that an income-generating project, which would save each of the households concerned R300 per month, could result in the headcount index being reduced from 0.67 to 0.59. The poverty gap ratio would,



furthermore, be reduced from 0.56 to 0.35 and the average monthly poverty gap from R1017 to R821. With a monthly addition of R500 to the household income, the headcount index would drop to 0.50, whereas the poverty gap index would drop from 0.56 to 0.35, indicating a significant alleviation of the levels of poverty that are currently experienced in the informal settlement (Oldewage-Theron & Slabbert 2008:96).

CONCLUSIONS AND RECOMMENDATIONS

For amendment of related policy

The levels of health that are experienced in a country are linked to the national levels of economic growth. The former, therefore, have been identified as being important contributors to economic growth (World Bank 2007:20). Health and nutrition play a pivotal role in economic and human development, as well as in poverty alleviation (World Bank 2007:12). Those most at risk of hunger and undernourishment are children and women (FAO 2009:1), as well as the poor, the landless and those living in female-headed households (FAO 2008:2). Such individuals are all present in the community under review.

The corollary of this situation also holds true, in that poverty is one of the main factors affecting levels of health in South Africa (Mooney & McIntyre 2008:637). Extensive poverty has lasting harmful effects on society, as such poverty results in hunger, malnutrition, poor physical status and increased health care costs, which undermines economic growth at large. In addition, poverty negatively affects cognitive functioning, leading to the inattentiveness of learners, which militates against their later success (World Bank 2007:70). The World Bank (2006:2) has indicated that malnutrition, as a result of hunger, can contribute to a loss of 2%–3% of the gross domestic product, with the treatment of such a condition being a costly drain on the national economy, specifically in terms of the health budget. The improvement of nutritional status is thus essential to alleviating levels of extreme poverty (World Bank 2007:70).

The findings of the current study confirmed that poverty was prevalent throughout the urban community surveyed, as defined by the headcount index of 0.67, indicating that 67% of the households were found to be living in poverty (Oldewage-Theron & Slabbert 2008:96). Such a high prevalence of poverty was compared to the poverty rate of 28.8% for Gauteng. However, 65.1% of all households in South Africa, representing 58.8% of the total population, have been found to dwell in urban areas (Armstrong *et al.* 2008:9). Such findings are consistent with those of the current study. The poor standard of living in developing countries is usually manifested by the presence of those earning a low income, who tend to be in poor health, with little or no education, and characterised by a general sense of hopelessness (Motloung & Mears 2002:531). In the community under survey, it can be concluded that the existence of households with a low standard of living confirmed the prevalence of poverty in the area, resulting in household food insecurity and accompanying malnutrition (Oldewage-Theron *et al.* 2005:25).

The level of unemployment in the settlement was extremely high, with 91% of those who were employable, and willing to work, outside the home, not being able to find work. Income-generating activities in the informal settlement are, therefore, of great importance to it. The World Bank (2006:16) has recommended focusing strategies and actions on the poor in order to alleviate their malnutrition and to improve their health by means of human development, which may not, necessarily, be related to financial remuneration as such. With the need for food being one of the most basic needs experienced by humankind, it is assumed that a person or household is poor when food intake is sacrificed due to the lack of resources or income (Rosalina *et al.* 2007:145). Those professionals who are concerned with economic development have questioned whether individuals can be sufficiently empowered within their local communities to move

from a position of having to receive food-aid relief to a situation in which they are able to contribute to helping to remove the underlying causes of food shortages (Chaiken, Deconinck & Degefeet *al.* 2006:95). The development of agriculture has a definite role to play on the international front, in respect of the 1.1 billion people who, globally, are still living on less than US\$1 per day (Weinberger & Lumpkin 2007:1464), as well as, more locally, in the community surveyed. The practice of agriculture within an urban setting should contribute to household food and nutrient security, to employment creation, and to household income. Such a contribution can be made as a result of selling surplus produce, as well as a result of saving on the purchasing of food (Foeken & Owuor 2008:1979; Weinberger & Lumpkin 2007:1468–1472). The possible effect of income generation interventions on the alleviation of poverty was demonstrated in the study reviewed in the current article. The study showed that interventions can be planned for reducing levels of urban poverty by addressing issues relating to both malnutrition and household food insecurity simultaneously. Increased agricultural productivity is closely related to the reduction of poverty (FAO 2008:34), and although the 'livelihood concept' was developed for rural areas, its applicability to poor urban areas has started to become increasingly recognised, too. Both recognising the multiple sources from which a cash income can be derived, as well as agricultural development, have come to be seen as two major coping strategies that can be adopted on behalf of the urban poor (Foeken & Owuor 2008:1978).

Several of the food products that are consumed in the informal settlement under review could be produced locally. The possibility of producing some such products by means of labour-intensive technologies in and around the settlement needs to be investigated. Such an *inward industrialisation process* should be linked to the pool of skilled, semi-skilled and unskilled labour that exists in the ranks of the unemployed. The formation of cooperatives, which are capable of producing such products as food and clothing, calls for investigation. Resources and support for such ventures might be obtainable from the industrial sector, or from local government. The following actions are recommended in this regard:

- A project steering committee should be formed, comprising members from the informal settlement, as well as from local government, the industrial sector and tertiary institutions.
- Detailed information should be obtained regarding which products are currently consumed, as well as what the skills of the unemployed are. Such compilation of information should lay the way for the drawing up of a business plan for the area, based on the community's own resources, skills and location.
- The use of labour-intensive methods for production purposes should be investigated.

ACKNOWLEDGEMENTS

We hereby thankfully acknowledge the following for their co-operation in the abovementioned project: both the Department of Education and the Department of Health, for their involvement in the Vaal Region, the Sedibeng District Council, VUT and the National Research Foundation, from which we received funding for the project. In addition to the participants from the local community, we wish, furthermore, to acknowledge the valuable contribution to the study made by Verena Nolan with regard to the handling of statistical data. We also wish to thank Carin Napier, Emsie Dicks, Rajab Rutengwe and the field workers who assisted with the relevant data collection.

REFERENCES

- Armstrong, P., Lekezwa, B. & Siebrits, K., 2008, Poverty in South Africa: A profile based on recent household surveys, *Stellenbosch Economic Working Paper*, 04/08, Department of Economics & Bureau for Economic Research, University of Stellenbosch, Stellenbosch.

- Bhorat, H., Leibbrandt, M., Maziya, M., Van der Berg, S. & Woolard, I., 2001, *Fighting poverty labour markets and inequality in South Africa*, Mills Litho, Cape Town.
- Chaiken, M.S., Deconinck, H. & Degefe, T., 2006, 'The promise of a community-based approach to managing severe malnutrition: A case study from Ethiopia', *Food and Nutrition Bulletin* 27(2), 95–104.
- Foeken, D.W.J. & Owuor, S.O., 2008, 'Farming as a livelihood source for the urban poor of Nakuru, Kenya', *Geoforum* 39, 1978–1990.
- Food and Agriculture Organisation (FAO), 2008, *The state of food insecurity in the world*, FAO, Rome.
- Food and Agriculture Organisation (FAO), 2009, *1.02 Billion people hungry*, viewed 30 June 2009, from <http://www.fao.org/news/story/en/item>.
- Haddad, L., Ruel, M.T. & Garrett, J.L., 2001, 'Are urban poverty and undernutrition growing? Some newly assembled evidence', *International Food Policy Research Institute Discussion Paper Briefs* 63, 1–2.
- Hargreaves, J.R., Morison, L.A., Gear, J.S.S., Makhubele, M.B., Porter, J.D.H., Busza, J. et al., 2005, "Hearing the voices of the poor": Assigning poverty lines on the basis of local perceptions of poverty. A quantitative analysis of qualitative data from participatory wealth ranking in rural South Africa', *World Development* 35(2), 212–219.
- McIlrath, L. & Slabbert, T., 2003, *Sedibeng Economic Regeneration Summit*, Sedibeng Municipal Council, Vanderbijlpark.
- Mooney, G.H. & McIntyre, D.E., 2008, 'South Africa: A 21st Century apartheid in health and health care?', *Medical Journal of Australia* 189(11/12), 637–640.
- Motloung, B. & Mears, R., 2002, 'Combating poverty in South Africa', *Development Southern Africa* 19(4), 531–543.
- Ngwane, A., Yadavalli, V. & Steffens, F., 2001, 'Poverty in South Africa – a statistical analysis', *Development Southern Africa* 18(2), 201–215.
- Oldewage-Theron, W.H., Dicks, E.G., Napier, E.C. & Rutengwe, R., 2005, 'Situation analysis of an informal settlement in the Vaal Region', *Development Southern Africa* 22(1), 13–26.
- Oldewage-Theron, W.H. & Slabbert, T.J.C., 2008, 'Impact of food and nutrition interventions on poverty in an informal settlement in the Vaal Region of South Africa', *Proceedings of the Nutrition Society* 67, 91–97.
- Potgieter, J.F., 1980, *Background and interpretation of the household subsistence level*, Institute for Planning Research, Port Elizabeth.
- Rosalina, T., Wibowo, L., Kielmann, A.A. & Usfar, A.A., 2007, 'Food-poverty status and food insecurity in rural West Lombok based on mothers' food expenditure equivalency', *Food and Nutrition Bulletin* 28(2), 135–148.
- Schwabe, C., 2004, 'Fact sheet: Poverty in South Africa. Pretoria: GIS Centre, Human Sciences Research Council', viewed 13 October 2009, from <http://www.sarpn.org.za/documents/d0000990/>.
- Slabbert, T.J.C. & Slabbert, G., 2002, 'Emfuleni Municipal Area (EMA): Urban economic review and projection of local economic sustainability', *Research Report*, No. 10, Vaal Research Group, Vanderbijlpark.
- Slabbert, T.J.C., 2004, 'An investigation into the state of affairs and sustainability of the Emfuleni economy', DCom thesis, Department of Economics, University of Pretoria.
- Statistics South Africa (SSA), 2000a, 'October household survey 1999', *Statistical Release P0137*, Government Printer, Pretoria.
- Statistics South Africa (SSA), 2000b, *Measuring poverty in South Africa*, Government Printer, Pretoria.
- Statistics South Africa (SSA), 2003, *Methodology for measuring poverty in South Africa*, Government Printer, Pretoria.
- Survey System, n.d., *Sample size calculator*, viewed 21 July 2006, from <http://www.surveysystem.com/ssformu.htm>.
- Weinberger, K. & Lumpkin T.A., 2007, 'Diversification into horticulture and poverty reduction: A research agenda', *World Development* 35(8), 1464–1480.
- World Bank, 1990, *Poverty*, Oxford University Press, Washington D.C.
- World Bank, 2006, *Repositioning nutrition as central to development – a strategy for large-scale action*, World Bank, Washington D.C.
- World Bank, 2007, *Healthy development – the World Bank strategy for health, nutrition and population results*, World Bank, Washington D.C.