FEASIBLE INDICATORS FOR MONITORING THE PERFORMANCE OF EQUITY-SHARE SCHEMES IN SOUTH AFRICAN AGRICULTURE

by

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ABSTRACT

This study aims to develop a robust methodology for measuring the performance of equity-share schemes in South African agriculture. Equity-share schemes are privately owned farming operations that are generally restructured as companies with the original owner and the farmworkers as shareholders. Several studies have investigated various aspects of the performance of these schemes but no single study has yet measured their performance using a comprehensive and objective set of criteria. Four categories of criteria are proposed: poverty alleviation; empowerment and participation; institutional arrangements and governance; and financial performance. This study does not aim to assess the performance of existing equity-share schemes rather a methodology for the four criteria based on empirical evidence gathered in 2004 from a land reform project in the Midlands of KwaZulu-Natal and seven established equity-share schemes in the Western Cape.
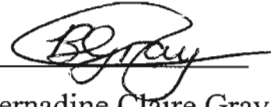
Poverty alleviation is measured using a transition matrix of households grouped by four different symptoms of poverty: current income, wealth, health and a principal component index of housing quality based on building materials, access to safe drinking water and adequate sanitation. Eight categories of indicators are recommended for empowerment and participation: control and ownership; skills transfer; understanding of the structure of the scheme; information; outcomes; trust; outreach; and participation. A scorecard applying norms based on empirical evidence gathered at equity-share schemes in the Western Cape is used to assess the indicators. A scorecard approach is also applied to institutional arrangements and governance, which are measured using three categories of indicators: accountability, transparency and property rights.

Recognised indicators of financial performance are applied to balance sheet and income statement data provided by four of the seven equity-share schemes in the Western Cape. This analysis highlights problems with several of the conventional ratios used to measure the profitability, solvency and growth of recently restructured farming enterprises whose 'empowerment' status attracts exceptionally high levels of debt capital to finance long-term investments. To avoid these problems it is recommended that, for equity-share schemes, profitability should be measured by the return on assets or dividend return; solvency by the debt/asset ratio; liquidity by cash flow projections; growth by changes in the (estimated) real value of shares; and workers' total returns by changes in the sum of the real wage bill, capital gains, dividends, interest and other benefits accruing to workers in aggregate.
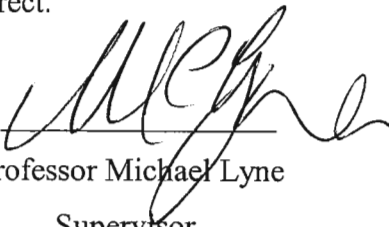
The proposed performance measures are relevant, manageable in number and have feasible norms based on empirical evidence. These indicators and their norms need to be tested on a wider scale and over time. Further research should be undertaken to estimate weights for the empowerment and institutional indicators.
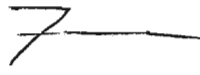
DECLARATION

I hereby certify that, unless specifically indicated to the contrary in the text, this dissertation is the result of my own original work. This dissertation has not otherwise been submitted to any other University for consideration.

Signed _____

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I hereby certify that this statement is correct.

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LIST OF ABBREVIATIONS

AE – Adult equivalent

ANOVA – Analysis of variance

BEE – Black economic empowerment

CA – Cluster analysis

COD – Cost of debt

CPAs – Communal Property Association(s)

DLA – Department of Land Affairs

HCI – Household circumstances index

HII – Household infrastructure index

HSL – Household subsistence level

IOF – Investor-owned firm

km - kilometres

KZN – KwaZulu-Natal

KZN-DEAT – KwaZulu-Natal Department of Environmental Affairs and Tourism

LRAD – Land Redistribution for Agricultural Development

LREF – Land Reform Empowerment Facility

MLL – Minimum living level

PC – Principal component

PCA – Principal components analysis

RDP – Reconstruction and development programme

ROA – Rate of return on assets

ROE – Rate of return on equity

SA – South Africa

SAA – South African Airways

SAWIT – South African Wine Industry Trust

SETA – Sectoral education training authority

SLAG – Settlement/land acquisition grant

SPP – Surplus People's Project

SSA – Statistics South Africa

UIF – Unemployment insurance fund

UOPT – Unlimited Olive People's Trust

INTRODUCTION

A well-planned and implemented process of land reform is important for sustainable economic development in South Africa (SA) (Kirsten *et al.*, 1996). The initial policy document of the Reconstruction and Development Programme (RDP) laid out the scope and content of land reform, stating that the eradication of the apartheid era Land Acts is not sufficient to redress inequities because only a minority of previously disadvantaged people can afford land on the free market (Adams *et al.*, 1999). In 1994 the South African government instituted a programme of land reform which has three components, namely, a market-assisted redistribution programme, land restitution and a tenure reform programme (Kirsten *et al.*, 1996; Cousins, 1997). Progress, however, has been slow. In KwaZulu-Natal (KZN), less than 0.5 per cent of commercial farmland has been transferred to previously disadvantaged[1] owners each year (Lyne & Darroch, 2003: 76). Lyne and Darroch (2003: 83) attribute this slow pace of land reform in part to the relatively high cost of subdivision of land and to cash flow problems associated with conventional mortgage loans.

Equity-share schemes have been proposed as one means of dealing with the slow pace of land and wealth redistribution in South African agriculture. They have also been proposed as a means of dealing with the free-rider problems associated with conventional producer co-operatives and collective ownership of resources (Knight *et al.*, 2003). Group ownership is a trend that is likely to continue in SA because most disadvantaged people cannot afford to purchase their own land privately. Instead they combine their resources and purchase land collectively (Knight *et al.*, 2003). Under these circumstances, equity-share schemes offer institutional arrangements that outperform those of conventional producer co-operatives and

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[1] People who were prohibited from owning land on the basis of race.

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communal property associations (CPAs) (Knight & Lyne, 2002). Equity-share schemes are also useful in farming situations where subdivision of land is not feasible (McKenzie, 1994; Eckert *et al.*, 1996).

Equity-share schemes are privately owned farming operations that are generally restructured as companies with the original owner and the farmworkers as shareholders (Knight & Lyne, 2002). The concept is not limited to include only farmworkers, but other previously disadvantaged stakeholders, such as neighbouring rural communities, as well. These schemes were initiated by the private sector in SA during the early 1990's. The first scheme was based at a fruit farm in the Western Cape province. They have since been implemented in the wine, fruit, vegetable, olive, cut flower, dairy and eco-tourism industries around SA (Knight & Lyne, 2002). One of the largest equity-share schemes in the country was recently implemented in the town of Ceres during May 2003 (West, 2003). Nine hundred and forty-two employees of the Dutoit Group purchased a 90 per cent shareholding in a cold storage subsidiary. Each employee contributed an average of R5000 of their own savings towards the project and Land Redistribution for Agricultural Development (LRAD) grants were used to fund a further R20000 each (a total of approximately R18.8 million). This project is expected to distribute dividends in its first year of operation (West, 2003).

A successful equity-share scheme should achieve a variety of goals, including the redistribution of wealth and income streams, worker empowerment through capacity building and benefit sharing, retaining or attracting quality management, decreased risk bearing for the original owner, increased capital investment in the farm business (which allows for debt restructuring and investment in new technologies), creditworthiness, improved worker productivity and power relations, and provision for ownership and control to be fully

transferred to previously disadvantaged shareholders (Eckert *et al.*, 1996; Knight *et al.*, 2003). Equity-share schemes have the potential to promote black economic empowerment (BEE) in South African agriculture. BEE in agriculture has recently become an important issue to government with a draft Agri BEE charter being proposed during 2004 (Paton, 2004: 25). Some studies have investigated BEE in South African agriculture but none were related specifically to equity-sharing. For example, Janssens *et al.* (2004) conducted a study on beneficiary perceptions of BEE and Kassier *et al.* (2004) investigated BEE in the South African wine industry.

Several studies have investigated particular aspects of the performance of equity-share schemes. Early studies questioned the success of equity-share schemes based on assessments of worker participation, empowerment and institutional arrangements. For example, Hall *et al.* (2001) argued that power relations were not improved and that gender equality was not promoted. Karaan (2003) concluded that equity-share schemes fail from an institutional economics perspective due to institutional incompleteness, and Mayson (2003) criticised the ability of these schemes to improve tenure security. A study conducted by Knight (2003) in the Western Cape showed that many of these concerns had been corrected in the more successful projects, especially those with superior financial performance. In particular, Knight *et al.* (2003) found positive links between financial performance, sound institutional arrangements, effective worker empowerment and good management. However, no single study has adequately assessed the performance of equity-share schemes in terms of a comprehensive set of criteria that objectively measure the broader goals of agrarian reform as set out by the South African government (Mayson, 2003).

Mayson (2003) also notes that although government has guidance policies on equity-share schemes, the Department of Land Affairs (DLA) has not conducted thorough research on these schemes, nor does it have records of the number of schemes currently operating in SA. Lyne *et al.* (1998) estimated that about 50 equity-share schemes were in operation in SA in 1998 but more recent estimates are lacking. They anticipated rapid growth in the number of equity-share schemes following the recapitalisation of the Land Reform Empowerment Facility (LREF) and the introduction of more generous LRAD grants. Agri BEE should provide added momentum as it recommends the transfer of ten per cent of the assets in South African agriculture to the previously disadvantaged by 2008 (Paton, 2004: 25).

Based on socio-economic issues raised in previous studies, it is clear that comprehensive assessment of equity-share schemes requires consideration of empowerment, institutional and financial criteria. Policy objectives of agrarian reform also need to be considered, and these goals could be included in performance criteria for equity-share schemes. Some of the policy objectives set out under the SA land policy include equitable distribution of land ownership, the reduction of poverty, security of tenure, and empowerment of beneficiaries to improve their economic and social well-being (Ministry for Agriculture & Land Affairs, 2000: 2). It is therefore important to develop a holistic approach to measuring performance of these schemes to gauge, monitor and identify reasons for their success or failure.

Four categories of criteria are proposed for monitoring the performance of equity-share schemes: poverty alleviation; empowerment and participation; institutional arrangements and governance; and financial performance. The objective of this study is to identify a feasible set of indicators and norms for these four categories using empirical evidence collected at seven

established equity-share schemes in the Western Cape and a land reform project in the Midlands of KZN during 2004.

This dissertation is structured as follows: Chapter 1 reviews literature on previous studies of equity-share schemes. It also reviews indicators appropriate to the four categories of performance and aims to define an objective set of measures for each category. Chapter 2 describes the seven established equity-share schemes studied in the Western Cape, as well as the land reform project in the Midlands of KZN. Data collection and questionnaires applied at these study projects are also described in Chapter 2. Chapter 3 uses empirical data gathered at the study sites described in Chapter 2 to identify a subset of feasible performance indicators from those proposed in Chapter 1. Chapter 4 concludes the dissertation with recommendations for an objective set of performance measures for equity-share schemes.

CHAPTER 1

LITERATURE REVIEW

This chapter reviews previous research on equity-share schemes in SA and discusses criteria relevant to measuring and monitoring their performance. The criteria are grouped into categories of poverty, empowerment, participation, governance and financial performance.

1.1   Previous research on equity-share schemes in South Africa

Eckert *et al.* (1996) view land reform as a process for redistributing property incomes (capital gains and dividends) in SA where there is a history of uneven land distribution. They examined dividend payouts at Whitehall Farm, an equity-share scheme in the Western Cape, and found that very few respondents actually understood the term 'dividend' but understood that they would receive a share of the business profits. No dividends had been declared at the scheme so changes in consumption or savings patterns could not be measured. The respondents were asked to rank what they would do with dividend payments once they received them. Saving was the most frequent of items ranked first (35 per cent), housing was second (32 per cent), followed by investment in their own businesses (19 per cent) and education (10 per cent). Eckert *et al.* (1996) viewed capital growth as an important benefit from equity-sharing. Their study did not attempt to measure capital growth but asked worker-shareholders how they would use income earned from selling shares and how they viewed capital growth. They did attempt to quantify changes in labour productivity and turnover, job satisfaction and income changes but did not focus on other performance criteria such as governance and participation.

The Surplus People's Project (SPP) studied four equity-share schemes in 1998 (Fast, 1999). They identified a number of concerns regarding equity-share schemes related to a lack of worker participation during establishment, lowered beneficiaries' expectations, unchanged power relations between worker-shareholders and the original owner, little evidence of the transfer of skills, poor labour relations, the position of employees who are not shareholders, lack of female participation, and issues concerning entry and exit from a project (Knight & Lyne, 2002). A later study of eight equity-share schemes conducted by Knight (2003) in the Western Cape showed that many of the concerns raised by the SPP, such as poor labour relations and a lack of female participation, had been corrected in the more successful projects. Worker-shareholders in these eight schemes had purchased net farm assets worth R7 million (measured in constant 2001 prices) representing 3.5-50 per cent of total shareholding (Knight & Lyne, 2002).

Hall *et al.* (2001) argued that equity-share schemes might be failing to meet the objectives of redistributing power and resources. They claim, without the benefit of empirical evidence, that power relations at these schemes do not shift because the workers remain minority shareholders and have little say in decision-making processes (Hall *et al.*, 2001). Knight and Lyne (2002) showed that this was not viewed as a serious problem by beneficiaries interviewed in their study of eight schemes in the Western Cape. Hall *et al.* (2001) also argue that equity-share schemes fail to improve gender equality because shareholding is tied to employment and the original Settlement/Land Acquisition Grant (SLAG) was based on one grant per household head. Knight and Lyne (2002) showed that women made up over 50 per cent of shareholders at 63 per cent of the eight projects that they studied.

Karaan (2003) reviewed equity-share schemes from an institutional economics perspective and concluded that equity-share schemes are subject to institutional incompleteness. This comparison was based on Williamson's (cited by Karaan, 2003) conceptual framework for analysing economic institutions and compares equity-share schemes to individual ownership models. Equity-share schemes present an alternative to sole proprietorship where grants are too small to cover the costs of subdividing farmland for individual buyers, let alone finance a meaningful downpayment on the purchase price of even a relatively small farm. Considering that most farmworkers do not have sufficient means to purchase their own land; it is perhaps more appropriate to compare equity-share schemes with other group ownership models. In this respect, Knight and Lyne (2002) are of the opinion that the institutional arrangements of equity-share schemes outperform conventional producer co-operatives and CPAs.

Mayson (2003) assessed the contribution of five types of joint ventures, including one equity-share scheme, to land reform in SA. His assessment was based on their ability to provide independent land tenure security, improve access to capital, transfer business and management skills to beneficiaries, generate immediate benefits, promote gender equality and change power relations between participants (Mayson, 2003). Data were obtained from interviews with management and farmworkers at a single equity-share scheme, De Kamp Boerdery, in the Western Cape, and with various government officials and land reform experts. His study focused mainly on empowerment and participation criteria, with some examination of poverty alleviation (provision of immediate benefits), and institutional arrangements (gender equality and power relations). Mayson (2003) argues that equity-share schemes should be viewed as investment schemes and not as instruments of land redistribution because they aim to obtain committed workers rather than to transfer land. He concludes that equity-share schemes often fail to transfer skills to farmworkers because there

is limited time and skill to train workers in-house, and gender equality is compromised because shareholding is often linked to employment and females are excluded because they are not full-time employees. This contrasts with Knight and Lyne's (2002) findings in the Western Cape where women comprised more than half of the worker-shareholders at most of the eight schemes studied. Most of these schemes also made special provision for female representation in their constitutions. Lastly, Mayson (2003) cites power relations as a problem because the worker-shareholders often hold a trivial shareholding, and even where they own a meaningful share, often lack the necessary education and training to contribute proportionally to management processes. This emphasises the importance of continued skills transfer through training programmes at these schemes.

Knight *et al.* (2003) identified best institutional practices for equity-share schemes in their analysis of case studies in the Western Cape. They related financial performance to institutional rules (including governance and organisational arrangements), worker empowerment and management quality. Some measures of financial performance were excluded from the analysis because most of the equity-share schemes surveyed were too new to report a full set of financial records. This left seven indicators of financial performance reflecting creditworthiness (private financing and collateral), liquidity (wages), dividends, capital gains and, from the workers' perspective, improvements in working conditions and housing. Knight *et al.* (2003) conclude that sound institutions are built on tradable voting and benefit rights assigned in proportion to shareholding. This foundation is facilitated by organising the equity-share scheme as a private company (investor-owned firm) which offers shareholders well-defined property rights, accommodates temporary restrictions on the trading of shares, and establishes legal requirements for transparent and accountable management.

The following sections propose a wide range of relevant indicators to measure and monitor the performance of equity-share schemes in South African agriculture. The indicators are grouped into four broad categories or criteria.

1.2   Poverty alleviation

Poverty has been defined as the *"denial of opportunities and choices most basic to human development to lead a long, healthy, creative life and to enjoy a decent standard of living, freedom, dignity, self-esteem and respect from others"* (Hirschowitz *et al.*, 2000: 54). Symptoms of poverty include low levels of income (Woolard, 2002) and economic wealth (Little, 2002), low levels of health (UNFPA, 2002; Southcentre.org, 2003) and poor standards of housing (May *et al.* cited by Shinns & Lyne, 2004). In general, the poor are unable to move out of poverty because they lack knowledge, human and social capital, organisation, rights and financial and material resources (Schneider, 1999). Equity-share schemes may help to reduce poverty amongst poor beneficiaries like farmworkers and their families as they offer supplemental income in the form of dividend payouts and capital gains realised on the sale of shares, empowerment through skills transfer and the ability to influence working conditions. In order to assess the extent to which equity-share schemes enable participants to move out of poverty, it is necessary to consider the problem of measuring poverty.

Traditionally, welfare has been measured in terms of income because it was believed that efficiency and welfare were commensurable (Greeley, 1994). Problems encountered with this measure encouraged economists to shift measurement from aggregate income growth to examination of the distributional characteristics of income growth at the individual or household level. For example, national food security is a measure of the short-term (year-to-

year) variability in average per capita food consumption in a country (Abalu, 1999). SA has attained food self-sufficiency for most staples but there are a large proportion of food insecure households who cannot afford sufficient food (van Rooyen *et al.*, 1996). Evidence suggests that the problem of food insecurity is due to low levels of income (Abalu, 1999) and that household wage income has a major influence on inequality and poverty (Greeley, 1994; Woolard, 2002). Use of single criteria, such as income, for measuring poverty has been criticised as not being a sufficient measure (Bourguignon & Chakravarty, Duclos *et al.* cited by Barrett, 2003; Zeller *et al.*, 2003).

Poverty lines are often used as the sole measure to assess poverty at the household or individual level (Greeley, 1994; Woolard, 2002). Poverty lines based on a single criterion like income have been contested by researchers advocating the use of multi-dimensional poverty measures (Bourguignon & Chakravarty, Duclos *et al.* cited by Barrett, 2003; Zeller *et al.*, 2003). They may also be based on a single indicator which is constructed from a number of underlying variables (multi-faceted index). For example, housing quality is a single indicator of poverty but may be computed from variables measuring the type of building materials used, access to sanitation and access to water. Examples of such multi-faceted indexes are the household infrastructure index (HII) and household circumstances index (HCI) developed by Statistics South Africa (SSA) (Hirschowitz *et al.*, 2000). A poverty line can be constructed for such a multi-faceted index or, with much greater complexity, from more than one indicator (e.g. income and nutrition). They provide an absolute measure of poverty against which households or individuals can be compared. Poverty line approaches may also be static or dynamic.

Shinns and Lyne (2004) assessed relative poverty amongst members of a land reform community using cluster analysis (CA) based on four poverty dimensions. Although this multi-dimensional approach does not involve poverty lines, it can be extended to track changes in the relative poverty status of individual households paneled over time by constructing a 'transition matrix'. The following sub-sections review a selection of absolute and relative measures of poverty in order to determine which measures are more suited to this study.

1.2.1 Poverty lines

Poverty lines are commonly used to assess poverty at the household level. Money metric poverty lines are usually determined by some level of consumption, expenditure or income that is adequate enough to meet primary human needs (Greeley, 1994; Woolard & Leibbrandt, 1999). The most commonly used determinant of poverty lines is income. Alternatives to using income as the basis for poverty lines are per capita consumption, household consumption, per capita food expenditure, per capita calorie intake, budget share of food expenditure (food ratio), average educational level of adult household members, quality of housing, access to clean water and sanitation, employment and wealth (Woolard & Leibbrandt, 1999; Hirschowitz et al., 2000; Woolard, 2002; Zeller et al., 2003). Expenditure is considered to be a more reliable measure of economic welfare than income in the rural areas of SA's former homelands where these variables often show low correlation (Alderman et al. cited by Hirschowitz et al., 2000).

The point at which a poverty line is drawn is somewhat subjective and often controversial (Woolard & Leibbrandt, 1999; Barrett, 2003). Nevertheless, single dimensional poverty lines

are widely used to assess welfare despite their imprecision (Greeley, 1994). SSA does not use income poverty lines (Hirschowitz *et al.*, 2000), but other organisations, such as the Institute for Planning Research and the Bureau for Market Research, use the Household Subsistence Level (HSL) and the Minimum Living Level (MLL) estimated for regions of SA, respectively (Woolard & Leibbrandt, 1999).

Some of the estimation problems are illustrated by differences in poverty lines used in various studies. For example, the KZN Department of Environmental Affairs and Tourism (KZN-DEAT) website (2000) reports a poverty line of R1695 per month for a household of six in 2000, whereas Woolard (2002) classified poor households as those with income less than R800 per month (constant 1999 Rands). Hirschowitz *et al.* (2000) cite a report produced by SSA in 2000 that classified households with total expenditure less than R600 per month as very poor, and those between R601 and R1000 as poor. The South African Human Development Report classifies 48.5 per cent of the South African population as poor based on an income poverty line of R354 per adult equivalent (AE) per month (constant 2002 Rands) (Adelzadeh, 2003).

Multi-faceted indexes of poverty have also been used to classify households. As noted above, two poverty indexes have been developed by SSA, namely, the HII and the HCI (Hirschowitz *et al.*, 2000). Principal component (PC) loadings indicate which variables define the two indexes. Variables with high loadings in the HII include: living in formal housing, access to electricity, tap water inside the dwelling, a flush or chemical toilet, a telephone or cellular telephone, refuse removal at least once a week, level of education of the household head and monthly household expenditure. The HCI is defined by: household unemployment rate, average household size and children under the age of five years (Hirschowitz *et al.*, 2000).

SSA applies cut-off points on these indexes to separate their sample into 'developmental groups'. However, these cut-off points are arbitrary as they have no theoretical or empirical basis.

Carter and May (2001) present a dynamic approach to measuring poverty based on underlying household assets. Time gives people the opportunity to escape from poverty but also increases the possibility of experiencing negative shocks that decrease income or assets. If household i at time t has a vector of assets A_{it}, then at every period the household chooses consumption (c_{it}) and investment (I_{it}) in order to maximise a discounted stream of expected well-being. Carter and May (2001) begin with the standard money metric poverty line c and consider a person poor if $c_{it} \leq c$. Households that are poor due to $c_{it} \leq c$ at each point in time are termed chronically poor, while households that move between poor and non-poor are termed transitorily poor. The structure or asset base of poverty is explored in terms of a poverty line A by estimating the regression $\hat{c}(A)$ as in equation (1.1) below:

$$A = \{A \mid \hat{c}(A) = c\} \tag{1.1}$$

where A is the combination of assets that yield an expected level of well-being equal to the poverty line. The poverty line is, therefore, interpreted as a cut-off point between households that fall above or below a certain asset base.

Carter and May (2001) then introduce a dynamic poverty line J, where J is the present value of sequences of poverty lines. Households can then be reclassified as falling above or below the discounted poverty line to indicate which households are in a poverty trap. A household is considered dynamically poor if $J^*(A_{0i}) < J$. This means that the long-term expected stream of well-being is less than the certain equivalence value of a stream of single-period poverty living standards (Carter & May, 2001). By expressing the poverty line in terms of income

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predicted from observed asset holdings, this approach has more in common with Zeller *et al.*'s (2003) view that poverty is multi-dimensional and has both qualitative and quantitative indicator variables. Expected income is regressed on the asset base of households to obtain an estimate of their permanent income. If there is a good fit, the predicted income is used to classify households above or below an income poverty line. Data on durable assets, such as livestock and vehicles, drawn from panel surveys are used to predict real income per AE for each household in each year. Absolute poverty is then assessed by comparing these predicted incomes with a poverty line. This method does not take into account that the poverty line chosen has an effect on the classification of households and therefore the resulting poverty profile may be over- or underestimated.

1.2.2   Measures of poverty not based on poverty lines

Shinns and Lyne (2004) studied the poverty status of land reform beneficiaries at Clipstone farm in the KZN Midlands. Symptoms of poverty were analysed using principal components analysis (PCA) and hierarchical CA. PCA is a data analysis technique which obtains linear transformations of a group of correlated variables such that the transformed variables (PCs) are uncorrelated (Jackson, 1991: 1). The number of PCs obtained is equal to the number of original variables but only a certain number of PCs need to be retained. This number depends upon the percentage of variance in the original data accounted for by each PC and the absolute variance accounted for by each PC (Manly, 1986: 79). In PCA the coefficients or loadings attached to the original variables in each PC are chosen so that each successive PC accounts for the maximum variation remaining in the original data and is uncorrelated with the other PCs (Nieuwoudt, 1977).

Poverty symptoms were measured in terms of housing quality, income, health and wealth. PCA was used to create an index of housing quality based on materials used to construct exterior walls, access to safe drinking water and adequate sanitation. This index is similar to the HII discussed in section 1.2.1. Shinns and Lyne (2004) retained only the first PC as it accounted for a large share (45.5 per cent) of the variation in the original variables and because the absolute variance accounted for by the two subsequent PCs was small (PC_2 and PC_3 had eigenvalues less than one) (Manly, 1986: 69). They estimated the housing index by equation (1.2):

$$PC_1 = \text{housing quality} = 0.65(\text{walls}) + 0.81(\text{water}) + 0.54(\text{sanitation}) \qquad (1.2)$$

where PC_1 = the first principal component index of housing quality,

walls = standardised value of a dummy variable scoring one for brick or stone walls, and zero otherwise,

water = standardised value of a dummy variable scoring one for protected water source, and zero otherwise, and

sanitation = standardised value of a dummy variable scoring one for adequate, and zero otherwise, where adequate includes ventilated pit latrines and waterborne sewerage.

The study households were then subject to hierarchical CA using the housing index and measures of household income, assets and health as grouping variables. The aim of CA is to form groups in such a way that objects in the same group are similar to each other, and those in different groups are as dissimilar as possible (Kaufman & Rousseeuw, 1990: 2). Most households were found to be relatively income 'rich' and asset poor (29 per cent) or income poor and asset 'rich' (29 per cent). A significant number (24 per cent) were classified as both income and asset poor, and some (18 per cent) as relatively income and asset 'rich'. Changes

in the distribution of poverty over time can be studied by constructing a 'transition matrix' to track the movement of individual households between poverty groups. In essence, the transition matrix shows whether certain groups have grown or shrunk, indicating positive or negative changes in poverty status. In this study, the transition matrix is applied to the multi-dimensional approach used by Shinns and Lyne (2004). Table 1.1 presents a matrix of probabilities for period 1 in a four-group classification like that described by Shinns and Lyne (2004).

Table 1.1 Matrix of probabilities in time period 1

	Poverty status groups				
	1	**2**	**3**	**4**	**Total**
Observed no. of households	O_{01}	O_{02}	O_{03}	O_{04}	O_0
Probability	$O_{01}/O_0=P_{11}$	$O_{02}/O_0=P_{12}$	$O_{03}/O_0=P_{13}$	$O_{04}/O_0=P_{14}$	1

A similar matrix can be produced for the same sample in time period 2, but the number of households appearing in each group is expected to change. Applying the transition matrix to groups defined in terms of multiple poverty dimensions holds promise as a method of measuring temporal changes in the welfare of farmworkers participating in equity-share schemes. Chapter 3 takes this approach further and suggests a partial solution to the problem of constructing a transition matrix to detect changes in the membership of groups separated by relative rather than absolute differences on several indicators (symptoms) of poverty.

1.3   Empowerment and participation

Empowerment is a process that enables participation. Narayan (2002: 11) defines empowerment as "*the expansion of assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives*". Whereas Narayan (2002) and others (Reid, 1999; Bartle, 2003) treat empowerment and

participation as synonymous concepts where empowerment requires active involvement by the community, this study views empowerment and participation as two distinct concepts, where empowerment is an enabling process and participation focuses on the meaningfulness of participation itself. Empowerment may only impart the right to participate in, and benefit from, an activity. Bartle (2003) lists 16 elements of empowerment, while the World Bank (Narayan, 2002: 14) defines four. These elements have been grouped into four main indicators: empowerment, outreach, trust and participation. Together they provide disadvantaged people with the rights, means, skills and incentives needed to participate in decision-making processes.

Until recently, measures of participation focused on who, how many, how often and the ways in which people participated, but it ignored the quality of participation. Assessing the quality of participation is important because participation has both developmental benefits, such as promoting new attitudes and skills, and instrumental benefits that influence the outcome of participation schemes (Morrissey, 2000). A discussion of the indicators follows.

1.3.1 Empowerment, outreach and trust

1.3.1.1 Information, skills transfer, understanding, and control and ownership

Empowerment requires access to information, and the transfer of skills, control and ownership. Establishing an equity-share scheme with previously disadvantaged workers requires more than just passive access to information – it requires facilitation. Facilitation refers to the process of actively providing prospective shareholders with information, gaining consensus on institutional arrangements and creating suitable legal entities to represent worker interests. The quality of the facilitation process is therefore indicated by the

shareholders' knowledge and understanding of the scheme in terms of their rights and obligations. A South African case study in 1996 showed that very few workers understood the role of the workers' Trust and the management of their funds (Eckert *et al.*, 1996), while case studies from 2001 showed otherwise (Knight & Lyne, 2002). The workers' Trust acts as a 'warehouse' for the workers' shares and becomes the shareholder in the operating entity. Some of the Trustees then represent the workers' interests in the operating entity. General meetings are the main forum for sharing information with shareholders. Worker-shareholders will not be empowered to participate if they are not given adequate notice of meetings, they lack the skills needed to participate, their relative shareholding prevents them from influencing Board decisions, and if records (for example, minutes) are not circulated amongst members. Low meeting frequency and attendance suggests that workers are poorly informed of the operations of the business and therefore unable to raise questions and issues that would aid their participation and understanding.

All prospective worker-shareholders should participate in the process of designing the institutions that will represent their interests in the enterprise and define their rights and obligations. Formal organisations are more likely to give members greater influence over decision-making than informal institutions (Narayan, 2002: 18). Knight and Lyne's (2002) Western Cape case studies showed that extensive workshopping had occurred with prospective beneficiaries on the more successful schemes to select a suitable legal entity and to establish its constitutional and operating rules. Legal entities used to represent the interests of worker-shareholders range from CPAs to participatory unit Trusts. Whatever legal entity is chosen, the constitutional arrangements should alleviate the free-rider, horizon, portfolio, control and influence problems commonly associated with conventional producer co-operatives (Cook & Iliopoulos, 2000: 335). Knight *et al.* (2003) recommended that these

problems are best alleviated if the legal entity is structured as, or like, a company with tradable benefit and voting rights proportional to individual investment.

Skills transfer should be a priority for all equity-share schemes, otherwise workers and their representatives cannot participate meaningfully in decision-making (Knight & Lyne, 2002). The Trustees must administer the Trust and their Board representatives must contribute to policy-making for the farming enterprise. Monitoring is facilitated by tradable shares. Workers, like shareholders in any company, will vote their representatives out if share prices fall. Advanced training is best targeted at the representatives, not ordinary shareholders. While the SPP (Fast, 1999) reported in 1998 that workers did not acquire new skills or benefit from capacity building, Knight and Lyne's (2002) study in the Western Cape found that more successful schemes provided general training in literacy and life skills for ordinary worker-shareholders, and that Trustees received higher level training in finance, management and administration.

Karaan (2003) criticised the lack of worker participation in planning and decision-making at equity-share schemes. To promote participation during the planning phase, initial training should be designed to improve basic life skills of all prospective worker-shareholders. To promote participation in decision-making, training should focus on Trustees and higher-level skills. This training must be ongoing as new Trustees are elected each year. Training programmes that are 'Sectoral Education and Training Authority' (SETA) certified must comply with certain conditions set out by the Skills Development Act, Act 97 of 1998. The purpose of this Act is to develop skills in the workforce, encourage worker participation in training programmes and to promote quality of education and training. Janssens *et al.* (2004) conducted a study on beneficiary perceptions of BEE in South African agriculture. They

elicited scores on five indicator variables using a five-point Likert-type scale. They concluded that beneficiaries were "neutral" about skills transfer because the mean score for their training indicator was close to a value of three, their assumed norm for all five indicators. Although this study proposes similar indicators to Janssens et al. (2004), empirical evidence is used to gauge appropriate norms specific to each indicator.

Even if training programmes are SETA certified, adequate and understood by worker-shareholders, empowerment may be constrained by a small relative shareholding. Norms for meaningful relative worker shareholdings have not yet been developed specifically for equity-share schemes, though a report produced by Fast (1999) recommended that worker-shareholding should be at least 50 per cent to ensure that the balance of power lies with the workers. While the report does note the problem of financing such a large share of firm's equity, it does not recognise that the creditworthiness of a scheme would be seriously undermined if the majority shareholding were transferred to people that have no track record of successful business management. This emphasises the need for equity-share schemes to transfer management skills and so maintain their creditworthiness as and when majority ownership passes to the workers. A stronger case could be made for workers to collectively hold at least 25 per cent of the equity in a scheme. At this level, the South African Companies Act, Act 61 of 1973, confers certain rights on minority shareholders, including the right to representation at Board level.

Karaan (2003) reported problems with control and ownership issues in equity-share schemes where ownership is diversified but control remains in the hands of specialised managers who exert considerable power and influence, and are often not from the worker constituency. Based on this argument measures of control and ownership should be separated. Ownership is

best measured by relative worker-shareholding and control by worker representation on the Board. Control (voting rights) must be proportional to individual investment to alleviate free- and forced-rider problems. Control is also measured by information and skills transfer, which aim to increase the decision-making capabilities of worker-shareholders. A more subjective measure of control is how the workers rate their ability to influence policy on matters such as working conditions.

Poor people seldom have sufficient savings or credit to finance the purchase of equity. Without grants, participation in equity-share schemes would be confined to relatively more wealthy workers. Small grants curtail the relative shareholding of workers, decreasing their ability to influence policy on matters such as working conditions. Improved working conditions alleviate poverty through better housing, healthcare, insurance and leave benefits. Housing is one of the most important benefits cited by worker-shareholders, followed by schooling and clinics (Knight & Lyne, 2002). Beneficiaries studied by the SPP were disappointed with the lack of tangible benefits and claimed that there had been little improvement in working conditions and land tenure security. Knight and Lyne (2002), however, found that worker-shareholders on more successful schemes perceived that they could improve working conditions if they chose to. In these case studies, workers reported that their influence over decision-making was proportional - or more than proportional - to their shareholding and that communication channels were kept open through regular meetings of shareholders. Worker equity ranged from 3.5-50.0 per cent at these schemes. This contrasts with Karaan's (2003) view that even if the workers are majority shareholders they may be unable to influence decisions.

1.3.1.2 Outcomes of equity-share schemes

Measures of empowerment reflecting the combined effects of skills transfer, relative shareholding and access to information may best be found in the outcomes of equity-share schemes. If empowerment is successful then positive outcomes of equity-share schemes should include improved working conditions and tenure security, trust amongst worker-shareholders in the scheme and improved labour relations. Half of the worker representatives interviewed in Knight and Lyne's (2002) Western Cape study did not cite tenure security as the most important benefit expected from equity-share schemes. Karaan (2003) criticised the tenure security aspect of equity-share schemes claiming that several schemes have focused on acquiring land for worker-shareholders with little emphasis placed on individual tenure security. Tenure security should rather be examined in the context of what happens to a family's continued access to housing or land when a worker dies or leaves the scheme. If continued access is conditional upon employment then the ability of equity-share schemes to improve tenure security is questionable. Gray *et al.* (2004) reported that positive outcomes of the equity-share schemes they studied, as perceived by the workers, were improved tenure security, the ability to influence wages and working conditions, secure employment, improved sanitation, access to telephones and access to safe drinking water. In this study, tenure security is measured by property ownership, ownership of residential plots and long-term leases. Improved tenure security occurs where worker-shareholders receive land title or long-term leases. Where residential rights are conditional upon employment, the ability of equity-share schemes to improve tenure security is compromised.

Positive outcomes of equity-share schemes also include income and wealth redistribution (Knight *et al.*, 2003). In this study, changes in worker income are measured by creating

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dummy variables for income from dividends, capital gains, interest received and changes in the aggregate wage bill, where one indicates positive changes and zero negative changes. Housing quality is based on the approach taken by Shinns and Lyne (2004) in their study of symptoms of poverty at a land reform project in the KZN Midlands during 2002 (section 1.2.2). In the case of the schemes studied in the Western Cape, data were obtained on whether the benefits of equity-sharing included improved housing, improved sanitation and access to safe drinking water.

Access to basic services is measured by access to electricity, health services, schools, telephones and improved roads. These are scored as dummy variables, where one indicates the presence of an attribute, and zero otherwise. Lastly, working conditions are measured by the ability of workers to influence wages and working conditions; security of employment; medical contributions made by the employer, as either a contribution to medical bills or a medical aid scheme; and pension benefits. Benefits included in the Basic Conditions of Employment Act, Act 75 of 1997, such as leave and unemployment rights, were excluded.

1.3.1.3 Outreach performance of equity-share schemes

Equity-share schemes are a means of transferring income, in the form of wages and dividends, and wealth through ownership of shares (that should be marketable in the long-term) to previously disadvantaged people. Outreach performance depends on the ability of the scheme to increase the incomes and wealth of the poorest people. Equity shareholding by women and unskilled workers is therefore relevant in determining the outreach of these schemes.

According to Mayson (2003), men participate disproportionately more than women in equity-share schemes because participation is linked to employment. Women generally did not participate as equals in the scheme studied by the SPP. Knight and Lyne's (2002) Western Cape study was more positive about female participation, but found that women are discriminated against in terms of wages. This is to be expected for unskilled workers because women cannot perform the same physical work as their male counterparts, i.e. they cannot undertake manual labour of equal value. Skills transfer to women, in particular, may help to bridge the gender divide between salaries. Knight and Lyne (2002) found that the majority of workers' Trust deeds in their sample made special provision for the inclusion of women as Trustees. Female shareholders made up at least 75 per cent of shareholders at the Whitehall scheme studied by Eckert *et al.* (1996) and between 33 and 59 per cent at the schemes studied by Knight and Lyne (2002). With the introduction of the LRAD programme, women can access grant finance as individuals rather than as members of households (Ministry for Agriculture & Land Affairs, 2000: 3; Mayson, 2003) improving their chances of purchasing equity. Objective measures of gender empowerment include provision for women as Trustees, the relative shareholding of women, and female representation at Board level.

1.3.1.4 The role of trust in equity-share schemes

An atmosphere of trust and reliability is required for a successful equity-share scheme (Knight & Lyne, 2002). Trust in the potential of the equity-share scheme to perform well is a prerequisite for shareholders to reinvest in the business and grow their equity. Putnam (cited by Karaan, 2003) notes that trust is a key indication of the development of social capital within an organisation and plays a role in limiting opportunism and resolving the problems of

collective action. Low worker confidence is likely to lead to increased wage demands and strikes, decreased productivity and decreased reinvestment in the business.

Knight and Lyne (2002) showed that some workers were willing to forego current earnings in order to reinvest, thereby showing an understanding of the project and confidence in management. Improved labour relations also foster trust. Labour relations improved in the majority of equity-share schemes studied by Knight and Lyne (2002) due to attitude changes, worker empowerment and incentives for financial performance. Long-serving workers are more likely to be better judges of trust given their experiences of past and present management. Eckert *et al.* (1996) measured labour relations according to changes in labour productivity (labour/output ratio), labour turnover and rates of absenteeism.

1.3.2 Participation rate

Ndibi and Kay (1999) developed a measure for the participation rate of a community. If the process of establishing and managing an equity-share scheme comprises activities $a_1, a_2 \ldots a_n$, $w_1, w_2 \ldots w_n$ are weights indicating the importance of those activities, β_i denotes the involvement level of the community and $1-\beta_i$ denotes the involvement of other parties, then the participation rate for any one activity may be represented by equation (1.3) (Ndibi & Kay, 1999):

$$P_i(\%) = \beta_i(w_i/\Sigma w_i) \tag{1.3}$$

and the overall participation rate is the sum of the different participation rates for each activity:

$$P_i(\%) = \Sigma \beta_i w_i/\Sigma w_i. \tag{1.4}$$

Ndibi and Kay (1999) assigned activities to five participation groups, where the fifth group represented the least community participation ($\beta_5 = 0$ per cent) and the greatest involvement by other parties (for example, original owners), and the first group represented the highest possible community participation ($\beta_1 = 100$ per cent). For the other groups, Ndibi and Kay (1999) assigned involvement levels of 25, 50 and 75 per cent, respectively. A problem may arise in assigning β_i to certain activities. Respondents should be asked to rate their participation relative to some defined activity so that consistency in their responses is ensured. In addition, the weights are discrete and subjective, bringing into question the reliability of the measure.

The w_i denote the relative importance of each activity. To estimate these weights, respondents were asked to rate the importance of each activity on a Likert-type scale (1 = most important and 5 = least important). The consistency of responses was calibrated by asking respondents to rate the importance of a logical sequence of events for one given activity. Bartlett's test was used to check the homogeneity of the variances among the five groups and the Spearman Rank Order correlation was computed to investigate relationships among the rankings of importance. The estimated β_i and subjective w_i values were then used to compute the overall participation rate.

1.4   Institutional arrangements and governance

1.4.1   The equity-share model

Equity-share schemes are a means of increasing workers' participation in decision-making and improving their productivity by allowing them to share in profits, risk and capital growth

in direct proportion to their financial investment in the farm on which they work (Eckert *et al.*, 1996). The initial feasibility of any employee equity-share scheme is dictated by the ability of workers to purchase equity. In SA, the poor cannot make significant contributions of their own to the purchase of equity or land (Lyne & Darroch, 2003: 83). Public grants awarded under the SLAG and LRAD programmes will, therefore, play a key role in the establishment and spread of these projects. LRAD grants may be used to finance land improvements, infrastructure, capital assets and the purchase of financial equity in farm enterprises (Ministry for Agriculture & Land Affairs, 2000: 3). In the latter case, government aims to direct LRAD grants to farmworkers who are considered to be the most insecure employees in the country (Adams *et al.*, 1999). These LRAD grants are available to any previously disadvantaged adult and the amount granted depends on the applicant's own contribution. This contribution can be anything from R5000 upwards, including cash, equipment, livestock, loan finance and sweat equity (payment in-kind) to secure a minimum LRAD grant of R20000. A maximum of R100000 is potentially available to successful candidates who make an own contribution of R400000 or more (Ministry for Agriculture & Land Affairs, 2000: 4).

In the case of joint ventures involving non-farm employees, prospective beneficiaries can apply for SLAG of R16000 per beneficiary household to purchase equity in farming, agribusiness and eco-tourism enterprises. The SLAG programme usually creates a community land Trust or CPA with institutional features similar to those of conventional producer co-operatives. Under this programme beneficiaries often struggle to manage their joint resources (Lyne & Darroch, 2003: 81).

Equity-share schemes are an alternative to conventional co-operative farming models. These models tend to discourage investment owing to free- and forced-rider problems caused by inadequate property rights (Cook & Iliopoulos, 2000: 335; Sykuta & Cook, 2001). The co-operative model is discussed further in section 1.4.2. In most cases, equity-share schemes are organised as private companies, with management concentrated in the hands of directors or hired experts, while shareholders participate through tradable voting and benefit rights that are proportional to individual investment. This eliminates the problems of free- and forced-riding (Knight & Lyne, 2002). The South African Companies Act, Act 61 of 1973, also entrenches principles of good governance such as accountability and transparency (Knight *et al.*, 2003).

Equity-share schemes may be structured in a variety of ways. In the basic model (Panel a, Figure 1.1 overleaf) the original owner retains ownership of the land and leases it to the operating entity. The workers form a workers' Trust which finances equity in the operating entity mainly through grants made to its worker-members. Both the original owner and farmworkers receive benefits from the operating entity in the form of dividends and capital gains. Although this model does not transfer land to the workers it affords them a larger share in, and therefore greater control of, the business than would be the case if they used part of their grant to purchase land. There are two main variants of the basic model. The first (Panel b, Figure 1.1) is where the operating entity owns the land. In this case the workers acquire a smaller share of the business because equity contributed by the original owner increases relative to the grants contributed by worker-beneficiaries. The second variant (Panel c, Figure 1.1) is where the workers' Trust finances a land-holding company that buys the land and leases it back to the operating entity. This variant allows the workers to make their own rules about tenure security and offers them a regular rental income from the outset (McKenzie, 1994).

Panel a

Panel b

Panel c
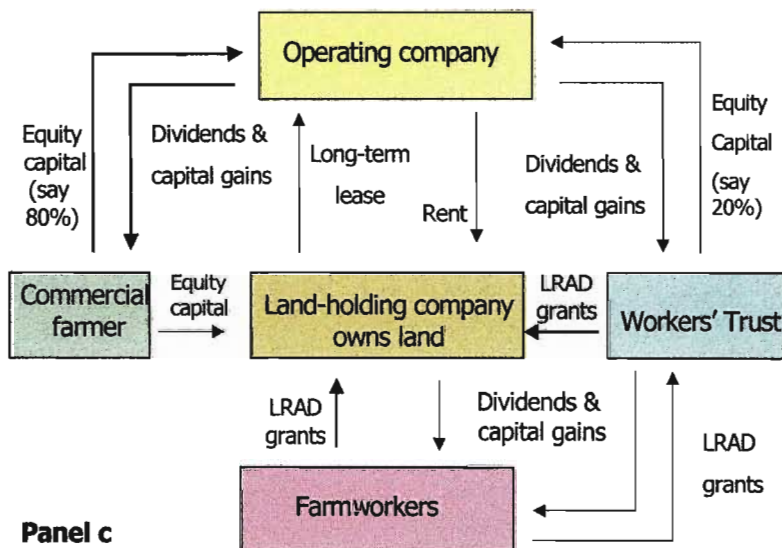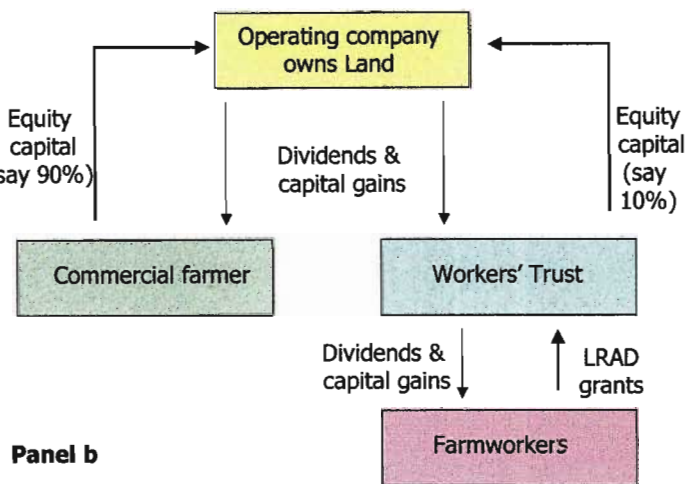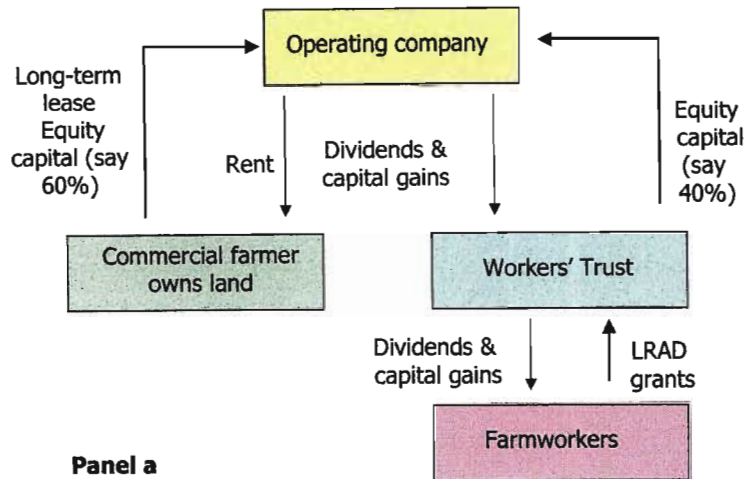
Figure 1.1 Typical equity-share scheme organisational structures (Source: McKenzie, 1994)

Commercial farmers that decide to embark on an equity-share scheme with their workers must realise that it will involve a long-term relationship that is difficult to terminate. Such schemes are unlikely to succeed where the farmer has short-term motives such as access to subsidised capital, or if safeguards and guarantees are not included to prevent unanticipated outflows of capital and expertise (Nel *et al.*, 1995). Knight *et al.* (2003) recommend that a temporary moratorium be placed on the sale of shares by the original owner during the first few years of a project's life and that shares should not be sold to non-workers. Although a temporary moratorium could discourage member investment, it helps to preserve creditworthiness at this early, critical stage.

Nel *et al.* (1995) claim that the equity-sharing model is not suitable for facilitating the emergence of individual farmers because shareholding cannot be related to particular underlying assets. However, skills, income and wealth transferred to workers by equity-share schemes may improve their future prospects of becoming entrepreneurs (Mayson, 2003). Eckert *et al.* (1996) found that investing in their own businesses was ranked high on the list of preferred uses for dividends earned by worker-shareholders. Similarly, Knight and Lyne (2002) report a case study in the Western Cape where beneficiaries were willing to forego dividend payouts in favour of reinvestment in the farm business.

LRAD grants are small for people with low savings and may not cover the costs of subdivision of farmland for individual buyers let alone the purchase price of those farms (Lyne & Darroch, 2003: 72). However, grants make it possible for poor people to finance equity in a creditworthy enterprise, thereby extending meaningful benefits to farmworkers who are amongst the poorest in SA (Vink & Tregurtha, 2001). Owning equity in the business

means that the workers gain rights to benefit from land and a range of complementary assets such as expertise, machinery, liquidity and the markets needed to make efficient use of land.

1.4.2   The co-operative model

South African agriculture has recently undergone major liberalisation that withdrew many of the privileges previously enjoyed by agricultural co-operatives. Such privileges included access to lower interest rates on institutional credit and protected markets (van Niekerk, 1988; D'Haese & Bostyn, 2001). D'Haese and Bostyn (2001) report that 70 out of 246 co-operatives had converted to company status by 2001. Losing access to relatively low interest rates on institutional credit was a severe blow to co-operatives as they inevitably struggle to raise equity capital owing to free-rider, horizon, portfolio and control problems (Cook & Iliopoulos, 2000: 335). In addition, the 'influence' problem tends to raise the cost of external equity and debt capital faced by conventional co-operatives, particularly when financing assets that have specific uses (Hendrikse & Veerman, 2001).

The free-rider problem emerges because property rights in conventional co-operatives are not assigned in proportion to individual investment and are not traded at market value. The free-rider problem creates a disincentive for member investment because profit shares are proportional to patronage and not to financial investment and capital gains cannot be realised by investors. In addition, voting rights are egalitarian, preventing a large investor from gaining greater control over investment decisions (Cook & Iliopoulos, 2000: 336). This is not the case in an investor owned firm (IOF) like a private company.

The horizon problem develops when the claim on the net cash flow generated by an asset is shorter than the economic life of the asset. This results in underinvestment in long-term assets and growth opportunities such as research and development because shareholders cannot realise capital gains by selling shares at their market value (Porter & Scully, 1987; Cook & Iliopoulos, 2000: 336). In effect, new members become free-riders because they do not bear the full cost of improvements through increased share prices.

The portfolio problem relates to the investment portfolio of the co-operative, which may not reflect the individual risk preferences or interests of members (i.e. they become forced-riders) as they cannot trade shares freely at market prices (Jensen & Meckling, cited by Porter & Scully, 1987; Cook & Iliopoulos, 2000: 336). The portfolio problem therefore stems from forced-riders whose personal preferences cannot be realised resulting in a risk distribution that is inefficient (Porter & Scully, 1987). The control problem refers to the cost members face in monitoring the actions of managers (agents) when share prices are fixed at par value and do not signal performance (Sykuta & Cook, 2001). This problem is less severe in IOF's where agent performance is signaled by the market value of shares, and where agents - as shareholders themselves – have an incentive to pursue cost-minimising strategies (Porter & Scully, 1987).

Finally, conventional co-operatives are at a disadvantage relative to IOF's when seeking capital from external sources owing to the influence problem. Specific assets, in particular, increase the financiers exposure to risk, and external financiers are unable to influence this exposure when management decisions reflect the preferences of numerous small investors who have equal or near equal voting rights (Hendrikse & Veerman, 2001).

The principal solution to the institutional challenges facing co-operatives is to link control with individual investment and property rights, as is the case with IOF's. This has also been achieved by 'New Generation' co-operatives in the United States where co-operatives still enjoy taxation, interest and information advantages (Sykuta & Cook, 2001). New Generation co-operatives operate more like private companies where property rights are proportional to individual investment, and members can capture the full benefits of their own investment at any time by trading rights at their market value. In SA, like other Commonwealth countries, company law also entrenches accountability through transparency (such as reporting of minutes and externally audited financial statements). Knight *et al.* (2003) argue that equity-share schemes can eliminate the problems of inadequate property rights associated with conventional co-operatives, CPAs and Trusts if they are structured as, or like, a private company and managed exclusively by an expert (usually the original owner).

1.4.3   Best institutional arrangements for equity-share schemes

In their study of best institutional arrangements of equity-share schemes, Knight *et al.* (2003) found positive links between sound institutional arrangements, effective worker empowerment, competent management and the successful performance of an equity-share scheme. They recommend that voting and benefit rights be assigned in proportion to individual investment to eliminate free- and forced-riding, and traded at their audited net asset value although some temporary restrictions on the transferability of shares may be necessary to prevent sudden outflows of capital and managerial expertise. Financial accountability and transparency must be maintained, for example, through annual external auditing of financial statements. The best way of achieving these arrangements is through the use of an operating entity that operates as, or like, a private company. Finally, they maintain that good corporate

governance is achieved through competent management, incentive schemes, a long-term business plan, procedures to resolve disputes and good labour relations.

1.4.4 Principles of good governance

Governance has been defined as the process of decision-making and the process by which decisions are implemented (or not implemented) (UNESCAP, 2003). King (2002) identified governance practices applicable to all business entities and described four 'pillars' of good governance: transparency, accountability, responsibility and fairness. These four categories incorporate the following: provision in the constitution for externally audited financial statements, disclosure and circulation of financial statements to shareholders, notice and conduct of meetings, disclosure and circulation of minutes, sound voting and election procedures, personal liability of negligent directors and penalties for bad management. Benefit and voting rights (i.e. property rights) should be proportional to individual investment by shareholders, and shares should be fully transferable to alleviate free- and forced-riding problems.

Narayan (2002: 2) reports on the linkages between empowerment and good governance and argues that good governance is unlikely if participants have not been empowered with the knowledge and skills needed to exercise their rights. Consequently, empowerment is not possible without the good governance practices of accountability, transparency and well-defined property rights.

1.5   Financial performance

Measuring financial performance involves examination of financial statements to assess the performance of a business based on its profitability, solvency, liquidity, risk, efficiency and growth status. The primary aim is to analyse the business' past and present performance in order to identify strengths and weaknesses and to formulate feasible plans for the future (Barry *et al.*, 2000: 91). Indicators of financial performance over time may also be gained from trends in appropriately calculated financial ratios, of which the most relevant are discussed further.

Most financial ratios are computed from information presented in the income statement and balance sheet. It is important to note that assets in the balance sheet are usually valued at historical cost whereas they should be assessed at current market value to compute meaningful ratios. This is especially important where land represents the largest underlying asset of the business, and in times of significant inflation. Ratios have the advantage that acceptable levels (norms) have already been developed for different types of businesses and provide important indications of the financial health of enterprises and their relative performance. Financial ratios should be calculated over successive years to observe trends in liquidity, solvency, profitability and growth (Barry *et al.*, 2000: 125). Table 1.2 overleaf presents financial indicators and norms commonly used to assess the performance of a farming business.

Koutroumanidis *et al.* (2004) evaluated the financial performance of rural co-operatives in Greece using eight financial ratios. Although not a study of equity-share schemes, their study is relevant to proposing financial measures for equity-share schemes. Koutroumanidis *et al.*

(2004) measured financial performance using categories of efficiency, reliability and management ratios. Different subjective weights were assigned to the ratios to simulate four scenarios. Each scenario produced an overall financial performance measure for each co-operative. In the first scenario the ratios were all weighted equally, in the second management ratios were weighted higher, efficiency in the third scenario, and reliability in the fourth scenario. Half of the eight ratios represented reliability and these were mainly based on aspects of liquidity. Similar ratios are proposed in this study to monitor the financial performance of equity-share schemes.

Table 1.2 Conventional financial indicators for measuring the financial performance of farm enterprises

Measure	Ratio/Indicator	Norm[1]
Profitability		
Rate of return on assets (ROA)	Return on farm assets[2]/Average farm assets[3]	Exceed real interest rate
Rate of return on equity (ROE)	Return on farm equity[4]/Average farm equity	Exceed ROA
Dividend return	Dividend payment/Share price	>0
Liquidity		
Current ratio	Current assets/Current liabilities	>1
Interest coverage ratio	Return on farm assets[2]/Interest paid	>1
Solvency		
Debt/Asset ratio	Total liabilities/Total assets	$<0.3-0.5$
Leverage	Total liabilities/Farm equity	<1
Growth	Absolute & relative change in share value[4] over period	Should be monitored over time
Workers' total return	Dividends, capital gains, wages, other benefits & interest received by workers	Should be monitored over time

[1] Norms were taken from Kohl, 1992; van Zyl *et al.*, 1999; Barry *et al.*, 2000.
[2] = Net farm income from operations (before tax, interest, rental payments, and salary paid to management) + Other net income from farm assets before tax (van Zyl *et al.*, 1999: 86)
[3] Includes the value of foreign factors such as hired land
[4] = Net farm income from operations before tax + Other net income from farm assets before tax (van Zyl *et al.*, 1999: 86)
[4] = Net asset value/Total number of shares issued

Profitability may be measured in absolute terms by net farm income, but this cannot be compared between different types of enterprises (Barry *et al.*, 2000: 101). Profitability ratios therefore become more useful as general performance indicators. These ratios have a large

effect on financing decisions (van Zyl *et al.*, 1999: 84). Return on assets (ROA) and return on equity (ROE) are commonly used to assess profitability of investments in assets and equity respectively. These ratios should be used only to compare like businesses or to examine trends over time. Dividend return is an alternative to ROA and ROE, and is widely used in stock exchanges to measure profitability.

The current ratio is a general measure of liquidity at a point in time and is widely used as a measure of a business' ability to meet its financial commitments as they become due (Barry *et al.*, 2000: 108). For farm enterprises, the size of the current ratio is strongly influenced by the point in time at which the ratio is calculated because most farm enterprises have long production cycles. The interest coverage ratio is a measure of the business' ability to repay debt and, like the current ratio, provides a measure of liquidity at a particular point in time (Barry *et al.*, 2000: 112). Liquidity may also be assessed using cash flow budgets (Barry *et al.*, 2000: 109).

The debt/asset, equity/asset and leverage ratios are mathematically related so it is not necessary to compute all three to gain information on the solvency position of the business. High leverage places the business at risk of failure because unfavourable events have a larger effect than favourable events (Barry *et al.*, 2000: 172). As leverage increases, liquidity is placed under pressure as credit reserves decrease. The advantage of the debt/asset ratio is that the norm remains relatively consistent between different types of businesses (Barry *et al.*, 2000: 110). The leverage ratio norm varies among different types and sizes of businesses (van Zyl *et al.*, 1999: 79), as well as the borrower's level of risk aversion (Barry *et al.*, 2000: 178).

Growth of the business may be measured by comparing starting equity and closing equity over a financial period. In measuring growth of an equity-share scheme, this amounts to a change in share value, where share value is calculated as the current audited net asset value divided by the number of shares issued. Growth is therefore measured by capital gains on shares. This presents growth in absolute or relative terms and is useful in comparing trends over time but not for comparisons between differently structured equity-share schemes.

The financial performance of the business should also be viewed from the workers' perspective. Apart from the direct financial benefits of acquiring equity in the business (such as dividends and capital gains) the workers may be better able to influence their working conditions. A greater relative worker shareholding suggests that workers are more able to influence policy on housing, access to basic services, wage levels and leave agreements. Each scheme may pay different combinations of these benefits so measures of change in workers' total returns must be used to compare the performance of schemes over time. Workers' total returns includes dividends, capital gains, wages, other benefits such as medical aid contributions and other non-cash items (limited to 20 per cent of total remuneration in terms of the Basic Conditions of Employment Act, Act 75 of 1997), and interest received by the workers from loans made to the business.

CHAPTER 2

DESCRIPTION OF STUDY PROJECTS AND DATA COLLECTION

This chapter describes the process of data collection at seven established equity-share schemes in the Western Cape and a land reform project in the Midlands of KZN during 2004. The project and schemes are also described in this chapter.

2.1 Equity-share schemes in the Western Cape

In November 2001 Knight (2003) conducted a study on the institutional arrangements of eight equity-share schemes and one joint venture in the Western Cape. These equity-share schemes were chosen to ensure variation across a number of known indicators, such as external finance and proportion of equity owned by farmworkers. The sample was designed to control for non-institutional determinants of financial performance such as enterprise type and geographic region (Knight & Lyne, 2002). Activities on these farms included the production of deciduous and citrus fruit, wine, olives, vegetables and cut flowers. Seven of these equity-share schemes were re-visited during February 2004 with the objective of testing performance indicators for equity-share schemes. These schemes were chosen for reasons of data availability.

Three separate questionnaires were used during the survey to gain information from relevant parties. A summary of the three questionnaires is presented in Appendix 1. The questionnaires were designed to elicit information about a feasible set of objective indicators for empowerment and participation; institutional arrangements and governance; and financial performance. As no previous data on poverty levels were available for the equity-share schemes in the Western Cape, this aspect of performance was excluded from the surveys at

the seven established schemes. Poverty data were collected at a land reform project in KZN. This aspect of data collection is discussed in section 2.2.

Interviews were held with the farm manager (frequently the previous farm owner), the chair of the workers' Trust and ordinary worker-shareholders. The chair of the Trust and at least one other worker-shareholder were interviewed at each scheme, with four worker-shareholders interviewed at five of the seven schemes. In all cases all permanent employees were shareholders. Non-shareholders were not interviewed. Both higher-level employees (such as office staff) and lower-level employees (such as crop sprayers) were interviewed and at least one female worker-shareholder was interviewed at each scheme.

The manager was asked questions about the ownership structure (shareholders and relative shareholding), composition of the workforce, lowest and highest wages paid to both skilled and unskilled workers, Board representation, labour relations (absenteeism, wage demands, strikes and labour issues), tenure security, shareholder agreements (moratoria on dividend payouts and sale of shares), property rights (transferability of shares), governance procedures (conduct of meetings and elections) and gender equality (female representation in the workforce, and at shareholder and Board level). In addition, the manager was asked to supply a recent set of financial statements for the business. The manager was asked when last the land had been valued and to provide dates and values for fixed improvements to land. For these projects, land (including fixed improvements) accounted for over 80 per cent of the assets. The (improved) land values were adjusted to current market value using the farm manager's estimates for 2002 and 2003. In one case where the farm manager would not provide his own estimate, real estate agents in the area were asked for estimates and a land valuator with personal knowledge of the particular farm was also contacted. Movable assets

were valued at book value after depreciation. These values are likely to be biased estimates of current market value but movable assets accounted for a small share of total asset value.

The chair of the worker's Trust was asked much the same questions as the farm manager, but relating specifically to the worker's Trust. In addition, the chair of the Trust was asked questions relating to empowerment and participation. Ordinary worker-shareholders completed a short questionnaire focusing on empowerment (skills transfer, understanding, outcomes and trust) and participation. Questions relating to skills transfer and outcomes required workers to indicate the presence of skills training courses and benefits received from the equity-share schemes. Worker-shareholders were also required to subjectively rate the quality of worker-management relations and trust in management. Responses to questions that required workers to rate indicators of empowerment or trust were not unanimous but varied within a relatively small range, usually between the highest point (5 = excellent or very high) and the middle point (3 = average) on a five-point Likert-type scale. In such cases, the mean response was recorded as representing the view of all worker-shareholders employed on the farm.

Financial statements for 2002 and 2003 were obtained from four of the seven farms visited and these were used to compute the ratios measuring liquidity, solvency, profitability and growth discussed in section 1.5. Of the four case studies that provided financial records, two had been operating as equity-share schemes since 2000, and the others since 1998 and 2001, respectively. The farms used in the financial analysis were located in the Stellenbosch, Piketberg and Lutzville regions of the Western Cape and the business activities of these farms included wine grapes, deciduous and citrus fruit, cut flowers and vegetables. Three of these case studies operate as private companies and one as a partnership. Workers' relative

shareholding exceeds 40 per cent in three cases and is ten per cent in the remaining case. The following sections describe each of the seven equity-share schemes in the Western Cape that were surveyed during 2004.

2.1.1 Bugler's Post

Bugler's Post is situated in Piketberg on the Piket Mountain, approximately 150 kilometres (km) north of Stellenbosch. Since 2001 the farm has expanded its production operations to include cut flowers (proteas). Approximately nine hectares of land have been leased from a nearby farm for proteas since 2003, and 13 ha of fruit were planted between 2001 and 2003. A drip irrigation system and one ha of shade cloth, valued at R100000 and R70000, respectively, were installed in 2001. The operating company was registered during 2000. At registration, the previous farm owner owned 94 per cent of the farm equity and worker's Trust six per cent (Knight, 2003). The relative shareholding of the previous farm owner has since decreased to 90 per cent, increasing the workers' share to ten per cent.

The first elections for the workers' Trust were held at the end of 2003 and the founding chairperson was re-elected. The farm manager seemed optimistic about how the project has proceeded in the previous two years, but did mention that working with the farmworkers as both co-owners and employees has added a new management challenge. The manager also highlighted that there are many educational and social challenges to overcome. Financial constraints also dictate skills training of the farmworkers because the business has to provide the funds for training. The manager suggested that government should bear some of the financial burden of skills training. None of the farmworkers had previous administrative

experience, but two had been trained by the previous owners to undertake bookkeeping and general administration duties on a full-time basis.

2.1.2   Cape Olive Trust

Cape Olives is located outside the town of Paarl and specialises in olive production. Cape Olives became an equity-share scheme in 1997. Cape Olive Trust forms part of a larger holding company known as Cape Olive Holdings. In 2001 the previous owners, the Costa family, and another shareholder, NewFarmers Development Company, each sold a part of their equity (17.5 per cent and 79 per cent, respectively) to a development company called 'Imibala'. The shareholding of Cape Olive Trust currently comprises of NewFarmers Development Company (76.5 per cent), Imibala (20 per cent) and the workers' Trust, Unlimited Olive People's Trust (UOPT) (3.5 per cent). LRAD grants totaling R1 million were approved in 2001 to boost worker shareholdings but had still not been disbursed at the time of the study. Dividends were paid during 2003 to the value of R20000 per household.

The farm manager seemed enthusiastic about the equity-share scheme and had a positive outlook on the future of the project. The farmworkers have also invested in, and manage their own trout hatchery. The trout hatchery is seen as a means of diversifying the business risk faced by the worker-shareholders.

2.1.3   Erfdeel

Erfdeel is located near the town of Piketberg and produces table grapes, citrus and wine grapes. The equity-share scheme was established in 1997. At registration, the shareholding

was divided between the previous owners (20 per cent), NewFarmers Development Company (60 per cent) and the workers' Trust, known as Zebraskop Trust (20 per cent). Between 2001 and 2004 the business experienced financial and management problems and collapsed. The chairperson of the new company attributes the collapse of the original scheme mainly to poor labour relations. Equity in the new company is held by Imibala (52 per cent), NewFarmers Development Company (42 per cent) and the workers' Trust (six per cent).

2.1.4   Iona

Iona is a wine farm situated in the Elgin district approximately 150 km east of Cape Town. In 1997 the farm was purchased by its manager who replaced old apple orchards with vineyards in 1998. At present the operating company, Iona, has four shareholders but the farm manager is in the process of buying out a minority shareholder. This will increase his shareholding from 50 to 55 per cent. An offshore investor holds 40 per cent of the shares and the workers' Trust the remaining five per cent.

The aim of creating an equity-share scheme at Iona was to uplift the farmworkers who suffered from social problems such as alcoholism. A farmworkers' committee was created to deal with worker affairs and currently deals with all labour related issues on the farm, liaising with the farm manager.

The farm exports most of its wine which has been rated as one of the top Sauvignon Blancs in the world. Iona's Sauvignon Blanc has won a first class listing from South African Airways (SAA) and a Wine of the Month Club rating (Knight, 2003). The farm manager has invested heavily in infrastructure. These investments include a cellar and 10 ha of vineyards to the

value of approximately R4.5 million. The manager views capital growth as a more important objective than dividend payouts. In 2003 he made an offer to purchase household appliances for each worker-shareholder as an alternative to paying out cash dividends. The farmworkers accepted this offer and each shareholder received their choice of appliances to the value of R2500. The relative shareholding of the workers at Iona is very small and for this reason the manager admits that workers are not consulted on financial issues. Investment decisions are communicated to workers through the farmworkers' committee.

2.1.5   Kleinbegin

Kleinbegin is a deciduous and citrus fruit farm located on the Piket Mountain near the town of Piketberg, 150 km north of Stellenbosch. The operating partnership of the equity-share scheme was registered in 2000. A land-holding company was also created in 2000, which leases the farm, called 'Achtervlei', to the operating partnership Kleinbegin. This organisational structure was chosen for its tax advantage because the original owner can offset expenditure on this project against income generated by Achtervlei (Knight, 2003). The land-holding company is owned by the previous owner (51 per cent) and the workers' Trust (49 per cent), while the operating partnership is owned by the previous owner (25 per cent), his wife (26 per cent) and the workers' Trust (49 per cent). Since 2001 there has been a change in board representation as a consequence of the Trust deed, which requires that a new chairperson must be elected each year. The farm manager noted that this has created administrative problems within the Trust because the new chair is untrained and inexperienced in his duties.

2.1.6 Lutouw

Lutouw is a wine grape and vegetable producing farm located near Lutzville, approximately 400 km north of Cape Town. The operating company, Lutouw Estates Pty Ltd. was established in late 1999 and became an equity-share scheme in 2000. Le Monde Trust owns 50 per cent of Lutouw Estates while an investment group, Oliphants Investments, owns ten per cent and the workers' Trust, known as Omaza Trust, the remaining 40 per cent. The farmworkers currently live on neighbouring farms. The farm manager reported that housing is seen as a major issue and that a housing project will be initiated in 2005. Improvements to land have amounted to approximately R5.5 million since the operating company was registered. No new shares have been issued at this scheme and no dividends have been paid. There is a five-year moratorium on dividend payments at Lutouw.

The South African Wine Industry Trust (SAWIT) is financing the workers' shares until they are able to pay for them. Vineyards have been established on 30 hectares of farmland and the intention is to export 70 per cent of the wine produced by Lutouw. Seasonal crops are also grown to generate cash flow and these include potatoes, sweet potatoes, beans, tomatoes, onions and cabbage. The intention of the equity-share scheme is to empower the farmworkers to manage their own farming operation to supply Lutouw Estates. When this happens they will be allowed to sell their products elsewhere once they have fulfilled their contractual obligations to Lutouw. An owner-operator tractor operation has already been set up on the farm and farmworkers have been assisted in purchasing tractors. Lutouw Estates has provided

surety for the loans, maintains the vehicles and has also guaranteed work for the owner-operators.

2.1.7   Nietbegin

Nietbegin is a wine farm situated in Devon Valley just outside Stellenbosch. Nietbegin operates as a partnership between the farm manager and his brother (50 per cent) and the workers' Trust (50 per cent). Land is leased from the Stellenbosch municipality and no workers reside on the property. The operating partnership has a 25-year lease on the land at a nominal annual rental of R16000. The lease agreement allows Nietbegin tax deductions for any improvements made to the land. Employees work on farms owned by the farm manager and his brother as well as on Nietbegin. Nietbegin harvested its first grape crop in 2004 and the farm manager was optimistic about the season. The majority shareholders at Nietbegin financed a 'dividend' of R1000 per worker from their own pockets. These payments amounted to R99000 and show a strong commitment to the project.

2.2   Land reform project at Clipstone farm

Clipstone farm is a result of a land reform project initiated in 1999 by the owners of Sherwood farm in the Midlands of KZN for labour tenants residing on the farm. The labour tenants, represented by the eGamalethu CPA, purchased Clipstone- a 630 hectare subdivision of Sherwood using SLAG. All but five households moved to Clipstone. Equity-sharing was then proposed as a means for the households to exchange cattle for financial equity in a commercial beef enterprise on Sherwood to alleviate grazing pressure on Clipstone. Figure 2.1 overleaf presents the proposed organisational structure for the proposed equity-share scheme at Sherwood.
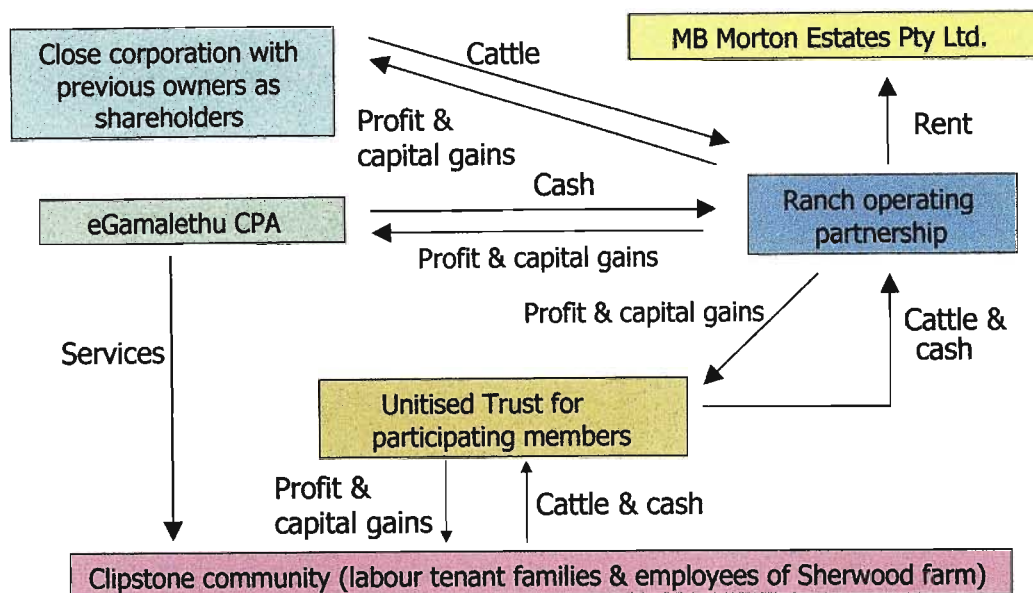
Figure 2.1 Proposed organisational structure for the equity-share scheme at Sherwood (Source: Greene, 2004)

Shinns and Lyne (2004) studied the poverty status of land reform beneficiaries at Clipstone. A census survey was conducted of all 38 beneficiary households residing on Clipstone in November 2002 and the same households were then paneled during August 2004. The 2002 survey was designed to capture information on both the symptoms and possible causes of poverty within the community, while the follow-up survey (Appendix 2) gathered panel data on just the symptoms of poverty. These were measured in terms of housing quality, household health, wealth and current income. Wealth was measured in terms of the estimated market value of livestock, the only significant non-depreciating and liquid asset identified in the surveys. Health was measured as the number of household members sick enough to consult a doctor during the two months prior to the survey. Housing quality was measured in terms of a PC index representing materials used to construct exterior walls, adequate sanitation and access to safe drinking water (section 1.2.2).

Sherwood is not yet an equity-share scheme but is used in this study to test the multi-dimensional transition matrix approach to measuring poverty because panel data were

available over two study periods. The aim of measuring poverty at Clipstone is not to assess the performance of the current CPA and conclusions regarding the performance of this land reform project should not be drawn from this study. The proposed equity-sharing arrangement on Sherwood was approved for LRAD funding in December 2004. Chapter 3 uses empirical data gathered at the study sites to identify a subset of feasible performance indicators from those proposed in Chapter 1.

CHAPTER 3

APPLICATION OF PROPOSED INDICATORS

This chapter uses empirical data gathered at the study sites described in Chapter 2 to identify a subset of feasible performance indicators from those proposed in Chapter 1 to measure aspects of: poverty alleviation; empowerment and participation; institutional arrangements and governance; and financial performance.

3.1   Poverty alleviation

3.1.1   Dynamic poverty approach

Following Carter and May's (2001) dynamic approach to measuring poverty, observed household income levels were regressed on asset values for the 38 households at Clipstone. This regression yielded very low R^2 values (less than 0.05). Piecewise linear regression (Gujarati, 2003: 317-319) was then used to test the hypothesis that only households with current income levels above some minimum threshold could afford to hold livestock. A threshold of R300/AE/month provided the best fit, with an R^2 of just 0.055 for the piecewise regression of income on assets. Neither the value of livestock nor the level of adult education (human capital) had statistically significant coefficient estimates. As a result, Carter and May's (2001) poverty line was abandoned in favour of Shinns and Lyne's (2004) multi-dimensional measure of relative poverty. Accordingly, the transition matrix was used to detect shifts in group membership between the two surveys, where membership was based on current income, wealth, health and housing quality.

A new PC index of housing quality was estimated from the pooled panel data using a correlation matrix. The index was estimated by equation (3.1):

$$PC_1 = \text{housing quality} = 0.78\,(\text{walls}) + 0.82\,(\text{water}) + 0.14\,(\text{sanitation}) \qquad (3.1)$$

where the variables are as defined in section 1.2.2. The first PC was the only component with an eigenvalue greater than one and explained 44 per cent of the total variation in the three housing variables. All of the poverty symptoms, apart from housing quality, were expressed in per capita adult equivalent (AE) terms, and all monetary values in 2001 Rands.

3.1.2 Transition matrix

Panel data gathered in the census surveys of beneficiary households at Clipstone in 2002 and 2004 were pooled and subject to non-hierarchical CA (Nie *et al.*, 1975). "*CA is the art of finding groups in data*" (Kaufman & Rousseeuw, 1990: 1). Clustering algorithms operate on either of two input structures. The one considered here, non-hierarchical (or K-means) CA (Nie *et al.*, 1975), is where weights are applied to emphasise the relative importance of income, assets, health and housing quality in assigning households to each poverty status group. In this case, weights were applied to emphasise income and assets as more important clustering variables than health and housing quality because it is easier to obtain more accurate measures of income and assets.

The data were pooled to ensure that the analysis would generate information about changes in relative poverty. Households were clustered into four poverty status groups: group 1 was intended for income and asset 'rich' households; group 2 for the income poor and asset 'rich';

group 3 for the income 'rich' and asset poor; and group 4 for the income and asset poor households.

A transition matrix was constructed from the poverty groups after excluding eight missing cases (two in 2002 and six in 2004), and is presented in Table 3.1. Transition matrices can be used where there are defined sets of conditions or states, there is a transition from one state to the next, and where the next state depends upon the previous one (Leigh-Lancaster, 2001). The groups are ranked from the least poverty-stricken households (group 1) to the most poverty-stricken (group 4) according to the group means computed for each clustering variable (see Table 3.2 on page 54). The transition matrix shows the movement of individual households between poverty groups over the study period (2002-2004). The shaded cells in Table 3.1 show the number of households that did not change their position over the study period. The cells below the diagonal track households whose poverty status improved, while those above the diagonal track households that moved into poorer groups.

Table 3.1 Transition matrix of 30 households at Clipstone farm for the study period 2002-2004

2002 Poverty groups	2004 Poverty groups				
	1	2	3	4	Total
1	1	3	1	3	8
2	2	2	0	2	6
3	1	1	3	3	8
4	0	1	2	5	8
Total	4	7	6	13	30

The transition matrix in Table 3.1 shows that 11 (37 per cent of) households did not shift between poverty groups over the study period. For seven (23 per cent) welfare improved over time and for the remaining 12 households (40 per cent) it worsened. The largest proportion of households fell into the income and asset poor group (group 4) in 2002 and 2004 (27 and 43 per cent respectively).

Although the proportion of households in the poorest (least poor) group appears to have increased (decreased), it is first necessary to test for statistically significant shifts and the direction of these shifts within groups. Following Carter and May (2001), Hout's (1983: 15) L^2 statistic is used initially to test the hypothesis that a household's poverty status in period two is independent of its position in period one. L^2 is estimated using equation (3.2):

$$L^2 = 2 \sum_i \sum_j nf_{ij} \ln (f_{ij}/F_{ij})$$

(3.2)

where nf_{ij} represents the count in cell ij of the transition matrix, i the rows of the matrix, j the columns of the matrix, and F_{ij} the frequency predicted for that cell under the assumption of perfect mobility. L^2 is distributed χ^2 with $(r-1)^2$ degrees of freedom, where r is the number of rows in the transition matrix, and is not statistically significant if a household's poverty status in period two is independent of its starting position in period one.

In this study L^2 was not statistically significant and the null hypothesis of independence was accepted. In this case the Z-test for equality of proportions (Berenson *et al.*, 2002) can be made for each group to identify statistically significant shifts and the direction of these movements within groups over the time period. The Z-test is computed using equation (3.3):

$$Z = \frac{\hat{P}_{11} - \hat{P}_{21}}{\sqrt{\hat{p}(1-\hat{p})(\frac{1}{n_1} + \frac{1}{n_2})}}$$

(3.3)

where $\hat{P}_{21}$ is the proportion of households in time period 2 in poverty group 1,

n_1 is the sample size in time period 1, and

$\hat{p}$ is an estimate of the standard error of $\hat{P}_{11} - \hat{P}_{21}$, and is computed using equation (3.4):

$$\hat{p} = \frac{n_{11}\hat{P}_{11} + n_{21}\hat{P}_{21}}{n_{11} + n_{21}}$$

(3.4)

None of the Z-tests were statistically significant, suggesting that the distribution of poverty did not change significantly over the study period. Table 3.2 highlights changes in absolute poverty over the study period. Only two of the t-tests applied to the group means in Table 3.2 showed significant differences between 2002 and 2004. In group 3 there were statistically significant improvements in both health and housing quality over time. However, there were no significant changes in levels of income or wealth in any of the poverty groups, nor were there significant changes in health or housing quality in groups 1, 2 and 4. In short, there is no evidence of improvement in relative poverty, and very little evidence of improvement in the alleviation of absolute poverty, at Clipstone.

Table 3.2 Group means for poverty symptoms at Clipstone farm, 2002 and 2004 (in constant 2001 Rands)

Poverty group	Income (per AE[1]) Rand/month		Assets (per AE) Rand		Health[2] (per AE)		Housing index	
	2002	2004	2002	2004	2002	2004	2002	2004
1	332.64	324.05	4002.67	5277.56	0.1724	0.2043	1.6594	-0.3495
2	102.07	113.79	4391.19	3872.04	0.1386	0.1446	0.3182	-0.2654
3	332.42	308.12	1207.39	1383.23	0.0822	0.0000	-0.4336	-0.2654
4	91.60	122.29	1152.49	1261.17	0.1681	0.1096	-0.0698	-0.2654
Overall mean	213.81	180.49	2340.90	2357.23	0.1403	0.1086	0.2781	-0.2760

[1]AE = (adults + (0.5) children)$^{0.9}$
[2]Health = number of household members sick enough to visit a doctor.

This application of the transition matrix has the advantage of using a multi-dimensional measure of poverty, generates information about changes in both relative and absolute levels of poverty, and avoids the problem of comparing a single dimensional measure of poverty (such as an income poverty line) with a subjective and controversial cut-off point.

3.2   Empowerment and participation

A scorecard listing feasible empowerment and participation indicators is presented in Table 3.3 (on page 57) and shows the scores computed for each study project. Eight categories of

indicators are proposed in the scorecard: control and ownership; skills transfer; understanding of the scheme; information; outcomes (benefits); trust; outreach; and participation. The indicators were scored as proportions or as dummy variables, where one indicates the presence of a characteristic important for good performance and zero the absence of the characteristic. This empirical information was then used to gauge cut-off points or norms for certain indicators. Proportions that exceeded their norms for some of the indicators in the skills transfer, understanding, information and trust categories were then scored as one, and those below the norm as zero. Simple arithmetic means of proportions were computed for the other categories because their indicators are all continuous variables.

An overall empowerment and participation score was computed for each scheme. Missing values counted negatively in the scorecard as they were attributed to a lack of record keeping. In future studies, questions relating to attendance of meetings and absenteeism should be rephrased to distinguish between instances where respondents are unaware of recorded information and cases where information was not recorded at all. Each category of indicators was then scored as a percentage and the overall score was computed as the simple average of the percentages across all categories. The overall score therefore naively assigns equal weight to each of the categories in the scorecard. For the outcomes category, scores were taken from the overall score computed in Table 3.4 (see section 3.2.3 on page 61) so no norms are suggested in Table 3.3 for these indicators.

Monitoring of these indicators must occur over time to assess the reasons for good or poor project performance and to modify norms. The overall scores for empowerment and participation ranged from 45 to 81 per cent at the study projects. A score of at least 50 per cent is recommended on the basis that at least half of the indicators are present. The following

sections discuss the indicators identified as feasible measures of empowerment, outreach, trust

and participation at equity-share schemes.

Table 3.3 Scorecard to measure empowerment and participation at seven equity-share schemes, Western Cape 2004

Indicators	Norm	Project number						
		1	2	3	4	5	6	7
Control & ownership (%)		22	9	13	28	41	37	50
Relative worker-shareholding (%)		10	3.5	6	5	49	40	50
Workers on the Board of the operating entity (%)		33	14	20	50	33	33	50
Skills transfer (%)		100	100	75	50	100	100	75
Initial training through facilitation	Yes	1	1	1	1	1	1	1
Ongoing training	Yearly	1	1	1	0	1	1	1
Certification of courses	Yes	1	1	1	1	1	1	1
All shareholders receive training	Yes	1	1	0	0	1	1	0
Understanding (%)		50	100	100	0	100	100	100
Does the chair of the Trust understand the scheme	Yes	0	1	1	0	1	1	1
Proportion of worker-respondents who understand scheme (%)	≥50 = 1	50	75	80	40	80	75	100
Information (%)		67	67	67	33	100	100	100
Frequency of general meetings	Yearly	1	1	1	0	1	1	1
Worker attendance at last general meeting (%)	≥80 = 1	DK[1]	DK	DK	N/A[2]	80	100	90
Circulation of minutes	Yes	1	1	1	1	1	1	1
Outcomes (%) See Table 3.4		55	76	54	41	73	62	69
Tenure security (%)		0	0	0	0	100	33	33
Worker income (%)		50	100	50	25	25	50	50
Housing quality (%)		67	100	100	100	100	67	100
Basic services (%)		80	80	60	60	40	80	80
Working conditions (%)		80	100	60	20	100	80	80
Outreach (%)		67	66	59	69	59	44	63
Relative female shareholding (%)		50	59	36	56	54	33	39
Female Trustees (%)		50	40	40	50	22	DK	50
Shareholding of unskilled workers relative to their share of enterprise workforce (%)		100	100	100	100	100	100	100
Trust (%)		100	100	100	80	100	100	100
Absenteeism rate (%)	≤10 = 1	<5	<5	10	DK	5-7	5	10
Wage demands or strikes	None	1	1	1	1	1	1	1
Trust in management	≥3 = 1	4.25[3]	3.75	4.3	4.4	3.56	3.5	3.67
Worker-management relations	≥3 = 1	4.0[3]	4.1	4.4	4.6	3.0	3.75	5.0
Procedures to resolve conflict	Yes	1	1	1	1	1	1	1
Participation rate (%)		82	82	61	61	71	70	82
Overall score (%)	50	68	75	66	45	81	77	80

[1]DK = Do not know
[2]N/A = Not applicable
[3]Average of scores assigned by worker respondents

3.2.1 Control and ownership

Ownership is measured by relative worker-shareholding, and control by worker representation at Board level. There is a positive correlation between worker-shareholding and Board representation in the study schemes. The ability of workers to influence decision-making is also indicated by skills transfer and information, as discussed in section 3.2.2.

Various sectors of South African business have, as required by Government policy) recently proposed BEE charters dealing with control and ownership issues. The goals proposed by these charters are subjective and indicate what is politically desirable from Government's perspective when assessing worker-shareholding at equity-share schemes. The Minister of Agriculture and Land Affairs, Thoko Didiza, recently outlined a framework for BEE in agriculture in the form of the draft Agri BEE charter (Paton, 2004: 25). In terms of this draft, targets have been proposed for farmworkers to achieve a ten per cent ownership stake in all farm enterprises by 2008; black representation at executive level of 30 per cent by 2006; and the elimination of illiteracy amongst farmworkers by 2010 (Paton, 2004: 25). Some of the study schemes exceed the requirements proposed by Agri BEE for black ownership, Board representation and literacy training. Three of the seven projects have a relative worker-shareholding above ten per cent; five have more than 30 per cent black representation at executive level (directors that are previously disadvantaged worker-shareholders); and four have provided some form of literacy training. In addition, five have ongoing training programmes to equip workers in subjects such as banking skills, interpretation of financial statements, life skills and farm management.

More than half of the study schemes do not meet the target proposed by Agri BEE for worker-shareholding. Given the modest size of LRAD grants, Agri BEE's proposed target of ten per cent may simply not be attainable at schemes that have substantial equity capital or a small workforce. The targets proposed by Agri BEE are not necessarily feasible and have no scientific basis. They are therefore questionable and are not applied as norms for equity-share schemes in this study. In general, the ability of workers to participate in and influence decisions was highest at those schemes with a worker-shareholding of ten per cent or more. However, project 2 had the lowest worker-shareholding (3.5 per cent) but scored 75 per cent for empowerment and participation (Table 3.3) compared to the other six schemes where worker equity ranged from five to 50 per cent.

The proportion of worker-directors on the Board of the operating entity was above 33 per cent at five of the seven schemes, and 14 and 20 per cent at the remaining two. At project 2, where worker-shareholding and Board representation was the lowest (3.5 and 14 per cent respectively), scores computed for measures of worker satisfaction and participation, outcomes and understanding were consistently the highest indicating that the majority shareholders were willing to include and empower worker-shareholders despite their small shareholding. These worker-shareholders also felt that they could influence working conditions if they wanted to, trusted management and rated their participation in decision-making as good. While there is clearly room for improvement in the shareholding of workers at this project it has performed very well in many other aspects of empowerment. This unexpected outcome may partially be explained by the fact that worker-shareholders had applied for LRAD grants to finance additional equity in the scheme.

By contrast, project 4 had one of the two highest scores for Board representation (50 per cent) but relatively low scores for skills transfer, understanding of the scheme, information, outcomes and trust. This is the only project that fits Karaan's (2003) view that workers may be unable to influence policy decisions even if they are well represented on the Board of directors. Although only four workers, at most, were interviewed at each scheme, exceptions like projects 2 and 4 suggest that the relative shareholding of workers by itself is neither a necessary nor a sufficient indicator of empowerment and participation.

3.2.2 Skills transfer, understanding of the scheme and information

Respondents were given a list of skills training courses and were asked when last training occurred (if at all) and to rate the quality of training. The quality of training was measured using workers' understanding of the scheme and certification of courses. Data were also gathered on whether worker-shareholders had received initial training through the facilitation process. Understanding of the scheme was objectively tested by asking respondents to sketch or explain the ownership structure of the equity-share scheme indicating the groups of the shareholders and their relative shareholding. The levels of understanding ranged from 40 to 100 per cent of workers interviewed at the study schemes. Schemes with less than 50 per cent scored a zero on the dummy variable used to score understanding of the scheme. Access to information was measured by the frequency of general meetings, circulation of minutes and attendance at meetings. The scores awarded to the study projects for indicators of skills transfer, understanding of the scheme and information highlight some of the positive relationships anticipated between these concepts. At project 4 where there was no ongoing training, most worker-shareholders (including the chair of the Trust) could not describe the ownership structure and no general meetings had been held. This is in contrast with project 6

where there is ongoing training, regular meetings are held and the majority of worker-shareholders interviewed understood the scheme's organisational arrangements. Ongoing training is defined as training that occurs at least once a year. This was the average frequency of training at the study schemes where regular training did occur.

3.2.3   Outcomes

Outcomes of the equity-sharing arrangement were measured by asking respondents to identify what benefits they had received before and after the scheme had been established. Respondents were also asked to rate the importance of each benefit. Unfortunately, the majority of workers rated every benefit as very important. In future surveys, respondents should rather be asked to rank the relative importance of the five most important benefits. The outcomes of equity-share schemes were grouped into five categories measuring tenure security, worker income, housing quality, basic services and working conditions (Table 3.4 overleaf). Variables within each of these categories were coded as dummy variables (with one indicating the presence of an attribute, and zero otherwise) and then summed to yield a percentage of the maximum possible score. This percentage score contributes to the overall empowerment scores presented in Table 3.3.

The (unweighted) outcome scores for the study schemes ranged from 41 to 76 per cent. All but one of these schemes scored low for tenure security because worker-shareholders did not acquire residential plots or long-term leases. Project 4 scored lowest on outcomes. Considering the poor performance of this project on other indicators it would seem prudent to suggest a target for outcomes on the next best performing scheme (project 3), which scored 54 per cent.

Table 3.4 Scores for the outcomes at seven equity-share schemes, Western Cape 2004

Outcome	Project number						
	1	2	3	4	5	6	7
Tenure security (%)	0	0	0	0	100	33	33
Residential plots	0	0	0	0	1	0	0
Property ownership	0	0	0	0	1	1	1
Long-term leases	0	0	0	0	1	0	0
Working conditions (%)	80	100	60	20	100	80	80
Influence wages	1	1	0	0	1	1	1
Influence working conditions	1	1	1	0	1	1	1
Secure employment	1	1	1	1	1	1	1
Medical contributions	0	1	1	0	1	1	0
Pension benefits	1	1	0	0	1	0	1
Basic services (%)	80	80	60	60	40	80	80
Access to electricity	1	1	1	1	1	1	1
Health services	1	1	1	1	1	1	1
Schools	0	0	0	0	0	0	0
Improved roads	1	1	0	0	0	1	1
Access to telephones	1	1	1	1	0	1	1
Worker income (%)	50	100	50	25	25	50	50
Dividend income	0	1	0	0	0	0	1
Capital gains on shares	1	1	0	0	0	0	0
Interest received from loans[1]	1	1	1	1	1	1	1
Wage increase	0	1	1	0	0	1	0
Housing quality (%)	67	100	100	100	100	67	100
Improved housing	0	1	1	1	1	0	1
Improved sanitation	1	1	1	1	1	1	1
Access to safe drinking water	1	1	1	1	1	1	1
Overall score (%)	55	76	54	41	73	62	69

[1]Interest from loans did not count against score if it was not applicable.

3.2.4   Outreach

The proportion of female Trustees was chosen as a meaningful and objective measure of female representation rather than female representation on the Board of directors because there are seldom more than one or two worker representatives on the Board. The relative shareholding of women in the worker's Trust was above the target set by the Financial Sector Charter (11 per cent) (Banking Council of SA, 2004) at all seven schemes. Female shareholding in the worker's Trust ranged from 33-59 per cent, and their representation as Trustees from 22-50 per cent with five of the seven schemes recording levels in excess of 40

per cent. Female representation in the workers' Trust is proportional, or more than proportional, to female shareholding in the majority of study schemes and significantly higher than levels of female representation in the wine industry as a whole. Kassier *et al.* (2004) reported that only about one per cent of Board representatives in corporate wine businesses in South Africa are women. A target of 30 per cent female representation in the workers' Trust seems reasonable (female shareholding in the study schemes was at least 30 per cent), but may not apply to agricultural industries characterised by heavy manual work. In these cases female shareholding should at least be proportional to their representation in the workforce of the enterprise.

Likewise, the proportion of unskilled worker-shareholders should be at least proportional to their representation in the total workforce. Two schemes did not employ unskilled workers on a permanent basis and therefore excluded unskilled workers as shareholders. At the remaining five schemes, the shareholding of unskilled workers was proportional to their share of the workforce in the enterprise. All of the unskilled permanent workers owned shares and the proportion of unskilled female shareholders exceeded that of unskilled males. Unskilled workers, male and female, were paid at the minimum wage at all seven projects.

3.2.5   Trust

Five of the seven study projects indicated that worker absenteeism was at or below five per cent. At one project the absenteeism rate was ten per cent and at the remaining project the manager did not know what the rate was. In view of these observations it is recommended that the norm for absenteeism should be less than ten per cent. There had been no demands for increased wages at five of the seven projects and at the remaining two projects wage demands

were settled through a process of negotiation. At project 6, wage disputes were settled by introducing a system where workers determined standards including an acceptable level of absenteeism and completion of skills training courses to qualify for a wage increase. Formal procedures to resolve disputes were in place at all of the projects. Worker respondents rated participation in these procedures as very important but less than 50 per cent participated in their design. This suggests that although workers have procedures for resolving conflict, their ideas on how conflict should be resolved were not taken into account.

Respondents were also asked to rate their trust in management and worker-management relations on a scale of one to five, where one was very poor and five was excellent. This provided a more subjective indicator of worker confidence. Mean scores for trust in management ranged from 3.5 to 4.4, which implies that trust in management is above average to high. Scores for worker-management relations ranged from average to excellent. Considering the distribution of these scores it is appropriate to assume that schemes that score below average for these two indicators are below the norm and have low worker confidence. Disinvestment was not used in the scorecard (Table 3.3) as a five-year moratorium had been imposed on the sale of shares by worker-shareholders at all of the study schemes. In future studies, when moratoria are no longer applicable, it may be useful to include this indicator as a measure of worker confidence in the scheme.

3.2.6   Participation rate

Ndibi and Kay's (1999) method of measuring participation was applied by asking worker respondents to rate the importance of five activities and the levels of worker participation in those activities. Respondents were asked about the importance of, and levels of worker

participation in; deciding on formal procedures to resolve disputes; most recent annual general meeting; workshopping the plans and procedures to create and run the equity-share scheme; establishing a formal organisation and institutions to represent workers' interests; and female representation in the scheme. The importance of each activity was rated from one to five, where five was the most important. For participation, respondents were given a series of statements ranging from no participation at all to 100 per cent participation and were asked to choose the statement that best matched their opinion. These statements were then used to classify participation into quintiles ranging from very high (β_i = 100 per cent) to none at all (β_i =0 per cent). Weighted participation rates were then summed across activities to estimate an overall participation rate for each study project.

The participation rates presented in Table 3.3 ranged from 60.5 to 82.4 per cent, with most achieving levels above 69 per cent. For the activities selected, a minimum participation target of 70 per cent seems reasonable when compared to the empowerment indicators in Table 3.3. Considering the inherent subjectivity in estimated participation rates, other more objective indicators of participation might be considered; for example, worker attendance at general meetings and voluntary training courses, the proportion of workers who are not shareholders and outcomes realised.

3.3   Institutional arrangements and governance

Table 3.5 overleaf presents the institutional arrangements and governance indicators used to score the operating entity at each study scheme. The indicators highlighted in italics were considered to be less important by Ithala Development Finance Corporation (Pringle, 2004) when assessing loan applications. Each indicator was scored as a dummy variable where one

indicated the presence of an attribute and zero otherwise. These scores were then summed and expressed as a percentage of the maximum score possible for each category. The (unweighted) overall score was computed as the average percentage across all three categories.

Table 3.5 Scorecard for institutional arrangements and governance at seven equity-share schemes, Western Cape, 2004

Indicator	Project number						
	1	2	3	4	5	6	7
Accountability (%)	**80**	**80**	**60**	**40**	**40**	**100**	**40**
Annual external audit	1	1	1	1	1	1	1
Directors aware of collective liability	1	1	1	1	1	1	1
Penalties for management	0	0	0	0	0	1	0
Incentive scheme for managers	1	1	1	0	0	1	0
Incentive scheme for workers	1	1	0	0	0	1	0
Transparency (%)	**71**	**86**	**100**	**14**	**100**	**100**	**100**
Annual general meeting	1	1	1	0	1	1	1
Disclosure of financial statements	1	1	1	0	1	1	1
Directors declare shareholding & personal transactions	0	0	1	0	1	1	1
Board approval for pledging land as collateral	0	1	1	0	1	1	1
Formal procedures for conflict resolution	1	1	1	1	1	1	1
Notice of meetings	1	1	1	0	1	1	1
Circulation of minutes	1	1	1	0	1	1	1
Property rights (%)	**67**	**75**	**67**	**67**	**75**	**75**	**67**
Formal nominations and elections of directors	0	0	0	0	1	0	1
Nomination of directors in proportion to shareholding	1	1	1	0	0	1	0
Non-shareholders cannot vote	1	1	1	1	1	1	1
Shares cannot be bequeathed to multiple heirs	1	0	0	1	0	0	0
Shares cannot be bequeathed to non-shareholders	0	1	1	1	0	0	0
Shares cannot be bequeathed to outsiders	1	1	1	0	1	1	1
Tradable benefit rights in proportion to shareholding (operating entity)	1	1	1	1	1	1	1
Tradable voting rights in proportion to shareholding (operating entity)	1	1	1	1	1	1	1
Tradable benefit & voting rights in proportion to shareholding (workers' Trust)	1	1	1	1	1	1	1
Restrictions on sale of shares to outsiders	1	1	1	0	1	1	1
Temporary moratorium on sale of shares by original owner	0	0	0	0	1	1	0
Shareholders must sell shares if they leave employment	0	1	0	1	1	1	1
Overall score (%)	**73**	**80**	**76**	**40**	**72**	**92**	**69**

The overall scores at the Western Cape study schemes ranged from 40 to 92 per cent, with most schemes (six) scoring above 69 per cent. Project 4 scored consistently low across empowerment and institutional arrangements, especially those that seek to ensure

transparency. These included annual general meetings, disclosure of audited financial statements, notice and conduct of meetings, and obligations for directors to declare their shareholdings and transactions with the business. Preliminary findings suggest a positive link between transparency and levels of worker understanding and information (Table 3.3) as suggested by Narayan (2002: 2) but, further research is needed to verify this relationship. Project 4 scores poorly on all three of these indicators whereas the opposite is true of Project 6.

Schemes that scored 69 per cent and above on the institutional and governance scorecard are all characterised by the presence of external audits, annual general meetings, disclosure of financial statements, formal procedures for conflict resolution, and tradable benefit and voting rights in proportion to individual investment in both the operating entity and workers' Trust. These attributes might be considered as fundamental requirements for the operating entity and for any other legal entity used to 'warehouse' worker shareholdings.

3.4   Financial performance

Financial statements for 2002 and 2003 were obtained from four of the seven equity-share schemes visited in the Western Cape and these were used to compute the financial ratios (see Table 3.6 on page 69). Financial statements could not be obtained from the remaining three study schemes so they were excluded from the analysis of financial indicators.

Knight *et al.* (2003) proposed a model of factors contributing to the performance of an equity-share scheme. One of the factors contributing to enterprise performance is enterprise choice and market environment. Financial performance must therefore be compared to trends in the

relevant agricultural industries. The fruit, wine grape and cut flower industries have all been negatively affected by significant Rand appreciation since 2002. In 2002, citrus prices were expected to increase by ten per cent from the previous year due to a weakening Rand (Mabiletsa, 2002). Stander (2004) estimates that profitability has since fallen by 20-25 per cent mainly as a result of the strengthening Rand. The deciduous fruit industry has experienced financial stress as a result of declining net returns caused by weak selling practices and low prices due to variable fruit quality; less consistent control; climate variability; and low labour quality and productivity (McKenna, 2000). Profitability has been declining over the past few years in the cut flower industry despite rising fresh flower sales (SAPPEX, 2004).

Table 3.6 overleaf presents the financial ratios calculated for four of the equity-share schemes in the Western Cape for the years ended 2003 and 2002. Asset values used to calculate profitability at Project 7 were based on end of year values and not average values as this project was still in its second year of operation. For the remaining projects, profitability ratios could be calculated only for the year ended 2003 because asset values were not available for 2001. Likewise, information about dividend payouts was available only for 2003. Absolute values for growth, workers' total return and wages presented in Table 3.6 were not estimated in real terms because data were available only for 2003. In future studies these measures should be expressed in real terms if the data are to be examined over a longer period of time. In general the overall financial performance of these four equity-share schemes during 2002 and 2003 was poor compared to the generally accepted norms presented in Table 1.2. Poor performance was primarily a reflection of adverse market conditions for their main crop enterprises.

Financial ratios should be differentiated into those that may be used for comparisons between schemes and those for monitoring the performance of a particular scheme. Ratios for monitoring the performance of equity-share schemes over time are leverage, profitability (ROA, ROE and dividend return), growth and workers' total returns. Workers' total returns should be examined over time as there are no generally accepted norms for these ratios.

Table 3.6 Financial indicators for four equity-share schemes in the Western Cape for the periods 2002 and 2003

	Project 1		Project 5		Project 6		Project 7
Enterprise type	Deciduous fruit & cut flowers		Deciduous & citrus fruit		Vegetables & wine grapes		Wine grapes
Year of establishment	2000		2000		1998		2001
Financial year	2003	2002	2003	2002	2003	2002	2003
Profitability							
Net farm income	R553212	-R725737	-R394875	-R374463	-R2582650	R359771	-R575799
Rate of return on assets (ROA) (%)	5.00	[1]	-132.3	[1]	-20.6	[1]	-20.3[2]
Rate of return on equity (ROE) (%)	-32.4		N/A		N/A		-41.6
Dividend return	0	0	0	0	0	0	0
Liquidity							
Current ratio	0.394	0.266	0.720	0.421	0.059	0.353	0.001
Interest coverage ratio	1.497	-4.152	-7.242	-9.950	-3.038	0.701	N/A[3]
Solvency							
Debt/asset ratio	1.043	1.059	2.090	2.375	1.222	1.127	0.513
Leverage	-31.311	-23.610	-1.917	-1.727	-5.514	-8.904	1.053
Growth (per share)							
Absolute	R1452		-R4510		-R16550		[4]
Relative	-0.003		0.015		0.007		[4]
Workers' total returns[5]	R611524		R20581		-R37987		R99 000
Dividends	0		0		0		R99 000
Capital gains to workers	R14524		-R315712		-R661978		0
Total wage bill	R597000		R336293		R624000		0[6]
Interest received	0		0		0		0
Wages (per month) Lowest wage paid to unskilled worker	R650[7]		R650		R650		0

[1]ROA and ROE could not be calculated for 2002 because asset and equity values were not available for 2001.

[2]End of year asset and equity values were used as no 2002 data were available.

[3]This business paid no interest in 2003 on its loan accounts.

[4]Business in first year of operation so no growth estimates could be made.

[5]Workers' total return = Total wages for the year + total dividends + total capital gains + interest received.

[6]Wages were not presented in the financial statements of the equity-share scheme business.

[7]Minimum wage is R650 per month for farmworkers in rural areas far from urban job markets (and R800 for those closer to urban areas) (Department of Labour, 2004).

Some difficulties were encountered when estimating profitability at these projects. The ROE ratio implicitly assumes that equity is positive and is not suitable where a business experiences fluctuations in equity from positive to negative (or vice versa) because the returns will become infinite as equity approaches zero. This may be the case in new businesses where equity is low and the business experiences a net farming loss. A further problem occurs when the business experiences net farm losses and negative equity simultaneously because ROE becomes mathematically positive. The ROE values presented in Table 3.6 show this problem clearly because Projects 1, 5 and 6 experienced farm losses and negative equity values which create the misleading impression of high returns to equity.

In some cases equity levels are low because investors inject capital as loans which are grouped with other liabilities in the balance sheet. As a result, equity levels are small and tend to become negative in times of financial stress. Project 6 is one such case because workers' equity is reported in the balance sheet as a loan from SAWIT. While it is understandable that cash-strapped and risk-averse investors might prefer to inject their capital as loans rather than as equity, this practice seriously undermines the creditworthiness of a scheme. The fact that commercial banks granted loans to Project 6 (and others like it) shows that they are willing to finance BEE projects with solvency ratios that fall well short of recommended norms. Consequently, in cases where the original owner or workers inject capital through loan accounts, the norms for profitability and solvency cannot be meaningfully applied. One 'solution' is to treat these loans as equity when computing the financial ratios. Apart from generating contrived indicators, this approach may not always be possible because audited balance sheets seldom distinguish between 'disguised' equity and other genuine loans. The ratios at Project 6 were not adjusted for 'disguised' equity. Considering the distortions created in ROE, it may be more appropriate to use the dividend return as an alternative measure of

profitability. Dividends cannot be declared when equity is zero or negative so the dividend return will tend to have a lower limit of zero.

Likewise, ROA is a more appropriate measure of profitability than ROE because asset values will always be non-negative. Current market values for (improved) land must be used when calculating ROA and the debt/asset ratio. Negative ROA, caused by large farm losses, is still a meaningful measure of profitability. Project 1 had a positive ROA that was more or less equal to the average real interest rate of 5.36 per cent for February 2002-February 2003 (SA Reserve Bank, 2004). Although the return to investment for Project 1 is positive, its debt/asset ratio of 1.043 for 2003 is not sustainable given the ROA and cost of debt (COD) for 2003, where the COD was taken as a nominal interest rate of 15.36 per cent. At these levels the sustainable debt/asset ratio for this project is approximately 0.333 (33.3 per cent). ROA is negative for the other three projects. If this situation persists, their debt/asset ratios will climb and lenders will be forced to question their solvency.

Both the debt/asset and leverage ratios indicate solvency but the leverage ratio implicitly assumes positive equity values. Table 3.6 illustrates the problem where meaningless leverage values are obtained for businesses that experience negative equity. The application of the leverage ratio is therefore limited to (established) businesses with positive equity. Solvency ratios also become distorted when equity is disguised as debt capital (for example, Project 6) or when assets and liabilities are not reported on the same balance sheet. It is conceivable that this may happen when a business forms part of a larger group of companies. In either instance, the norms cannot be applied meaningfully to the solvency ratios and their use should be confined to monitoring changes in a particular scheme's solvency over time. The debt/asset ratio has the advantage of producing meaningful indicators when equity is negative.

The current ratio is not affected by negative equity but its norm may not be applicable to new farming enterprises where crops require long-term investment before the first harvest. This problem is well illustrated by Project 7, a wine grape farm. This business was established in 2001 and did not expect its first harvest until 2004. As a result, the current ratio computed at the end of 2003 falls far short of the recommended norm. In such cases it is reasonable to assume that investors had planned for the cash flow problem and that the current ratio should be monitored but not yet compared with its norm. The interest coverage ratio is an alternative to the current ratio but both ratios suffer from the problem that they are computed at a specific point in time. Consideration must be given to the time of year when the ratios are computed. For example, the ratios change significantly depending on whether they are computed pre- or post-harvest. Project 7 illustrates this, where the current ratio was computed before the first harvest. Adequate assessment of liquidity in these circumstances really requires cash flow projections (Barry *et al.*, 2000: 109).

Table 3.6 reports growth measured in terms of absolute and relative capital gains per share. Again, negative equity renders the relative measures meaningless in Projects 5 and 6, suggesting that attention should rather be focused on the absolute measures. These absolute measures of growth should not be used to compare between schemes, but rather to track changes in growth over a period of time. Early losses at Projects 5 and 6 resulted in negative growth during 2003 when producers of export crops felt the full effect of an appreciating Rand.

Workers' total returns measures financial benefits viewed from the workers' perspective. The objective of the measure is to determine if their real aggregate earnings improve as the equity-sharing arrangement matures. This measure should account for income from wages,

dividends, capital gains, other benefits such as medical aid contributions and other non-cash items, and interest received from lending to the business. The questionnaires used in the 2004 study did not require respondents to assign monetary values to 'other' benefits so they were not reported. In future, respondents should be asked to assign monetary values to these benefits. None of the projects had declared dividends or paid interest to workers (interest earned on the SAWIT loan accrued to SAWIT and not the workers). The workers' total returns estimates listed in Table 3.6 cannot be meaningfully interpreted until further time series data are available. Nevertheless, large (unrealised) losses in equity at Project 6 resulted in a negative estimate for workers' total return.

It is likely that workers' ability to influence working conditions will increase as their joint share of total equity increases. At the same time, their incentive to demand considerably higher wages is likely to diminish because their share of profits also grows with increased shareholding. Worker-shareholding exceeded 40 per cent of total equity at three of the four projects discussed in this dissertation. There had been no demands for higher wages since 2001 at two of these three projects and at the third project wage disputes were settled by introducing a system where workers determined standards including an acceptable level of absenteeism and completion of skills training courses to qualify for a wage increase. At all four of the projects most workers said that they felt the ability to influence working conditions was a direct result of acquiring shares in the scheme. The majority of respondents rated this ability as being a very important benefit of equity- sharing. This is consistent with Knight and Lyne's (2002) findings where most of the trustees interviewed (88 per cent) felt confident that they could influence wage conditions if they chose to. Knight and Lyne (2002) also found that worker-shareholders realised that demands for higher wages could jeopardise the profits of the business so they chose not to demand higher wages.

Knight *et al.* (2003) found that only one out of the nine projects they studied had declared dividends during 2001. Mayson (2003) criticised the ability of equity-share schemes to provide immediate benefits to worker-shareholders in the form of, for example, dividend payouts and additional housing benefits. Mayson (2003) argued that worker commitment to schemes that do not provide immediate benefits would decline substantially. Although none of the four projects investigated in this study were able to declare dividends, the majority shareholders of Project 7 financed a 'dividend' of R1000 per worker from their own pockets. These payments amounted to R99000 and show a strong commitment to the project. Fast (1999) suggests that visible benefits should be built into every year of the financial plan and that these may include activities such as cash crop production and the setting aside of additional productive land for the private use of shareholders. At three of the four projects, workers are given an additional piece of land on which they may grow their own crops or plant trees. This was not feasible at the fourth (remaining) project because workers reside off-farm. Instead, the workers are allowed to take crops for their own use with permission from the manager.

Capital gains accruing to workers reflect the real gain or loss in the value of equity held by all workers. Project 7 was in its first year of operation so capital gains were not estimated. Capital gains were estimated from annual changes in the audited net value of assets and therefore measure unrealised gains or losses. Workers are unlikely to realise losses unless they leave the scheme. Nevertheless, they should be made aware of changes in the value of their shares so that they may make informed decisions concerning their investment portfolios.

Other monetary benefits accruing to worker-shareholders included unemployment benefits through company contributions to the Unemployment Insurance Fund (UIF) and pension

contributions. Some of these benefits (such as UIF) were in existence before the equity-share scheme was established. Other non-monetary benefits common to all four projects, as perceived by the workers, were improved tenure security, ability to influence wages and working conditions, secure employment, improved sanitation, access to telephones and access to safe drinking water.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

Equity-share schemes have been implemented in a variety of agricultural and eco-tourism industries around South Africa to promote agrarian reform and BEE. Several studies have been carried out on these schemes but no single study has considered the performance of equity-share schemes in terms of a comprehensive set of objective indicators. Four broad criteria were proposed in this study to monitor the performance of equity-share schemes in South African agriculture: poverty alleviation; empowerment and participation; institutional arrangements and governance; and financial health. Data gathered in 2004 from a land reform project in the Midlands of KwaZulu-Natal and seven established equity-share schemes in the Western Cape were used to check the applicability of indicators proposed for each of these criteria. The aim of this study was not to assess the performance of equity-share schemes but to identify a feasible set of indicators to gauge and monitor the performance of these schemes.

A multi-dimensional approach to measuring poverty was tested using a transition matrix to track changes in the income, wealth, health and housing quality standards of beneficiary households at the land reform project in KwaZulu-Natal. This method is recommended over single dimensional poverty lines and does not rely on an assumed relationship between current income and assets. Importantly, it generates information about changes in both relative and absolute levels of (multi-dimensional) poverty over time, and these changes can be tested for statistical significance.

A scorecard approach is recommended for empowerment and participation, based on eight categories of indicators: control and ownership; skills transfer; understanding of the scheme;

information; outcomes; trust; outreach and participation. Empirical evidence was used to suggest norms and targets for feasible indicators. For control and ownership, more than half of the seven study schemes did not meet the (debatable) targets proposed by Agri BEE for worker-shareholding. These targets are not considered appropriate for equity-share schemes. Relative worker-shareholding by itself is neither a necessary nor a sufficient indicator of empowerment and participation. A target of 30 per cent female representation in the workers' Trust is met by the data but may not apply to agricultural industries characterised by heavy manual work. In these cases female shareholding should be at least proportional to their representation in the enterprise workforce. The overall scores for empowerment and participation ranged from 51 to 80 per cent at the study projects. A score of at least 50 per cent is recommended on the basis that at least half of the indicators are present.

A scorecard approach is also recommended for institutional arrangements and governance. Dummy variables (or proportions) are used in the scorecards and unweighted overall scores are computed to provide comparisons between schemes and over time. Three categories of indicators are recommended: accountability, transparency and property rights. The indicators show the presence or absence of attributes that alleviate the problems of free- and forced-riding. These problems tend to undermine the performance of conventional co-operatives. Five important attributes were found to characterise the schemes that scored higher on the institutional scorecard and these may be considered as fundamental requirements for the operating entity and the legal entity used to 'warehouse' worker shareholdings. These included general meetings, disclosure of audited statements, notice and conduct of meetings, and obligations for directors to declare their shareholdings and transactions with the business. The overall scores at the study schemes ranged from 40 to 92 per cent, with most schemes (six) scoring above 69 per cent.

Financial ratios are a useful means for objective measurement of the financial performance of equity-share schemes over time. Ratios typically recommended to measure the profitability, liquidity, solvency and growth of an enterprise were applied to financial data supplied by four equity-share schemes studied in the Western Cape province during 2004. This empirical analysis showed that certain financial ratios and conventionally applied norms are inappropriate for assessing the financial performance of farms recently restructured as equity-share schemes. Problems arise because equity often accounts for a small share of the capital invested by these empowerment projects, and investments tend to be in long-term crops with high establishment costs and low initial returns. When compounded by adverse market conditions, large losses made during the early years reduce equity to near-zero or even negative levels, rendering many financial performance ratios or their norms meaningless. The practice of 'disguising' equity as loans aggravates this problem.

For newly established equity-share schemes, dividend return and return on assets are better measures of profitability than return on equity as they do not rely on positive equity. For the same reason, the debt/asset ratio is preferred to the leverage ratio as a measure of solvency, and growth is better measured by absolute rather than relative changes in the real value of shares (estimated by net asset value). The apparent willingness of commercial banks to finance empowerment projects even though they are highly leveraged suggests that the debt/asset ratio and current or coverage ratio should not be compared with recommended norms but rather monitored to gauge the performance of a particular project over time. Likewise, absolute measures of growth cannot be used to compare the performance of different equity-share schemes. Cash flow projections might give a better assessment of liquidity than either the current or coverage ratio for newly established farm enterprises.

From society's perspective, the financial performance of an equity-share scheme could also be measured by changes in levels of employment and earnings indicated by changes in the real aggregate earnings of its workers over time. It is recommended that workers' total returns be computed by summing the wage bill, capital gains, dividends, interest and monetary value of any other significant benefits accruing to the scheme's workers in aggregate.

The scorecards proposed in this dissertation are recommended as an alternative to the DLA's monitoring and evaluation approach, which relies on "quality of life surveys". Such surveys measure outcomes that may not be related to the project or its performance. The performance indicators recommended in this study are objective. They are relevant, manageable in number, and have feasible norms based on empirical evidence. The robustness of these indicators and their norms needs to be tested on a wider scale and monitored over time. Further research is needed to determine the contribution of each indicator to overall performance in order to try and attach weights to the categories proposed in the empowerment and institutional scorecards. The criteria recommended in this study will help to assess the contribution of equity-share schemes to agrarian reform and BEE in South African agriculture and may well be applied to any land reform project involving groups of beneficiaries.

SUMMARY

Equity-share schemes have been proposed as one means of dealing with the relatively slow pace of land and wealth redistribution in South African agriculture. They have also been proposed as a means of dealing with free-rider problems associated with conventional producer co-operatives and collective ownership of resources. Equity-share schemes are privately owned farming operations that are generally restructured as companies with the original owner and the farmworkers as shareholders. The concept of equity-share schemes is not limited to include only farmworkers, but other previously disadvantaged stakeholders, such as neighbouring rural communities, as well.

Several studies in SA have investigated particular aspects of performance of these schemes. Early studies questioned the success of equity-share schemes based on assessments of worker participation, empowerment and institutional arrangements. The most common concerns raised by earlier studies related to worker understanding of the structure of the scheme, worker participation during establishment, beneficiaries' expectations, power relations, skills transfer, labour relations, gender issues and tenure security. A later study, conducted on eight equity-share schemes in the Western Cape in 2001, showed that many of these concerns had been corrected in the more successful projects.

Policy goals and socio-economic issues raised in previous studies of equity-share schemes suggested four criteria to monitor the performance of equity-share schemes in South African agriculture, namely: poverty alleviation; empowerment and participation; institutional arrangements and governance, and financial performance. Data were gathered from a land

reform project in the Midlands of KwaZulu-Natal and seven established equity-share schemes in the Western Cape in order to test the proposed criteria.

Data on poverty were collected from Clipstone farm in KwaZulu-Natal in a census survey of 38 land reform beneficiary households during November 2002. The same 38 households were then paneled during August 2004. Clipstone is not an equity-share scheme but is used in this study to demonstrate the application of the transition matrix approach to measuring poverty because panel data were available over the two study periods. The aim of measuring poverty at Clipstone was not assess the performance of the current communal property association and conclusions regarding the performance of this land reform project should not be drawn from this study. Respondents were asked questions about housing quality, household wealth, health and income. Wealth was measured in terms of livestock, the only significant non-depreciating and liquid asset identified in the surveys. Housing quality was measured as a principal component index of building materials, access to safe drinking water and adequate sanitation.

A dynamic approach to measuring poverty was tested by regressing observed household income levels on asset values for the 38 households at Clipstone. This regression yielded very low R^2 values. Piecewise linear regression was then used to test the hypothesis that only households with current income levels above a certain minimum threshold could afford to hold livestock. Neither the value of livestock nor the level of adult education (human capital) had statistically significant estimated coefficients. As a result, the dynamic approach to measuring poverty was abandoned in favour of a multi-dimensional measure of relative poverty.

A transition matrix was used to detect shifts in group membership between the survey periods (2002 and 2004), where membership was based on current income, wealth, health and housing quality. A new principal component index of housing quality was estimated from the pooled panel data. The data were then subject to non-hierarchical cluster analysis. Households were clustered into four poverty groups: group 1 was intended for income and asset 'rich' households; group 2 for the income poor and asset 'rich'; group 3 for the income 'rich' and asset poor; and group 4 for the income and asset poor households.

The transition matrix showed that 37 per cent of households did not shift between poverty groups over the study period. For some (23 per cent) welfare improved over time and for the remaining households (40 per cent) it worsened. The largest proportion of households fell into the income and asset poor group in 2002 and 2004 (27 and 43 per cent respectively). The L^2 statistic was test the hypothesis that a household's poverty status in period two is independent of its position in period one. L^2 was not statistically significant and the null hypothesis of independence was accepted. The Z-test for equality of proportions was then made for each group to identify significant shifts and the direction of these movements within groups over the study period. None of the Z-tests were statistically significant suggesting that the distribution of poverty did not change significantly over the study period.

Only two of the t-tests applied to the group means for each poverty group showed significant differences between 2002 and 2004. In group 3 there were significant improvements in both health and housing quality over time. There were no significant changes in the levels of income or wealth in any of the poverty groups, nor were there significant changes in health or housing quality in groups 1, 2 or 4. This multi-dimensional approach to measuring poverty is recommended over single dimensional poverty lines and does not rely on an assumed

relationship between current income and assets. Importantly, it generates information about changes in both relative and absolute levels of (multi-dimensional) poverty over time, and these changes can be tested for statistical significance.

A detailed study of seven established equity-share schemes was conducted in the Western Cape during February 2004 to test performance criteria proposed for empowerment and participation; institutional arrangements and governance; and financial performance. The activities at these farms included cut flowers and fruit, olives, fruit and wine grapes, wine grapes, deciduous and citrus fruit, and vegetables and wine grapes. Interviews were held with the farm manager (frequently the previous farm owner), the chair of the workers' Trust and ordinary worker-shareholders. The chair of the Trust and at least one other worker-shareholder were interviewed at each scheme, with four worker-shareholders interviewed at five of the seven schemes. Non-shareholders were not interviewed. Both higher-level employees (such as office staff) and lower-level employees (such as crop sprayers) were interviewed and at least one female worker-shareholder was interviewed at each scheme. Responses to questions that required workers to rate indicators of empowerment or trust were not unanimous but varied within a relatively small range, usually between the highest point (5 = excellent or very high) and the middle point (3 = average) on a five-point Likert-type scale. In such cases, the mean response was recorded as representing the view of all worker-shareholders employed on the farm.

Three different questionnaires were used for these respondents. Worker-shareholders (including the chair of the workers' Trust) were asked questions relating to skills transfer, benefits of the equity-sharing arrangement, trust and participation. The manager and chair of the Trust were asked questions on institutional arrangements and governance relating to the

operating entity and workers' Trust respectively. In addition, the manager was asked questions about meetings, communication with worker-shareholders, tenure security and gender equality. In addition, the farm manager (who was often the original owner) was asked to detail the composition of the workforce and the lowest and highest wage rates paid to both skilled and unskilled workers. They were also asked when last the land had been valued and to provide dates and values for fixed improvements to land.

A scorecard for empowerment and participation was proposed with eight categories of indicators: control and ownership; skills transfer; understanding; information; outcomes; trust; outreach; and participation. The indicators were scored as proportions or as dummy variables, where one indicates the presence of a characteristic important for good performance and zero the absence of a characteristic. This information was then used to gauge cut-off points or norms for certain indicators. Proportions that exceeded their norms for some of the indicators in the skills transfer, understanding, information and trust categories were then scored as one, and those below the norm as zero. Simple arithmetic means of proportions were computed for the other categories because their indicators are all continuous variables. An overall score was computed for each scheme. Missing values counted negatively in the scorecard as they were attributed to a lack of record keeping. Each category of indicators was then scored as a percentage and the overall score was computed as the simple average of the percentages across all categories. The overall score therefore assigns equal weight to each of the categories in the scorecard.

Monitoring of these indicators must occur over time to assess the reasons for good or poor project performance and to modify norms. The overall scores for empowerment and

participation ranged from 45 to 81 per cent at the study projects. A score of at least 50 per cent is recommended on the basis that at least half of the indicators are present.

A scorecard was also applied to institutional arrangements and governance. Three categories were proposed in the scorecard: accountability, transparency and property rights. Each indicator was scored as a dummy variable where one indicated the presence of an attribute and zero otherwise. These scores were then summed and expressed as a percentage of the maximum score possible for each category. The (unweighted) overall score was computed as the average percentage across all three categories. The overall scores at the Western Cape study schemes ranged from 40 to 92 per cent, with most schemes (six) scoring above 69 per cent. Project 4 scored consistently low across empowerment and institutional arrangements, especially those that seek to ensure transparency. These included general meetings, disclosure of audited statements, notice and conduct of meetings, and obligations for directors to declare their shareholdings and transactions with the business. Preliminary findings suggest a positive link between transparency and levels of worker understanding of the structure of the scheme and information but further research is needed to verify this relationship.

Financial ratios of profitability, liquidity, solvency, growth and workers' total return were used as measures of financial performance of equity-share schemes. For these projects, land (including fixed improvements) accounted for over 80 per cent of the total asset base so (improved) land values were adjusted to current market value using the farm manager's estimates for 2002 and 2003. In general the overall financial performance of these four equity-share schemes during 2002 and 2003 was poor compared to the generally accepted norms. Poor performance was primarily a reflection of adverse market conditions for their main crop enterprises. This empirical analysis showed that certain financial ratios and conventionally

applied norms are inappropriate for assessing the financial performance of farms recently restructured as equity-share schemes. Problems arise because equity often accounts for a small share of the capital invested by these empowerment projects, and investments tend to be in long-term crops with high establishment costs and low initial returns. When compounded by adverse market conditions, large losses made during the early years reduce equity to near-zero or even negative levels, rendering many financial performance ratios or their norms meaningless. The practice of 'disguising' equity as loans aggravates this problem.

For newly established equity-share schemes, dividend return and return on assets are better measures of profitability than return on equity as they do not rely on positive equity. For the same reason, the debt/asset ratio is preferred to the leverage ratio as a measure of solvency, and growth is better measured by absolute rather than relative changes in the real value of shares (estimated by net asset value). The apparent willingness of commercial banks to finance empowerment projects even though they are highly leveraged suggests that the debt/asset ratio and current or coverage ratio should not be compared with recommended norms but rather monitored to gauge the performance of a particular project over time. Likewise, absolute measures of growth cannot be used to compare the performance of different equity-share schemes. Cash flow projections might give a better assessment of liquidity than either the current or coverage ratio for newly established farm enterprises.

From society's perspective, the financial performance of a project could also be measured by changes in the real aggregate earnings of its workers over time. It is recommended that workers' total returns be computed by summing the wage bill, capital gains, dividends, interest and monetary value of any other significant benefits accruing to workers in aggregate.

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APPENDICES

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APPENDIX 1. QUESTIONNAIRE FOR EQUITY-SHARE SCHEMES

Name of case study _____

Year of registration of operating entity _____

Name of previous owner _____

Date of interview _____

Postal address _____

Telephone number _____

Fax number _____

E-mail address _____

Name of manager _____

Director of operating entity _____

Chair of Trust _____

Trustee _____

Worker-shareholder respondents

_____

ORGANISATION

1.1 Ownership structure

Please draw a diagram of the ownership structure in terms of companies, Trusts etc. and specify all lease agreements. Note differences between different respondents.

1.2 Board representation

Reasons given for change in manager and/or chairperson: [n/a]

	Operating entity	Land-holding company	Worker's Trust
Name of Chairperson			
Is the Chairperson a shareholder? Y/N/DK*			
Name of Manager			
Is the manager a majority shareholder? Y/N/DK*			
No. of directors/trustees			
No. of male directors/ trustees			
No. of shareholders			
No. of female shareholders			
No. of shareholding directors			
No. of shareholding directors with shares in Workers' Trust			
No. of shareholders who are non-workers			

*Y=Yes, N=No, DK=Don't Know

Shareholding:

Shareholding	Previous owner	Outside investors	Worker's Trust	Other (specify)
Operating entity %				
*Director representation				
Land-holding company %				
*Director representation				

* Ratio in absolute terms (e.g. 2/5)

1.3 The work force

Permanent workers – currently employed						
	Unskilled*			Skilled**		
	Number	Lowest wage (R/month)	Highest wage (R/month)	Number	Lowest wage	Highest wage
Male shareholders						
Female shareholders						
Male non-shareholders						
Female non-shareholders						

*For example, cane cutters etc
**For example, supervisors, drivers etc

What is the minimum wage rate on your farm? _____

What % of workers are contract (non-permanent) workers?

- Male shareholders _____

- Female shareholders _____

- Male non-shareholders _____

- Female non-shareholders _____

How many contract workers are shareholders, and what is their monthly wage rate (only if they are shareholders)? _____

Are any non-farmworkers currently shareholders? Yes/No

If yes, what number (or %) of the workers' entity are non-workers? _____

Where do they come from? (e.g. neighbouring community) _____

Are any of the current office bearers in the Trust or operating entity women?

Yes	No	Don't know

If yes, what proportion are women? _____ [Don't know]

What was the rate of absenteeism in the last year? _____ [No response]

Has there been demand for higher wages from the workers over the past 2 years? Yes/No
If yes, how were these demands settled? _____

Have there been any strikes over the last 2 years? Yes/No
If yes, over what issue? _____

Have there been any other labour issues over the past 2 years (e.g. protests, discipline issues)?
Yes/No
If yes, what were the problems? _____

1.4 Tenure security

If workers live on the farm, **do not** own the land on which they reside:

	Yes	No	Don't Know/ Uncertain
Do the workers lease the land on which they reside?			
Can workers pledge the lease as collateral?			
Can workers sell their lease to another worker?			
Can the land be bequeathed to a non-worker?			
Are workers compensated for any improvements that they make?			
Are workers provided with a piece of land on which they can grow their own crops, plant trees etc?			
Are the lease agreements written contracts?			

Are the lease agreements all the same period? Yes/No
Explain briefly _____

Do any of the workers have title deeds to the land on which they reside? Did they get title as a result of the equity-sharing arrangement? Yes/No Number with title deeds _____ Yes/No

What happens* to the following rights when a worker-shareholder:

	Residential rights (workers who live on company owned land)	Worker's shares
Resigns?		
Is (legitimately) fired or retrenched?		
Dies?		

*For example: Returns to the operating company, spouse inherits, sold to another worker

If the worker-shareholders own the land on which they reside: [n/a]
Have any worker-shareholders sold their land? Yes/No/Don't know
If yes, to whom? _____
If no, what reason would you give for this (e.g. there are no willing sellers)? _____

SHARE INFORMATION

1.1 Purchase of shares by workers

Have new worker-shareholders joined the scheme in the last 2 years? Yes/No/Don't know
If yes, from what sources did these workers finance their shares (e.g. DLA grant, savings, loan):

	Type of financial support	Aggregate level of financial support (Rand)	Quantity of shares bought (-2 = don't know)
1.			
2.			
3.			

1.2 General share information

	Operating Company	Land-holding Company	Trust
How many shares originally issued to workers?			
Average **no.** of shares currently owned by workers (shares/worker)			
Latest price assessment of worker shares (Rand/share)			
Were dividends declared in the previous year?			
Is there a moratorium on dividend payouts? (length if yes)			
Length of moratorium on sale of shares by workers (months)			
Length of moratorium on sale of shares by original owner (months)			

Are there provisions for a gradual reduction in the previous owner's shareholding?

Yes	No	Don't Know

If yes, please expand: _____

If dividends have been paid out, what proportion (%) (average) was reinvested in the operating company by
- the original owners? _____ [Don't know]
- the worker-shareholders? _____ [Don't know]

1.3 Property rights/tradability of shares

	Yes	No	Don't Know
Can shares be bequeathed to multiple heirs?			
Can shares be bequeathed to outsiders? [1]			
Is there a limit on no. / % of shares held?[2]			
If a shareholder buys additional shares does he/she acquire a greater share of profits?			

[1] **A person who does not work on the farm.**
[2] **Specify in more detail** _____

Are there any restrictions on the sale of shares (transferability of shares) by worker-shareholders? Yes/No
If yes, please specify _____
If shares can be sold at any time to another permanent worker, has there been an absence of willing sellers in the past 2 years? Yes/No
How can a new employee obtain shares in the scheme?

_____

Are workers made aware of changes in the assessed value of shares?

Yes	No	Don't Know

If yes, how? _____

INSTITUTIONAL ARRANGEMENTS & GOVERNANCE

1.1 Accountability and transparency

	Operating Company			Land-holding Company			Trust		
	Yes	No	Don't Know	Yes	No	Don't Know	Yes	No	Don't Know
Annual external auditing of financial records									
Audited statements & annual reports circulated (or explained in detail) to shareholders before AGM?									
Minutes of board meetings readily available to shareholders?									
Is notice given of meetings?									
How often are board meetings held?									
Are general meetings held with the workers and how often?									

1.2 Election procedures/issues*

	Operating entity	Land-holding Company	Trust
Are the directors/Trustees elected by secret ballot?			
Are the general meetings at which board members/Trustees elected advertised to shareholders?			
What period of notice is given for such a meeting? (Weeks)			
Term of office – directors (years)			
Term of office – Trustees (years)			
Can non-shareholders vote for directors/ Trustees?			

*Where relevant, record response as Yes/ No/ Don't Know (uncertain)

Are representatives of the different interest groups (shareholders) nominated in proportion to shareholding? Yes/No/Don't know or uncertain

Were current directors formally nominated and elected?

Yes	No	Don't Know

Is the election process perceived to be free and fair?

Yes	No

Are the directors aware that they are collectively liable for taking decisions that are not in the best interests of the company?

Yes	No

What forum can shareholders use to voice their concerns over management decisions, and or, how are conflicts resolved?

_____

Has provision been made for penalties to be levied on management for unfair or poor decision-making? If yes, what are the levies? Who decided on the levies?

Yes	No

Yes:

_____

_____

Are the directors obliged to declare their personal shareholdings in, and transactions with, the company?

Yes	No	Don't Know

Do any of the workers representatives in the company board(s) or Trust have previous experience at this level of business administration?

Yes	No	Don't Know

If yes, expand:

_____

_____

On average, what percentage of worker-shareholders attended the most recent annual general meeting (or any other meeting of worker-shareholders)?

None	25%	50%	75%	100%	Uncertain

1.3 Level of Decisions taken by Board and Manager

Is Board approval required to pledge land as security for a long-term loan?

Yes	No	Don't Know

Is Board approval required to increase the line of short-term credit (e.g. the overdraft facility) to finance seasonal inputs?

Yes	No	Don't Know

FINANCIAL INFORMATION

Audited Statements – establish, where possible, **current market value** of:

	Year*	Year*
Land & fixed improvements at current market value		
Machinery & equipment		
Other fixed assets (specify)		
Current assets		
Long-term liabilities		
Current liabilities		
Gross income		
Gross operating expenses		
Total interest paid on debt		
Total income tax paid		
Dividends paid on shares		
Retained earnings		

*Please specify relevant year

When last was the land valued? _____

Have there been any major improvements to the farm property since the land was last valued?
Yes/No/Don't know
If yes, please specify the improvement, cost and date: [Don't know]

_____

Are there any special provisions to protect the investment made by worker shareholders?

_____

_____

Is there an incentive scheme for the workers and the manager? Explain.

Workers: _____

_____

_____

Manager: _____

_____

_____

EMPOWERMENT

1.1 Facilitation process

Were facilitators contracted to implement the project?

Yes	No	Don't know

If yes, which facilitators? _____

Was a workshop held with prospective shareholders to select a suitable legal entity to represent the workers?

Yes	No	Don't know

Was a workshop held with prospective shareholders to define institutional rules of the workers' entity?

Yes	No	Don't know

Did workers receive any other training during the facilitation process (specify)?

1.2 Skills transfer

Were worker-shareholders instructed in any of the following subjects since the equity-share scheme was first discussed (and/or implemented) with the workers? Please rate the quality of training received and the most recent year in which this was done.

	Year[1] last training occurred	Chair of trust[2]	Worker 1	Worker 2	Worker 3	Worker 4
Shareholder rights and obligations						
Governance and voting procedures						
Procedures for distributing benefits						
Interpretation of financial statements						
Literacy training						
Basic mathematical skills						
Basic banking skills						
Training as office bearers						
Minute taking skills						
Basic farm management						
*Other (specify)						

[1] –2 = Don't know or uncertain, [2] 5 = very good, 4 = good, 3 = average, 2 = poor, 1 = very poor

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Is training ongoing for all workers, specify who gets trained if otherwise?

_____

Which workers have been given training? (If other, please specify)

All shareholders	Only trustees

Are any of these courses certified (for e.g. by SETA, PAETA)?

Yes	No	Don't know

If yes, by who? _____ [Don't know]

1.3 Benefits

What major benefits have the worker-shareholders received as a direct result from the equity-sharing arrangement? Rank the importance of only the top five of those that have been received on a scale of 1-5 (5 is most important and 1 is the least important).

Benefits	Received? Y/N
Residential plots	
Improved housing	
Title deeds to land	
Dividend income	
Capital gains on shares	
Tenure security	
Ability to influence wages	
Ability to influence working conditions	
Secure employment	
Property ownership	
Access to electricity	
Access to health services	
Building of schools	
Improved roads	
Access to telephones	
Paid vacation leave	
Paid sick leave	
Medical aid contributions made by company	
Unemployment benefits through company contributions to UIF	
Pension benefits	
Improved sanitation	
Access to safe drinking water	

Benefits	Importance (5 = most important)				
	Chair of trust	Worker 1	Worker 2	Worker 3	Worker 4
Residential plots					
Improved housing					
Title deeds to land					
Dividend income					
Capital gains on shares					
Tenure security					
Ability to influence wages					
Ability to influence working conditions					
Secure employment					
Property ownership					
Access to electricity					
Access to health services					
Building of schools					
Improved roads					
Access to telephones					
Paid vacation leave					
Paid sick leave					
Medical aid contributions made by company					
Unemployment benefits through company contributions to UIF					
Pension benefits					
Improved sanitation					
Access to safe drinking water					

Were there any unanticipated drawbacks for worker-shareholders or has any aspect of the scheme got worse over time?

_____

1.4 Trust

Please rate the following as currently perceived by the workers:

	Rating (5 = excellent, 1 = very poor)				
	Chair of trust	Worker 1	Worker 2	Worker 3	Worker 4
Overall feeling of trust in management					
Management- worker/mngt relations					
Worker-shareholder participation in decision-making					

PARTICIPATION

Please rate the importance of the following activities according to **your perception of its importance to your participation** in the equity-share scheme, on a scale of 1-5, where 5 is the most important and 1 the least important:

	Disputes		AGM		Explanation		Organisation		Females	
	NB[1]	Rating[2]	NB	Rating	NB	Rating	NB	Rating	NB	Rating
Chair of trust										
Trustee										
Worker 1										
Worker 2										
Worker 3										

[1] NB = Importance to participation (5 = most important, 1 = least important)
[2] Rating of participation in each activity (5 = high, 1 = low)

List of activities

1. Deciding on formal procedures to resolve disputes.
2. Ability to participate in the most recent annual general meetings.
3. Explanation of concepts and procedures surrounding implementation and running of the equity-share scheme.
4. Establishing a formal organisation for the workers (e.g. Trust, CPA).
5. Women should be shareholders and Trustees in the scheme.

APPENDIX 2. HOUSEHOLD POVERTY QUESTIONNAIRE 2004 – CLIPSTONE FARM

The information obtained in this questionnaire is strictly confidential and will be used for research purposes by LIMA staff and researchers at the School of Agricultural Sciences and Agribusiness, University of KwaZulu-Natal. Respondents do not have to answer questions, answers are voluntary and will be kept strictly confidential.

DATE: _____   ENUMERATOR: _____

RESPONDENT'S NAME & SURNAME: _____

HOUSEHOLD NUMBER: _____

PARTICIPATION LEVEL (COMPLETE/PARTIAL/NONE) _____

1.1 Household demographics

	HH member (including migrants who return daily or for weekends)	Relationship to head	Gender (M/F)	Age (Years)	Primary occupation[1]	Cattle owner (Yes/No)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

[1]Wage employed (WE), farmer (F), self-employed (SE), housekeeper (H), pensioner (P) if in receipt of pension, disabled (D) if in receipt of disability grant, unemployed (U) if seeking work, scholar or student (S), infant (I) if up to 6 years of age, vagrant (V)

1.2 Household health and nutrition status

Household member	Household member ill during the past month (Yes/No)	Number of times ill person visited doctor/clinic in past month
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

2.1 Income sources

Have any adult household members engaged in wage-work, earned a pension or received other welfare payments over the period Jan – July 2004?

Household member[1]	Activity[2]	Cash income (R/month)	Cash remitted (R/month)	Disability & pension payments (R/month)	Who receives the remittance[1]
Total remittances since Jan					

[1]Household member from Table 1.1
[2]Pension, wage-work, disability or child maintenance grant, other (specify)

3.1 Fixed assets

Housing attributes	Response
Number of rooms in house	
Material of house roof[1]	
Material of exterior walls[2]	
Main source of drinking water[3]	
What kind of toilet does the house have?[4]	
Main source of energy[5]	
Approximate replacement value of house	
Was cash or credit used to buy or build house?	
If credit was used, what was the source of credit?	

[1]Concrete (1), brick tiles (2), iron sheets (3), stone or slate (4), grass (5), tarpaulin or plastic sheets or branches & twigs (6)

[2]Brick or stone with cement plaster (1), brick or stone with mud (2), timber (3), iron sheets (4), mud walls (5), tarpaulin or plastic sheets or branches & twigs (6)

[3]Piped in house (1), public tap (2), tube well or borehole (3), protected well or spring (4), unprotected well or spring (5), pond, river or stream (6), tank, truck or vendor (7), other (8) (specify)

[4]Flush to sewage system (1), flush to septic tank (2), pour flush latrine (3), covered dry latrine (4), uncovered latrine (5), no facilities (6)

[5]Electricity (1), gas (2), paraffin (3), charcoal (4), purchased wood or sawdust (5), collected wood (6), dung (7)

4.1 Livestock revenue and expenditure

Livestock owned	Number owned	Number sold last year	Number bought last year	Number born last year	Number slaughtered /died/stolen/ otherwise lost last year	Estimated sale value of current stock (R)	Gross income from animal sales last year	Gross income from animal product sales last year
Bulls								
Oxen								
Cows								
Steer calves 0-12 months								
Steer calves 12-24 months								
Heifer calves 0-12 months								
Heifer calves 12-24 months								
Goats								
Pigs								
Horses								
Donkeys								
Total household estimated value of livestock								
Total household gross income from animal sales								
Total household gross income from animal product sales								