

**AN EVALUATION OF THE SOUTH AFRICAN SUGAR INDUSTRY'S
SMALL CANE GROWERS' FINANCIAL AID FUND**

by

RICHARD FRANK BATES

Submitted in partial fulfilment of the academic requirements for the degree of

DOCTOR OF PHILOSOPHY

in the

Department of Agricultural Economics

University of Natal

Pietermaritzburg

1996

ABSTRACT

The research is an evaluative case study of the South African Sugar Industry's Small Cane Growers' Financial Aid Fund (FAF). FAF has been operating since 1973 and has advanced 59 597 loans amounting to R175 million to small scale sugar cane growers located in KwaZulu-Natal, Eastern Cape and Mpumalanga provinces of South Africa. FAF, which has been the principal supplier of credit to small scale growers over the period, also operates a savings facility.

Small scale grower development in South Africa has been driven by prevailing economic conditions in the sugar industry and its need to meet expanding markets. Small scale grower sugar cane production expanded rapidly from 1973 to 1985 whereafter it has shown a decline. FAF was found to be an important element in facilitating the expansion. An analysis of FAF's financial records indicated that it is subject to policy and procedures not aligned to sustainability. Loans to small scale growers from FAF were advanced at subsidised rates of interest. Calculation of a subsidy dependence index showed that, for FAF to be sustainable, interest rates in the order of 34% need to be charged.

The viability of small scale growers themselves is an important aspect of the provision of credit. An analysis of small scale grower production costs for the period 1988 to 1996 indicated low margins per unit of production. Inefficiencies in weed control, fertilization and contracting were identified as important factors contributing to poor performance. Cashflow models using different methods of production and productivity indicated that small scale grower margins can be increased. Farm systems research is proposed to address improved economic performance.

There have been two divergent approaches to small scale grower development in the South African sugar industry. The first was a highly directed or managed approach while the second relied on provision of agricultural extension and training to enable small scale growers to develop. The underlying philosophies of these approaches were contrasted

with findings indicating that a great amount of dissatisfaction, misunderstanding and mistrust are evidenced in the highly directed/managed approach.

Linear discriminant analysis indicated that growers using loans were more likely to have used mill contractual services, have produced sugar cane for a greater number of seasons and have larger areas planted to sugar cane than growers who did not use loans. It was also shown that small scale growers using mill contractual services appeared to use a greater number loans, produced sugar cane for a greater number of seasons, had larger areas planted to sugar cane but exhibited lower yields per hectare and had higher loan default rates, than small scale growers not using mill contractual services.

The provision of credit enabled expansion of the small scale grower sector to take place. However, in terms of individual circumstances of small scale growers, those utilising FAF loans and those utilising services of mill contracting companies did not appear to have been as successful as those growers who developed independently of credit and managed development procedures.

Overall it is found that FAF's original and revised objectives have not been met. It is noted that objectives of sugar mills to increase sugar cane supplies have been achieved. In concluding it is recommended that FAF be restructured to broaden access to finance by small scale growers, to mobilise savings and attain sustainability of institutions providing required financial services.

ACKNOWLEDGEMENTS

I am indebted to my supervisor, Professor W.L. Nieuwoudt, of the University of Natal, Pietermaritzburg, for guidance in the preparation of this thesis.

I am also indebted to the South African Sugar Association for the opportunity to carry out the research and for the support which it provided.

I must express my gratitude to Ms Patsy Clarke of the Natal University's Computer Department, Mr Manfred Kuhn of the Department of Agricultural Economics, University of Natal, Mr Elston Le Roux of the KwaZulu-Natal Department of Agriculture and Dr George Smith for assistance they provided.

Miss Laura Procter who typed the manuscript requires a special word of appreciation.

Finally I must express my gratitude to my family for their continued support and understanding and to Mr A.L. Schaffer for his exhortation to do the study.

DECLARATION

In accordance with a stipulation of the University of Natal I hereby declare that, except as acknowledged and except for quotations indicated in the text, this thesis is wholly my own work.

R.F. BATES

CONTENTS

1.	INTRODUCTION	1
2.	SMALL SCALE FARMER DEVELOPMENT AND CREDIT	7
2.1	Introduction	7
2.2	Development Defined	7
2.3	Agricultural Development	9
2.4	Small Scale Farmers	10
2.5	Small Scale Farmer Development in South Africa	13
2.6	The Small Scale Farmer : Factors of Production and Access	16
2.6.1	Land	17
2.6.2	Labour	19
2.6.3	Capital	21
2.6.4	Management	22
2.7	Participation	24
2.8	Finance and Rural Financial Markets (RFM)	28
2.9	The Need for Credit	30
2.10	The Provision of Credit 1960 - 1996	34
2.10.1	Interest Rate	35
2.10.1.1	Adoption of improved inputs and new technologies	36
2.10.1.2	Income Transfer	37
2.10.1.3	Informal sources of credit	38
2.10.2	Positive Real Rate of Interest	39
2.10.3	Administrative and Transaction costs	40
2.10.4	Mobilisation of Savings	42
2.10.5	Loan Recovery	44
2.11	Conclusion	45
3.	HISTORICAL BACKGROUND TO SUGAR CANE PRODUCTION BY SMALL SCALE FARMERS IN SOUTH AFRICA	47

3.1	Introduction	47
3.2	Production of Sugar Cane by Zulu Farmers to 1946	47
3.3	Overview of Sugar Industry 1946 - 1996	49
3.4	Small Scale Grower Production 1946 - 1992	59
3.5	Accuracy of Land Measurement	70
3.6	Small Scale Grower, Numbers, Hectares and Production	74
3.6.1	Number of Growers Delivering Sugar Cane	77
3.6.2	Productivity Per Hectare and Productivity Per Grower	78
3.7	Distribution of Production and Area	83
3.8	Sucrose Price	87
3.9	Purchasing Power of a Ton of Sugar Cane	92
3.10	Summary	95
4.	THE FINANCIAL AID FUND (FAF)	97
4.1	Introduction	97
4.2	Inauguration of FAF	97
4.3	Funding of FAF	100
4.4	Organisational Structure	102
4.5	Loans and Creditworthiness	109
4.6	Administration - Costs	111
4.7	Administration - Information Systems and Transaction Volumes	113
4.8	Administration - Staff	117
4.9	Loan and Saving History	117
4.9.1	Borrower Contributions	124
4.9.2	Loan Redemption/Recovery	126

4.10	FAF's Interest Rate	128
4.11	Calculation of Loan Amounts	130
4.12	Bad Debts	135
4.12.1	Noodsberg area : History and Irrecoverable debts	136
4.12.2	Eston area : History and Irrecoverable debts	140
4.12.2.1	Eston Small Scale Growers - Demographics	143
4.12.2.2	Eston Small Scale Growers - Loan area	144
4.12.2.3	Eston Small Scale Growers - Loan status	144
4.12.2.4	Eston Small Scale Growers - Cane production	145
4.12.2.5	Eston Small Scale Growers - Ratoon Management	146
4.12.2.6	Eston Small Scale Growers - Condition of Cane	146
4.12.2.7	Eston Small Scale Growers - Months since last delivery	147
4.12.2.8	Eston Small Scale Growers - Age of Loan	148
4.12.2.9	Eston Small Scale Growers - Arrears and Bad Debts	148
4.12.2.10	Eston Small Scale Growers - Summary	149
4.13	Reasons for Irrecoverable Loans	153
4.14	Institutional Viability	156
4.15	Summary	162
5.	THE ECONOMICS OF SMALL SCALE GROWER SUGAR CANE PRODUCTION	165
5.1	Introduction	165
5.2	Small Scale Grower Income and Production Costs	165
5.3	Small Scale Grower Technology and Agricultural Practices	178
5.3.1	Weed Control	179
5.3.2	Fertilization	181
5.3.3	Harvesting and Transport	182
5.4	Small Scale Growers Production Cycle	184
5.4.1	Low Yield - Base Model	186
5.4.2	High Yield - Model	188
5.4.3	High Yield - Contractor/Money Lender	189
5.4.4	High Yield - Progressive Re-establishment	190

5.5	Comparison of Profitability of Alternative Production Models	193
5.6	Summary	194
6.	CONTRASTING APPROACHES TO SMALL SCALE GROWER DEVELOPMENT	199
6.1	Introduction	199
6.2	Distribution of Small Scale Growers According to Mill Area	199
6.3	Maidstone Small Scale Grower Development	202
6.4	Amatikulu Small Scale Grower Development	209
6.5	Felixton Small Scale Grower Development	214
6.6	Resume of Critiques of Small Scale Grower Development	216
6.7	Direct and Indirect Development - Small Scale Grower/Miller Relationship	223
6.8	Summary	225
7.	EVALUATION OF THE IMPACT OF AND REACTIONS TO FINANCING BY SMALL SCALE GROWERS	227
7.1	Introduction	227
7.2	Methodology	228
7.2.1	Group Discussions Methodology	228
7.2.2	Small Scale Grower Survey Methodology	229
7.3	Results of Group Discussions	233
7.3.1	Amatikulu/Felixton Small Scale Grower Group Discussion	233
7.3.2	Maidstone/Mount Edgecombe Small Scale Grower Group Discussion	234
7.3.3	Sezela Small Scale Grower Group Discussion	236
7.3.4	Miller Group Discussion	237
7.3.5	KwaZulu Department of Agriculture Extension Officer Group Discussion	240
7.3.6	Summary of Group Discussions	243

7.4	Small Scale Grower Survey	244
7.4.1	Small Scale Grower Demographics	245
7.4.2	Socio-economic Status of Small Scale Growers	246
7.4.3	Land, Livestock and Other Crops	247
7.4.4	Sugar Cane Husbandry	250
7.4.5	Attitude Towards Sugar Cane Production	259
7.4.6	Knowledge of Organisations Involved in Sugar Cane Production	263
7.4.7	Use and Knowledge of Credit and Savings	265
7.4.8	Gender, Farmwork and Income	269
7.5	Analysis of Surveyed Small Scale Grower Production Records	269
7.5.1	Land	271
7.5.2	Surveyed Small Scale Grower Productivity	272
7.5.3	Use of FAF Loans	280
7.5.4	Use of Retention Savings Scheme	283
7.5.5	Disaster Relief	285
7.5.6	Surveyed Small Scale Growers' Sugar Cane Proceeds 1989/90	288
7.6	Analysis of Credit Utilisation	291
7.6.1	Loan/No Loan Model	293
7.6.2	Managed/Non-managed Development Model	298
7.7	Analysis of Sugar Cane Area and Yield	304
7.8	Characteristics of Small Scale Growers Producing More Than 35 Tons Sugar Cane Per Hectare	306
7.9	The Substitutes in the Small Scale Grower Survey	310
7.10	Summary	310
8.	FINDINGS IN RESPECT OF FAF OBJECTIVES AND RECOMMENDATIONS FOR CONTINUED PROVISION OF FINANCIAL SERVICES TO SMALL SCALE GROWERS	317
8.1	Introduction	317
8.2	Small Scale Farmer Credit - Lessons	317
8.3	The South African Sugar Industry and Small Scale Grower Development	318

8.4	FAF and Its Objectives	323
8.4.1	Provide Economic Assistance	324
8.4.2	Improve and Develop Small Scale Grower Productivity and Efficiency	326
8.4.3	Transfer Skills and Knowledge	326
8.4.4	Provide Supervision and Management to Obtain the Maximum Possible Advantage	327
8.4.5	Improving Living Standards	329
8.4.6	Concluding Remarks on 1973 Objectives and Considerations of 1992 Objectives	329
8.5	Small Scale Grower Development Strategy	331
8.6	Restructuring Financing of Small Scale Growers	333
8.7	Conclusion	347
9.	CONCLUSION	349
10.	SUMMARY	360
11.	BIBLIOGRAPHY	369

TABLES

3.1	Early sugar cane projects owned by Zulus	48
3.2	Distribution of free entry small scale growers by mill 1991 - 1993	66
3.3	Percentage of small scale grower numbers and land area per sugar mill as at the end of the 1992/93 season	67
3.4	The number of non-quota growers and their sugar cane area as at August 1989	71
3.5	Estimates of non-producing registered cane growing area 1989/90	72
3.6	Small scale grower deliveries, area and numbers - 1972 to 1994	75
3.7	Levels for different methods of calculating small scale grower average productivity	81
3.8	Small scale grower sucrose and cane prices - 1960 to 1995	89
4.1	Factors taken into account in establishing a small scale growers creditworthiness for a FAF loan	110
4.2	FAF administration costs - 1991 to 1997	112
4.3	Total volume of FAF transactions - 1973 to 1996	118
4.4	FAF retention savings transaction history - 1985 to 1996	120
4.5	Projected loan requirements - 1996 to 2001	121
4.6	FAF, Prime and Land Bank interest rates compared to the CPI% increase	128
4.7	Calculation of small cane grower bench mark loan level for 1996/97 season	132
4.8	FAF bench mark loan levels and seasonal increases - 1974 to 1996	133
4.9	Small scale grower irrecoverable loans as a percentage of the total loans advanced in each area	136

4.10	Average and median tons cane cut per hectare	145
4.11	Condition of Eston small scale borrowers sugar cane	146
4.12	Reasons for loan default	154
4.13	FAF total capital employed, operation expenses, income, net surplus, real rate of return required and real capital increase/decrease per season	158
4.14	Rate of Interest which FAF should have charged to have been sustainable	159
5.1	Average small scale grower sugar cane production costs - 1988 to 1996	166
5.2	Small scale grower distribution by distance from a sugar mill and mode of transport used to haul sugar cane from loading zone to mill - 1981	167
5.3	Average total small scale grower sugar cane profit - 1988 to 1996 - Growers with FAF loans	169
5.4	Average total small scale grower sugar cane profit - 1988 to 1996 - Growers without FAF loans	170
5.5	Total small scale grower production costs as a percentage of sugar cane price - Growers with a FAF loan	173
5.6	Total small scale grower production costs as a percentage of sugar cane price - Growers without a FAF loan	173
5.7	Harvesting costs as a percentage of total small scale grower production costs	174
5.8	Transport and transshipment costs as a percentage of total small scale grower production costs	174
5.9	Ratoon management costs as a percentage of total small scale grower production costs	175
5.10	FAF loan redemption as a percentage of total small scale grower production costs	175

5.11	Average small scale grower field labour costs - 1988 to 1996	177
5.12	Average small scale grower field labour costs as a percentage of total costs - Growers with FAF loans	177
5.13	Average small scale grower field labour costs as a percentage of total costs - Growers without FAF loans	178
5.14	Scheduling of progressive re-establishment of small scale grower cane land	191
5.15	Summary of small cane grower production models for a cycle of 10 harvests	193
6.1	Percentage number, area and sugar cane tons of small scale growers by geographic and mill area	201
7.1	Distribution of surveyed small scale growers by mill and consolidated area	230
7.2	Area of sugar cane cultivated by surveyed small scale growers	250
7.3	Small scale growers level of satisfaction with sugar cane production methods	256
7.4	Small scale grower age of sugar cane by area	257
7.5	Small scale growers recall of income received from sugar cane for the 1989/90 season	258
7.6	Small scale growers reasons for entering into the production of sugar cane	260
7.7	Small scale growers perception of the income received from sugar cane	261
7.8	Small scale growers perception of income received from sugar cane in relation to loan status	262
7.9	Small scale growers awareness of organisations in the sugar industry and frequency of contact	264
7.10	Small scale growers use of FAF loans	266

7.11	Distribution of surveyed small scale growers by number, average, total and accumulated number, area and tons sugar cane	279
7.12	Number of loans per small scale cane grower per mill area	281
7.13	Distribution of loans and distribution of value of loans by area	282
7.14	Bad debts arising from loans to surveyed growers	283
7.15	Number of retention savings accounts per small scale grower per mill area	284
7.16	Distribution of drought and flood relief assistance by mill area	286
7.17	Distribution of drought relief loans according to growers average sugar cane yield per hectare	287
7.18	Distribution of small scale growers according to income received from sugar cane for the 1989/90 season	289
7.19	Potential discriminating variables	292
7.20	Correlation coefficients matrix in respect of proposed variables in loan/no loan and mill/non-mill contractor	294
7.21	Condition indices - loan/no loan model	295
7.22	Condition indices - mill/non-mill contractor development model	299
7.23	Principal Components of area, average yield, number of seasons, number of loans and loan defaults	300
7.24	Distribution of small scale growers producing more than 35 tons sugar cane per hectare according to mill and area	307

FIGURES

1.1	Sugar cane growing regions of South Africa	2
2.1	Classification of farmer groups	13
3.1	South African sugar industry total sugar cane area 1946 - 1995 showing expansion phases	50
3.2	South African sugar industry total sugar cane deliveries 1946 - 1995	52
3.3	Small scale grower registered area and sugar cane deliveries as a percentage of the industry 1946 - 1992	60
3.4	Small scale growers' deliveries 1946 - 1992	63
3.5	Small scale growers' registered cane area 1952 - 1992	64
3.6	Small grower sugar cane deliveries as a percentage of mills' total cane (mills < 20%)	68
3.7	Small grower sugar cane deliveries as a percentage of mills' total cane (mills > 20%)	69
3.8	Increase in small scale grower total registered area per season 1974 - 1993	76
3.9	Percentage of small scale growers delivering per season - 1973 to 1992	77
3.10	Average registered land area per small scale grower - 1972 to 1992	79
3.11	Deliveries per small scale grower - 1992 to 1994	79
3.12	Small scale grower average yield per hectare - 1972 to 1992	82
3.13	Small scale grower average yield per hectare and rainfall lagged by one season	82
3.14	Frequency distribution of sample of small scale growers according to sugar cane deliveries - 1987/88 season	84
3.15	Frequency distribution of sample of small scale growers' according to registered sugar cane area	85

3.16	Distribution of Sezela mill small scale grower sugar cane tonnage, area and numbers	85
3.17	Distribution of Maidstone mill small scale grower sugar cane tonnage, area and numbers	86
3.18	Small scale grower sucrose price - 1960 to 1995	90
3.19	Deflated sugar cane price - 1960 to 1995	90
3.20	Change in the real sugar cane price above and below the average real price of R31.09 per ton - 1960 to 1995 (1985=100)	91
3.21	Purchasing power of a ton of sugar cane in respect of maize meal and tractors	93
3.22	Purchasing power of a ton of sugar cane in respect of fertilizer - 1974 to 1995	94
4.1	Comparison of FAF debt/equity ratios for the years 1991 and 1996	102
4.2	The structure of the Financial Aid Fund - 1973 to 1983	103
4.3	The structure of the Financial Aid Fund - 1983 to 1986	103
4.4	The structure of the Financial Aid Fund - 1987 to 1992	106
4.5	The structure of the Financial Aid Fund - 1993 to 1996	106
4.6	Average monthly percentage transactions experienced by FAF	114
4.7	Financial Aid Fund organogram 1996/97	116
4.8	Distribution of FAF borrowers according to the number of loans each borrower has utilised	119
4.9	Total committed and outstanding loans - 1974 to 1995	121
4.10	FAF Loan History - 1987 to 1995	122
4.11	FAF loans indicating amount redeemed, written-off and outstanding by season	123

4.12	FAF bad debts as a percentage of amount advanced each season	123
4.13	FAF, Prime and Land Bank interest rates compared to the CPI	129
4.14	Redemption of a loan of R4840 with given parameters	132
4.15	Small scale grower debt repayment ability	134
4.16	Noodsberg mill area small scale grower cane deliveries - 1973 to 1994	139
4.17	History of small scale grower development in the Eston area - 1947 to 1995	141
4.18	Eston small scale grower survey population distribution	143
4.19	Number of loans per borrower in the Eston area	144
4.20	Eston small scale growers' condition of surveyed crop	147
4.21	Eston small scale growers' months since last sugar cane delivery	147
4.22	Eston small scale growers' outstanding loans by date of loan	148
4.23	Eston small scale growers' arrears status	149
4.24	Eston small scale grower average tons cane per grower delivering and average registered area per grower	150
4.25	Comparison of FAF's actual interest rate with the rates required to recover costs	160
4.26	Actual rate of return on FAF capital employed compared to FAF's opportunity rate of return	161
5.1	Distribution of small scale growers by distance from a sugar mill - 1981	168
5.2	Sugar cane "profit" for small scale growers using and not using credit at 25 kilometres from a sugar mill	171
5.3	Small scale grower "profit" with an average yield of 32 tons per hectare using FAF loans to establish and re-establish the cane crop	186

5.4	Small scale grower "profit" with an average yield of 50 tons sugar cane per hectare using FAF loans to establish and re-establish sugar cane	188
5.5	Small scale grower cane establishment with contractor acting as money lender	189
5.6	Small scale grower income with progressive re-establishment of cane	192
6.1	Maidstone mill area small scale grower cane deliveries - 1973 to 1995	203
6.2	Maidstone small scale grower average tons cane per grower delivering and average registered area per grower	204
6.3	Amatikulu mill area small scale grower cane deliveries - 1973 to 1995	210
6.4	Amatikulu small scale grower average tons cane per grower delivering and average registered area per grower	211
6.5	Felixton mill area small scale grower cane deliveries 1973 to 1995	214
6.6	Felixton small scale grower average tons cane per grower delivering and average registered area per grower	215
6.7	The relationship between small scale growers and sugar mills with respect to involvement of the parties	224
7.1	Demographic profile of surveyed small scale grower households	245
7.2	Demographic profile of respondents	246
7.3	Methods small scale growers used to carry out land preparation	251
7.4	Methods small scale growers used to carry out planting	252
7.5	Methods small scale growers used to carry out weeding	252
7.6	Methods small scale growers used to carry out fertilizing	253
7.7	Methods small scale growers used to carry out harvesting	253

7.8	Methods small scale growers used to carry out transporting	254
7.9	Frequency distribution of surveyed small scale growers' land area as recorded by FAF	271
7.10	Number of surveyed small scale growers delivering per season and average sugar cane tonnage per grower	273
7.11	Number of seasons that surveyed small scale growers delivered and average total tonnage of sugar cane per grower	274
7.12	Number of seasons that surveyed small scale growers delivered and average tons sugar cane per grower - THS	276
7.13	Distribution of surveyed small scale growers according to average tons cane delivered per hectare per season	278
7.14	Surveyed small scale growers distribution of area and tons cane	280
7.15	Distribution of small scale growers producing more than 35 tons sugar cane per hectare according to the number of seasons they produced sugar cane	308
7.16	Distribution of better performing small scale growers according to their average yield of sugar cane per hectare	309
8.1	Small scale grower total sugar cane proceeds - 1972 to 1995	319
8.2	Simplified representation of the sugar industry division of proceeds	321
8.3	The relationship between growers and sugar mills indicating zone of mutual benefit	325
8.4	The perceived interaction between FAF, growers and millers	335
8.5	The structure of the Financial Aid Fund 1996/97 onwards	337
8.6	Agricultural finance	339
8.7	Proposed structure of rural financial services in sugar producing areas	341

1. INTRODUCTION

"The achievement of sustained and equitable development remains the greatest challenge facing the human race. Despite good progress over the past generation, more than 1 billion people still live in acute poverty and suffer grossly inadequate access to the resources - education, health services, infrastructure, land and credit - required to give them a chance for a better life. The essential task of development is to provide opportunities so that these people, and the hundreds of millions not much better off, can reach their potential." (World Bank, 1992:1)

This research is essentially an evaluative case study of the South African Sugar Industry's Small Cane Growers' Financial Aid Fund (FAF). FAF was established in 1973 to provide credit to small scale farmers who wished to produce or who already produced sugar cane for delivery to sugar mills in the Republic of South Africa. The location of small scale growers¹ is indicated in figure 1.1. Credit was unavailable to small scale growers principally as a result of them occupying land under a system of communal tenure. Land could not be used as collateral for a loan. This situation continues to exist. The programme is a unique one in South Africa and as such this evaluation is carried out to provide guidelines which may be useful, not only for FAF itself, but also for other programmes of a similar nature.

At the close of the 1995/96 sugar production season (31 March 1996) FAF had, since its inception in 1973, approved an accumulative total of 59 597 loans amounting to R175 million to small scale farmers for production of sugar cane. In addition to providing loans, FAF had made savings facilities available to 31 143 small scale farmers to save a portion of their income from sugar cane to enable them to finance their continuing production expenses.

¹ This study refers to black small scale growers in KwaZulu-Natal. In terms of the South African Sugar Industry a small scale grower is a sugar cane farmer who produces no more than 450 tons of sucrose (approximately 3600 tons of sugar cane) per annum.

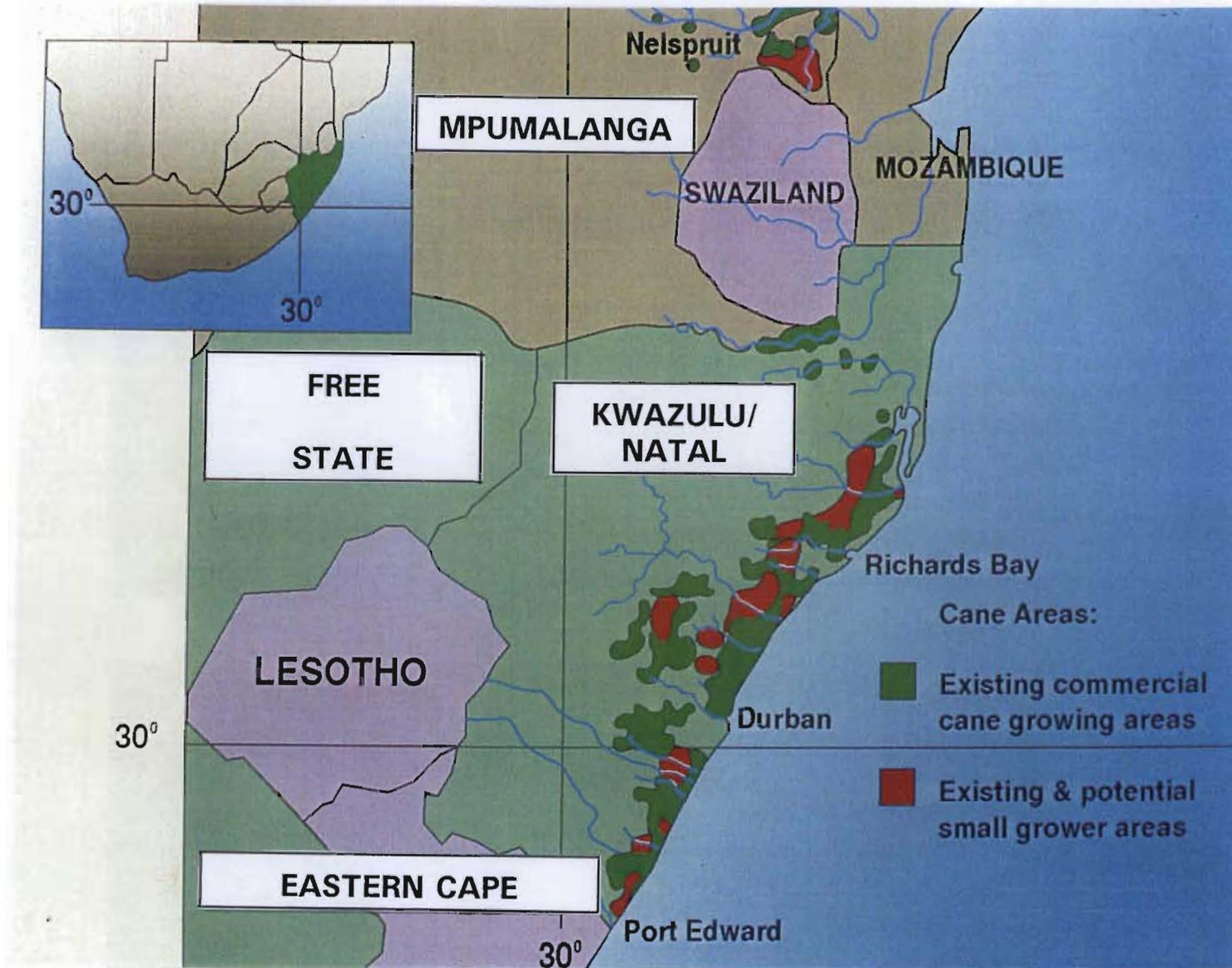


Figure 1.1

Sugar cane growing regions of South Africa

Source : South African Sugar Association

During the period that FAF has been operating the tonnage of sugar cane delivered by small scale growers increased from 315 702 tons harvested in the 1973/74 season to a peak tonnage of 1 627 233 tons delivered in the 1984/85 season.

The number of black small scale growers increased from 3 628 in 1973 to 41 917 in 1992, while their area under sugar cane increased from 14 861 hectares to 98 253 hectares over the same period. From 1993 the South African Sugar Association (SASA) changed its method of recording small scale growers and did not identify racial groupings. With subsequent consolidation of other racial groups and continuing registration of growers, small scale grower numbers increased to 52 746 by the end of 1995.

According to surveys undertaken or commissioned by the KwaZulu Government and the South African Sugar Association in 1988 there was potential for 84 000 hectares of sugar cane in areas formally designated as KwaZulu (KwaZulu Department of Agriculture, 1988). In addition areas within the Mpumalanga and Eastern Cape Provinces were also identified for production of sugar cane (see map, figure 1.1).

Small scale grower development has required input of capital from a number of sources. Infrastructure, eg roads and bridges, was financed by the respective government departments. Mills financed their infrastructure from normal commercial sources. Contractors, requiring finance for tractors etc., were financed by government supported development corporations, private sector banks or individuals themselves. Suppliers of inputs, which comprised sugar mills, co-operatives and private business, sourced finance from the financial market.

FAF was the primary source of credit to small scale growers from 1973 to 1992. Any shortfalls it may have had were taken up by sugar mills accessing, in the case of KwaZulu-Natal, finance from the KwaZulu Finance and Investment Corporation (KFC). Finance from KFC was advanced to growers according to FAF policy and procedures and, in a number of instances, was administered on the FAF data processing system. In

relation to the total amount of credit advanced by FAF this did not amount to more than 5%. For all intent and purpose FAF was the sole source of finance for small scale growers over this period. From 1992 KFC offered credit directly to small scale growers, its loan book being approximately R7.5 million as of 1996 (Gevers, 1996).

FAF was established "to provide economic assistance to small and developing sugar cane growers to improve and develop their productivity and efficiency " (FAF, 1973:1). FAF's objectives originally included the following :-

"B5 To provide means whereby advice, guidance, technical skill and knowledge can be imparted and to provide the supervision and management required in order to obtain the maximum possible advantage": and

"B6 To improve the farming and thereby the living standards of those growers engaged in their own independent farming operations."

The above objectives pertained to the period from 1973 to 1992, when FAF's Mission and Objectives were amended (FAF, 1992:1) such that its new objectives included the following:-

- "Providing an efficient service employing methods and procedures which are relevant to the needs of its borrowers".
- "Through its lending policies and procedures it will promote an awareness amongst its borrowers of economic opportunities to enhance their disposable incomes".
- "Ensuring that its operations are supportive of the wider development of small cane growers being undertaken through other Sugar Industry bodies".

The amended objectives require evaluating in terms of the outcome of the evaluation of the initial objectives and the conclusions arrived therefrom.

Following discussions with small scale growers in 1995 the sugar industry adopted the following overall objectives (South African Sugar Association, 1996:10) in respect of restructuring of FAF :-

- Ensuring the continued availability of finance to small scale cane growers on a viable basis.
- Increasing small scale growers' involvement in the operation of the Fund.
- Reducing the Industry's exposure to banking risks.

Whether and how the above objectives can be achieved, in all likelihood, rest on the success or otherwise of FAF prior to 1995. The need to restructure FAF consequently gives rise to an important component of the study which is development of a model to achieve SASA's, as well as small scale growers' objectives taking account of factors contributing to successful rural financial intermediation and conclusions drawn from the evaluation.

A small scale farmer is a person who has access to land and by the addition of labour, capital and management is able to produce an agricultural product. By definition this would not preclude a person who had a very small area of land and who would probably not be classified as anything more than a gardener in certain circumstances. The predominant system of land tenure is a traditional communal system (Davenport and Haart, 1974:31) and, due to population pressure and subsequent fragmentation of holdings, individual access is, in many instances, limited to small areas of land. Production from this land, if it is used, could either be for subsistence or marketing purposes or even for both. A formal land market enabling sale, rental, registration of individual rights or use of land as collateral does not exist in communal areas in South Africa and prevailing legislation prevents, rather than encourages, development of such a market. This is being addressed by the South African Government in its land reform proposals (Department of Land Affairs, 1996:21-43).

In terms of this dissertation small scale farmers who produce sugar cane and fall within the category defined as small (see footnote 1) are defined as small scale growers. A small scale grower was originally defined by FAF as "any cane grower whose average deliveries to a (sugar) mill over the previous two seasons, have not exceeded 1 000 metric tons cane and who can satisfy the (FAF) Committee that he does not normally have access to credit facilities offered through commercial banks or other sources" (FAF, 1973). The definition was amended in 1992 to read :-

"Small cane growers shall be defined as any cane grower who has not produced, nor in the opinion of the Sugar Industry Central Board (SICB), has sufficient registered land to produce an average of two hundred tons of sucrose per year over any consecutive period of two years" (FAF, 1992:3). In 1993 the ceiling on production was raised to the current level of four hundred and fifty tons sucrose per annum. According to FAF's objectives a small scale grower must satisfy FAF that he or she "does not normally have access to agricultural credit facilities offered through banks or other sources" (FAF, 1992:3).

Evaluation is undertaken in terms of FAF's original and modified objectives. Chapter two through to chapter seven examines development theory with specific reference to the provision of credit, the historical background to small scale grower development, FAF administration and procedures, small scale grower economics and a detailed analysis of sugar industry interventions and small scale grower responses. Data is an integral part of the narrative as it is considered necessary for clarity of discussion. Chapter eight discusses major findings from which recommendations are made for future financing of small scale growers. Chapters nine and ten conclude and summarise the study respectively.

2. SMALL SCALE FARMER DEVELOPMENT AND CREDIT

2.1 Introduction

Chapter two opens with a definition of development and then proceeds to deal briefly with agricultural development. Small scale farmers are defined and identified as a marginalised group who comprise relative and absolute poor sub-groupings. A diagrammatic model, which is further developed in chapter eight depicts these groupings. A historical overview of small scale farmer development in South Africa is then given.

Following the overview of development, factors of production which are essential components of development are then described in the context of small scale agriculture. Access to land, availability of labour, capital and management receive attention. Small scale farmer participation in the development process is then identified as a key issue. The latter part of the chapter deals in greater detail with credit which is the focus of this study. International experience, interest rates, transaction costs, savings and loan recovery are considered as they establish a framework around which evaluation of FAF is carried out.

2.2 Development Defined

In its definition of economic development the World Bank states that it is:-

"a sustainable increase in living standards that encompass material consumption, education, health, and environmental protection. Development in a broader sense is understood to include other important and related attributes as well, notably more equality of opportunity, and political freedom and civil liberties. The overall goal of development is therefore to increase the economic, political, and civil rights of all people across gender, ethnic group, religions, races, regions and countries" (World Bank, 1991:31).

The definition is broad and covers every facet of human life and, according to the World Bank, is little different from the definition it set in the 1950's. The emphasis in economic development has shifted from one of "measuring quantitative increases in output and productive capacity" (economic growth) to one which focuses on the wellbeing of people (Coetzee, 1987:11).

Paul Streeten, quoted by Coetzee, states that :-

"Development is not about index numbers or national income, it is not about savings ratios and capital coefficients: it is about people and for people. Development must therefore begin by identifying human needs. The objective of development is to raise the level of living of the masses of the people and to provide all human beings with the opportunity to develop their potential" (Coetzee, 1987:2).

As may be seen from the above there is an emphasis on the needs of, and participation of people concerned with the development process. "Development" is not development if the human dimension is neglected. This factor must be borne in mind in planning, implementation, and outcomes of small scale farmer or rural development.

Development is a process, it is not a static thing (Holscher and Romm, 1987:108-136). In undertaking development an individual, group or community is striving towards an achievement of a goal, which up to that point in time was a vision. By its nature a process involves time and adjustments as and when needs are identified.

In Johnston and Clarke's (1982:405) view the "fundamental objective of rural development programmes is to reduce and eventually eliminate acute poverty." They stress that what is desirable may not be feasible and vice versa. The objectives of development are finally shaped by resources which are available.

2.3 Agricultural Development

In programmes to promote development of low income countries (LIC)² during the 1950's and 1960's, small scale farmers were more or less neglected in the process. It was in the late 1960's and early 1970's that attention began to be focused on small scale farmers as they were identified as belonging to the poorest sections of LIC populations.

During the decades referred to above, development of LICs' agricultural production was concentrated on the commercial or large scale sector with limited assistance being given to small scale farmers (Bathrick, 1981).

The need to direct attention to small scale farmers was recognised primarily as a result of :-

- the benefits of the Green Revolution being identified as capable of being applied to small units and not only to large scale production;
- experience with interventions which had been undertaken in the small scale farmer sector which, in the majority of cases, had not been successful; and,
- the need to address the extreme poverty in LICs.

The World Bank concluded that provision of finance to small scale farmers would promote their development. In his address to the World Bank's Board of Governors in Nairobi on 24 September 1973, Robert McNamara stated :-

"The miracle of the Green Revolution may have arrived, but for the most part, the poor farmer has not been able to participate in it. He simply cannot afford to pay for the

2 Definition :- LIC (1990) GNP per capita up to \$610, weighted mean \$350. Middle income country GNP per capita from ± \$611 - ± \$7619. South Africa is classified as an upper middle income country. High income country GNP per capita > \$7620. (World Bank, 1992)

irrigation, the pesticide, the fertilizer, ... For the small holder operating with virtually no capital, access to credit is crucial. No matter how knowledgeable or well motivated he may be, without such credit he cannot buy improved seed, apply the necessary fertilizer and pesticide, rent equipment or develop his water resources. Small farmers generally spend less than 20% of what is required on such inputs because they simply do not have the resources" (McNamara quoted in Bathrick, 1981:13).

The International Labour Organisation (1984) in a report prepared for the Economic Commission for Africa stated that priority should be given to agricultural development as for, the then, foreseeable future "a majority of African populations will find their livelihood in agriculture and therefore it is imperative that their situation be improved to improve the overall employment and poverty situation" (ILO, 1984:5).

2.4 Small Scale Farmers

Small scale farming is not defined according to the area of land that a farmer occupies. According to Singh (1979:4) small scale farmers exhibit some or all of the following characteristics :-

- a high proportion of their land and output is devoted to subsistence needs;
- they often produce a variety of crops to reduce risk. They have a high degree of risk aversion - they aim not to jeopardise their subsistence requirements;
- they have low levels of capital and few on-farm investments;
- their labour, other than the land resource, is the most important input;
- there are few market linkages and where there are, they are generally weak. This is due to a low level of output being sold and a low level of capital input use.

Shaner et al (1982:16) in guidelines drafted for the United States Agency for international Development (USAID) defined "small scale farming" as follows :-

"A situation in which farmers frequently have difficulty obtaining sufficient inputs to allow them to adequately use the available technology as would medium and large scale commercial farmers. Small does not, necessarily, refer to the area of land held." Shaner further states that small scale farmers "are unable to easily raise their levels of production because of limited resources and technologies suitable for their needs." Small scale farmers range from subsistence farmers through to those who are able to produce a marketable surplus but who still suffer from constraints which prevent them from having easy access to resources and technology.

The Development Bank of Southern Africa (DBSA) classified farming in "less developed areas" in southern Africa into three classes :-

- subsistence farmers - farmers who primarily produce for their own consumption but who may occasionally market surplus produce;
- emerging farmers - farmers who have the motivation and potential to farm as commercial farmers but are hampered in their efforts by restrictions of being small scale;
- commercial farmers - farmers who farm independently for their own account and can compete on an equal basis in markets (van Rooyen, 1987:12).

With regard to "commercial" farmers, in less developed areas, DBSA considers that they often experience problems of access to resources. An important issue is lack of secure title to land which impacts on their access to credit. Van Rooyen (1987) states that these farmers operate despite "numerous restrictions facing them in relation to access to farming resources and support systems." These commercial farmers would, in terms of the USAID definition, be classified as small scale.

Small scale farmers can be identified as a marginalised group as a result of their inability to access resources and technology which they require. Marginalisation is a condition associated with poverty. The World Bank (1988) refers to "absolute" and "relative"

poverty. Absolute poverty is defined "by a state of degrading living conditions such as disease, illiteracy, malnutrition and neglect" (McNamara in Dams, 1992:435). Dams states that there are two levels of absolute poverty, these are :-

- primary poverty - where physical existence is barely possible; and,
- secondary poverty - where the group concerned is marginalised to the extent that it does not have access to resources, technology, markets, and participation in the decision making process.

According to the FAO (1988) the correlates of poverty are :-

- undernutrition
- high rate of illiteracy
- high dependency burden (child/adult ratio)

Absolute poverty is a major factor in rural areas and a majority of small scale producers can be categorised as falling into this group (Dell'Amore, 1975., IFAD, 1985., World Bank, 1988).

Relative poverty according to the World Bank, is found where a person's income "falls below a stated portion of the national average, a portion that varies between 15% and 40%, depending on the income level" (World Bank, 1988:3). South Africa is classified as an "upper-middle income" country (see footnote 2 section 2.3) with per capita GNP in 1990 at US\$2530 (World Bank, 1992:219).

Small scale farmers cannot be classified as an homogeneous group. Figure 2.1 diagrammatically represents the structure of a countries agricultural sector. Small scale farmers are divided into three sub-groups viz. subsistence-, emerging-, and commercial-farmers. Exactly where the divisions between groups lie would depend on circumstances prevailing in the area under consideration. It is indicated that small scale farmers may

be further sub divided into absolute and relative poor groups. Within the absolute poor are those that may be defined as primary poor and those that may be defined as secondary poor.

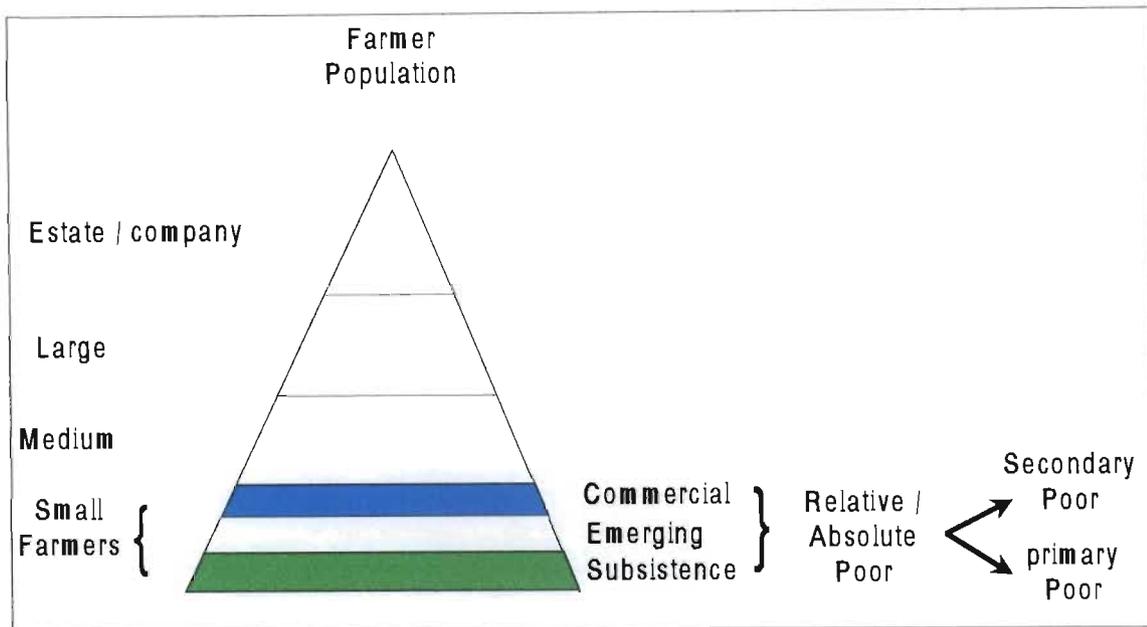


Figure 2.1 Classification of farmer groups

Small scale farmers are comprised of an array of groupings. An important feature to note is that they are marginalised and hence fall into the relative and absolute poor of a country. The focus of attention of rural development has been alleviation of this poverty (ILO, 1984, World Bank, 1992). The provision of credit to small scale farmers is faced with the complexities of the sub groupings as noted above.

2.5 Small Scale Farmer Development in South Africa

An in depth, historical overview of small scale farmer development in South Africa will not be undertaken. It is, however, illuminating to grasp an understanding of basic trends.

The Development Bank of Southern Africa (DBSA, 1994a:31) estimates that there are approximately 1 292 587 families in the former homeland areas of South Africa. Of these families 31% have no access to arable land or grazing rights, 56% operate at, or are below subsistence level, 13% use improved technology and market their surplus production and only 0.2% could be described as commercial farmers. Bembridge (1987) also indicated that only 0.2% of rural families make a viable living out of farming. Those families having access to land have up to 5 hectares. The average area of arable land, as is commented on in section 2.4.1, is about 1 hectare per family.

The overall history of South Africa generally points to a neglect of the small scale sector. Simkins concludes that the period 1918 to 1954 was a period of "fragile productivity maintenance" when productivity remained approximately constant as a result of an out migration of people from rural areas. He identifies the period 1955 to 1969 as a period of "rapid decline" in productivity arising from increasing population density of rural areas as a result of the homeland policy (Simkins, 1981:258). This finding is supported by Mbongwa et al (1996:60).

In viewing the KwaZulu-Natal region of South Africa, Natrass (1981) estimated that 27% of labour employed in 1976 was in agriculture in areas designated as KwaZulu. Of employment in agriculture it was estimated that 70% of jobs were in subsistence farming. The remainder of agricultural employment was in "market or commercial farming". Agricultural employment generated 22% of total agricultural production and 1.6% of the gross domestic product of the KwaZulu-Natal region as a whole.

It is estimated that population pressure in the former KwaZulu area will reduce the average area of land available to rural families by more than 50% by the year 2000 (Natrass, 1981). Natrass states that without development of rural areas problems "of unemployment, housing, security, land degradation and absolute poverty, will remain" (Natrass, 1981:17). She went on to say that there was a lack of development capital needed to improve administrative and physical infrastructure.

In a more recent assessment of rural areas the DBSA indicated that the situation in which small scale farmers find themselves is much the same as that identified by Natrass (DBSA, 1994a:28). Rural areas are faced with high population densities, low levels of income, low levels of nutrition and fragmentation and degradation of land. Access to technology and institutional support has not been such as to promote small scale farming.

It was noted by DBSA that lifting of control on movement and settlement of people (the repeal of influx control and group areas Acts) could eventuate in a decline in population density in rural areas. This, however, could be constrained by prevailing economic conditions.

The above comments indicate that problems faced by small scale farmers in South Africa have not improved during the latter part of the 20th Century. Marginalisation of the sector would appear to have continued.

Summarising the results of a workshop on "Development in the Transition" Coleman (1991:57) states that "there can be little doubt that the issue of development has claimed its rightful role at centre stage of the transformation process." Seven political affiliations were represented at the workshop, the African National Congress (ANC), Azapo, the Democratic Party (DP), the Inkatha Freedom Party (IFP), the National Party (NP), the Pan Africanist Congress (PAC) and the South African Communist Party (SACP). The general content of the individual party's views included the concepts identified in definitions of development referred to previously viz, :-

- development is about people
- it requires participation
- it is a process
- it involves the eradication of poverty, improvement in the quality of life, human development and requires a needs-based approach.

The Kagiso Trust's definition of development states that "From the conception of the community, the fundamental essence of development is the general eradication of poverty and ignorance, and therefore, the enhancement and empowerment of people with the will and skills to manage all available resources. The concept of development is essentially about a process of change and growth. Development is about the creation of opportunities and access to a better quality and standard of life" (Coleman, 1991:22).

The Southern African Regional Development Policy, as was adopted by administrations of the independent homelands in South Africa, stated that small scale farmer development should, amongst other objectives, enable participation, promote equitable opportunities to compete in the market, provide the necessary support for small scale farmers to improve their abilities, and promote the use of local institutions so that the results of development will be sustainable (van Rooyen, 1987).

The DBSA promoted a Farmer Support Programme (FSP) which aimed to ensure that small scale farmers had access to required inputs, mechanisation, markets, extension services, and training. The supporting policy measures were indicated as being an area which required addressing. By adopting the FSP approach the DBSA anticipated that it would be a "major strategy" in reducing inequities which have characterised agriculture in South Africa (Thomas and van Rooyen, 1991).

2.6 The Small Scale Farmer : Factors of Production and Access

Small scale farmers require inputs of land, labour and capital as well as management to be able to produce. Their produce is either consumed (subsistence) or sold in a market. The price received (income) is then allocated to the purchase of further inputs and to the purchase of goods which the household requires. It is assumed that the public sector provides extension and infrastructure which enable farmers to operate. In the small scale farming sector farm families may also sell their labour outside agriculture.

2.6.1 Land

In considering small scale farming in Africa, communal land tenure dominates the sector. There are other forms of tenure but these do not account for a large percentage of the area (Lele, 1975; Bates, 1979).

The system of communal or traditional land tenure has been codified in most African countries as it has been in South Africa, and the attitude, according to Famoriyo (1973) commenting on land tenure in Nigeria, of the colonizing nations and the subsequent administrations "has been essentially one of non-interference in the customary tenure system at grass roots" (Famoriyo, 1973:7).

Under the communal land tenure system a farmer has the right to use land but has no power to sell it or use it as collateral (KwaZulu Government, 1975). The control of land is vested in a tribe. It is frequently held that rights of an individual under a communal land tenure system are insecure. The KwaZulu Government report referred to states that a "considerable measure of security" exists and that "cancellation of rights rarely occurs, and then, only for (a) very serious misdemeanour" (KwaZulu Government, 1975:17). The land is passed from one generation of a family to another and can "remain under occupation by the family for generations" (KwaZulu Government, 1975:17). Cross (1988a) confirms this view. Thomson and Lyne (1995) question this view and state that "when the criteria of breadth and assurance are applied to land rights tenure is not secure and that technical innovation has done little to alter this situation" (Thomson and Lyne, 1995:181).

There is no formal land market in areas occupied under traditional/communal land tenure. Households with rights to land and who are not cultivating it, do not normally allow other households to use their land "for fear that they may lose permanent usufruct" (Lenta and Maasdorp, 1988). This fear would appear to be real but is paradoxical in relation to the stated security of traditional tenure cited earlier. As a result of migration, together with

other constraints which small scale farmers face, arable land is left uncultivated. The feature of traditional tenure whereby "neither the land nor the rights to it are negotiable" (KwaZulu Government, 1975:9) may account for there being no significant movement to establish a system of informal leasing or lending of land for productive purposes. The acts governing land occupation in black areas of South Africa provide for non negotiability of land and the rights thereto which means that if a contractual agreement was entered into between two parties it would not be enforceable at law.

There is considerable debate about the demerits of communal land tenure and the merits of freehold tenure and vice versa. Cross comments on the debate and in referring to freehold tenure states that, in her view, maintaining access to land by the whole community is more suited to development than concentrating "land resources in the hands of the few" (Cross, 1988:347). Lyne and Thomson (1996) suggest that the constraints of communal land tenure be alleviated and that security of tenure be ensured to enable the establishment of a rental market to improve "both allocative efficiency and equity" (Lyne and Thomson, 1996:13). Moor and Nieuwoudt (1996) support this view and state that "adoptive policies" are required as replacing communal tenure with freehold rights will not provide a solution (Moor and Nieuwoudt, 1996:75). "Where farms are very small and households attach a high value to land as a form of social security, allocative efficiency is more likely to be reflected in the rental market for farmland than in the sale market" (Lyne, Thomson and Ortmann, 1996:17). Further to the issue of the form of tenure is the one concerning the amount of land available to small scale farmers.

Cobbet (1988:61) estimates that the average area of arable land per household (6 persons) in the homeland areas is 1 hectare. The range is from 0,2 hectares in QwaQwa to 1.5 hectares in the Transkei. He assumes that the total population in these areas has access and does not take account of the possibility of the urbanised population not having access to land. If, as he states, 40% or more of the population was urbanised the average area would increase to approximately 2 hectares. It will be shown in later analysis that the

average area of land recorded for the production of sugar cane in KwaZulu is approximately 2 hectares (see section 3.6.2).

The per capita arable land area in Africa, according to Lele (1975) ranges between 0.5 and 7.7 hectares. She states that this is greater than that found in more densely populated areas of Asia where the average in India is 0.28 hectares. This, however, has to be qualified in terms of environmental factors which pertain when the question of productivity is considered. Land available to small scale farmers is highly fragmented and unless significant migration of people out of traditional homeland areas occurs, as a result of the repeal of legislation previously preventing this, will remain so for the foreseeable future.

Not only are land units small but current productivity therefrom is also low. Lenta and Maasdorp (1988) suggest that a lack of adequate intervention in the provision of improved inputs and technology is an important factor contributing to this. They maintain that without improved inputs and technology output from small scale farmers has been unable to produce an income which can compete with wage employment. Mbowa and Nieuwoudt (1996) in comparing the size efficiency of sugar cane farmers arrive at similar conclusion in respect of small farms less than 10 hectares in extent.

2.6.2 Labour

Small scale farming has a bias to family labour and production from agricultural activities goes to meeting household needs. As with all factors involved in small scale production, a wide number of choices face a farm household in the allocation of its labour. According to Ruthenberg and Jahnke (1988) there are choices between subsistence production and market production, labour and leisure, and present and future consumption. Not only do the above decisions face a household but also the choice of supplying its labour to agriculture or to some other sector of the economy eg. industry also exists. The question of the marginal rate of return thus arises.

Kada (1983:375) demonstrates that the "marginal product of labour on the farm must be equal to the wage rate, and that the marginal valuation of family labour should be equal to the off-farm wage rate." Small scale farmers have been shown to take rational decisions when faced with the allocation of their resources.

In South Africa it is found that the portion of the population classified as economically active in rural areas is depleted as a result of seeking employment outside agriculture. Natrass and Muller (1981) state that the average absentee rate of men between the ages of 20 and 45 years in KwaZulu is over 50% and in some communities reaches levels of between 75% and 80%. This then leaves the small scale farming sector with the young, females, aged and infirm as its main source of labour. In addition, there are a greater number of economically active women than males who remain in rural areas. Natrass (1976) estimated that the male - female migration ratio was approximately 6:1. Peters and May (1984:30) reporting on the Mapumulo district of KwaZulu, state that wage earning employment was highest for the age group 25 - 44 years. They found that the average age of the majority of full-time farmers was 55 - 64 years. (see sections 4.12.2.1 and 7.4.1). The above situation impacts on the productivity of small scale farming.

With migration of able bodied labour from rural areas a greater burden falls on those who remain to manage a household, care for the young, elderly and infirm and perform productive tasks that are required. Resource constraints in rural areas are compounded by households having to allocate time to obtaining water and collecting fuel. Research frequently points to a situation where, in an apparent condition of labour surplus, labour scarcity exists during peak periods of demand for labour (Bates, 1979; Lente and Maasdorp, 1988).

World Bank findings indicate that "labour supply proved to be a major factor in determining farmers' acceptance or rejection of technological change" (World Bank, 1988:45). Small farmers were found to measure benefits of new technologies "in terms of return per day of labour" (World Bank, 1988:45).

2.6.3 Capital

Capital includes all physical and financial assets, not included in land and labour, which are required for purposes of production. The principal categories of capital are the following :-

- Mechanical - equipment, etc.
- Chemical - fertilizer, pesticides, etc.
- Biological - seeds, etc.
- Infrastructure
- Finance

Associated with capital is research which is necessary to develop appropriate technology in each of the categories. With regard to Africa, the World Bank (1989:99) states that "attempts to introduce technology into Africa (excluding South Africa) in the past 30 years have been disappointing" and that "more has been spent on agricultural research in sub-Saharan Africa per farmer than elsewhere in the developing world." The bank maintains that the quality of research in Africa has declined and that there is only slow development of new technology. "Off the shelf" technology has frequently been inappropriate and has, accordingly, failed (World Bank, 1989:95).

It was noted by Croxall and Smith (1984), in regard to machinery, that with improved technology and its increased intricacy that it was not only more expensive initially to purchase but also the cost of maintenance escalated. The return from use of such machinery therefore has to be sufficient to maintain, repair and replace it. Farmers using new technology have to rely on an efficient supply of fuels and spare parts which can be problematic in developing areas. This problem, amongst others, labour utilisation, etc., raises the issue of appropriateness of technology for small scale farmers.

Literature generally concludes that an increase in production in the small farm sector is not possible without an increased use of improved inputs (Singh, 1979; Presidential Committee on Agricultural Credit, 1981; Hamdy, 1987; Lenta and Maasdorp, 1988; World Bank, 1988). Economies of scale are indicated to be important with small scale farmers incurring higher costs per unit of production than large scale farmers, especially in respect of machinery (Mbowa and Nieuwoudt, 1996:3).

The question of how small scale farmers gain access to improved inputs and technology is answered by the provision of credit. Credit projects provide access to resources not previously available to farmers. In addition provision of credit, which enables production to be increased, can make an important contribution to addressing problems of rural poverty. It is as a result of this enabling function of credit that the World Bank, USAID, FAO and other organisations have placed a great deal of emphasis on provision of finance to small scale farmers.

Credit is a component of capital and may be viewed as a catalyst in the development process - it enables improved inputs and technology to be combined with available land and labour - and as such it is suggested that it is a special category of capital. Consequently it will be dealt with in greater detail. Before doing this, however, the subject of management as a fourth input following land, labour and capital will be considered briefly.

2.6.4 Management

Labour is viewed as an input into the production process. It, like other inputs, has different levels of quality. The qualitative attributes of labour can be divided into :-

- physical
- management

The physical attributes will not be commented upon except to say that unless a farmer is capable of being economically active, in the accepted sense, agricultural production can suffer if a farmer, him or herself, is an important source of labour on the farm. Note previous comments on migration of able bodied people from rural areas.

The management attributes of a farmer are exceedingly important. "Everything depends on who is at the controls, his powers, his motives and his ability, and, perhaps most of all his awareness of the complexities of the situation and his willingness to admit error and to apply any necessary adjustments" (Croxall and Smith, 1984). Kinsey and Binswanger (1996:113) indicate that there is a critical balance between management ability, amount of family labour and other inputs in the success of small scale farmers.

A small scale farmer is in a situation where he/she has to take all production decisions. Knowledge is an important factor in the management ability of a farmer. Lack of knowledge and inadequate use of knowledge that exists are major limitations to improved productivity. The use of knowledge can be hampered by a lack of or shortcoming in the following :-

- information
- time
- power
- materials
- money

The required knowledge can only be obtained by farmers receiving necessary education and training. According to Schultz (1968) investment in human capabilities (education) is one of the most powerful engines of development. Agricultural extension (timely information) to small farmers in Africa has proved ineffective due to :-

- poor management

- fragmented systems
- multiple donor - finance of extension services
- weak links with research
- poor training of extension agents
- virtually non existent feedback from farmers (World Bank, 1989)

Without adequate extension and training, provision of improved inputs and appropriate technology will not have the benefits which they should have. It is also stated that unless an extension system is able to impart advice on improved inputs and appropriate technology, it will not succeed.

The provision of extension services is an expensive undertaking (Lele, 1975). Eicher and Rukuni (1992) confirmed this from experience in Zimbabwe, where the current ratio of extension workers to farmers is 1:850, an attempt is being made to achieve a ratio of 1:400. The World Bank (1991) advocated a "Training and Visit" system whereby extension agents deal with farmers on a group basis. This would enable an extension agent to service a greater number of farmers. According to this system qualified agricultural extensionists operate through "village extension workers" who are farmer representatives drawn from target areas (Adams, 1982:78).

The methods extension services employ, the management, the quality of staff employed and participation of farmers in programmes are a major subject in small scale farmer development. An appropriate extension system is, however, a requisite in the development process.

2.7 Participation

Development involves people and as such the way they are involved has implications in respect of the final results. Heyer (1981) in commenting upon rural development stated that there is a paternalistic attitude towards development. She maintains that rural

development is based on an assumption that those outside know best with the rural people being the object of development. This attitude is reflected in statements such as "the need to develop the rural population" and "the need to elicit rural participation" (Heyer, 1981:223). Heyer maintains that this may really imply "the need to get the rural population to do what the agencies want them to do, sometimes against their own interests" (Heyer, 1981:223).

Nattrass commented similarly on development agencies operating in KwaZulu-Natal indicating that it was her "impression that these bodies are too concerned to supply needs rather than concentrating on removing constraints", they are providing "things that 'we' can supply 'them'" (Nattrass, 1981:18). The paternalism inherent in meeting such "needs" is difficult to avoid and perhaps one should rather concentrate on creating an environment conducive to development and wait for the demand for these additional "inputs" to emerge.

Heyer states that rural people usually know what they want and are able to express their needs. They are, however, not listened to or heard. The notion of partnerships or participation is often one where the rural population is the "subordinate partner" (Heyer, 1981:217).

It is recognised that a participatory approach to development is essential. The implementation of the practice is beset with obstacles which require identification and addressing. Participatory approaches are a way of life, are sensitive and may easily be destroyed (DBSA, 1994b).

The United Nations Administration Committee on Co-ordination Task Force on Rural Development defined participation as follows :-

"What gives real meaning to popular participation is the collective effort by the people concerned to pool their efforts and whatever resources they decide to pool together to

obtain objectives they set for themselves. In this regard, participation is viewed as an active process in which the participants take initiatives and action that is stimulated by their own thinking and deliberation and over which they can exert control. The idea of passive participation which only involves the people in actions that have been thought or designed by others, is unacceptable" (Dams, 1992:435).

The World Bank (1988) reports that the lack of beneficiary participation is a recurrent theme in evaluation of projects. Beneficiary participation is interpreted by practitioners in one of the following ways :-

- Contribution to resource or labour input;
- Involvement in identification of project priorities;
- Farmer organisations and co-operatives; and,
- Recovery of project costs.

Beneficiaries in World Bank financed projects which were evaluated were not involved in decision making nor were they consulted during the design phase. The failure to nurture participation resulted in the following:-

- Farmers viewed projects as somebody else's responsibility eg. the government's.
- Farmers were unconvinced of benefits of particular projects and wished to be paid for their involvement. The lack of farmer support and technical expertise resulted in delays in carrying out projects, poor maintenance and lack of interest in project sponsored activities. Irrigation projects were especially prone to these problems.
- Emphasis on central planning has resulted in limited, partial and often perfunctory participation in the identification of project components. This reinforced the climate of dependency and paternalism.
- Farmer organisations are considered useful for sustained participation in projects. However, they are frequently absent or ineffectual. The Bank noted that organisations which were imposed by itself or its borrowers almost always failed.

Successful farmer organisations were usually associated with farmers who had previously organised themselves, who received training and extension and whose organisations were small. An influential leader was found to be a useful attribute. Where formal organisations are encouraged which do not fit with existing informal relationships organisations are unable to function effectively. Legoupil (1994:38) noted that traditional structures in West Africa eventually "take over" the control of co-operatives. He noted that practitioners will have to meet the challenge of how to reconcile "customary authority" with "public authority".

Important factors for farmer participation, summarised from a workshop on participation (Thomas et al, 1994:7-17), would appear to be :-

- Farmers identifying their needs.
- Communication
- Information
- Access to improved inputs and technology
- Time in which to assimilate information, consult and decide
- Freedom to choose and say "no" if necessary and involvement in the decision making process.

Farmers will adopt improved inputs and new technology if there is an adequate return. Likewise, participation will probably occur if there are benefits to be obtained by farmers.

The World Bank has reported that participation is a necessary part of sustainable development. It stated that "advances in communication technology and parallel improvements in the operation of markets allow more and more people to learn about opportunities available to them and express their preferences" (World Bank, 1994:3).

Participation of beneficiaries in projects has been identified as an essential factor in development. Participation and an adequate return to small scale farmers would appear to be elements for success.

2.8 Finance and Rural Financial Markets (RFM)

The following institutions, which specialise in creating and processing financial assets, are components of a countries financial sector/market :

- the central bank (in South Africa the Reserve Bank) which issues currency and supervises other financial institutions
- commercial banks and other specialised institutions which serve as money transfer intermediaries
- institutions such as building society savings banks and the post office which directly serve the public by accepting deposits and transmitting funds.
- institutions which directly serve the public primarily by issuing loans such as hire purchase, and finance companies
- other diversified intermediaries which accept deposits and issue loans, such as co-operatives, credit unions, etc.

The traditional rotating credit and savings associations (known as "stokvels" in South Africa) can also be added to the above. In addition, informal money-lenders such as shopkeepers, traders, farmers, friends and relatives can be included in the financial market.

The formal sector includes institutions governed and controlled by financial legislation, semi-formal organisations are those not governed by legislation, such as NGO's and parastatals which are not part of the "traditional indigenous financial" system. Informal finance structures or mechanisms fall outside of the control of financial legislation and

may include credit and savings associations, cooperatives and money-lenders and variations of the foregoing (Meyer and Nagarajan, 1992:644; Birgegård, 1993:6).

An important part of the financial system is the depositing of money. This establishes "debt claims" with the financial sector serving as an intermediary dealing in claims.

The financial sector performs the following functions :-

- provides a medium of exchange more efficient than bartering
- mobilises savings and allocates capital amongst competing users
- transforms and distributes risk - the financial system enables investors to have a small participation in many investments rather than a large involvement in a few.
- stabilises the economy with regard to cyclical changes in prices and output.

In addition to the above, the system enables a person to purchase items which would require a period of savings immediately eg. tractors, etc. and meet cash shortages during the production/consumption cycle (Long and Adams quoted in Tinnermeier, 1983).

The money circulating in rural areas is not divorced from the overall financial system. With increased incorporation of less developed areas into the market economy the rural sector is being more closely intertwined with the financial system. RFM's are inextricably linked with the overall financial market.

"RFMs include all the rural institutions (man-made rules and regulations which guide the behaviour of people) which affect the accumulation of savings and their use, the flow and holding of funds in the rural sector, the allocation of investment capital (public and private), and the integration of rural financial activities with national and international financial markets" (Tinnermeier, 1983).

RFM's include the operations of public and private sector institutions operating in the financial market. Less well recognised components of RFM's would be local institutional and cultural practices which impact on the flow of funds eg. investments in livestock in Africa.

As an RFM is part of a larger financial market it should operate within the norms of the overall market so as not to introduce distortions into the rural sector. Major problems facing RFMs according to Adams (1977) are :-

- fixed and negative real interest rates causing capital erosion
- non-mobilisation of rural savings
- major loan repayment defaults
- high administration costs of financial institutions
- high transaction costs for both lenders and borrowers
- non involvement of institutions from the broader financial market due to resistance to lending to agriculture, especially to small scale farmers
- fragmentation due to lenders only serving a small and/or select portion of the rural population. This does not lead to efficiency in RFM's.
- concentration of wealth in the hands of a few borrowers who may realise an income transfer due to negative real rates of interest. This may enable borrowers to bid away resources from non-borrowers which may lead to non-borrowers paying a higher price for resources.

The problems cited have been identified in many credit programme evaluations undertaken by the World Bank, USAID and FAO.

2.9 The need for credit

IFAD (1985:IX), a United Nations sponsored organisation, states that "the provision of credit can be one of the most effective means of reaching the poor directly." This view

is also expressed by the World Bank and the FAO in regard to their developmental operations. The World Bank, a large provider of rural development financing, began providing finance for small scale farmers in the 1960's. The elements of the Bank's rural development strategy were primarily focused on small scale farmers and included :-

- the promotion of rural institutions and organisations to promote productivity
- attention to land and tenancy reform
- better access to credit
- assured availability of water
- intensification of agricultural research and extension
- greater access to public facilities

During the period 1974 to 1986 14% of the World Bank's agricultural sector lending went directly to the provision of credit. Credit was the third largest portion of the Bank's agricultural sector lending following irrigation (30%) and area development schemes (20%). Credit also formed a component of area development schemes. Area development schemes involved the provision of improved seeds, livestock breeds, irrigation facilities, fertilizer, chemicals, storage, transport and marketing services and pricing arrangements together with the necessary credit (World Bank, 1988).

The provision of credit was based on the traditional "agricultural bank" model as follows:-

"Funding to cover estimated investment for agricultural inputs i.e., seed, fertilizer, pesticide, etc., and other production expenses is provided by the Government or an external agency to the Government's central bank for relending to other commercial banks. More often, in the case of the small farmer, such funds are channelled through the country's agricultural development bank, a specially created rural development agency, or a co-operative. The institutions provide loans to producers for the purchase of usually short-term production inputs and medium- or long-term farm investments, from livestock purchases to equipment. It is hoped that these purchases, combined with the family labour

and perhaps contracted labour, will result in greater output than traditional technologies. The marketed output should provide a sufficient amount to cover loan payments plus interest charges and give the producer sufficient incentive to repeat the operation. The interest charged by the bank should cover the cost of loan administration and supervision, inflation, loan defaults, and the amount needed to repay the central bank and thus perpetuate the fund." (Bathrick, 1981:10).

Experience has, however, shown that provision of credit has not been as straightforward as the above indicates. In fact it has been acknowledged that agricultural credit is one of the most difficult of all services to provide. The literature is replete with reports on credit projects detailing problems which have been experienced. The largest study undertaken was the 1973 USAID Spring Review of Small Farmer Credit. Although it was undertaken 20 years ago the findings and the recommendations, in comparison with those recorded in more recent studies, remain valid. Amongst other problems, a high rate of loan repayment default was identified as a major failing in many credit programmes.

Credit is a tool which must be linked with adoption of improved inputs and technology (Dell'Amore, 1975). Its use should be based on increased productivity providing an increased net income to a farmer. Credit financed activities should be sufficiently remunerative to justify borrowing (FAO, 1994:5).

Loans should be used for income generation and for meeting operational needs of borrowers. Where possible they should incorporate new activities that are substantially more productive than those in which small scale farmers are currently engaged. Projects involving provision of credit should include all such supportive components as can help raise the productivity of current activities by a significant margin. This requirement is obviously tied to a need to ensure equalisation of marginal efficiency of investment with the cost of borrowing. Credit financed activities must be sufficiently remunerative to justify borrowing.

A credit programme has no place in the continuation of subsistence production, it presupposes that borrowers are, or can be, partly or fully integrated into the market economy. Credit is an input which bridges a gap between current expenditure and future income which should yield a surplus. Favourable results with the provision of credit are observed where :-

- there is an improved technology beyond the traditional technology used by a small scale farmer
- the necessary infrastructure exists to access markets with increased production
- improved inputs are readily available
- an effective extension service is available.

The flow of credit to the small farm sector has an important role in development especially with increased dependence on markets, improved inputs and technology. Hamdy (1987) states that credit is essential from the production to the marketing stages in agricultural development.

It has been pointed out by several authors that availability of credit during the early phase of development is not a critical element in the process. Bottrall (1976) states that evidence with regard to provision of subsidised credit in early stages of development has shown that it is rarely a need. He states that the greatest needs in early stages of development are extension and savings mobilisation.

For farmers to adopt improved inputs and technology they need to be convinced of the investment potential of the new inputs or technology. If they are convinced they will commit their own savings to adoption of these. However, as production progresses the need for credit arises to enable farmers to expand and increase the use of improved inputs and new technology. The need for credit becomes especially important where improved inputs or new technology are "lumpy".

2.10 The provision of credit 1960 - 1996

Credit for small scale farmers became an important component of World Bank agricultural development projects in the mid 1960's. Increasing emphasis having been placed on the small scale farmer sector.

In 1973, as a result of problems experienced by credit institutions serving small scale farmers, USAID undertook an extensive survey - the Spring Review of Small Farmer Credit - to identify causes of problems encountered and provide recommendations for improving credit provision. A summary of recommendations made in the Spring Review, as quoted by Bathrick (1981:16-21), are as follows :-

- Reduce costs of administration of providing credit and extension services by using group methods.
- Decentralise decision making to the lowest operational levels.
- Promote client participation.
- Utilise staff with suitable training with an emphasis on employing staff from project areas.
- Simplify loan procedures.
- Improve linkages between various agencies involved eg. between extension services and input suppliers, between credit institutions and clients.
- Ensure that programme goals and strategies are co-ordinated. The Review noted that programmes in which credit was one function of an integrated programme "operated by a specially created organisation" are usually the most successful programmes.
- Maintain default and delinquency records to make it possible to distinguish between those borrowers who are unable to repay and those who are unwilling to repay their loans.

- Utilise crop liens for security, there was no justification for use of land as collateral. In addition large farmers should not be included in the local loan approval system.
- Charge realistic interest rates.
- Do not subsidise the provision of credit. Subsidies, if deemed necessary, should be applied to technical assistance, education, research and marketing services.
- Address problems of commercially non-viable farmers.
- Provide technical supervision for the use of new technology.
- Mobilise savings.
- Graduate small farmers to use commercial banks.
- Note that larger farmers frequently become defaulters for reasons other than being unable to repay.
- Consider the provision of "consumption" credit to meet shortfalls in small farmer cash flows.

IFAD (1985) and World Bank (1991) reports identify similar issues to those reported in the Spring Review. The provision of credit is a component of an RFM, it is impacted upon by the overall economic environment and policies adopted by the respective government. Further comment will be made on some of the issues which have been identified.

2.10.1 Interest Rate

The interest rate charged to small scale farmers is an issue which has given rise to a great deal of debate. There would appear to be general consensus that the level of interest charged a small scale farmer is not the real issue. The issue is the ability of a farmer to access credit when it is required. The interest charged impacts on the ability of an institution to be able to supply credit on a sustainable basis (Bottrall, 1976; Adams, 1983; Tinnermeier, 1983; Final Report of the Commission of Inquiry into the Provision of Rural Financial Services, 1996:32).

Experience indicates that unless a credit institution charges a positive real rate of interest it will be unsustainable requiring capital injections from time to time which eventually face the possibility of drying up. Subsidised interest rates lead to an abnormal demand for credit which may necessitate the introduction of rationing devices (Vogel and Larson, 1981). Rationing leads to market distortions.

Justification for subsidisation of interest rates was predicated on the assumptions that :-

- it would encourage small scale farmers to adopt improved inputs and new technology to increase production
- it was an income transfer to a target group - the rural poor
- money-lenders exploited the rural poor by charging usurious interest rates

The above points have been criticised if not discredited on the following basis.

2.10.1.1 Adoption of improved inputs and new technologies

Small scale farmers have been found to adopt improved inputs and new technology if prospects for improved farm profit are good (World Bank, 1991). As already stated the early adoption of improved inputs and technology does not require credit.

Bottrall (1976:85) states evidence suggests that where small "farmers are 'potentially viable' but reluctant to innovate, the main reason is less likely to be lack of access to capital than a lack of attractive investment opportunities or a failure to perceive (or be convinced) that such opportunities exist".

Bottrall (1976) goes on to quote that numerous studies have shown that small scale farmers have cash savings and that the constraint to innovation which they face is not one of money but of technical knowledge. Similar arguments are recorded by Von Pischke, (1978), Tinnermeier, (1983) and IFAD, (1985).

2.10.1.2 Income Transfer

An income transfer occurs when interest rates are subsidised to make production more profitable for targeted groups of small scale farmers. Adams and Meyer (1983:137) state that this arises from the difference between the real and nominal price (interest rate) of credit. A reason put forward for interest subsidisation is the low price farmers often receive for their produce as a result of cheap food policies. In addition to this, small scale farmers are identified as a poor group which therefore require assistance. Subsidised credit programmes then assume the role of welfare programmes.

It has been recognised that credit programmes cannot be used as "poverty alleviation" programmes for the "poorest of the poor" (Dell'Amore, 1975; Bottrall, 1976; Tinnermeier, 1983; World Bank, 1988). A credit programme, as previously stated, is predicated on the basis that productivity of small scale farmers utilising credit will increase. In the case of the poorest of the poor their resource base is usually such that subsidised credit programmes will not achieve the desired results. The poorest of the poor (the primary poor in terms of previous classification) may benefit through the creation of additional employment opportunities in the small scale farming sector but they would require other appropriate interventions eg. public works programmes. Evaluations of subsidised credit programmes record that benefits usually accrue to larger farmers and not the poorest who are the ones whom it is intended to benefit.

According to Bottrall "subsidised credit programmes are thus likely to provide a highly inefficient and expensive way of providing welfare and one must question the good sense (and sometimes the sincerity) of governments which continue to employ them" (Bottrall, 1976:83). If subsidisation is required in a development programme it should be directed to services. Subsidies if applied, should be indirect, one or more steps removed from the farmer, and be applied to extension services, marketing, infrastructure and research (Dell'Amore, 1975; Adams and Meyer, 1983). The applicability of subsidisation in a

programme, however, should receive considerable attention before being adopted as market distortions occur.

2.10.1.3 Informal sources of credit

In addition to credit programmes being seen as an intervention which would encourage adoption of improved inputs and new technologies and as an income transfer to the poor, they were also seen as a means of enabling small scale farmers to escape the exploitation of local money-lenders.

Studies have indicated that the so called "exploitation" by money-lenders is generally an erroneous perception. (Meyer and Nagarajan, 1992:644). Money-lenders have been identified as having advantages as far as small scale farmers are concerned in that they are part of the community, are easy to approach, provide loans timeously and do not require collateral (Presidential Committee on Agricultural Credit, 1981). Although their interest rates would appear high the rates are "market" related. A money-lender would probably not cover his/her costs if they did not charge the rates they do (Bottrall quoted in Tinnermeier, 1983).

Cross (1988b:270) reported that interest on small informal loans in KwaZulu amounted to 60 - 80% for short term loans. This interest rate was high given an inflation rate of 16% at the time. She stated that there was a "thriving network of credit and lending" in the informal sector. Credit was used for providing capital for informal small business enterprises and for meeting costs of minor emergencies. Other uses of credit cited by Cross were for consumption, house construction and social borrowing. She stated that borrowing for agricultural production in the informal sector was limited.

The "customer service" provided by money-lenders appears to be a factor favouring money-lenders even where formal sources of credit are available. ADEMI, a small enterprise credit institution, in the Dominican Republic, has identified customer service

as a major element in operating a credit programme. It employs loans officers from the community in which they work and they operate on a similar basis to informal money-lenders. The interest rate is also comparative to a money-lenders' - a real positive rate of 32 - 58% (Jiménez, 1993). The bank rate in the Dominican Republic was 28% at the time.

2.10.2 Positive Real Rate of Interest

Literature, as indicated, argues strongly for credit institutions to charge positive real rates of interest (Adams and Meyer, 1983:136, Graham, 1995:141). For this to be achieved interest rates should be established taking the opportunity cost of capital, the cost of lending, the risk and a margin, including an allowance for inflation, for a credit institution into account.

Dell'Amore (1975), amongst others, states that as far as small farmers are concerned availability of credit is more important than the interest rate which is charged. He noted that farmers are generally not responsive to interest rate cuts and would prefer measures to lower input costs or increase product prices. According to Stutley (1979) a return of 250 - 300% is not unusual with the use of fertilizer so it is not of great concern to a farmer that he/she pays an interest rate of 15% or 20%; the farmer's concern is that he/she is able to obtain fertilizer at the right time.

A credit institution operates within the constraints of a financial market and, may not in terms of prevailing government lending regulations, be able to exceed certain interest rate limits. In addition to policy which may impact the level of interest rates, cognisance must be taken by a credit institution of competing rates.

A credit institution should control those cost elements which impact on the interest rate charged eg administration costs. If it is unable to recover these costs through the interest rate it could consider charging a service fee (Stutley, 1979). It should be noted however

that all costs of borrowing should be taken into account in establishing the effective or true interest charge which a borrower pays.

2.10.3 Administrative and Transaction costs

Bathrick (1981:119) noted that there was little appreciation of the difficulties involved in providing credit efficiently, that there is "only limited concrete advice" to practitioners on how to implement advice which is provided and there appears to be a need for further studies on management systems required for credit programmes.

Transaction costs are found to be high in small farmer credit programmes. Both the principal (the lender) and the agent (the borrower) incur costs. In the case of a lender costs include expenses incurred in acquiring finance, cost of capital, administration costs and cost of risk of default (Raito and Villanueva, 1978). Depending on the situation transaction costs for different borrowers can vary eg. customers of long standing will have lower costs than new borrowers where performance is unknown.

A borrower's loan transaction costs include time lost in order to negotiate a loan, travel costs to visit a lender, loan paperwork costs and may even extend to having to pay bribes (Adams, 1978). The more times a borrower has to visit a lender and the greater the delays incurred, the higher transaction costs become for borrowers.

IFAD (1985:65) in noting that small scale farmer credit programmes should be made self sustaining, recommends that lending procedures be simplified. To further reduce high costs a high rate of turnover in loans should be aimed for, trained and motivated staff should be employed (a major deficiency identified by USAID) and electronic information systems used to process accounts and management information.

Group financing procedures as well as channelling of lending through farmers' associations, processors and co-operatives on the "basis of efficiency and not according

to political considerations" (Hamdy, 1987:340) should be evaluated. Decentralisation of decision making is identified as a means of reducing costs.

The Presidential Committee (1981), reporting on money-lenders in the Philippines, reported that money-lenders reduce their loan losses, reduce their risks and information costs and increase their profits by:-

- Integrating product markets with the credit market;
- Lending to a small circle of farmers - friends, relatives, and regular business clients which simplifies information gathering and record keeping. This could be considered a variant of group lending;
- Requiring repayment of loans in kind; and,
- Generally do not relend to defaulters and if so, require some penalty payment as well as repayment of the original debt.

The Association for the Development of Microenterprises Inc. (ADEMI) in the Dominican Republic has implemented recommendations made by critics of credit institutions (Jiménez, 1993). ADEMI, which had been operating for 10 years in 1993, advanced 14 159 loans valued at US\$ 13.94 million during 1992. The recovery rate was 98%.

To achieve this ADEMI employed loan officers who had tertiary educational qualifications from within the areas in which they operated. The loan officers had personal contact with clients and rigorous borrower selection procedures were followed. An interest rate varying between 32 and 58% was charged, the bank rate was 28% (see section 2.10.1.3). Exorbitant guarantees were not required, the application form was simple and the decision process quick. ADEMI did not "graduate" good clients to commercial banks as it asked "what bank passes its best clients on to another bank?" (Jiménez, 1993:4). ADEMI took strong action against loan repayment defaulters and promoted savings.

The Filipino money-lender and ADEMI examples indicate benefits of good linkages between borrower and lender. World Bank and FAO recommendations indicate that good linkages between extension services, input markets, credit institutions and clients are important.

Credit institutions, according to Stutley (1979), face two commercial challenges :-

- decreasing the administration costs while increasing the number of loans advanced
- decreasing the loan default rate.

It is through efficient borrower/lender linkages that these challenges of high transaction costs are addressed and interest rates charged maintained at lower levels.

2.10.4 Mobilisation of Savings

An aspect of rural financial markets which frequently is not addressed adequately is that of savings mobilisation. Rural people have significant amounts of money which could be mobilised if appropriate facilities were available to do this (Von Pischke, 1978).

It has been reported that there are about 150 000 "stokvels" (rotating credit and savings associations) in South Africa with an average membership of 12 to 13 people. It was estimated that in 1992 they accounted for R1.6 billion in savings (Business Day, 1992). Cross states that these associations are not confined to urban areas and are found in rural areas (Cross, 1988b). The "stockvel" system enables savings of communities to be invested in the community concerned and avoid savings being syphoned off to finance a more affluent sector in an another area.

The opportunities for mobilising rural savings for investment in development in rural areas has been largely overlooked. Credit programmes should incorporate savings mobilisation. There are two types of saving, forced and voluntary. Forced savings are usually linked

to membership subscriptions and fees of co-operatives or credit unions or may be required by a lender as part of a credit package.

Voluntary savings depend on appropriate incentives being present. The interest rate, accessibility of and confidence of depositors in a savings organisation are important factors in savings mobilisation.

A small scale farmer credit system should be linked to a system which "encourages high saving rates and efficient investment of the capital saved" (FAO, 1973:36). FAO findings indicate that loan repayment performance of credit programmes where savings are involved are high (FAO, 1995:109).

Savings mobilisation is desirable, not only to improve repayment performance, but also to augment the resource base for further investment. As noted by Cross (1988b) and Business Day (1992), stokvel savings are used to benefit participating communities and not for financing of sectors which do not benefit the savers.

The above comments on saving have not included investment in livestock. This, together with the socio-cultural elements, is an avenue which is used for saving in rural areas (Krige, 1936; Duminy and Guest, 1989). Saving in physical assets according to Bottrall (1976:83) is an indication of an "absence of institutions in which cash savings could be safely deposited".

The Strauss Commission in its final recommendations to the South African Government identified "greater availability of and access to appropriate savings products and opportunities" as one of the priorities in addressing rural financial services (Final Report of the Commission of Inquiry into the Provision of Rural Financial Services, 1996:3).

2.10.5 Loan Recovery

A poor loan recovery rate is recorded by many credit institutions serving small scale farmers (Tinnermeier, 1983; World Bank, 1991). IFAD (1996) suggested that the following are some of the reasons for loan default :-

- Dealing with an individual farmer as opposed to a group.
- Poor quality of credit institution staff.
- Inadequate linkage between the formal and informal administrative systems.
- Pressure for officials to meet targets.
- Inadequacy of packages which then requires additional borrowing.
- Inadequate or absent technical package.
- Loans in excess of requirements being advanced.
- Misappropriation of funds by credit institution staff.
- Poor administration and poor monitoring.
- Indiscriminate loan disbursement.
- Adverse environmental factors.
- Lack of loan supervision.
- Lack of experience of a small scale farmer with credit.
- Unfavourable product prices.
- Lack of surplus or increase in net farm income.
- Selection of clients with no long term interest in rural activities.
- Absence of borrowers' own capital in the operation.

There would appear to be strong linkages between the above problems and interest rates and administration costs. It is apparent that innovative procedures are required to address problems.

The operation of a credit programme "presupposes that the client farmers are, or can be, partly or fully integrated into the money economy" (Dell'Amore, 1975:63). As a small

scale farmer is supposed to operate economically so should a credit institution. ADEMI states that it expects its clients to be businesslike (Jiménez, 1993). It, therefore, must itself be seen to be implementing advice which it gives its clients. In this way both the credit institution and its clients are viable.

2.11 Conclusion

There is a need to appreciate the complexities of development and in particular the operation of credit programmes. Evaluations have been undertaken of a great variety of projects. Recommendations have been forthcoming from these evaluations. Literature indicates that after three decades answers have not been found of how to practically implement recommendations (Birgegård, 1993:2).

"In the 1960's and 1970's, providing credit at low rates of interest was widely believed to be the only essential function of financial intermediaries in rural areas of developing countries. However, widespread failure of subsidised and heavily regulated credit programmes in achieving goals of increased production and more equitable income distribution have been considered lately to reflect the basic weaknesses of the credit-centred approach in development finance in developing countries" (FAO, 1995:14). The lessons learned with the provision of financial services to small scale farmers conclude that credit has to be managed according to normal banking practice for financing organisations themselves to be sustainable. The primary concern of small scale farmers is the accessibility of credit and the return to be made from the investment rather than the rate of interest charged.

The basic lessons regarding provision of credit would indicate that:-

- a real positive rate of interest should be charged
- small scale farmers should be able to identify benefits of use of credit and should have prospects of improved farm profits

- savings should be mobilised
- transaction costs should be minimised
- loan recovery should be facilitated by sound borrower assessment, loan decisions and risk management
- a participatory system based on small groups would appear to be appropriate

For credit programmes to be effective they need to be "demand-driven" and "profitable opportunities" must exist for farmers to expand their "production capabilities" (IFAD, 1996:32). Amongst other success factors, such as secure land tenure, IFAD also highlighted mobilization of savings to "ensure farmers responsibility to the credit operations" (IFAD, 1996:22).

3. HISTORICAL BACKGROUND TO SUGAR CANE PRODUCTION BY SMALL SCALE FARMERS IN SOUTH AFRICA

3.1 Introduction

In order to understand the present setting and constraints under which small scale growers operate it is necessary to trace major historical factors which have influenced circumstances under which they have developed. The first section of this chapter establishes that sugar cane production by black agriculturalists in southern Africa is not a recent innovation.

Following this a broad overview of the sugar industry is outlined to provide a backdrop to small scale grower development. Major factors which are relevant to the research are identified and assessed. This leads to an analysis of the period from 1946 to 1996 when it can be seen that small scale grower production became an important component of the sugar industry. Promotion of small scale grower production is shown to have been an economic imperative for the sugar industry.

An overall analysis of small scale grower numbers, area and productivity is then presented. Arising from this Lorenz curves showing the distribution of land and production are produced. The distributions shown are an important attribute of small scale grower data. Finally the sucrose price and the purchasing power of sugar cane are considered.

3.2 Production of sugar cane by Zulu farmers to 1946

Sugar cane, or a variety of it, was found to be growing in Zululand during the reign of Zulu King Shaka in the early 19th century. It was known as umoba. The origins of this sugar cane are not known. It is, however, assumed that Zulus either obtained it from traders or that it originated from a shipwreck. Sugar cane was usually associated with

homesteads of Amakhosi (chiefs). Early industrial plantings of sugar cane by Europeans in 1851 probably originated from Zulu sugar cane; an early variety of sugar cane produced commercially, known as Green Natal, is considered to have descended from this sugar cane (Osborn, 1964:116).

Osborn states that attempts were made by the Colonial Government to interest Zulus in cultivation of sugar cane. The Government even went so far as the erection of a sugar mill in 1861 on the banks of the Umvoti river to process sugar cane produced by Zulus. American missionaries also attempted to stimulate sugar growing in a similar way on the south coast of Natal. Nkosi Umnini purchased a sugar estate and mill in 1876 at Umgababa. Osborn, quoting reports, stated that this promotion of sugar cane production was not successful.

Sugar cane continued to be produced by small scale farmers in the Adams, Ifafa and Groutville Mission reserves and in Reserve 9, Ongoye District, encouragement, although not intensive, emanated principally from missionaries and certain millers.

Table 3.1 indicates the year in which projects to promote Zulu sugar cane production were commenced and when they ceased operations. Osborne (1964:136) reports that the mills were established with the assistance of the Government and closed as a result of management difficulties.

Table 3.1 Early sugar cane projects owned by Zulus

Place	Name of Operation	Year Operations	
		Started	Ended
Mtwalumi	Mtwalumi	1862	1877
Adams Mission	Ncaijana & Funana	1865	1878
Adams Mission	Ifumi	1874	1878
Umzumbi	Umzumbi	1872	1877
Umgababa	Umnini	1876	1880
Groutville	Umvoti	1861	1978

Source : Osborn, 1964

The mill at Groutville was sold to Europeans in 1900 for £1000. The Melville Sugar Company Limited subsequently purchased the mill in 1916 and continued operations to 1978.

The South African Board of Trade and Industries in an enquiry into the sugar industry in 1934 directed that attention should be given to "the position in the industry of small cane growers³ and the need of according them special treatment in the future organisation of the industry" (Huntley, 1966:6).

Following a further enquiry in 1946 the Board noted that small scale farmers were not producing sugar cane according to potential which existed in areas that they occupied. It noted that attempts had been made to encourage small scale farmers to produce but that these had not been successful. The Board noted that a serious handicap which small scale farmers experienced was a "lack of knowledge of cane growing", and a "lack of transport and draught animals" (Board of Trade, 1947:60).

The Board urged the Government to provide extension services and "animal or mechanical traction and transport on a co-operative basis". It was noted that "interesting experiments have already been made in this direction by millers" (Board of Trade, 1947:60).

3.3 Overview of Sugar Industry 1946 - 1996

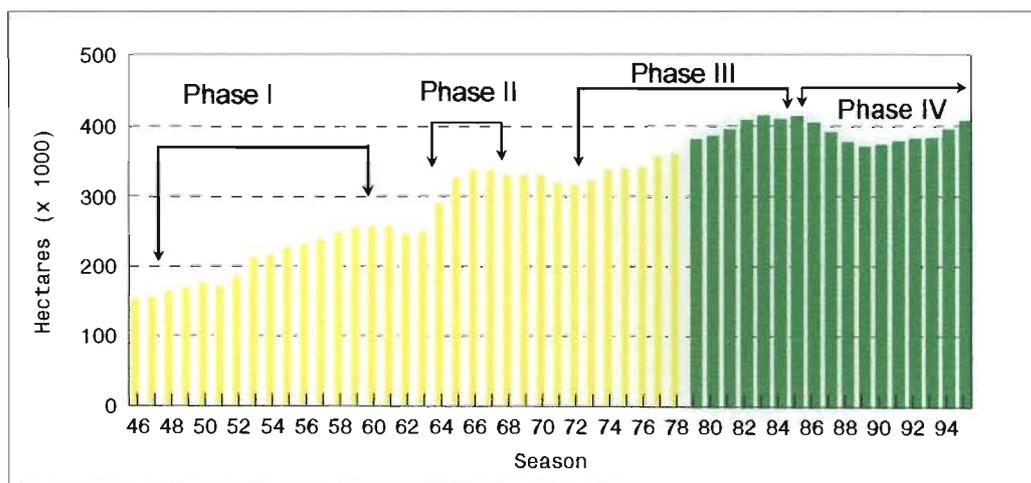
During the Second World War the sugar industry experienced a number of difficulties. As a result of a drought in the 1940/41 season the principal cane variety failed. This had the effect of severely reducing production. To compound problems faced by the industry, the domestic market demand for sugar increased and consequently the quantity of sugar

³ The definition of a small scale sugar cane grower has changed from time to time. It currently encompasses any sugar cane grower who produces less than 450 tons of sucrose per annum (Sugar Industry Agreement, 1979). Prior to this definition it was a grower producing less than 200 tons sucrose per annum.

available for export was reduced. Due to these pressures a system of controlled sugar distribution was introduced in 1944 and remained in force for ten years i.e. to 1954.

According to a submission by the South African Sugar Association (SASA) to the Van Biljon Commission, "The end of the War found the industry in a state of some stagnation which was exaggerated by another drought in the 1946/47 season ..." (Van Biljon Commission of Enquiry into the Sugar Industry, 1967:11). Export of sugar from South Africa accordingly decreased and as a result the industry decided to expand production in 1947 over a period of five years. The problems faced by the industry were viewed as "unfortunate" as in 1949 the Commonwealth Sugar Agreement was being negotiated prior to being agreed in 1951.

Figure 3.1, indicating the total sugar industry registered land from 1946 to 1995, depicts phases that the industry has gone through. The sugar cane area indicated for the period 1946 to 1978 was according to that recorded in the Sugar Industry Central Board (SICB) growers register. From 1979 the area indicated is as measured by aerial photography (SASA, 1995; Hansen, 1996).



Source : S.A. Sugar Association Year Books, Industry Directory 1995 and personal communication

Figure 3.1 South African sugar industry total sugar cane area 1946 - 1995 showing expansion phases

The expansion phases may be summarised as follows :-

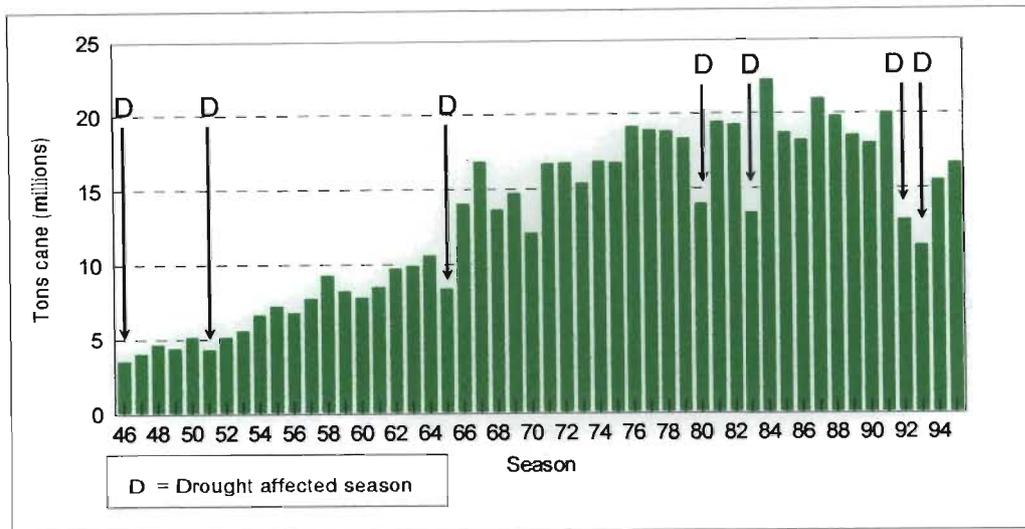
Phase I	1948 - 1959	Gradual expansion - 99 687 hectares
Phase II	1963 - 1967	Expansion of production - 90 253 hectares
Phase III	1973 - 1986	Expansion including small scale growers - 94 963 hectares
Phase IV	1986 - 1995	Deregulation - a 42 726 hectare area decline before a recovery to approximately the 1984 area.

Phase I amounted to a 64% increase in the registered area of the industry, Phase II to a 36% increase and Phase III to a 30% increase.

Phase IV saw an overall decrease in the total area under sugar cane up to 1989/90 whereafter there was a subsequent upward turn in the total area. Deregulation of the Industry, which had an impact on sugar cane transport costs and sucrose prices was a prime factor in the decline. Adverse climatic conditions also prevailed over the period in areas producing sugar cane.

A significant amount of expansion took place between 1950 and 1953 following an amendment of the Sugar Industry Agreement in 1948 when provision was made for "controlled" expansion of the sugar industry with an additional 39 961 hectares being registered (Huntley, 1966). This accounted for 40% of the Phase I expansion. The Pongola and Umfolozi areas benefited appreciably from this expansion. An increased demand for sugar arose at the time from increasing domestic and export market requirements.

A severe drought in 1951/52 depressed sugar cane production. Figure 3.2 shows the industrial sugar cane production for the period 1946 to 1995 - drought seasons are highlighted.



Source : S.A. Sugar Association Year Books and Industry Directory 1995

Figure 3.2 South African sugar industry total sugar cane deliveries 1946 - 1995

From 1960 to 1962 the industry experienced a contraction of its markets which was compounded by an expansion of sugar production in Swaziland and Zimbabwe (Rhodesia). In 1963 the industry considered that the export market for sugar was improving, the International Sugar Agreement had foundered and an opportunity existed to expand production. Initially expansion was recommended for sectors of the industry which were within economic distance of mills with unutilised capacity. The following year, 1964, it was agreed to issue new quotas and the Government gave permission for 2 new sugar mills to be constructed, Union Co-Op and Noodsberg in the midlands area of KwaZulu-Natal.

As expansion commenced in 1964/65 the industry was struck by a severe drought. As a result the 1965/66 season's production declined.

The 1963 - 1967 expansion ended with sugar production having increased materially and, as a result of extremely low export prices, the industry was faced with serious financial problems. Assistance had to be obtained from the Government.

At the end of the 1960's and during the early 1970's the industry was faced, not only with financial problems, but also with problems with its labour supply and productivity as well as with threats of land being removed from sugar cane production to, for example, timber, township and road development. Figure 3.1 indicates a decline in the area under sugar cane from 1966 through to 1973 as a result of these problems. At the same time that this contraction occurred the 1968 International Sugar Agreement came into operation. A country's share of international sugar trade was primarily based on past performance. It was therefore important that South Africa maintained its production and where possible expand to, at a minimum, retain its share of the export market.

The fortunes of the industry then turned sharply with a period of exceptional rainfall and high export earnings. It was able to repay its loans to Government and establish a price stabilization fund to enable it to weather future adverse conditions.

The industry was, however, still faced with a variety of problems, the maintenance of its export market not being the least. Threats to production had to be faced. Reports in the early 1970s indicated that the industry was:-

- looking at labour training,
- considering expending R5 million on mechanization research to replace cutting labour; and
- looking at the possibility of gradual expansion.

It was considered that declining "throughput" of sugar cane through mills, if not addressed, would lead to "an inevitable slowing down and contraction of the industry" (South African Sugar Journal, 1972a:285). The capital intensive nature of sugar milling requires that continuing attention is paid to throughput by sugar millers.

In May 1972 the South African Sugar Association's Planning and Development Committee met with representatives of the then Government's Department of Bantu Affairs and

Development (DBAD), the Department of Industries and black members of the non-European Sugar Advisory Board. "Amongst the matters discussed was the policy of the Department of Bantu Affairs, the availability of land in Bantu areas, the past performance of Bantu growers, and the future of cane production in Bantu areas" (South African Sugar Journal, 1972b:213).

The Chairman of the South African Sugar Millers' Association in his address to the 1972 annual general meeting of the Association stated that "the South African Sugar Industry will have to analyse its own position very carefully. It will have to determine, in consultation with the Government, what the policy is to be regarding any possible increase in production of sugar for export markets bearing in mind of course, its prior and fixed obligations to an expanding local market" (South African Sugar Journal, 1972a:285).

The Chairman in a subsequent address to "African and Indian Leaders" at a function in Durban in October 1972, stated that the industry was conscious of the "fact that opportunities for expansion have been limited and that in the future every effort must be made to develop agricultural production within the African Homelands". He went on to say that he hoped that industrial planning would show "positive and tangible results" for Indian and African sugar cane growers (South African Sugar Journal, 1972c:443).

A decision to expand the industry with a "limited and gradual development programme" was taken in late 1972 by the Government. The S A Sugar Association stated that the "first consideration for the allocation of additional land would be given to those sectors of the industry which had faced severe economic hardships during the past 10 years" (South African Sugar Journal, 1972d:558).

It was estimated that the market demand faced by the industry by 1980 would exceed 2 million tons. The industry had to take steps to increase production to keep pace with a rapid increase in consumption in the domestic market and to maintain, not increase, its exports which exceeded 1 million tons in 1972.

At the same time that the above decisions were taken it was decided to establish a "R5 million fund to increase the productivity of small sugar cane growers" (South African Sugar Journal, 1972d:559). The fund was seen as a source of assistance in the opening up of new cane growing areas, "mainly in the African Homelands." (South African Sugar Journal, 1972b:559).

The Vice-Chairman of the South African Cane Growers' Association stated in 1973 that the industry had to progress and that meant that it had to increase its production. The Chairman of the South African Cane Growers' Association stated that the "industry at present is embarking on a conservative and modest development programme designed to do hardly more than replace the land that has been lost to cane due to other developments over the past five years, and which will continue in the future. We keep under constant review the balance between markets and production, coupled with the economics of the situation, and we hope to be able to advance the industry to take advantage of profitable opportunities" (South African Sugar Journal, 1973:285).

Sucrose quota equivalent to a total of 34 500 hectares was approved for expansion. Small scale growers were allocated 5 000 hectares, 14.5% of the expansion. A further amount of sucrose quota equivalent to 2 800 hectares, relating to small scale grower sugar cane areas which had gone out of production, was reallocated for planting. A total of 7 800 hectares was thus available for small scale grower expansion.

The Chairman of the South African Sugar Millers Association noted that there was scope for further expansion and noted that there was at least an additional "40 000 hectares of land suitable for cane within reasonable distance of established mills." Some mills had surplus capacity and the greater part of additional production could be "crushed at near marginal costs of production" (South African Sugar Journal, 1973:274).

The 1968 International Sugar Agreement was terminated at the end of December 1973 with a new one coming into effect in 1974. Under the 1968 agreement South Africa had

a basic export tonnage of 625 000 tons of sugar (International Sugar Agreement, 1968). Under the 1974 agreement the tonnage was increased to 1 045 000 tons (United Nations Sugar Conference, 1973).

It was at this stage in the development of the sugar industry that the Small Cane Growers' Financial Aid Fund (FAF) was officially established. FAF's first loans to small scale growers were advanced during the latter part of the 1973/74 season.

Together with the 7 800 hectares for expansion and the finance available from the industry the scene was set for an expansion of small scale growers. This expansion continued into the 1980s.

Industrial difficulties arising in the early 1980s and changes in industrial procedures as a result of the 1982 Rorich Committee of Enquiry into the Sugar Industry brought expansion to a close. Expansion was to receive attention once again at the end of the 1980s. The fortunes of the export market, although under pressure from sanctions, turned and the proposed conversion of sugar into ethanol and construction of a new mill in Mpumalanga fuelled demand for further expansion. At the same time climatic conditions appeared to normalise after a disastrous series of droughts and floods, each one of which exceeded the previous one in severity.

The industry continued to face the prospect of loss of agricultural land to urbanisation, infrastructure development as well as to an expansion of the timber industry. With limited potential for expansion in the large scale (largely White) farming sector small scale growers assumed greater importance in regard to sugar cane production.

The recommendations of the Rorich Committee of Enquiry introduced a number of changes to the industry. Not least of these were the phasing out of subsidies on transport of sugar cane from farms to mills and the introduction of a two tier pricing system. The system established an "A" pool price for sucrose destined for domestic and contracted

sugar markets (see section 3.8). A maximum tonnage, or quota, of sucrose subject to the "A" pool price was determined. The "A" pool sucrose price was higher than the "B" pool price. The "B" pool price, which reflected the world market price, was paid for the balance of production over and above the "A" pool quota. Both sugar cane growers and millers were subject to the pool system. It was incumbent on both growers and millers to produce their "A" pool quotas. The production of "B" pool sucrose, subject to a maximum, was based on growers' and millers' decisions regarding the economics of such production.

Small scale growers benefitted from the changes. Firstly, a large part of small scale grower production area was situated fortuitously close to sugar mills and secondly, following a period of receiving the average price, they were given the preferential "A" pool price for all of their production from the 1990 season (see section 3.8). In addition to benefits small scale growers received, the changes, arising from the Rorich Committee recommendations, made their production extremely attractive to sugar mills and made expansion in their areas an economic imperative for mills.

The sugar industry was subject to additional changes in 1990 with further deregulation. This involved, amongst other provisions, the following :-

- lifting of price control on sugar and molasses
- deregulation of the requirement to register land for sugar cane production
- permitting the sale of "A" pool delivery shortfalls
- phased removal of the limitation of "B" pool production
- lifting of the requirement that small scale growers within 30 kilometres of a sugar mill obtain sucrose quotas - in other words they were permitted freedom of entry and production
- construction of a new sugar mill at Komatipoort in Mpumalanga
- expansion of cane growing in the Eastern Cape

- streamlining of the payment of "A" pool price to all small scale growers which encompassed compensation for the loss of equalisation fund payments. The equalisation fund was established to pay small growers a higher sugar cane price than larger growers.

The "free entry" policy for small scale growers gave rise to an explosion in their numbers. Although procedures for registering growers for sugar cane delivery and payment purposes were established there was little or no control of multiple registration of growers. The results of this will be discussed at a later stage.

The 1990 deregulation enabled expansion of sugar cane production in the Pongola/Makhatini area of KwaZulu-Natal and Malelane/Komatipoort areas of Mpumalanga. The sugar industry agreed to further deregulatory measures in 1993 (South African Sugar Association 1994:4). The main impact of these measures on small scale growers was the decision to change the method used to determine the sucrose price. It was agreed that as from 1998 the pool pricing system would be replaced by an average sucrose price (see section 3.8).

The 1980's and 1990's saw the industry experiencing a number of seasons of adverse climatic conditions. The incidence of droughts can be seen in figure 3.2 which shows total sugar cane deliveries. The 1993/94 production level was the lowest since 1970. The erratic and low levels of production placed the industry under severe pressure. At the end of the period the spectre of increased competition from Swaziland and the question of how the World Trade Agreement requirements would impact the industry arose. The threat of imported sugar entering the South African domestic market was significant. Given that sugar mills are sensitive to economies of throughput and that the world sugar market is volatile as a result of it being primarily a "dump" market (27% of world sugar production) the industry had, once again, to assess its position. The domestic markets of sugar producing countries are important and if volumes are threatened the economic well being of domestic industries, both millers and growers alike, are or can be affected.

From the above background it can be deduced that expansion of small scale grower cane growing has arisen out of a need for the industry to meet, retain and expand its markets as well as on economic factors which have led players to either maximise their benefits from or minimise the impact of regulations governing the industry. Periods of stress occurred on a cyclical basis but the need to meet increasing demand for sugar whether in the domestic or export markets, and to improve efficiency of capital utilization within the industry, necessitated continued attention being paid to sugar cane supplies. As areas farmed by large scale farms have become fully utilized and competition from other land use has increased, so greater attention has been paid to small scale grower areas within economic distance of sugar mills.

As sugar cane production has to be secured on a long term basis to justify investment in processing facilities, the need to secure productive areas and ensure that their productivity levels are maintained, has placed ever increasing pressure on small scale grower areas to produce cane. Small scale grower production will now be considered in more detail.

3.4 Small Scale Grower Production⁴1946 - 1992

Small scale growers' percentage of total sugar industry registered land area and sugar cane production is indicated in figure 3.3. Their proportion of industry land area increased from 1.3% in 1952 to 20% in 1992, with their share of sugar cane production increasing from 1.3% in 1952 to a peak of 8% in 1985 and falling to 7% in 1992.

Figure 3.3 indicates little or no growth of the small scale grower sector from 1954 to 1972. From 1972 small scale growers' percentage of land and production increased to 1981. Their proportion of land increased from 1989 as a result of the registration of "non

⁴ It should be noted that the analysis is of Black small scale grower production in KwaZulu-Natal and as the sugar industry consolidated its small grower statistics on a non-racial basis in the early 1990's the analysis is taken up to and including the 1992/93 season unless otherwise indicated to avoid inclusion of other groups of small scale growers, eg Indians, Whites and small scale growers in Mpumalanga

quota" growers and industry deregulation referred to in section 3.3. It will be noted that although their proportion of land increased their proportion of production decreased from 1985.

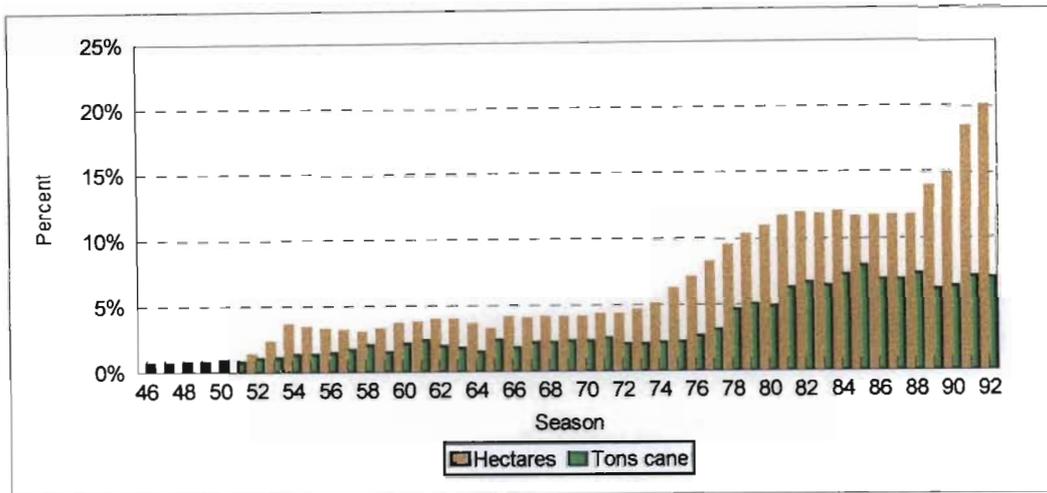


Figure 3.3 Small scale grower registered area and sugar cane deliveries as a percentage of the industry 1946 - 1992

The disparity in small scale growers' proportion of land area and sugar cane production gives rise to questions about the productivity (yields per hectare) of small scale growers. Small scale grower registered land area tripled between 1952/53 and 1954/55 from 2388 hectares to 7 616 hectares. The DBAD in its report for 1952/53 stated that approximately 26% of total small scale grower sugar cane delivered that season was produced by non-quota or unregistered growers (Department of Bantu Affairs and Development, 1953). These growers were subsequently registered by the industry.

This registration of non-quota growers would appear to have been an important decision, not for its practical effect of regularising production by a number of small scale growers, but for the precedent which was established. Non-quota production had been condoned, it was perceived as a way to gain access to the industry and would continue with the last and major allocation, following other similar decisions, of over 11 000 hectares being made to approximately 7 500 growers in 1989.

The DBAD established an assistance programme for small scale growers in 1956 providing finance for ploughing and purchase of fertilizer and seedcane. A total of 1 060 new small scale growers on 4 409 hectares were assisted (South African Sugar Journal, 1968:623). A drought in the 1956/57 season did not appear to affect small scale grower production as badly as the 1951/52 drought.

It was recorded once again that non-quota growers, who had established sugar cane prior to 1955, were producing cane on an area equivalent to 8% of the registered area. The S A Sugar Association agreed that all caneland so established should be registered, and that in order to "endeavour to control indiscriminate plantings future quota allocations would be applied for on a bulk basis by the Department (DBAD), which in turn would be responsible to the Sugar Industry Central Board (SICB) for individual allocations to approved applications for quota rights" (South African Sugar Journal, 1968:621). Further to the regularisation of non-quota growers the Government amended Proclamation 123/31 of the Location Regulations to prohibit planting of quota controlled crops without a permit.

Small scale grower sugar cane production reached a peak in 1958/59. Small scale growers benefited from increased production during Phase I of the sugar industry expansion with their rate of increase in production between 1951 and 1960 being an average of 16% per annum.

The shrinkage of the S A sugar markets between 1960 and 1962 led to restrictions being imposed on sugar cane production. "All deliveries were controlled on a restricted quota basis as from the beginning of the 1960/61 season. On account of the large number of Bantu growers supplying small quantities of cane it was virtually impossible to apply the restriction on their quotas on an individual basis. The SICB agreed that the total delivery quota of each mill group of Bantu growers would be determined by applying the restriction of the Total Farm Mean Peaks of such growers. In other words the restriction, as far as Bantu growers were concerned, would only affect individuals if the total crop

exceeded the total delivery quota of the group supplying a mill. In Zululand crop estimates exceeded the total delivery quota by 22 000 tons and restrictions were placed on growers supplying over 25 tons. At Illovo it was exceeded by 7 300 tons and restrictions were placed on growers delivering over 80 tons. At other centres the crop estimate was below the total delivery" (Sugar Industry Central Board, 1962).

Planting of sugar cane in portion of Zululand was brought to a standstill in the early 1960's as a result of small scale growers refusing to adopt "Betterment Planning" which was being promoted by the Government. Betterment Planning arose out of the Tomlinson Commission Report of 1957. It involved formal planning of tribal areas with residential, arable and grazing land being demarcated. The procedure was intended to improve agricultural production in areas occupied by blacks. This resulted in 1961, in sugar quota which was available to small scale growers in the Mtunzini area, being transferred to the Empangeni and Umbumbulu areas.

Figure 3.4 indicates that small scale grower production dropped in 1959/60, recovered through to the 1961/62 season then decreased through to the 1965/66 season. According to DBAD annual reports, climatic conditions were generally unfavourable during the period. Further comment was made about poor fertilization and weed control of small scale grower lands, it was stated that "growers regrettably are not making the best use of their land or the quotas available and most growers are not delivering sufficient cane to fulfil their quota obligations" (Department of Bantu Affairs and Development, 1963:17).

Financial assistance provided by the Government to small scale growers continued through to 1968. It was noted that planting had to be restricted to 4 - 5 months of the most favourable period of a season to reduce crop failure to a minimum and so "avoid replanting costs and subsequent loss to the grower" (Department of Bantu Affairs and Development, 1968:13).

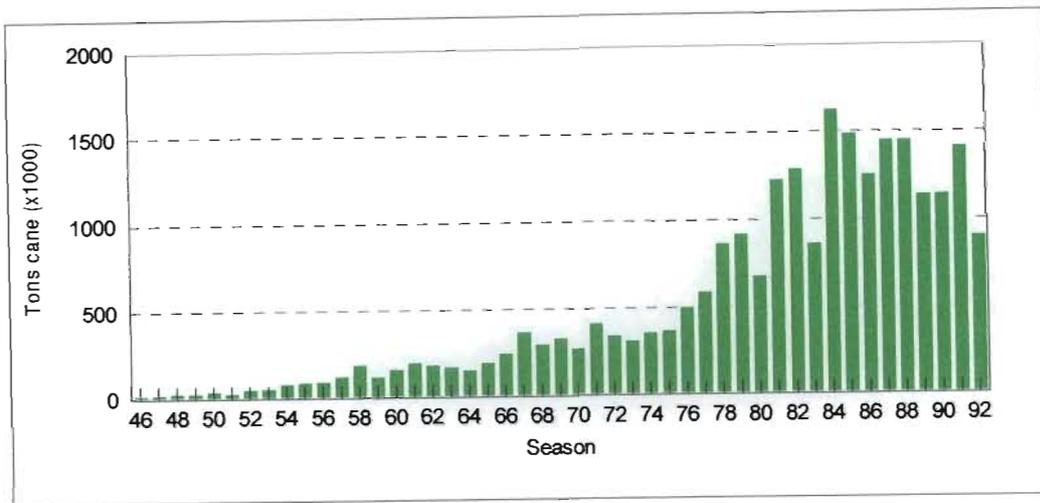


Figure 3.4 Small scale growers' deliveries 1946 - 1992

During phase II expansion, 1963 - 1967, DBAD was issued a bulk quota for small scale growers to plant 6 840 hectares. The total expansion approved by the industry amounted to 37 727 hectares. The small scale grower portion amounted to 22%.

The significant rise in small scale grower sugar cane deliveries from 1964 to 1967 may be attributed to this expansion (see figure 3.4). A two year planting clause was attached by the sugar industry to the expansion which meant that DBAD was under pressure to plant the new quota land. This would appear to be the first record of a time constraint being placed on small scale grower development which led to pressure being exerted on planting of small scale grower land. An attempt was made to issue quota on an economic unit basis.

An economic unit was determined to be an area of 4 hectares which it was estimated would produce at least 100 tons of sugar cane (20 tons of sucrose). Proclamation No R188 of 1969 limited the maximum area that a small scale grower could plant to sugar cane to 4 hectares. This had the effect of limiting small growers to a so called "economic unit" (Tomlinson Commission, 1957:113) or less. The KwaZulu Legislative Assembly repealed this Proclamation in its 1973/74 session. The "4 hectare" allocation had,

however, been established as a norm and a large number of grower registrations were thenceforward recorded as 4 hectares, rightly or wrongly (see section 3.5).

Small grower cane expansion and production appeared to level off during the period 1968 to 1973. This coincided with an apparent contraction in the industry as a whole, refer to figure 3.1

The period 1973 to 1993 witnessed the most concerted effort to date in the expansion of small grower production. FAF was established in 1973 to provide credit to small scale growers. At the same time sugar milling companies commenced increasing their input into the small scale sector. More detailed comment on inputs provided during this period will be made in Chapter 4. The registered area of small scale grower production increased from 13 408 hectares in 1972/73 to 96 792 hectares in 1992/93, a 7.2 fold increase in the registered area of small scale grower cane land. Figure 3.5 indicates the increase in registered land area of small scale growers from 1952 to 1992. The total increase in registered area from 1973 to 1992 was 83 384 hectares.

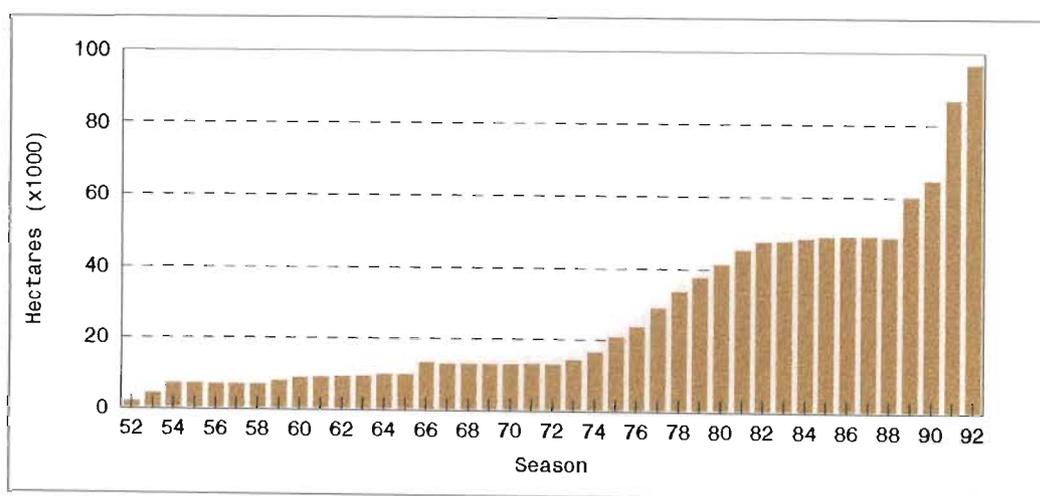


Figure 3.5 Small scale growers' registered area 1952 - 1992

Small scale grower production exhibited a decline from 1985, see figure 3.4. The small scale grower land area, however, increased with 47 980 hectares being registered from

1988 to 1993. This area accounted for 57% of the increase for the period 1973 to 1993. The increase is attributed to registration of "non-quota" growers in 1989 and deregulation of the sugar industry in 1990.

Prior to deregulation of the sugar industry quota for small grower production was granted in bulk to the KwaZulu Government which, with the authority of the KwaZulu Minister of Agriculture, issued quota to small scale growers. Agricultural extension staff received, checked and recommended applications for quota. The Tribal Authority, usually the Inkosi (chief), approved applications before they were forwarded to the Minister's office.

Following deregulation the procedure was simplified. A grower's application for registration (registration being required to ensure that a mill could receive a grower's sugar cane and to allocate a number for delivery and payment purposes) was channelled through the small growers' local representative structure, the Mill Cane Committee, where an appointed small grower official approved an application whereafter it was forwarded to a mill and thence to the Sugar Industry Central Board for recording.

The responsibility for carrying out checks to establish correctness of applications lay with small grower structures. This involved ensuring the correctness of the land measurement, the suitability of the land for sugar cane production and that no previous registration existed in respect of the land being registered. In discussions with small grower representatives it was stated that these checks were not carried out carefully and that growers were obtaining multiple registration of land holdings (Gumede, 1993), (cf section 3.3). The implications of this will be discussed at a later stage.

During the 1989/90 season 11 257 hectares of sugar cane land were registered to regularise non-quota growers. A total of 11 165 hectares, or 99% of the area registered, was in the Felixton, Amatikulu, Illovo, Glendale and Umfolozi mill areas.

Deregulation of the industry removed the continuing "problem" of non-quota growers and made entry into the industry relatively simple. A significant increase of 22 194 hectares took place in the 1991/92 season as a result of deregulation in 1990/91. Of this, 11 581 hectares, or 52%, was recorded in the Amatikulu mill area.

Of a total area of 31 982 hectares registered from 1991 to 1993 in terms of "free entry", 98% was recorded in 6 out of 16 mill areas as reflected in table 3.2. The Amatikulu mill area registered 39% of the area with Felixton, Maidstone and Umfolozi mills each recording 14% to 15% of the total.

Table 3.2 Distribution of free entry small scale growers by mill 1991 - 1993

Mill	% Free Entry Small Scale Grower Registration
Felixton	14%
Amatikulu	39%
Maidstone	15%
Sezela	7%
Glendale	9%
Umfolozi	14%
TOTAL	98%

Although small scale grower registered land area increased significantly during the period 1989/90 to 1992/93 (see figure 3.5) their total deliveries declined from the 1984/85 season at an average annual rate of 5% per season. Figure 3.3 also indicates a decline in small scale growers percentage of total industry production. It should be recorded that the 1992/93 season was affected by a severe drought. Notwithstanding the adverse climatic conditions the general decline in production raises questions as to the causes.

In concluding this section, table 3.3 is included to show the distribution of small scale grower numbers and registered area by sugar mill as at the end of the 1992/93 season. The Tongaat-Hulett group of mills situated between Durban and Richards Bay, the north

coast of KwaZulu-Natal, account for 63% and 62% of small scale growers and land area respectively. One mill area, Amatikulu, accounts for 30% of small scale growers and land area. The Illovo group of mills of which three mills, Eston, Sezela and Umzimkulu serve the south coast of KwaZulu-Natal, Durban to Port Edward, account for 26% and 28% of small scale growers and land area respectively (see map, figure 1.1).

Table 3.3 Percentage of small scale grower numbers and land area per sugar mill as at the end of the 1992/93 season.

Mill	% Registered Growers	% Land Area
Felixton	12.90%	13.19%
Amatikulu	29.16%	30.54%
Darnall	0.02%	0.03%
Maidstone	14.30%	12.39%
Mt. Edgecombe	1.16%	0.72%
Entumeni	5.23%	4.89%
Total Tongaat Hulett	62.78%	61.78%
Gledhow	0.67%	0.91%
Pongola		0.03%
Noodsberg	3.58%	1.97%
Eston	6.83%	6.07%
Sezela	10.18%	8.74%
Umzimkulu	0.51%	1.80%
Umfolozi	4.11%	7.92%
Total Illovo	25.88%	28.44%
Glendale	10.82%	8.30%
Malelane	0.45%	1.49%
Total	11.27%	9.79%
TOTAL ALL	100.00%	100.00%

Figures 3.6 and 3.7 indicate small scale grower sugar cane tonnage as a percentage of the total tonnage of sugar cane processed by individual sugar mills. It will be seen that generally small scale grower percentage of sugar cane has increased over the period

1990/91 to 1994/95. The large increase for a number of mills for the 1995/95 season is due to deliveries from small scale growers other than Black. The exception is Komati mill in Mpumalanga.

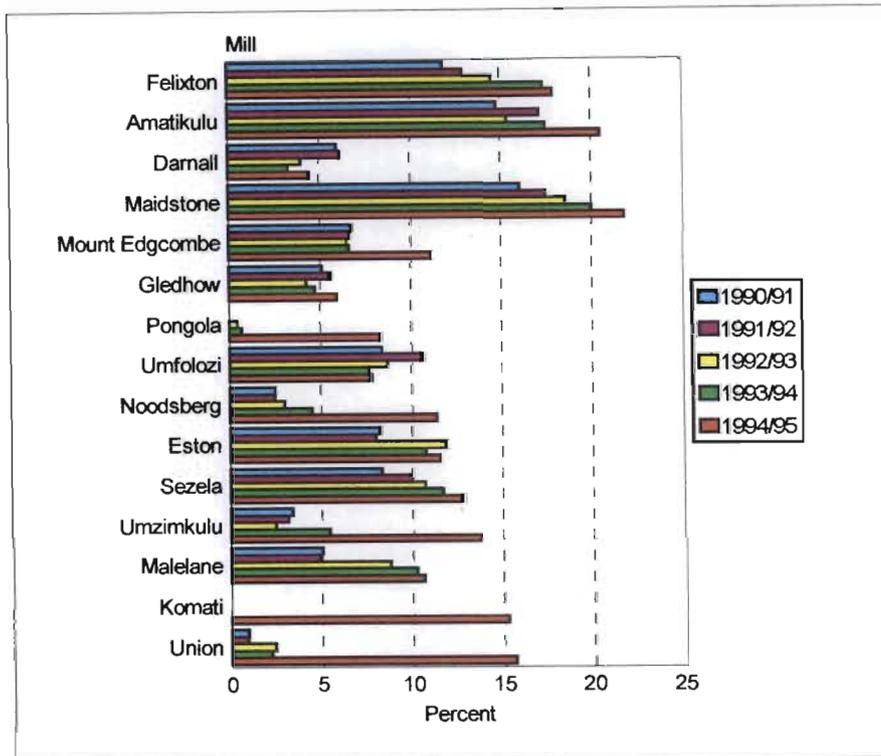


Figure 3.6 Small grower sugar cane deliveries as a percentage of mills' total cane (mills < 20%)

Three sugar mills, Felixton, Amatikulu and Maidstone obtain more than 15% of their sugar cane from small scale growers. This is an important contribution to their throughput. The Eston and Sezela mills receive 10% of their sugar cane from small scale growers.

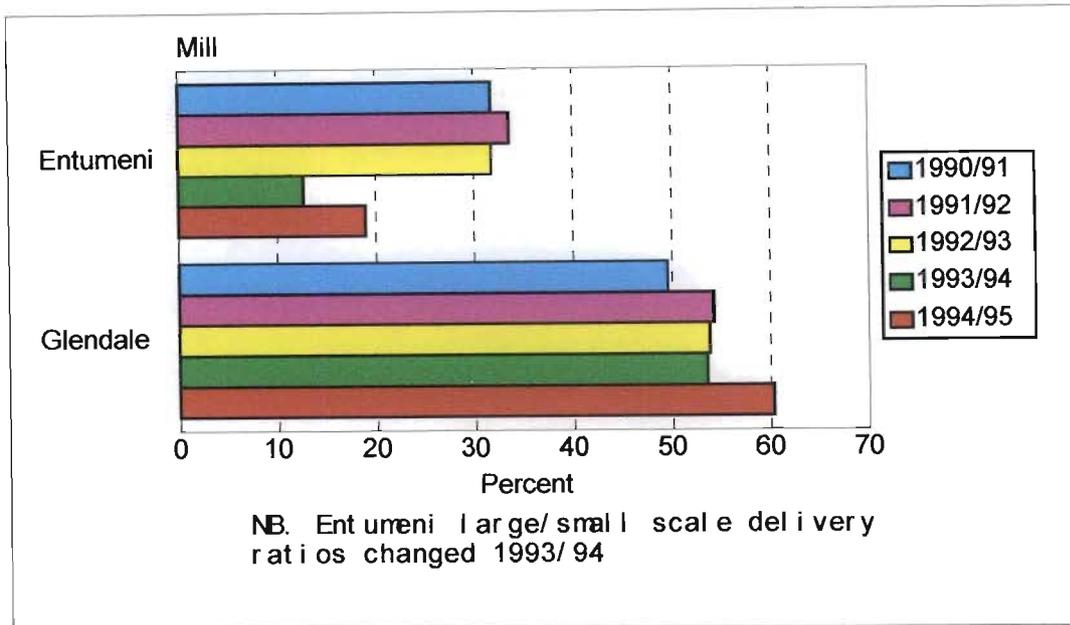


Figure 3.7 Small grower sugar cane deliveries as a percentage of mills' total cane (mills > 20%)

Figure 3.7 shows the tonnage of small scale grower sugar cane received by the Entumeni and Glendale mills. At one stage over 30% of Entumeni's sugar cane was supplied by small scale growers. This has now declined as a result of the purchase of Entumeni mill by the Tongaat-Hulett Group and subsequent rationalization of deliveries of sugar cane between the Entumeni and Amatikulu mills.

The Glendale sugar mill receives more than 50% of its sugar cane from small scale growers. Of all sugar mills small scale grower production is of greatest importance in respect of Glendale.

The Malelane mill, situated in the Mpumalanga Province, accounts for 0.45% of small scale growers and 1.49% of industry registered land. These small scale growers, who recently commenced irrigated sugar cane production, are not included in the analysis unless specifically referred to. A new mill, the Komati mill in Mpumalanga, was opened

in 1994. This has enabled significant expansion of small scale grower production to take place in the province.

Having considered the overall development of small scale growers, a more detailed analysis of their productivity and of factors bearing on this will now be undertaken. Before this is done however consideration will be given to issues surrounding land measurement.

3.5 Accuracy of land measurement

In analysis of small scale grower production the only measurement which can be assumed to have a degree of accuracy is the total tonnage of sugar cane delivered each season. Before deregulation of the sugar industry the area of sugar cane cultivated by non-quota growers was an unknown which impacted on overall productivity. Non-quota growers, known as "pirate growers", delivered their sugar cane by using registered quota growers' numbers.

The registration of non-quota growers, which took place in 1989 illustrates how these growers could have impacted the accuracy of small scale grower statistics. At the beginning of the 1989/90 season there were 22 226 registered small scale growers with a recorded area of 49 146 hectares. However, an additional 7 676 non-quota small growers on 11 849 hectares were recorded, in August of that season, as being productive within a 30 kilometre road haul distance of sugar mills. These growers were subsequently registered. It should be noted that there were a small number of non-quota small scale growers beyond this distance who were not registered in the exercise. The reason for this was that free entry area classification, which was due to come into effect in the 1990/91 season, was applied. Only small scale growers within 30 kilometres of a sugar mill were initially considered for free entry.

The production of non quota growers up to the 1990/91 season would have given an upward bias to delivery records of registered growers. It will be shown however that a compensatory error may also have existed with non-producing small scale grower areas being included in the total area indicated as being productive.

The following table shows the distribution of non quota growers registered in 1990/91.

Table 3.4 The number of non-quota growers and their sugar cane area as at August 1989

Mill	No. of Non-Quota Growers Registered	Estimated Area Hectares	Estimated Area per Grower Hectares
Umfolozi	289	617.0	2.13
Entumeni	54	76.0	1.41
Felixton	1486	2358.0	1.57
Amatikulu	3791	6623.0	1.75
Glendale	1256	868.5	.69
Gledhow	2	3.0	1.50
Maidstone	31	35.5	1.15
Mt Edgecombe	3	3.0	1.00
Eston	491	918.0	1.87
Sezela	255	282.5	1.11
Umzimkulu	18	65.0	3.61
TOTAL	7676	11849.5	1.54

Source : Sugar Industry Central Board

As with registered growers the measured area of non-quota growers could be questioned. From information on "non-quota" growers it would appear that these growers cultivated an area equivalent to 24% of the total small scale grower registered area.

It was also reported that not all registered small scale growers land was producing sugar cane. Approximately 6 035 hectares were recorded as being out of production. See Table

3.5. The reason for land being out of production in the Maidstone area was ascribed to drought, floods and a loss of interest in cane production by a number of growers. It was stated that this land would be planted to cane again by other growers (Gilfillan, 1990). A similar situation probably existed in other areas. The following table provides estimates of areas not producing sugar cane during the 1989/90 season.

Table 3.5 Estimates of non-producing registered cane growing area 1989/90

Mill	Estimated Non Productive Registered Area Hectares
Umfolozi	11
Glendale	345
Noodsberg	1545
Maidstone	2158
Mt Edgecombe	1404
Eston	167
Entumeni	65
Union Co-Op	340
TOTAL	6035

Source : Survey of Sugar cane Growing Potential of KwaZulu, 1988

As may be deduced from the above the effect of non-quota production is diluted by non production of registered land. Once again measurement of non productive registered land has an element of error. It will be noted that several mills are not reflected in the table. Amatikulu and Felixton mill areas did not record areas which were not producing sugar cane. This may be an error of omission. The above indicates that overall the figures contain compensatory errors.

Two surveys to verify sugar industry registered land area measurements undertaken in the Noodsberg (N = 21) and Maidstone (N = 92) mill areas using land survey equipment, indicated that recorded registered areas were 25% and 52% greater than actual measured

areas respectively. These figures should themselves be treated with caution as measurement took place, in some instances, several years after initial registration, and field boundaries are known to change with areas being increased and decreased over time.

Measurement of small scale grower fields is currently carried out by measuring with a tape, a standard length of rope or a measuring wheel. The area of land planted to sugar cane is obtained by using calculations involving either triangulation, counting and measurement of rows planted to sugar cane or perimeter measurement. All these methods can suffer from error.

Small scale farmers in traditional areas of KwaZulu-Natal have not had their allotments surveyed or officially registered in a deeds office. Allotments are issued according to tribal tradition with no documentation being undertaken. Production of sugar cane has necessitated land measurement to obtain a production quota or a grower registration to enable delivery of sugar cane to be made.

The number of registered small scale growers may be inaccurate as a result of non inclusion of non-quota growers, and the inclusion of non-producing farmers. An example of how distortions may arise is the distribution of food aid during the 1992/93 drought. In the Amatikulu area it was reported that food aid being distributed by farmer groups would only be provided to pensioners who were registered small scale growers. Pensioners who were not registered growers consequently applied for and obtained registration to gain access to food aid. The numbers involved are not known, however, this is an example of how records can be distorted. This fact reinforces the suggestion made earlier that there may be non producing sugar cane areas in the Amatikulu mill area.

With a simplified system of small scale grower registration, referred to in section 3.4, a problem of multiple registration of growers and land has arisen. This problem, although not impossible in earlier years, would appear to be more prevalent in the 1991/92 and

succeeding seasons. It is suggested that the sugar industry will have to re-assess how small scale growers are registered so as to avoid problems as illustrated above.

The total tonnage of sugar cane produced by small scale growers may be considered to be accurate as this is the tonnage of sugar cane which has been processed through sugar mills and for which small scale growers have been paid. Sugar cane has no significant market other than a sugar mill and diversions, which would elude measurement, are not a factor which would cause major errors in measurement.

It is noted that registered land areas and the recorded number of growers appear to suffer from inaccuracies. There is, however, no other source from which this information can be obtained. Consequently where conclusions are drawn from calculations involving land areas the trends, so identified, may be assumed to be more important than the accuracy of the figures. It is therefore concluded that, although records of the number of growers and the registered areas are known to include errors, small scale grower trends can be determined. Given the foregoing caveat an analysis of small scale grower production will be undertaken.

3.6 Small Scale Grower, Numbers, Hectares and Production

The analysis in this section covers the period from 1972 to 1992. The 1992/93 season is used as a cutoff date to exclude small scale growers who were, by definition, not black small scale growers situated in KwaZulu-Natal and who are included in sugar industry statistics from 1993/94 onwards. The impact of the inclusion of other groups of small scale growers from 1993/94 can be seen in table 3.6, especially in respect of total hectares recorded. The period 1972 to 1992 coincides with phases III and IV of expansion in the South African sugar industry as identified in figure 3.1.

Table 3.6 Small scale grower deliveries, area and numbers - 1972 to 1994

Season	Tons Cane Delivered	Total Hectares	Number Growers Registered	Number Growers Delivering	Tons Per Grower Delivering	Area Per Grower Registered (Hectares)
72/73	346 763	13 408	4 225	3 455	100.4	3.17
73/74	315 702	14 659	4 279	3 327	94.9	3.43
74/75	361 482	16 846	4 739	3 515	102.8	3.55
75/76	371 650	21 113	6 088	3 581	103.8	3.47
76/77	503 876	24 077	7 207	4 242	118.8	3.34
77/78	591 547	29 345	8 681	5 291	111.8	3.38
78/79	866 703	34 164	10 877	6 320	137.1	3.14
79/80	921 541	37 924	12 896	8 070	114.2	2.94
80/81	677 738	41 558	15 067	8 163	83.0	2.76
81/82	1 227 393	45 565	17 433	10 640	115.4	2.61
82/83	1 288 839	47 859	19 130	12 956	99.5	2.50
83/84	864 644	48 091	19 733	12 407	69.7	2.44
84/85	1 627 233	48 812	20 786	14 315	113.7	2.35
85/86	1 488 205	49 326	21 487	15 777	94.3	2.30
86/87	1 254 917	49 449	21 825	15 272	82.2	2.27
87/88	1 449 969	49 595	22 185	15 313	94.7	2.24
88/89	1 449 958	49 144	22 226	16 033	90.4	2.21
89/90	1 138 015	60 401	29 710	15 854	71.8	2.03
90/91	1 141 508	64 810	31 496	18 141	62.9	2.06
91/92	1 415 274	87 004	39 531	19 905	71.1	2.20
92/93	903 919	96 792	41 729	20 111	44.9	2.32
93/94	1 052 663	137 619	44 690	20 617	51.1	3.08
94/95	2 069 219	181 233	49 007	23 284	88.9	3.70

Source : Sugar Industry Central Board and Sugar Industry Administration Board

Referring to table 3.6 it will be seen that small scale grower production rose from 346 763 tons sugar cane in the 1972/73 season to a peak of 1 627 233 tons in the 1984/85 season from when it declined to production levels of between 1.1 and 1.4 million tons of sugar cane. The 1984/85 peak followed a drought. Another severely affected drought harvest occurred in 1992/93. The 1994/95 production is not considered for reasons already noted.

The average annual increase in production over the period 1972 to 1984 amounted to 14%. From the 1984/85 season production declined at an average rate of 5% per season. The decline in production was aggravated by a drought experienced in the 1992/93 season.

Over the period 1972 to 1992 the number of small scale growers increased by 11.8% per season from 4 225 to 41 729 growers and the registered area increased at a rate of 8.6% per annum from 13 408 to 96 792 hectares. Figure 3.8 shows the increase (decrease) in small scale grower total hectares registered per season from 1974 to 1993.

From figure 3.8 it can be seen that small scale registered land areas increased from 1974 to 1983 by a 1 000 hectares or more per season. The increase in 1978 was 5 000 hectares. From 1984 to 1989 there was very little expansion in small scale grower registered area. This resulted from the sugar industry's slowing down of expansion and adverse climatic conditions (see section 3.3). The expansion in area from 1990 onwards occurred as a result of registration of non quota growers and deregulation of the sugar industry (see sections 3.4 and 3.5).

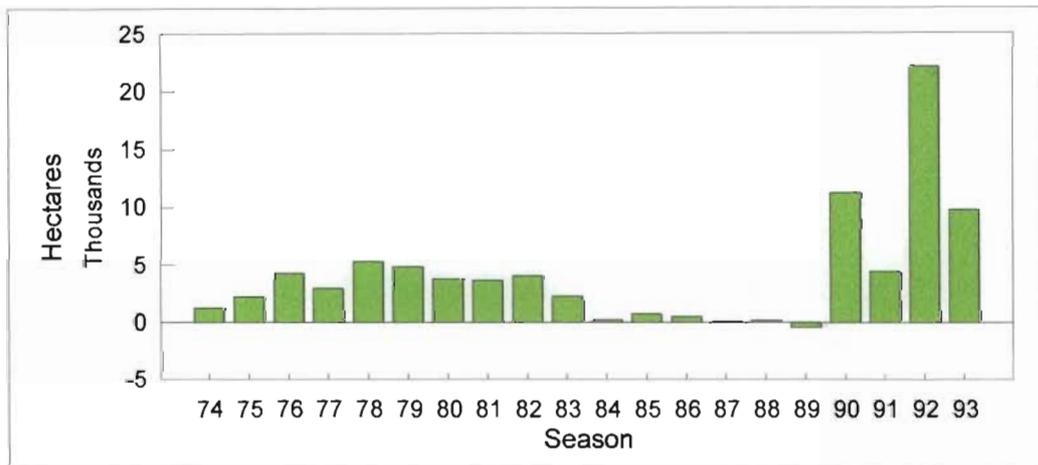


Figure 3.8 Increase in small scale grower total registered area per season - 1974 to 1993

The increase in small scale grower total production and in their registered land area from 1973/74 to 1988/89 is correlated. The relationship changes from 1989/90 with the registration of non-quota growers and free entry growers. At this stage production declined as the area increased. Amongst reasons for this could be the impact of drought, a lag in new land coming into production, or multiple registration of land units and

registration of land which was already producing sugar cane which was delivered on existing quotas (see section 3.5).

Small scale grower production increases would appear from the data presented to be predominantly horizontal (area increases) with little or no vertical or increased production per unit area. This matter will require further comment when considering increased inputs which have been directed into the sector.

3.6.1 Number of growers delivering sugar cane

From table 3.6 it is seen that not all registered growers deliver in a particular season. The average delivery per grower indicated is of those growers who delivered. Figure 3.9, shows that the percentage of growers delivering sugar cane in a season ranges from 48% to 82% of registered growers. The average is 64%. Periods of low percentages of growers delivering coincide with periods where expansion, increases in area, has taken place in the sector. As area increases, the percentage of growers delivering decreases and where there is no expansion the percentage of growers delivering increases. The reason for this is a lag in land coming into production following the registration of growers. It could be expected that a newly registered grower will only deliver sugar cane 12-18 months after registration.

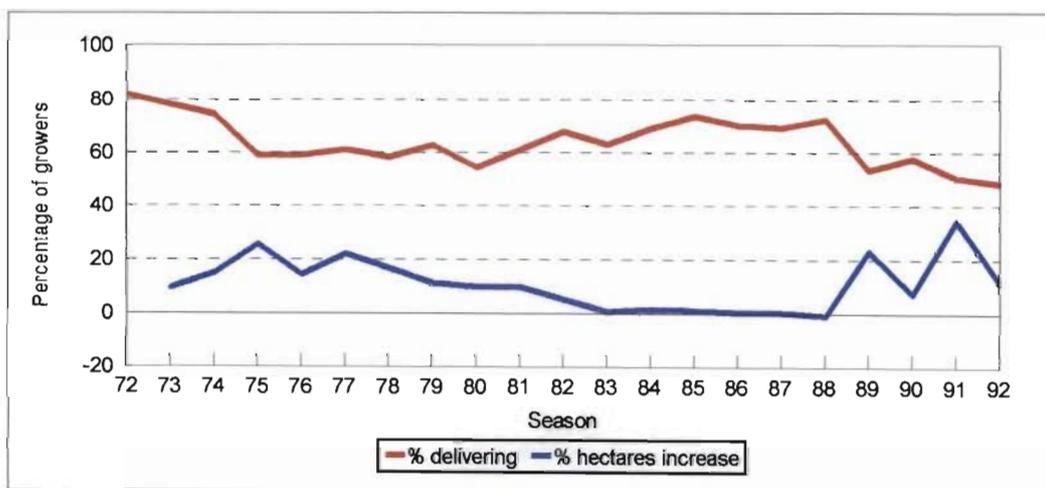


Figure 3.9 Percentage of small scale growers delivering per season - 1973 to 1992

Non delivery of sugar cane in a season may also be ascribed to a number of other reasons. These may include a grower's production cycle not coinciding with a milling season (the production cycle of sugar cane, depending on a variety of factors, varies between 12 and 22 months), a grower may be newly registered and is only commencing planting, or a grower may be going out of production (the sugar industry only cancelled a small scale grower's registration after three seasons of non delivery had elapsed). The most important factor would be a grower's production cycle not coinciding with a season.

As production per grower delivering is used in the discussion which follows the disparity between registered and delivering growers should not influence conclusions.

3.6.2 Productivity per hectare and productivity per grower

Table 3.6 shows that the average area per registered grower in 1972/73 was 3.17 hectares. This rose to a peak of 3.55 hectares in 1974/75 from when it declined to a low of 2.03 hectares in 1989/90. From that season there has been an increase in the average area per grower. Figure 3.10 shows the decrease in the average area per small scale grower for the period 1972 to 1992. The rate of decrease averages 3% per annum. There may be a number of reasons for this :-

- fragmentation of land
- improved land measurement as a result of land being measured for loan purposes as opposed to being measured for registration purposes.
- a greater number of small land holders than large land holders entering the industry.

The most important reason is the latter with greater numbers of small scale growers with small units entering the industry.

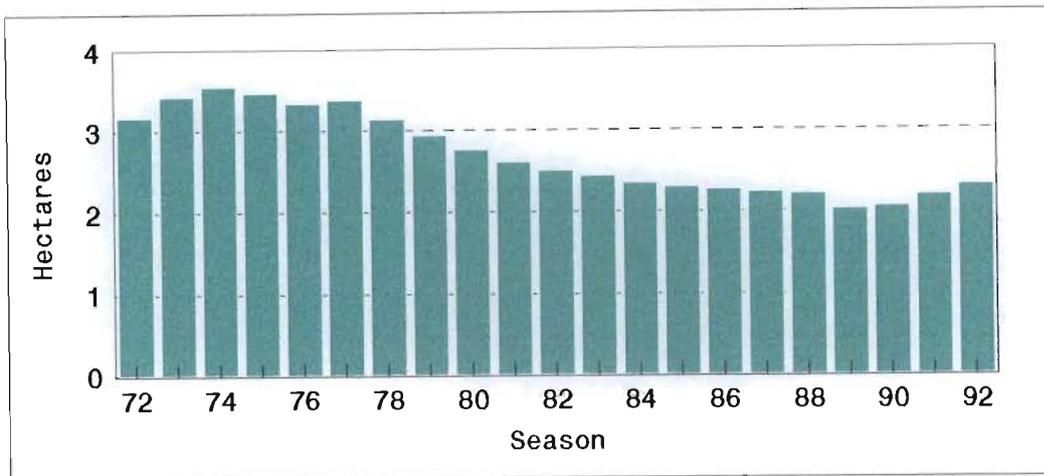


Figure 3.10 Average registered land area per small scale grower - 1972 to 1992

The average delivery per grower decreased over the period at a similar rate to the decrease in land unit area. Figure 3.11 indicates the average delivery per grower increasing over the period 1972 to 1978 before declining. The increase in average delivery per grower from 1992 results from the inclusion of small scale growers from other racial groups (see footnote 1).

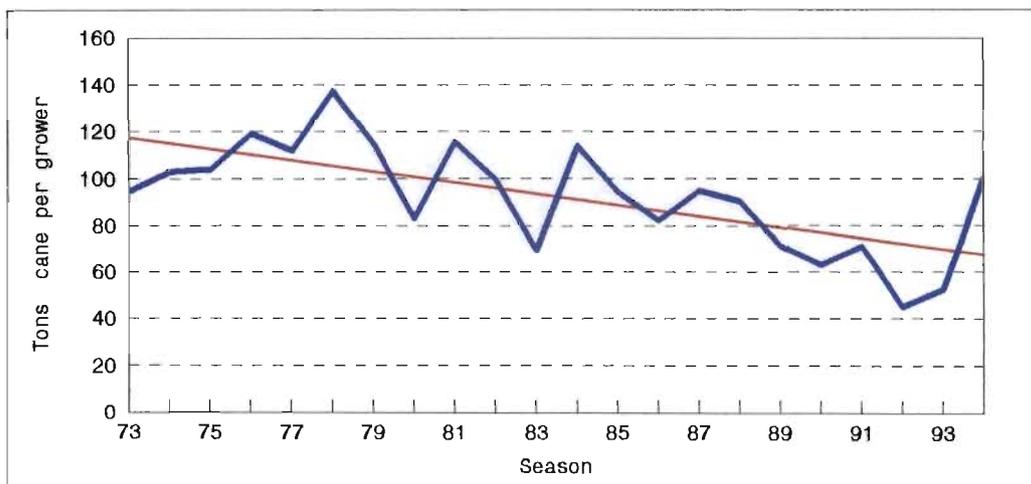


Figure 3.11 Deliveries per small scale grower - 1992 to 1994

The average delivery per grower peaked in 1978 at 137.1 tons. Since then it declined, exhibiting a series of lows due to droughts reaching the 1992 drought low of 44.9 tons sugar cane per grower delivering.

Data presented in table 3.6 suggest that growers registered in later seasons had smaller areas consequently giving rise to a declining trend in land area per grower. Figure 3.4 indicated a decrease in small scale growers total deliveries from 1984. Figure 3.8 indicated that from 1984 to 1989 there was little or no increase in small scale growers registered land area. This suggests that there was an overall decline in small scale grower productivity per unit area and that the economics of sugar cane production for small scale growers was deteriorating.

Figure 3.3 (section 3.3) indicated small scale growers' percentage of sugar industry total production. This data adjust small scale deliveries in respect of the impact of climatic factors. With this adjustment small scale grower total deliveries, and hence relative yields compared to the sugar industry as a whole, continue to show a decreasing trend from 1985.

An estimate of productivity is to utilise the average total delivery per grower divided by the average area per grower. This provides an average greater than that obtained by dividing the total tonnage delivered by the total registered area under small scale grower cane. The latter calculation indicates an average of 22.6 tons cane per hectare per annum for the period 1972 to 1993. The lowest yield obtained using this method of calculation was 9.3 tons per hectare rising to a high of 33.3 tons per hectare. It is suggested that this average is not representative of small scale grower yields as it is firstly, so low that one would not expect a grower to continue producing. Secondly, visually small scale grower cane lands appear to have a higher tonnage on them. Thirdly, figures provided by contractors harvesting sugar cane indicate that a level of at least 30 tons per hectare is obtained and lastly, and probably importantly, FAF loan recovery rates do not support

such a low average yield. The following table provides levels for the different methods of calculation.

Table 3.7 Levels for different methods of calculating small scale grower average productivity

	Tons per hectare unlagged	Average tons/ average area
Min tons	9.3	19.4
Max tons	33.3	48.4
Average tons	22.6	35.2
Median tonnage	21.5	35.3

The average productivity of the sugar industry as a whole is between 55 to 82 tons sugar cane per hectare harvested depending on climatic factors (A'Bear et al, 1994:4). Whichever method is used small scale growers' average productivity is, according to table 3.7, below industry average yields. Figure 3.12 shows that small scale grower average sugar cane tonnage per hectare increased, notwithstanding droughts, for the period 1972 to 1984. The average rate of increase was approximately 1% per season. From 1985 there has been an apparent rapid decline in the average yield per hectare of 13% per season. The droughts of the 1990's would appear to have contributed to this decline while the droughts of the 1980's did not appear to have had as great a detrimental effect on yields. The viability of small scale sugar cane production may provide some explanation.

The 1984/85 season would appear to be a significant turning point in small scale grower development. The date coincides with a turning point in the sugar industry's fortunes (see section 3.3 and figure 3.1). The Rorich Committee pool system of sucrose payments commenced during the period and it will be seen in section 3.8 that the real sucrose price was subject to a period of negative changes.

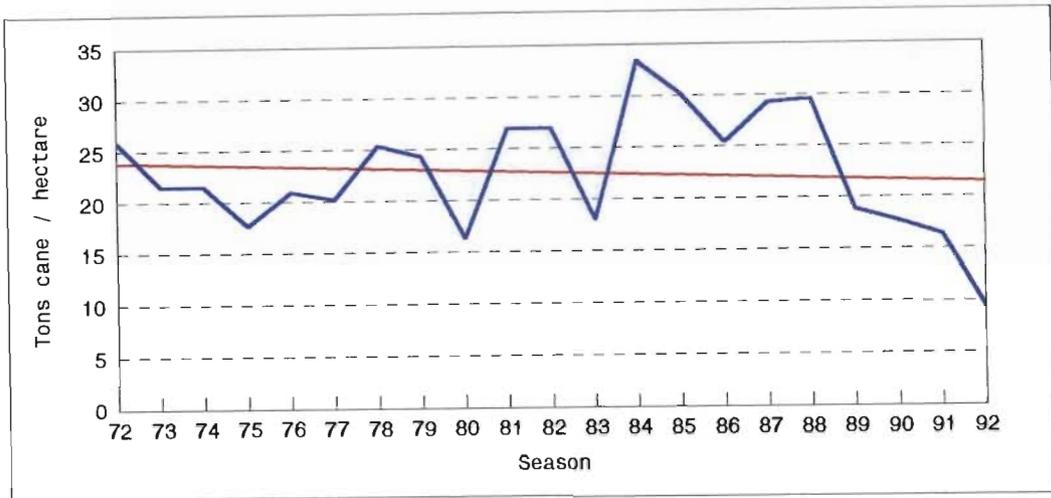


Figure 3.12 Small scale grower average yield per hectare - 1972 to 1992

An analysis of the effect of rainfall on small scale grower production was undertaken to ascertain if there is a relationship which could contribute to explaining fluctuations in production. Rainfall during the season preceding a sugar cane season appears to have an impact on the level of cane production. The effect of rainfall is lagged by one season. Figure 3.13 is included to indicate the correlation between small grower productivity per hectare and the average rainfall recorded during the preceding rainfall season ($r = 0.4689$).

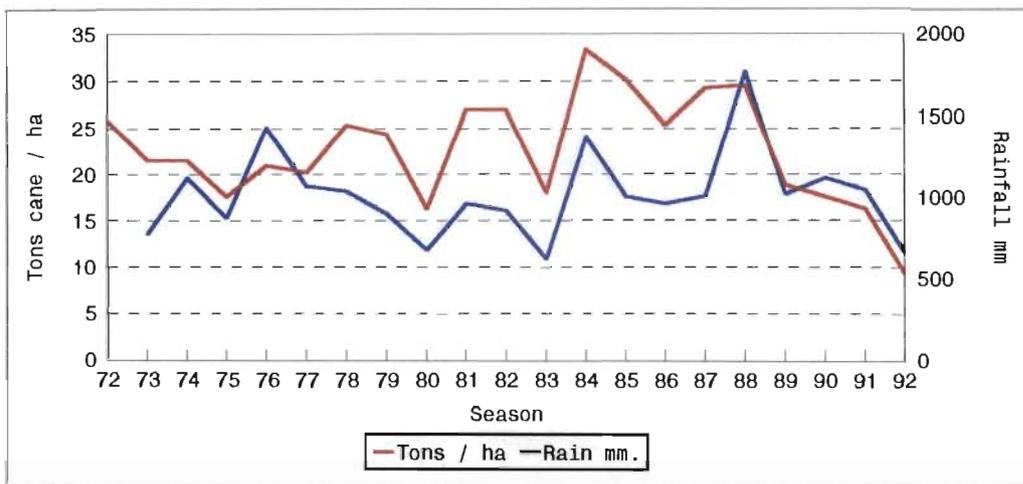


Figure 3.13 Small scale grower average yield per hectare and rainfall lagged by one season

It is concluded that rainfall is an important factor, although not the only factor, which impacts on small scale grower yields. The decline of yields for the period 1989 to 1992 is, however, significant.

The conclusions reached from this discussion on small grower productivity are, notwithstanding the problem with the accuracy of the data, that :-

- small scale growers total production is declining
- small scale growers' average yield per hectare is below that of the sugar industry.
- the average small scale grower productivity per hectare is decreasing.
- although rainfall is associated with a small scale grower yields, factors other than climate, rainfall being an omnibus measurement for climate, would appear to account for a large portion of the productivity per hectare.
- the average total production per grower is declining due to a decline in the area of sugar cane per small scale grower and apparent decreasing productivity.
- The apparent decline in average production per grower and the absence of improving productivity per hectare may indicate that the economics of small cane grower production may be deteriorating.

Further discussion on small grower productivity is presented in Chapter 5 where the question of appropriate use of technology is addressed. The distribution of small scale grower land and deliveries will now be considered.

3.7 Distribution of Production and Area

Table 3.6 and the analysis to this stage have dealt with total and average values. Underlying characteristics of the data are not evidenced. The following analysis is of a random sample of KwaZulu-Natal small scale growers (N=1533). The survey was undertaken in 1989. The objective of this analysis is to establish the distribution of small scale grower production and land area.

Figure 3.14 indicates the distribution of small scale growers according to sugar cane tonnage delivered during the 1987/88 season. The figure indicates a positively skewed distribution of sugar cane production.

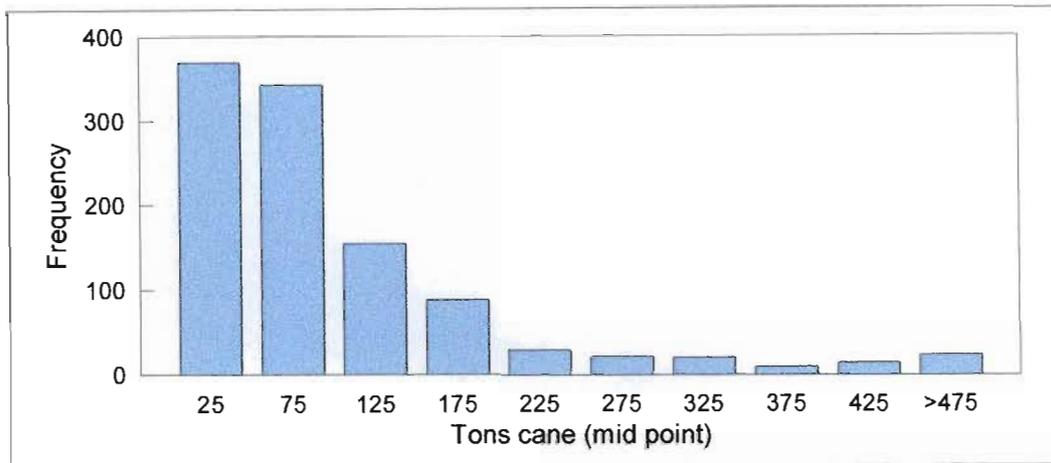


Figure 3.14 Frequency distribution of sample of small scale growers according to sugar cane deliveries - 1987/88 season

Of the sample of growers, 66% delivered less than 100 tons of sugar cane. The median tonnage was 69 tons and the average tonnage was 105 tons per grower delivering. The modal tonnage was 48 tons sugar cane.

Figure 3.15 indicates the distribution of small scale growers' registered area of cane land. The sample mean was 2.5 hectares, the median 2 hectares and the mode 1 hectare. The distribution of sugar cane area is also seen to be positively skewed.

Figure 3.15 indicates that 90% of small scale growers have less than 4 hectares of registered sugar cane land. The peak exhibited at 3.5 hectares, probably results from the "4 hectare" unit as referred to in section 3.4. It will be seen that 62% of small scale growers have less than 2 hectares of sugar cane land.

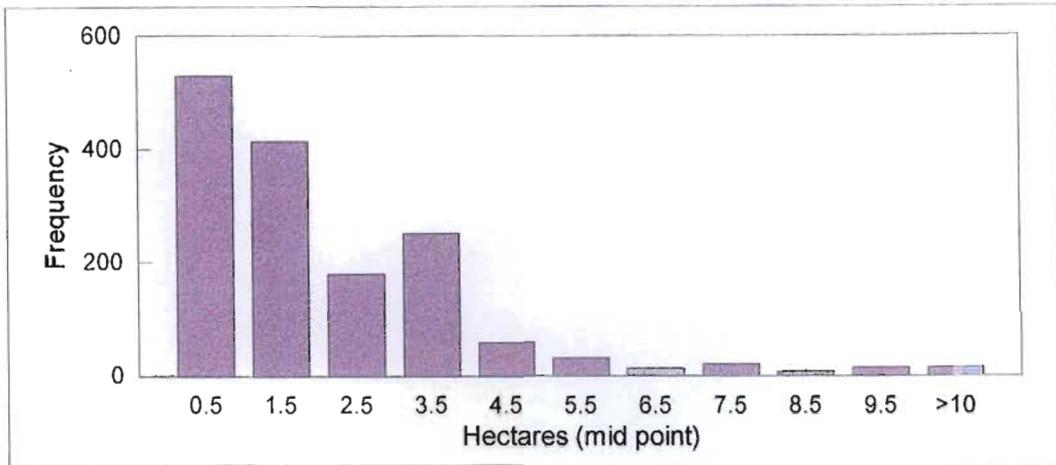


Figure 3.15 Frequency distribution of sample of small scale growers according to registered sugar cane area

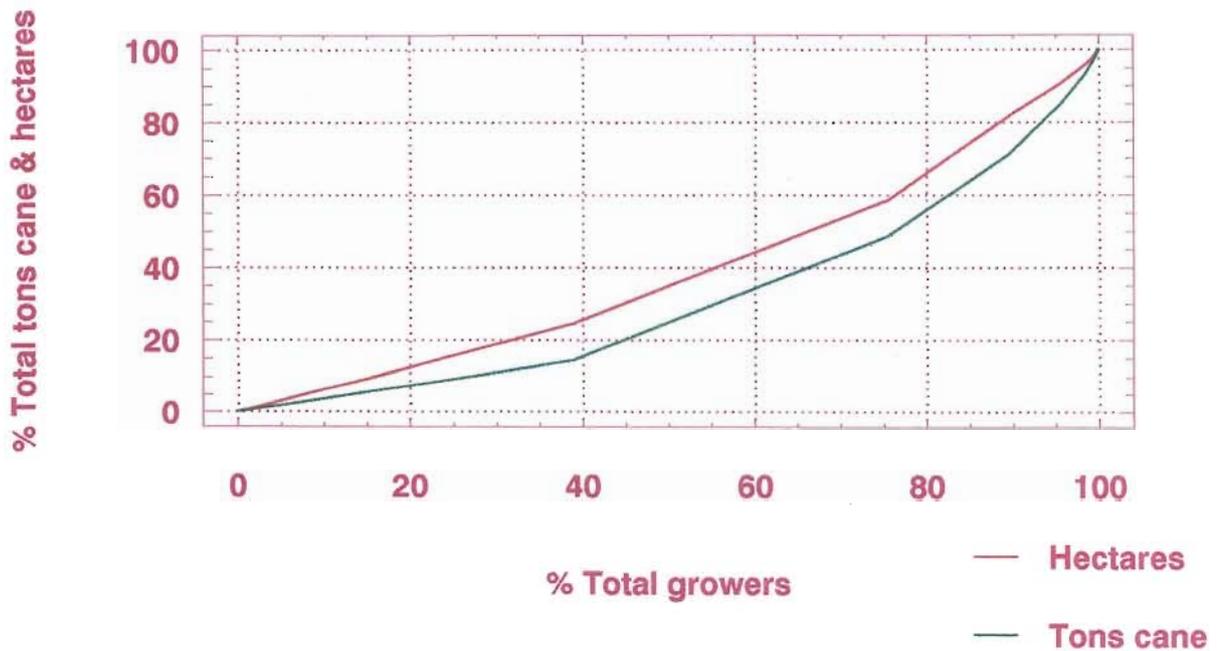


Figure 3.16 Distribution of Sezela mill small scale grower sugar cane tonnage, area and numbers

Given the above frequency distributions of sugar cane deliveries and land areas the following figures, in respect of two mill areas, are reproduced to indicate how they relate to each other. Figures 3.16 and 3.17, Lorenz curves, indicate the distribution of registered land area and tonnage of sugar cane delivered by small scale growers in the Maidstone and Sezela mill areas.

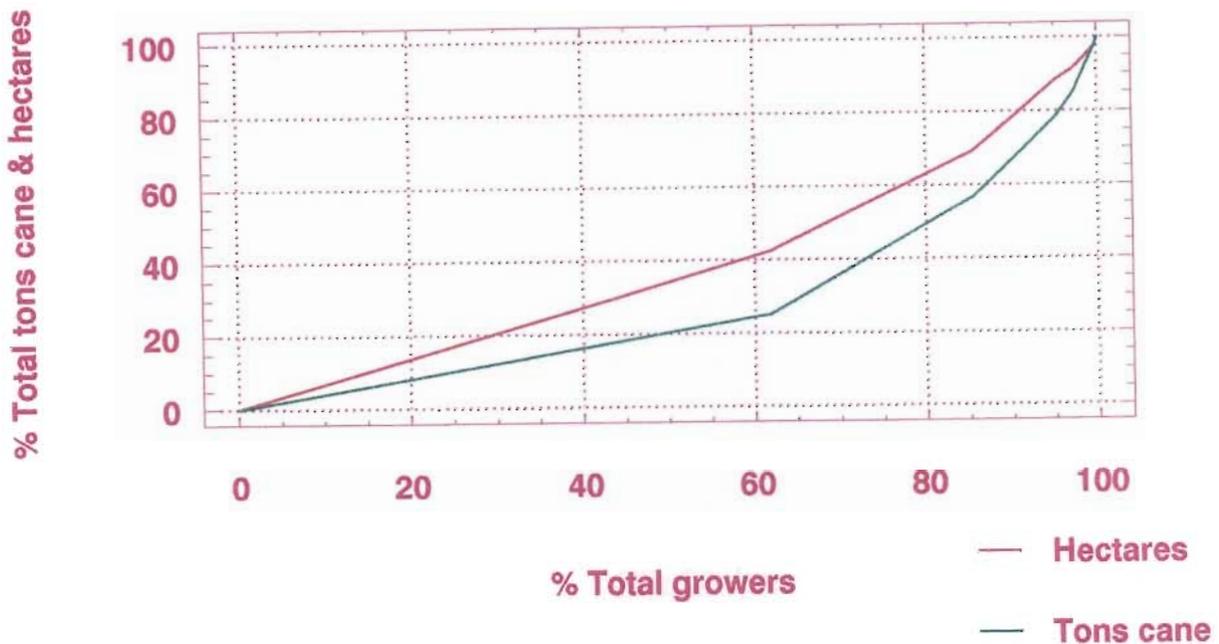


Figure 3.17 Distribution of Maidstone mill small scale grower sugar cane tonnage, area and numbers

In the Sezela mill area 60% of growers accounted for approximately 45% of the land area and only 35% of production while in the Maidstone mill area 60% of the growers accounted for approximately 42% of the land and 25% of production. This would indicate that 40% of small growers in the above examples account for 55% to 75% of production. The upper 20% account for 45 to 50% of production. A similar observation was made for the Amatikulu, Felixton, Eston and Entumeni mill areas. The foregoing observations are considered important as they lead to questions being asked regarding FAF's current and future development objectives.

Brief consideration will now be given to the sucrose price. Not only does small scale grower productivity impact on their income but so does the sucrose price.

3.8 Sucrose Price

The sucrose price is the price paid for the sucrose contained in sugar cane. The average sucrose content of small scale grower cane has ranged between 12% and just over 14% for the period 1947 to 1995.

During the period 1960 to 1995 the method of paying for sucrose has varied. The method employed for the period 1960 to 1985 was that the net proceeds of the sugar crop were shared between cane growers and millers in accordance with a predetermined formula, the sugar industry division of proceeds (see section 8.3). Both the domestic and export market proceeds were pooled in this formula. The export proceeds fluctuated according to the world market demand and supply situation. In 1985 the "A" and "B" pool system of sucrose payments was introduced (see section 3.3).

"A" pool sucrose was produced for the domestic market and for a proportion of the export market viz. contracts. The "A" pool sucrose price was based on the domestic sugar price and was higher than the "B" pool sucrose price. Initially the "A" pool was set at a level to produce 1.8 million tons of sugar. "B" pool sucrose was any sucrose over and above the quantity required for the "A" pool and received a price related to the world market price. A grower could not produce more "B" pool sucrose than his/her "A" pool sucrose quota.

Small scale growers received the weighted average price for the sucrose that they delivered to a sugar mill as it was determined that a small scale grower, due to the small tonnage delivered, would not be able to manage, on an irregular delivery pattern, the allocation of sugar cane between the "A" and "B" pool. To protect small scale growers

from being penalised by excessive "B" pool sucrose deliveries to a mill they received the higher of either the mill or industry average price (Sugar Industry Agreement, 1979).

An additional mechanism was introduced in 1988 to protect small scale growers from receiving low income from abnormally low deliveries. A large scale grower would, if his/her production declined, receive a greater proportion of the "A" pool price for his/her production whereas a small scale grower as a result of averaging would not benefit from this. A principle known as a "safety net" was introduced so that a small scale grower was not prejudiced. This involved the application of a formula to a growers production, or deemed production, to determine what a growers payment would be. From the 1990/91 season payment to small scale growers was changed to the "A" pool price. Small scale growers, as a result, benefited by an increase in the sucrose price paid to them.

With the most recent deregulation measures (1993) the pool system of sugar cane payments will be phased out and an average price will be paid as from 1998. Given that the average price is lower than the "A" pool price small scale growers could expect a decrease in the real price which they receive for their sugar cane unless there is a substantial increase in the rand denominated price.

Table 3.8 indicates the sucrose price and deflated price for the period 1960 to 1993. The consumer price index is used as the deflator. The base year is 1985. Figure 3.18 graphically depicts the sucrose price for the same period.

The rand denominated price of sucrose has risen throughout the period. The seasons indicated by asterisks in the figure show the seasons affected by "A" pool sucrose price payments to small scale growers as described above. The large increase in the sucrose price in 1992 resulted from droughts of that period. There tends to be an inverse relationship between the sucrose price and the total tonnage of sugar cane produced.

Table 3.8 Small scale grower sucrose and cane prices - 1960 to 1995

Season	Sucrose Price R/ton	Average Sucrose % Cane	Cane Price R/ton	Deflated Cane Price R/ton
60	33.01	13.73	4.53	31.68
61	32.95	13.82	4.55	31.38
62	32.92	13.36	4.40	29.73
63	40.55	13.55	5.49	36.60
64	35.88	13.91	5.00	32.68
65	33.04	12.99	4.29	26.98
66	35.04	13.64	4.79	29.03
67	34.35	12.94	4.44	26.12
68	36.84	13.11	4.83	27.92
69	41.80	12.92	5.40	30.34
70	44.53	13.66	6.08	32.51
71	42.26	12.97	5.48	27.54
72	44.33	13.26	5.88	27.74
73	55.34	13.08	7.24	31.21
74	67.25	13.10	8.81	34.02
75	97.75	12.62	12.33	41.94
76	91.83	12.43	11.42	34.92
77	93.45	12.83	12.00	33.06
78	104.05	12.64	13.15	32.63
79	120.15	12.96	15.56	34.12
80	164.20	13.34	21.90	42.20
81	163.99	12.20	20.00	33.44
82	172.73	12.86	22.16	32.30
83	244.75	12.33	30.18	39.14
84	192.64	12.27	23.64	27.49
85*	217.68	13.13	28.58	28.58
86*	278.93	12.80	35.70	30.25
87*	268.62	12.00	32.23	23.41
88*	323.76	12.61	40.83	26.28
89*	382.36	13.17	50.09	27.78
90**	436.19	12.91	55.41	26.86
91**	468.25	12.77	54.64	22.97
92**	705.88	13.82	84.15	31.06
93**	797.24	12.53	99.89	33.60
94**	833.50	12.54	104.52	32.06
95**	886.27	11.87	105.20	29.60

* Average A and B pool price

** A pool price

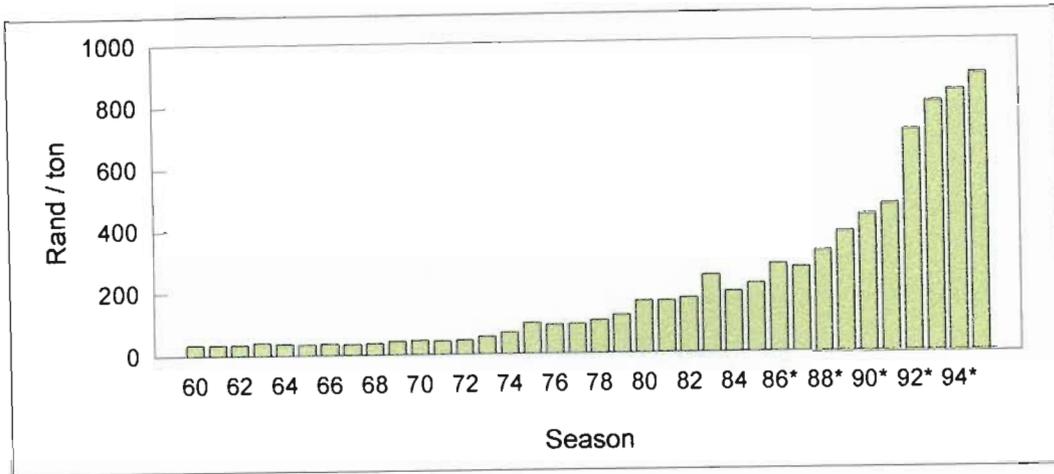
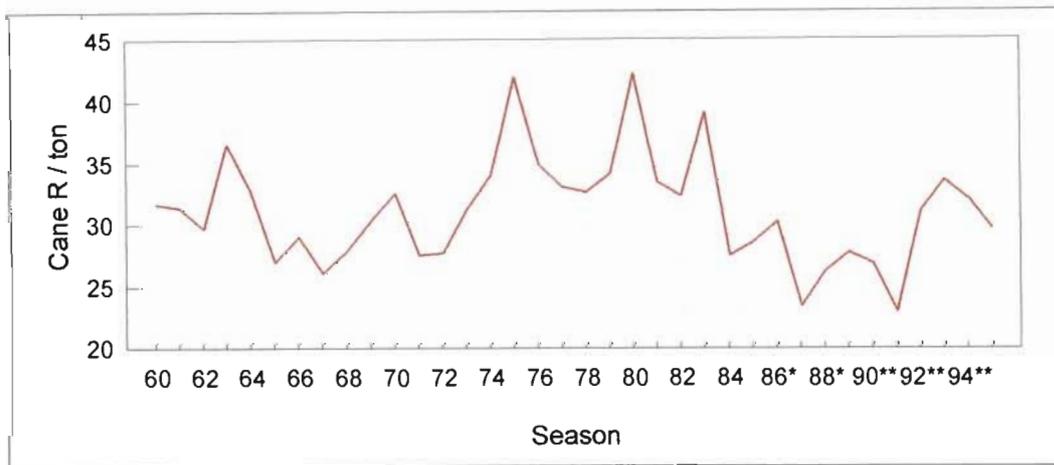


Figure 3.18 Small scale grower sucrose price - 1960 to 1995

Figure 3.19 indicates the deflated sugar cane price received by small scale growers for the period 1960 to 1995 (1985 = 100). The CPI is used as the deflator. It will be noted that the sugar cane price increased in real terms from 1964 to 1975 when it reached a peak only to be equalled in 1981. From 1981 the trend in the sucrose price was downwards with an increase occurring in 1992. The real price indicated a downward turn once again in 1994.



(Deflator = CPI , 1985 = 100)

Figure 3.19 Deflated sugar cane price - 1960 to 1995

Figure 3.20 shows the change in the real price of sugar cane received by growers on a seasonal basis. The period 1973 to 1982 shows increases in the real price of sugar cane on an annual basis. This period of real price increases coincided with the period of rapid expansion of the small scale grower sector (see section 3.5, figure 3.8). From 1984, following the introduction of the pool system of payment, the real price of sugar cane has declined on an annual basis. This decline also coincided with growers having to pay the full cost of transportation of their sugar cane to mills. Prior to 1984 sugar cane transport was subsidised.

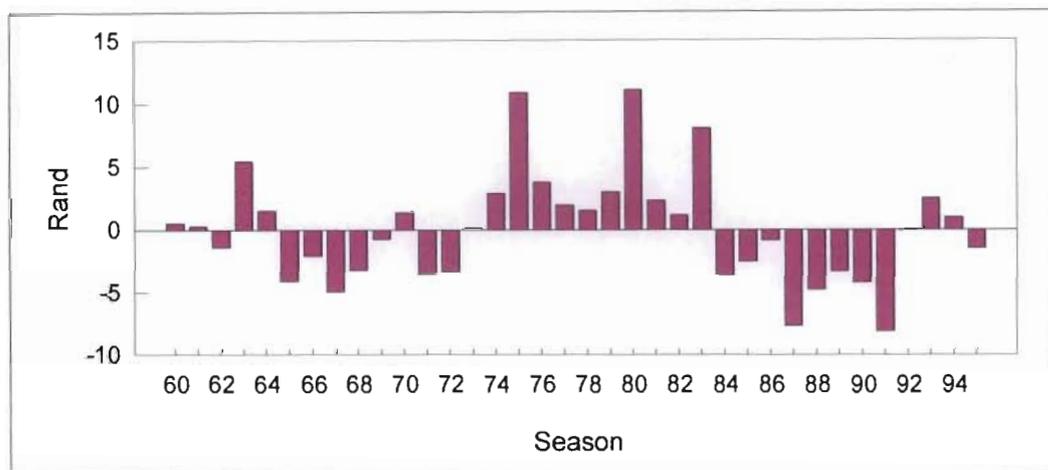


Figure 3.20 Change in the real sugar cane price above and below the average real price of R31.09 per ton - 1960 to 1995 (1985=100)

This decline in the sugar cane price followed two severe droughts which gave rise to poor production (see figures 3.2 and 3.4). As recorded earlier small scale grower expansion slowed down in 1984, see figure 3.8.

During the period of rapid expansion of the small scale grower sector the real price of sugar cane was consistently above the long term average price of R31.09 per ton. Accepting that small scale growers are rational in their decision making the message that the respective high and low prices transmitted could have affected growers motivation to enter into or withdraw from production. The change in the transport subsidy may also have been an important price signal. In considering the decline in the price paid for sugar

cane the terms of trade between sugar cane and three key small scale grower purchases are examined.

3.9 Purchasing Power of a Ton of Sugar Cane

The key items used in this analysis are maize meal, a staple food, tractors, as sugar cane production requires machinery inputs for land preparation and transportation, and fertilizer, a necessary input to maintain and increase production. According to a survey conducted by the Bureau of Market Research for the Maize Board "maize remains the most important source of carbohydrate in rural areas" (Maize Board, 1996). The annual per capita consumption is approximately 60 kilograms.

Maize meal prices were obtained from the weighted average of eleven urban areas (Central Statistical Service 1996). The prices are probably lower than those pertaining in rural areas but would be indicative of the price trend. Tractor prices are for a 58 kilowatt tractor as generally used in the sugar industry. The prices were obtained from the South African Cane Growers' Association (SACGA) and Armstrong Ford, a tractor supplier in Pietermaritzburg. Fertilizer prices were obtained from SACGA and suppliers' price lists.

Figure 3.21 using consumer price index (CPI) deflated prices (1985 = 100), shows the rate of exchange between sugar cane and maize meal and sugar cane and a 58 kilowatt tractor for the period 1972 to 1995. The figure shows that the quantity of maize meal, in kilograms, which a small scale grower could purchase with one ton of sugar cane declined from 104 kilograms in 1975 to 44 kilograms in 1991 rising to 49 kilograms in 1995.

With regard to tractors the figure indicates that the purchase price of tractors has increased in real terms over the period. In 1975, the peak sugar cane price, it required 580 tons of sugar cane to purchase a tractor. This increased to 1 684 tons of sugar cane

in 1991. A substantial decrease occurred in 1992. Subsequently the purchasing power of a ton of sugar cane in respect of tractors declined with 1 228 tons of sugar cane being required to purchase a 58 kilowatt tractor in 1995.

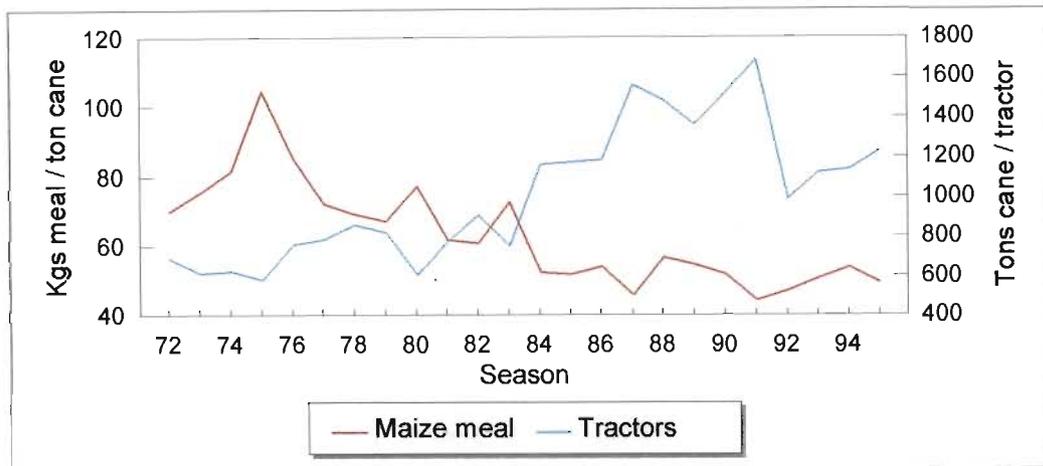


Figure 3.21 Purchasing power of a ton of sugar cane in respect of maize meal and tractors

Figures 3.19 and 3.20 indicate a reversal in 1984 of the 1973 to 1983 increasing trend in the real price of sugar cane with a change to a decreasing trend being recorded from then through to 1993. Figure 3.21 shows that this change gave rise to a further decline in the quantity of maize meal that could be purchased with proceeds from a ton of sugar cane. This followed, as shown in figure 3.21, a period (1972 to 1984) of general decline in the purchasing power of a ton of sugar cane.

At the same time as the quantity of maize meal which could be purchased declined there was a significant increase in the cost of tractors. This coincided with the removal of a sugar cane transport subsidy which was paid to growers.

With regard to fertilizer, the price of LAN (lime ammonium nitrate) was used as an indicator, the trend would appear to be different to that found for maize meal and tractors. Figure 3.22 shows the trend for the period 1974 to 1995 with the purchasing power of a

ton of sugar cane with regard to fertilizer improving at an average rate of just over 1% per annum. The exchange rate between sugar cane and fertilizer indicates a relatively consistent relationship with the price of a ton of fertilizer equating to the value of between 8 and 10 tons of sugar cane. The comparative purchasing power of sugar cane in respect of fertilizer improved significantly from 1992 to 1995.

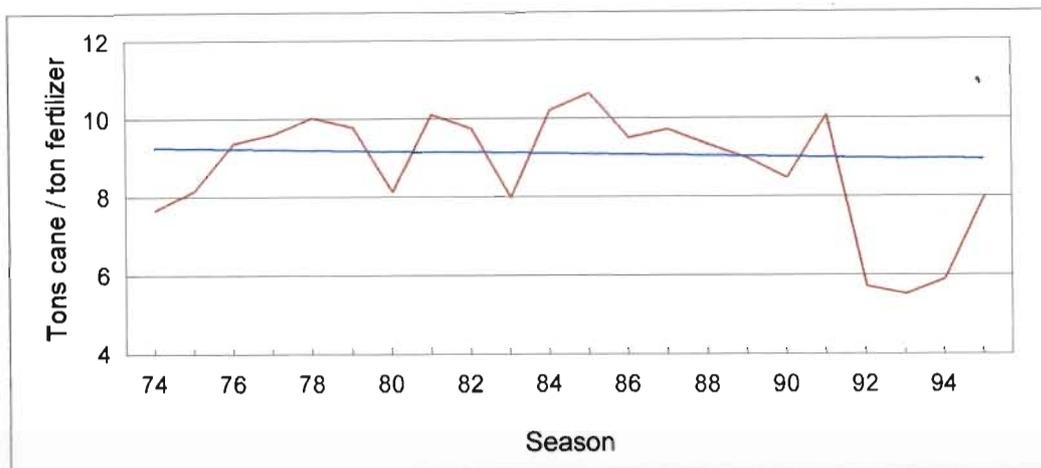


Figure 3.22 Purchasing power of a ton of sugar cane in respect of fertilizer - 1974 to 1995

From the above it can be concluded with regard to a staple food, maize meal, and a major input, tractors, which could be seen as a proxy for mechanical and energy inputs, that the terms of trade for small scale growers have declined during the period 1975 to 1996. There was an improvement in the purchasing power of a ton of sugar in respect of tractors from 1991 but this turned again in 1992.

Even though small scale cane growers received a more favourable price for their sugar cane than large scale growers since 1990 it is suggested that underlying declining productivity and a declining real sugar cane price raise questions about the economic viability of small scale grower sugar cane production. The question of whether the declining trends in small scale grower productivity are related to a deterioration in the terms of trade will probably be answered positively. Poor climatic conditions during the

1980's and 1990's have probably played a major role in the apparent decline in productivity but demotivation arising from a price-cost squeeze illustrated by the declining purchasing power of a ton of sugar cane will probably be of greater importance.

3.10 Summary

The historical background to small scale grower sugar cane production has been sketched in chapter 3. Sugar cane was not a new crop for small scale growers, its production was recorded in the early part of the nineteenth century. It was suggested that a driving force of small scale grower development in the South African sugar industry was the maintenance of production and, when opportunity presented itself, expansion.

Effort is expended in ensuring that the industry remains cost competitive in world terms so ensuring that its markets are retained and where possible expanded. The development of small scale growers complemented the industry's objectives in this regard. Production of sugar cane from black small scale growers in KwaZulu-Natal in 1992 was 7% of the total industrial production. Small scale growers however were recorded as having 20% of the land area producing sugar cane. The accuracy of the measurement of the land area is indicated as questionable but to obtain trends is used with caution.

A significant percentage of individual sugar mills throughput is sourced from small scale growers. The total sugar cane production of small scale growers was shown to have increased over the period 1946 to 1984 with significant increases being evident for the period 1973 to 1984. There was however a decline in small scale grower total production from 1985 to 1993. The period of increasing production appeared to have been correlated with an increase in the total area planted and not necessarily to an increase in unit area productivity.

It was found that the average area per small scale grower decreased over the period 1974 to 1993. Together with this reduction there was declining average seasonal production

of sugar cane per grower delivering. The average small scale grower yield per hectare was indicated as having decreased from 1984 to 1992. Small scale growers average yields were shown to be below the sugar industry's average productivity. Productivity of small scale growers would appear to be correlated, to a limited degree, with rainfall.

In an analysis of a sample of growers it was found that small scale grower production is positively skewed. It was shown that approximately 60% of growers account for 35% to 40% of production in the Maidstone and Sezela mill areas. The remaining 40% of growers accounted for a significant proportion of production.

The sugar cane price, for the period 1960 to 1996 was shown to have increased in nominal terms. When considered in real terms it was shown to have decreased for the period 1960 to 1972. It then increased, from 1973 to 1983, from when it declined to 1992. It is suggested that movement in the real sugar cane price has played an important role in motivating small scale growers to enter or withdraw from sugar cane production. It is shown that the purchasing power of sugar cane in respect of a staple food, maize meal, and machinery inputs has declined and that this would probably have contributed to the decline which was observed in individual small scale grower production. In respect of fertilizer the terms of trade would appear to have remained relatively stable over the period analysed.

The overall analysis of small scale grower production presented in this chapter would indicate that the sector is facing declining total production, declining productivity and a price-cost squeeze. Notwithstanding these negative trends there has been an increase in small scale grower numbers and production. Chapter 5,6 and 7 shed light on this paradox. The following chapter will deal with FAF and the provision of credit to small scale growers.

4. **THE FINANCIAL AID FUND (FAF)**

4.1 Introduction

This chapter provides a historical perspective of the functioning of FAF. The sugar industry's reasons for establishing the Fund together with its funding, organisational structure and administration are described. The evolution of FAF's administration structure clearly indicates the balance of power between small scale growers and sugar mills.

The descriptive analysis links previous and subsequent chapters in the evaluation of FAF. A conflict in objectives, which is raised in later chapters, is identified at the foundation of FAF. An overall description of loans and savings history is undertaken. An overview of FAF's interest rates places them in the context of market related rates.

Calculation of maximum or bench mark loan amounts is described. The model used to calculate loans is based on a cash flow model which is applied in later analysis of small scale grower productivity.

Loan defaults and their underlying causes are considered in detail with detailed studies of the Noodsberg and Eston areas being presented. Finally the sustainability of FAF using the subsidy dependence index is considered. It is important to note that this chapter brings out many of the continuing issues which impact on FAF and its achievements.

4.2 Inauguration of FAF

Mr A A Lloyd, FAF's first chairman, stated that:

"The idea of establishing a Fund to aid small cane growers in the South African sugar industry was conceived in July, 1972. The sugar industry had emerged from a long cycle

of depressed export prices and had been obliged to repay loans amounting to R16 million raised in 1967 and 1968 to maintain its economic stability. A temporary surge in export prices enabled the industry to establish a price stabilization fund over the next four years and at the same time to appropriate an amount of R5 million from its own total proceeds from the 1972-73 crop to aid its developing members. To provide assistance to cane growers who have no access to normal credit facilities and who lack the capital, equipment, experience and basic essentials to become viable and efficient farmers, was a spontaneous and voluntary gesture by the sugar industry.

The Fund was established with the full approval of the Governments of the Republic of South Africa and of KwaZulu, and its programme of financial aid and development was planned in consultation with the Natal Indian and the Mangete (Coloured) Cane Growers' Associations. The administration of the Fund, however, is vested solely in the South African Sugar Association which provides the costs of such administration so that the Fund's entire assets, with accrued interest on unutilised investments as well as the interest and redemption payments on loans, become available for assistance to small growers" (Small Cane Growers' Financial Aid Fund, 1978:1).

FAF was established as "not simply a provider of monetary aid : it is essentially a development agency. Development is concerned with people - with improving the quality of life - and the Fund's primary aims are to raise the productivity of small cane growers and to promote their economic advancement so that as self-reliant members of the community they may lead richer and more satisfying lives" (Small Cane Growers' Financial Aid Fund, 1975:unnumbered).

Approval was given in late 1972 by the Minister of Economic Affairs for a limited expansion of the sugar industry. In authorising this expansion he indicated that "preference would be given to those areas which are in need of development" (South African Cane Growers Association, 1977:346). The establishment of FAF, as noted by Dr M.G. Buthelezi in his opening speech of the Umsunduze Farmers Centre in Ndwedwe

in 1975 should be seen as "enlightened self-interest". Gilfillan (1993), addressing members of the South African Sugar Technologists Association confirmed this view when he stated that the involvement of millers was based on enlightened self interest in that millers were concerned about generating extra profits and had, at the same time, a desire to help their neighbours. As recorded in chapter 3 the supply of, or procurement of sugar cane from small scale growers was an important objective for sugar mills.

The establishment of FAF coincided with a climactic period in the history of South Africa. The Bantu Homeland policy was being pursued with the KwaZulu homeland having been established in 1972. The administration of the homeland was preparing to relocate from Pietermaritzburg and Nongoma to Ulundi and consolidation of land, the excision in certain areas and inclusion in others, was progressing rapidly. The sugar industry was not immune to the impact of this and indicated concern about the economic and political stability of the region.

It consequently played an active role in charting a road ahead. The sugar industry made submissions to the Lombard Report (1980) and the Buthelezi Commission (1982) which formed a foundation for further debate of the future of KwaZulu-Natal. Small scale grower development was associated very closely with the larger and overriding political issues for the way forward. The question may be asked as to why the sugar industry and small scale grower development assumed an important role. Of KwaZulu-Natal's commercial field crop production in 1991 sugar cane accounted for 41% of the gross income (DBSA, 1994:100). With regard to the area formally demarcated as KwaZulu, sugar cane production accounted for 17.6% of the gross agricultural product ranking third to cattle and goats (Pim Goldby, 1989). With regard to gross crop production in KwaZulu sugar cane accounted for 31.1% and was rated as the most important crop (Lyne and Ortmann, 1988). In addition, and as recorded previously, there was a significant potential for sugar cane production in KwaZulu.

Further to the above the involvement of the sugar industry in small scale grower development began to assume major importance in the industry's international market. Where South Africa's export trade was being exposed to the impact of trade embargoes and eventually sanctions the sugar industry continued to remain within international forums, albeit at a lower key, but nevertheless present. The importance of the small grower sector to the sugar industry continues to the present with involvement in rural development conforming to, and supporting the Government's Reconstruction and Development Programme (RDP) philosophy (African National Congress, 1994).

The pronouncements on the establishment of FAF and development of small scale growers within the context of the sugar industry as sketched in chapter 3 indicate a degree of ambivalence. On the one hand there was a social concern while on the other there was an economic and financial goal. These two driving forces, it will be seen, continue to give rise to division amongst parties involved and probably leads to confusion of objectives. Having sketched the background to the establishment of FAF the following sections will deal with its evolution, administration and achievements.

4.3 Funding of FAF

The South African sugar industry, following an announcement in December 1972 that it was to establish a "fund to increase the productivity of small cane growers", appropriated R5 million from "funds in excess of the requirements of the Price Stabilisation Fund" (South African Cane Growers Association, 1977:346). In 1978 an additional R1 million was granted to FAF from the sugar industry's development fund. Further funding was obtained by raising loans in the financial market. The first loans, totalling R7.5 million, were from commercial banks at an average interest rate of 2% below the prime rate.

During 1991 the Independent Development Trust (IDT) was approached to provide finance for FAF. It was agreed that a loan of R67 million would be advanced to FAF of which R42 million would be in a first tranche and a subsequent R25 million would be based on

FAF's performance in respect of the initial R42 million. During 1994 the first amount of R42 million was subject to a loan swop. The IDT loan was repaid by raising finance on the bond market by way of issue of sugar stock which was subscribed to by four insurance companies. The initial loan from the IDT was at an interest rate equivalent to FAF's lending rate. The sugar stock was provided on the basis of an interest rate which had a floor of 8% and a ceiling of 16% and varied according to the world sugar price, the rand/dollar exchange rate and the total sugar production of South Africa. To ensure that FAF was not prejudiced as a result of the swop transaction the IDT provided a grant to FAF to ensure that the overall interest rate that FAF incurred would not be greater than that which it would have incurred if the loan had continued to be with the IDT.

The balance of the IDT loan, R25 million, was negotiated for drawdown in the 1996/97 season and once again a swop transaction was entered into. The IDT did not provide finance but provided a grant to ensure that the interest rate which would be incurred would equate to that which had been agreed in respect of the loan. The interest rate, in the case of the R25 million loan, was 4% below the lending rate of FAF to enable FAF to earn a margin on its operations. The loan was swopped for a facility with a commercial bank.

Figure 4.1 indicates the change in the debt equity situation of FAF between the years 1991 and 1996. FAF's total resource base, equity plus loan funding, amounted to R22 million and R98 million in 1991 and 1996 respectively. The debt ratio went from a debt amount of 31% and an equity amount of 69% in 1991 to a debt amount of 61% and an equity amount of 39% in 1996. This was a total reversal in the debt equity situation of FAF.

Up to 1996 all FAF borrowings were underwritten by the South African Sugar Association. The sugar industry was thus exposed to any losses that FAF incurred in respect of the repayment of loan finance. The change in FAF's debt/equity ratio was an important determinant of sugar industry decisions in respect of the future of FAF.

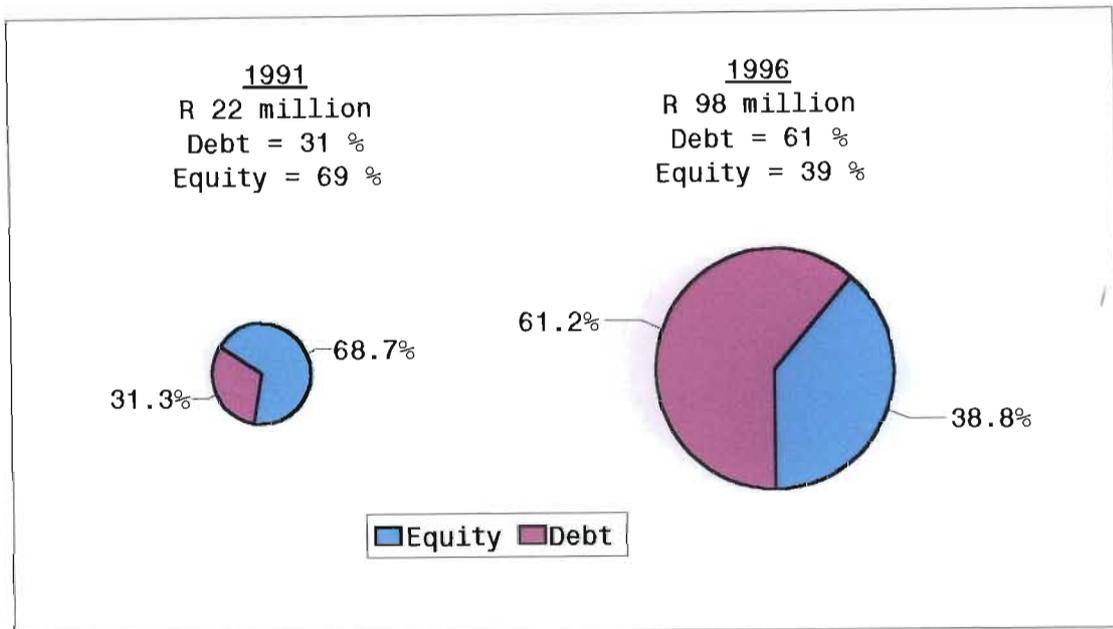


Figure 4.1 Comparison of FAF debt/equity ratios for the years 1991 and 1996

4.4 Organisational Structure

When FAF was established it was noted that participation of growers in its administration was important (*cf* section 2.7). Figures 4.2 to 4.5 chart the involvement of small scale growers in FAF's administration.

The main policy formulating body of FAF is the FAF Standing Committee, see figure 4.2, which is a Committee of the Council of the South African Sugar Association. FAF therefore reports through to the highest policy making body of the South African Sugar Industry. At its inception the Standing Committee was comprised of an equal number of representatives from the South African Cane Growers' Association and the South African Sugar Millers Association Limited. From these representatives the Chairman and Vice-Chairman of the Fund were elected. Serving the Standing Committee was an administration office which provided management and accounting functions.

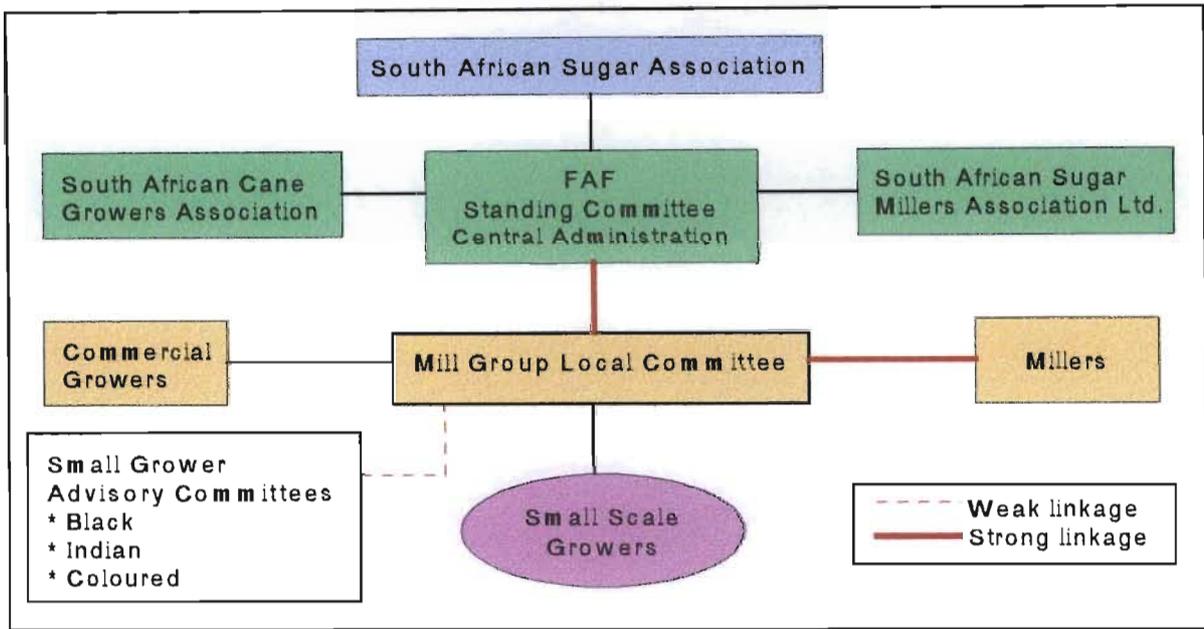


Figure 4.2 The structure of the Financial Aid Fund - 1973 to 1983

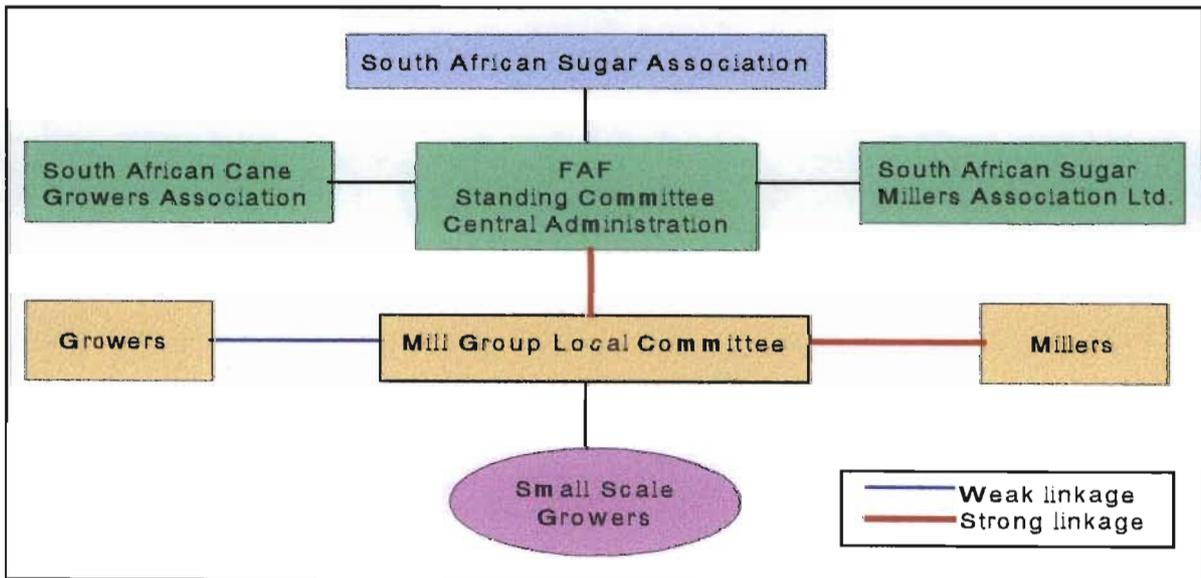


Figure 4.3 The structure of the Financial Aid Fund - 1983 to 1986

At each sugar mill an administrative committee, known as a Mill Group Local Committee (MGLC), was established. MGLC's were made up of an equal number of growers and millers, as was the FAF Standing Committee. At the inception of FAF there were 17 MGLC's. MGLC's were charged with local administration of FAF operations. Sugar milling companies provided secretarial services at the outset. These MGLC's met on a regular basis and considered loan applications from small scale growers and took appropriate decisions. They were also involved in broader sugar cane development issues in areas for which they were responsible. Agricultural staff from the KwaZulu Department of Agriculture attended these meetings enabling a direct link to be established for provision of infrastructure and extension services. Members of MGLC's did not receive remuneration for their services.

The responsibilities of MGLC's were to administer FAF's operations in the respective mill areas, to establish and monitor loan budgets, to ensure that loan levels were appropriate to requirements, to ensure that loans were used for purposes for which they were advanced and were recovered and to ensure that all necessary administration was undertaken.

Referring to figure 4.2 it will be noted that attached to MGLC's for the period 1973 to 1983 were Small Grower Advisory Committees. These Advisory Committees were required to address issues pertaining to different sections of the small scale grower community. The grower representation on MGLC's was drawn from the commercial or large grower sector. Where issues or questions arose which required small scale grower input these were referred to the Advisory Committees. It will be seen in figure 4.2 that the link between the Small Scale Grower Advisory Committees and Mill Group Local Committees is indicated as weak and this was generally the case.

The link between FAF and MGLC's is indicated as a strong linkage as was the link between Millers and MGLC's. The link between Millers and MGLC's was secured as a result of the provision of administrative services and establishment of field services by

mills to carry out day to day administration of the provision of loans to small scale growers.

In four mill areas, namely the Maidstone, Eston, Sezela and Noodsberg areas, this linkage was strengthened by the establishment of mill development companies to provide land preparation, planting, ratoon management and cane transport services to small scale growers. It was in very few areas that growers retained equality of input into the operation of MGLC's. The size of MGLC's was not determined by FAF but was established on the basis of requirements of each area.

The weaknesses of the structure, as indicated in figure 4.2 were addressed in 1983 and the Small Grower Advisory Committees were disbanded. From that date grower representation on MGLC's was based on growers nominating representatives from the commercial and small grower sectors. There was equality of miller and grower representation.

In 1987 the structure of FAF then shifted to that indicated in figure 4.3. To address what was apparently an unsatisfactory level of participation of small scale growers on MGLC's, it was agreed that membership would be changed to increase representation of small scale growers. The membership was constituted with two millers, two commercial growers and six small scale growers as indicated in figure 4.4. If an area required additional representation, due to its size or structure, additional small scale growers could be included. It was anticipated that this would increase growers participation in the administration of FAF operations in each mill area. It will be noted that a strong relationship continued to exist between FAF, MGLC's and Millers as previously detailed. Although attention was being directed at increased participation of small scale growers the strength of representation did not change significantly. With regard to representation on the FAF Standing Committee the first small grower representative, Mr WTV Luthuli, was elected to the committee by the SA Cane Growers' Association in 1983.

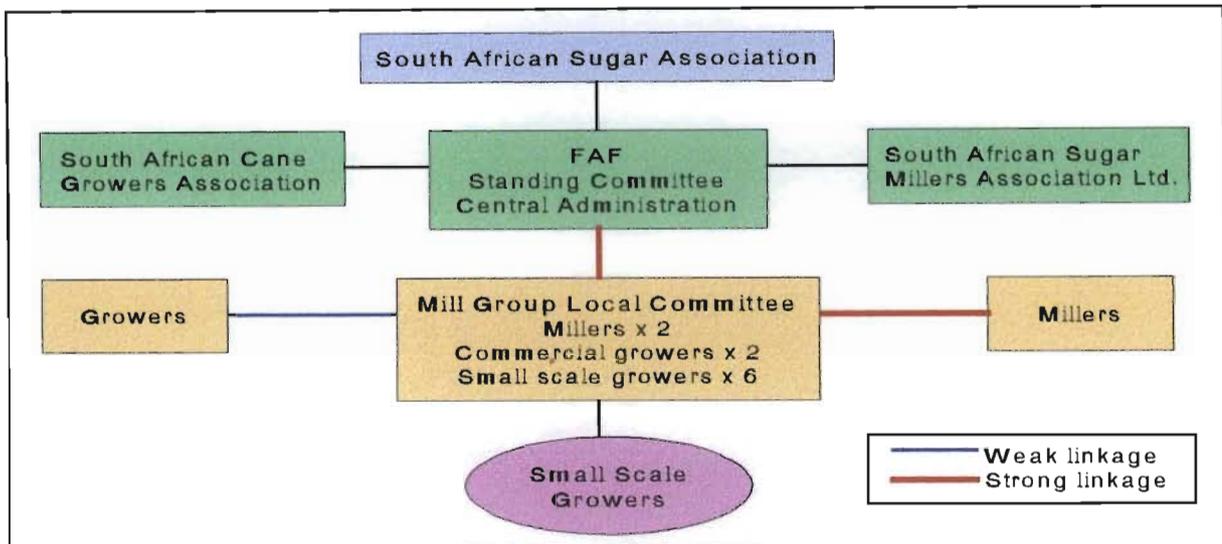


Figure 4.4 The structure of the Financial Aid Fund - 1987 to 1992

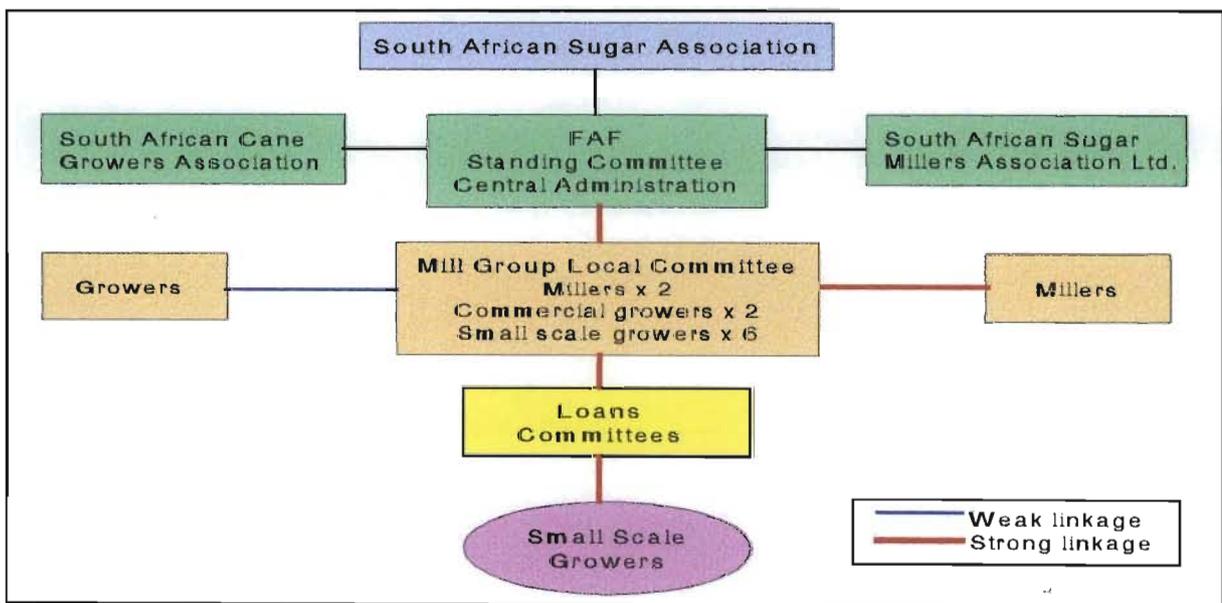


Figure 4.5 The structure of the Financial Aid Fund - 1993 to 1996

The training of small scale growers with regard to participation in MGLC administration was addressed by FAF. The change in representation on MGLC's complemented changes in the structure of the KwaZulu Cane Growers Association (KZCGA) which established Mill Cane Committees to represent black small scale grower associations' and sub committees' interests at mill level. KZCGA, which was established by proclamation of the KwaZulu Government in 1985, was affiliated to the South African Cane Growers' Association. KZCGA was later to become amalgamated with the South African Cane Growers' Association so that by 1990 growers had a unified structure with committees from mill area level, Local Grower Councils, upwards having a 50% commercial grower and 50% small scale grower representation.

It will be noted from figure 4.4 that there was still a strong relationship between FAF, MGLC's and millers. The change in growers representation did not appear to increase participation or the quality of representation on MGLC's. A number of factors were cited for this. They included the language barrier, the domination of activities in the field by milling companies, especially with regard to mill development companies, and the financial and technical nature of discussions which were held at MGLC level.

During evolution of the administrative structure to the stage reached in 1987/1992 (figure 4.4) MGLC's had established and delegated sub-committees to consider loan applications due to the volume of applications which were presented at each meeting. Sub-committees were initially made up of grower and miller representatives but eventually evolved to being wholly managed by full time mill staff. This meant that, in practice, loan applications were considered by mill administrative staff and MGLC's were merely advised of the status of the granting and refusing of loans. In general there was no debate about decisions which had been taken.

To address this problem loans committees, as shown in figure 4.5, were established in 1993. These committees were established in each area where there was a small scale grower association or sub committee. There were approximately 270 loans committees.

Loans committees were constituted of a FAF loans officer, who had been appointed in the 1992 season, a grower representative, who was to be known later as a grower facilitator, and a mill representative. The extension services of the respective departments of agriculture were also invited to participate but did not.

The authority for granting or refusing loans was transferred to these loans committees with final authority being in the hands of FAF loans officers. The relationship between small scale growers and the loan granting process then swung to that indicated in figure 4.5 with a direct link between FAF, MGLC's, loans committees and small scale growers. This began to address the equality of representation between growers and millers at the MGLC level. Mills however continued to retain a strong link with small scale growers due to their field services and mill development company activities.

With the enlargement of MGLC's in 1987 it was agreed that growers should be reimbursed for expenses they incurred in providing services to MGLC's. This reimbursement was also provided to growers who served on loans committees. Training of growers and grower representatives/facilitators was an important function of FAF with regard to the functioning of the structure.

In 1995 the structure of the FAF Standing Committee was changed with the committee being increased in size. It was comprised of 20 growers, of which one grower was to be a small scale grower from each mill area and 10 miller representatives. In this way increased involvement of small scale growers and improvement in communications with the different areas was anticipated. It was during the period 1994 to 1996 that discussions were held with small scale growers and other interested parties to evaluate FAF's structure as depicted in figure 4.5. The conclusions reached will be discussed in chapter eight.

4.5 Loans and Creditworthiness

A small scale grower in terms of FAF's definition is " any cane grower who has not produced, nor in the opinion of the Sugar Industry Central Board (SICB), has sufficient registered land to produce an average of 200 tons of sucrose per year over any consecutive period of two years" (FAF, 1992:3). In addition to the above FAF requires that a small scale grower must satisfy it "that he (sic) does not normally have access to agricultural credit facilities offered through banks or other sources" (FAF, 1992:3).

Assistance to individuals is available on a loan basis only. Loan interest and capital repayments are used to provide further loans. Loans are provided for the purchase of land development services, fertilizer, seed cane, weed control and, in a limited number of instances, for equipment. The terms of loans are currently (1996) for a maximum period of eight years at an interest rate which is near market related. Interest will be discussed in a later section.

To obtain assistance small scale growers may approach their local agricultural extension officers, mill liaison officers, Mill Cane Committee (MCC) Development Officers or administrative staff of MGLC's. Growers complete application forms either themselves or they can be assisted to do so. Once completed, forms are submitted to loans committees which require growers to attend an interview and have their land inspected for suitability for sugar cane production. As small scale growers cannot use their land as collateral for a loan a lien is taken over the crop (see section 2.6.1). A grower is not required to lodge any additional security for a loan as it is advanced on the basis that it will be used for production of sugar cane which will provide an income stream to repay the loan. A loan advanced by FAF could be considered as self-liquidating. A grower is assessed on his or her personal profile, creditworthiness and environmental factors pertaining to the land where sugar cane will be produced. Table 4.1 indicates criteria used to assess a borrowers creditworthiness.

Table 4.1 Factors taken into account in establishing a small scale growers creditworthiness for a FAF loan

A. Personal Profile	B. Environmental Factors	C. Creditworthiness
<ol style="list-style-type: none"> 1. Grower involvement 2. Knowledge of husbandry requirements 3. Grower's security of access to land 4. Knowledge of FAF policy & procedures 5. Character references 6. Health 7. Education 8. Age 	<ol style="list-style-type: none"> 1. Distance from mill 2. Rainfall 3. Soil, slope etc. 4. Infrastructure 5. Land area 6. Contractor availability 7. Social stability 8. Farmers association 	<ol style="list-style-type: none"> 1. Loan history & outstanding loans 2. Delivery record 3. Savings

According to Barry et al (1988:154) the factors normally taken into account when assessing creditworthiness of a loan applicant are :-

- availability of assets for security
- repayment and income expectations
- personal characteristics
- financial management practices

FAF's creditworthiness assessment would appear to include most of the above. It will be seen from table 4.1 however, that no assessment of a growers assets is required. Security for a loan is a cession (lien) over a growers sugar cane proceeds. If a crop fails for any reason no security exists. Consideration of environmental factors may be assumed to improve prospects of success of a loan.

Life and/or crop insurance was not required by FAF. Section 4.13, table 4.12, indicates that death of borrowers accounted for 11% to 20% of loan defaults. It will also be seen that drought accounted for a large percentage of loan defaults. Insurance could, depending on costs, play an important role in improving loan security.

FAF is developing a credit scoring system using factors indicated in table 4.1. This system should assist in loan granting decisions.

Once a decision is taken regarding an application a farmer is issued with an order to purchase goods or services required. FAF then pays suppliers of these goods or services directly. It is usually only in the case of labour that payment is made directly to a grower.

Loans are provided on the basis of an amount required per hectare of development. FAF establishes a bench mark loan level each year which is based on the interest rate to be charged, the expected sucrose price which the farmer can anticipate over the term of a loan, a yield factor and the rate of repayment. A loan is structured according to the anticipated cash flow which a farmer can expect. Repayment is based, under average circumstances, on a deduction of 25% of a farmers sugar cane proceeds. A farmer is required to contribute R50 per hectare towards development costs. The requirement for this contribution was established in 1983 and has lead to a great deal of controversy. When it was introduced it amounted to 2,5% of a loan, currently it only amounts to 1% of a loan. Further comment on this subject will be made.

In addition to providing credit FAF also operates a retention or savings system for small scale growers. This saving system was introduced in 1985 to enable growers to save portion of their proceeds towards financing their fertilizer and labour requirements for following ratoon crops. The savings system is obligatory for growers who have outstanding loans with FAF and voluntary for those who do not have outstanding loans.

4.6 Administration - Costs

Table 4.2 details the administration costs for FAF for the period 1991 to 1996. A budgeted cost for 1996/97 is also shown.

Table 4.2 FAF administration costs - 1991 to 1997

Season	Admin. excluding bad debt (R mill)	Bad debt (R mill)	Total (R mill)
1991/92	1.6	1.7	3.3
1992/93	2.2	0.7	2.9
1993/94	2.2	2.7	4.9
1994/95	3.0	2.2	5.2
1995/96	3.0	2.0	5.0
1996/97 (Budget)	4.6	2.0	6.6

The administration costs, excluding bad debt write-offs, have increased over the period. The costs comprise of FAF staff, information systems, capital expenditure and general administration expenses. They do not include the cost of operating Mill Group Local Committees' administration and field staff provided by sugar milling companies or interest charges.

The increase in costs from 1991/92 to 1992/93 arose from the appointment, by FAF, of loans officers. The introduction of loans officers enabled the formation of loans committees, as previously discussed, to be undertaken. Bad debts will be discussed at a later stage.

Up to 1991/92 the South African Sugar Association met the actual administration costs of FAF on an annual basis. From 1992/93, instead of meeting actual costs, a grant of R4 million was made to FAF on an annual basis for five years, ie up to and including 1996/97. Funds for this grant came from the premium price which the industry earned on sale of sugar to the United States of America under a quota arrangement.

With the introduction of the grant finance of R4 million per annum, administration costs including bad debts in excess of this amount were required to be met out of FAF's own

resources. This had implications as far as the interest rate charged on loans was concerned.

In addition to the USA premium supporting FAF it also provided funding in an amount of R4.3 million per annum for 5 years, for the Small Growers' Development Trust (SGDT) which was established in 1990 by small scale growers with the support of the South African Cane Growers' Association. The SGDT was formed to channel funds to establish small scale grower institutional structures and to provide training with particular attention being paid to the management of their own affairs (Small Growers' Development Trust, 1993).

4.7 Administration - Information Systems and Transaction Volumes

FAF, from its inception, has utilized computer facilities to manage its loan and savings system. From 1973 to 1987 it used a mainframe batching system, from 1987 to 1996 it used a mainframe, real time online system. Each MGLC administration office is linked to the FAF system and data is captured at mill level.

The current information system has reached critical levels in its ability to handle transaction volumes. As a result FAF is investigating the development of a new system which will be a client/server based system as opposed to a mainframe system.

Although the current system is real time, payments are only made on a weekly basis from the Durban office of FAF. This leads to delays in receipt of cash required by growers and is an item which requires addressing. The issue relates to staffing and transaction costs. The overall cost of operating FAF will be dealt with when considering the interest rate.

A detailed policy and procedures manual (FAF, 1992) has been produced by FAF for use by all involved and interested parties. This is revised from time to time to take account of changed conditions and improved methods of operation.

Figure 4.6 shows the average monthly volume of transactions processed by FAF over a 12 year period, 1987/88 to 1995/96. The information is shown as a percentage of the total value of transactions.

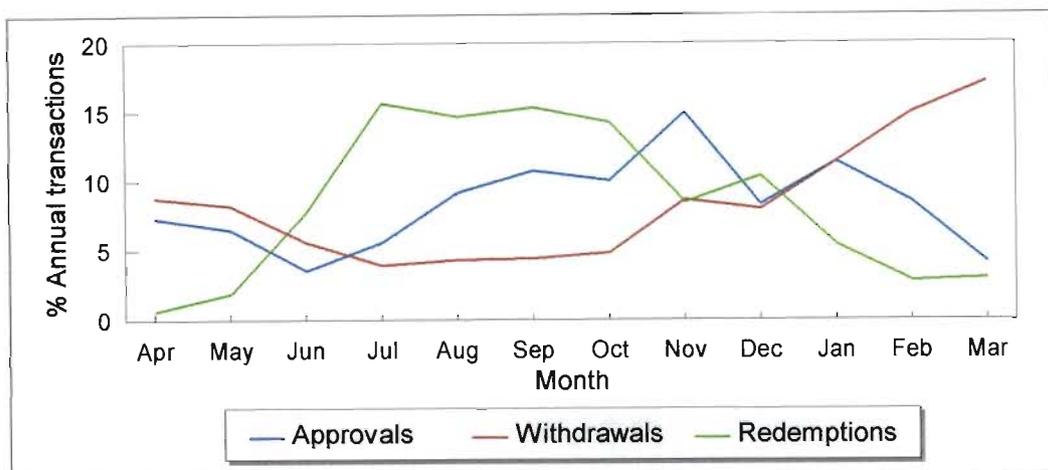


Figure 4.6 Average monthly percentage transactions experienced by FAF

Loan approvals are at their lowest in June and increase in volume reaching a peak in November. It is during October and November that loan withdrawals increase as planting of sugar cane takes place. It has been recorded that small scale contractors only start ploughing and planting operations once cane harvesting and haulage ends. This phenomenon can be seen clearly in figure 4.6 where loan redemptions slow down from October onwards and loan withdrawals increase. Agronomically late ploughing and planting are generally considered to be poor practice. The land does not lie fallow long enough during a dry period, ie winter, to permit roots of a previous crop to be adequately destroyed. Also the most effective part of a planting season, spring and early summer is foregone in terms of germination and establishment of a new crop.

Another feature which is evident from figure 4.6 is cane establishment operations extending into late summer and autumn which again is not agronomically ideal practice. This is shown by increasing withdrawals in February and March.

A peak in November and January in registration of loan applications is also seen. This may indicate that small scale growers are not planning replant operations in advance but taking decisions at a late stage. This gives rise to complaints about the loan approval process delaying small scale grower operations. In theory applications should be made in advance of requirements to avoid such delays. The loan approval process is an important step in small scale grower financing given the requirement to establish creditworthiness as detailed previously (see section 4.5). Adverse borrower selection has been shown to lead to increased loan delinquency rates therefore it is important that a credit provider does not skimp this activity (see section 2.10.5). Late loan applications from growers tend to place pressure on the process.

Redemption of loans corresponds to the harvesting of sugar cane. The peak harvesting period is seen to extend from June to September. Redemptions are received one month after harvesting. This is when cane payments are made by mills. Small scale growers are known to be late starters in harvesting at the beginning of a season and this is shown clearly for May/June.

An interesting phenomenon is the tailing off of deliveries/redemptions for October and November. A sugar cane production season normally closes in December. Small scale growers would appear to deliver most of their sugar cane from June to September. This is the period of peak sucrose levels. The sugar industry operates a system, known as the relative cane payment system, to spread cane deliveries evenly throughout a season. The system establishes average sucrose levels for a season in respect of each sugar mill to even seasonal fluctuations in sugar cane sucrose levels and was implemented to prevent the practice evidenced by small scale growers. The system enables sugar mills to receive a

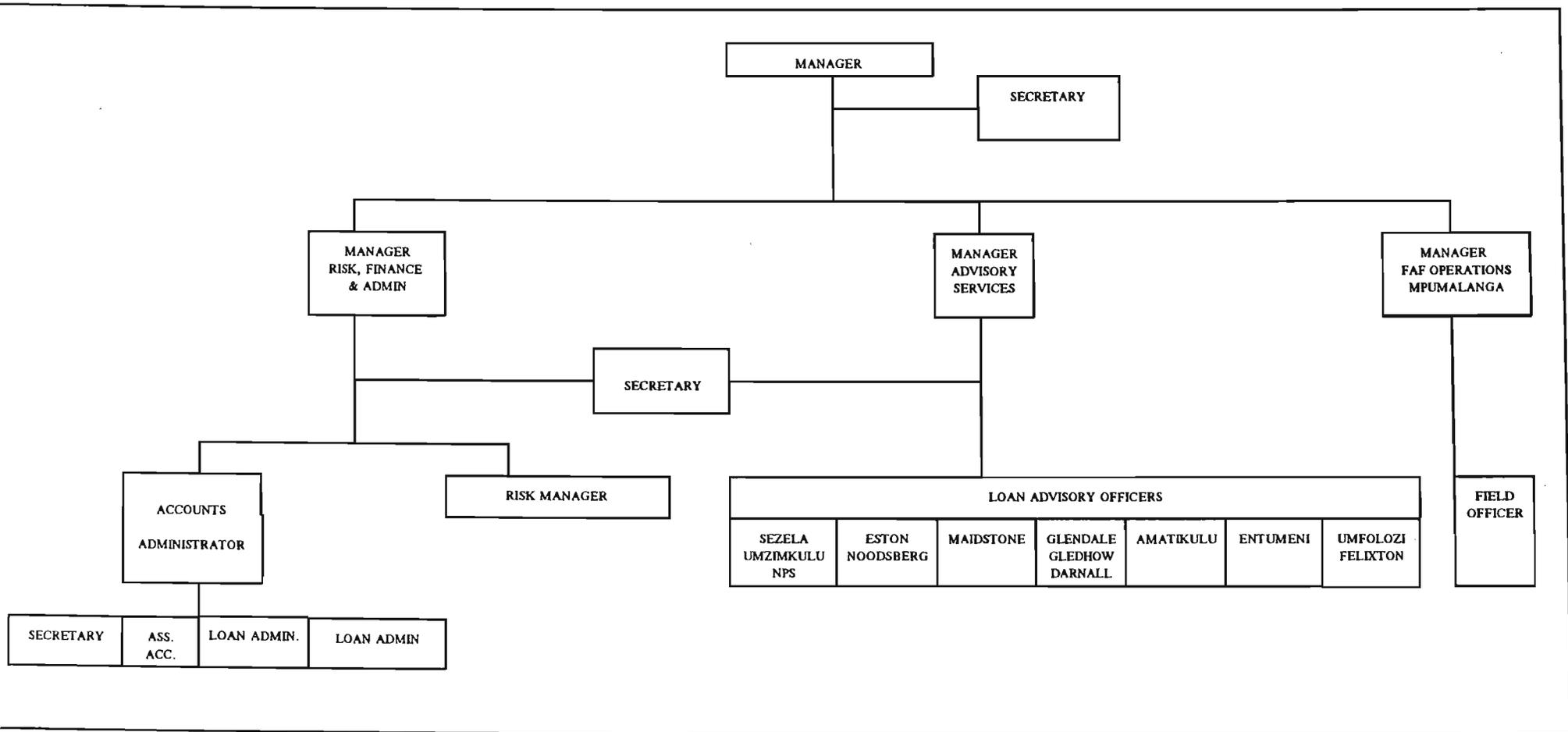


Figure 4.7 Financial Aid Fund Organogram 1996/97

constant supply of sugar cane and is structured so as not to prejudice growers' income during the months of sugar cane's low sucrose content.

There may be a number of reasons that the observed delivery practice continues, not least the erroneous perception that growers receive a higher return for their sugar cane during the period. Farm system research may be required to develop programmes to change small scale growers' delivery and planting patterns as identified in this section.

4.8 Administration - Staff

FAF's staff structure is shown in figure 4.7. Out of a staff of 20, 11 are associated directly with operations at mill area level - these fall under the heading of advisory services and Mpumalanga staff.

The administration staff comprises 9 people of whom the majority are involved in administration and accounting functions. Risk management is identified as an important function.

It was estimated by FAF that a total of 94 staff would be required to administer FAF's operations if mills did not provide staff. It should be noted that mill staff levels are in excess of this number due to extension and development services also being provided by mills.

4.9 Loan and Saving History

The administration of FAF's loans and savings is divided into three sections viz, medium term loans or development and re-establishment loans, short term loans (ratoon management loans) and drought relief loans. The following table indicates the accumulated volume of transactions from the inception of FAF to the end of the 1995/96 season.

Table 4.3 Total volume of FAF transactions - 1973 to 1996

	Medium term loans	Short term loans	Drought relief loans	Total
No. of transactions	45797.00	31143.00	13800.00	90740.00
Loans approved	R146.7m	R5.9m	R22.6m	R175.2m
Loans advanced	R127.9m	R5.6m	R16.2m	R149.7m
Loans repaid (inc. interest)	R89.1m	R5.2m	R6.4m	R100.7m
Interest accrued	R29.6m	R0.6m	R2.3m	R32.5m
Bad debts	R7.3m	R0.2m	R0.2m	R7.7m
Outstanding loans	R61.1m	R0.8m	R11.9m	R73.8m

FAF has approved loans totalling R175 million to 45 797 medium term borrowers (loans up to eight years), 13 800 drought relief borrowers (also medium term loans) and to a portion of the 31 343 small scale growers who are registered as retention savings account holders (short term loans for up to two years). Short term loans are only advanced to small scale growers who have insufficient savings to meet their ratoon management requirements. Medium term loans account for 84% of FAF's lending. Of the total amount advanced, including accrued interest (R149 million + R32 million) 40% was outstanding as at the end of the 1995/96 season.

An analysis of the total number of loans advanced up to 1994 indicated that 37% of borrowers had used two or more loans. A borrower in one instance was recorded as having utilized 13 loans. Figure 4.8 indicates the distribution of borrowers according to number of loans which they utilised. Of first time borrowers 62% had not been advanced subsequent loans. Whether all growers who had been assisted were still producing sugar cane could not be ascertained from the data.

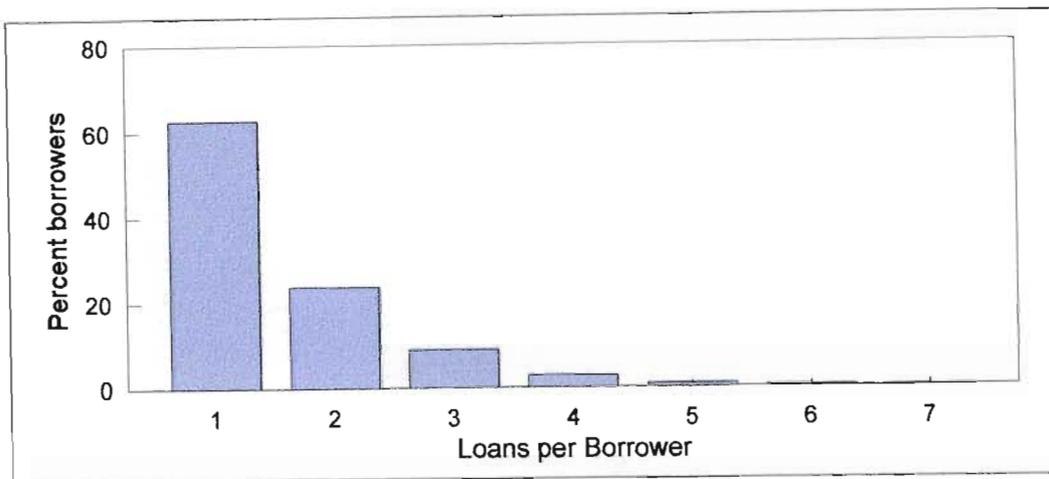


Figure 4.8 Distribution of FAF borrowers according to the number of loans each borrower has utilised

It will be seen from table 4.4 that during the 1995/96 season small scale growers deposited R26,9 million and utilized R25,7 million for ratoon management purposes. The retention savings scheme was established to assist small scale growers with saving portion of their sugar cane income to purchase fertilizer and to finance weed control operations for their ratoon crops. Small scale grower savings have shown substantial growth from 1985 to 1996.

The savings scheme was seen as a way of improving FAF's security (reducing risk) by ensuring that small scale growers would have sufficient funds available to maintain a high level of productivity. Funds are retained by FAF in trust for small scale growers. Interest has accrued as indicated in table 4.4. The funds, in terms of deposit taking regulations, could not be used to fund lending as they would have been in a normal banking institution. Savings have not been mobilised in the true sense of a savings scheme (see section 2.10.4). Up to 1996 FAF did not charge small scale growers for providing the service but provision was made in its policy to do so.

While small scale growers have outstanding loans they are required to participate in the savings scheme. Once a loan has been repaid a grower can opt to withdraw from the scheme. Growers without loans can participate voluntarily in the savings scheme.

Table 4.4 FAF retention savings transaction history - 1985 to 1996

Season	Saved R mill.	Interest R mill.	Withdrawn R mill.	Balance R mill.	Av. annual interest
85/86	0.05	0.00	0.01	0.04	9.6%
86/87	3.00	0.10	2.40	0.70	8.7%
87/88	3.40	0.10	3.20	1.10	7.6%
88/89	4.00	0.20	2.80	2.50	9.8%
89/90	6.20	0.40	6.60	2.50	14.8%
90/91	15.90	1.20	16.30	3.30	17.5%
91/92	13.50	0.80	13.10	4.50	16.1%
92/93	9.70	0.80	10.90	4.10	14.0%
93/94	10.70	0.60	10.80	4.60	11.3%
94/95	21.80	0.90	20.60	6.70	10.9%
95/96	26.90	1.20	25.70	9.10	12.0%

It should be noted that FAF retention savings figures shown in table 4.4 do not include small scale grower savings in the Sezela, Noodsberg, Eston and Gledhow mill areas as the milling companies concerned provided a retention savings system using FAF policy and procedures. Given that these areas account for 18% of registered small scale growers it could be anticipated that total small scale grower savings would be proportionately greater than the R26,9 million recorded by FAF for the 1995/96 season.

Table 4.5 indicates the expected loan requirements of small scale growers for the period 1996 to 2001. The amount varies between R35 and R47 million per season. The area

of land which is expected to be planted or replanted and ratoon managed over the period is estimated to be 31 714 hectares and 15 740 hectares respectively. The foregoing estimate does not make provision for any changes in FAF's method of operation which, as will be seen later, may be required.

Table 4.5 Projected loan requirements - 1996 to 2001

	Long term ha	Ratoon ha	Rand millions
1996/97	7826	2475	41
1997/98	5740	2745	35
1998/99	6546	3203	44
1999/00	6236	3653	47
2000/01	5366	3664	45
Total	31714	15740	212

Figure 4.9 shows the accumulative total medium term loans approved (committed) by FAF from 1974 to 1995. The figure does not include drought relief and short term loans. It will be noted that there has been a significant increase in loan approvals since 1990. The amount outstanding has also increased significantly reaching a level of R61 million as shown in table 4.3.

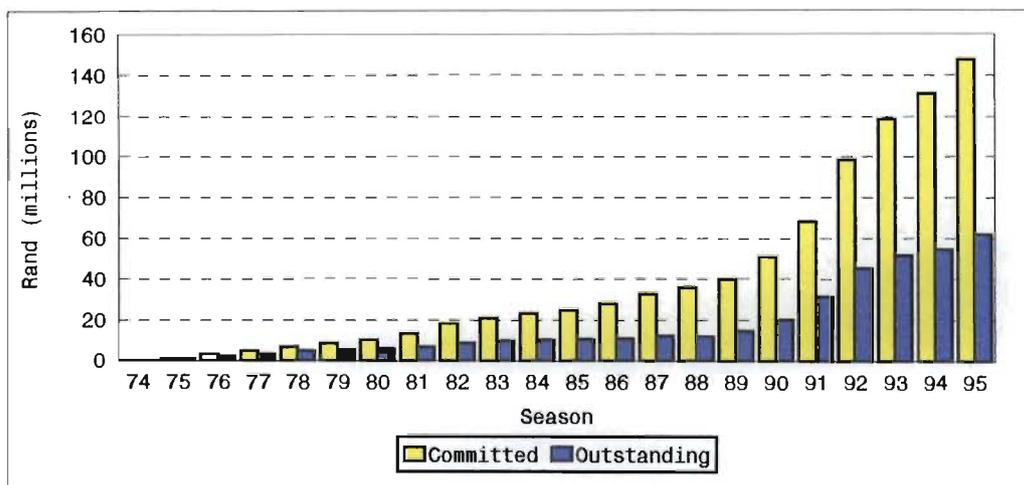


Figure 4.9 Total committed and outstanding loans - 1974 to 1995

Figure 4.10 indicates, in greater detail, the increase in approved (committed), advanced and redeemed loans as well as the increase in the outstanding amount for the period 1987 to 1995.

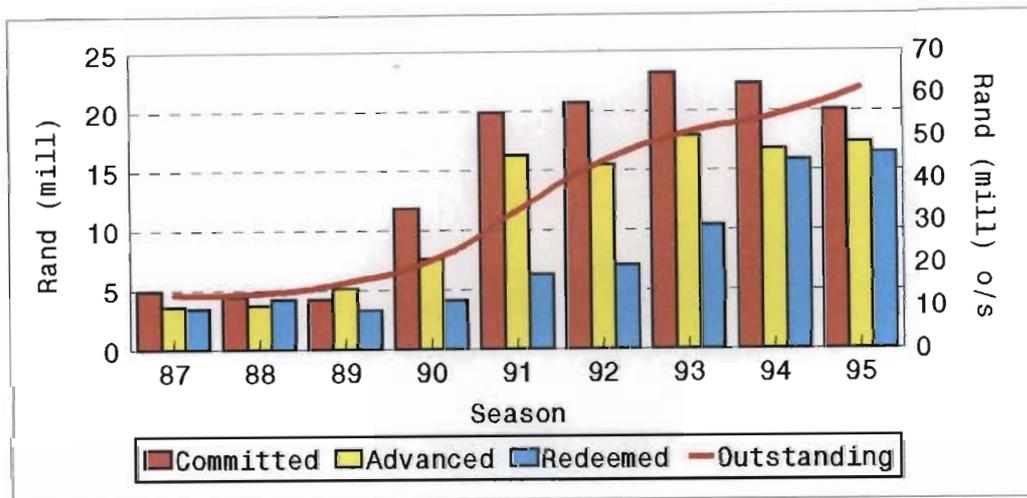


Figure 4.10 FAF Loan History - 1987 to 1995

It will be noted that loan commitments for the period 1991 to 1995 averaged R20 million per annum and that withdrawals averaged R15 million per season. The redemption of loans increased from below R10 million to just over R15 million per season. Over the period 1987 to 1995 there was a 12 fold increase in the outstanding amount. This is a significant increase in the exposure of FAF, albeit in nominal terms.

When considering outstanding amounts concern about the age of debt is important. Figure 4.11 provides an indication of this. Each bar in the chart details the status of loans approved during the season indicated. It will be seen that loans advanced in the seasons 1974 to 1988 have been redeemed.

The outstanding amounts are indicated as being in respect of the seasons 1990 to 1995, a total of 6 seasons, which is the average term of a loan (see chapters 5 and 7). The maximum term in accordance with the FAF loan agreement is 8 years.

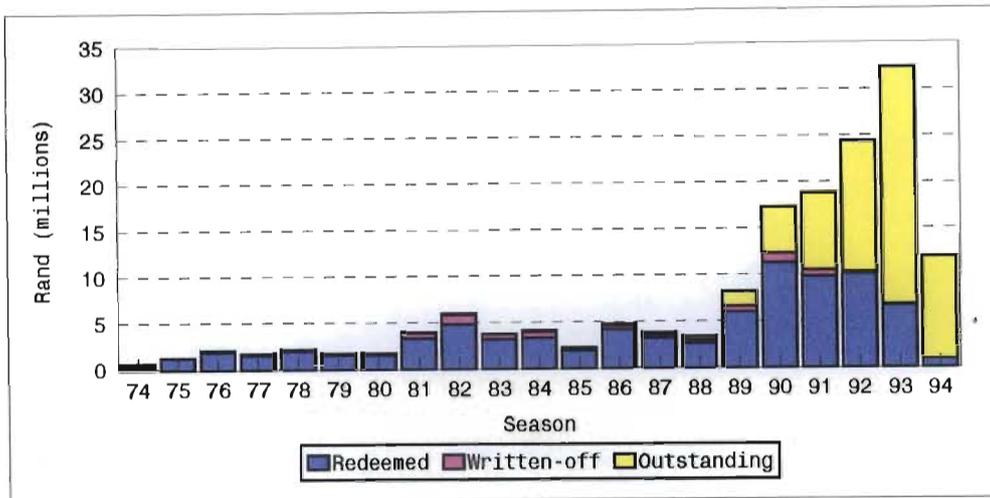


Figure 4.11 FAF loans indicating amount redeemed, written-off and outstanding by season

The distribution of loan defaults (bad debts) amounting to R7,6 million, as at the end of the 1994/95 season, is indicated in figure 4.11. The droughts of the 1980's and the 1990's would appear to have been seasons when loan defaults peaked. FAF recorded that droughts have been a principle cause of bad debts but other factors play a role (see section 4.13).

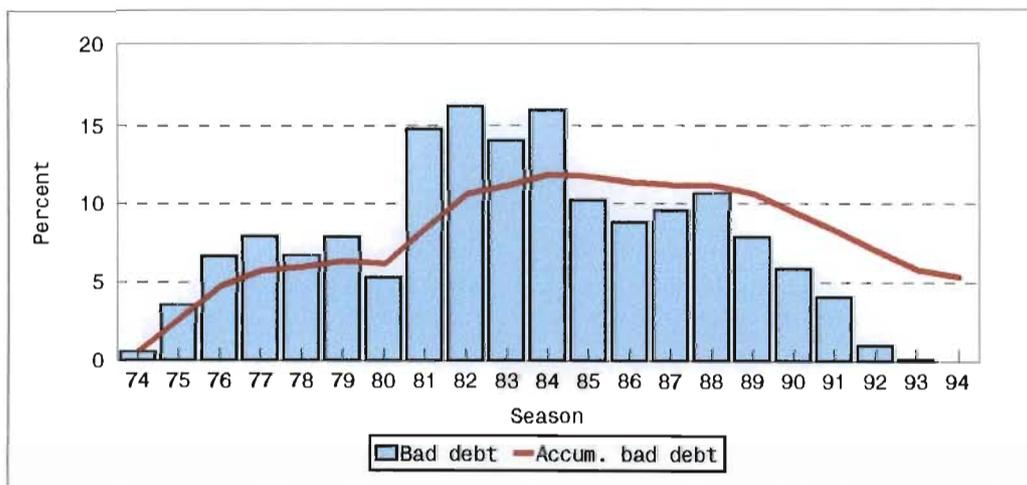


Figure 4.12 FAF bad debts as a percentage of amount advanced each season

Figure 4.12 shows the percentage of the amount advanced by season which has been written off to date. Bad debt peaks, at approximately 15%, coincide with drought affected seasons. The impact of the 1990 droughts is not yet apparent. The accumulated bad debt percentage indicates a decline from 1988. This is erroneous in that there is a large percentage of the loan book outstanding. Further, recent seasons have not experienced write offs in respect of loans advanced during the respective seasons. Bad debts will be dealt with in sections 4.12 and 4.13.

4.9.1 Borrower Contributions

In 1983 it was proposed that small scale growers should contribute to their own development when utilizing FAF loan finance. Up to that stage loans provided for 100% of growers' development requirements.

At an early stage in FAF's operations it was considered that a fundamental weakness of its policy was the ability of growers to borrow money without contributing anything to their own development. The ease of access to loans was seen as an opportunity to abuse loan finance use. In 1978 FAF introduced a policy measure whereby growers with less than 2 hectares of land under sugar cane were required to provide their own resources to carry out weeding operations. Due to a number of factors the policy was unable to be applied. One of the main reasons for this was that it was felt that small scale farmers with very small pieces of land would be prejudiced and one of the main categories of farmer involved was single women, especially widows. It was also pointed out that small scale farmers generally did not have the ability to increase the area of land that they were able to cultivate (see section 3.7).

It is recorded that in 1983 the KwaZulu Development Corporation (KDC, 1983) required farmers who applied for loans for maize production to provide either :

1. A mortgage bond over property or if the farmer did not have title to the land;

2. A cession of the permission to occupy the land and a cession of a farmers life policies; and/or,
3. A notarial bond over immovable property.

In total the security required was 110% of the loan applied for. The borrower was also required to provide the first 5% to 6% of the capital needed and to take out life insurance cover if he or she did not already have such cover. For loans less than R1 000 the above stringent requirements were not required. The requirements of FAF were therefore very lenient compared to those required by the KwaZulu Development Corporation (*cf* section 4.5).

In a World Bank report on the evaluation of agricultural credit programmes it was stated that farmers are often more willing to risk borrowed capital on new technology than their own limited resources and this was especially the case with a group of farmers known as "slow innovators" (The World Bank, 1976:56). It was suggested that, if a technology was worth investing in, farmers should contribute their own resources towards the acquisition of the new technology (see chapter 2).

The concept of a small scale farmer contributing to his or her own development was accepted in principle by FAF, however its introduction proved difficult and led to a great deal of controversy. Issues, which were raised by both millers and growers, involved the ability of growers to afford a contribution, initially R50 per hectare, and whether in fact FAF was providing "aid" by pursuing a policy of requiring a contribution. Questions were also raised by millers regarding the impact that the requirement would have on the rate of development and consequently on development programmes (see chapter 5). In addition concern was expressed about additional administrative problems which would arise. The introduction of a contribution had to be delayed by a season as result of a debate which ensued and was only formally introduced in 1985. Since that date, discussion regarding an increase in the level of contribution has led to similar responses which were raised when it was initially introduced.

The contribution was intended to obtain a commitment from a small scale grower to farming activities which were about to be undertaken. Lessons from world wide experience were taken note of and it was considered that growers would give greater consideration to using credit rationally and efficiently. It was anticipated that small scale growers would give greater thought to investing in sugar cane farming activities than when they were able to obtain a 100% loan. As mentioned previously the contribution decreased in proportion to a loan being provided and in 1996 accounted for 1% of the benchmark loan level of R4 840 per hectare.

4.9.2 Loan Redemption/Recovery

Loans to small scale farmers are recovered by way of deductions from their sugar cane proceeds at a sugar mill. The FAF computer system obtains information from mills' cane payment systems and notifies their systems about amounts to be deducted from growers' proceeds both for loan redemption and for retention savings. It is therefore essential that growers, when they deliver, deliver on their own registered numbers. Firstly, so that they receive their proceeds and secondly, so that their loans and savings accounts can be credited with the correct amounts.

Until deregulation in 1990 small scale growers were required to obtain small grower entitlements or quotas as were large growers. This quota was sought after as entrance into the industry was restricted. After 1990 small scale growers were given free entry status into the industry. To deliver sugar cane a grower had merely to register with a mill to ensure that it had capacity to receive his or her sugar cane. With this freedom of entry there was an explosion in small grower numbers. It also became possible for small grower households to have multiple grower registrations. This has led to an increasing (1996) opportunity of avoidance of loan repayment (see sections 3.4 and 3.5).

Land on which small scale growers intend producing sugar cane is not identified in the registration process. This means that land on which sugar cane is to be grown can be

registered a number of times. The sugar industry is currently investigating a Geo Positioning System (GPS) to map and record land so linking grower registrations to land units. Such a system would assist in managing multiple registrations of land.

The problem arises out of non-registration of ownership of land in the traditional or communal land tenure system. It is an issue which should be addressed in land tenure reform in South Africa (see section 1 and 2.6.1.).

Previous experience with defaulting growers has indicated that taking legal action is a costly option and in the majority of cases, not economically practical. Pressure through individuals, farmers associations and extension services has been utilised to minimise loan default. With burgeoning grower numbers and downsizing of field services of sugar mills this is now becoming more and more difficult.

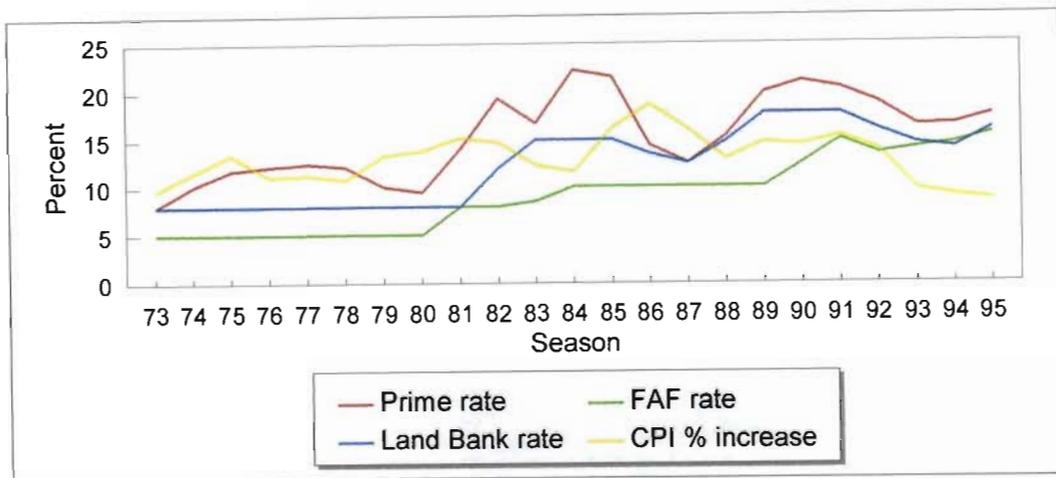
In a report in Business Day of 30th May 1996 it was reported that home loan defaulters are becoming "untouchable" as banks are unable to have them evicted from properties or recover loans through legal means. FAF has had problems in following up small scale growers through the legal process with sheriffs of the court reporting that they were unable to serve summons as a result of being unable to locate farmers. This particular situation places great stress on risk management procedures which FAF has to follow to ensure that loans are recoverable. The importance of selecting a farmer to be assisted at the outset is very important in terms of making a good loan. Further to this the ability of the legal system to cover rural areas is of concern. Although the application of legal sanction is a harsh way to resolve problems the option must be available and should engender respect. The apparent inability of the law to reach certain areas and see justice done will lead to escalating problems in credit administration if it is not addressed timeously.

4.10 FAF's interest rate

Reference is made to the interest rate which should be charged on loans in section 2.10.2 and it is in the light of fundamentals identified in that section that the interest rate charged by FAF is considered. Figure 4.13 constructed from Table 4.6 indicates the FAF interest rate for the period 1973 to 1995 compared to the prime rate, the Land Bank long term rate and the annual percentage increase in the consumer price index (CPI). The interest rates quoted are nominal rates.

Table 4.6 FAF, Prime and Land Bank interest rates compared to the CPI% increase

Season	Prime bank rate	FAF rate	Land Bank	CPI% increase
73/74	7.96%	5.0%	8.00%	9.6%
74/75	10.17%	5.0%	8.00%	11.6%
75/76	11.83%	5.0%	8.00%	13.5%
76/77	12.25%	5.0%	8.00%	11.1%
77/78	12.50%	5.0%	8.00%	11.3%
78/79	12.13%	5.0%	8.00%	10.8%
79/80	10.00%	5.0%	8.00%	13.3%
80/81	9.50%	5.0%	8.00%	13.8%
81/82	14.00%	8.0%	8.00%	15.2%
82/83	19.33%	8.0%	12.00%	14.7%
83/84	16.67%	8.5%	15.00%	12.3%
84/85	22.17%	10.0%	15.00%	11.6%
85/86	21.50%	10.0%	15.00%	16.2%
86/87	14.33%	10.0%	13.50%	18.6%
87/88	12.50%	10.0%	12.50%	16.1%
88/89	15.33%	10.0%	14.75%	12.9%
89/90	19.83%	10.0%	17.75%	14.7%
90/91	21.00%	12.5%	17.75%	14.4%
91/92	20.31%	15.0%	17.75%	15.3%
92/93	18.83%	13.5%	16.00%	13.9%
93/94	16.39%	14.0%	14.50%	9.7%
94/95	16.50%	14.5%	14.00%	9.0%
95/96	17.50%	15.5%	16.00%	8.6%



Source : FAF, Standard Bank and Land Bank

Figure 4.13 FAF, Prime and Land Bank interest rates compared to the CPI

Although the FAF interest rate is indicated as 5% for the period 1973 to 1980 a dual rate applied at the time with a borrower's interest rate being 3% for the first four years of a loan and 5% for the remaining six years of a loan advanced for a maximum period of ten years. Since 1980 a single rate has been applied and has varied as indicated.

In 1980 FAF changed its policy with regard to the interest rate it charged and indicated that it should be more "market" related. The interest rate policy was changed from a fixed rate to a variable rate. FAF considered that the interest rate charged should be set at a level which would prevent its capital from being eroded. In addition it took note of operating in a developing agricultural sector which it considered to be sensitive to interest rate levels (see section 2.10.2 which indicates a contrary view).

During the period 1980 to 1989 FAF's interest rate rose from 8% to 10% with the rate remaining at 10% for five seasons. The increase from 10% to 12.5% in 1990 was motivated on FAF charging a market related interest rate. The increase in the interest rate from 12.5% to 15% was based on linking FAF's interest rate to inflation and the cost of

money in the market. Although the principle of a market related interest rate had been accepted FAF's rate remained below market rates, see the prime and Land Bank rates at the time. It was expected that FAF would obtain finance from international or development sources at lower than market rates. FAF was still viewed as requiring to provide credit at "soft rates" as it was involved in a developing agricultural sector.

Figure 4.13 indicates the FAF rate moving more or less in harmony with the prime rate from 1991. It will be noted from figure 4.13 that FAF's interest rate has been less than the Land Bank long term rate for all but one year, 1981. The difference between the FAF and Land Bank rates from 1991 to 1993 has increased from 2% to 4%. FAF's interest rate has been below the CPI for all but three years, 1993, 1994 and 1995. This means that FAF's capital has been eroded by a minimum of the difference between the FAF rate and CPI, the inflation rate. FAF's real interest rate was negative until 1992/93. From that date the real rate has been positive although below the prime rate of interest but close to the Land Bank rate.

The prime rate of interest has been a positive, real rate i.e. above the CPI, for 15 of the 23 years for which the CPI is indicated. The Land Bank long term interest rate was generally below the CPI up to 1988. From 1988 the rate has been above the CPI and has therefore been a positive real rate of interest. This would appear to be a significant change in Land Bank policy.

4.11 Calculation of Loan Amounts

Loans which FAF advances to small scale growers are used to finance the following :-

- Land preparation
- Seedcane
- Fertilizer
- Planting

- Weed Control

FAF has provided loans for other inputs eg machinery etc. but these are an exception rather than a rule. Loans, other than for sugar cane establishment, require viability analyses and motivation. The amount that FAF advances a small scale grower on a per hectare basis is calculated utilising the following parameters :-

- sugar cane cutting cycle in months
- expected average yield level for the period covering the loan term
- sucrose price
- an estimate of the sucrose price escalation
- redemption rate
- interest rate

The above parameters were introduced in 1983 to establish a "bench mark loan level". This bench mark level indicated an amount which FAF would advance to a grower without further economic investigation provided all other criteria required for creditworthiness were met (see section 4.5). If an applicant required a greater amount than the bench mark level a viability study was required.

Prior to 1983 the loan level was based on averaging quotations received from contractors in different mill areas. This system did not take a growers ability to service a loan into account and frequently led to acrimonious debate.

Table 4.7 indicates the application of the above parameters to the calculation of a benchmark loan level of R4 840/hectare for the 1996/97 season. Figure 4.14 shows the redemption of a loan over six cane harvests.

Table 4.7 Calculation of small cane grower bench mark loan level for the 1996/97 season

Harvest	Loan Balance Rand	Tons Cut	Gross Y /ton suc Rand	Redempt Rand	VAT /ton suc Rand	Sucrose Price Rand
0	4 840.00		830.00		60.39	830.00
1	4 437.61	39.0	953.32	1 422.12	65.22	888.10
2	3 697.65	42.9	1 020.71	1 674.91	70.44	950.27
3	2 863.15	38.6	1 092.86	1 613.56	76.08	1 016.79
4	1 913.30	34.7	1 170.12	1 553.08	82.16	1 087.96
5	816.46	31.3	1 252.85	1 499.95	88.74	1 164.12
6	-0.01	28.2	1 341.44	988.49	95.83	1 245.61
7	-0.00	25.3	1 436.30	-0.01	103.50	1 332.80
Total				8 725.09		

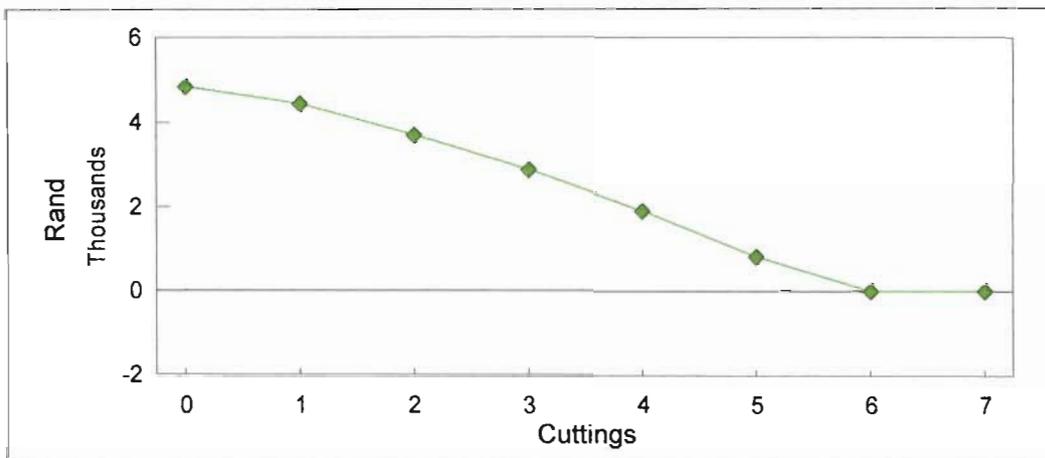


Figure 4.14 Redemption of a loan of R4840 with given parameters

Loan rates per hectare for the period 1974 to 1996 and the seasonal increases are shown in table 4.8. The average rate of increase of the FAF bench mark loan level was 11,9%. The comparable increase in the sucrose price was 12,6%.

Table 4.8 FAF bench mark loan levels and seasonal increases - 1974 to 1996

Season	Loan per hectare Rand	Percent increase
74/75	440	
75/76	550	20.00%
76/77	630	12.70%
77/78	650	3.08%
78/79	735	11.56%
79/80	810	9.26%
80/81	947	14.47%
81/82	1 059	10.58%
82/83	1 265	16.28%
83/84	1 265	0.00%
84/85	1 402	9.77%
85/86	1 550	9.55%
86/87	1 650	6.06%
87/88	1 820	9.34%
88/89	1 990	8.54%
89/90	2 155	7.66%
90/91	2 500	13.80%
91/92	3 226	22.50%
92/93	4 029	19.93%
93/94	4 810	16.24%
94/95	4 350	-10.57%
95/96	4 840	10.12%

In estimating bench mark loan levels, projections of interest rates and sucrose prices were used so that loan levels would be in the bounds of small scale growers being able to service them over the period of a loan with cash flow from their crops. In addition a conservative estimate of small scale grower yield levels, 31 tons per hectare per annum, was applied in the calculations.

The sensitivity of the bench mark loan level to a 10% change in parameters is as follows:-

Interest rate 5,5%
 Sucrose price 9,5%

Sugar cane yield 10,2%

A 10% increase in the interest rate from 16,5% to 18,15% means that the loan level would be decreased by 5,5% from R4 840 to R4 574 per hectare. An increase in the sucrose price or sugar cane yield level has an opposite effect, such increases enable a larger loan to be advanced. It will be seen that the model is most sensitive to changes in sugar cane yields.

Figure 4.15 indicates small scale growers debt repayment ability at different levels of interest with other parameters in the calculation remaining constant. At 6 harvests and the indicated interest rates a bench mark loan amount varies between R4 800 and R5 600 per hectare.

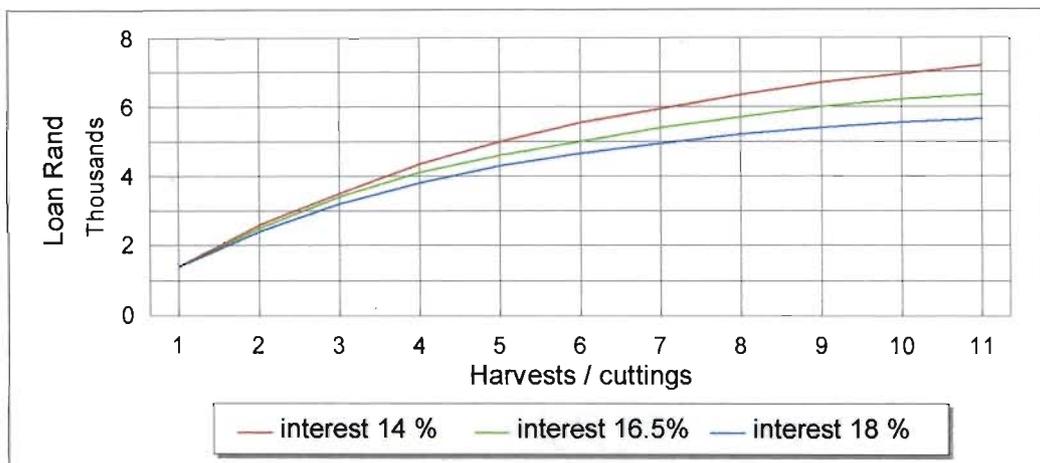


Figure 4.15 Small scale grower debt repayment ability

Not only does interest charged by FAF have an impact on FAF's ability to recover costs but it also has an impact on the amount a small scale grower can afford to optimally borrow. The interest rate is the price of capital to a borrower. This price provides, as do all prices, a signal regarding the optimal mix of borrowed funds which a farmer should use in the production process.

FAF's policy in respect of loan redemption is based on a percentage deduction of a small scale grower's sugar cane proceeds. This is a "variable repayment" system (Heady, 1952:560). This system is adapted to sporadic changes in ability to repay a loan but does not cater for crop failure.

The redemption of a loan is dependent on the productivity of an investment, this is a basic requirement of any credit programme, however in the case of FAF there is no security other than the crop if failure is encountered. The risk of such failure should therefore be built, as a cost, into the interest rate.

Risks which are not crop related but are related to a borrower eg life could be catered for by appropriate insurance measures. Currently FAF does not require small scale growers to purchase life insurance (see section 4.5).

4.12 Bad Debts

The incidence of bad debts experienced by FAF was shown in figures 4.11 and 4.12 in section 4.9.

From its inception to the end of the 1995/96 season FAF has written off a total of R9 million in irrecoverable loans and made provision for R10 million doubtful debts (total write off and provisions = R19 million) (see table 4.13).

An analysis of write offs as at the end of 1994 indicated that, of total loans advanced in individual mill areas, the highest write offs had occurred in the Noodsberg small scale grower production area, the write off amounted to 37% of the total amount advanced. The Eston area experienced a write off of 18% and the Maidstone (Tonga) area 13%. Table 4.9 ranks small scale grower areas according to write offs. Mill areas not shown in table 4.9 had not incurred more than 0.5% write offs at the stage of the analysis.

Table 4.9 Small scale grower irrecoverable loans as a percentage of the total loans advanced in each area

Mill Area	Percentage written off
Noodsberg	37%
Eston	18%
Maidstone	13%
Amatikulu	11%
Sezela	10%
Felixton	7%
Entumeni	6%
Umzimkulu	6%
Umfolozi	5%
Glendale	5%

The Noodsberg area has a long cropping cycle - approximately 22 months - and had a large number of small units relying on services being provided by the Mpumalanga Development Company (a mill development company). Many small scale growers' production levels were poor and they were unable to service interest on their loans yet alone redeem capital amounts. Loans advanced were generally in excess of FAF's benchmark loan level due to a need to apply lime to the land. As a result of a high default rate amongst Noodsberg small scale growers a closer look is taken at the area.

4.12.1 Noodsberg area : History and Irrecoverable debts

An analysis of data for Noodsberg small scale growers up to 1990 indicated a median area per grower of 1.5 hectares and a median productivity of 33 tons sugar cane per hectare. With a higher loan value per hectare than the respective FAF loan level and an extended cropping cycle the median tonnage was insufficient to service a loan (cf table 4.7, section 4.11).

Noodsberg small scale farmers who produced sugar cane prior to 1974 had larger units than growers who subsequently started production with FAF loans. Once credit became available there was a rapid decrease in the average area per grower from 1974 to 1980.

In 1989 it was identified that Noodsberg small scale growers should either use less credit or repay loans over a shorter period and reduce the subsequent interest charge (Gcumisa, 1989). An additional issue concerning loan amounts, and hence ability to repay, was incorrect land measurement (see section 3.5).

Development in the Noodsberg area was stimulated by the milling company in the early 1970's in order to increase cane supplies. It was noted in 1974 that the Noodsberg mill was undersupplied and was likely to continue to remain under capacity unless it obtained additional supplies. KwaZulu was a logical, and one of the only areas, from which to obtain sugar cane.

A great deal of land which was developed to sugar cane was originally demarcated as grazing land. With this being allotted to small scale growers to establish sugar cane, conflict arose between these growers and stock owners. Grazing of sugar cane by cattle became an increasing problem. Growers were supplied with fencing by the mill but this did not control grazing of sugar cane satisfactorily.

The milling company management input into the area increased with the eventual formation of a mill development company - Mpumalanga Development Company - in 1977. At the time growers attendance at meetings was reported as poor and operations to prevent bad debts - rescue operations - were beginning to be undertaken. Rescue operations involved an external person or organisation managing a small scale grower's farming unit to either resuscitate or replant it to recover outstanding debts. The logistics of doing this were complicated and not many such operations were undertaken. One of the main problems was crop security. It was identified as not belonging to a particular grower but to the sugar mill concerned and this meant that keeping cattle out of the land

was problematic. In addition there was no guarantee that a crop or crops would be harvested to recover the original loan plus any additional expenditure which had been incurred.

Further problems arose in the area with construction of infrastructure. Access for road making equipment was denied due to disputes over placement of roads and conservation structures. Equipment was vandalised and life threatened in a particular incident.

In 1982 small scale growers reported that they were dissatisfied with their returns from sugar cane production. The problems identified at this stage were a decrease in the sucrose price and an increase in harvesting and haulage costs. Dissatisfaction reached a peak in 1983 when a number of small scale growers ploughed their sugar cane out. Neither the Tribal Authority or the growers' association took any action nor were they capable of taking action.

In 1985 the Noodsberg mill employed small scale grower representatives from each farmers' association to address issues and liaise with growers. These employees were known as CAROS (Cane Association Representative Officers). CAROS were drawn from grower leadership and were expected to improve communication between the mill and growers (Sokhela 1988:11).

In 1985, 161 hectares of small scale grower quota land was cancelled. This accounted for 6% of the registered land in the Noodsberg area at that stage. The reasons were as follows :-

- Stoney fields 12 hectares
- Multiple quotas 20 hectares
- Frost affected areas 6 hectares
- No access roads 5 hectares
- Grazed lands 65 hectares

- Fields used for seedcane 5 hectares
- Land disputes 48 hectares

Forty percent of the cancelled quota was due to grazing and 30% due to land disputes.

In 1987 poor production in the Gcumisa area of Noodsberg was attributed to :

- poor roads
- some growers not applying correct quantities of fertilizer
- many fields too far from the main road for haulage contractors
- cane planted on steep areas

Figure 4.16 shows Noodsberg small scale grower sugar cane production history for the period 1973 to 1994. A rapid increase in sugar cane production from 1976 to 1983 and the subsequent decline are clearly indicated.

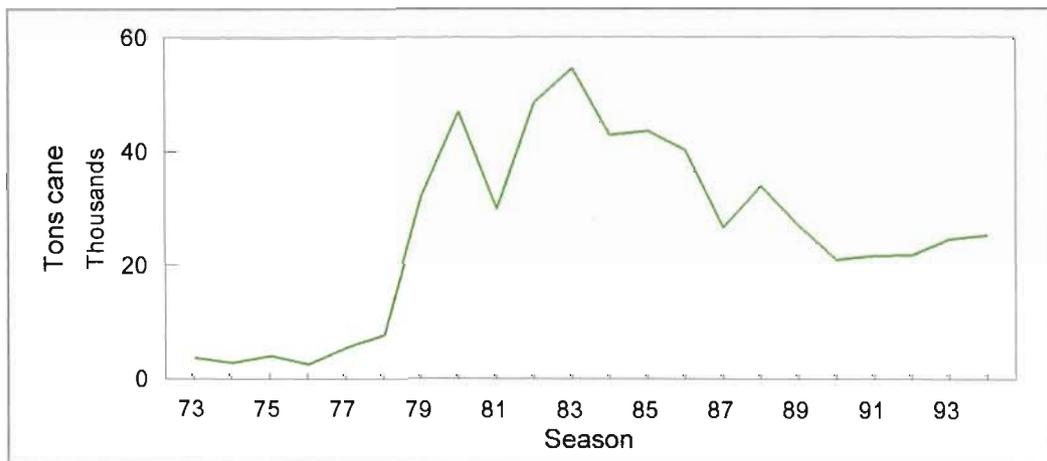


Figure 4.16 Noodsberg mill area small scale grower cane deliveries - 1973 to 1994

Following meetings in 1990 loan procedures were changed. Small scale growers were required to either make a contribution of 40% of the cost of development they wished to undertake or to agree to a loan redemption rate of 40%. In addition pressure for sugar

cane development from Mpumalanga Development Company was relaxed. It will be noted that production stabilised at the 1990 level and indicates a gradual increase.

The brief history of development in the Noodsberg area indicates underlying social, economic, communication and participation issues which gave rise to loan defaults.

4.12.2 Eston area : History and Irrecoverable debts

A survey was carried out in the Eston area during the 1992/93 season for the following reasons:-

- small scale grower sugar cane production had declined by 54% from a peak of 136 131 tons in the 1985/86 season to a low of 66 992 tons in the 1990/91 season.
- small scale growers were indicating dissatisfaction with sugar cane production.
- there was a high level of bad debts and loan arrears in the area.

The first record of sugar production by Zulu growers in the Eston area was in 1865 when 7 tons of sugar was produced at Adams Mission by growers who owned a steam sugar mill which cost £700 (Osborne, 1964:136). A further two steam mills were started in 1874 and 1876 (Osborn, 1964).

A peak of 8 655 tons of sugar cane was reached in 1935. Thereafter production declined to 889 tons sugar cane in 1952.

Figure 4.17 shows small scale grower sugar cane production in the Eston area from 1947. A rising and falling trend can be discerned where cycles would appear to coincide with assistance being given to and withdrawn from small growers in the area.

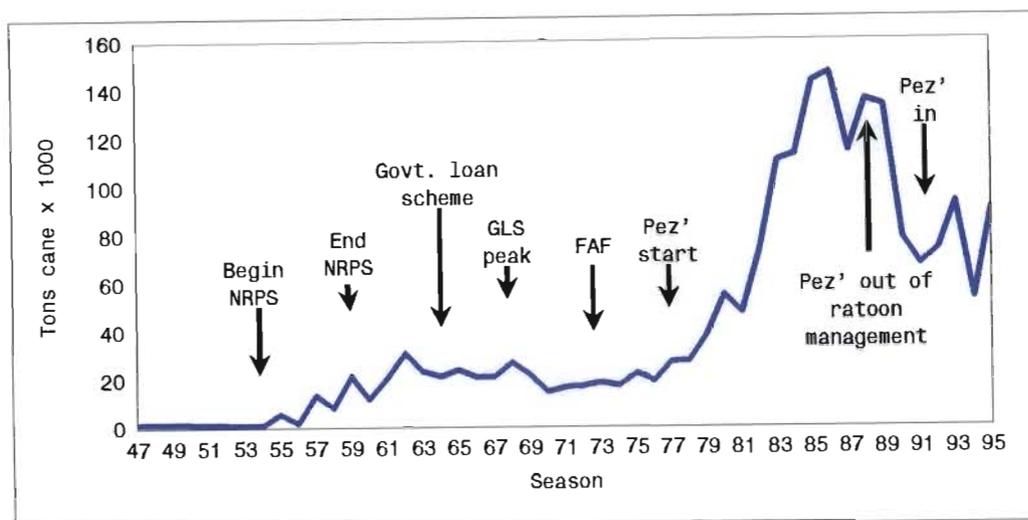


Figure 4.17 History of small scale grower development in the Eston area - 1947 to 1995

The "Native Planter Rehabilitation Scheme" (NPRS) was initiated in 1952. "Under this scheme Illovo (Eston) began to provide a greater degree of assistance and Bantu (sic) planters were given loans to establish cane lands. Illovo (Eston) ploughed and planted lands and even harvested cane on their behalf, with an eventual pay-off to the so called grower who had, in fact, made no contribution other than present his land for cultivation" (Wallis, 1976).

Production peaked in 1962 with 30 799 tons sugar cane being delivered. Thereafter production began declining. A "Government Loan Scheme" (GLS) was introduced in 1964. Loans, repayable over 4 years with a 12.5% administration fee, were made available to small scale growers.

Wallis (1976) reported that the selection of growers was "haphazard and certain lands were so neglected that no cane was even harvested from the plant crop". Production peaked in 1967/68 at 26 679 tons and once again declined.

FAF commenced advancing financial assistance to small scale growers in the area in 1973/74. Small scale contractors provided the bulk of services to growers. The rate of development was slow and availability of contractual services was identified as an obstacle. Eston mill then decided to provide such services and established the PezKwomkhono Development Company (Pez') in 1977. As may be seen from figure 4.17, production increased rapidly reaching a peak of 147 000 tons in 1985. The immediate drop in production following the peak delivery was due to a severe drought. From 1977 to 1987 Pez' provided ratoon management services to growers. As a result of reconsideration of this policy and acknowledgement that small scale growers should be more involved in their farming operations, Pez' withdrew its ratoon management services. Production can be seen to have declined following that decision, this then gave rise to Pez' reversing its decision and once again becoming actively involved in ratoon management.

It may be erroneous to conclude that the mere cessation of ratoon management by Pez' gave rise to the subsequent decline in production. The underlying reasons are probably more complex. Pez's involvement is however, a significant factor.

The cyclical nature of growth of small scale grower production in the Eston area provides some insight into the dynamics of small scale grower development. Growth would appear to have occurred with an external (to the community) stimulation and input of resources. With withdrawal of the stimulus production declined on four occasions, 1955, 1962, 1968 and 1987.

At the time of the survey there were 2 794 small scale growers with a registered area of 5 762 hectares. By 1992 FAF had advanced loans to the value of R8 million to small scale growers in the area and R587 117, or 7%, had been written off as irrecoverable. The statistics, as at the end of the 1995/96 season showed that R1.59 million had been written off of total advances of R13 million.

Of registered small scale growers in Eston in 1992 1610 had outstanding loans with FAF. A 20% random sample of these was drawn for investigation. The sampled growers had 838 hectares of registered land and, at the time of the survey, had delivered 19 642 tons of sugar cane, or 22% of the total Eston small scale grower deliveries for the 1992/93 season.

4.12.2.1 Eston Small Scale Grower - Demographics

Figure 4.18 indicates distribution of the registered growers by gender and age.

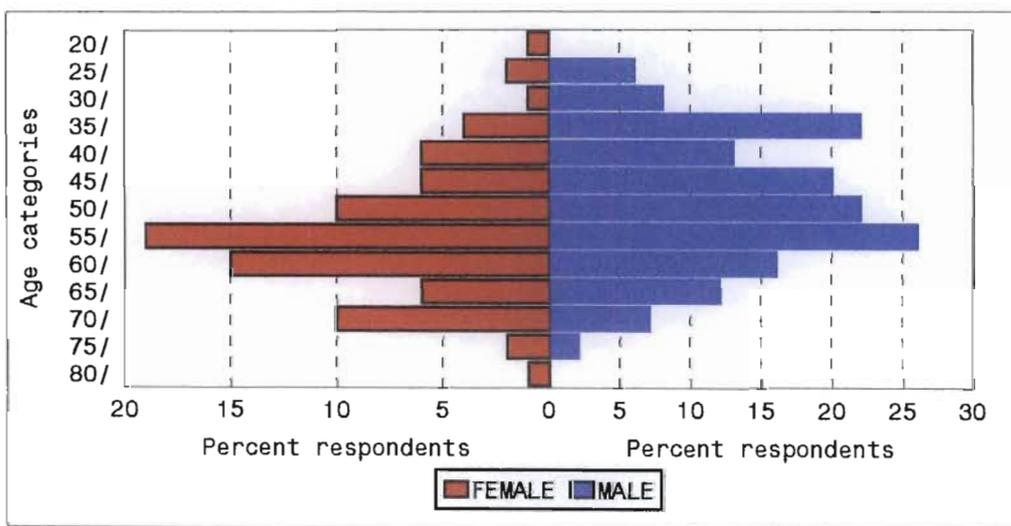


Figure 4.18 Eston small scale grower survey population distribution

The average age of male growers was 52 years while that of female growers was 57 years. There would appear to be a high number of male growers in the age group of 35 to 40 which is not the case with female growers.

With regard to the distribution of growers by gender, 188, or 59% were male and 105, or 33% were female. Eight percent of respondents did not provide information on the gender of the borrower.

At the time of the survey 40% of registered growers were present, of those not present family members responded in 41% of the interviews and a further 8% of the interviews were answered by a CAROS (see section 4.12.1). Of registered small scale growers interviewed 47% were male and 53% female.

4.12.2.2 Eston Small Scale Growers - Loan area

The total loan area of the surveyed growers was 529 hectares, or 63% of their registered land area (838 hectares). The average registered area per grower was 2.6 hectares. The average loan area per grower was 1.6 hectares.

4.12.2.3 Eston Small Scale Growers - Loan status

The growers surveyed had borrowed a total of R1 128 127 from FAF. This accounted for 14% of FAF lending in the Eston area at the time. The amount outstanding was R1 050 009, or 20% of the total amount outstanding in the area. The average amount borrowed per grower was R3 525.

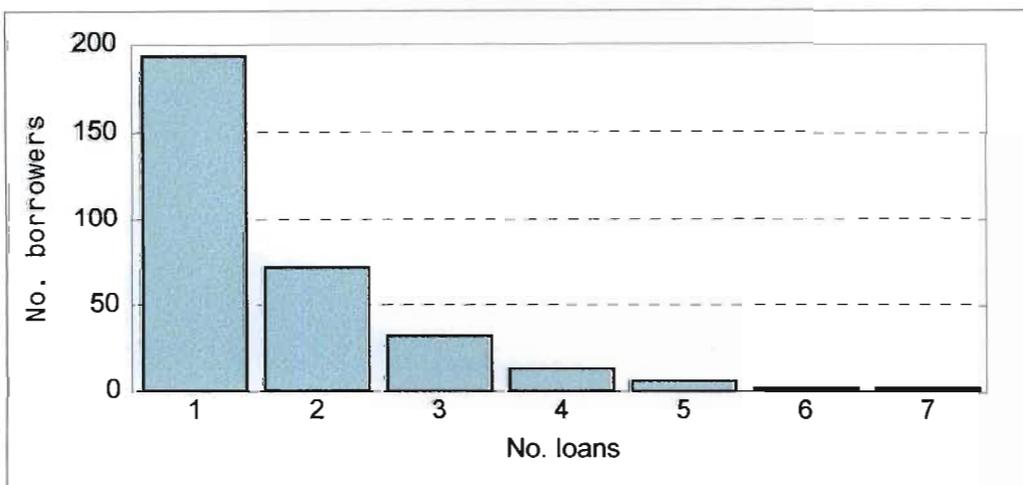


Figure 4.19 Number of loans per borrower in the Eston area

Figure 4.19 indicates that 193 growers, or 60% of the sample had been advanced at least one loan from FAF. Of these growers, 63% had not been advanced subsequent loans. This accords with the overall situation for FAF (see section 4.9). Figure 4.19 shows that 72 growers had 2 loans each and 2 growers had a total of 7 loans each.

4.12.2.4 Eston Small Scale Growers - Cane production

Table 4.10 indicates the average and median production per hectare of the sampled growers for the 1991/92 and 1992/93 seasons. The calculation of the average and median production levels is based on the loan area per grower and not the registered area. If the registered area is used in the calculation production levels would be $\pm 40\%$ less. It is assumed that the actual area under sugar cane in most cases would equate to the loan area. The average tonnage is greater than that indicated for small scale growers as a whole (see section 3.6.2). Errors in measurement cannot be ruled out (see section 3.5).

Table 4.10 Average and median tons cane cut per hectare

Season	Average Tons Cane/Hectare Cut	Median Tons Cane/Hectare Cut
1991/92	61	49.5
1992/93	60	48.0

The cutting cycle was found to be approximately 13 to 14 months. There was a large variability in the length of time between cuts with a number of growers cutting below 12 months. Intervals greater than the average were also indicated.

4.12.2.5 Eston Small Scale Growers - Ratoon Management

Of the respondents, 80% indicated that Pez' carried out ratoon management on their behalf. Only 7% indicated that they carried out ratoon management themselves.

4.12.2.6 Eston Small Scale Growers - Condition of Cane

Table 4.11 provides a summary of the condition of borrowers' cane, as assessed by interviewers.

Table 4.11 Condition of Eston small scale borrowers sugar cane

Condition	% Borrowers' Cane
Good	23%
Satisfactory	40%
Poor	12%
No cane	16%
Recently cut	4%
Unknown	5%
TOTAL	100%

It should be noted that 7% of borrowers were recorded as bad debts and had no sugar cane. It may be assumed that growers indicated as having poor cane (12%) and no cane (16%) would have difficulty in repaying their loans. These two categories totalled 28% of the growers. Of these 7% had already been recorded as loan defaulters which meant that an additional 21% could be assumed to be high risk in terms of loan recoverability.

Figure 4.20 indicates results of an assessment of the condition of the crop according to its age (ratoon). It would appear that a higher percentage of older ratoons than younger ratoons was in a poor condition. Furthermore a major portion of the crop was adjudged to be only satisfactory.

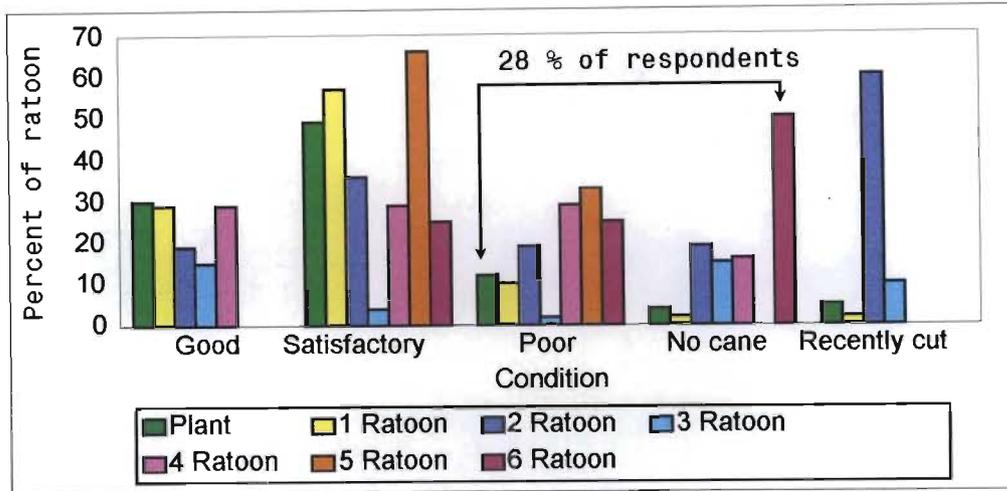


Figure 4.20 Eston small scale growers condition of surveyed crop

4.12.2.7 Eston Small Scale Growers - Months since last delivery

Figure 4.21 indicates the number of months since respondents either delivered cane or if they had a new loan and had not yet delivered, the number of months since planting. It will be seen that 36% or 115 growers delivered sugar cane within the previous 6 months.

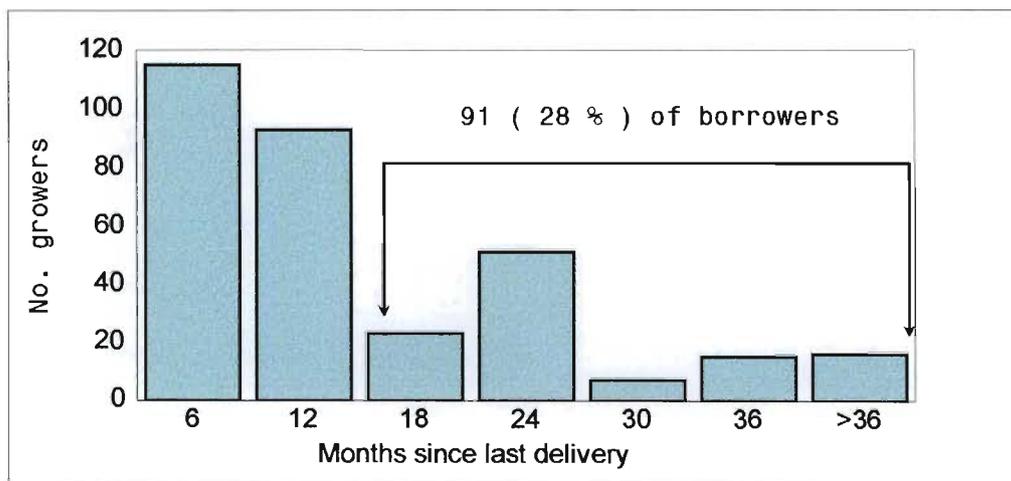


Figure 4.21 Eston small scale growers months since last sugar cane delivery

The figure indicates that 91 growers or 28% of the respondents had not delivered cane for more than 18 months. Of these 7% were loan defaulters which indicates, once again, that

the remaining 21% could be considered high risk. This figure supports the information presented in respect of the condition of the crop shown in figure 4.20.

4.12.2.8 Eston Small Scale Growers - Age of Loan

Figure 4.22 indicates that 18.6% (60) of the sampled loans were advanced during and earlier than 1987. These loans were therefore older than 6 years. On average small scale grower loans from FAF are repaid within a maximum of 6 years. The recoverability of loans older than this are considered to be doubtful. The greater portion of outstanding loans were less than 4 years old.

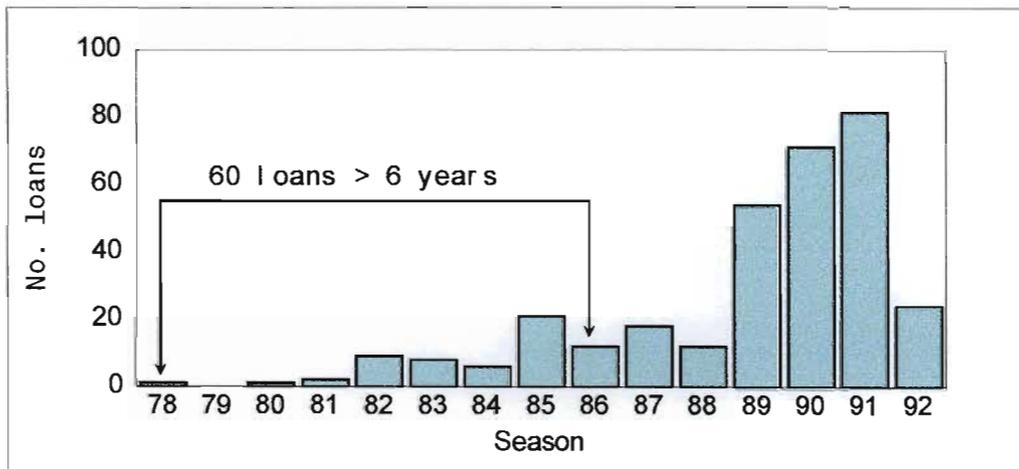


Figure 4.22 Eston small scale grower outstanding loans by date of loan

4.12.2.9 Eston Small Scale Growers - Arrears and Bad Debts

Figure 4.23 indicates that 33% of sampled growers' loans were greater than 80% in arrears in repayment. FAF considers that loans which are more than 20% in arrears are cause for concern.

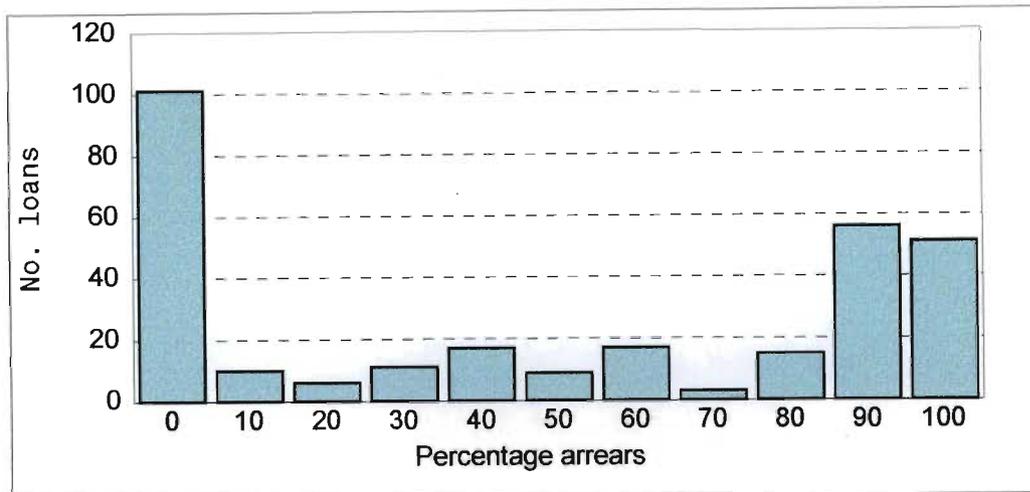


Figure 4.23 Eston small scale growers arrears status

4.12.2.10 Eston Small Scale Growers - Summary

From data presented it will be noted that 28% of the sampled growers had poor or no cane and, of these, 7% were recorded as loan defaulters. The survey provided an indication of measurable attributes of small scale borrowers and their sugar cane crop. It did not provide any qualitative data which could suggest reasons for the situation which presented itself.

The history of Eston small scale grower deliveries indicated an increase when an external stimulus was applied. This is similar to the situation found in the Noodsberg area. On withdrawal or closing of a programme total yields declined before a new initiative was undertaken. The latter part of the delivery cycle has not shown a recovery.

In analyses of small scale grower production in all mill areas the increase in tonnage delivered has been associated with registration of new small scale growers and establishment of their land to sugar cane. If increases in land area, increases in number of growers and increases in total yield of sugar cane are standardised it is found that trends in all three instances increase at very similar rates. It will be seen from figure 4.24

that the average registered area per small scale grower decreased over the period 1973 to 1994. The average tonnage delivered per small scale grower increased to 1985 and then decreased from then onwards. The reversal in the average area per grower from 1991 onwards is as a result of amalgamation of all small scale grower records - black small scale growers not being recorded separately from other groups.

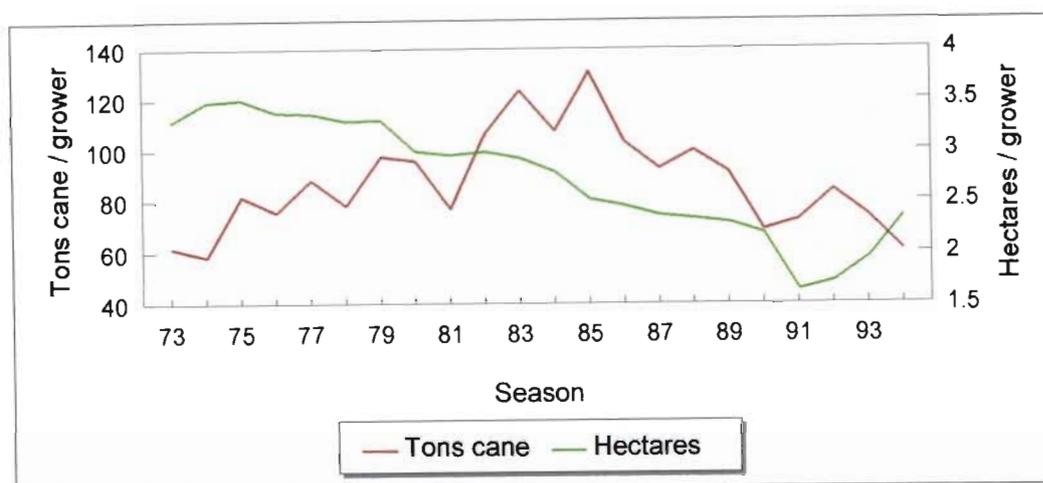


Figure 4.24 Eston small scale grower average tons cane per grower delivering and average registered area per grower

Referring to section 3.6 the Eston area does not indicate a different trend from the rest of the sugar industry in respect of large numbers of small units having been brought into production. In the case of Eston 80% of small scale growers delivered 40% of the small scale grower tonnage. The average registered area per grower has declined from just over 3 hectares to under 2 hectares.

In 1974 it was recorded that "the reasons for poor cane production in the Illovo (Eston) mill area may be ascribed to poor farming practices, lack of agricultural knowledge, the absence of men in the labour centres (leaving farming to the women) and to the fact that cane farming does not provide the main income of the family" (Wallis, 1974).

From 1974 to 1978 small scale contractors and one commercial contractor, provided services in the Eston area. PezKwomkhono Development Company commenced operating in 1977. In 1980 it considered that an increase in sugar cane yields would be obtained by increasing the area replanted each season to the industry norm of 10-12% of the area as well as by offering "better supervision and management under PezKwomkhono" (Thompson, 1983).

In 1979 the Illovo (Eston) Central Committee - a small scale growers committee formed from representatives of different farmers associations - indicated that they were not happy with the high cost of development, especially in respect of weed control and fertilizer costs. The Eston small scale farmers association structures were well established, active and representative of small scale growers views at the time.

The question of accurate land measurement also arose in the area at about this time. Pez' commenced land measurement to avoid problems which arose with errors.

Due to FAF's 1979 policy of not providing weed control loans to small scale growers who had less than 2 hectares of land, weed control became an issue as small scale growers cultivating small units were not applying adequate weed control measures. To ensure that fertilizer was applied to small scale grower sugar cane Pez' introduced a R2.00/ton deduction on growers' proceeds for purchase of fertilizer.

In 1983 the first area of sugar cane affected by tribal "faction fighting" was destroyed by fire. 27 hectares of cane were lost and contractors could not harvest cane or ratoon manage it. Non recovery of loans arose from this event as well as from cattle grazing sugar cane lands.

Pez's objective was "to produce as much cane as the available resources allow and to do this within the policy of as much self help by the growers as is practically possible" (Thompson, 1983). All harvesting and infield haulage of sugar cane was carried out by

small scale contractors. Small scale contractors did about 33% of the land preparation and Pez' did approximately 17% of the ratoon management.

With the introduction of the FAF contribution of R50 per hectare in 1983 growers stated that they did not understand the necessity for it, that it was contrary to the reason for the establishment of FAF as it went against the notion of "aid" and if FAF persisted then they did not want its help. Additional issues which arose at the time were that small scale growers did not believe that the KwaZulu Department of Agriculture extension officers were responsible or conscientious in carrying out their duties and they requested that their own training centre be established.

In 1984, after discussions the R50 contribution was accepted with the small scale grower chairman stating that "most of the growers know why they have to pay the R50/hectare contribution and it was a decision made by themselves" (Nzimande, 1984). This decision was contrary to that of the KwaZulu Cane Growers Association (KZCGA) Central Committee and caused dissension amongst growers with special meetings being held by the Chairman of KZCGA and small scale growers in the Eston area.

Pez' withdrew from providing ratoon management services in 1985 as it was felt that small scale growers were in a position to do it themselves. Pez' continued providing cane establishment services.

Growers discussed the use of "borrowed land and quotas" and noted that it led to problems of "piracy" (production of sugar cane without a quota) and disputes about the sharing of proceeds between the cane producer and owner of the land. If such arrangements did occur they believed it should be done with the involvement of the Tribal Nkosi (Chief) or Induna. They felt however that such transactions should not be encouraged (Nzimande, 1984).

In 1986, as a result of continuing problems with ratoon management, it was agreed that farmers associations should be involved in checking that growers carried out their fertilizer and weed control operations correctly. Pez' re-introduced ratoon management services in 1987 as the total yield had declined due to poor ratoon management.

The CAROS system was introduced in 1988 (see section 4.12.1). It was agreed that they would verify the use of FAF loans by small scale growers.

Maintenance of roads, KwaZulu Department of Agriculture sugar cane quota administration and lack of consensus with the KZCGA continued as problematic through to 1989.

Production continued declining with premature burning of sugar cane being problematic. Small scale growers accused contractors, who they stated wanted to harvest cane whilst contractors indicated that it was growers who required their sugar cane proceeds. It was agreed that, to prevent premature burning, sugar cane proceeds from burnt crops should only be paid at the end of a season to discourage the practice.

The reasons for poor production were given as use of poor seedcane, poor fertilizer, non resident growers and poor land preparation. As in the case of Noodsberg poor sugar cane production and the increasing level of bad debts had many underlying reasons. The Noodsberg and Eston bad debt case studies provide a compendium of development issues.

4.13 Reasons for Irrecoverable Loans

Arrears investigations are carried out on an annual basis by FAF. For a loan to be defined as being in arrears it must meet the following criteria -

- more than 20% in arrears with repayment

- no delivery within 24 months
- older than 6 years

For the 1995/96 season 7 350 loans, in an amount of R26.8 million, were investigated. Of this amount R1,4 million was identified as irrecoverable. Table 4.12, indicates reasons for loans being written off as irrecoverable in the 1992/93 and 1994/95 seasons.

Table 4.12 Reasons for loan default

Reason	Season Percentage	
	1992/93	1994/95
Drought	5%	54%
Grower neglect	27%	14%
Social unrest	26%	12%
Deceased grower	20%	11%
Grazed by cattle	11%	3%
Land dispute	3%	3%
Poor crop establishment	1%	1%
Delivery on wrong grower no.	0%	25
No reason	7%	-%
Total	100%	100%

It will be seen that losses attributed to drought increased from 5% to 54% between 1992/93 and 1994/95. Although drought did have a significant impact on crop production this category probably disguises other contributing factors.

If losses due to drought are set aside from the data, grower neglect, social unrest and death of a grower are the most important reasons for non recovery of loans in both the 1992/93 and 1994/95 seasons. A slight increase in the percentage attributed to grower neglect occurred from 1992/93 to 1994/95 with this category increasing to 30%. Another two categories record increases in the adjusted comparison. These were land disputes increasing to 7% and delivery of sugar cane using the wrong grower number increasing

to 4%. Both these categories more or less doubling in proportional terms. The phenomenon of repayment avoidance is a serious one. It is one which the banking sector is having to contend with in respect of housing bond defaults (Business Day, 1996b) (see section 4.9.2).

Although the category is titled "wrong grower number" this once again disguises underlying issues. Since deregulation of the sugar industry in 1990 and the opening up of the industry to "free entry", small scale growers have been able to obtain multiple grower registrations per household and it has been found that, in a number of instances, multiple registrations are in respect of the same piece of land. This has enabled sugar cane to be delivered on a grower number which is not encumbered with a loan deduction.

The procedure for registration of small scale growers has been found to be lax with no adequate checks being made to prevent the type of avoidance referred to above (see section 3.5). A system whereby land units will be identified with the use of a geo-positioning system (GPS) is being investigated to ensure that land units are only recorded against one grower number. This however will not prevent fraud or unscrupulousness in avoiding repayment. This problem is one of ethics and integrity. It has been reported that a small loan scheme run in the Amatikulu area by a small scale growers' Advisory Committee has experienced a high rate of default and avoidance would appear to be a major factor (Wiseman, 1996).

The main categories of default, grower neglect, social unrest and deceased growers should be considered in relation to the situation indicated in case studies of Noodsberg and Eston. Questions regarding correct selection of borrowers in respect of their age, prevailing social conditions (land disputes could be included in this category of socially related problems) and growers involvement in their farming operations and decision making processes are raised (*cf* section 2.7).

It would appear from the two analyses that development, in the initial period, progressed at a rapid rate which may have prejudiced borrower selection - the refusal to advance loans as a result of an applicant being found to be uncreditworthy was uncommon. Loan application approval was more or less 100%. The respective development companies provided all services and hence grower involvement did not have to be large. Once services were withdrawn grower neglect could have been the consequence as indicated by the level of loan defaulters. Borrowers in the Eston area were also shown to be elderly which would have given rise to an increased risk of loss through death of borrower.

The problem of grazing of sugar cane by cattle suggests an underlying problem in respect of acceptability and ownership by the respective communities of the development process. It is accepted that on occasion livestock can be problematic but on a large scale, with inability of farmers associations and Tribal Authorities to take action, it would suggest a far larger issue which required resolving by the communities themselves. External pressure for development placed on communities probably created tensions which could not be easily resolved (see section 2.7 regarding participation).

The economics of sugar cane production would also appear to have arisen as a problem. Small scale growers indicated that they were dissatisfied with their returns as well as the cost of inputs. These issues were not addressed directly excepting via extension services where growers were continuously exhorted to improve their productivity. This obviously is a component of the problem of viability but may not necessarily be the whole problem.

4.14 Institutional Viability

In nominal terms FAF equity has increased from the initial R5 million and subsequent R1 million grant received from SASA, to R26.5 million as at the end of the 1995/96 season. From table 4.13 it will be seen that the total capital employed per season has risen from R5.4 million to R63 million. The capital is made up of retained surpluses and borrowed funds.

FAF's administration costs between 1974/75 and 1990/91 were met directly by SASA. These figures were unobtainable as they were included in SASA's total administration costs and could not be separated from these. The average annual net return on capital employed was 4.33%. The minimum was -5.9% and maximum 9.1%.

Sustainability of an organisation such as FAF is achieved if it is both financially and economically viable. Financial viability is achieved if a financial institution can at least equalise its costs per unit of money lent with the price (interest rate) that it charges its borrowers. Economic viability of an organisation is defined as its ability to meet the economic cost of funds (opportunity cost) used for the provision of credit and other operations with income it generates from lending (Khandker et al, 1995:36).

Yaron (1992:15) suggested that the measurement of an institution's sustainability was encompassed in the subsidy dependence index (SDI) as follows :-

$$SDI = \frac{S}{LP * n}$$

where :-

$$S = A(m-c) + [(E*m)-P] + K$$

where :-

S = annual subsidy received (Rands)

A = concessional borrowed funds outstanding (annual average)

m = interest rate the organisation would pay on the financial market

c = average annual concessional interest rate actually paid

E = average annual equity

P = reported annual surplus (profit)

K = sum of all subsidies received

LP = average annual outstanding loan portfolio

n = on-lending interest rate

Table 4.13 FAF total capital employed, operation expenses, income, net surplus, real rate of return required and real capital increase/decrease per season

Season	Total Cap employed	Bad debt & Provisions	Admin. Expenses	Financial costs	Capital grants	Administration subsidy	Operating income interest & other	Net surplus	Net return on Cap (including grants)	Opportunity cost of Cap * (see note)	Estimated return from alternative investment	Incr./(Decr.) in Cap. compared to alt. invest.
74/75	R5 429 371		R140 321				R425 434	R285 113	5.25%	5.00%	R271 469	R13 644
75/76	R5 269 788		R37 952		(R416 298)	R5 490	R408 862	R376 400	7.14%	5.00%	R263 489	R112 911
76/77	R5 763 481		R41 232				R382 081	R340 849	5.91%	5.00%	R288 174	R52 675
77/78	R5 946 647		R4 300				R354 210	R349 910	5.88%	5.00%	R297 332	R52 578
78/79	R6 315 062		R22 507				R316 463	R293 956	4.65%	5.00%	R315 753	(R21 797)
79/80	R7 860 674	R32 047	R215 752		R1 000 000		R369 250	R121 451	1.55%	5.00%	R393 034	(R271 583)
80/81	R8 213 319		R11 665	R10 984			R406 800	R384 151	4.68%	10.00%	R821 332	(R437 181)
81/82	R10 960 078	R19 885	R13 736	R106 553			R547 835	R407 661	3.72%	15.00%	R1 644 012	(R1 236 351)
82/83	R13 506 507	R43 863	R19 117	R199 789			R764 593	R501 824	3.72%	15.00%	R2 025 976	(R1 524 152)
83/84	R14 007 582	R54 825	R24 153	R739 193			R1 364 929	R546 758	3.90%	15.00%	R2 101 137	(R1 554 379)
84/85	R14 971 210		R27 104	R1 002 832			R1 840 948	R811 012	5.42%	8.24%	R1 233 628	(R422 616)
85/86	R17 256 965		R32 890	R817 298			R1 828 729	R978 541	5.67%	9.60%	R1 656 669	(R678 128)
86/87	R16 341 912	R58 066	R146 946	R739 636			R1 686 863	R742 215	4.54%	8.87%	R1 449 528	(R707 313)
87/88	R17 084 127	R137 040	R105 099	R558 906			R1 721 835	R920 790	5.39%	7.55%	R1 289 852	(R369 062)
88/89	R18 272 180	R413 735	R42 888	R735 208			R2 084 094	R892 263	4.88%	9.77%	R1 785 192	(R892 929)
89/90	R18 715 012	R1 755 558	R78 005	R902 390			R2 553 785	(R182 168)	-0.97%	14.78%	R2 766 079	(R2 948 247)
90/91	R17 842 654	R178 363	R234 426	R934 150			R2 974 581	R1 627 642	9.12%	17.47%	R3 117 112	(R1 489 470)
91/92	R28 710 756	R1 728 164	R73 090	R1 179 543		R1 805 658	R3 683 296	R2 508 157	8.74%	16.05%	R4 608 076	(R2 099 919)
92/93	R46 916 000	R2 704 000	R2 296 000	R3 123 104		R2 920 000	R5 908 000	R704 896	1.50%	14.02%	R6 577 623	(R5 872 727)
93/94	R60 561 000	R8 455 000	R2 359 000	R4 280 000		R4 789 000	R6 726 000	(R3 579 000)	-5.91%	11.34%	R6 867 617	(R10 446 617)
94/95	R62 714 383	R2 106 000	R2 868 929	R6 461 506	R4 773 000	R4 000 000	R9 768 753	R2 322 318	3.72%	10.87%	R6 817 053	(R4 484 735)
95/96	R63 856 880	R1 517 694	R2 712 674	R5 815 259		R4 000 000	R10 392 528	R4 346 901	6.81%	11.97%	R7 643 669	(R3 296 768)
Total		R19 204 240			R5 356 702	R17 520 148		R15 711 640			R54 233 805	(R38 522 165)
Average									4.33%	10.25%		

Source : FAF Annual Reports 1974 to 1996

* Note Opportunity cost of capital

1974 to 1984 Bankers Acceptance rate

1984 to 1996 FAF return on retention savings

The SDI was applied to FAF with results obtained for the period 1991/92 to 1995/96 being indicated in table 4.14. The SDI indicates by how much FAF's on lending interest rate was required to be increased to have made its operation sustainable in respect of the financial years indicated. The SDI only takes account of adjustments in the interest rate, all other things being equal. Adjustments in administration costs, improved loan recovery and lower levels of borrowing can lead to changes which impact the interest rate.

Table 4.14 Rate of Interest which FAF should have charged to have been sustainable

Season	FAF actual interest	SDI	FAF unsubsidised interest	Total operating cost estimated interest rate
91/92	13.50%	98.09%	29.71%	57.81%
92/93	11.00%	142.47%	31.52%	50.73%
93/94	12.50%	340.39%	48.44%	62.71%
94/95	14.50%	73.20%	25.11%	36.78%
95/96	15.50%	57.61%	24.43%	34.44%

Two levels of unsubsidised interest rates are indicated in the table. At the first level FAF has an administration structure which it finances. It could not however operate without a further administration structure at each sugar mill. The second level is financed by the respective sugar mills. Staff at mill level, although reporting to mill managements perform FAF administrative tasks.

The "FAF unsubsidised interest" rate shown in table 4.14 indicates the interest rate which FAF should have charged to meet its first level administration costs. The column headed "total operating cost estimated interest rate" indicates the interest charge which should have been raised to meet both the first and second level operating costs.

It will be seen from figure 4.25 that the trend is an improving one. This is as a result of FAF's policy of increasing its lending rates to more market related levels. The required, or unsubsidised rates are above those of the Land Bank and the commercial bank prime interest rates.

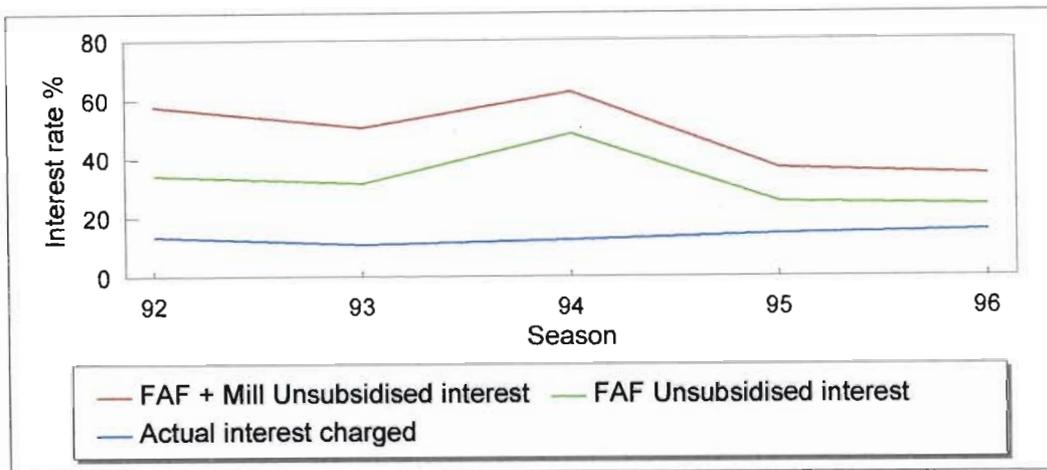


Figure 4.25 Comparison of FAF's actual interest rate with the rates required to recover costs

The above results indicate that FAF is probably not sustainable under the current financing structure. Loan interest rates are required to be increased. Raising interest rates will have an impact on small scale grower cash flows (see chapter 5). Grower viability is an important factor in the use of credit.

It will be seen that for FAF to cover its total costs including administration costs (these are only obtainable for the seasons 1990/91 to 1995/96) an interest rate of between 34% and 63% was required if grant funding was not available. The maximum interest rate in terms of the Usury Act (Act 73 of 1968) for amounts not exceeding R6 000 in 1996 was 31%. For amounts from R6 000 to R500 000 the maximum interest rate was 28% (Financial Mail, November 1996:126).

As a result of FAF not charging interest rates related to expenses it was incurring, the real value of FAF's capital has been eroded by R38.5 million (see the real decrease of FAF capital shown in table 4.13). If FAF had received an amount equal to its opportunity return (see table 4.13 for opportunity cost of capital) its capital base should have increased by R54.2 million from R5.4 million, its original capital, to R59.6 million. Inclusive of the grants of R5.4 million which it received, FAF's capital base should have been approximately R65 million. It, however, experienced a negative real rate of return eroding its capital by a notional amount of R38.5 million, vide the last two columns of table 4.13 (also see section 2.10.1.2).

The R38.5 million by which FAF capital has been eroded may be viewed as a net transfer to small scale growers. This is graphically illustrated in figure 4.26. The figure is based on data shown in table 4.13. With growth in FAF's operations and interest rates below the opportunity cost of capital greater transfers have taken place during the 1990's than previous years.

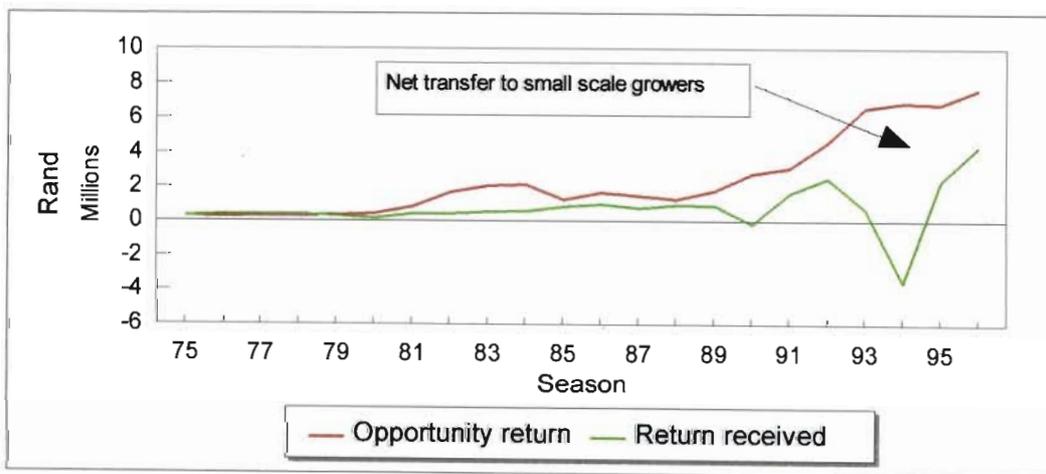


Figure 4.26 Actual rate of return on FAF capital employed compared to FAF's opportunity rate of return

For FAF to be a sustainable organisation the interest rate it charges on loans should be increased to levels at which its costs of operating are recovered.

4.15 Summary

Chapter 4 detailed the establishment of FAF, its funding, organisational structure and administrative issues. It highlighted a number of critical issues with regard to FAF's provision of credit to small scale growers.

Access to funds for on lending to small scale growers would not appear to have been an impediment to providing credit to small scale growers. It should, however, be borne in mind that funding was obtained on the basis of its repayment being guaranteed by the South African Sugar Association. As far as funders in the broader financial market were concerned the provision of loans was a risk free transaction. The risk resided with SASA and hence, at the end of the day, with individual milling companies and sugar cane growers, both large and small. SASA funds the costs of FAF's administration by way of an annual grant.

The organisation of FAF is based on a standing committee reporting to the Council of the South African Sugar Association. The committee, comprised of grower and miller representatives, establishes policy and approves loan terms and procedures.

FAF's administration operates through Mill Group Local Committees (MGLC's), established at each sugar mill. These committees are comprised of grower and miller representatives. It was shown that the miller component encompasses more power than that of growers as a result of the provision of administrative and field services. A number of milling companies have established mill development companies to provide services to small scale growers which also leads to mills having a more dominant role in MGLC's. The structure of MGLC's has striven to encourage grower involvement. This however has not been achieved and consequently criticism has been expressed by small scale growers.

FAF established loans committees to increase small scale grower involvement in the loan approval process and to improve small scale borrower selection. This structure has been in place since 1993, it may however be too early to determine whether the system will lead to improved borrower selection, monitoring and loan recovery.

FAF's volume of business in both loans and retention savings has increased from season to season. The outstanding loan book as at the end of 1995 was 12 times that recorded at the end of 1987. Administration costs have also increased significantly. It was noted that, as a result of the MGLC structure, FAF does not incur costs of mill area administration and field services. These costs are borne by the respective mills.

An analysis of monthly transactions administered by FAF gave an insight into small scale grower activities. An indication that growers did not carry out sugar cane planting at an optimum time was highlighted. Sugar cane planting operations would appear to be dependent on the availability of contractors once they had completed cane harvesting and transporting operations.

FAF has attempted to increase small scale grower involvement or commitment to sugar cane production by introducing a policy whereby growers are required to make a monetary contribution toward their own development. The amount is small - currently 1% of a loan - but has created controversy. The principle accords with good practice in the provision of credit but, in FAF's case, does not appear to be contributing to rational utilisation of credit.

Inability to accurately identify small scale grower land units and the inability to take legal action in cases of loan default were identified as serious shortcomings in the recovery of loans. The issue of the breakdown of the legal system is of concern. It should be noted that legal action is contemplated in very few instances due primarily to its expense.

The amount FAF advances to a small scale grower is based on a grower's ability to service a loan. FAF has developed a cash flow model to establish a "benchmark loan level".

Following subsidised interest rates loan recoverability is a major area of concern. Two mill areas, Noodsberg and Eston, were considered in identifying issues leading to loan defaults. Other than drought related losses grower neglect of a cane crop, social unrest which includes land disputes and borrower death appear to be the main causes of default.

Grower neglect probably encompasses a wide classification of issues but the following would appear to have been highlighted by the analysis :-

- non involvement of growers
- pressurised (directed) development
- economic issues (poor returns to sugar cane production)
- lack of knowledge

When considering credit providing organisations the interest rate frequently assumes prime position. FAF charged a real negative rate of interest from 1973 to 1992. The consequence of this is that there has been, in real terms, a transfer of R38 million to the small scale grower sector during the term of FAF's operation.

Resulting from a calculation of the subsidy dependence index in respect of FAF it is suggested that it should be charging an interest rate of between 34% and 63% if grant funding for its administration is not taken into account. These interest rates take mill area administration and field services costs, which FAF does not currently bear, into account. The reliance of FAF on grant funding for its administration is a critical issue in its sustainability.

5. THE ECONOMICS OF SMALL SCALE GROWER SUGAR CANE PRODUCTION

5.1 Introduction

The previous chapter described the basic operation of FAF and resulting problems with its current policy and procedures which together with analysis presented in chapter 3 now leads to a consideration of the economic viability of small scale growers themselves. The analysis provides possible explanations of small scale grower reactions to interventions in their development.

Surveys of small scale grower production costs are presented indicating low margins under current production systems. Small scale grower margins are compared to large commercial grower margins.

A review of technologies small scale growers use in respect of weed control, fertilization and sugar cane harvesting and transportation is undertaken. It is shown that inefficiencies exist which require addressing to improve small scale grower returns. Finally models of different small scale grower production systems are presented which indicate that small scale grower productivity can be increased using existing technology.

5.2 Small Scale Grower Income and Production Costs

Surveys of small scale grower average production costs in respect of different mill areas were undertaken over a number of seasons. The values have not been deflated. Results for the 1988/89 to 1991/92 seasons, the 1992/93 seasons for which limited information is available, and the 1995/96 season and projected 1996/97 season are analysed. Surveys were not carried out in respect of the 1993/94 and 1994/95 seasons. Although this may be considered a shortcoming in the data, trends may nevertheless be observed from those presented.

It should be recorded that the original information was in respect of averages for the mill areas concerned. Data from small scale growers themselves were not available. The data are a compilation of information gathered from mill extension staff. The data should however provide a fair indication of the economics of small scale grower production.

Table 5.1 provides information on average costs of different operations and services required by small scale growers. As stated, information for the 1992/93 season is limited being only available from one mill area. Transport, heavy road vehicle, costs are provided over various distances. Most small scale growers are required to use heavy road vehicles to transport their sugar cane to mills from loading zones to which sugar cane is hauled by tractor/trailer combinations from fields. As a result of the latter, harvesting and infield haulage costs are combined. Infield haulage is from field to zone where sugar cane is transhipped (loaded) onto heavy road vehicles. Due to the system of transporting and loading cane most growers require the use of chains to put sugar cane into 3 to 5 ton bundles. These chains are hired from mills.

Table 5.1 Average small scale grower sugar cane production costs - 1988 to 1996

Season	Harvest Rand	Infield Rand	Harv/ infield Rand	Transport Rand/ton						Tran- ship Rand	Chains Rand	Ret fert. Rand	Ret. weed Rand	Ret. total Rand	Loan red Rand	Levies Rand	
				10 km Rand	15 km Rand	20 km Rand	25 km Rand	30 km Rand	35 km Rand								40 km Rand
88/89	5.00	1.60	8.82	3.85	4.70	5.50	6.34	7.46	8.73	9.55	1.89	0.14	5.57	2.96	8.16	9.75	0.2R1
89/90	6.00	5.25	9.08	5.37	6.75	8.69	9.47	11.08	12.01	12.99	2.59	0.00	6.85	4.00	11.63	12.59	0.3R1
90/91	7.21	3.75	10.93	6.75	7.90	9.43	10.58	12.16	14.15	14.98	2.40	0.00	8.46	4.78	13.46	14.42	0.5R5
91/92	5.88	5.14	12.67	8.41	9.65	10.64	12.10	13.54	15.56	15.61	3.02	0.35	9.66	5.58	15.64	15.97	0.7R2
92/93	n/a	n/a	16.97	n/a	n/a	n/a	11.33	n/a	n/a	n/a	4.40	n/a	10.93	7.61	18.54	25.05	0.4R8
95/96	11.38	12.77	20.08	12.02	11.99	14.59	17.05	19.04	22.62	24.45	4.85	0.40	14.47	10.19	24.71	25.12	1.67
96/97	11.87	14.50	21.18	12.49	13.33	16.12	18.59	20.94	24.80	26.35	5.01	0.48	15.30	10.61	25.78	25.47	2.26

Fertilizer and weeding costs are ascertained from amounts which small scale growers deposit in their FAF retention (ret.) savings accounts. As recorded elsewhere virtually 100% of these funds are used for the operations concerned. The loan redemption amount

is the amount repaid on a FAF loan. Levies include various membership fees in respect of cane growers associations as well as in later years costs of cane testing services which, prior to deregulation of the sugar industry, were subsidised.

In a survey undertaken in 1981 88% of small scale growers were located within 36 kilometres of a sugar mill, 44% of them were within 16 kilometres. The areas where small scale growers produce sugar cane have not changed significantly since that date. Information provided in that survey is considered useful in the current analysis. Table 5.2 indicates methods of transport used by small scale growers to transport sugar cane over various distances. Seventy two percent of small scale growers used heavy road vehicles which transported 68% of their sugar cane.

Table 5.2 Small scale grower distribution by distance from a sugar mill and mode of transport used to haul sugar cane from loading zone to a mill - 1981

Distance	Rail		HRV		Lorry		Tractor		Total	
	Growers No.	Cane Tons	Growers No.	Cane Tons	Growers No.	Cane Tons	Growers No.	Cane Tons	Growers No.	Cane Tons
1-5 kms	1.34%	1.77%	2.28%	1.19%	0.02%	0.03%	0.18%	0.32%	3.83%	3.32%
6-10 kms	0.05%	0.05%	11.15%	7.33%	1.83%	1.36%	4.06%	4.18%	17.09%	12.92%
11-15 kms	1.44%	3.57%	11.75%	14.76%	1.92%	1.17%	7.77%	8.06%	22.87%	27.55%
16-20 kms	0.48%	0.95%	9.61%	7.14%	0.22%	0.25%	1.07%	1.12%	11.38%	9.45%
21-25 kms	1.18%	1.64%	12.25%	11.77%	0.17%	0.44%	1.11%	1.04%	14.71%	14.89%
26-30 kms	1.00%	0.97%	12.42%	11.57%	0.21%	0.20%	1.26%	1.37%	14.88%	14.12%
31-35 kms	1.07%	1.62%	5.18%	4.37%	0.17%	0.16%	0.00%	0.00%	6.43%	6.16%
36-40 kms	0.40%	0.70%	5.15%	5.93%	0.32%	0.24%	0.00%	0.00%	5.87%	6.87%
41-45 kms	0.30%	0.40%	2.21%	3.78%	0.00%	0.00%	0.00%	0.00%	2.51%	4.18%
46-50 kms	0.00%	0.02%	0.23%	0.26%	0.00%	0.00%	0.00%	0.00%	0.23%	0.29%
51-55 kms	0.06%	0.09%	0.09%	0.10%	0.00%	0.00%	0.00%	0.00%	0.15%	0.16%
> 56 kms	0.00%	0.00%	0.04%	0.06%	0.00%	0.00%	0.00%	0.00%	0.04%	0.06%
Total	7.33%	11.79%	72.36%	68.27%	4.86%	3.85%	15.46%	16.09%	100.00%	100.00%

Source : SA Sugar Association

Since 1981 the use of rail transport has declined with greater use being made of heavy road vehicles. Rail transport did not however account for a large percentage of small scale grower sugar cane tonnage.

Figure 5.1 indicates the distribution of small scale growers by distance from a mill. The economics of transporting sugar cane over long distances have given rise to the distribution indicated. The original planning for expansion of small scale sugar cane production, undertaken in 1972, limited expansion to a maximum of 40 kilometres from a mill. Subsequently FAF placed a maximum distance of 35 kilometres on the provision of loan finance. If small scale growers situated at a greater distance than 35 kilometres from a mill applied for loans viability studies were required.

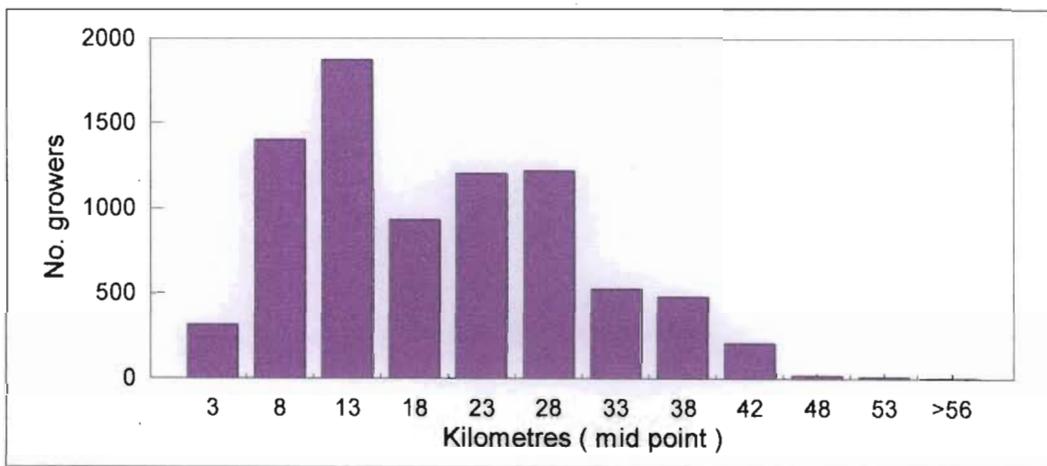


Figure 5.1 Distribution of small scale growers by distance from a sugar mill - 1981

From figure 5.1 it may be seen that there appear to be two concentrations of growers with 40% being between 5.5 and 15.5 kilometres from a mill and 30% being between 20.5 and 30.5 kilometres from a mill. 12% of growers in the 5.5 to 15.5 kilometre category utilized tractor/trailers for transport, in other words they had sugar cane hauled directly from their field to mills.

Table 5.3 indicates the "profit" per ton of sugar cane at various distances from a sugar mill in respect of growers who are required to service a FAF loan. For simplicity "profit" is defined as :-

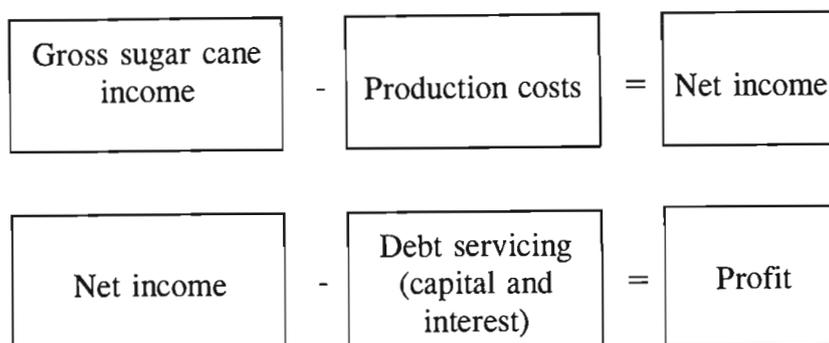


Table 5.3 Average total small scale grower sugar cane profit - 1988 to 1996 - Growers with FAF loans

Season	Average cane price Rand	Average profit R/ton at respective distance from mill							Average profit Rand
		10 km Rand	15 km Rand	20 km Rand	25 km Rand	30 km Rand	35 km Rand	40 km Rand	
88/89	42.76	9.93	9.08	8.28	7.44	6.32	5.06	4.24	7.19
89/90	51.01	9.45	8.07	6.13	5.34	3.73	2.80	1.83	5.34
90/91	56.31	7.81	6.66	5.13	3.98	2.40	0.41	(0.42)	3.71
91/92	61.06	4.28	3.04	2.05	0.59	(0.85)	(2.87)	(2.92)	0.47
92/93	97.55	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
95/96	105.20	16.34	16.37	13.78	11.32	9.33	5.74	3.92	10.97
96/97	104.72	12.05	11.22	8.42	5.95	3.60	(0.26)	(1.80)	5.60

Table 5.4 indicates the net income in respect of growers not servicing a loan. It may be legitimately argued that net income should not be compared to profit. It is however suggested that small scale growers view their cash in hand as profit from their production whether it be "net income" or "profit". Perceptions are created from this comparison as will be seen at a later stage.

As could be expected, distance from a sugar mill has a significant impact on net income and profit per ton of sugar cane. Looking at the 1996/97 season for growers without a loan (table 5.4) the range in net income is from R48.01 per ton sugar cane at 10

kilometres to R23.67 per ton at 40 kilometres. This amounts to a difference of 51% in net income received by growers at these different distances.

Table 5.4 Average total small scale grower sugar cane profit - 1988 to 1996 - Growers without FAF loans

Season	Average cane price Rand	Average net income R/ton at respective distance from mill							Average net income Rand
		10 km Rand	15 km Rand	20 km Rand	25 km Rand	30 km Rand	35 km Rand	40 km Rand	
88/89	42.76	22.28	18.84	18.03	17.19	16.08	14.81	13.99	17.32
89/90	51.01	26.81	20.66	18.72	17.93	16.32	15.39	14.42	18.61
90/91	56.31	27.23	21.07	19.54	18.39	16.82	14.82	14.00	18.84
91/92	61.06	26.23	19.01	18.02	16.56	15.11	13.10	13.05	17.30
92/93	97.55	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
95/96	105.20	51.71	41.49	38.90	36.44	34.45	30.87	29.04	37.56
96/97	104.72	48.01	36.69	33.90	31.42	29.08	25.21	23.67	32.57

Small scale growers' profit is very much lower than net income as could be expected. This is an important issue as a complaint voiced by small scale growers is that "FAF takes everything". Small scale growers have been known to receive zero income once all costs have been deducted. If growers supplied family labour they would have received a minimum of this income (see table 5.11). If they, however, did not supply labour and mismanaged their cane production operations by employing excessive amounts of labour or used labour and contractual services inefficiently a zero income situation could occur (see sections 7.4.4 and 7.4.8). This issue was addressed in certain mill areas by ensuring a grower received a minimum income, initially R1 per ton which was subsequently increased. This minimum payment had the effect of reducing a grower's loan redemption amount. An implication of this was that a loan's repayment term was affected and, as a consequence, a grower in such a position incurred additional interest charges.

Attention is drawn to table 5.3 where negative returns were received by growers using loan finance at distances greater than 30 kilometres from a mill. This appears to be more prevalent in more recent seasons.

In tables 5.3 and 5.4 the 1991/92 season exhibits a decline in net income and profit per ton of cane. The average sugar cane price increased by 8% from 1990/91 to 1991/92 while production costs increased by an average of 17%.

In respect of the 1995/96 season a similar situation appears to have occurred. The 1996/97 season, for which budgeted figures are indicated, commenced with a sucrose price little different from the previous season. Budgeted costs however increased by 6% over the previous season.

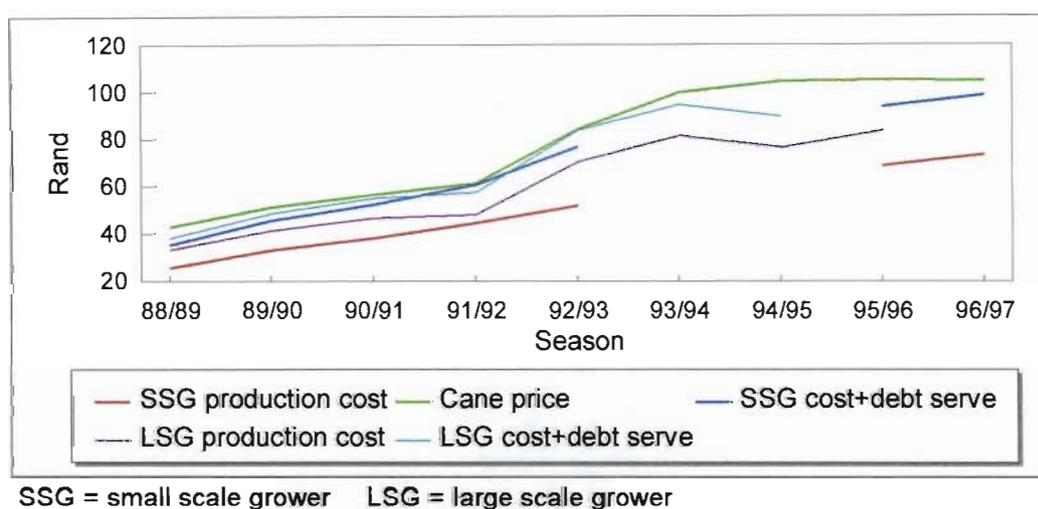


Figure 5.2 Sugar cane "profit" for small scale growers using and not using credit at 25 kilometres from a sugar mill

Figure 5.2 graphically presents small scale grower net income and profit at a distance of 25 kilometres from a sugar mill. It will be seen that the profit margin (cane price - (cost of production and debt servicing)) narrowed from 1988/89 to 1991/92. It widened as a

result of a large increase in the sugar cane price in 1992/93 but thereafter appears to have narrowed.

Sugar cane production costs appear to have increased at a similar rate to the sugar cane price from 1988/89 to 1991/92. Notwithstanding the large increase in the sugar cane price in 1992/93 there appears to be a narrowing in net income being received by small scale growers.

Small scale grower profit margins appear to be narrowing at a more rapid rate than net income margins. This may be as a result of increasing loan interest rates.

Figure 5.2 indicates that small scale grower margins, whether they be profit or net income, are, for the period indicated greater than those achieved by large scale growers. Large scale grower production costs include elements eg building maintenance, electricity, water, insurance and administration costs, not generally borne by small scale growers which may account for this difference (SA Cane Growers' Association, 1996).

An interesting observation is that although small scale growers' net income margins are shown to be greater than large scale growers' net income margins (possibly as a result of small cane growers using contractual services as well as not incurring certain costs as previously indicated) their profit margins are much closer which may indicate that small scale grower debt servicing as a percentage of their total costs may be proportionately greater than large commercial growers debt servicing costs. This may lend additional weight to the "FAF takes everything" complaint. Later models (section 5.4) underscore this problem.

For purposes of further comparison debt servicing costs are included in production costs. Tables 5.5 and 5.6 show production costs as a percentage of the sugar cane price. In the case of small scale growers using loans production costs amounted to an average of 91% of the sugar cane price, for growers not using loan they amounted to 65%.

According to figure 5.1 there were two distinct concentrations of growers according to distance from a sugar mill. From tables 5.5 and 5.6 it will be seen that growers in the 15 kilometre category, who utilise loans, expend 86% of their income on production costs while those who do not use loan finance expend only 62% of their income. In respect of growers in the 30 kilometre category it is 94% and 69% respectively.

Table 5.5 Total small scale grower production costs as a percentage of sugar cane price - Growers with a FAF loan

Season	Production costs as a percentage of sugar cane price at various distances from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	76.77%	78.76%	80.64%	82.60%	85.21%	88.18%	90.09%	83.18%
89/90	81.48%	84.19%	87.99%	89.53%	92.68%	94.50%	96.41%	89.54%
90/91	86.13%	88.17%	90.89%	92.94%	95.74%	99.28%	100.74%	93.41%
91/92	92.98%	95.03%	96.64%	99.03%	101.40%	104.70%	104.78%	99.22%
92/93	n/a	n/a	n/a	78.70%	n/a	n/a	n/a	78.70%
95/96	84.46%	84.44%	86.90%	89.24%	91.14%	94.54%	96.27%	89.57%
96/97	88.49%	89.29%	91.96%	94.32%	96.56%	100.25%	101.72%	94.66%
Average	85.05%	86.65%	89.17%	89.48%	93.79%	96.91%	98.34%	91.34%

Table 5.6 Total small scale grower production costs as a percentage of sugar cane price - Growers without a FAF loan

Season	Production costs as a percentage of sugar cane price at various distances from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	47.89%	55.95%	57.82%	59.79%	62.40%	65.37%	67.28%	59.50%
89/90	47.44%	59.50%	63.30%	64.85%	68.00%	69.82%	71.73%	63.52%
90/91	51.64%	62.57%	65.29%	67.34%	70.14%	73.68%	75.15%	66.54%
91/92	57.05%	68.87%	70.49%	72.88%	75.25%	78.55%	78.63%	71.67%
92/93	n/a	n/a	n/a	53.02%	n/a	n/a	n/a	53.02%
95/96	50.85%	60.56%	63.03%	65.36%	67.26%	70.66%	72.39%	64.30%
96/97	54.15%	64.96%	67.63%	69.99%	72.23%	75.92%	77.40%	68.90%
Average	51.50%	62.07%	64.59%	64.75%	69.21%	72.33%	73.76%	65.46%

The allocation of small scale grower production costs will now be considered in more detail. Tables 5.7 to 5.10 indicate the principle inputs as a percentage of total costs. The

tables are presented in their entirety as it will be seen that over time percentages have remained more or less constant. Harvesting costs account for approximately 22%, transport and transshipment costs for approximately 25% and ratoon management (fertilizer and weeding) for approximately 25% of total production costs.

Table 5.7 Harvesting costs as a percentage of total small scale grower production costs

Season	Average percentage of costs at respective distance from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	26.86%	26.19%	25.58%	24.97%	24.20%	23.39%	22.89%	24.87%
89/90	21.85%	21.15%	20.24%	19.89%	19.21%	18.84%	18.47%	19.95%
90/91	22.53%	22.01%	21.35%	20.88%	20.27%	19.55%	19.26%	20.83%
91/92	22.31%	21.83%	21.47%	20.95%	20.46%	19.82%	19.80%	20.95%
92/93	n/a	n/a	n/a	22.10%	n/a	n/a	n/a	22.10%
95/96	22.59%	22.60%	21.96%	21.38%	20.94%	20.19%	19.82%	21.36%
96/97	22.85%	22.65%	21.99%	21.44%	20.94%	20.17%	19.88%	21.42%
Average	23.17%	22.74%	22.10%	21.66%	21.01%	20.33%	20.02%	21.57%

Table 5.8 Transport & transshipment costs as a percentage of total small scale grower production costs

Season	Average percentage of costs at respective distance from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	17.49%	19.57%	21.44%	23.31%	25.66%	28.16%	29.69%	23.61%
89/90	19.15%	21.75%	25.13%	26.42%	28.92%	30.29%	31.67%	26.19%
90/91	18.87%	20.75%	23.12%	24.81%	27.01%	29.61%	30.64%	24.97%
91/92	20.13%	21.84%	23.15%	25.01%	26.76%	29.07%	29.12%	25.01%
92/93	n/a	n/a	n/a	20.49%	n/a	n/a	n/a	20.49%
95/96	18.99%	18.97%	21.27%	23.33%	24.92%	27.63%	28.93%	23.43%
96/97	18.88%	19.61%	21.94%	23.89%	25.66%	28.40%	29.43%	23.97%
Average	18.92%	20.41%	22.67%	23.89%	26.49%	28.86%	29.91%	24.45%

For small scale growers using loan finance the redemption and interest repayments account for an average of 27% of growers costs. FAF's standard loan and interest

redemption rate is set at an average of 25% of a small scale grower's sugar cane proceeds.

Table 5.9 Ratoon management costs as a percentage of total small scale grower production costs

Season	Average percentage of costs at respective distance from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	24.87%	24.24%	23.68%	23.12%	22.41%	21.65%	21.19%	23.02%
89/90	27.97%	27.07%	25.90%	25.46%	24.59%	24.12%	23.64%	25.53%
90/91	27.76%	27.11%	26.30%	25.72%	24.97%	24.08%	23.73%	25.67%
91/92	27.55%	26.96%	26.51%	25.86%	25.26%	24.46%	24.44%	25.86%
92/93	n/a	n/a	n/a	24.15%	n/a	n/a	n/a	24.15%
95/96	27.81%	27.82%	27.03%	26.32%	25.78%	24.85%	24.40%	26.29%
96/97	27.82%	27.57%	26.77%	26.10%	25.50%	24.56%	24.20%	26.08%
Average	27.30%	26.80%	26.03%	25.25%	24.75%	23.95%	23.60%	25.38%

Table 5.10 FAF loan redemption as a percentage of total small scale grower production costs

Season	Average percentage of costs at respective distance from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	29.71%	28.96%	28.29%	27.62%	26.77%	25.87%	25.32%	27.51%
89/90	30.29%	29.32%	28.05%	27.57%	26.63%	26.12%	25.60%	27.65%
90/91	29.72%	29.03%	28.16%	27.54%	26.74%	25.79%	25.41%	27.49%
91/92	28.12%	27.52%	27.06%	26.41%	25.79%	24.98%	24.96%	26.40%
92/93	n/a	n/a	n/a	32.63%	n/a	n/a	n/a	32.63%
95/96	28.27%	28.28%	27.48%	26.76%	26.20%	25.26%	24.80%	26.72%
96/97	27.49%	27.24%	26.45%	25.79%	25.19%	24.27%	23.91%	25.76%
Average	28.94%	28.39%	27.58%	27.76%	26.22%	25.38%	25.00%	27.04%

During the first few years of FAF's operation an amortization formula was used to determine a borrowers annual redemption. Once an annual repayment had been received no further repayment deductions were made from any additional sugar cane which was delivered during that year. The next deductions only took place during the following year. It was soon observed, with a sugar cane production cycle generally extending

beyond 12 months and a decline in yields of successive ratoons, that growers rapidly fell into repayment arrears (see section 4.11, table 4.7).

A proportional redemption system was consequently adopted. This made allowance for periodicity of small scale grower deliveries and tailored deductions according to tonnages harvested. A high tonnage meant a proportionally greater amount of a loan was redeemed and a reduced tonnage gave rise to a proportionately lower repayment. The average redemption period of a loan under this system was six harvests. There would appear to be pro's and con's to the system. A negative aspect is a borrowers low income during early ratoons.

According to Darroch (1986:75-87), quoting Pack, debt servicing should ideally not exceed 15% to 20% of income. Small scale growers, as noted, averaged 27%. If this percentage was reduced growers would only be able to borrow lesser amounts (see section 4.11, figure 4.15) or the redemption term would have to be increased which would increase FAF's exposure to risk. With regard to FAF, a more rapid repayment of loans may lead to a lower risk of loan default. In addition with an increased speed in revolving of funds its capital requirements could be reduced which, as a result, may have a influence on FAF's interest burden. This latter benefit could possibly be translated into lower loan interest rates for growers.

It is suggested that, given the nature of sugar cane production, a proportional repayment system is the most appropriate method (see section 4.11). If a grower has an adequate cash flow a more rapid loan redemption will reduce overall interest costs (see section 5.4.2).

Tables 5.11 to 5.13 are included to show the average harvesting and weeding labour costs and their proportion of total production costs. Labour costs increased from R7.96 per ton of sugar cane in 1988/89 to R22.48 per ton in 1996/97, an approximate 3 fold increase over nine seasons. Labour costs are influenced by prevailing labour rates on commercial

sugar cane farms. This is a significant factor as it has been recorded that more efficient and productive labour offers its services to commercial farms while labour that remains in small scale grower areas is less efficient.

Table 5.11 Average small scale grower field labour costs - 1988 to 1996

Season	Labour cost per ton Rand
88/89	7.96
89/90	10.00
90/91	11.99
91/92	11.46
92/93	n/a
95/96	21.56
96/97	22.48

Table 5.12 Average small scale grower field labour costs as a percentage of total costs - Growers with FAF loans

Season	Average percentage of costs at respective distance from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	24.24%	23.63%	23.08%	22.53%	21.84%	21.11%	20.66%	22.44%
89/90	24.06%	23.29%	22.28%	21.90%	21.15%	20.74%	20.33%	21.96%
90/91	24.72%	24.14%	23.42%	22.91%	22.24%	21.44%	21.13%	22.86%
91/92	20.18%	19.75%	19.42%	18.95%	18.51%	17.92%	17.91%	18.95%
92/93	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
95/96	24.27%	24.27%	23.58%	22.97%	22.49%	21.68%	21.29%	22.93%
96/97	24.26%	24.04%	23.34%	22.76%	22.23%	21.41%	21.10%	22.73%
Average	23.62%	23.19%	22.52%	22.00%	21.41%	20.72%	20.40%	21.98%

Tables 5.12 and 5.13 indicate that the average cost of labour, based on employing local people, is 22% of total costs in the case of small scale growers using loans and 31% for growers without a loans. It has been suggested that small scale growers should apply as much of their own labour as possible to their farming activities which would enable them

to earn the wage which they would otherwise be expending on contracted labour. Family labour is considered to be an important feature, if not a foundation of small scale farmers (Kinsey et al, 1996:113). The question which requires answering is, is family labour available? This is addressed in section 5.3.1 and chapter 7.

Table 5.13 Average small scale grower field labour costs as a percentage of total costs - Growers without FAF loans

Season	Average percentage of costs at respective distance from mill							Average percent
	10 km	15 km	20 km	25 km	30 km	35 km	40 km	
88/89	38.86%	33.27%	32.19%	31.13%	29.83%	28.47%	27.66%	31.63%
89/90	41.33%	32.95%	30.97%	30.23%	28.83%	28.08%	27.33%	31.39%
90/91	41.22%	34.02%	32.60%	31.61%	30.35%	28.89%	28.33%	32.43%
91/92	32.90%	27.25%	26.62%	25.75%	24.94%	23.89%	23.87%	26.46%
92/93	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
95/96	40.31%	33.84%	32.52%	31.36%	30.47%	29.01%	28.31%	32.26%
96/97	39.64%	33.04%	31.74%	30.67%	29.72%	28.27%	27.73%	31.54%
Average	39.04%	32.39%	31.11%	30.12%	29.02%	27.77%	27.21%	30.95%

The costs of producing sugar cane have been shown to be a high percentage of the cane price. The ability to manage, and where possible decrease, costs would therefore be an important factor in the viability of small scale grower production.

5.3 Small Scale Grower Technology and Agricultural Practices

Small scale growers utilize technology and agricultural practices which have been developed or applied in the sugar industry as generally accepted practice. The technology and practices are those developed for commercial sugar cane production (large scale). Scientific research with regard to fertilization, weed control (methods and chemicals), land drainage, land preparation, irrigation, harvesting, mechanisation, sugar cane varieties and disease control is carried out at the South African Sugar Associations' Experiment Station (SASEX) at Mount Edgecombe. To date research has focused on large scale production

requirements. Small scale grower requirements, especially with regard to intercropping with other crops, is to receive attention to enable growers to increase the economic return from their holdings.

FAF (FAF, 1988) carried out an investigation into the following small scale grower operations :-

- Weed control
- Fertilization
- Harvesting and transport

as these were viewed as key areas in improving small scale grower productivity and income.

5.3.1 Weed Control

The report suggested that hand weeding was "not a successful means of weed control" for small scale growers. The primary reason for this was the frequent shortage of labour (Bates, 1979), the quality of available labour, and poor management of labour when it was employed.

A survey into sugar cane operations (Bates, 1988:3) found that "with regard to labour costs both growers and contractors indicated that they had no formal control over labour productivity and costs. No uniform tasking system existed. The impression gained is that labour dictates its own terms of service". A hectare of sugar cane requires 30 man days to weed by hand. During a season a field may require up to three weedings. Due to the high labour requirement, labour is usually employed to either supplement or substitute for family labour to carry out the task.

Small scale growers in many instances pay labour for weeding "lines" (rows) of sugar cane. A line, however, has no standard length and can vary according to a field's shape.

The task is therefore determined by a labourer. Daily rates paid by small scale growers for weeding do not give any indication of work done as growers do not manage their labour themselves. It was found that small scale growers could pay up to 3 to 4 times the amount per hectare of weeding compared to the rate on a commercial sugar cane farm. Labourers were also found to determine how long they worked per day by commencing and leaving work as they decided.

Some small scale growers indicated that they had to retain permanent labour if they wished to have their weeding and harvesting done. If labour was only used for one operation and was then dismissed, growers stated that they would not be able to obtain more labour for a following operation. Small grower labour costs in this instance were therefore inflated with a "labour maintenance" overhead.

To achieve adequate weed control it was recommended that small scale growers make greater use of trashing. This is leaving a blanket of leaves (trash) from a harvested crop on the land surface to shade out weed growth. A reason recorded as to why this is not practised widely is that it is more labour intensive to harvest unburnt as opposed to burnt cane. Burning of sugar cane prior to harvesting destroys vegetative material (leaves) which would be used for a trash blanket (mulch).

In addition to encouraging the above practice - which is environmentally friendly with a reduction in smoke and particle levels in the atmosphere - the use of herbicides was proposed. Less labour is required, however training in the correct application of chemicals is essential. Small scale growers can utilize knap sack spray equipment. Third world low volume micro spray systems have been experimented with but these did not, at the time, obtain acceptance. A problem which was identified in small scale grower production was the inability to obtain small volumes or packs of inputs such as herbicide. Available packs are for large scale operations. This has been addressed on occasion but no long term solution has been implemented.

5.3.2 Fertilization

Application of the correct amount of fertilizer uniformly over the land has proved to be problematic in small scale grower sugar cane production. SASEX provides a fertilizer advisory service for which growers pay for soil samples. A small scale grower is required to organise for a soil sample to be taken and sent to SASEX. The government agricultural extension services can assist a grower in this regard. Due to the large number of small scale growers some areas use "blanket" or average recommendations to determine the type and quantity of fertilizer to be applied. This has inherent shortcomings. On the other hand to convince the majority of growers to take soil samples on a regular basis has proved difficult.

Once a soil sample has been analyzed a small scale grower is required to interpret the results. Again extension service personnel can be used for this. With a high level of illiteracy it is necessary that a grower receives assistance in this instance.

With regard to fertilizer application it is essential that it is spread uniformly over a crop at the right time. The suggested methods are a "string and tin" system, a wheelbarrow applicator or the use of a contractor. The "string and tin" system relies on the required quantity of fertilizer being measured with a suitable tin (usually a ½ litre oil tin) and this equated to a cane row distance measured consistently by a rope of suitable length. Once again training is necessary.

Where contractors are used to apply fertilizer frequent disputes have arisen as to whether the correct quantity of fertilizer was applied. The presence of a grower during these operations would avoid such disputes. In addition the timing of contractor applied fertilizer is also an issue with growers complaining of delayed, late or non application.

The FAF report concluded with regard to weed control and fertilizer that "the necessity to motivate these farmers to implement any technology effectively and to see the results

of this implementation in terms of higher yields and more profit should be receiving highest priority" (FAF, 1988:5).

5.3.3 Harvesting and Transport

In a small scale grower harvesting and transport survey carried out during the 1987/88 season an overlying influence of contractors was identified as an important factor in small scale grower production (Bates, 1988).

The predominant machinery owned by contractors were tractors and trailers (85% of contractors). The type of trailer is important as it contributes to time and cost efficiencies. There was an approximately equal split between "box type" trailers which required manual loading and "self loading" trailers. Contractors were unable to provide accurate data on their operations which made an assessment of their efficiency and viability difficult.

Small scale growers interviewed stated that they did have access to more than one contractor. Although this was the case, 55% of the growers interviewed stated that they did not use the contractor whom they considered was the best as a result of sugar cane delivery allocations being controlled by contractors and not by growers themselves. A delivery allocation per zone/area is provided by a mill, these the contractors or zone committees managed which meant that an individual grower did not have a great deal of influence on when or who would cut and deliver his or her sugar cane.

In addition to the above "control" that contractors had they set prices for cutting and transporting, not through a demand/supply competitive market, but via a price setting mechanism controlled by themselves either with or without mill extension service involvement (see section 5.2). Gilfillan (1985) records that rates in Ndwedwe were set with assistance of the mill above the average rate charged in other areas. This was to encourage new contractors. This however would have given rise to a negative impact on

growers. It has been observed that contractors attempting to operate outside this mechanism are obstructed or prevented from providing a service.

Sokhela (1988) also recorded a similar situation in respect of small scale contractors in the Noodsberg area. He suggested that "rules or regulations" to regulate and improve the efficiency of contractors should be established.

A majority of small scale contractors were reported as operating at a sub-economic level or below a break even capacity hauling an average of 3 000 tons of sugar cane per annum (FAF, 1988). It was estimated that a break even tonnage was 5 500 tons per annum. It was found that tractor/trailer haulage distances were generally greater than those considered economic and it was recommended that field to zone distances should average about 1 kilometre. This recommendation has implications with regard to the cost of providing infrastructure. Tractor/trailers were found to be hauling sugar cane over distances in excess of 12 kilometres which is considered uneconomic by the South African Cane Growers' Association (SACGA). Gilfillan (1985) states that tractor/trailers can haul up to 21 000 tons sugar cane per season. This would indicate room for increased productivity amongst small scale growers.

An area where contractors were found to be experiencing problems was in maintenance of their machinery with down time causing problems. The majority of small scale contractor equipment is second hand so maintenance can be expected to be more costly and break downs more frequent than in the case of new machinery. A problem which faces small scale contractors is the escalation in the cost of machinery (vide section 3.9).

It was suggested that contractors require more training and that increased competitiveness should be promoted. Sokhela (1996) has indicated that contractors require organising into associations and that they should have access to finance to assist them with their operations. Currently contractors rely on hire purchase and mill financial assistance. The KwaZulu Finance and Investment Corporation (KFC), until recently, channelled finance to contractors via mills, this meant that mills had a direct influence on who was and was

not financed. This policy has been changed with contractors now (1996) having direct access to KFC.

5.4 Small Scale Growers Production Cycle

This section is included to demonstrate how the perception that FAF takes all a growers proceeds (see section 5.2) has been created. Theoretical models are then presented to stimulate thought on how small scale grower incomes could be improved.

In section 5.2 costs of production, net income and profit received by small scale growers were considered. Results obtained in the production cost analysis are combined with the model detailed in table 4.7 (see section 4.11). A number of models are developed to demonstrate small scale grower cash flows using different scenarios. Final results, net income/profit, (see definition section 5.2) are presented in graphical form. It should be noted that the predictive soundness of the models will not be affected significantly with a variation in percentage value of production costs. It is accepted that production costs could vary but variations should not detract from the overall conclusions which will be reached. The models are based on one hectare. It is suggested that results are multiplicative within the bound of average small scale land areas.

The parameters used are those included in the calculation of the benchmark loan level as illustrated in section 4.11. The models take 10 production periods (harvest cycles) into account to allow for re-establishment (replant). The parameters are as follows :-

<u>Parameter</u>	<u>Value</u>
Interest rate	16.5%
Loan advanced	R4 840
Crop cycle	14 months
Loan redemption rate	30% of proceeds
Cane price escalation	7%

Production cost as % of income	60%
Average production	32 tons cane/hectare

The models are presented in nominal rand values as these are the results which small scale growers see and experience following harvesting. For this reason the sugar cane price is escalated. Issues surrounding the real price of sugar cane were addressed in chapter 3.

The following parameters are kept constant :-

- Interest Rate
- Crop cycle
- Loan redemption rate - where applicable
- Cane price escalation

The following parameters are varied as indicated :-

- Loan amount
- Average production tons cane/hectare

The above parameters are ones that small scale growers have control over notwithstanding climatic factors which could influence productivity. The models assume that no adverse climatic conditions occur. In reality this would not be the case over a 10 period production cycle - the affect would, given past history, probably be negative and the consequences would therefore lead to a reduction in overall income thus impacting negatively on debt repayment. Positive climatic impacts can occur and would give rise to more rapid debt repayment and greater net income.

An initial assumption is that small scale unit sizes are such (see average areas in section 3.6) that growers do not stagger harvests or replants in a way that income flows can be smoothed. This is in fact a reality for most small scale growers where an operation is

usually an "all or nothing" decision. A suggestion is made in this regard in the final model presented.

5.4.1 Low Yield - Base Model

The base model is as depicted in table 4.7. Figure 5.3 indicates the profit per harvest using a loan of R4 840 per hectare and obtaining an average yield of 32 tons sugar cane per hectare. Also shown in figure 5.3 is the impact on growers' profits if they do not replant their fields after the seventh harvest. It will be seen in chapter 7 that growers usually replant at this stage.

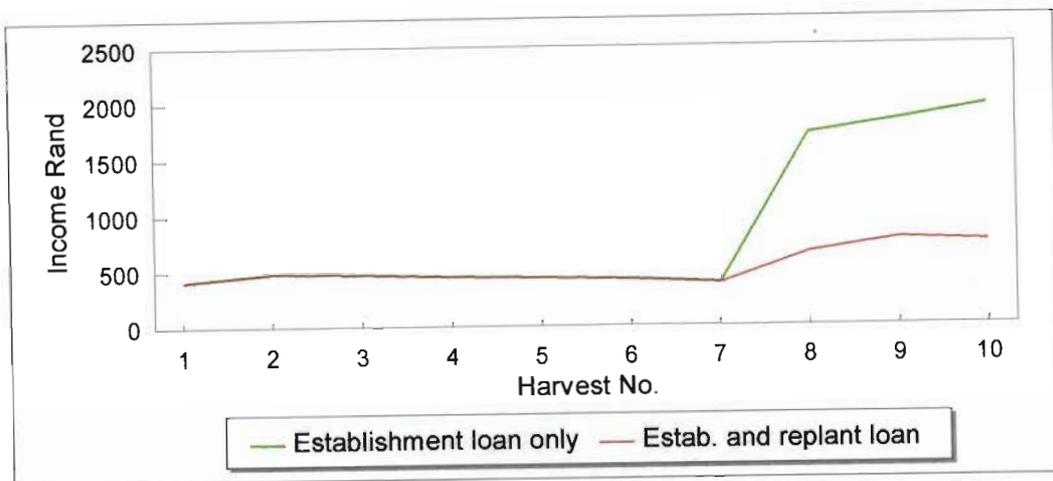


Figure 5.3 Small scale grower "profit" with an average yield of 32 tons per hectare using FAF loans to establish and re-establish the cane crop

The first scenario depicted in figure 5.3 is where a small scale grower uses a loan to establish a crop of sugar cane and does not replant the crop after 7 harvests. The gross income for 10 harvests is R44 062, with a total profit of R8 492. It will be seen that the net income for the first 7 harvests does not exceed R500 per hectare. It drops due to declining productivity of the cane crop to R381 per hectare. Following loan redemption, which totals R9 133, an amount greater than the cash amount received up to that stage,

a grower's cash flow increases dramatically if the cane crop is not replanted with a 4 to 5 fold increase in income received. This is due to no loan redemption being required and to an escalating sugar price. A small scale grower's perception of being better off, albeit with low to very poor yields, is a reality. In addition the perception, as referred to previously, of FAF apparently "taking everything" is experienced as a reality.

A second scenario which is shown in figure 5.3 is that of a grower who, once having redeemed the original loan at harvest 7, applies for another loan and re-establishes the crop but does not improve productivity. The total profit for a 10 harvest cycle is R5 192, an apparent worse situation than not having re-established the cane crop - compare R8 492 (no replant) to R5 192 (replant with loan). The foregoing scenario probably provides an explanation as to why small scale growers frequently show a reluctance to replant their crops even when obtaining low yields.

Most mill areas attempt to promote a replant programme amongst small scale growers delivering cane to their mills but generally encounter resistance or reluctance to participate. Those mill areas with mill development companies make an effort to "acquire", "document" or "sign up" small scale growers to replant their cane fields. In this way they organise a replant area commensurate with their view of how much should be replanted, normally 10-12% of the total area under sugar cane (*cf* section 4.12.2.10).

With average repayment of a FAF loan being in the order of 6 years and with 37% of FAF loans being second and additional loans a significant number of small scale growers probably experience the low yield/two loan cycle level of income as demonstrated. Sugar cane production from their perspective appears to be unattractive. Their perception of working for FAF or a mill would have been reinforced. Their involvement and dedication to improved productivity may be questioned under circumstances sketched in the model.

5.4.2 High Yield - Model

The high yield model uses the same parameters as the previous model except that the average yield is increased to 50 tons sugar cane per hectare. This yield level equates with the industrial average (see section 3.6.2).

With a small scale grower only using an establishment loan, not replanting following seven harvests, maintaining the crop and achieving 10 harvests the total profit is R20 435. The cash flow is shown in figure 5.4. Loan redemption amounts to R7 124, R2 000 less than where a small scale grower exhibits low productivity as in the model in section 5.4.1. Full loan redemption is achieved within three harvests with high yields whereas it takes 7 harvests with low yields.

A grower's net cash flow increases following loan redemption. Prior to full loan redemption income is approximately R700 per hectare. Once the loan is repaid it increases to R2 000 and more per hectare.

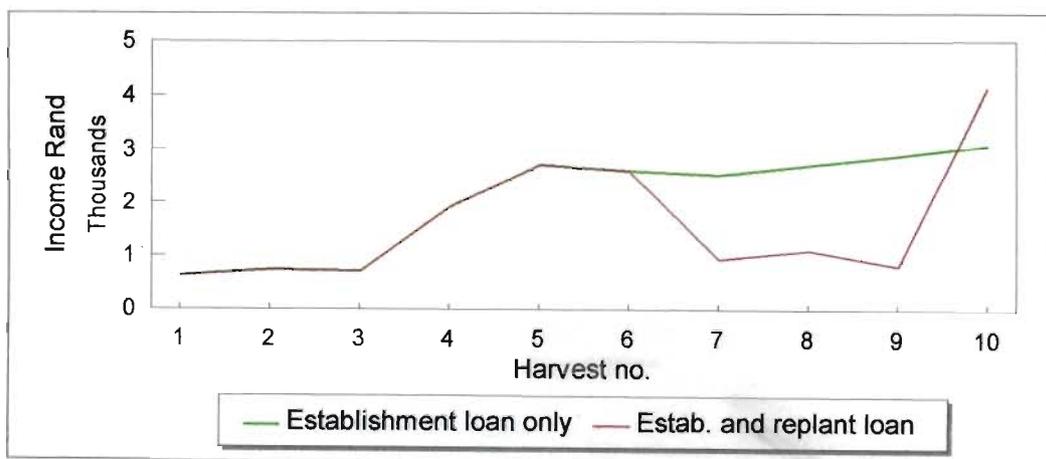


Figure 5.4 Small scale grower "profit" with an average yield of 50 tons sugar cane per hectare using FAF loans to establish and re-establish sugar cane

If a grower re-establishes a sugar cane crop after the seventh harvest to maintain productivity, using a loan to do so, there is a decline in total income for the 10 harvest cycle to R16 303. This is below the amount which would have been received if the crop had not been replanted and productivity had been maintained, which is not impossible to do. The decision as to when a small scale grower should replant should be taken on an individual basis and should be determined by the productivity of a particular ratoon crop taking into account the impact the replant will have on a grower's cash flow and profitability.

5.4.3 High Yield - Contractor/Money-Lender

In a number of mill areas small scale growers do not borrow money from FAF nor do they use their own funds to establish their cane lands. In these cases they use contractors who finance cane establishment. For contractors to recover their costs and earn returns they manage growers' land for two harvests and claim the total sugar cane proceeds. Contractors then hand the land, with the third crop, back to the owners who continue production. Contractors in effect are money-lenders. A cash flow model is depicted in figure 5.5.

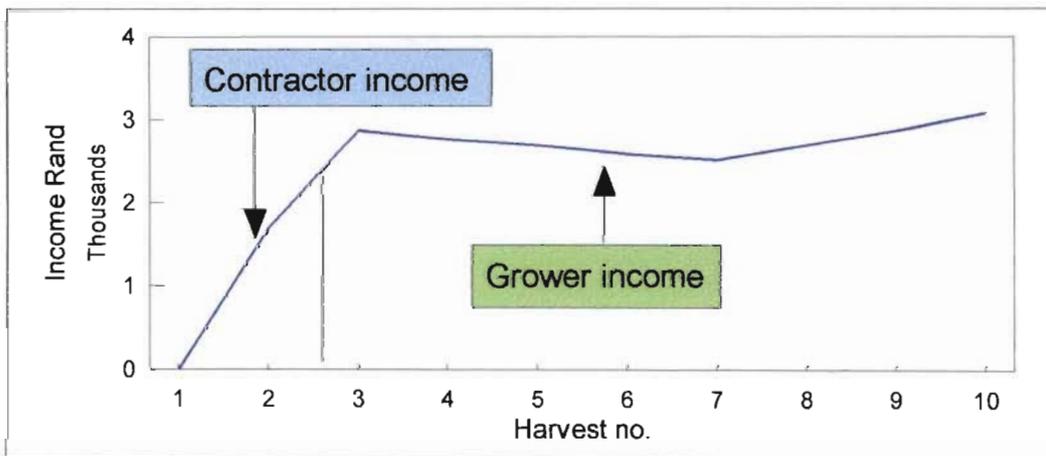


Figure 5.5 Small scale grower cane establishment with contractor acting as money-lender

It may be assumed that the costs of establishing a crop are less than a grower would incur as a result of a margin for a profit not being included at this stage. Crop establishment is assumed to cost R3 000 per hectare. It is assumed that a contractor will conform to a high yield model of production ie 50 tons sugar cane per hectare.

A contractor would receive a total income of R13 678 from which costs of establishment, harvesting and ratoon management would have to be deducted. It could be expected that a contractor will receive a total net income of between R3 000 - R5 000 per hectare for two harvests.

A grower using a contractor as a money-lender is, according to figure 5.5, debt free from the third harvest. The decline in income results from declining crop productivity. The subsequent increase results from stabilisation of production and an escalating sugar cane price. A grower, if he/she continues to obtain yields commensurate with a 50 ton/hectare average could expect a total net income for the remaining eight harvests of R22 088.

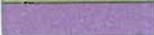
5.4.4 High Yield - Progressive Re-establishment

A problem faced by small scale growers is a large decline in their net income when re-establishing their cane fields and the concomitant cost of this. This model suggests that a small scale grower utilises a loan to establish the initial cane crop. It is then suggested that 25% of the area be replanted after each harvest commencing from the third harvest. It is suggested that the model will be suited to a small scale grower who has approximately 2 hectares or less and is able to carry out a re-establishment operation utilizing labour as opposed to employing a contractor. The cost of re-establishment could be partially met by ratoon management expenditure that would have been applied to the crop. Seedcane should represent a minimal cost (\pm 2.5 tons per 0.25 hectare) and if a grower maintains the remaining crop in a disease free state could use his/her own sugar cane as seedcane. A replant operation could be achieved by using minimum tillage methods ie spraying the old crop with a herbicide and planting a new one in interrows by hand.

The average yield which could be expected is approximately 60 tons sugar cane per hectare. The reason that this high level of production is maintained is that the oldest stage a segment of the crop reaches is fourth ratoon so that the natural decline in yield following aging of ratoons is arrested. Table 5.15 shows the replant cycle and the total and average sugar cane tonnages obtained.

Table 5.14 Scheduling of progressive re-establishment of small scale grower cane land

Harvest	Field sector tons cane harvested				Total tons cane	Average tons cane
	1	2	3	4		
1	60	60	60	60	240	60
2	66	66	66	66	264	66
3	60	60	60	60	240	60
4	66	60	54	54	234	59
5	60	66	60	49	235	59
6	54	60	66	60	240	60
7	60	54	60	66	240	60
8	66	60	54	60	240	60
9	60	66	60	54	240	60
10	54	60	66	60	240	60
Total	606	612	606	589	2413	60

 First replant cycle
 Second replant cycle

The total net income over a 10 harvest period which a small scale grower could expect is R27 763. After repayment of the initial loan the net income, as depicted in figure 5.6 can be seen to increase on an annual basis. The increase is shown in nominal rands.

The model could be expected to require improved management. With regard to time and labour use it may happen that very little is required over and above normal requirements. Given smaller panels to be cultivated labour management and productivity may be improved over that obtained on larger areas (see section 5.3).

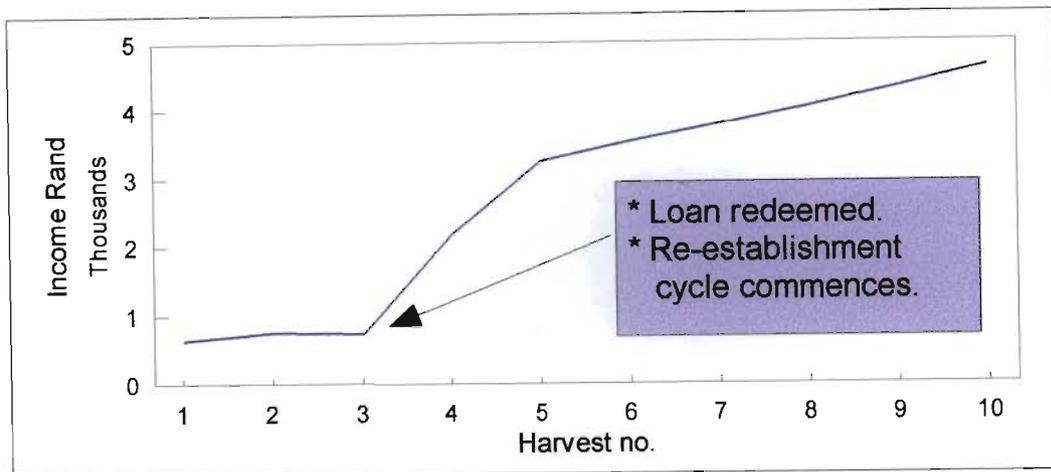


Figure 5.6 Small scale grower income with progressive re-establishment of cane

Practical application of this model has not been demonstrated. The basis for it has arisen out of the previous models. It would appear to increase productivity and could, if combined with a staggered harvesting programme lead to a reduced labour requirement. A staggered harvesting programme involves cutting the sugar cane on a periodic basis such that deliveries are made on a monthly, bimonthly or quarterly basis whichever is most appropriate. This would lead to a reduction in the total area being cultivated at any one time. In this way use of labour could be spread over a season thus avoiding peak demands and labour shortages. The harvesting, weeding and replant cycle may create a "wave like" appearance to a field with sugar cane being at different stages but with overall productivity being maximised.

It is suggested that a model as detailed above, or variation of it, be tried under experimental conditions. This could form part of a farm system research programme to improve small scale grower productivity and income.

5.5 Comparison of Profitability of Alternative Production Models

Table 5.16 presents a summary of the above production models in ascending order of total profit. It will have been noted that small scale growers in low yield scenarios received substantially lower profit than growers in high yield scenarios. The difference between the lowest amount received and the highest is an average of R22 000, which amounts to R2 200 per harvest.

Table 5.15 Summary of small cane grower production models for a cycle of 10 harvests

Model	Production alternative	Total 10 harvest profit Rand
1	Low yield, loan 1, replant, loan 2	5,192
2	Low yield, loan 1, no replant	8,492
3	High yield, loan 1, replant, loan 2	16,303
4	High yield, loan 1, no replant	20,435
5	Contractor takes 2 crops, high yield	22,088
6	High yield, loan 1, maintain production level	27,869

The model which provides the greatest return to a small grower is a progressive re-establishment programme. The total profit over a 10 harvest cycle is R5 000 greater than the nearest best alternative.

A second alternative which appears extremely attractive is the use of a contractor as a money-lender. Use of a contractor/money-lender is an accepted, but not widely promoted, method of small scale grower development. The possibility of increased use and the support of contractors to fund such operations should be investigated further. The models shed some light on small scale grower productivity as well as on perceptions expressed by growers regarding their net income.

The question of total area cultivated by a small scale grower was not considered. It was indicated that results of the models are multiplicative. If the 1995 average per capita

income for KwaZulu-Natal of R5 865 (This Week in Parliament, 1996:57) is used as an indicator and assuming two persons being employed per household and a high production model, small scale growers would require a minimum of 4 hectares to obtain an equivalent household income. As a result of the average area of sugar cane being 2 hectares (see section 3.6.2) sugar cane production, in the majority of instances, supplements income from other sources. This situation may give rise to the apparent demand for hired labour as opposed to the use of family labour which, due to the families resource base and the opportunity cost of labour, is directed to the wage market (see sections 4.12.2.1, 5.2 and 5.3.1).

5.6 Summary

Small scale grower average sugar cane production costs for seven seasons, 1988/89 to 1992/93, 1995/96 and 1996/97, were presented. The 1992/93 figures only represented one mill area whereas the remainder of the figures represented input from the majority of mill areas.

Transport costs were presented for different distances. Although data were dated an analysis of small scale grower average distances from a sugar mill was presented. It was shown that 44% of small scale growers were within 16 kilometres of a sugar mill and that 41% were between 16 and 30 kilometres of a mill. A majority of growers used heavy road vehicles to transport sugar cane from loading zones to mills. Sugar cane was transported by tractor/trailer from fields to loading zones.

The reason that a majority of small scale growers, 91%, were within 35 kilometres of the mill could be ascribed to Government planning and development parameters which restricted small scale grower development to within a maximum of 40 kilometres from a mill, FAF policy of not providing finance, under normal circumstances, to growers beyond 35 kilometres from a mill as well as to the impact of increasing transport costs the further a grower was located from a mill.

Transport costs are shown to be a major cost item and factor influencing the profit which a grower obtains. It was shown that growers utilising loan finance could have experienced negative returns at distances greater than 30 kilometres. Growers who did not use loan finance were not indicated as experiencing negative returns but did receive substantially lower net income per ton of sugar cane than those growers situated closer to a sugar mill. The net income of a grower 40 kilometres from a mill could be up to 50% less than that of a grower situated at 10 kilometres from a mill.

It should be noted that the costs indicated are averages. In terms of input costs there are elements which could experience diminishing returns and would not be applied beyond a point where marginal costs equated with marginal returns. Fertilizer and weed control measures would fall into this category, however major costs such as harvesting and transport relate to tons cane produced and vary accordingly.

The profit per ton of sugar cane of small scale growers redeeming loans is approximately 26% lower than the net income of growers not redeeming loans. This arises from FAF's loan redemption rate of 25% to 30% of a borrowers sugar cane proceeds.

It was shown that harvesting costs, transport costs and ratoon management costs made up an average of 22%, 24% and 25% respectively of a small scale grower's sugar cane production costs. In terms of controlling or reducing costs, ratoon management is an area where a grower can have direct management control and maximise returns to inputs used. Small scale growers have, it has been observed, exhibited a generally poor level of ratoon management.

Small scale growers could increase their productivity and returns by improving ratoon management practices. It was indicated that ratoon management expenditure accounts for a high proportion of growers costs. In discussing weed control and fertilization, inefficiencies in small scale grower production were identified. The overall conclusion reached was that appropriate methods require to be researched for small scale growers.

This was not to say that current technology was not appropriate however its efficiency in respect of small scale growers requires investigation.

The adoption of improved methods is one element of improved ratoon management, another is promotion of improved management of sugar cane farming operations by small scale growers themselves. The latter may rest on grower motivation which may be associated with the economics of sugar cane production. It was indicated in section 3.8 that the real return to sugar cane production has declined over the period 1960 to 1996. Small scale farmers are rational decision makers and hence, given trends in returns from sugar cane production, increasing their motivation may be difficult unless financial returns are seen to be favourable.

A way of improving returns is by reducing costs and/or increasing productivity of inputs used. Ratoon management was shown to suffer from inefficiencies. Another area which would appear to involve diseconomies is that of harvesting and haulage of sugar cane to loading zones. It was observed that there appears to be a lack of competition amongst small scale contractors with a system of establishing prices which was not related to constraints of demand and supply as well as uneconomic use of resources in respect of tonnages handled. These influences impact on the cost structure of small scale growers who appear to have little or no bargaining power in the situation. Small scale contractors were identified as influential people.

It was noted that small scale contractors require training. Regulatory measures have also been suggested to facilitate competition and improvement in service levels.

Heavy road vehicle (loading zone to mill) transport and transshipment costs are usually established by a market tendering process. Small scale growers are linked to transport agreements established for large scale growers. It has, however, been observed in some instances that, due to poor infrastructure, costs can be higher for small scale growers.

Infrastructure, such as roads etc, has not be dealt with in this overview of small scale grower development. It is an area into which substantial investment has been made by the respective government departments and one in which continuous difficulties arise. The Development Bank of Southern Africa has suggested that to overcome problems of insufficient infrastructure and its inadequate maintenance that small scale growers should contribute to its funding. This suggestion was not accepted but, given frequent problems which surround maintenance of road infrastructure, there may be merit in revisiting the recommendation (DBSA, 1993).

Labour costs, which are included in costs discussed above, were extracted and considered as a separate item. It was shown that labour costs account for from 22% to 31% of small scale growers' sugar cane production costs. It was found that labour management was weak. It was shown that labour shortages exist, that the quality of labour available is probably lower than that available to commercial farms and that wage rates are influenced by commercial farms. The apparent shortage of labour would appear to be a paradox in the light of un- or under employment in the sector. Small scale growers require to improve labour management to attract labour and to enhance its efficiency.

An analysis of the small scale grower sugar cane production cycle was presented. Cash flow problems, presented in nominal monetary terms, were demonstrated with low levels of productivity reinforcing growers perceptions of economic shortcomings of sugar cane production. It was demonstrated that with judicious use of credit and focusing on productivity the net return to sugar cane production could be improved significantly.

It was demonstrated that using small scale contractors as "money-lenders" and maintaining yields, small scale growers could achieve high levels of income per hectare. Small scale contractors are known to provide "money-lender" services. The system has not, however, been widely practised or promoted. Further investigation into this system is required.

A theoretical model was developed which aimed to maintain a high level of productivity and spread the use of labour. It was shown that this model could maximise a small scale

grower's return. The model did not suggest the use of any new technology or methods but involved the application of current knowledge in a co-ordinated way. It was suggested that research into the model or some variation of it may be advantageous.

By addressing improved productivity and efficiency of use of inputs and services, returns to small scale growers could be improved. The impact of a declining real sugar cane price may be lessened as a result.

The results and suggestions detailed in this chapter may not address problems faced by small scale growers who are poor producers and are indicated as being located in the lower quartile of the distribution of growers according to productivity (see figures 3.16 and 3.17, section 3.7). It was indicated that there was a positively skewed distribution of small scale growers according to production and land holdings. It was suggested that growers in the lower portion of the distribution may not benefit, as a result of their non-involvement, from improved methods and that they may discontinue sugar cane production. Growers in the upper portion of the distribution referred to may be expected to be beneficiaries of increasing efficiencies. The welfare problems of small scale farmers who do not or cannot benefit from the small scale grower development programme will require addressing in other ways.

This chapter has demonstrated that efficiency of production is extremely important for small scale growers. It is suggested that attention and effort be directed to research and extension which develops and transfers appropriate technology and methods to small scale growers. A farm system research and extension (FSR+E) methodology could probably be beneficially applied.

6. CONTRASTING APPROACHES TO SMALL SCALE GROWER DEVELOPMENT

6.1 Introduction

Having examined FAF as an instrument of financial intervention and small scale grower economies of production, two approaches to small scale grower development are now considered. The analysis compares two divergent approaches which involve a participative approach on the one hand and, on the other, a highly managed and directed approach. A difference in these approaches has been observed in previous chapters. The underlying objectives and issues require consideration in greater detail.

It is indicated that a higher proportion of small scale grower development was promoted according to an indirect, self motivated and participative approach than a directed, managed approach. A resume of independent assessments of the two approaches is then given. The chapter concludes with a presentation of a model showing the relationship between direct and indirect approaches to development which impinge on FAF's objectives.

6.2 Distribution of Small Scale Growers According to Mill Area

Table 6.1 indicates the distribution of small scale growers by mill and geographic area according to their numbers, their registered area and their sugar cane tonnages for the seasons 1989/90, 1992/93 and 1994/95. It will be seen that Zululand accounts for approximately 50% of registered small scale growers, 50% of the land area and just under 50% of total production of small scale growers. The Zululand area is defined as that area north of the Tugela River centred on Richards Bay in figure 1.1. The north coast area, which is defined as that area lying between Durban and the Tugela River accounts for approximately 30% of registered growers, 25% of the registered land and about 27% of total tonnage of sugar cane produced. The midlands area, west of Durban in figure 1.1, served by the Noodsberg sugar mill, accounts for 4% of growers, 4% of the land and

about 3% of total small scale grower tonnage. Another mill in the midlands area, the Union Co-operative mill does not have many black small scale growers delivering cane to it. The reason for this is that it is situated at a greater distance from small scale grower areas than the Noodsberg mill. In addition it is a co-operative mill and when the small scale grower development programme commenced in 1973 co-operatives were unable to accept sugar cane from non-members. Black small scale growers could not, at that stage, be members. Regulations governing membership of co-operatives have subsequently been amended.

The south coast is defined as that area lying south of Durban stretching down to the Eastern Cape. This area accounts for approximately 17% of small scale growers, 18% of the land and 17% of total tonnage of sugar cane delivered. The percentage of growers, land and tons cane for Mpumalanga is shown to indicate that development is taking place there with small scale grower productivity being significant in terms of the province having approximately 1% of growers, 3% of the land and delivering about 8% of total small scale grower sugar cane tonnage. Figures in table 6.1 are rounded and in certain instances will not add to 100% as a result of discrepancies arising from non-inclusion of small scale growers of other groups.

From table 6.1 it will be seen that the Amatikulu and Maidstone mill areas represent significant portions of the particular geographic areas in which they are situated. The Amatikulu mill area accounts for approximately 28% of registered growers, 26% of the land and an average of about 16% of total tons sugar cane produced. The Maidstone area accounts for 16% of growers, 12% of the land and about 13% of small scale grower production.

It is significant to note that development in Zululand has been indirect, taken place principally on the basis of sugar milling companies providing administrative and extension services to small scale growers. In the north coast area Maidstone sugar mill established a mill development company, Sukumani Development Company, which provides a wide

Table 6.1 Percentage number, area and sugar cane tons of small scale growers by geographic and mill area

Geographic area	Mill area	% Registered growers			% Land area			% Tons cane		
		1989/90	1992/93	1994/95	1989/90	1992/93	1994/95	1989/90	1992/93	1994/95
Zululand	Felixton	11%	13%	13%	12%	13%	9%	19%	15%	13%
	Amatikulu	26%	29%	28%	29%	31%	19%	20%	15%	12%
	Entumeni	5%	5%	6%	6%	5%	3%	6%	5%	3%
	Umfolozi	2%	4%	5%	2%	8%	7%	5%	8%	4%
	Pongola						4%			4%
	Total		43%	51%	52%	49%	57%	42%	51%	43%
N. Coast	Maidstone	19%	14%	14%	14%	12%	10%	11%	14%	13%
	Glendale	11%	11%	11%	9%	8%	7%	11%	10%	8%
	M. Edgewood	1%	1%	2%	1%	1%	2%	1%	1%	2%
	Darnall	1%		1%	1%		2%	1%		2%
	Gledhow	1%	1%	1%	2%	1%	2%	2%	1%	3%
	Total		33%	27%	28%	27%	22%	23%	26%	26%
Midlands	Noodsberg	6%	4%	2%	4%	3%	6%	2%	2%	6%
	Total	6%	4%	2%	4%	3%	6%	2%	2%	6%
S. Coast	Eston	8%	7%	6%	9%	6%	7%	7%	9%	4%
	Sezela	9%	10%	9%	10%	9%	9%	10%	7%	7%
	Umzimkulu		1%	1%	1%	2%	4%	1%	1%	5%
	Total	18%	18%	16%	19%	17%	20%	17%	17%	16%
Mpumalanga	Malelane			1%	1%	1%	3%	5%	12%	4%
	Komati			1%			2%			4%
	Total			1%	1%	1%	5%	5%	12%	8%
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%

Source : SASA Administration Board

range of services to small scale growers and follows a directed approach. Glendale sugar mill has also provided services to small scale growers, not to the same degree as Maidstone but to a greater extent than mills in Zululand. The Noodsberg, Eston and Sezela mills also established mill development companies which followed a directed approach to development (see section 4.12).

6.3 Maidstone Small Scale Grower Development

Prior to 1973 fewer than 200 small scale growers delivered sugar cane to the Maidstone mill. From 1973 expansion in the area commenced on a large scale. Figure 6.1 indicates deliveries of sugar cane by small scale growers to Maidstone mill from 1973 through to 1995. When credit from FAF was made available to small scale growers in the area it was recognised that a shortage of mechanical power was inhibiting development of the sector. Initially Tongaat Sugar Company provided contractual services to growers. This arrangement was subsequently formalised by the establishment of Sukumani Development Company Pty. (Ltd) in 1978 with financial input being made by the Corporation for Economic Development (CED) in terms of its objectives to establish "tri-partite" organisations to promote and assist with development in black areas. Tripartite companies involved a partnership between a private sector organisation, the CED and small scale farmers.

The increase in deliveries of sugar cane from small scale growers arose from an increase in the number of growers and an increase in the area planted to sugar cane in the Ndwedwe District. The rates by which grower numbers and land area increased were very similar. This would indicate that increased production could be attributed more to horizontal expansion than to vertical expansion of small scale grower productivity. Figure 6.1 shows an increase in small grower cane deliveries from 1977 through to 1985, albeit impacted by severe droughts in the 1980/81 and 1983/84 seasons. From 1985 total deliveries of small scale growers in Ndwedwe decreased to a low in 1990 whereafter there has been a levelling off, also affected by droughts. The increase in production from 1993

has probably resulted from changed operational procedures of Sukumani Development Company which is undertaking ratoon management operations for small scale growers and also from the impact of sugar cane produced by other groups of small growers being included in total deliveries.

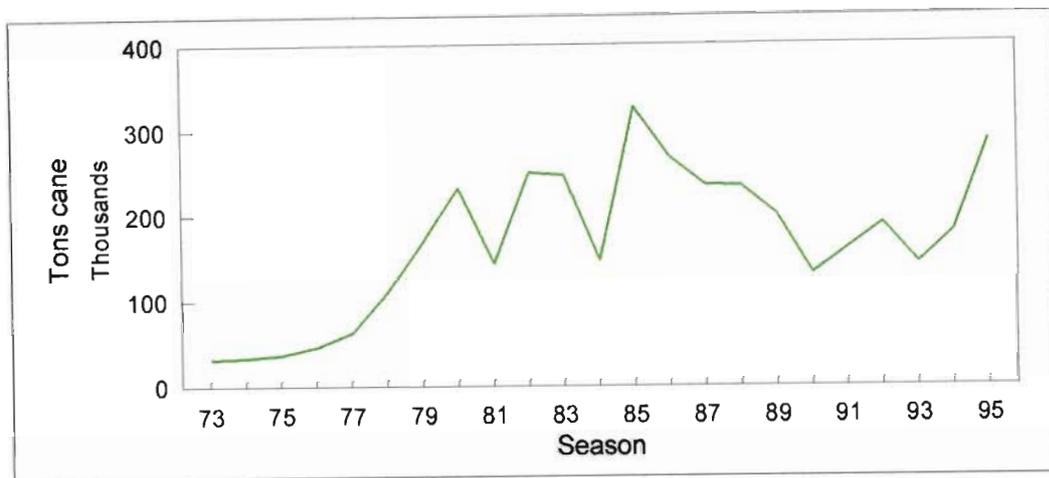


Figure 6.1 Maidstone mill area small scale grower cane deliveries 1973 to 1995

Figure 6.2 indicates the average sugar cane delivery per small scale grower delivering sugar cane and average registered area per grower. The figure indicates a decline in the average tonnage delivered per grower for the period 1973 to 1994 and also a decrease in the average registered area per grower. The increase from 1991 in average area would possibly be as a result of deregulation of the sugar industry and inclusion of small scale growers from other groups in statistics. Not taking the latter increase of small scale growers' average area into account the average area of small scale growers in Ndwedwe was 1.5 hectares and the median area was 1 hectare. The average delivery per small scale grower was 66 tons sugar cane per grower and the median tonnage was 52 tons per grower. Decreasing average area per grower entering the sugar industry may be concluded to be an important factor in decreasing average deliveries per grower. New entrants to the industry are cultivating smaller areas.

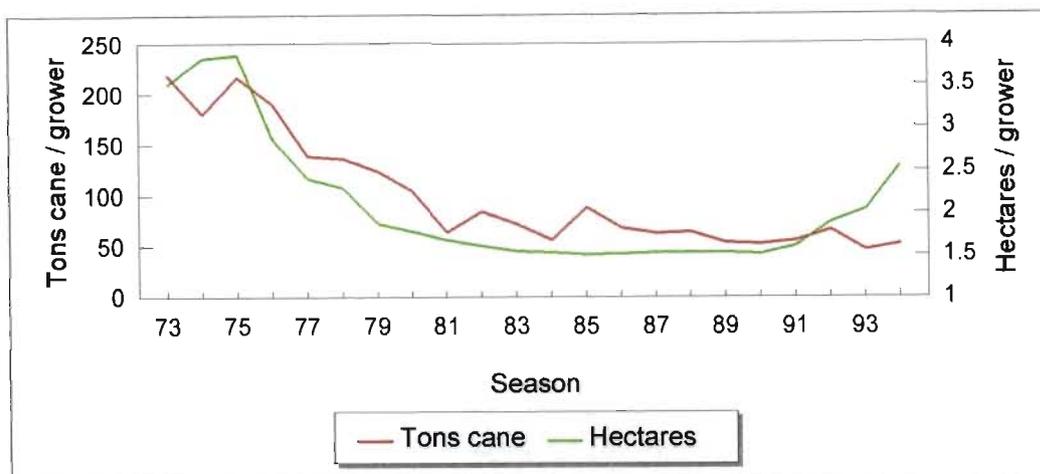


Figure 6.2 Maidstone small scale grower average tons cane per grower delivering and average registered area per grower

Referring to figure 3.17 it would have been seen that 60% of small scale growers delivered 50% of the sugar cane tonnage in Ndwedwe indicating a positively skewed distribution of deliveries per small scale grower.

In 1973 the KwaZulu Government identified land suitable for sugar cane development in Ndwedwe. Tongaat Sugar Limited sought co-operation and approval from two Amakhosi (Chiefs) and introduced extension services into the area. Tongaat reported that it had employed an extension officer, had developed plans for access roads and contour structures and had established local committees consisting of progressive farmers of the community. It was stated that areas of 4 hectares and more were considered for development. Cane establishment operations were carried out by the company with farmers' consent. Farmers and local labour were employed in the development. The company maintained the crop until first harvest whereafter farmers were required to assume responsibility. It was calculated that after a farmer had serviced a loan and met harvesting and ratoon management costs he or she would obtain an income of R2.50 per ton of sugar cane (1974 cane price = R8,81, cf table 3.8).

At this stage it became apparent that there was a difference in approach between FAF and Tongaat Sugar Company Limited. It was FAF's view that one could not separate agricultural development from social development issues as they were part of the same problem. FAF indicated that it required small scale growers to be involved from the start of a programme and expected growers to participate in their own development. Tongaat Sugar Limited indicated that they subscribed to the ideal but they considered "that the priority is to get the cane into the ground as it is necessary first to satisfy the individual farmers (and the Industry's) material needs. Tongaat (with some measure of justification) maintains that a man must live until his land becomes revenue producing and that no project has any prospect of success if the farmer is denied an income from his land for the first 18 months to 2 years" (FAF, 1974a:2). It was indicated that the requirement to carry out development as proposed by Tongaat rested on an underlying impediment of the small size of small scale grower land units. The fact that small scale growers could only earn a supplementary income from these lands was cited as a problem.

The implementation of the thinking underlying Tongaat's development can be seen in the rapid registration of small scale growers from 1973 through to 1980 when the average seasonal increase in small scale grower numbers levelled off. The increase in registration of small scale growers during the 1970's and early 1980's resulted from an increase in quota allocation to the sector (see chapter 3). The average size of small scale grower areas of sugar cane decreased rapidly over this period as can be seen from figure 6.2. This decrease arose primarily from increasing numbers of growers with small units entering the industry. There was a consequent decrease (average 13% per season) in the average tonnage of sugar cane delivered by individual small scale growers over the period with a levelling off of the average delivery per grower from 1980/81 to a decline of an average of 1% per season. Notwithstanding the impact of droughts the total tonnage of sugar cane supplied by small scale growers increased from 1973 to 1985 when it began to decline.

At an early stage of small scale grower development Tongaat Sugar indicated that the loan amount provided by FAF to growers was insufficient to cover the total cost of developing a grower's land unit (see table 4.8, section 4.11). Tongaat also suggested that FAF provide a monthly cash advance to small scale growers to enable them to stay on the land. This suggestion would appear to have conflicted somewhat with the problem of small units.

FAF did not agree with the above due to the following :-

1. The indebtedness of growers would be increased to unserviceable levels;
2. Assistance should only be provided to potential full-time growers; and,
3. Growers should make some form of contribution to their own development.

The above issues were going to be the basis of continuing debate and conflict in small scale grower development in all areas (see section 4.9.1).

FAF's philosophy was that "it is essential that a grower/borrower should participate in and have a material interest in his own development and that he himself should make a contribution so that he has something to lose. This involvement should be stressed in the initial stage as part of the extension service" (FAF, 1974b:1). The issues of two separate and independent extension services, government and mill, and the competition of a mill contractual service with small scale contractors were also raised as potential areas of conflict.

An evaluation of the income being obtained by small scale growers in Ndwedwe in 1977 indicated that an amount of R539 per annum was insufficient to maintain a grower on the land. It was concluded that unit sizes should be increased.

Due to problems experienced with land measurement and loan application completion Tongaat Sugar undertook to carry out these tasks. Prior to this the KwaZulu Department of Agriculture and grower committees had been involved.

In 1981 it was identified that the motivation of growers to farm properly was a major issue. Small scale growers were encouraged to carry out their own ratoon management operations but if they failed Sukumani Development Company stepped in and did the work.

Sukumani promoted the establishment of a Regional Cane Committee to co-ordinate development with farmers associations and their growers. Small scale growers did not identify their sugar cane as belonging to them; fertilizer for ratoon management was sold to adjacent larger farmers and a majority of growers did not pay attention to weed control. Bad debts which arose were ascribed to drought, grower neglect and grazing by cattle (*cf.* Noodsberg, Eston section 4.12).

In 1983 the small scale grower chairman stated that the methods used by Sukumani were unsatisfactory and that they were "aimed at making them perpetual debtors who are unlikely to be debt free and developed" (Mhlongo, 1983). Small scale growers acknowledged that the situation could be corrected as long as errors were addressed. They noted that it was important for the Company to have a good relationship with the community.

The Managing Director of Sukumani stated that "The people of Ndwedwe were more motivated to seek outside employment rather than diverting their energies to sugar cane production and unless there existed some form of organising unit, which provided guidance and assistance, not many family units would have taken the initiative to develop their lands" (Gilfillan, 1983). He went on to say "that the development of approximately 8 000 hectares, comprising approximately 5 500 growers would not have been achieved, had the route of identifying self-starters and stimulating development, been chosen. If the

objective of alleviating the growing poverty in Ndwedwe was to be achieved, then this necessitated the creation of a sugar industry in the shortest space of time". The intention was for Sukumani to promote increased involvement of small scale growers and for it to gradually withdraw from operations.

In 1986 growers in Ndwedwe established the Sisukumile Co-operative with the initial objective to transport sugar cane to Maidstone mill. The Co-operative was loaned two Bell haulage tractors and four hilo type trailers from the Bell Company with the intention of purchasing them at a future date. The Co-operative did not survive long. Members maintained that they were undermined by Sukumani which, at the time, offered to transform itself into a co-operative and offer shares to small scale growers. This caused a division amongst growers and the probable demise of Sisukumile. There may have been other contributing factors, one being that there was a poor relationship with the Ndwedwe branch of the KwaZulu Cane Growers' Association which represented 14 farmers associations in the area. The initiative is one which probably should have been supported as it would have lent weight to Sukumani's objective of "gradual withdrawal" from small scale grower operations.

By 1991 there were 5 257 registered small scale growers at Maidstone. Their recorded land area was 8 450 hectares from which they delivered 159 174 tons of sugar cane. During 1993 Sukumani introduced a new scheme for ratoon management which involved providing grant assistance to small scale growers to improve their production. Growers who obtained very low yields received larger grants for ratoon management than growers who obtained higher yields. Growers who had good yields and adequate savings did not receive grant assistance. This scheme would accord with Sukumani's objectives but should be questioned with regard to its longer term impact and sustainability. Where harvesting and haulage problems arose or continued Sukumani provided assistance.

In 1995 Sukumani and Tongaat Hulett Sugar Company began addressing development problems in Ndwedwe with a proposed withdrawal of Sukumani from the intensive

involvement which it has had with small scale growers since 1978. The question of how this is done is critical. Ndwedwe may be faced with a similar cycle to that shown for Eston small scale growers, to avoid such a scenario it may have to establish a modus operandi which will prevent a decline in overall production and increase profitability for individual small scale growers.

The background to development in Ndwedwe has been presented in some detail as it reflects many of the issues which have pervaded small scale grower development. It has been the area which set precedents which were followed in other areas where highly directed and managed small scale grower development was promoted. Although development in Ndwedwe only accounts for 14% of small scale growers it has given rise to proportionately far greater debate.

6.4 Amatikulu Small Scale Grower Development

Small scale grower development in the Amatikulu and Delville (Emoyeni) areas of KwaZulu-Natal was based on an indirect approach involving self motivation and participation of small scale growers with limited involvement of the sugar miller. The sugar mill provided extension, administration and liaison/mediating services to growers. Other than in recent years when they provided contractual assistance on a limited scale, the mill has not operated contractual services to promote development of small scale growers.

Sugar cane production by small scale growers in the Amatikulu area was established in the early part of the 20th century. During the 1945/46 season 101 small scale growers delivered 6 334 tons of sugar cane. The growers benefited from government interventions identified in respect of Eston small scale grower development (vide section 4.12). When FAF commenced operating in 1973 there were 1 177 registered small scale growers with a registered sugar cane area of 3 896 hectares producing 127 000 tons of sugar cane.

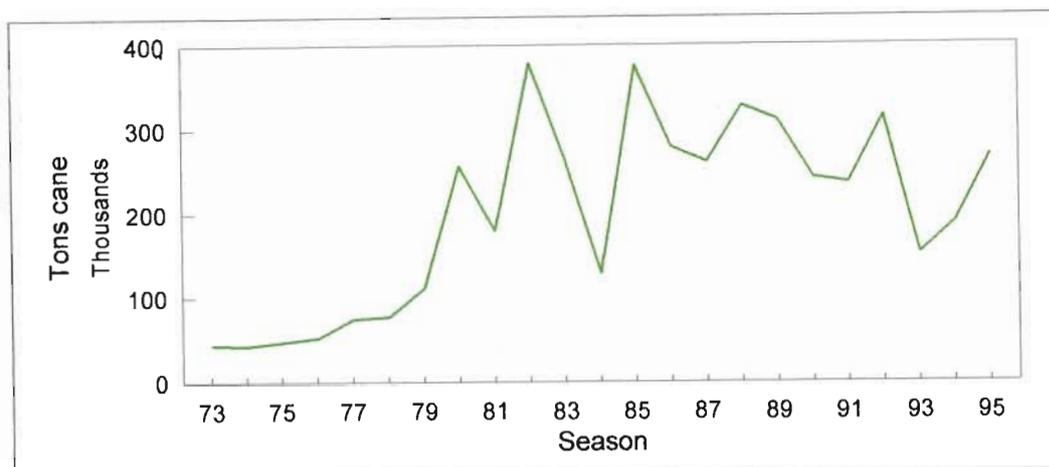


Figure 6.3 Amatikulu mill area small scale grower cane deliveries - 1973 to 1995

Figure 6.3 indicates an increase in the total sugar cane production from 1973 through to 1985 from when a decline in total deliveries occurred. The 1984 deliveries were severely impacted by drought. The average total tonnage of sugar cane delivered by individual growers remained relatively constant (notwithstanding droughts) for the period to 1982. This may be seen in figure 6.4. From that date there has been a decrease in the average tonnage delivered by small scale growers by an average of 12% per season. The Amatikulu small scale delivery pattern would appear to be contra to that shown for Maidstone. Amatikulu growers show an increasing pattern to begin with whereas Maidstone growers (figure 6.2) show a declining pattern with reversals in both cases in about 1982.

The average registered small scale grower sugar cane area remained relatively constant up to 1981 whereafter it declined to 1990. The increase from 1990 is probably impacted by consolidation of sugar industry data as commented upon previously. Figure 6.4 suggests that the average income of small scale growers in the Amatikulu area is declining. Given a continuing increase in the number of registered growers and land area there is also an indication of declining productivity per unit area.

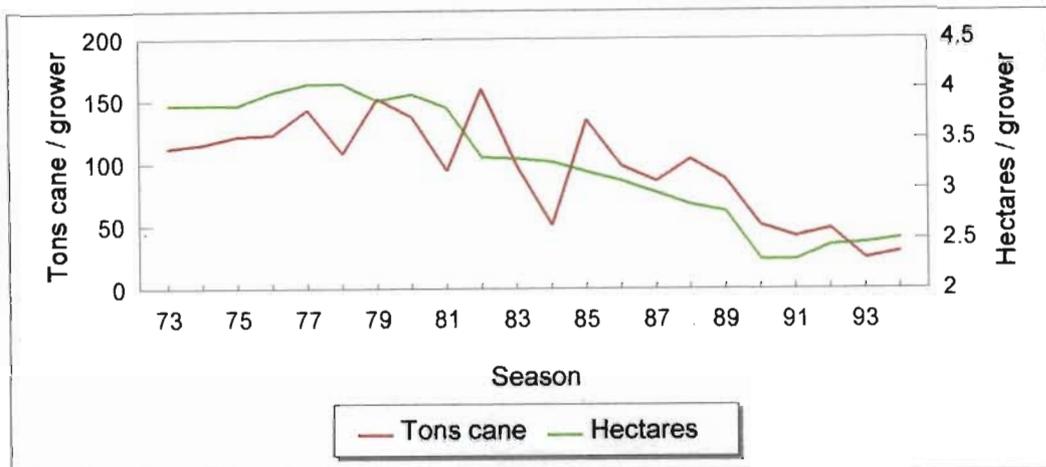


Figure 6.4 Amatikulu small scale grower average tons cane per grower delivering and average registered area per grower

The distribution of small scale growers according to their sugar cane deliveries and land areas is similar to that indicated for other mill areas (see figure 3.16 and 3.17, section 3.7). Eighty percent of Amatikulu small scale growers account for 45% of tonnage delivered and approximately 70% of the land area.

In 1983 Amatikulu Extension services attempted to promote establishment of sugar cane by promoting FAF loans more intensively. This was also an effort to preempt the necessity for borrowers from FAF to make a monetary contribution towards their development (the R50 contribution). This particular attitude may be seen as an attempt to undermine principles underlying the introduction of the contribution and lent weight to problems cited in section 4.9.1. Approximately R1 million of loans were approved as a result of this promotional drive.

The loans were not, however, utilised as anticipated. A drought which occurred at the time could have been a contributing factor. The result of this was a subsequent decline in FAF loan advances in Amatikulu and a net cancellation of unutilized loans.

According to field staff "after twisting growers arms to plant they showed disinterest and (Tongaat-Hulett) realised that the forced pace was the wrong course" (Manning, 1985). Following this, effort was directed at improving small scale grower ratoon management. Discussions with small scale growers and mill extension staff as to why loans had not been utilised indicated the following :-

1. There had been a good harvest in 1985/86.
2. Contractors resisted doing work for small scale growers with loans due to delays in being paid.
3. The previous drought had a demotivating influence.
4. Growers were unhappy with the level of FAF deductions (*cf.* small grower income and production costs section 5.2).
5. A dislike of FAF retention (savings) scheme.
6. In certain cases growers were unaware that they had loans approved.
7. A low sugar cane price.
8. Adverse publicity regarding FAF loans.
9. A greater number of growers were doing their own work without financial assistance.

Small scale grower development in Amatikulu was premised on time being expended by extension staff on addressing development problems and bottlenecks identified by small scale growers and on promoting close liaison with grower committees. Attention was directed at assisting the establishment of small scale contractors with finance being accessed from a development corporation. The philosophy of Huletts Extension services encompassed the following :-

1. Mill extension personnel operated in small scale grower areas by invitation and therefore had to attune themselves to the needs of growers. The objective of the extension service was to transfer knowledge and co-ordinate activities.
2. The extension service needed to contribute to Company profits by encouraging increased sugar cane production. There was a need of mutual advantage for both grower and miller. The benefits of this would lead to improved living standards of the local community.
3. It was considered that the objective outlined in 2 above would be achieved through recognition of small scale grower involvement which was promoted through a committee structure. It was recognised that the more involved a miller was the higher were costs but on the other hand it was also recognised that there was a lower level of involvement below which cane supplies would not be increased. A balance had to be struck. The involvement required discipline as the process involved human development, a perishable product, marketing issues and a capital intensive processing unit (the mill).
4. The promotion of viable contractual services and the motivation of growers to do as much as possible for themselves.

To promote transparency and trust between growers and contractors a document laying out tasks and standards which growers should expect and contractors should deliver was introduced to be signed by both parties when utilising loan finance. Attention was paid to borrower assessment and selection and training courses in ratoon management were promoted.

By 1991 there were 7 703 registered small scale growers on 17 609 hectares in Amatikulu. They delivered 235 323 tons of sugar cane during the 1990/91 season.

It is interesting to note that with emphasis placed by Tongaat Hulett extension services on communication that this element of small scale grower development continued to be

highlighted as a problematic area. The small scale grower committee structure did not appear to operate effectively.

6.5 Felixton Small Scale Grower Development

A brief review of trends in the Felixton area is also undertaken as this area has shown increasing small scale grower sugar cane production since 1973. Felixton and Amatikulu small scale growers were served by one extension department until 1988. Figure 6.5 indicates total sugar deliveries for small scale growers in Felixton for the period 1973 to 1995. The figure is unusual in comparison to similar information shown for other mill areas in that it is the only mill area where the trend is an increasing one. The average rate of increase in total seasonal sugar cane tonnage delivered is 7% per season.

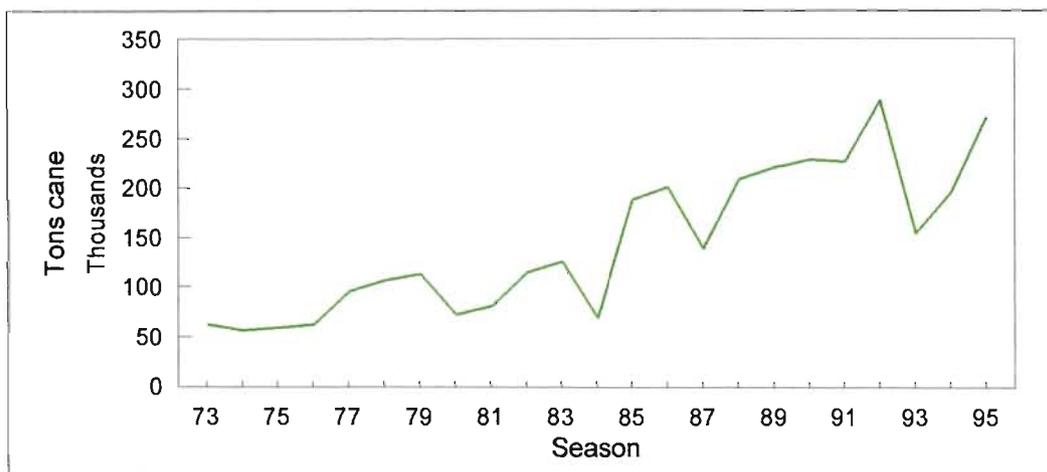


Figure 6.5 Felixton mill area small scale grower cane deliveries - 1973 to 1995

Questions about the above trend however arise when trends in figure 6.6 are considered. The average rate of decrease of individual grower deliveries is 5%. There has also been a decrease in the average size of small grower units from 1982.

The total small scale grower production record masks declining individual grower sugar cane production. These trends in Felixton are similar to those in Amatikulu. The continuing increase in total production of small scale growers could probably be accounted for by the establishment of a number of irrigation projects in the Umhlatuze valley. Both the Glendale and Umfolozi areas, which also have small scale irrigation projects, indicate less rapid declines in total small scale grower sugar cane production than areas which do not have irrigated small scale grower areas. By 1991 there were 3 694 small scale growers on 8 358 hectares in the Felixton area. They delivered 227 069 tons of sugar cane during the 1990/91 season.

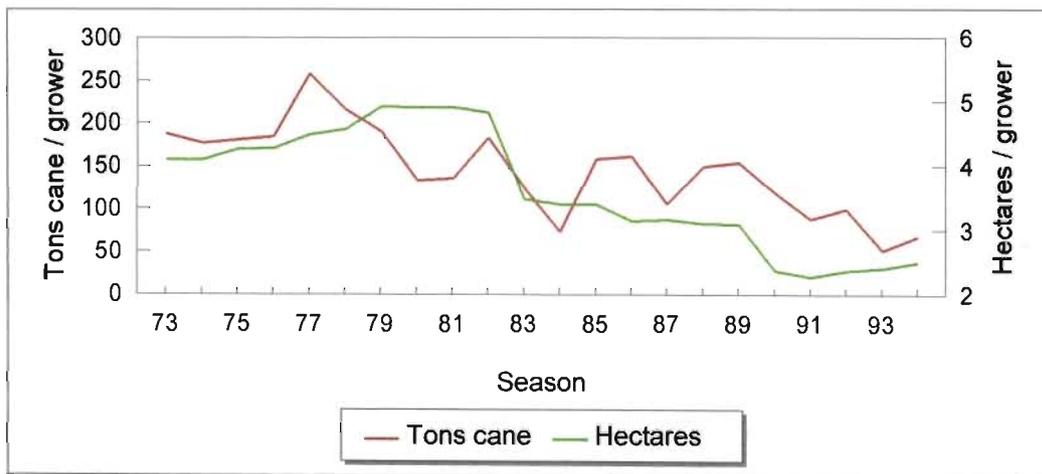


Figure 6.6 Felixton small scale grower average tons cane per grower delivering and average registered area per grower

An area of concern should be the declining individual small scale grower sugar cane deliveries which would lead to reduced incomes from sugar cane production. The Maidstone area has shown a stabilisation of individual growers deliveries while Amatikulu and Felixton growers exhibit an unbroken declining trend. This downward trend in unit size and consequent decrease in individual small scale grower deliveries was shown to hold for the sugar industry as a whole (see figure 3.11, section 3.6.2).

6.6 Resume of Critiques of Small Scale Grower Development

Cherry noted in 1976 when comparing small scale grower development in the Maidstone and Amatikulu areas that in Amatikulu there was "an active and energetic attitude towards cane farming..... with high levels of independence and self interest" whereas in Ndwedwe there was "on the whole, a certain apathy and mild though positive acceptance of the situation" (Cherry, 1976:1). He noted the difference in basic philosophy between Maidstone and FAF.

Cherry suggested that the primary objective should have been to "create a bond between private enterprise and government" which would have led to "development of agricultural resources to the benefit of the people" (Cherry, 1976:5). He suggested that government should :-

1. Provide essential infrastructure;
2. Create an appropriate incentive for small scale farmers to be involved in enterprise management;
3. Provide extension services for the transfer of skills, both technical and managerial; and
4. Provide a "strong and forceful stimulant".

The evaluation undertaken for the KwaZulu Department of Agriculture noted the following:-

1. Small land units did not permit/provide levels of income sufficient to meet a family's full needs;
2. Small scale growers identified capital and labour as being problematic, they did not see the extent of their land units as a problem.

3. There was a desire for small scale farmers in Ndwedwe to reduce their dependence on Maidstone. They wished to establish a co-operative which in the first instance would provide transport facilities (cf section 6.3).
4. "Tongaat (Maidstone) itself is motivated entirely by profit. This cannot be criticised..... but the aggressiveness that Tongaat has shown in fulfilling its search for profit in KwaZulu has led to apathy on the part of the Zulu cane farmer". While this policy continued Cherry noted that "Tongaat will have to continue its administrative function indefinitely". (Cherry, 1976:74, emphasis Cherry's)
5. The unassisted grower as predominated in Amatikulu, was more involved while the assisted grower identified his/her cane as belonging to the mill.

The evaluation concluded that improvements in small scale grower performance lay in improved management and motivation. Factors which influenced the latter were self interest and a quest for profit. The most important conclusion was that "good cane production starts with the human factor" (Cherry, 1976:69). It was recommended that expenditure be directed to technical, general management and labour management training.

Loan applicants, as originally recommended by FAF, should be required to attend a training course before being granted a loan. Access to "cheap finance should not be regarded as a right, the granting of finance should require certain preconditions" (Cherry, 1976:88).

Cobbett in a study undertaken in 1980/81 in the Noodsberg and Glendale areas noted that small scale growers could not expect high earnings due to the small size of their units. He said that for "most the cultivation of the crop will prove to be economically non viable" (Cobbett, 1984:1). As a result of this growers would have to depend on sugar mills for financial assistance and they would in fact lose control over the use of their land.

He suggested that assistance available to small scale farmers for sugar cane production left growers with little choice - either produce sugar cane or continue in subsistence agricultural production as they had done up to that time. Sugar cane was the only realistic option to improve their income. He concluded that in reality growers "rented out their lands to sugar mills in return for cash payments every one and a half to two years" (Cobbet, 1984:21). Under these circumstances growers could not expect to break their reliance on mills or financial assistance nor their need for migrant labour remittances.

In considering the strategy for involvement of the KwaZulu Development Corporation, the forerunner to the KwaZulu Finance and Investment Corporation, in small scale grower development Erskine noted that the contribution of sugar mills to development had been "worthwhile", without it little would have happened and if it was withdrawn areas may have reverted to former conditions which pertained. He went on to say, however, that more meaningful development could have been achieved by placing more emphasis on human development -to assist people to help themselves. A "correct" approach to development was required. The Corporation for Economic Development's approach at that time had supported the Maidstone approach, it had been "production orientated and not people orientated" (Erskine, 1980:3).

Following from the above studies Pike of the South African Sugar Association's Experiment Station in reporting on services available to small scale growers noted that development services provided by mills to growers "showed a lack of training or an educational programme to assist growers to acquire new skills to stimulate management and productivity" (Pike, 1982:4). He reported that milling company staff frequently dealt directly with growers and did not involve the KwaZulu Department of Agriculture extension staff, this he suggested complicated communication with growers. This led to varying degrees of commitment or withdrawal of government extension staff in small scale grower development.

In a study of development in Ndwedwe undertaken by ARDRI (1986) pressure on land occupiers to grow sugar cane was indicated as "gentle" (some coercion) by some small scale growers whereas others "claimed that they were forced to grow cane under threat of eviction or the confiscation of their land either by the Chief or the Government" (ARDRI, 1986:48). This claim was unfortunate in the light of small scale farmers apparent security of occupation of land (see section 2.6.1).

Although pressure to grow sugar cane was cited, the reason 76% of the respondents reported was that it was grown because of sugar cane's profitability or cash earning ability. Within the reasons to produce sugar cane was the perception of "the free-of-charge planting by Sukumani" which referred to the availability of credit (ARDRI, 1986:49). Although the reason to plant sugar cane referred to its perceived profitability, problems identified with sugar cane production involved its apparent unprofitability. Dissatisfaction with sugar cane production was associated with high deductions of expenses from proceeds, with the retention (savings) scheme and its impact on the non involvement of growers in ratoon management and with subsequent complaints that operations were not carried out timeously by the mill development company, with labour shortages and concern in respect of grazing of cane by cattle. All these issues have been referred to previously (see sections 4.12 and 4.13).

ARDRI made the following recommendations with regard to cane production in Ndwedwe:-

1. Sukumani and its associates needed to adopt, as a first priority, a drive to increase growers profits from cane.
2. The weeding scheme required reviewing to meet individual circumstances and its communication required improving.
3. A programme of adult literacy and numeracy needed to be introduced.
4. The scope and the efficiency of the powers of the growers associations needed increasing.

5. Sukumani needed to improve communication with small scale growers and improve certain staff attitudes towards growers.
6. Financial assistance should only be advanced to growers who successfully completed approved training courses and who were creditworthy.

Sokhela (1988) in a study in the Noodsberg area noted that small scale grower development was impacted by :

1. Lack of participation;
2. Poor institutional (farmers association) management;
3. Inefficient extension services;
4. Poor communication; and,
5. The "pressure of development agencies and organisations to meet their objectives resulted in growers non involvement and dissatisfaction" (Sokhela, 1988 : summary).

His study confirmed much of what has been recorded earlier in this section and in the section on bad debts (vide section 4.12).

Vaughan (1990) suggested that the provision of credit to small scale growers, while having positive effects, also had inhibiting effects in the way that it was managed. She stated that growers were "structurally prevented from effectively managing their own budgets" (Vaughan, 1990:27). This arises from the way FAF provides loan finance - orders for the purchase of goods and services as opposed to provision of cash - the way the retention (savings) system is operated and the method of recovering the loans by way of automatic deduction from a growers proceeds.

She found however, that growers, even with the above negative factors, were positive about development. She suggested that a major problem is grower illiteracy and

innumeracy in respect of information which is provided on cane payment statements and FAF loan and savings statements.

It is interesting to note that she recorded that extension staff in Amatikulu stated that growers who had received credit from FAF viewed their fields as belonging to FAF. This observation, also noted by Cherry (1976), tends to suggest that growers in Amatikulu had a similar view in this regard to growers in Maidstone.

She indicated that the FAF loan agreement established a "dependency" relationship between growers and mills and went as far as describing the agreement as a contract which makes small scale growers "contract farmers" or "outgrowers" (Vaughan, 1992:12). She recorded that a feature of this arrangement was the organisation of production and labour by mills to secure production in indirect ways. It should be noted that the agreement (contract) is between FAF and a small scale grower not between a grower and a mill. The registration of a small scale grower as a producer of sugar cane with a mill is and always has been a loose arrangement - a grower does not incur any penalties for not producing sugar cane, the worst that could happen for not producing sugar cane was that a grower could lose the right to deliver sugar cane in the future as a result of cancellation of the registration. The sanction which arises in the production process comes about as a result of FAF's loan agreement and performance required therefrom. Mill extension staff and development company officers have enforced performance to safeguard repayment of loans. This involvement has gone as far as taking responsibility for operations as shown in the Maidstone, Eston, Sezela and Noodsberg areas.

The security for provision of credit is a crop, a small scale grower is on communal land and is generally not able to provide fixed security. Land is occupied according to traditional land tenure and constraints pertaining thereto (see section 2.6.1). The pressure to perform in accordance with a loan agreement together with pressure, to a greater or lesser degree, from a mill to produce sugar cane places a grower in a situation described

by Vaughan. Vaughan identifies it as a complex issue and records problems identified elsewhere in this section.

A'Bear (et al) 1994 in undertaking an appraisal of the Small Grower Development Trust's pilot training programme arrived at similar conclusions and recommendations as recorded. He did highlight an issue of conflict of objectives and said that "small growers stated that too many organisations were involved in small grower development and they had a conflict to (sic) objectives" (A'Bear et al, 1994:17).

A'Bear identified the following training needs :-

1. Agricultural techniques;
2. Business management which included elementary financial management, planning and record keeping; and
3. Labour management.

At workshops held by small scale growers in 1995 to discuss their concerns in respect of development supported by FAF the following were raised :-

1. Undue influence of mills on FAF policy and procedures.
2. In certain instances FAF policy was by-passed.
3. Mill development companies did work without involving growers.
4. The understanding of and the level of interest charged.
5. Growers had little or no choice regarding the source of finance.
6. Conflict regarding how the retention scheme operated in certain areas.
7. Poor communication with growers and their structures.

Solutions suggested to address the above were :-

1. Empower local grower structures (mill cane committees) to administer FAF loans in each mill area.
2. Improve communication between FAF and small scale growers.
3. Ensure FAF policy and procedures were applied.
4. Increase grower choices in terms of finance and contracting services.
5. Introduce a system of simple interest as opposed to a compound interest system.
6. Increase small scale grower representation on the FAF Committee.

It will be noted that there is a common thread running through all commentaries from 1976. Mills were generally seen as powerful and small scale growers as disempowered. Concerns about the economics of sugar cane production were frequently raised. Poor communication and lack of knowledge and skills would also appear to have been areas of concern.

6.7 Direct and Indirect Development - Small Scale Grower/Miller Relationship

The above reviews of two divergent methods of small scale grower development would appear to indicate that complex relationships exist at the interface between growers and millers and that these involve economic and social factors. In simplistic terms the grower/miller relationship would appear to be as depicted in figure 6.7. The x axis depicts miller involvement while the y axis depicts small scale grower involvement. The problem facing small scale grower development is where the balance should be between the two.

Questions in respect of the balance have been a focus of attention since FAF's inception. The KwaZulu Cane Growers' Association expressed dissatisfaction about aspects of development in 1983. Small scale grower involvement which encapsulates participation in, contribution to and commitment to development, together with mill involvement was investigated in 1983 and it was found that there were divergent development objectives (Bates, 1983). Ensuing discussions clearly indicated an element of confusion or conflict

of objectives. FAF's objectives were those indicated in chapter 1. Sugar mills objectives were primarily focused on sugar cane supplies. Small scale growers found themselves subject to the foregoing objectives. They had not defined their own objectives which could have included employment creation, improving welfare, human development, establishing viable farming units and maximising productivity. FAF's objectives should have complimented grower objectives however this did not appear to be the case.

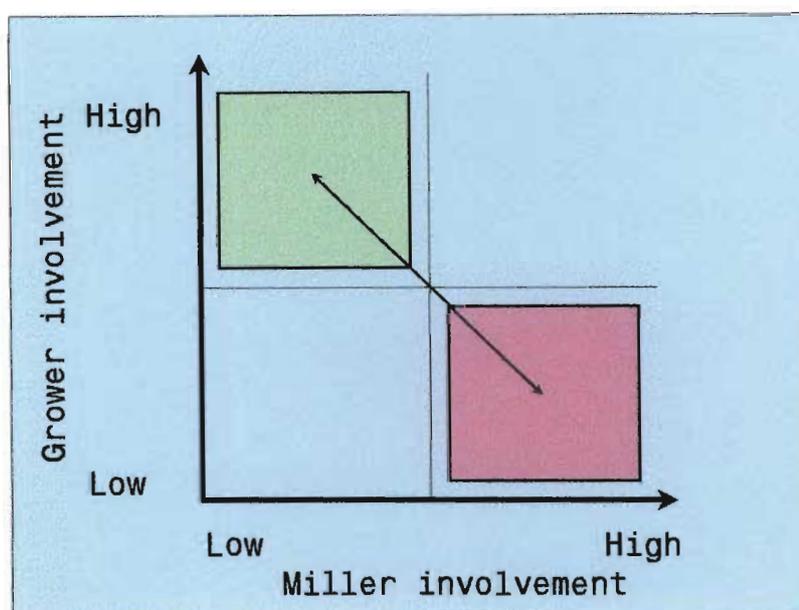


Figure 6.7 The relationship between small scale growers and sugar mills with respect to involvement of the parties

It was noted that FAF did not interact directly with small scale growers but worked through mill group local committees (see section 4.4) which operated via mill extension services or mill development companies. An additional element in interaction with small scale growers were government agricultural extension services which operated at various levels and with varying degrees of enthusiasm and success. The most influential links

with small scale growers were sugar mills. These were strengthened by their focused purpose, their control of FAF administration and their presence on the ground.

6.8 Summary

This chapter presented an overview of small scale grower development in the Maidstone, Amatikulu and Felixton areas. This was done to establish a background to two different development philosophies. The approach represented by Maidstone exhibited a directed or managed production oriented system whereas the approach represented by Amatikulu and Felixton represented an indirect grower oriented extension system.

Sukumani Development Company at Maidstone was the first mill development company to be established in the sugar industry. A further three mill development companies were established at Noodsberg, Eston and Sezela. These last three followed very similar procedures to Sukumani. Mill development companies have been associated with development of 31% of small scale growers in the sugar industry.

Amatikulu and Felixton mills have been associated with development of approximately 40% of small scale growers in the sugar industry. The balance of 29% of small scale growers were associated with mills whose development philosophies have fallen somewhere between those held by Maidstone and Amatikulu. This division of small scale grower development into different philosophical categories is used in analyses in chapter 7.

The philosophy underpinning mill development company promoted development was to rapidly establish and increase small scale grower sugar cane production in an area. Maintenance of this production then became a priority. In this way sugar cane throughput for a sugar mill was secured and income flowed into the small scale sector. Development of small scale growers in terms of training, transfer of skills and promotion of their involvement was then supposed to follow. A problem which appears to have arisen is that

the latter objective, development of human potential, would not appear to have been reached and achieved.

An overall indication that the average size of small scale grower sugar cane units has been declining and that small scale grower average deliveries per grower have decreased was underscored in all mill areas reported on. The decline in unit size arises primarily from increasing numbers of small scale growers entering the industry with small units. Whether small scale growers were subject to managed or self motivated development did not alter the trend.

Commentaries and reports referred to indicated a number of issues which have continued to affect small scale grower development since 1973. Underlying the issues are small scale grower empowerment and the economics of sugar cane production. The grower/miller interface, economics of small scale grower production, especially when credit was used, and an apparent lack of definition of, or understanding of objectives have possibly given rise to tensions developing in the relationship between growers and millers. A model was presented indicating the dynamics of the relationship and suggesting that a balance was necessary. The following chapter explores the relationship in more detail.

7. EVALUATION OF THE IMPACT OF AND REACTIONS TO FINANCING BY SMALL SCALE GROWERS

7.1 Introduction

Chapter 7 is a summation of the relationship between the credit delivery system, FAF and its associated intermediaries (mills and mill development companies), and the receiving system, small scale growers, which are integral to the evaluation of FAF's objectives.

The first part of the chapter abstracts findings from group discussions and an attitude survey undertaken in 1990 in 12 mill areas which identified grower profiles and confirmed grower attitudes to differing approaches to development - participative and directive.

Results of group discussions highlighted and confirmed differences identified in previous chapters. A field survey provided information on small scale grower demographics, socio economic status, access to land and production of livestock and other crops. Detailed information on small scale grower sugar cane production and attitudes towards it are provided. Growers recall of use and knowledge of credit and savings is then presented.

Following presentation of the survey results FAF records pertaining to the sampled growers are analysed. Where appropriate FAF data are compared to grower recall, understanding and attitudes expressed in the field survey.

Two linear discriminant analysis models were developed. The first model identifies characteristics of small scale growers who use loans and those who do not. The second model identifies characteristics of growers who have utilised mill contracting services and those who have not to develop their sugar cane. This second model links to the diagrammatic model of the grower/miller relationship presented in chapter 6. The results of these models provide confirmation of observations and trends identified in other sections of this study.

Following the linear discriminant models a closer look is taken at the results with analysis providing confirmatory findings and highlighting areas where caution in interpretation of results is required. This then leads to an analysis of small scale growers who have evidenced high levels of sugar cane productivity.

The final section of the chapter raises a cautionary comment about the data and suggests that the way substitutes were introduced into the field survey may have biased the incidence of loan defaulters downwards.

7.2 Methodology

The evaluation was divided into two parts. The first involved exploratory group discussions of involved parties to obtain overall attitudes with the second part involving a questionnaire and field survey.

7.2.1 Group Discussions Methodology

Five group discussions, the results of which are summarised in section 7.3, were held in January and February 1990 as follows:-

1. Three small scale grower groups consisting of 12 growers from each of the Amatikulu/Felixton, Maidstone/Mt Edgecombe and Sezela mill areas. The participants were selected by KwaZulu Department of Agriculture extension officers on the basis that one third should represent good farmers, one third average and one third poor farmers. This obviously involved some subjectivity on the part of the selectors so an element of bias could not be discounted.
2. One miller group consisting of field and/or extension personnel from the following mills :-

- Amatikulu
- Felixton
- Maidstone
- Glendale
- Noodsberg
- Eston
- Sezela

Participants were selected by the respective mills as being the most suitable persons.

3. One group of six KwaZulu Department of Agriculture extension officers. They were officers involved in sugar cane extension in the different mill areas.

The group discussions were held in Durban at a market research company's offices and were moderated by trained and experienced researchers who followed a discussion guide to ensure that relevant points were covered during the discussions.

The group discussion technique was employed as an exploratory exercise as it offered an opportunity of obtaining in-depth information. The technique enabled leads to be followed up and areas of interest to be more fully explored which could not be done to the same extent during a structured interview.

7.2.2 Small Scale Grower Survey Methodology

A survey was carried out in 1990 in twelve mill areas as shown in the following table.

The mills were grouped as shown due to the predominating style of development management which was applied in the different areas. The Tongaat-Hulett North mills promoted small scale grower development under one extension department according to the philosophy detailed in section 6.4. The Tongaat-Hulett South mills promoted small

scale grower development according to the philosophy detailed in section 6.3. These approaches were, in case of the northern area indirect and participative and in the southern area directive and highly managed. It should be noted that since the survey the Umfolozi mill, which was a co-operative mill, has been purchased by the Illovo Sugar Company and the Entumeni mill, which was privately owned, has been purchased by the Tongaat-Hulett Sugar Company.

Table 7.1 Distribution of surveyed small scale growers by mill and consolidated area

Consolidated area	No. growers per consolidated area	Mill	Number of growers per mill
Tongaat Hulett North - THN	204	Felixton	61
		Amatikulu	123
		Darnall	20
Tongaat Hulett South - THS	127	Maidstone	110
		Mt Edgecombe	17
Illovo	155	Gledhow	20
		Noodsberg	30
		Eston	45
		Sezela	60
Individual - (Indv)	116	Entumeni	30
		Glendale	61
		Umfolozi	25
Total	602		602

The Illovo mills, excepting for Gledhow, followed a philosophy similar to that of the Tongaat Hulett south area but being a different milling group imprinted its own procedures/style. Gledhow mill, although belonging to the same milling group, did not establish a mill development company to provide contractual services as did the other three.

The independent mills did not establish mill development companies but were involved at various levels of intervention which had similarities. Their philosophies appeared to fall between those espoused by the Tongaat-Hulett North and Tongaat-Hulett South mills.

The sample was drawn from the sugar industry's grower register. A random sample proportional to the number of growers in each mill area was drawn for each area included in the survey. As a result of the previous registration of non-quota growers by the sugar industry the problem of these growers not being included did not arise (see section 3.5). The total sample numbered 602 small scale growers. The size of the sample requires further comment as the confidence one can place in results obtained will be determined by the underlying variability of the population.

Constraints of time and cost played a major role in determining the sample size. A large amount of data in rural surveys exhibit skewed distributions - see data referred to in previous sections. Using standard deviations of means from proceeding data in calculating samples give sample sizes in excess of 2 000 respondents which in terms of time and cost constraints was unacceptably large. With a sample of 602 growers a cautionary word is noted in that individual mill area samples are not large therefore comparison between mills should be treated with caution. The consolidated area samples are larger, see table 7.1, and will probably present more valid comparisons.

Respondents were interviewed individually at convenient locations in each mill area in their home language. Where an original respondent was unavailable for interview a substitute was drawn randomly from the grower register. The substitution rate was 21%. This in itself is an important statistic. The reasons for substitution included the following:-

1. Grower unknown and/or had left the area.
2. Grower had abandoned cane farming.

3. Grower worked away from home, could not be contacted and no member of the household could be interviewed in the registered growers place.

The most common reason for substitution was that indicated in points 1 and 2. Given the reasons for not being available for interview these growers should have been included in the analysis as possible negative responses to sugar cane farming and therefore their exclusion may have introduced a bias into the analysis. The highest incidence of substitution was in the Eston mill area (37%) followed by Maidstone (30%). Both these areas recorded social unrest as contributing to the unavailability of growers. The highest level of social unrest was in the Eston area. The research organisation undertaking the work recorded that social unrest in many areas of KwaZulu-Natal placed stress on the survey. The Glendale mill area had a substitution rate of 20% of which 11% were recorded as newly registered growers who had not yet established sugar cane. This was the only area recording this reason for substitution of respondents. This again would appear to be an unfortunate omission. Further comment will be made on growers who were not interviewed at a later stage (see section 7.9).

The questionnaire comprised a combination of 51 closed and open ended questions which made final coding an extensive exercise. The questionnaire was divided into the following sections :-

1. Demographic
2. Socio economic
3. Land/Livestock/Other crops
4. Sugar cane husbandry
5. Sugar cane attitudes
6. Knowledge of organisations involved in the area
7. Use and knowledge of credit

The survey, as any survey of this nature would have been, was exposed to weaknesses of lack of record keeping by small scale farmers and hence a reliance on an individual's memory, errors of interpretation and understanding on the part of both the enumerators and the respondents as well as possible exclusion of pertinent questions and inclusion of questions which may have given rise to invalid, incorrect or unnecessary data collection. Notwithstanding the possible weakness in the sample size and the errors which may have arisen as a result of misunderstanding, misinterpretation and inability to recall information it is suggested that results of the survey provide indicative information which provide broad answers to the initial questions, albeit not necessarily as detailed as would have been liked.

7.3 Results of Group Discussions

A summary of each group discussion is provided. The results complement information detailed in chapter 6.

7.3.1 Amatikulu/Felixton Small Scale Grower Group Discussion

This group of small scale growers had a positive outlook to sugar cane production indicating that sugar cane was an important source of income. The growers belonged to farmers' associations and they had utilized their income from sugar cane production to invest in other activities such as building a shop and purchasing tractors.

In respect of FAF they were critical about the loan application process. There was no direct contact between FAF and growers. The mill extension service acted as a "middleman" and growers expressed disquiet about this, to the degree of being suspicious of the integrity of the system. They also felt that there was a great deal of "red tape" in borrowing.

The growers saw the KwaZulu Finance and Investment Corporation (KFC) as providing finance for the purchase of tractors. Once again the finance was routed through the mill and this gave rise to similar views as those expressed about FAF.

With regard to problems faced by growers they felt that there were insufficient contractors (tractors) and those that there were, were identified as inefficient and "monopolistic". The inadequacy or lack of roads was also identified as problematic.

Growers had a feeling that racial discrimination existed, firstly, where they perceived that growers of other groups could access FAF directly (which was not the case) and secondly, where contractors of other racial groups did not appear to have as comprehensive inspections carried out on their work as did black small scale contractors before payment was approved. Growers expressed dissatisfaction with the operation of heavy road transport which involved delays and loss of cane between zones and mills.

The group identified training as a solution to problems of poor production and management. They also identified an issue where small scale growers did not receive economic information whereas large commercial growers did. Poor productivity was ascribed to insufficient funds to purchase necessary inputs. "Embezzlement" of funds, which was a function of the routing of funds, was cited as one of the reasons for shortage of funds. This arose out of suspicions around deductions made from their proceeds and loans. They suggested that funds should be paid directly to them.

7.3.2 Maidstone/Mount Edgecombe Small Scale Grower Group Discussion

This group of small scale growers represented two distinct development styles. The Mount Edgecombe group had received development assistance from a large commercial grower. This commercial grower had spent time training and encouraging small scale growers to be involved. Small scale growers exposed to this form of development expressed positive views about agriculture and were proud of their involvement. They

indicated that they were involved at all stages and had costs etc. explained before operations were undertaken.

The Maidstone group, on the other hand, expressed extreme dissatisfaction with the Sukumani Development Company which did everything for them. They did, however, recognise that they could not have progressed without Sukumani as they did not have tractors or finance to produce sugar cane. They expressed dissatisfaction about being ill informed and on being pressured into accepting Sukumani's point of view. The growers felt that they did not earn enough from their production.

Growers were under the impression that they had a "ten year contract" with Sukumani. This would have in fact been a misunderstanding of the FAF loan agreement which was, at that time, a 10 year loan (see section 6.6).

As in the case of the Amatikulu/Felixton group, growers suspected the authenticity of their statements. A major criticism of Sukumani was that it had full control of farmers' loans, to the point of farmers' exclusion. Farmers felt that they were ignorant of their financial status with no control over what was deducted or withheld from their proceeds. A farmer could not even discipline Sukumani by withholding payment as Sukumani controlled payments.

Growers viewed KFC as being closely associated with Sukumani. Local small scale contractors, although viewed as more efficient than Sukumani, were seen as being constrained in their operations.

Growers poor productivity was attributed to:

- floods;
- drought;
- cane fires;

- lack of maintenance of the crop;
- Sukumani not responding promptly to requirements;
- competition from large commercial growers who had access to funds and irrigation.

Growers had a view that being able to obtain freehold land rights would assist them in obtaining finance.

7.3.3 Sezela Small Scale Grower Group Discussion

Small scale growers in the Sezela area viewed agriculture positively. The opportunity to be self employed was attractive. Growers indicated that they were dependent on the Inkanyezi Development Company. As with growers in the Maidstone area Sezela growers expressed dissatisfaction with Inkanyezi. Inkanyezi's herbicide and ratoon management programme was viewed as advantageous.

The maintenance of tractors in the area was identified as a problem with long delays in repairs being experienced. There appeared to be a reliance on Inkanyezi/Illovo Sugar Company to provide assistance and there was disappointment that it was not forthcoming timeously.

With regard to FAF, growers expressed dissatisfaction with loans being routed through the mill/Inkanyezi. There also appeared to be dissatisfaction with deductions from their sugar cane proceeds and the rate of interest charged on loans. Interest charges were seen as contributing to poor returns.

Sezela growers referred to services previously supplied by the government and stated that they were more satisfied with these as there had been a greater element of choice. Inkanyezi, they stated, insisted on providing an entire package. Growers said that they were unaware of charges that they incurred and were "caught" because they had "signed".

Growers appeared to be confused about the roles of the KwaZulu Department of Agriculture and the KwaZulu Cane Growers' Association. Local farmers' associations were viewed as service organisations. A number of farmers' associations in the Sezela area operated transshipment cranes at loading zones to load and unload growers' cane.

Farmers expressed a need for training which would lead to independence of small scale growers from development organisations. They felt that they should take charge of cane growing and service operations in their area, this would remove them from the control of Inkanyezi in which they expressed distrust. Poor productivity was attributed to laziness of farmers, below standard inputs and questionable service from Inkanyezi.

7.3.4 Miller Group Discussion

The miller group discussion indicated that production from small scale growers was important to sugar mills. Small scale grower production represented an opportunity to expand cane supplies.

The group recognised that only a few small scale growers were successful and that this represented a problem. Unsuccessful small scale growers contributed to a bad image of sugar cane growing. The ageing population of small scale growers was identified as a further problem - no young people were showing an interest in sugar cane production.

The group agreed with the good intentions of small scale grower development and recognised the benefits of helping growers to improve their productivity. The reality, they stated, was that this was not possible as small scale grower land units were too small and therefore could not sustain a family. The units could only provide a supplementary income and as a result woman and children were left to run sugar cane operations.

The group did recognise that, in certain instances, they had "charged in" and "developed at a hell of a rate with one thing in mind - tons of cane through our mill - blow what

happened out there, and maybe no growers were even involved, we just developed their land".

The group believed that they could not sit back and "allow development to take its course". "Not only were the current circumstances of land tenure and all its ramifications unsuitable for such development to take place, but they believed that it had to be proved that cane growing could be profitable in order for development to have any chance of succeeding". The physical and human development aspects were required to run parallel with each other, you did however require finance for human development and this had to come from the physical development. "For anything to survive it has to be proved to be profitable".

Some of the group said that they had tried to follow FAF's objectives and "stepped back" from their input but this had proved unsatisfactory so they reintroduced their services. The following statement encapsulates much of the foregoing :-

"Under the present circumstances, which are beyond our control to change, we take the next course of action which is to keep the cane alive which may be short term in some areas, and in the more rural areas perhaps long term, because you can adopt that attitude (of development) and survive for longer. Certainly, if you keep on in our area with this naive attitude that we must develop the farmer, which we have done over the last few years, cane farming will become a complete no-no in the end". The foregoing indicates a wide difference between growers views, expressed earlier and FAF objectives.

The miller group also recognised that for their input, developing 1 hectare units was not really worthwhile and that they should concentrate on larger units. However it was noted that a number of 1 hectare units in an area adds up as does the production. Mills situated closer to urban areas saw it as important to secure cane land which otherwise would be lost to other crops or housing. This also led to a recognition of area differences which it was felt that FAF did not recognise.

The miller group believed that they had a good relationship with small scale growers. They admitted that they were very protective of their growers and at times probably had too much of a paternalistic attitude. Small scale grower areas were "their (the mills) territory" and they "were resentful of too much outside interference". This attitude arose from the large investment that mills had made in small scale grower development.

The group stated that their credibility had been put at stake by "unnecessary interference" of the KwaZulu Department of Agriculture extension staff and FAF's "persistence to strengthen the farmers associations". One participant stated that he believed that "the Fund has grossly over emphasised and over promoted a thing like the Small Cane Growers' Association. They have pushed and pushed in order to give them (growers) strength in order to take away the millers bargaining position with the growers".

From the above arose a number of negative attitudes towards FAF which were expressed as anger, resentment, frustration, annoyance, mistrust and disappointment. The miller group viewed FAF as having an "unrealistic view on development", this arose from FAF's objective of establishing self sustaining farmers which, as has been recorded, the mills did not see as possible given the situation small scale growers found themselves in. One mill representative stated that if FAF's objectives were followed there would be a two third reduction in small scale grower cane supplies to his mill.

Representatives agreed that FAF had to safe guard its financial investments but that it should not be involved in how the actual operations were carried out. They had strong criticism of FAF's involvement in attempting to direct how development should be undertaken and felt that this was an area in which FAF should not have been involved. They suggested that FAF's role should have been confined to being "banker" as opposed to being involved in development issues. FAF, they believed, in addition to being a financier, could have provided liaison functions between all parties and provided information on development issues.

The KwaZulu Department of Agriculture extension staff were not viewed as contributing a great deal to small scale grower development. There appeared to be a power struggle between extension officers and mill field services as to who was promoting and administering development in the various areas. As a result of this growers were drawn into the struggle and mills credibility was brought into question. It was however recognised that this was not the case in all areas. In some areas co-ordination of activities was taking place. A closer working relationship was seen as an answer to the problem. It was noted that the KwaZulu Government agriculture extension services operated under great difficulties with poor management, lack of vehicles and no programmes or direction. A strength which the extension officers were recognised as having was that they represented the government and were independent of other organisations. The, then recently formed, joint extension meetings were seen as a positive move in the relationship between mill staff, growers and extension services.

Joint extension meetings involved mill staff, KwaZulu Department of Agriculture extension officers, as well as grower and FAF representatives. The objective of the meetings was to develop and co-ordinate extension programmes in the respective mill areas. When an official, seconded by FAF to the Department of Agriculture to assist with the management of extension services to small scale growers, resigned in 1992 the system fell into disuse.

7.3.5 KwaZulu Department of Agriculture Extension Officer Group Discussion

Extension officers believed that they had a vital role to play. They had a paternal outlook towards "their farmers". This outlook may have been a contributory factor to the conflict which was indicated as existing between mills and extension officers. Extension officers indicated a scepticism of millers intentions in their areas and hence an element of distrust was evidenced. The paternalistic view arose out of extension staff seeing themselves as assisting farmers who were illiterate and therefore dependent on them for advice.

Mill extension staff were viewed as a threat to their roles. Extension officers believed that they were only called upon when there were problems that mill staff could not resolve otherwise they were not called upon to be involved in sugar cane development.

Extension officers viewed themselves as communicators and saw themselves as being there to assist farmers to help themselves. They were required to introduce new innovations to farmers and persuade them of benefits of adopting these. In addition to the foregoing extension officers viewed themselves as people who taught farmers how to manage their businesses which included the provision of financial advice. They were also involved in establishment of farmers' associations.

Extension officers saw themselves as a link between outside organisations and small scale farmers. Extension officers believed that they had a good relationship with farmers who they stated had confidence in them. An advantage that they had was that they resided in the communities which they served. The relationship was however threatened by confusion which was being created as a result of other organisations having direct dealings with small scale farmers. They felt that there should have been some form of co-ordination and that they, the extension officers, should have been involved.

Extension officers indicated that one of the most difficult issues to be dealt with was small scale farmers' illiteracy. Farmers had, in many cases, to be shown physically what to do/or a subject had to be explained repeatedly, slowly and clearly to ensure that they fully understood what was being taught. Management issues and contracts frequently gave rise to problems.

The issue of providing training to people who were unable to take decisions was also highlighted. In many instances the head of household was away and his spouse and children were responsible for agriculture activities about which he had little or no information.

Extension officers did record that mills were not always to blame for problems but that farmers, who did not manage their cane properly or used excessive amounts of contractual services and who subsequently complained about little or no income, were to blame for circumstances in which they found themselves.

An issue which they raised as a problem was one where FAF processed borrower redemption deductions from sugar cane which had not been financed by FAF. They believed that FAF should only deduct repayments from FAF financed sugar cane and not from sugar cane which had been planted with a grower's own resources.

In response to how extension officers believed small scale growers viewed organisations in the sugar industry they recorded the following :-

1. South African Sugar Association - Farmers did not really know much about SASA. Farmers were generally unable to separate organisations in the sugar industry from each other and viewed them as one entity.
2. Millers - It was believed that farmers had a negative image of millers. It was suggested that field staff employed by millers had contributed to this image.
3. KwaZulu Department of Agriculture extension officers - Extension officers believed that small scale farmers had a positive image of them.
4. Financial Aid Fund - The view was expressed that FAF was viewed positively but because of its close linkage with mills this image was being affected negatively. Extension officers cited instances where problems had arisen and FAF had been cited by mill staff as the problem. Overall, extension officers felt that FAF was recognised by many farmers as having done much to help small scale growers.

Extension officers indicated that there was an on/off relationship between themselves and mills. When there were problems they were consulted otherwise contact was kept to a minimum. Extension officers stated that although they and mills had the same goal - to improve small scale grower productivity - the different methods employed caused conflict.

They said that although joint extension meetings were held there did not appear to be commitment to co-ordination or a partnership. Extension officers viewed the relationship as one filled with conflict, mistrust and misuse and they did not know how to manage it.

Extensionists saw problems arising from the conflict surrounding objectives of developing land/production as opposed to developing people. They also identified disagreement arising from what they had been taught regarding sugar cane husbandry (training was provided at the South African Sugar Association's Experiment Station) and what development companies were actually doing in their development operations. They considered that the terms of the FAF loan agreement were not adhered to by contractors. They felt that mills were "primarily interested in making money, even at the farmer's expense".

Extension officers felt that, with them not being involved in FAF, loan application procedure problems were created for them and farmers. They believed that, with mill extension staff completing FAF loan application documents and at the same time striving to meet development targets set by mills, problems were created.

Extension officers felt that limited vehicle operating budgets made their job difficult. In addition, the size of small farmer units raised a question as to whether the effort was worthwhile. Extensionists were not dealing with legitimate farmers in most cases and this required addressing.

7.3.6 Summary of Group Discussions

The groups appeared to focus on the same problems but from their particular perspectives. Growers indicated a mistrust with regard to the way financial transactions took place and felt that they lacked adequate training and information. Their relationship with development companies was highlighted as problematic and they felt powerless in the situation.

The miller group identified the conflict which existed between the commercial imperative of mills and human development requirements. They felt that under prevailing small scale grower circumstances, small land units, lack of economically active farmers etc. that there was no satisfactory solution. The need for cane production dominated the relationship which existed. If mills did not operate the way that they did production from small scale areas would have been severely reduced. FAF policy was not seen as providing a solution but in fact was viewed as a major factor in contributing to problems.

The extension officers saw themselves as being side-lined and were viewed by mills as not making a significant contribution. Each group had a "paternalistic" attitude towards small scale growers and appeared to exhibit an adversarial stance towards each other. This may have been unfortunate as given the pressures in the grower/miller relationship a neutral body, able to manage the process, may have proved advantageous.

7.4 Small Scale Grower Survey

A full summary of the results of the survey in the form of frequency tables and commentary was prepared by Quantum Research and presented to the South African Sugar Association in 1990. This summary will only deal with the most important findings.

In graphs and tables that follow the following abbreviations will be used:-

- THN - Tongaat-Hulett's north mill areas
- THS - Tongaat-Hulett's south mill areas
- Illovo - Illovo mill areas
- Indv - Individual mill areas

See table 7.1, section 7.2.2, for details of mills and number of growers.

7.4.1 Small Scale Grower Demographics

The 602 households surveyed reported a total population of 4 526 people, an average of 7.5 persons per household. Figure 7.1 indicates the distribution by age of the surveyed population. Forty seven percent of the population was below 17 years of age, 10% between 17 and 20 years of age, 25% between 21 and 45 years of age and 17% older than 45 years of age. Forty five percent of the population was male and 55% female.

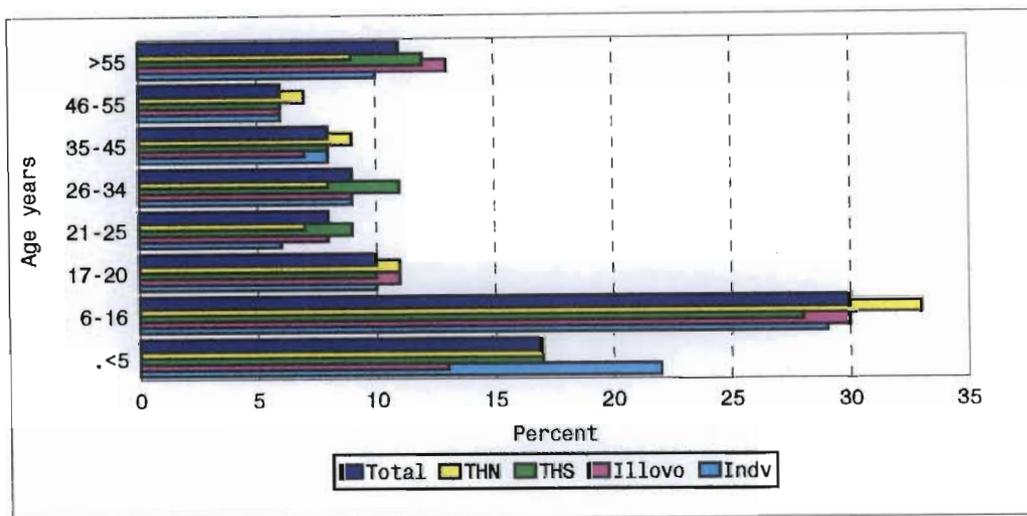


Figure 7.1 Demographic profile of surveyed small scale grower households

Figure 7.2 indicates the age profile of respondents. It will be seen that 46% of respondents were older than 56 years of age with Tongaat-Hulett south and the Illovo areas indicating 54% and 61% respectively. This is similar to the profile indicated in figure 4.18 in section 4.12.2. Forty one percent of respondents were male and 59% female. Seventy five percent of respondents in the Tongaat Hulett south area were female.

An average of 62% of respondents had a level of education less than standard 4 (grade 6). The majority of respondents would therefore be considered to be functionally illiterate.

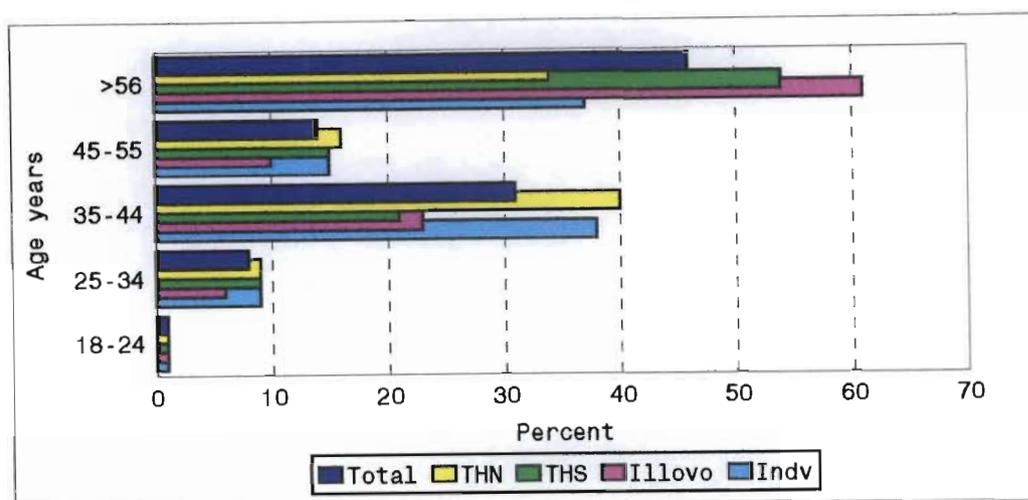


Figure 7.2 Demographic profile of respondents

A total of 26% of households were headed by woman. Fifteen percent of households in the Tongaat Hulett north area, 35% in the Tongaat Hulett south area, 29% in the Illovo areas and 25% in the individual mill areas were headed by females.

Fifty percent of households had one or more members living away from home. An average of 50% of these people were between the ages of 26 and 45 years of age with 67% of them being male. An average of 24% of these people returned home weekly while 42% returned home once per month. The remainder returned home after more lengthy periods away.

7.4.2 Socio-economic Status of Small Scale Growers

Of people residing away from home an average of 64% remitted money to their households with 77% of households receiving remittances in the Tongaat Hulett south area. The response to a question about the last amount received indicated that 33% had remitted between R11 and R50 and 37% had remitted between R51 and R100. The last remittance was recorded by 57% of households as being the same as the usual

contribution. Sixty nine percent of households said that they received remittances monthly and 14% weekly.

In addition to monetary remittances 53% of households indicated that they also received contributions of food. The quantities and values were not determined. Clothing was indicated by 46% of households as being received from people working away.

Seventy five percent of households had a positive attitude towards people working away as they could obtain jobs and earn money which was not possible in rural areas. There was, however, an underlying feeling of discontent expressed by 54% of households regarding men being forced to leave home as a result of economic conditions. The positive attitude expressed towards migrancy was in terms of earning money and not in any other respect.

Seventy nine percent of household decision making was done by the head of household of whom 74% were male. Forty percent of households stated that the male head of household was responsible for most of the farm work. It was recorded that 72% of heads of households received the sugar cane payments with only 25% of spouses receiving the payment. Seventy eight percent of households owned radios, 14% televisions and 6% owned tractors.

7.4.3 Land, Livestock and Other Crops

Eighty nine percent of respondents indicated that they had grown other crops on their land prior to planting sugar cane. These crops were maize (77%), beans (65%), madumbe (60%) and potatoes/sweet potatoes (58%). Not all land planted to sugar cane had been utilized for other crops as respondents had indicated that some land had been cropped, some had been used for grazing and some was uncultivated. Thirty three percent of respondents indicated that their land had formally been used for livestock grazing.

Seventy eight percent of small scale farmers claimed that their land had been measured, with 30% of respondents stating that the KwaZulu Department of Agriculture extension officers had carried out the measurement and 44% that mill development company or sugar mill staff had done the measurement. Mill development companies carried out 60% of the measurement in the Tongaat Hulett south area and 46% in the Illovo areas. Mills had done 26% of the measurement in the Tongaat-Hulett north area and 29% in the individual mill areas.

Forty three percent of the sample however, claimed that they did not know how much of their land was planted to cane. The higher incidence of people claiming that their land had been measured probably relates to land being measured either for loan and/or quota application purposes which they would have observed being done. The highest incidence of respondents not knowing how much land was planted to sugar cane was in the Tongaat-Hulett south area with 73% stating that they did not know their land area.

Seventy percent of respondents indicated that 75% and more of their land was under cane. Twenty percent of respondents indicated that between 25% and 50% of their land was planted to sugar cane. To gauge areas respondents were shown flip cards with shaded areas and asked to indicate which most resembled their land use. Where land was indicated as not being used for sugar cane production it was indicated by respondents that it was used for other crops in similar proportions as those recorded prior to sugar cane production being undertaken.

Although other crops were indicated as being grown by 45% of respondents, it was apparent that a high proportion of land, not planted to sugar cane, was uncultivated, overgrown with weeds or abandoned. Even where other crops were grown not all available land was used. Ninety two percent of respondents indicated that the total land area which they had access to had not changed over the previous five years. In Illovo, which reported the highest incidence of change (12% of respondents), 58% of those

reporting a change indicated that there had been an increase in the area which they had access to.

Fifty two percent of respondents overall considered that the areas of land they had access to affected how successful they could be as farmers. Fifty percent and 51% respectively in the Maidstone and Illovo areas did not consider their land area as a factor.

Ninety percent of respondents stated that they would not lease their land out while 11% claimed that they did lease land. The main objection to leasing land was that it led to friction in the community. In addition, there was a fear that if a person leased land out it was an indication that they did not need it and they would consequently loose claim to it (see sections 2.6.1 and 6.6).

With regard to livestock, 94% of households owned poultry with an average of 18 birds per household. Forty nine percent of households owned cattle with an average of 5.5 head. Goats were owned by 27% of the households. The Tongaat-Hulett south area had the lowest incidence of households owning cattle with 35% reporting ownership. The Illovo areas reported 57% of households owning cattle. Livestock was kept primarily for subsistence purposes. It was indicated by 27% of households owning cattle that they were for investment purposes and by 36% that they were for spiritual/ceremonial reasons.

Income from the sale of other crops and livestock was indicated as being low. Seven percent of the sample claimed to have sold livestock and 20% to have sold other crops. The sale of crops during the year generated less than R100 for 48% of the households selling these products and between R101 and R500 for 34% of households selling products. Ten households indicated that they had received between R1 001 and R3 000 from the sale of livestock.

7.4.4 Sugar Cane Husbandry

Forty three percent of respondents did not know the area of sugar cane which they had. The following table indicates responses to how much cane land each household had.

Table 7.2 Area of sugar cane cultivated by surveyed small scale growers

Hectares	THN %	THS %	Illovo %	Indv %	Total %
Don't know	33%	73%	40%	32%	43%
< 1	13%	9%	14%	13%	11%
1 - 2	14%	10%	12%	25%	15%
2 - 3	8%	1%	12%	12%	9%
3 - 4	21%	2%	12%	6%	12%
4 - 6	5%	2%	6%	4%	4%
6 - 8	3%	1%	2%	5%	3%
8 - 10	1%	n/a	1%	2%	1%
> 10	2%	4%	1%	1%	1%

The highest incidence of the response "don't know" occurred in the Tongaat-Hulett south area (Sukumani). The high incidence, 21%, of households with 3 - 4 hectares in the Tongaat-Hulett north area may be viewed with a question mark as at one stage a small scale grower could not cultivate more than 4 morgan (\pm 4 hectares) of sugar cane land and all applicants for quota automatically applied for this area whether they had the actual area or not (see chapter 3). Of growers that indicated that they knew the area of their cane land 61% had less than 3 hectares and 82% had less than 4 hectares (*cf* section 3.7 where 90% of registered growers were recorded as having less than 4 hectares).

Eighty two percent of surveyed households stated that the area which they had planted to sugar cane had not changed over the previous 5 years. Seventeen percent indicated that their area of sugar cane had changed. Of the 17% who recorded a change in their sugar

cane area, 62% stated that it had increased in size. Households recording decreases stated that it was as a result of floods, poor returns, contractors not ploughing the land or sugar cane dying. The highest incidence of households reporting decreases in sugar cane land areas were in the Tongaat-Hulett south and Illovo areas. The Tongaat-Hulett south area was one of the areas most badly affected by floods in the late 1980's. Both the Tongaat-Hulett south and Illovo areas have mill development companies providing services in the areas. Where individuals had experienced decreases in land area they tended to view their sugar cane production as unsuccessful and unprofitable.

Sugar cane production operations were carried out in a variety of ways utilizing mill development companies and mill services, large and small scale contractors, hired labour and farmers own and family labour. Figures 7.3 to 7.8 illustrate methods employed for land preparation, planting, weeding, fertilizing, harvesting and transporting sugar cane. The percentages in each figure for each operation per method total, in most instances, to greater than 100% as a result of growers using combinations of methods.

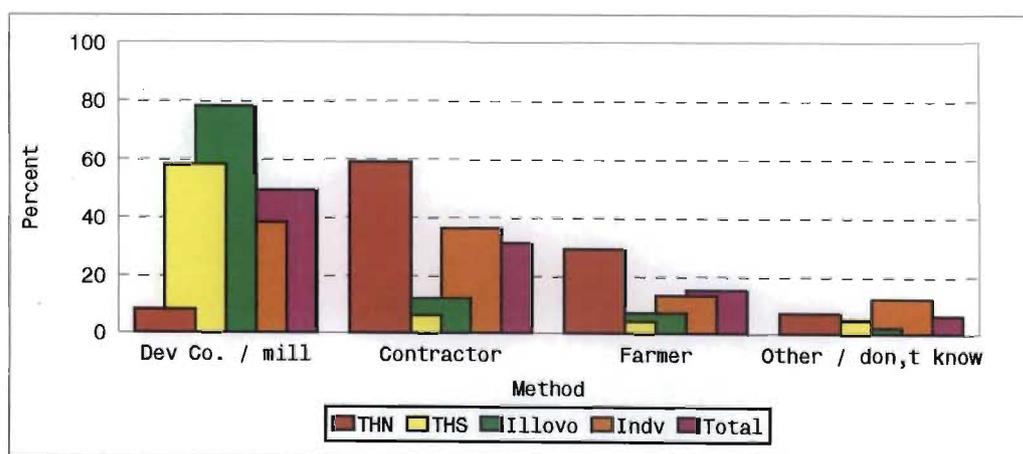


Figure 7.3 Methods small scale growers used to carry out land preparation

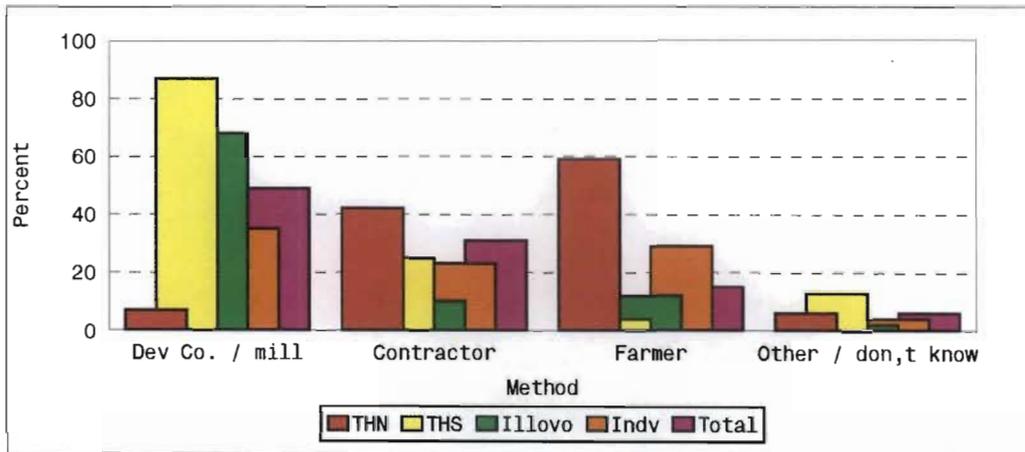


Figure 7.4 Methods small scale growers used to carry out planting

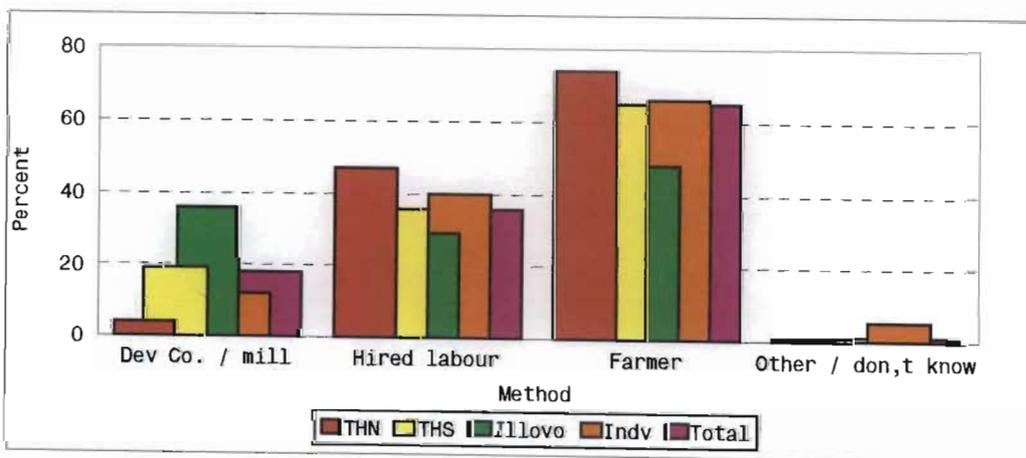


Figure 7.5 Methods small scale growers used to carry out weeding

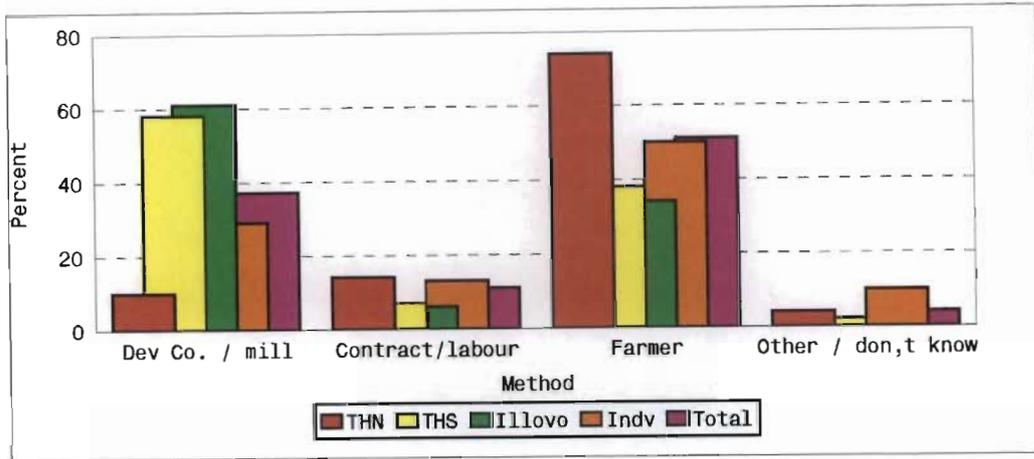


Figure 7.6 Methods small scale growers used to carry out fertilizing

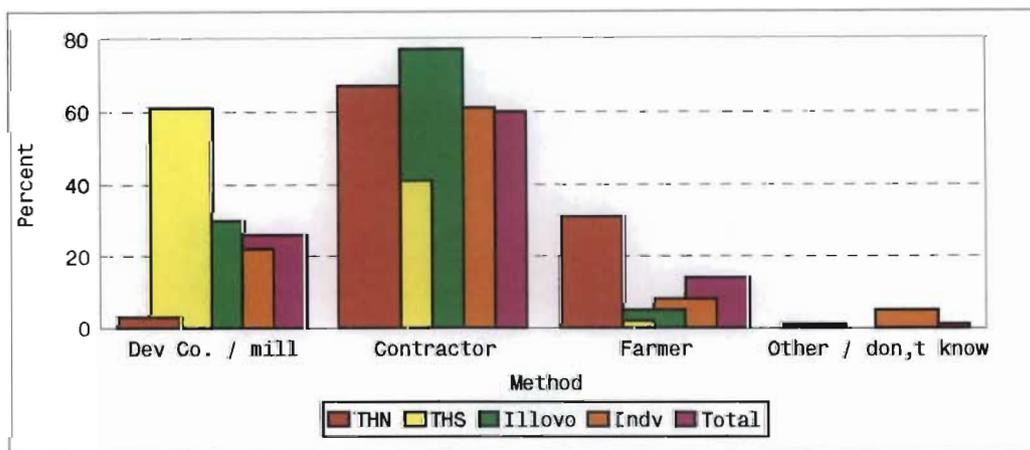


Figure 7.7 Methods small scale growers used to carry out harvesting

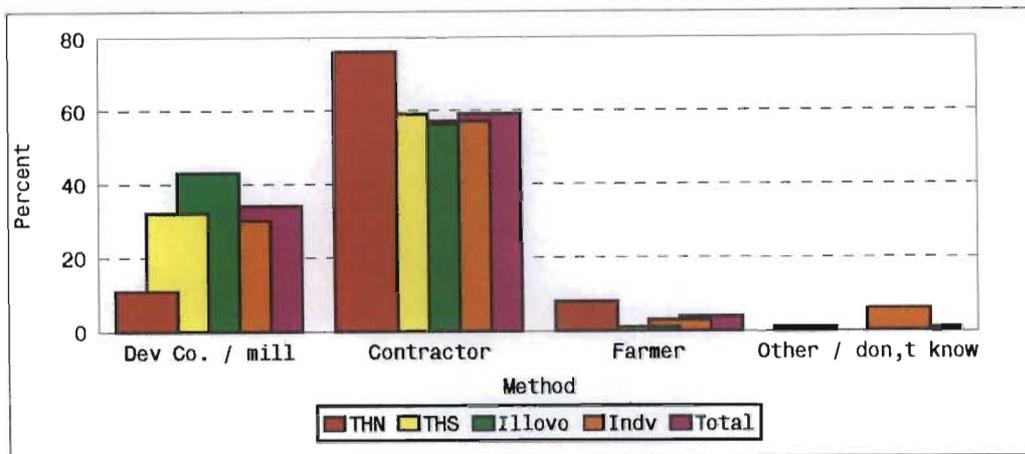


Figure 7.8 Methods small scale growers used to carry out transporting

It will be seen that there are area variations. Areas such as Tongaat-Hulett south and Illovo, which have mill development companies, have a predominance of use of these companies for land preparation, planting and fertilizing. Mill development companies are also active in harvesting and transport but not to as great an extent as they are involved in land preparation, planting and fertilizing. Harvesting and transporting of sugar cane are predominated by contractors which usually involve small scale contractors undertaking harvesting and transport to transshipment zones from whence heavy road vehicles transport sugar cane to a mill.

The Tongaat-Hulett north area shows a predominance of use of farmers own and family labour, hired labour and contractual services (see section 5.2). Contractual services are primarily used for those operations requiring mechanical power while those operations which can be performed without a large mechanical input labour is utilized.

The weeding operation is predominated by the use of labour in all areas. The Illovo area stands out as one where the mill development company is involved to a greater degree in this operation. This would link with the operational methods identified in section 4.12.2. The application of fertilizer is also an operation where mill development companies play

a role in those areas where they operate. Mill development companies, as previously noted, have targeted ratoon management operations as a critical factor in small scale grower productivity.

With regard to harvesting Sukumani development company, in the Tongaat-Hulett south area, has played a greater role than mill development companies in other areas, they however, play a lesser role in transporting as a result of their policy of encouraging small scale contractors to undertake this operation.

The preceding figures provide a good summary of small scale grower sugar cane production methods and show involvement, and in particular dominance, of mill development companies in those areas where they operate. The analysis serves to underscore findings presented in chapter 5 and 6.

Respondents were required to indicate their level of satisfaction with the particular way they carried out their operations. Table 7.3 indicates that, overall, a high percentage of growers indicated a high level of satisfaction.

The percentage of respondents expressing a high level of satisfaction with mill development companies was lower than that for other methods. It is interesting to note that a majority of respondents were satisfied with their own inputs into operations. This may be significant in terms of how extension services should approach growers to encourage increased productivity.

Where respondents indicated dissatisfaction with the way operations were carried out this generally related to cost and efficiency. Asked whether there was a better way of carrying out specific operations with which they were dissatisfied they could not suggest an alternative. It should be noted that for any particular operation a maximum of 10% of respondents expressed dissatisfaction.

Table 7.3 Small scale growers level of satisfaction with sugar cane production methods

Operation	Method	Very satisfied/satisfied %
Land Preparation	Dev Co./Mill	80
	Contractor	86
	Farmer	96
	Overall	84
Planting	Dev Co./Mill	75
	Contractor	92
	Farmer	97
	Overall	75
Weeding	Dev Co./Mill	78
	Hired Labour	86
	Farmer	88
	Overall	78
Fertilization	Dev Co./Mill	75
	Contractor	97
	Farmer	91
	Overall	75
Harvesting	Dev Co./Mill	81
	Contractor	84
	Farmer	94
	Overall	81
Transporting	Dev. Co/Mill	84
	Contractor	82
	Overall	80

Respondents were requested to indicate the percentage of their sugar cane at various ages. Table 7.4 indicates percentages by stage and area and clearly indicates, according to the overall allocation of land that small scale growers have a cycle of six harvests between plantings. This impacts the economics of cane production as detailed in chapter 5.

The percentages indicated for cane at different stages total greater than 100% as a number of growers indicated that they had different plots of sugar cane at different stages. The

Table 7.4 Small scale grower age of sugar cane by area

Ratoon	Overall allocation of loan %	Percentage of cane at each stage				
		THN %	THS %	Illovo %	Indv %	Total %
Plant	18%	37%	17%	23%	28%	28%
1st	9%	14%	10%	12%	10%	12%
2nd	14%	16%	14%	16%	16%	16%
3rd	14%	20%	18%	12%	17%	17%
4th	13%	16%	12%	15%	19%	15%
5th	22%	19%	28%	22%	23%	22%
6th	3%	4%	3%	3%	5%	4%
7th	3%	1%	2%	6%	2%	3%
8th	4%	8%	3%	2%	8%	5%

indication however is that sugar cane is replanted after 6 harvests or after the 5th ratoon. Respondents were asked at what stage they normally replanted, 20% (31% in the individual areas) indicated that they had not yet replanted which, given the information in table 7.4, would suggest that they had been producing sugar cane for less than 7 years. An average of 30% indicated replanting at the 4th or 5th ratoon a further 9% indicated replant at the 6th ratoon. It was interesting to note that 13% indicated that replanting should take place at the 10th ratoon however this is not reflected in table 7.4.

Forty two percent of respondents indicated that replanting took place at the stage that they had indicated as a result of "incorrect farming procedures" (poor management) which related to poor weeding and fertilizing. This probably translated into reduced or poor yield levels. This observation by respondents conflicts to a degree with their satisfaction expressed with operations which they carry out.

With regard to harvesting, 50% of respondents indicated that they harvested their sugar cane at 12 months of age. A total of 61% harvested their sugar cane at an age of 12 to 15 months. Under dryland (rainfed) conditions a 12 month harvesting cycle is considered

too short, an optimum cycle is approximately 14 months, except in high lying colder areas. A further 26% harvested at 18 to 19 months. Most of these respondents were in the Tongaat-Hulett south, Illovo and individual areas which encompass higher lying sugar cane producing areas where the harvesting cycle can extend to 22 months. The Tongaat Hulett north area exhibited 67% of respondents harvesting their sugar cane at 12 months and a total of 74% at 12 to 15 months. A third of respondents indicated that there could be reasons other than the maturity of cane to influence the age at which sugar cane was harvested, these were runaway sugar cane fires and financial pressures.

Table 7.5 shows respondents indications of income which they received from sugar cane during the 1989/90 season. A number of respondents did not indicate whether the income was gross or net after expenditure i.e. net income or whether it was profit. A later table will indicate actual gross amounts, the following table relied on recall of respondents.

Table 7.5 Small scale growers recall of income received from sugar cane for the 1989/90 season

Income	THN %	THS %	Illovo %	Indv %	Total %
Don't know	3%	5%	3%		3%
Nil	9%	8%	10%	11%	10%
<R199	4%	24%	11%	8%	11%
R200 - R499	17%	23%	18%	14%	18%
R500 - R799	18%	12%	23%	10%	17%
R800 - R1199	18%	16%	18%	18%	18%
R1200 - R1799	10%	4%	5%	9%	7%
R1800 - R2499	11%	3%	3%	12%	8%
R2500 - R3999	6%	2%	3%	6%	5%
>R4000	4%	3%	6%	12%	3%
Total	100%	100%	100%	100%	100%

Sixty four percent of respondents indicated that they received up to R1 200 from their sugar. Those growers indicating zero income were those who had not harvested sugar cane during the season or who had recently planted sugar cane and once again had not harvested. An average of only 23% of growers indicated incomes greater than R1 200.

Forty seven percent of respondents in the Tongaat-Hulett south area indicated incomes of less than R500 which is a higher proportion of growers than in other areas, Illovo, the next highest, indicated 29% in this category. Although information in table 7.5 may suffer from a number of errors (memory recall, gross or net of expenditure etc.) it probably indicates small scale growers' real view of the return to sugar cane production.

To improve productivity 46% of respondents indicated that they needed to improve their farming methods. Fifty four percent of respondents in the Tongaat-Hulett south area recorded this need. Only 13% of respondents referred to increased land as a means of increasing production. A further 13% indicated that additional financial assistance was necessary. Twelve percent indicated that obtaining advice on cane farming would lead to increased productivity. When respondents were asked what assistance they required to help them develop as farmers 32% indicated that financial assistance was necessary and 30% indicated training in agriculture was required. Eighteen percent did not consider they required any further information or assistance (27% Tongaat-Hulett south and 24% Illovo - areas with mill development company services).

7.4.5 Attitude Towards Sugar Cane Production

Respondents indicated that if they did not produce sugar cane, 65% would produce vegetables, 11% would produce timber and 23% would produce nothing at all. The production of crops indicated was chosen as a result of their marketing potential and ability, except timber, to meet household consumption requirements. The reasons that respondents gave for starting sugar cane farming are reflected in the following table.

Table 7.6 Small scale growers reasons for entering into the production of sugar cane

Reason	THN %	THS %	Illovo %	Indv %	Total %
Success of others	43%	15%	21%	43%	31%
Took over from family	28%	20%	27%	12%	23%
Recruited by -					
Development Co./Mill	2%	36%	20%	19%	15%
Extension services	8%	20%	14%	19%	14%
Need income	8%	3%	12%	15%	9%
Interest	13%	4%	9%	4%	8%
Other	4%	8%	3%	7%	6%

The percentages in table 7.6 sum to more than 100% due to multiple answers being possible as to why a respondent entered into sugar cane production.

Forty three percent of respondents in the Tongaat-Hulett north and individual areas indicated that they commenced sugar cane production as a result of other farmers success with production. Taking over from family members was a reason given by an average of 23% of respondents. With the evident high age of sugar cane growers and one of the main causes of loan default being death of a borrower this reason would appear to be highly plausible.

The "recruitment" of farmers by mill development companies and extension services also appears to be a strong reason why farmers took up sugar cane farming. It is interesting to note the strength of this reason in the Tongaat-Hulett south area - both the mill development company and the extension services are important factors in having promoted sugar cane production.

The need for income did not stand out as a reason for entering sugar cane production but this is probably an underlying incentive underscoring the categories "success of others"

and "took over from family" and, in addition, why growers were initially persuaded or recruited to undertake sugar cane production by mill development companies and extension services. Self motivation reasons for undertaking sugar cane production are predominant in the Tongaat-Hulett north and individual areas while the Tongaat-Hulett south area is predominated by recruitment and the Illovo areas would appear to be a mixture of the two.

Forty nine percent of respondents indicated that they were generally satisfied with sugar cane farming. The highest levels of satisfaction were found in the Tongaat Hulett north and individual areas with 53% and 59% being generally satisfied. The satisfaction pertained to sugar cane being a source of income. However when probed on their satisfaction with regard to the income which they received, an average of 39% of respondents considered that the income from sugar cane was poor to very poor with 55% of respondents in the Tongaat-Hulett south recording this view. Table 7.7 indicates the distribution of perceptions. The "don't know" category included don't knows and growers who were new and had not harvested sugar cane and did not have a view. Two percent of this category had ceased cane farming and did not express a view.

Table 7.7 Small scale growers perception of the income received from sugar cane

Income	THN %	THS %	Illovo %	Indv %	Total %
Very good	11%	11%	12%	14%	12%
Good	18%	7%	15%	20%	15%
Fair	24%	20%	24%	26%	23%
Poor	17%	16%	17%	18%	17%
Very poor	17%	39%	22%	14%	22%
Don't know	13%	7%	10%	8%	11%
Total	100%	100%	100%	100%	100%

The general feeling expressed regarding sugar cane production and perceptions regarding income received would appear to conflict. The perceptions in respect of income received

would probably provide a more correct small scale grower opinion of sugar cane production. An average of 27% of respondents considered income received from sugar cane to be good to very good.

Table 7.8 Small scale growers perception of income received from sugar cane in relation to loan status

Income	Outstanding loan %	Paid-up loan %	No loan %
Very good	11 %	14 %	13 %
Good	11 %	25 %	16 %
Fair	24 %	26 %	21 %
Poor	18 %	14 %	18 %
Very poor	29 %	14 %	17 %
Don't know	7 %	7 %	15 %
Total	100 %	100 %	100 %

The effects of having or not having a loan brought out a different picture in respect of income received. Table 7.8 indicates that 47% of respondents who had loans considered their income from sugar cane production to be poor to very poor while there was a change with those growers who had redeemed their loans when 39% viewed income from sugar cane as being good to very good. This would probably link with the increase in income recorded in section 5.4 where a small scale grower's income from sugar cane rises substantially once a loan has been redeemed. Growers who have not utilized loan finance appear to have a fair spread between good and poor views of their income from sugar cane, with 29% recording their income as good to very good and 35% recording their income as poor to very poor.

In probing small scale grower perceptions of sugar cane production, 86% of respondents viewed sugar cane as profitable to very profitable. This would appear to be a far stronger response to sugar cane production than respondents view of their income. This result may emphasise the perceived potential that respondents saw in sugar cane production as opposed to the actual income.

The importance of income from sugar cane production is reflected in areas in which growers welfare would be most affected if they did not receive the income with respondents identifying food supplies (43%), education (30%), health (8%) and shelter and clothing (12%) being needs which would be most affected. The above needs would probably be at the root of the link between growers viewing income from sugar cane as low and their belief that sugar cane production is a potentially good source of income.

The most difficult aspect of sugar cane production was considered by small scale growers to be weeding, 45% of respondents identifying this as a problem. Servicing the costs of production was identified by 40% of respondents as a problem. Labour, which would probably relate to weeding and harvesting was also identified as a difficult aspect by 19% overall, and by 25% of respondents in the Tongaat Hulett north area - the area where growers undertook most of the work themselves. With regard to problems facing them 41% of respondents stated that access to their fields, soil erosion and roads were of most concern.

7.4.6 Knowledge of Organisations Involved in Sugar Cane Production

Small scale growers showed a high degree of awareness of different organisations serving them as well as being aware of the roles that these organisations played. There did not appear to be confusion about what services each organisation provided. Table 7.9 indicates respondents level of awareness. It will be noted that there was a low level of awareness of the KwaZulu Cane Growers' Association and the KwaZulu Finance and Investment Corporation, in addition, those respondents recording awareness of them indicated a lower level of identifying the roles which they performed.

The frequency of contact with organisations is also indicated in table 7.9. It will be noted that 57% of respondents recorded that they had frequent contact with the KwaZulu Department of Agriculture extension officers. Respondents recording seldom, or

Table 7.9 Small scale growers awareness of organisations in the sugar industry and frequency of contact

Organisation	Respondents aware of organisation %	Respondents recording correct role %	Frequency of contact		
			Often %	Seldom %	None %
Mill	93%	87%	29%	50%	20%
KwaZulu Dept. Agric E.Os	83%	95%	57%	33%	10%
Contractors - small scale	80%	94%	15%	73%	11%
Contractors - transport	77%	94%	14%	65%	20%
FAF	67%	85%	11%	33%	54%
Contractors - development	64%	93%	11%	70%	19%
KwaZulu Cane Growers' Ass.	28%	49%	17%	33%	50%
KwaZulu Finance and Investment Corporation	19%	65%	5%	15%	80%

infrequent, contact with contractors could probably be as a result of the seasonality of the use of these facilities. The apparent low level of contact raises questions as to why such responses were obtained given the role that contractors play. Fifty four percent of respondents recorded no contact with FAF with 33% recording infrequent contact. This would be as a result of mill development companies being the channel of finance.

The awareness of mill development companies is not reflected in table 7.9. For particular areas where development companies operated respondents showed levels of awareness of 15% to 39% although for Sukumani in the Tongaat-Hulett south area, 96% of respondents indicated awareness. The role of mill development companies in other areas was probably linked to respondents awareness of mills. Respondents indicated a high awareness in each area respectively of what role mill development companies performed with 74% to 92% of respondents identifying the roles of these organisations.

With regard to contact with mill development companies the percentage of growers recording frequent contact ranged from 26% to 35% with those having infrequent contact ranging from 42% to 58%. The percentage of growers having no contact ranged from 10% to 26%. Given the nature of mill development companies operations, limited contact probably contributes to the perceived poor communication, lack of understanding and dissatisfaction.

In the group discussion reports the KwaZulu Department of Agriculture extension officers were rated highly by growers and this can be seen from the frequency of contact. The KwaZulu Cane Growers' Association had a low level of awareness as well as contact. This is the small scale growers' representative body to which they elect representatives so this should be regarded as an important issue.

7.4.7 Use and Knowledge of Credit and Savings

Forty nine percent of respondents stated that they had an outstanding loan from FAF, 18% had used and repaid their loans and 34% indicated that they had not used loan finance. The variation between areas can be seen in table 7.10.

Sixty six percent of respondents in the Tongaat-Hulett north area stated that they had not had a loan whereas 78% in the Tongaat-Hulett south area had outstanding loans as did 65% in the Illovo area. The areas with mill development companies showed low levels of respondents who had not utilized loans.

Loans to growers in areas where there were mill development companies were on the whole sourced, organised, had the amount decided and advanced in the form of services by those companies. Mill development companies, as has been noted, dominated small grower development which involved loan finance.

Table 7.10 Small scale growers use of FAF loans

		THN %	THS %	Illovo %	Indv %	Total %
Incidence of loans	Current	23%	78%	65%	40%	49%
	Repaid	11%	19%	18%	29%	18%
	No loan	66%	3%	17%	31%	34%
	Dev. Co/Mill	39%	66%	56%	48%	55%
	FAF	42%	21%	27%	37%	30%
	Extension officers	13%	10%	12%	13%	12%
	Don't know	3%	2%	3%	3%	3%
Who organised loan	Dev. Co/Mill	61%	70%	64%	56%	61%
	FAF	1%	3%	2%	8%	3%
	Extension officers	10%	7%	7%	18%	10%
	Don't know	26%	15%	21%	20%	20%
Who decided amount	Dev. Co/Mill	36%	48%	47%	39%	43%
	FAF	6%	2%	5%	15%	7%
	Size of land	16%	6%	12%	17%	12%
	Extension officers	7%	6%	9%	5%	7%
	Don't know	28%	37%	23%	24%	29%
How loan was received	Via services	22%	21%	26%	30%	25%
	Via Dev. Co.	1%	49%	35%	1%	27%
	Via mill	39%	2%	12%	47%	21%
	Via letter	19%	6%	14%	4%	10%
	Extension officers	4%	5%	5%	9%	6%
	Don't know	12%	12%	5%	4%	10%
Aware of interest	Yes	42%	40%	46%	52%	45%
	No	4%	8%	11%	13%	9%
	Don't know	54%	52%	44%	35%	46%

Mills, generally, have been the channel of loan finance and this is borne out by respondents view of the situation. In the case of loans being provided via services in the Tongaat-Hulett south and Illovo areas it is not clear whether these were services from other contractors or mill development companies. Where services are identified as being received via a mill in the Tongaat-Hulett north and individual areas the majority of services were not provided by the mills but the expenditure was controlled by them according to FAF procedures ie via the FAF local administration bodies, mill group local committees (see section 4.4 and 7.3).

A high percentage of respondents, overall 46% and Tongaat-Hulett north 54%, indicated that they did not know whether interest was charged. There appeared to be a higher awareness in the individual mill areas with 52% of respondents being aware of interest charges on loans.

Respondents were asked to indicate their level of satisfaction/ dissatisfaction about their FAF loans, 58% recorded being "satisfied/happy/everything clear/no unreasonable amounts are deducted", this went as high as 71% and 70% in the Tongaat-Hulett north and individual areas respectively. The Tongaat-Hulett south and Illovo areas recorded 48% and 54% respectively in this category. The highest levels of dissatisfaction were also recorded in these last areas with deductions, loan redemptions, from sugar cane proceeds being noted as too high. There were a low number of respondents, 6%, who were dissatisfied with the interest rate charged which appears to conflict with respondents knowledge of the interest rate as commented upon above.

Sixty six percent of respondents recorded that FAF's current way of recovering loans - via deductions from sugar cane payments - was the best way of repaying loans even though there was dissatisfaction with the level of deductions respondents still claimed that they preferred this method to that of repaying loans out of their own cash. It was recorded by Vaughan (1990) that small scale growers in Mpumalanga had a preferable system of repaying by making payments from their own cash resources. This has changed with small scale growers in that area requesting that an automatic deduction system be applied to redemption of their loans. They identified record keeping and timeousness of the method as being advantageous.

Sixty one percent of respondents did not agree with having to contribute from their own resources towards costs of developing their sugar cane. The main reason was that they could not afford to do this (see section 4.9.1). Although FAF loan applications require a R50 contribution per hectare from an applicant - the amount is credited to a grower's loan account for use in meeting expenditure to be incurred in the grower's development -

59% indicated that they had not made a contribution. Sixty five percent of respondents in the Tongaat-Hulett south area stated that they had not made a contribution. The reason that knowledge is probably low regarding contributions is that in most mill areas automatic transfers of the required amounts were made from growers' retention (savings) accounts to their loan accounts to meet the requirements. This practice was not condoned by FAF for the very reason that growers would be unaware of the amount which they had contributed and therefore the rationale of a contribution encouraging a sense of ownership would be foregone.

Forty two percent of respondents recorded that there were issues about FAF loans which they did not understand. These included how deductions, redemption amounts, were calculated, the amount which they had borrowed, and the period for which a loan had been granted. The area indicating the highest concern was Tongaat-Hulett south, 53% while 38% recorded not understanding the loan system in the Tongaat-Hulett north area. The lack of knowledge on basic terms of loans should be viewed as serious as these are conditions which should be understood before entering into a loan transaction. Illiteracy was cited by growers as one of the problems contributing to the above.

Not recorded in this analysis is that the survey being reported on was also carried out on a sample of Indian small scale growers. With regard to issues raised above 91% of respondents claimed that they understood the loan system and 96% stated that they understood their loan statements. This is raised as a control with regard to whether the FAF system and its statements were comprehensible to anyone at all. Of the Indian households 61% of the sampled population had an educational level above standard 6 (grade 8). The issue is one of literacy and how communication can be achieved with people with a low level of or no education. This challenge will remain until the overall level of education of the small scale farmer population has been raised.

As with the contribution towards their own development, 53% of respondents were unaware of whether they contributed to the FAF retention (savings) scheme or not. The

Tongaat-Hulett south area recorded the highest level of 61% of respondents being unaware. The awareness of the savings scheme was highest in the Tongaat-Hulett north area with 33% of respondents recording that they were members of the scheme. A total of 25% of respondents recorded awareness of the savings scheme.

Questioned on whether growers would apply fertilizer or the correct amounts if they did not have funds available from savings 65% recorded that they would still apply fertilizer. Twenty three percent recorded that they would apply less fertilizer. Ninety four percent recorded that they would still carry out weeding operations. They did not expand on how these operations would be financed.

7.4.8 Gender, Farmwork and Income

Respondents indicated that in 41% of households farmwork was carried out by males and in 59% of households females carried out the farmwork. Fifty percent of households indicated that the income received from sugar cane, although it may have been received by the male head, went to his spouse. Of woman who did the farmwork 81% received the sugar cane income. In the case of men 95% of those who worked on the farm received the income.

Sixty one percent of growers sampled used FAF loans. Of these 76% were male and 24% female. Given that in 59% of households women carried out the farmwork the low percentage of female loan holders would probably have resulted from legal restrictions regarding women's contractual abilities. Contractual laws have been amended and restrictions previously applying to women have been repealed.

7.5 Analysis of Surveyed Small Scale Grower Production Records

The qualitative results detailed in section 7.4 were linked, for analysis purposes, with quantitative data of the sampled growers. The sugar cane delivery and loan data for the

sampled growers was extracted from records extending from the 1973/74 sugar cane production season to the 1995/96 season.

A question which may arise is whether the attitudinal data collected in 1990 continued to be relevant through to 1995/96. During the period 1990 to 1996 a number of workshops dealing with the restructuring of FAF were held with small scale growers and mill representatives contributing to discussions. The workshops indicated that the overall situation pertaining to small scale growers did not change significantly from that indicated in the 1990 survey.

The proceedings of a FAF workshop conducted by Braxton Associates (1995:14) identified the following, amongst other issues, as being of concern :-

- growers not being aware of what they were committing to in loan finance and development;
- growers not understanding their financial situation;
- poor communications between FAF and growers primarily as a result of communications going via mills;
- the role of mill development companies, with growers being excluded from the decision making process; and,
- FAF policy and procedures being by-passed under certain circumstances.

Small scale growers indicated that they wished to access loans at lower levels of interest and required to borrow larger amounts than FAF would approve. These requests came against a background, discussed at the workshop, of FAF's escalating administration costs and loan defaults. There was a view, promoted by small scale growers themselves, that they establish their own financing structures independent of FAF.

Analysis of quantitative data, linking where appropriate to qualitative information, enabled an improved and more relevant evaluation to be undertaken.

7.5.1 Land

FAF records indicate that the surveyed growers had 1615 hectares of sugar cane, 26% of the growers had, according to their loan applications, less than 1 hectare of sugar cane land. Figure 7.9 indicates that a further 27% had between 1 and 2 hectares. Of the surveyed growers, 53% of them had less than 2 hectares, 68% had less than 3 hectares and a total of 86% had less than 4 hectares of land. This data accords with the growers knowledge of their areas (*cf* section 7.4.4). The peaking of growers with land areas between 3 and 4 hectares probably related to the 4 hectare phenomenon referred to previously (see chapter 3).

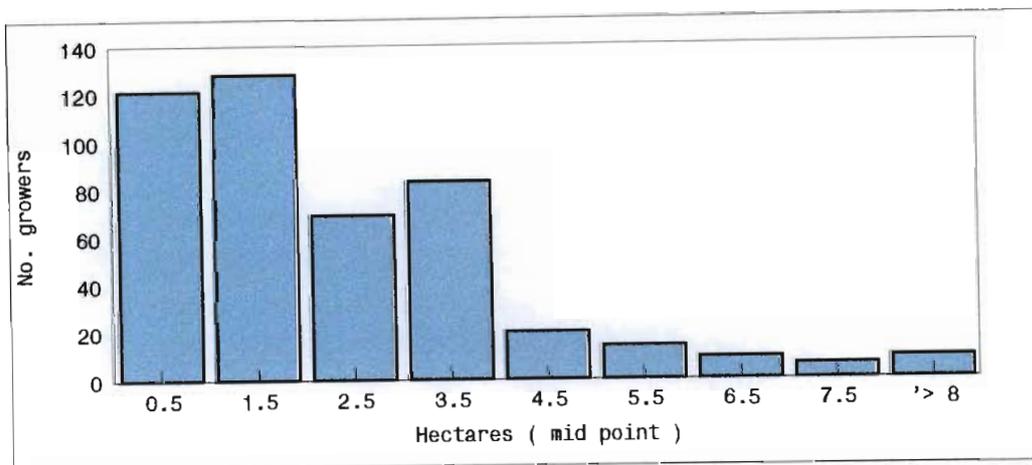


Figure 7.9 Frequency distribution of surveyed small scale growers' land area as recorded by FAF

The average area recorded per small scale grower was 2.9 hectares, the median was 2 hectares. These figures accord with those shown in table 3.6 and figure 3.15 in chapter 3. The modal values were from 1 to 2 hectares except for the Felixton mill area where it was 4 hectares, although land areas are known to be larger in this area this could also relate to the 4 hectare problem already discussed. The median land areas were from 1.5 to 2 hectares except for the Illovo, Sezela and Umfolozi mill areas where they were 2.5 hectares, 3 hectares and 4 hectares respectively.

The Entumeni, Sezela and Umfolozi mill areas showed the largest average area per grower with 3.4 hectares, 3.1 hectares and 6.8 hectares respectively. The Umfolozi area is known to have a number of small scale growers with units which are larger than those normally found elsewhere. Unfortunately the accuracy of land measurement raises questions in most small scale grower areas, as previously commented upon, and this has to be kept in mind in the following analysis (see section 3.5).

7.5.2 Surveyed Small Scale Grower Productivity

Two elements to be considered in this section may be considered to contain a higher degree of integrity than small scale growers' land areas and these are the number of seasons for which growers delivered sugar cane and the total tons of sugar cane delivered per grower per season. There is one note of caution, however, and that is there is no certainty that a registered grower was delivering his or her own sugar cane and not including sugar cane from non-quota growers in deliveries for seasons prior to 1989. From the 1989/90 season it may be assumed that limited if no erroneous deliveries were made as there was no restriction on farmers registering as growers as there had been prior to the 1989/90 season. It is assumed, with the large registration of "non quota" growers in 1989/90, that the practice of delivering non quota growers' sugar cane on quota growers numbers ceased and growers avoided complications such deliveries involved (see sections 3.4 and 3.5).

Notwithstanding the above, small scale growers are known to have multiple grower registrations in a single household for legitimate or other reasons. It may be that different members of a family are carrying out sugar cane production on their own account or it may be, as has been found in more recent years, that avoidance of loan repayments is being achieved in this way. Traditionally a Zulu household may split its assets according to the number of wives and/or sons a head of household has and these may be run as separate entities (Bantu Law in SA, 1975:71). The problem of loan repayment avoidance has arisen mainly in the 1994/95 and 1995/96 seasons. Recent investigations have

indicated that the practice is probably more prevalent in the Felixton mill area than anywhere else. The assumption, in analyses which follow, is that the above problems will not affect results significantly.

Without information of when surveyed growers registered as small scale growers an analysis of the number of growers delivering sugar cane per season provides an indication of the expansion of production by these growers. Figure 7.10 indicates a rise in the number of growers from less than 100 in 1975/76 to a peak of over 400 in 1991/92. Thereafter there has been a decline in the number delivering.

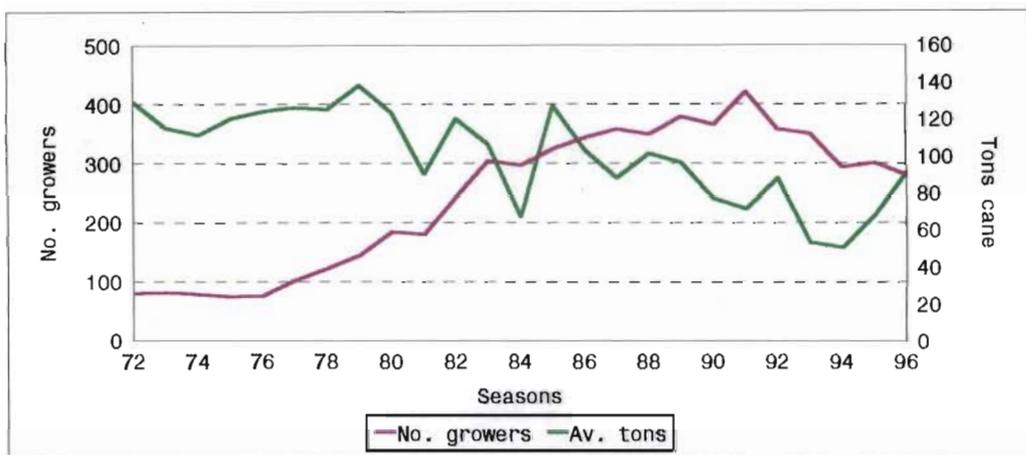


Figure 7.10 Number of surveyed small scale growers delivering per season and average sugar cane tonnage per grower

The figure also indicates a decreasing trend in the average seasonal tonnage of sugar cane per surveyed grower delivering. This decrease in average tonnage could be as a result of newer growers having smaller land areas planted to sugar cane and/or productivity of growers per unit area could be declining.

Figure 7.11 presents the season and number of growers from another perspective and indicates the number of seasons for which each of the surveyed small scale growers delivered sugar cane and the average tonnage of sugar cane delivered per grower. It will

be noted that there is a peak in the number of growers who delivered sugar cane for six seasons thereafter there is a decline in the number of growers who delivered for a greater number of seasons with a degree of levelling off of the number of growers who delivered for periods of from fourteen to twenty five seasons.

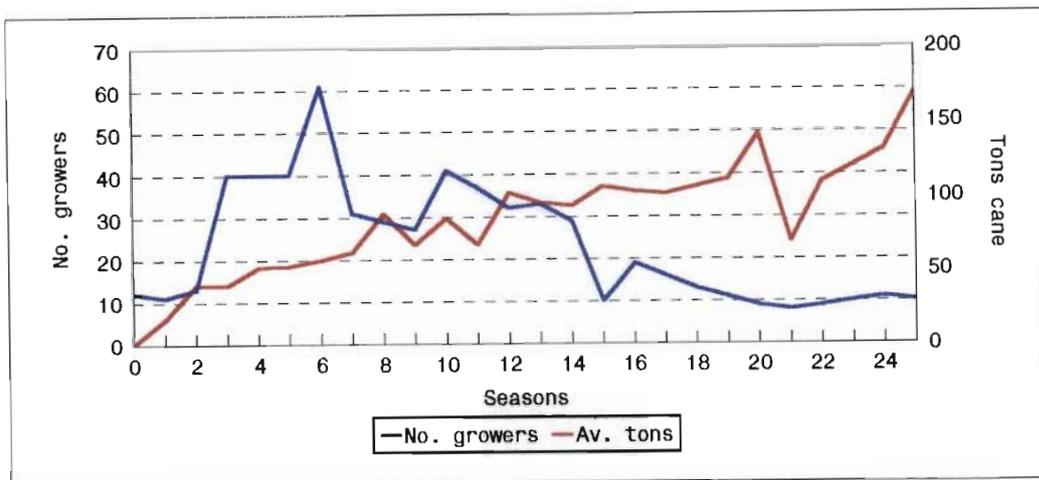


Figure 7.11 Number of seasons that surveyed small scale growers delivered and average total tonnage of sugar cane per grower

It will be seen from figure 7.11 that the longer, more seasons, a small scale grower delivered sugar cane for the greater the average total tonnage of sugar cane was delivered per grower delivering. Taking 14 seasons as a central point a comparison of small scale grower recorded areas was made. The average area of growers who delivered for less than 14 seasons was compared to the average area of growers who delivered for more than 14 seasons. It was found that there was a significant difference with growers who delivered for more than 14 seasons having an average 1.5 hectares more land, 3.8 hectares

compared to 2.3 hectares, than growers who delivered for fewer seasons ($P=0.0000$)⁵. A similar result was obtained in respect of the land area of those growers producing for more than six seasons compared to those growers producing for less than six seasons.

As a result of the above it could be expected that the income received by growers producing sugar cane for longer periods on larger areas is important and sufficient for them to maintain production. Those growers on smaller areas do not realise their economic expectations and cease sugar cane production at an early stage. This observation may explain the reason for the observed declining productivity of small scale growers in that a high proportion of small scale growers entering the sugar industry in recent years are cultivating smaller areas (see section 3.6).

Given the distribution of growers according to the number of seasons they delivered there would appear to be a group who only produced for one crop cycle. A crop cycle is approximately six seasons and encompasses a plant crop and five ratoon crops. Replanting of a crop frequently takes place at this stage. This particular crop cycle was confirmed in the qualitative survey (see table 7.4). The second crop cycle would include growers extending their sugar cane production from 7 to 12 or 14 seasons.

Analysing underlying information from the consolidated areas it would appear that small scale growers in areas serviced by mill development companies are more likely to have replanted and be in a second cycle of crop production, see figure 7.12 indicating the situation in the Tongaat-Hulett south area. A similar trend is observed for the Illovo area. The Tongaat-Hulett north area exhibits a peak at 6 seasons, one crop cycle, then a decline and levelling off of the number of growers delivering per season. This may indicate that after one crop cycle there is a withdrawal of growers from production and those growers who replant are more likely to remain in production for longer periods.

⁵ P = level of significance of the t - statistic

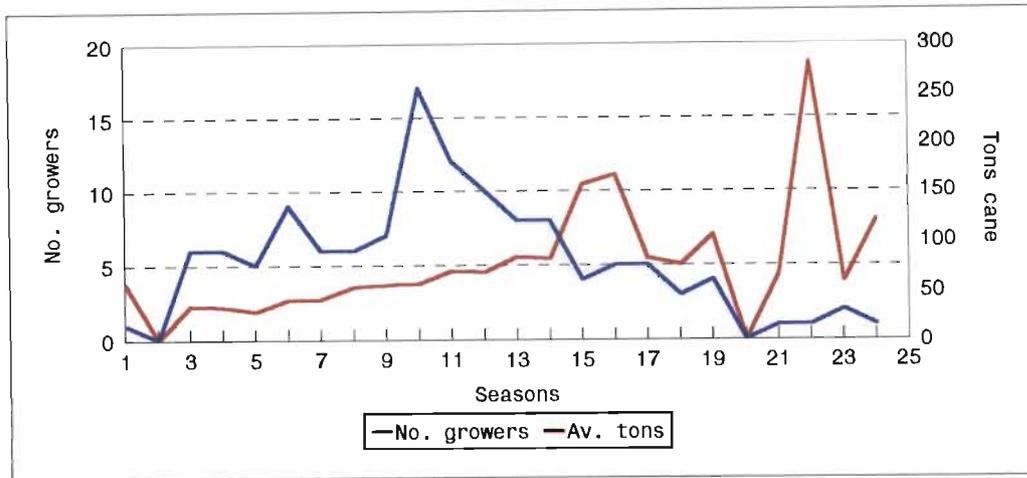


Figure 7.12 Number of seasons that surveyed small scale growers delivered and average tons sugar cane per grower - THS

It should be noted that those growers recording extended periods of production may be families that have continued in production and may not necessarily be the same individuals. Looking at the age profile of growers, long term production would probably not be possible without family members continuing family operations. The qualitative data indicated that a number of respondents, 23%, recorded that they became involved in cane farming by taking over cane production operations from family members.

A conclusion which could be reached from the above is that continuity by small scale growers in sugar cane production is probably dependent on cultivation of larger areas of land than the average and on a reasonable level of productivity and hence of income. These trends accord with those shown for the global data presented in chapter 3 (also see section 5.5).

Each of the four consolidated areas exhibited more or less the same trends as above. The Tongaat-Hulett north area shows an interesting feature of relatively high average total tonnages of small scale grower deliveries for the period 1971/72 to 1982/83 of 150 tons

sugar cane per grower and then a decline from the 1983/84 season to 50 tons sugar cane per grower for the 1995/96 season. The peak in the number of growers delivering sugar cane occurred in the 1991/92 season as is the case in figure 7.10.

The Illovo areas have shown a fairly consistent average total delivery per grower of 60-80 tons for the period 1971/72 to 1995/96. A consistent pattern also emerges for the individual mill areas from 1981/82 with the average tonnage being approximately 100 tons sugar cane per grower. The Tongaat-Hulett south area shows a declining trend in the tonnage delivered per grower for the period 1975/76 to 1995/96.

Given the decline in the real sucrose price and the general trend of declining sugar cane deliveries per small scale grower over the period 1971/72 to 1995/96, as indicated in figure 7.10, the overall economic situation of surveyed growers would appear to have deteriorated. The impact would have been felt more in the Tongaat-Hulett north and south areas than the Illovo and individual areas as a result of the decline in growers' average total tonnage as opposed to a relatively level trend in tonnages in the latter two areas.

An assumption in the analysis of the productivity of the surveyed small scale growers is that individual sugar cane land areas have remained constant over time. The qualitative study indicated that this is the case (see section 7.4.3). Changes in production per grower should then translate into unit area productivity (yield) changes. The data suggest that yield per hectare has declined in the Tongaat Hulett areas and remained constant in the Illovo and individual areas. This probably relates to ratoon management practices and suggests that Illovo and individual area growers have been more efficient in this regard.

The Noodsberg small scale growers have shown an improvement in their average total seasonal delivery since the 1990/91 season. This coincides with a levelling off of total production from that season (see figure 4.16) and follows radical changes to the approach to small scale grower development in the area in 1990 (see section 4.12.1). This may

have resulted from growers on small units opting out of production whereas those on larger units remained.

It may be noted that productivity of small scale growers in the Tongaat Hulett areas has assumed an upward trend since the 1992/93 season. Sukumani, in the Tongaat Hulett south area, has, as previously noted, been concentrating on promoting small scale grower ratoon management.

Notwithstanding the cautionary note about the accuracy of measurement of small scale grower sugar cane areas figure 7.13 is produced to show the distribution of the surveyed growers according to their average tonnage of sugar cane produced per hectare. The average sugar cane production is 38 tons per hectare. The median is 28 tons sugar cane per hectare. Seventeen growers are indicated as producing from 105 and more tons per hectare. Although it is possible, and a number of small scale growers are known to produce at these levels under dryland conditions, a question mark over the accuracy of the land measurement should be raised. Due to errors in land measurement outliers could be expected at both extremes of the distribution.

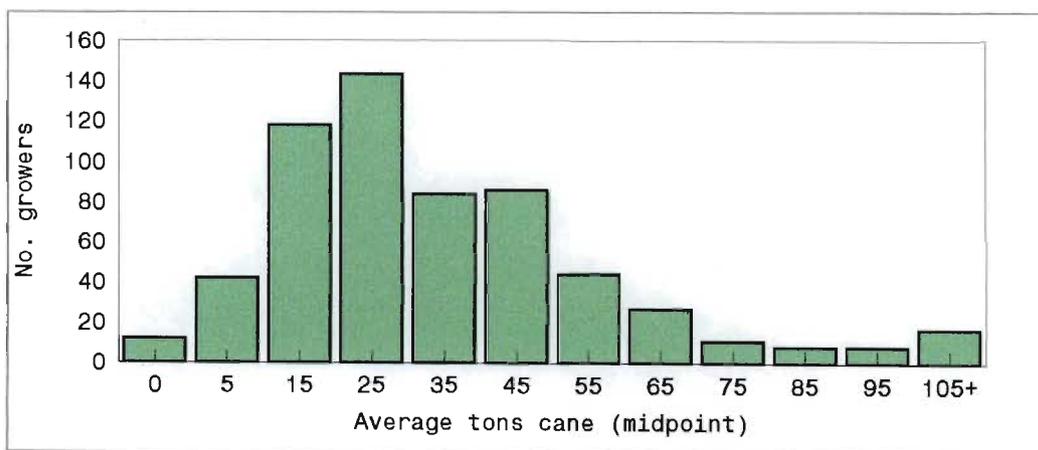


Figure 7.13 Distribution of surveyed small scale growers according to average tons cane delivered per hectare per season

From the distribution of small scale growers by average tons sugar cane per hectare it is found that 20% produced more than 40 tons sugar cane per hectare per season while 51% produced less than 30 tons sugar cane per hectare per season (this does not include 2% non producers).

Table 7.11 shows the distribution of the surveyed small scale growers according to their average total seasonal delivery of sugar cane by average area per grower, average tonnage per grower and average tons cane per hectare. Totals, percentages of totals and accumulated percentages of area, tonnage and number of growers are also shown. Other than the average yield recorded for the 350 -399.9 tons per season class the figures appear to accord with averages shown elsewhere. A measurement error may have given rise to this observation.

Table 7.11 Distribution of surveyed small scale growers by number, average, total and accumulated number, area and tons sugar cane

Class Tons sugar cane per season	Average hectares/ grower	Average tons/ grower	Average tons/ hectare	Total area (hectares)	Total tons	Total no. growers	Percent hectares	Percent tons	Percent no.	Accum Percent hectares	Accum Percent tons	Accum Percent no.
0-49.9	1.6	29	17	424	7 419	258	26%	16%	43.0%	26%	16%	43%
50-99.9	2.4	72	29	521	15 332	213	32%	34%	35.0%	59%	50%	78%
100-149.9	3.8	121	32	263	8 436	70	16%	18%	12.0%	75%	68%	90%
150-199.9	5.8	175	30	163	4 900	28	10%	11%	5.0%	85%	79%	95%
200-249.9	5.3	218	41	74	3 050	14	5%	7%	2.0%	89%	86%	97%
250-299.9	7.4	272	37	59	2 175	8	4%	5%	1.0%	93%	90%	98%
300-349.9	7.8	313	40	39	1 566	5	2%	3%	1.0%	96%	94%	99%
350-399.9	4.5	386	86	9	771	2	1%	2%	0.5%	96%	95%	99%
>400	15.8	517	33	63	2 066	4	4%	5%	1.0%	100%	100%	100%
Total				1 615	45 715	602						

Figure 7.14 shows graphically the accumulated percentage tonnage of cane and area as recorded in table 7.11. It will be seen that the upper decile of growers occupy 25% of the land and produce 32% of the sugar cane. The upper 20% occupy 40% of the land area and produce 50% of the sugar cane tonnage. At the lower extreme 43% of the growers cultivate 26% of the area and only produce 16% of the tonnage.

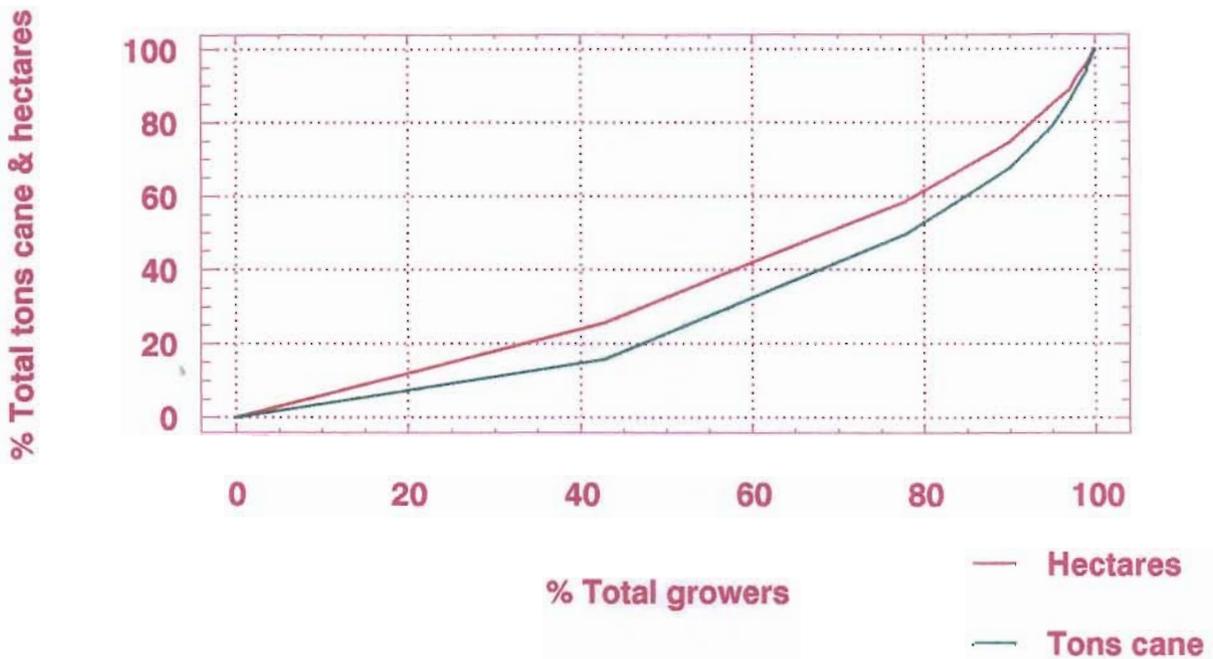


Figure 7.14 Surveyed small scale growers distribution of area and tons cane

The distribution observed in table 7.11 and figure 7.14 raises questions as to whether those growers at the lower end of the distribution can be classified as farmers or have they been drawn into sugar cane production as a result of other factors e.g. mill development company activities. Those people that could be considered to be farmers are probably in the upper portion of the distribution.

7.5.3. Use of FAF Loans

Loans totalling R1 753 701 had been advanced to 366 or 61% of the surveyed small scale growers. Table 7.12 shows the distribution of these loans according to mill area and number of loans per borrower.

Forty percent of the Tongaat Hulett north growers, 72% of the Tongaat Hulett south growers, 81% of the Illovo growers and 57% of the individual area growers sampled utilized FAF loans. The utilization of credit, as indicated by these figures, would appear

Table 7.12 Number of loans per small scale grower per mill area

Area	Mill	FAF loan 1		FAF loan 2		FAF loan 3		FAF loan 4		FAF loan 5		FAF loan 6		Total	
		No. growers	Total value	No. growers	Total value	No. growers	Total value	No. loans	Total value						
THN	Felixton	27	R58,925	9	R43,089	3	R4,157	1	R3,700	0		0		40	R109,871
	Amatikulu	55	R106,574	20	R43,218	5	R9,382	3	R2,775	1	R2,130	1	R14,991	85	R179,070
	area total	82	R165,499	29	R86,307	8	R13,539	4	R6,475	1	R2,130	1	R14,991	125	R288,941
THS	Maidstone	92	R160,449	60	R144,932	31	R93,862	14	R65,658	1	R4,863	1	R5,157	199	R474,921
	area total	92	R160,449	60	R144,932	31	R93,862	14	R65,658	1	R4,863	1	R5,157	199	R474,921
Illovo	Gledhow	13	R15,061	9	R14,796	5	R13,968	2	R9,615	0		0		29	R53,440
	Noodsberg	24	R23,777	14	R14,900	5	R11,435	1	R2,244	0		0		44	R52,356
	Eston	35	R85,725	25	R56,494	15	R53,063	6	R21,283	2	R8,807	0		83	R225,372
	Sezela	54	R164,083	33	R100,951	15	R68,223	4	R15,069	1	R8,177	0		107	R356,503
	area total	126	R288,646	81	R187,141	40	R146,689	13	R48,211	3	R16,984			263	R687,671
Individual	Entumeni	25	R85,116	10	R47,065	2	R9,043	0		0		0		37	R141,224
	Glendale	29	R56,936	6	R13,421	1	R315	1	R3,200	0		0		37	R73,872
	Umfolozi	12	R51,138	5	R28,403	1	R7,531	0		0		0		18	R87,072
	area total	66	R193,190	21	R88,889	4	R16,889	1	R3,200					92	R302,168
Grand total		366	R807,784	191	R507,269	83	R270,979	32	R123,544	5	R23,977	2	R20,148	679	R1,753,701

to accord with growers stated utilization of credit as recorded in table 7.10 (section 7.4.7). The highest utilization of credit is found in those areas where mill development companies operate viz. Tongaat Hulett south and Illovo areas.

The total amount, although only advanced to 366 borrowers, comprised a total of 679 loans, just under an average of 2 loans per borrower. First loan borrowers utilized 46% of the total amount advanced and second loan borrowers 30%. Two growers utilized 6 loans each.

Table 7.13 Distribution of loans and distribution of value of loans by area

Area	Percent Loans	Percent Value
THN	22%	17%
THS	25%	27%
Illovo	35%	39%
Individual	18%	17%
Total	100%	100%

Table 7.13 indicates that 35% of the loans advanced were in the Illovo area. These accounted for 39% of the value of loans advanced. Tongaat-Hulett south accounted for 25% of loans and 27% of the value. Both these areas had mill development companies operating in them. The policies of the Tongaat-Hulett south and Illovo areas with regard to promoting development is probably reflected in the higher levels of loan utilization in these areas (see section 6.3).

Of the 366 growers, to whom loans were advanced, 46 defaulted on their loan repayment. Table 7.14 details the distribution of bad debts.

In terms of the number of bad debts expressed as a percentage of the number of bad debts per mill area Noodsberg, Maidstone and Sezela exhibit the higher levels of bad debts. This accords with the overall FAF bad debt experience. The Tongaat-Hulett south area

(Maidstone) accounted for 22% of bad debt borrowers and the Illovo area 44% (Noodsberg 20%, Eston 11% and Sezela 13%). The individual and Tongaat-Hulett north areas accounted for 24% and 11% of cases respectively. It should be noted that the samples are small and hence the results are probably affected accordingly. A total of R101 123 was written off as bad debts which is 6% of the amount advanced as shown in table 7.12. The average amount per loan defaulter was R2 198.

Table 7.14 Bad debts arising from loans to surveyed growers

Mill	No. bad debts (growers)	Percent no bad debts	Value Rand
Felixton	1	2%	2 296
Amatikulu	4	9%	9 828
Maidstone	10	22%	17 243
Noodsberg	9	20%	7 715
Eston	5	11%	17 468
Sezela	6	13%	15 432
Entumeni	4	9%	16 848
Glendale	5	11%	8 760
Umfolozi	2	4%	5 533
Total	46	100%	101 123

7.5.4 Use of Retention Savings Scheme

Three hundred and seventeen of the surveyed growers had retention savings accounts, of these 221 had FAF loans and 96 had not utilized FAF loans. It should be noted that a condition of FAF loans is that borrowers are required to be members of the retention savings scheme for the term of their loan. Borrowers who produce sugar cane in the Illovo areas are exempted from the FAF retention scheme but during the term of a FAF loan are required to participate in an Illovo mill savings scheme which is operated on conditions similar to the FAF scheme. Once a loan is repaid a grower may withdraw from the retention savings scheme (see section 4.9).

Sixty six percent of surveyed growers in the Tongaat Hulett north area, 83% in the Tongaat south area and 64% in the individual areas were recorded as participating in the retention savings scheme. Growers awareness of this appeared to be low with only 33% in the Tongaat Hulett south area stating that they participated in the scheme. Overall 25% of growers said that they participated in the retention savings scheme which is far less than the records indicate (see section 7.4.7). This fact probably underlies the misunderstanding and conflict which has arisen in respect of the retention savings scheme.

Table 7.15 Number of retention savings accounts per small scale grower per mill area

Area	Mill	Retention +ve balances		Retention -ve balances	
		No. growers	Total Rand	No. growers	Total Rand
THN	Felixton	44	11 560	2	(2 300)
	Amatikulu	88	41 395	7	(5 371)
	Darnall	2	0		
	Area total	134	52 955	9	(7 671)
THS	Maidstone	105	18 395		
	Area total	105	18 395		
Illovo	Gledhow	0			
	Noodsberg	1	1 723		
	Eston	3	211		
	Sezela	0			
	Area total	4	1 934		
Individual	Entumeni	28	12 522		
	Glendale	28	3 943	1	(1 560)
	Umfolozi	18	9 254	1	(1 046)
	Area total	74	25 719	2	(2 606)
Total		317	99 003	11	(10 277)

Table 7.15 indicates retention savings information with regard to FAF records. As at the end of May 1996 a positive balance of R99 003 was held by 317 growers which represents an average balance of R312 per grower.

The negative balances reflect retention advance loans which are short term loans for ratoon management purposes. Not many growers make use of this facility as a result of their savings. The information reflected in the table would accord with FAF experience as a whole.

It is noted that 66% of growers surveyed in the Tongaat-Hulett north area are members of the retention scheme. Of these only 76 had utilized FAF loan facilities which indicates that 27% of the growers are voluntary savers. In the Tongaat-Hulett south area 83% of the surveyed growers were savers. Only 13% of growers were voluntary savers. The higher percentage of growers saving in the Tongaat-Hulett south area is probably a reflection of the ratoon management policy carried out by the mill development company in the area.

One of the concerns of small scale growers is the loss of control that they have experienced over their savings as a result of ratoon management policies promoted in a number of mill areas. The high percentage of savers may indicate that a large proportion of small scale growers may experience the problem identified above.

7.5.5 Disaster Relief

FAF provided loan assistance to small scale growers who suffered either drought or flood damage to their sugar cane crops. The Government provided interest subsidies via FAF to growers eligible for such assistance. A total of 94 of the surveyed small scale growers, as indicated in table 7.16, received drought relief assistance totalling R476 459. Of these growers 69 had utilised FAF loans. A total of 35 growers received flood relief assistance totalling R79 962. Of these growers 11 had also received drought relief assistance.

From table 7.16 it will be seen that there is a concentration of disaster relief assistance in the Tongaat-Hulett north, Tongaat-Hulett south and individual areas. These areas are situated on the north coast of KwaZulu-Natal which experienced a series of climatic

disasters. The Illovo areas are situated primarily in the south coast areas of KwaZulu-Natal and although experiencing droughts, were not affected by floods. The Gledhow mill area, in terms of the Illovo mills, is the exception as it is situated on the north coast.

Table 7.16 Distribution of drought and flood relief assistance by mill area

Consolidated Area	Mill Area	No. of Growers Receiving Drought Relief	No. of Growers Receiving Flood Relief
THN	Felixton	22	1
	Amatikulu	13	5
	Sub total	35	6
THS	Maidstone	24	8
Illovo	Gledhow	3	3
	Eston	1	
	Sezela	4	
	Sub total	8	3
Indv	Entumeni	4	4
	Glendale	14	9
	Umfolozi	9	5
	Sub total	27	18
Total		94	35

In terms of disaster relief policy, assistance should only have been advanced to small scale growers who were creditworthy in terms of FAF requirements (see section 4.5). Those small scale growers who were not creditworthy and who applied for assistance and were refused could have, as a result of a drought or flood disaster, ceased sugar cane production and may even have defaulted on their FAF loan repayments.

Table 7.17 shows that the distribution of drought relief assistance to growers is similar to the distribution of growers according to their average sugar cane productivity per hectare. The distribution is positively skewed and shows that growers with a low level of productivity comprised the majority of relief recipients. Fifty percent of assistance was

advanced to growers who produced an average of less than 30 tons of sugar cane per hectare cut.

Table 7.17 Distribution of drought relief loans according to growers average sugar cane yield per hectare

Class tons/ha.	Number of drought loans	Number of growers	Percent loans	Percent growers
0 - 10	2	42	2%	7%
10 - 20	23	118	25%	20%
20 - 30	21	143	23%	24%
30 - 40	14	84	15%	14%
40 - 50	5	86	5%	15%
50 - 60	12	44	13%	7%
60 - 70	5	27	5%	5%
70 - 80	2	11	2%	2%
80 - 90	1	8	1%	1%
90 - 100	1	8	1%	2%
100 - 110	1	2	1%	0%
> 110	6	15	6%	3%
Total	93	588	100%	100%

The requirement that only creditworthy growers be advanced drought relief assistance would appear not to have been achieved as growers with very low productivity and who were probably not creditworthy were the majority of those who received assistance.

Looking at the overall credit which surveyed small scale growers utilized, FAF loans as well as drought and flood relief loans, a total of R2 310 122 was drawn down. This equates to an average of R3 837 per grower or an average of R1 430 per hectare of the recorded land area.

7.5.6 Surveyed Small Scale Growers' Sugar Cane Proceeds 1989/90

Sugar cane proceeds of the surveyed small scale growers for the 1989/90 season are reviewed as respondents were requested to provide information in the qualitative survey (see section 7.4.4 table 7.5). Table 7.18 indicates the distribution of surveyed growers according to their gross sugar cane proceeds by consolidated area as well as overall. It will be noted that 39% of growers received no proceeds either as a result of being new growers, growers who had recently replanted or non delivering growers. Sixty one percent of growers delivered sugar cane during the 1989/90 season. The total proceeds were R1 438 584.

Comparing growers' recall of their income (see table 7.5) with that in table 7.18 highlights some differences. A greater percentage of growers did not received cane payments than indicated by respondents, 39% not receiving payment compared to the recall figure of 10%. It could be assumed that the recall of growers may have referred to previous proceeds received as opposed to proceeds for the 1989/90 season.

The recalled income appeared to be lower than gross proceeds shown in table 7.18. If figures in table 7.18 are reduced by 80% (an approximate average cost of production for growers with and without loan finance see section 5.2) it is found that there is a similarity in the distributions. A gross income of R6 000 would equate to a net income of R1 200. Table 7.18 shows that 52% of growers received a gross income of less than R6 000. This would equate to a net income of R1 200. Table 7.5 indicates that 64% of growers stated that they received less than R1 200. Only 9% of growers received a gross income greater than R6 000. Growers' recall indicated 23% of growers receiving more than R1 200. As stated in section 7.4.4 it could not be determined whether growers indicated gross or net income. From the similarity of the distribution of the gross income, once it was adjusted for expenditure, it may be assumed that a majority of growers indicated net income with those providing gross incomes contributing to differences in the distribution.

Table 7.18 Distribution of small scale growers according to income received from sugar cane for the 1989/90 season

Income	THN		THS		Illovo		INDV		Overall	
	Rel %	Accum %	Rel %	Accum %	Rel %	Accum %	Rel %	Accum %	Rel %	Accum %
Nil	38%	38%	36%	36%	43%	43%	41%	41%	39%	39%
< R500	5%	43%	2%	39%	3%	46%	3%	44%	4%	43%
R500 - R1000	7%	50%	6%	44%	6%	53%	6%	50%	6%	49%
R1000 - R1500	8%	57%	10%	54%	5%	57%	3%	53%	7%	56%
R1500 - R2000	8%	65%	9%	64%	8%	65%	5%	58%	8%	64%
R2000 - R2500	4%	70%	9%	73%	8%	73%	4%	62%	7%	70%
R2500 - R3000	3%	73%	7%	80%	5%	78%	2%	64%	4%	74%
R3000 - R3500	3%	75%	4%	84%	3%	81%	3%	66%	3%	77%
R3500 - R4000	4%	79%	5%	89%	5%	86%	6%	72%	5%	82%
R4000 - R4500	3%	83%	5%	94%	3%	88%	3%	76%	4%	85%
R4500 - R5000	3%	85%	2%	95%	3%	91%	3%	79%	3%	88%
R5000 - R5500	3%	89%	1%	96%	1%	92%	3%	82%	2%	90%
R5500 - R6000	1%	89%	0%	96%	1%	93%	2%	83%	1%	91%
R6000 - R6500	2%	91%	0%	96%	0%	93%	0%	83%	1%	91%
R6500 - R7000	1%	92%	0%	96%	1%	93%	0%	83%	1%	92%
R7000 - R7500	0%	93%	0%	96%	1%	95%	3%	86%	1%	93%
R7500 - R8000	0%	93%	1%	97%	1%	95%	1%	87%	1%	94%
R8000 - R8500	0%	93%	1%	98%	2%	97%	2%	89%	1%	95%
R8500 - R9000	0%	94%	0%	98%	0%	97%	2%	90%	0%	95%
R9000 - R9500	0%	94%	0%	98%	0%	97%	0%	90%	0%	95%
R9500 - R10000	0%	95%	2%	99%	0%	97%	1%	91%	1%	96%
> R10000	5%	100%	1%	100%	2%	100%	9%	100%	4%	100%
Total	100%		100%		100%		100%		100%	

The Tongaat Hulett south area showed the greatest percentage of small scale growers, 60%, with a gross income of less than R6 000. The recall of growers in the area indicated 75% of them obtaining less than R1 200 which is probably equivalent to a gross income of R6 000. Although the Illovo area exhibited the next highest percentage of growers recalling an income of less than R1 200 the gross income receipts indicated that only 50% of growers may have been in this category. The Tongaat Hulett north and individual areas exhibit similar distributions of sugar cane proceeds.

The perception that a small scale grower can make a reasonable income or that sugar cane is a remunerative crop may be influenced by the gross income which they receive. Once production costs have been deducted, and in particular loan redemptions, this perception of sugar cane production may change with the reduction being ascribed to transactions whose veracity they question. This problem was raised in chapter 5.

An investigation to determine how small scale farmers view investments in productive inputs and the subsequent recovery of those costs requires to be carried out. Bates (1979) observed that a majority of small scale contractors did not take the recovery of capital or machinery depreciation and maintenance requirements into account when establishing contractual prices. A further observation which raises questions with regard to small scale farmers understanding of production costs were observations made of contract vegetable producers on a Fish River irrigation project in the Eastern Cape selling their produce prematurely over the fence at prices lower than those which they would have received within weeks from an agent with which they had contracted. This placed the recoverability of credit at risk and reduced, if they repaid their loans, their net income (Personal observation). This aspect of small scale farmers understanding of financing requires investigation to enable effective training to be provided.

7.6 Analysis of Credit Utilisation

An assumption with the provision of credit to small scale growers is that it will be used to increase production levels above those that would have been obtained without its use (see section 2.6.3).

Credit may be used to hire contractors to carry out land preparation and planting, to purchase inputs such as disease free and improved seed cane, to purchase the correct amount and type of fertilizer and to enable improved weed control measures to be carried out effectively. Credit could, if land is available, also enable a small scale grower to expand his or her area under sugar cane.

With the above in mind an analysis of the difference in productivity between growers who utilized loan finance and those who did not is carried out. Three hundred and sixty six of the surveyed growers used loan finance and 236 did not.

Two linear discriminant models were developed. The first was based on the hypothesis that small scale growers using FAF loans should evidence improved productivity and/or a larger area planted to sugar cane than growers not using credit thus indicating that the use of credit was beneficial.

The second model arose from the need to compare two distinct methods of small scale grower development which have existed in the sugar industry. On the one hand, there has been a highly directed and managed form of development where sugar mills have established mill development companies to promote and manage small scale grower development while, on the other hand, there have been areas where indirect development has occurred by facilitating growers own efforts through agricultural extension and by addressing impediments to development (see chapter 6).

Discriminant analysis was used as it will be seen from the proposed models that a division into distinct classes is required, growers with and without loans, and growers who used mill development company services and those who did not.

The following linear discriminant function after Johnston (quoted in Lyne, 1985) is used

$$D_p = \sum_{i=1}^k d_i x_{pi}$$

where :

$x_{p1} \dots \dots \dots x_{pk}$ = k discriminating (explanatory) variables.

D_p = the p^{th} discriminant score

d_i = coefficients chosen such that the values of the discriminant function differ by the maximum possible amount.

The basis of the analysis is that linear combinations of discriminating variables, the characteristics which differ between the groups, are established and these are used to classify cases into the respective groups (Lyne, 1985; Lujemwa and Darroch, 1995). The assumptions underlying the model are that the variables that make up each group are multivariate normal with equal variance - covariance matrices (Mostert, 1995).

Table 7.19 Potential discriminating variables

Variable	Description
AREA	Small scale grower sugar cane area (hectares).
AVSHA	Average seasonal tonnage of sugar cane produced (per hectare).
BDEBT	BDEBT = 0 if no loan default. BDEBT = 1 if loan default.
CON	CON = 0 if non mill contractor. CON = 1 if mill contractor.
NO	Number of loans borrower utilised per lifetime.
SEA	Number of seasons a small scale grower produced sugar cane.

Table 7.19 details the variables used in the models. In an initial hypothesis of productivity of small scale growers age, sex, size of family, education level, amount of credit used, participation in the FAF retention scheme and quantity of fertiliser used in addition to those described in table 7.19, were considered as variables, which may have had a positive relationship to sugar cane yield. Their inclusion, however, did not add to the discriminating power of the models.

7.6.1 Loan/No Loan Model

The rationale supporting this model is that the use of loans will enable small scale growers to improve their productivity and, if land is available, cultivate larger areas of sugar cane. These expectations arise from the anticipated rational use of credit which, according to theory as quoted in chapter 2, should enable improved inputs to be acquired. It is also expected from observation that where mill development companies provide contractual services there will be greater use of loan finance by growers. It should be noted that small scale growers could not obtain loans other than from FAF for the period 1973 to 1992 (see chapter 1). In exceptional circumstances a mill may have advanced loans but these were limited compared to the use of FAF loans.

The linear discriminant analysis model to determine characteristics associated with users and non user of loans included growers' sugar cane area, their average yield per hectare, the number of seasons they produced sugar cane and who they used to carry out contractual work on their holdings.

Due to the positively skewed nature of the data it was transformed logarithmically to achieve conditions of normality as required by the modelling technique. Discriminant analysis was performed with prior probabilities being attached to group membership according to whether a grower had or did not have a loan such that the probability of not having a loan was 0.38 and of having a loan 0.62. A total of 585 cases were included in the analysis.

Table 7.20 Correlation coefficient matrix in respect of proposed variables in loan/no loan and mill/non-mill contractor models

	BDEBT	LOGAREA	LOGAVSHA	LOGNO	LOGSEA
BDEBT	1.0000	-.0376	-.0821*	-.0670	-.2001**
LOGAREA	-.0376	1.0000	-.4399**	.2812**	.3363**
LOGAVSHA	-.0821*	-.4399**	1.0000	-.0088	.1964**
LOGNO	-.0670	.2812**	-.0088	1.0000	.4190**
LOGSEA	-.2001**	.3363**	.1964	.4190**	1.0000

* - Significant at 0.05 level ** - Significant at 0.01 level

Table 7.20 shows the correlation matrix of the variables proposed for the model. It will be seen that there is a high degree of correlation between LOGAREA, the logarithm of area (hectares) and LOGAVSHA, the logarithm of average yield (tons sugar cane per hectare). The correlation is indicated as being negative. This observation is contrary to that observed by Mbowa and Nieuwoudt (1996) in respect of small scale Indian growers compared to large scale growers in KwaZulu-Natal, see section 2.6.1. There could be two reasons for this. Firstly observations have indicated that frequently growers farming larger units have lower levels of production due to poor management and inability to carry out operations timeously. Binswanger and Deininger (1996:89) support this view with observations in Kenya where small units in resettled areas were found to be more highly productive than larger units. The issue is one of management ability and access to resources such as family labour (see section 5.3). At one stage FAF considered advancing loans to small scale growers on larger units on an incremental basis to overcome this problem. Growers would then have been able to use additional finance on a performance based basis. Secondly the problem of correct land measurement could play a role, see section 3.5 where this was discussed in detail. A correlation is also observed between LOGSEA, the logarithm of the number of seasons, and LOGNO, the logarithm of the number of loans used by a grower. The positive relationship between the increased use of loans and the longer a grower produces sugar cane for was commented on in section

7.5.3. The possible relationship between area (LOGAREA) and number of seasons (LOGSEA) was commented on in section 7.5.2. The longer (more seasons) a grower had produced sugar cane for the larger the area under sugar cane. Newer growers entered the industry with smaller areas than growers who had been established for longer periods (see figures 6.2, 6.4 and 6.6). As a result of the correlation observed between LOGAREA and LOGAVSHA further investigation was undertaken to establish the degree of multicollinearity present.

The condition index, defined as follows, was used as an indicator:-

$$\text{Condition Index} = \frac{\text{Maximum eigenvalue}}{\text{Minimum eigenvalue}}$$

According to Gujarati (1988:301) a value for the condition index of between 10 and 30 indicates moderate to strong multicollinearity and a value exceeding 30, severe multicollinearity.

Table 7.21 Condition indices - loan/no loan model

Number	Eigenvalue	Cond. Index	Variance Proportions				
			Constant	LOGAREA	LOGAVSHA	LOGSEA	CON
1	3.97747	1.000	.00179	.01201	.00175	.00390	.01922
2	.59613	2.583	.00004	.35860	.00111	.00024	.29393
3	.36150	3.317	.00774	.19438	.01413	.00725	.67823
4	.04863	9.044	.11805	.13404	.04979	.94725	.00722
5	.01627	15.634	.87238	.30096	.93322	.04137	.00139

Table 7.21 shows a condition index value greater than 10, which indicates moderate multicollinearity, in respect of LOGAVSHA and LOGAREA. There appears to be mild multicollinearity between LOGSEA and LOGAREA with the condition index being just above 9. The correlation matrix (table 7.20) substantiated these conclusions.

Yield (LOGAVSHA), in an initial linear discriminant model, did not prove to be a significant discriminator. When the yield variable was considered on its own, its sign changed from negative to positive. Because of multicollinearity and low significance of yield it was decided to drop the variable from the final model.

Wilk's lambda was used to monitor the between group and within group variation. Wilk's lambda is the ratio of within group sum of squares to the total sum of squares. It indicates that proportion of the association not explained by differences among groups (for the two group case). A small Wilk's lambda indicates a high degree of variation between groups and a low degree of variation within groups.

The estimated discriminant function, using standardised coefficients (as their magnitude may be used as indicators of the relative importance of variables in the function), obtained was :-

$$D_L = 0.6759 \text{ CON}^{**} + 0.6261 \text{ LOGSEA}^{**} + 0.2963 \text{ LOGAREA}^{**}$$

** = significant at 0.01 level

$$\text{Wilk's lambda} = 0.77$$

Where	:	D_L	=	0 if no loan
			=	1 if loan
		CON	=	0 if non mill contractor
			=	1 if mill contractor
		LOGSEA	=	log of number of seasons production
		LOGAREA	=	log of hectares

The model correctly classified 84% of growers who used loans and 57% of those who did not. The overall classification was 74% with a Wilk's lambda of 0.77. This high level indicates that a large amount of information may not have been included in the function with the selected variables.

The above function indicates that small scale growers using loans were more likely to have used a mill contractor (CON) to provide contractual services to develop their sugar cane holdings than growers who did not use loans.

Growers using loans produce sugar cane for a greater number of seasons (LOGSEA) than those not using loans. This result relates to mill development company involvement with growers who use loans, where replanting of their lands is scheduled and managed by the companies. The analysis indicates that small scale growers who used loans had larger areas (LOGAREA) planted to sugar cane than growers who did not use loan finance.

As the model was used to determine characteristics associated with the use and non-use of loan finance and not to establish causative relationships a random percentage of cases was not extracted to test the results. Additional analysis of data detailed in the study accord with results obtained using linear discriminant analysis.

The model indicates that important characteristics associated with small scale growers who use loans are that they use the services of mill development companies for contractual services and produce sugar cane for a greater number of seasons than those growers who do not use loans. As indicated earlier mill development companies have a large management input into those areas where they operate and maintenance of sugar cane production from small scale grower areas was a primary objective of their activities. Under these circumstances the encouragement of growers to replant their sugar cane and continue production would have been expected. As the use of loan finance was promoted to achieve this goal the indication that growers who used loans produced sugar cane for a greater number of seasons would be supported.

Growers using loan finance are indicated as having larger areas planted to sugar cane than those growers not using loans. An analysis of variance indicated an average difference of 0.7 hectares with growers using loans having an average of 2.97 hectares and those not using loans an average of 2.24 hectares ($P=0.0006$) (see footnote 5, section 7.5.2).

Analysis indicated that growers using loans produced sugar cane for an average of 5 seasons more than growers not using loans ($P=0.0000$). Growers using loans produced sugar cane for an average of 12 seasons whereas those not using loans produced sugar cane for an average of 7 seasons, one crop cycle (see sections 7.4.4 and 7.5.2).

Overall the use of loans by small scale growers may be concluded to have led to loans being used to cultivate larger areas, produce sugar cane for a greater number of seasons and employ contractual services. The model indicated greater use being made of mill contractual services as opposed to non-mill contractors.

Given that involvement of mill development companies appears to be important the following model was developed. Mill development companies are associated with directed and highly managed development procedures (see chapter 6).

7.6.2 Managed/Non-managed Development Model

The merits and demerits of managed or project type development was addressed by Ruthenberg (quoted in Bates 1979:300). Managed or pressured development was shown by Ruthenberg to have been associated with project failure in Tanzania. A suggested cause of this failure was that such development did not fit into the social structure of communities involved in development. The subject of highly directed or managed development has raised questions in regard to development of small scale sugar cane growers in South Africa. A number of sugar mills established mill development companies to promote establishment of small scale growers while at the same time there were other sugar mills which relied on the provision of extension services to encourage small scale grower production (see sections 6.3, 6.4 and 6.5).

As indicated, in previous sections, there was an apparent difference between the approaches. This model is used to establish whether there are differences associated with the two approaches. The linear discriminant analysis model, to determine the

characteristics associated with development of small scale growers in those areas serviced by mill supported development companies (a highly managed development methodology) compared to those areas where the principle input from mills was orientated towards provision of extension services, included the use of growers' area planted to sugar cane, their average yield, the number of seasons they produced sugar cane, who they used to carry out their contractual services, the number of loans used per borrower and the level of bad debts as variables.

As in the previous model, data were transformed using logarithms to achieve conditions of normality. Multicollinearity was investigated using condition indices as shown in table 7.22.

Table 7.22 Condition indices - mill/non-mill contractor development model

Number	Eigenvalue	Cond. Index	Variance Proportions					
			Constant	BDEBT	LOGAREA	LOGAVSHA	LOGLNO	LOGSEA
1	4.28682	1.000	.00098	.00509	.01060	.00124	.01322	.00251
2	.92019	2.158	.00000	.84087	.00682	.00001	.00499	.00058
3	.45566	3.067	.00267	.02254	.48572	.00974	.00687	.00257
4	.28979	3.846	.00388	.00642	.09891	.00342	.88036	.00270
5	.03640	10.851	.03776	.06669	.14389	.12396	.07769	.96356
6	.01168	19.161	.95471	.05839	.25406	.86163	.01687	.02807

Condition indices greater than 10, according to Gujarati (1988:301), indicate moderate multicollinearity between LOGAVSHA and LOGAREA as well as between LOGAREA and LOGSEA as indicated by the high proportions of variance in rows 5 and 6 of the table. A model based on the variables chosen with the level of inter-correlation indicated would "increase the standard errors of the regression coefficients and make the latter highly unstable" (Nieuwoudt, 1972:278).

To eliminate the problem of multicollinearity a principal component analysis was performed. The objective of principal component analysis is to economise on the number of variables and this is achieved through linear transformations as follows :-

$$PC_i = \sum_{j=1}^P a_{ij} x_j \quad j = 1, 2 \dots P$$

Where

- PC_i = i^{th} principal component
- a = characteristic vector
- X_j = j^{th} variable

Coefficients a_{ij} are chosen such that the first principal component displays the largest variation in the data. The second principal component is chosen to be uncorrelated to the first principal component and captures the variation not displayed by the first principal component. Thus the x variables are transformed into new variables which account for as much of the variation as possible in descending order (Nieuwoudt, 1972).

A principal component analysis was carried out on the variables indicated in the correlation matrix, table 7.20. The results are shown in table 7.23.

Table 7.23 Principal Components of area, average yield, number of seasons, number of loans and loan defaults

	PC1	PC2	PC3	PC4	PC5
BDEBT	-.29498	-.57059	.71388	.27891	0
LOGAREA	.78092	-.41893	-.13009	.10810	.43134
LOGAVSHA	-.40200	.79293	.24198	.13555	.36432
LOGLNO	.66003	.24397	.55582	-.44147	0
LOGSEA	.72919	.43414	0	.47139	-.23278
Eigenvalue	1.82581	1.37781	.89745	.52495	.37398
Percentage variance explained	36.52	27.56	17.95	10.50	7.47

Following Kaiser's criterion the principal components with eigenvalues greater than 1 are retained for the analysis (Manly, 1994). Through inspection of table 7.23 it appears that the following linear combinations accounted for about 64% of the variance in the data.

$$\begin{aligned} (1) \quad PC_1 &= 0.78 \text{ LOGAREA} + 0.73 \text{ LOGSEA} + 0.66 \text{ LOGLNO} \\ (2) \quad PC_2 &= 0.79 \text{ LOGAVSHA} - 0.57 \text{ BDEBT} \end{aligned}$$

These transformations were obtained by using variables with dominant co-efficients (Nieuwoudt, 1972). To obtain, for example, the first transformation, PC_1 it can be seen from table 7.23 that the co-efficients for LOGAREA, LOGNO and LOGSEA are all approximately numerically equal while the co-efficients for BDEBT and LOGAVSHA are relatively small.

The coefficients are ranked in order of importance as they are standardised. Principal component 1, which is labelled "loans" in the following discriminant analysis, groups variables associated with loan characteristics. The grouping of these variables appear logical as loan amounts advanced are usually determined by a grower's land area to be planted to sugar cane (see section 4.11), use of loans is associated with a greater number of seasons production than non use of loans (see previous model) and the final variable, number of loans, by definition is associated with loans.

Principal component 2 is associated with average yield and is thus labelled "yield" in the following discriminant analysis model. Loan default is included in this principal component. Loan default is associated with this principal component as a relatively low yield would lead to loan default.

The discriminant analysis was performed with prior probability being attached to group membership. The probability of a grower using a mill contractor was 0.58 and of not using a mill contractor was 0.42. The model included 419 cases. The direct linear discriminant analysis method was used and Wilk's lambda was monitored.

The following standardised function was obtained :-

$$D_C = 5.9507 PC_1^{**} - 5.8208 PC_2^{**}$$

** significant at 0.01 level

Wilk's lambda = 0.14

Where : $D_C = 0$ if non mill contractor
 $D_C = 1$ if mill contractor
 $PC_1 =$ Loan
 $PC_2 =$ Yield

PC_1 scores positively for area, number of loans and seasons of production. Mill contracting services are associated with small scale growers having larger areas planted to sugar cane, using more loans and producing sugar cane for more seasons than growers who do not use mill contracting services. The data used in the model cover a number of areas between which contractor efficiencies and grower resource availability vary (see section 7.2.2). In respect of the area planted to sugar cane a complex relationship would appear to exist with variations being noted in between and within area comparisons which are not evidenced in the overall comparison.

The negative sign of PC_2 suggests that mill contracting services are associated with low scores on yield. Once again caution is required to be exercised in the interpretation of this result. Overall a difference in yield is indicated between growers who use mill contractors and those who do not. This difference is not however significant for the data as a whole. Looking at within and between area data significant differences are found. Small scale growers who obtained high yields, greater than 35 tons sugar cane per hectare, and who used loans had significantly lower yields than high producing growers who did not use loans (see section 7.8). The foregoing relationship did not exist in the case of lower yielding small scale growers. The analysis indicates that a higher level of loan defaults is associated with mill contractors.

Results must be interpreted with caution. It appears from the model that mill contracting services are associated with small scale growers using a greater number of loans and producing sugar cane for more seasons. The latter indication is in accordance with the loan/non loan model for growers using loans. Mill contracting services are associated with developing larger areas. Further the use, by small scale growers, of mill contracting services is associated with lower sugar cane yields. This probably results from growers who use mill contractors expecting them to continue providing services and managing their sugar cane (see section 7.4.4). Mill contractors usually operate on the basis that growers assume responsibility for farming operations once planting is complete. It is at this particular juncture that problems arise and weeding and other operations are not carried out timeously or at all. This then leads to poor management and mill contractors having to return and rescue such growers from defaulting on their loans by carrying out the required agricultural operations (see sections 6.6 and 7.3.4). By this stage of the growth cycle of sugar cane irretrievable loss to its final yield will have been incurred. It is known that sugar cane development is promoted by mill contracting companies and as result small growers who are not committed or motivated to produce sugar cane efficiently may be developed. An increased level of loan default then eventuates from this situation. Data used in this model indicate that 80% of the growers sampled accounted for 60% of the area and 50% of production (see section 7.5.2, figure 7.14). Mill contractors are associated with the whole spectrum of growers which suggests that a large percentage of their clients are low yielding producers. The upper 20% of growers sampled produced 50% of the sugar cane. An overriding problem is probably one of adverse borrower selection as opposed to sub-standard contracting (see section 4.7).

The model correctly classified 100% of those growers who used mill contractors and 98% of those who did not. The overall classification was 99% with a Wilk's lambda of 0.14. The model indicated a high degree of accuracy.

Once again the model was used to determine characteristics associated with small scale growers using mill contracting services compared to those who did not and not as a model

to establish causative relationships. As with the previous model a random percentage of the sample was not retained for testing.

Section 6.3 detailed objectives followed by a mill development company which provided mill contracting services. The characteristics of small scale growers associated with mill contractors reflect the application of the objectives. Promotion of production with larger areas, more loans and longer term production meet these objectives. Lower average yields and higher loan defaults however do not. These would have arisen from adverse selection of growers and misunderstanding arising between the mill contractor and the growers who were developed (see section 7.3).

Results obtained in this model indicate that small scale growers who are independent of mill contracting services on average use fewer loans, produce for fewer seasons, have smaller areas, exhibit a lower loan default rate and exhibit higher yields than growers who use mill contracting services. The anomaly which is apparent is of these growers producing for fewer seasons. This may relate to the economics of sugar cane production and of these growers being in a position to decide whether they should or should not continue production without external pressure determining what they decide.

The model assists in understanding miller/grower relationships as depicted in figure 6.7. The relationship, as sketched throughout this study, is shown to be complex and one that requires a careful balancing of objectives.

7.7 Analysis of Sugar Cane Area and Yield

The linear discriminant analysis model indicated that there was a difference in sugar cane area between those small scale growers who used loans and those who did not as well as there being a difference in sugar cane areas and yields of growers serviced or not serviced by mill contractors. A comparison of average area of recorded sugar cane land per grower using and not using loans indicated that growers using loans had larger areas of

sugar cane ($P=0.0006$). Small scale growers who used loans had an average of 0.7 hectares more sugar cane land than those who did not.

Looking more closely at area differences, according to the consolidated mill areas (see table 7.1), it was found that in the Tongaat-Hulett north area there was a significant difference between land area of growers who used loans and growers who did not use loans. Growers using loans had an average of 1.2 hectares more sugar cane land, or 57% more land under sugar cane than those growers without loans ($P=0.00034$). Growers using loans had an average area of 3.3 hectares whereas those who did not use loans had an average of 2.1 hectares.

A similar situation was found in the Tongaat-Hulett south area where growers who used loans had 1.3 hectares or 93% more sugar cane land than those growers who did not use loans ($P=0.04$). The average area of growers using loans was 2.7 hectares whereas the average area of those not using loans was 1.4 hectares. In the Illovo and individual areas no difference was found between the average area of land of growers using and not using loans.

Looking at the difference in area planted to sugar cane in the Tongaat Hulett north area and the Tongaat Hulett south area it was found that there was a significant difference between the average areas planted. The average area in Tongaat Hulett north was 2.7 hectares and 2.2 hectares in Tongaat Hulett south. The difference of 0.5 hectares was significant ($P = 0.04$). The reason for this is may be that the Tongaat Hulett south area is adjacent to a metropolitan axis and hence has a higher population density than the Tongaat Hulett north area which is situated further from a metropolitan area.

It was observed that productivity of growers utilising loan finance in areas serviced by mill contracting services was significantly lower than those growers not using loans. Small growers not using loans produced an average 16 tons per hectare, in the Tongaat Hulett south, and 10 tons per hectare, in Illovo, more than growers using loans

($P=0.0001$ and $P=0.0218$ respectively). This result, given the cautionary note on land measurement, should give rise to concern. Reasons were proposed in section 7.6.2. It is noted that both the Tongaat-Hulett south and Illovo areas have mill development companies performing most of the services for the small scale growers (cf sugar cane production methods section 7.4.4).

If it is assumed that the majority of growers using credit in the Tongaat Hulett south and Illovo areas relied on services from the respective mill contracting services it would appear that small scale growers using their own resources or local small scale contractors were able to out perform growers using the services of mill contractors. This is of concern if it is recalled that miller respondents indicated, in the group discussion, that it had to be proved to small scale growers "that cane growing could be profitable" to be able to succeed with small scale grower development (see section 7.3.4).

7.8 Characteristics of small scale growers producing more than 35 tons sugar cane per hectare

Figure 7.13, (see section 7.5.2) indicated the distribution of surveyed small scale growers by the average tonnage of sugar cane produced per hectare. One hundred and thirty one, or 22%, of the sampled growers had an average productivity level greater than 35 tons sugar cane per hectare, had not defaulted on loan repayments and were still producing sugar cane in 1996. The average area of these growers was 1.7 hectares which was below the average of 2.9 hectares recorded for the sample as a whole ($P=0.0000$)(see section 7.5.1). Their distribution according to mill area is shown in table 7.24.

Thirty three percent of growers producing more than 35 tons sugar cane per hectare were located in the Tongaat Hulett north area, 32% in the Tongaat Hulett south area, 16% in the Illovo area and 19% in the individual mill area. Twenty five percent of the growers were located in the Maidstone mill area.

Table 7.24 Distribution of small scale growers producing more than 35 tons sugar cane per hectare according to mill and area

Area	Mill	Yield/ha > 35 tons no. growers	Yield/ha > 35 tons % growers
THN	Felixton	23	18%
	Amatikulu	19	15%
	Darnall	1	1%
	Area total	43	33%
THS	Maidstone	33	25%
	Mt. Edgecombe	9	7%
	Area total	42	32%
Illovo	Gledhow	7	5%
	Noodsberg	0	0%
	Eston	7	5%
	Sezela	7	5%
	Area total	21	16%
Individual	Entumeni	3	2%
	Glendale	17	13%
	Umfolozi	5	4%
	Area total	25	19%
Grand total		131	100%

(Note percentages are rounded)

The better producing small scale growers were apparently longer term producers of sugar cane. Figure 7.15 indicates that better performing growers appear to be concentrated around 10 to 15 seasons of production as well as a smaller number being evidenced at the 22 and 24 season level. No growers are shown in the 1 to 3 season category as a criteria for better performers was production during the period 1992/93 to 1995/96. If growers did not produce sugar cane during this period or delivered inconsistently they were not considered to qualify as better performers.

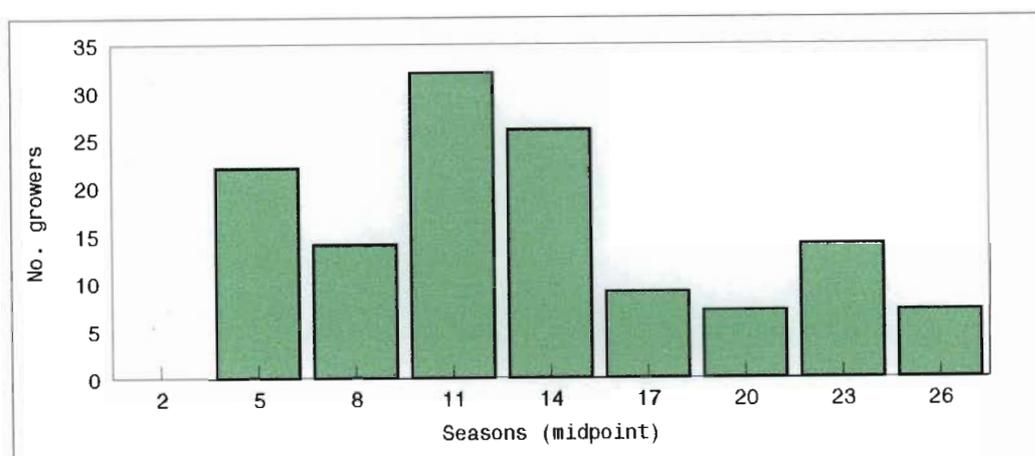


Figure 7.15 Distribution of small scale growers producing more than 35 tons sugar cane per hectare according to the number of seasons they produced sugar cane

Figure 7.16 indicates the frequency distribution of better performers according to their average yield per hectare. Sixty four percent of them have an average yield level of between 35 and 60 tons sugar cane per hectare.

It will be seen that 15 of the growers exhibited yields greater than 105 tons per hectare. This is possible but a question about the accuracy of their land measurement would require addressing.

Of the 131 better performers 90 had used FAF loans. Comparing the productivity of growers who obtained yields of more than 35 tons per hectare and who used credit and those who did not use credit the following results were obtained. Growers who did not use loans recorded a higher level of productivity than those who used loans. Non credit users had an average yield level of 85 tons whereas those who used credit had an average yield of 57 tons sugar cane per hectare ($P=0.0000$). The use of credit appears to have enabled growers in the group being discussed to cultivate larger areas than they would

have, had they not had access to credit. Comparing the average area of better performing growers who used and those who did not use credit indicates that credit users had larger areas with an average of just less than 1 hectare more than non credit users (0.9 ha, $P=0.00016$). Better performing growers produced sugar cane for a greater number of seasons than poor producers, they cultivated areas which were below the overall average size with those using credit cultivating larger areas than those growers who did not.

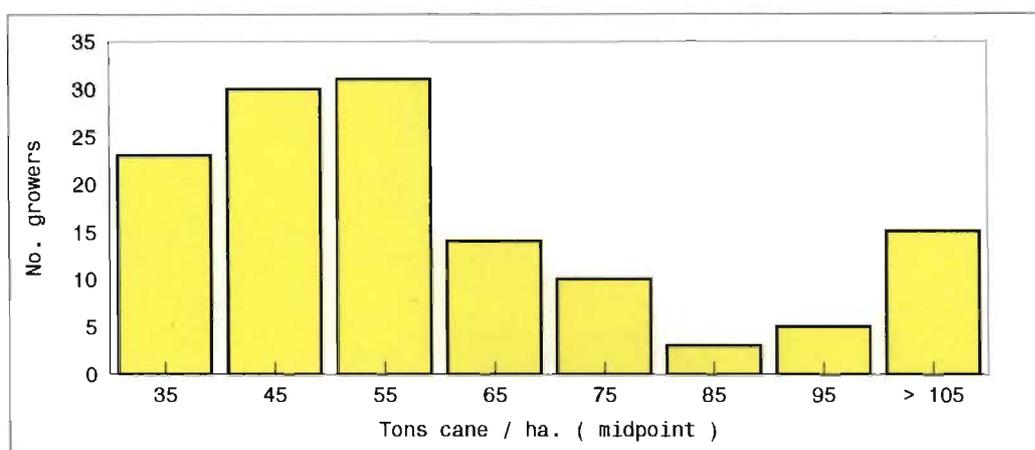


Figure 7.16 Distribution of better performing small scale growers according to their average yield of sugar cane per hectare

A finding of concern is that growers producing more than 35 tons sugar cane per hectare and using loans exhibited lower productivity than growers who did not use loans. This finding would require further investigation so that the issue can be addressed, it may revolve around management as suggested in section 7.6.1. High productivity appears to be more than credit and more than a larger area of sugar cane. High productivity is associated with longer term production of sugar cane. Kinsey and Binswanger (1996:113) suggest that limitations arising from the amount of family labour, managerial skills and

the capital resources that a farmer has access to are determining factors of success. Results obtained in this study suggest support for this and suggest that further studies be undertaken in this regard.

7.9 The substitutes in the small scale grower survey

In section 7.2.2 it was recorded that 21% of the original sample of small scale growers in the survey undertaken were substituted as a result of unavailability of a person to interview and it was suggested that a bias could have been introduced into the sampling process. The following is a brief analysis of production data of substituted growers.

The original sugar cane area of the substitutes was 241 hectares. Of 123 growers substituted 60 had FAF loans. Of these 25 or 42% were recorded as loan defaulters. An amount of R46 101 was written off as bad debt. If the substitutes had been retained in the sample the percentage of loan defaulters would have increased from 13%, as indicated in table 7.14, to as much as 17%. The total value of loans utilised by the substitutes was R214 300. In addition they used R42 447 in drought relief loans.

Thirteen of the substitutes had not delivered sugar cane, nor did they subsequently deliver sugar cane. Thirty four or 28% of them produced less than 20 tons of sugar cane per hectare.

Interestingly, 9 produced more than an average of 35 tons sugar cane per hectare. There was no particular concentration of these growers in terms of mill areas. An important feature of the substitutes was the high percentage of loan defaulters.

7.10 Summary

Chapter 7 presented results of five group discussions carried out with small scale growers, mill representatives and extension staff and a field survey interviewing a sample of 602

small scale growers. In addition to the attitudinal surveys which included some quantitative data collection, an analysis of sugar cane production of the surveyed growers from 1972 to 1996 was carried out.

The survey and analysis included information from twelve sugar mill areas. These mills were consolidated into four groups based on the assessed development methodology practised in each mill area (see chapter 6). The consolidated areas represented small scale growers in the Tongaat-Hulett north area, Tongaat Hulett south area, Illovo area and what was called the independent areas.

The discussion group results indicated that there was a high level of mistrust of mills' objectives by small scale growers. Mills were driven by commercial and economic imperatives. Arising out of the foregoing developed a conflict with the FAF objectives in respect of small scale grower development. The KwaZulu Government Department of Agriculture extension offices considered themselves powerless in the situation. Their productivity was viewed as low by mills who appointed their own staff to serve small scale growers. Although growers appeared to see government extension staff as important, as did the extensionist themselves, they were unable to perform a mediating or constructive role in the process. The discussion groups highlighted succinctly the tensions and issues pervading small scale grower development.

The field survey provided insight into small scale grower demographics, factors surrounding sugar cane production and grower attitudes. Forty percent of the respondents were older than 56 years of age and 62% had an education level less than grade 6. These two statistics may be considered to be very important in respect of them being underlying features of many aspects of small scale grower sugar cane production.

The majority of households were headed by males who also took a majority of decisions in respect of agricultural matters. Fifty four percent of the surveyed households had

members living or working away. The average annual remittance by these people was R1 260.

The survey did not ascertain the importance of pension receipts. Other surveys of rural areas have identified these as a significant source of income to rural households. The production of other crops and raising of livestock were not indicated as important sources of income. A majority of households had produced other crops but it appears that these were only for subsistence purposes.

A majority of respondents appeared to have a negative attitude to the leasing of their land. Land leasing or transfer of right of use, although not identified as widely practised in the survey, does occur. Small scale contractors have been found to cultivate extensive areas by using other peoples land (*cf* section 5.4.3). In an investigation into loan defaults FAF has found that land, or its right of use, has been transferred to another farmer. The overall incidence of this is, however, unknown. Land transactions thus apparently take place but are not openly undertaken. Legislation is not in place to enable such transactions (see chapter 1). Comment was made that cultivation of sugar cane has taken place to secure land ownership (see chapter 6). This may be the case but the cultivation by development companies may have placed an impediment in the way of land transfers taking place between those households which would not have used land and those which would have wanted to expand their production. Further research is required into land transactions and the impact of different models of development.

The involvement of mill development companies in small scale grower development was clearly seen in the Tongaat-Hulett south and Illovo areas in agricultural operations required for production of sugar cane. Excepting for weed control and harvesting small scale growers in the areas identified relied heavily on mill development companies for services. Small scale growers in the Tongaat-Hulett north area and, to a lesser degree, the individual areas relied on small scale and independent (not miller) contractors for their services.

Growers generally showed a high degree of satisfaction with methods they employed for sugar cane production. This satisfaction requires questioning in the light of low productivity and dissatisfaction with the level of income received. In all cases, excepting for transportation of sugar cane, the degree of satisfaction with services received from development companies/mills was lower than that of other suppliers. This lower level of satisfaction may result from growers expressed lack of control of what these organisations do when providing services. As noted the objectives of mill development companies gave rise to mistrust and conflict.

The reason that small scale growers commenced sugar cane production was heavily influenced by the mill development company in the Tongaat-Hulett south area. The Illovo area showed a lower level of influence of mill development companies and had a similar profile to the individual areas where promotion of small scale grower sugar cane production was targeted by mills but with a lower level of mechanical input and greater emphasis on grower involvement. The Tongaat-Hulett north and individual areas show a high level of influence of successful growers leading farmers to enter sugar cane production. In this instance it could be expected that farmers did not experience pressure to commence sugar cane production. An average of 23% of growers took over sugar cane production operations from their families which, as indicated by the number of seasons during which a particular household produced sugar cane, led to sustained production.

Given the reasons for entering into sugar cane production which would have been underlain by the expected economic gain, although this was not verbalised in the reasons, 39% of the respondents stated that their income was poor to very poor with 55% of the growers in the Tongaat-Hulett south area having this view. Only 27% of growers considered their income from sugar cane to be good or very good. There was a predominantly negative view of income received from sugar cane production. Added to the above, those growers utilising credit experienced lower initial levels of income with 47% of growers with a loan being dissatisfied with their level of income. The issues in respect of this were discussed fully in chapter 5. In addition to the above, a high

percentage of growers indicated dissatisfaction with the amount of information they had and hence their understanding of transactions they were involved in was identified as a shortcoming.

Small scale growers had a high awareness of the majority of organisations involved in small scale grower development. An aspect which, however, was weak was their awareness of the small scale grower representative structure. This is a study on its own and, save to say that it was weak, is fraught with problems. It is suggested that the structure is open to abuse and does not focus small scale growers' potential strengths and power on those areas which could lead to increasing small scale grower benefits.

The use of credit by small scale growers was highest in those areas where mill development companies operated. There appeared to be a degree of ambiguity in the understanding of the credit process and its requirements. There was a difference between growers understanding in the different areas with areas served by mill development companies being generally weaker and more negative. The fundamental issue is probably that small scale growers entering into credit transactions were not fully acquainted with the requirements and implications. This is probably a grave flaw in the process and together with external pressures has contributed a great deal to the expressed dissatisfaction.

The analysis of production data and the analysis of the attitudinal survey complemented each other. The basic data concerning land areas, production and productivity indicated similar distributions and trends obtained in previous analyses in this discourse. The advantage of the analysis was the ability to focus on trends at the grower level as opposed to overall trends.

More extensive use of credit in areas serviced by mill development companies was confirmed by the analysis of grower production data. Loan defaults were also observed to be greater in these areas.

Data were not available regarding small scale growers' participation in a savings scheme in the Illovo area. The Tongaat-Hulett south area however showed a higher percentage of growers registered on the scheme than other areas. The operation of the retention savings scheme in areas served by mill development companies appears to be more controversial than other areas and may relate to mill development companies being highly involved in ratoon management operations.

Two linear discriminant models were presented. The first model compared the characteristics of small scale growers who used loans with those who did not. The second compared the characteristics of small scale growers who used mill contracting services with those growers who did not.

The provision of credit appears to have enabled the expansion of the small scale grower sector. However, in terms of individual circumstances of small scale growers, those utilising FAF loans and those utilising services of mill contracting companies do not appear to have been as successful as those growers who developed independently of credit and managed development procedures. Small scale growers using mill contractual services used more loans, had higher loan default rates, had larger areas planted to sugar cane, exhibited lower average yields per hectare and produced sugar cane for more seasons than those growers not utilising the services of mill contractors. The anomalous situation of growers who used loans obtaining lower yields than those not using loans, especially in the case of better performing growers, was indicated as an area where further research is required.

Improved small scale grower productivity is linked to factors over and above larger land units and credit. These factors, availability of family labour, managerial skills and physical capital require further investigation. Chapter 5 indicated a need for improved management, chapter 6 suggested that, based on the return which can be expected from sugar cane, a larger area of land per farmer is required. What is evident is that more research is required to improve small scale grower production.

Chapter seven brought many issues raised in previous chapters together in respect of the surveyed growers. Issues which had been commented on previously were observed in the data presented.

8. FINDINGS IN RESPECT OF FAF OBJECTIVES AND RECOMMENDATIONS FOR CONTINUED PROVISION OF FINANCIAL SERVICES TO SMALL SCALE GROWERS

8.1 Introduction

This chapter sets out to consolidate the main findings of the study to enable conclusions to be drawn in regard to the evaluation of FAF. Arising from the evaluation and taking account of the sugar industry's overall objectives in respect of financing small scale growers, which were adopted in 1995, recommendations are made for the establishment of a broadened rural finance structure. It is noted that FAF was the principal source of credit for small scale growers for the period studied and therefore conclusions reached and recommendations made are considered important in respect of the future financing of small scale growers.

8.2 Small Scale Farmer Credit - Lessons

Rural financing has been found to be a complex field and, as recorded by Birgegård (1993:2), the complexity is underscored by the relatively few answers regarding its administration which research has produced.

Notwithstanding the above, lessons indicate that :-

- a real positive rate of interest should be charged;
- small scale farmers should be able to identify the benefits of the use of credit and should have prospects of improved farm profits;
- savings should be mobilised;
- transaction costs should be minimised;
- loan recovery should be facilitated by sound borrower assessment, loan decisions and risk management; and,

- a participatory system based on small groups would appear to be appropriate.

Availability of and accessibility to credit by small scale farmers would appear to be of greater importance than the actual interest rate charged. It is however noted that credit is not the only input that small scale farmers require and may not necessarily even be the most important one. According to the Strauss Commission "credit should not be over-emphasised, as the poor can least afford to be caught in a debt trap" (Interim Report of the Commission of Inquiry into the Provision of Rural Financial Services, 1996:4).

Savings mobilization emerges as an important component of a rural financial market. Studies have indicated (Adams, 1977:41, Von Pischke, 1978:55) that small scale farmers frequently have cash balances which can be mobilised. In addition to this rural households have members in the broader economy who require a means to transmit funds. The Strauss Commission identified this as an important need of rural communities. The Commission stated that "the formal financial sector needs to give at least equal emphasis to credit provision and savings mobilisation" (Interim Report of the Commission of Inquiry into the Provision of Rural Financial Services, 1996:7).

How the above lessons apply to or impact on FAF will be drawn out as findings are addressed in the following sections.

8.3 The South African Sugar Industry and Small Scale Grower Development

The South African sugar industry, its broad background having been sketched in chapter 3, is a large agro-industry based on innovative financial and technological methods of production operating in a world competitive market. Its underlying *raison d' être* is to make a satisfactory rate of return from its resources for its investors while meeting the demands of its consumers. It is against this background that investment in small scale grower development was made. It is also as a result of this *raison d' être* that continued investment in small scale grower development is reviewed. The question of sustainability

of investment in small scale grower development applies as much to the industry as a whole as it does to the Financial Aid Fund.

Figure 8.1 indicates the total sugar cane proceeds received by small scale growers for the period 1973 to 1995. In nominal terms they increased from R2.6 million in 1973 to R124.8 million in 1994. The 1994/95 season amount, R227.6 million, includes all small scale growers and not just black small scale growers located in KwaZulu-Natal who were the subject of the study.

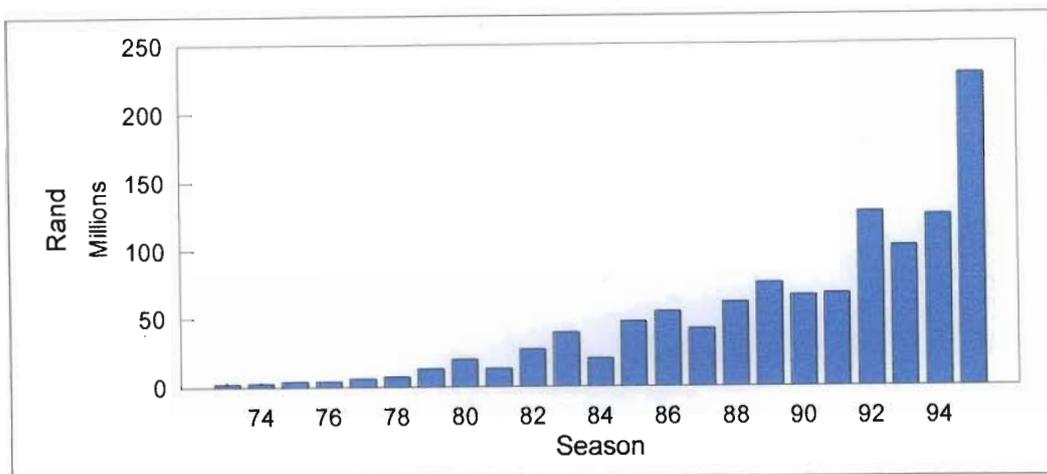


Figure 8.1 Small scale grower total sugar cane proceeds - 1972 to 1995

The increase in small scale grower proceeds arises from an increase in total sugar cane tonnage, total area and number of small scale growers. An increasing sucrose price has also had an impact. KwaZulu-Natal small scale grower sugar cane tonnage, as a percentage of total industry tonnage, rose from 4.5% in 1972/73 to 7% in 1992/93.

Data presented in chapter 3 indicated that underlying the increased tonnage produced were a number of trends which showed a decreasing average area of sugar cane planted per grower and a decreasing average yield per hectare. This underscored the conclusion that the increased total tonnage of sugar cane was obtained from a larger total area and greater number of small scale growers.

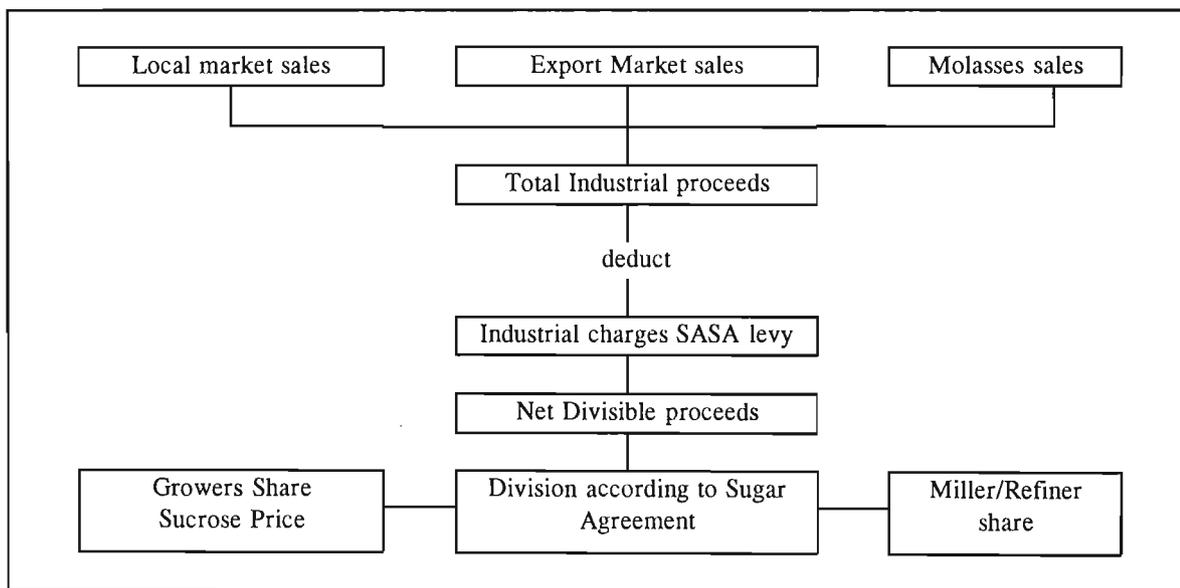
Concomitant with the decreasing average tonnage of sugar cane delivered per small scale grower was a declining real sucrose price. Not only was the sucrose price declining but the purchasing power of a ton of sugar cane in respect of a staple food, maize, and an important input, tractor power, declined. Small scale growers were faced with a deteriorating economic situation with a price/cost squeeze in respect of sugar cane production. It was under the above circumstances that more and more small scale growers developed or were developed with the use of credit.

Production of sugar to meet domestic and international markets, in the most cost effective and profitable way, forms the foundation of the sugar industry. Associated very closely with this is the profitable operation of sugar mills. These are capital intensive processing plants whose sources of raw material - sugar cane - are sugar cane growers both large and small scale. Growers and millers operate within a regulated environment in terms of the Sugar Act, 1978, and the Sugar Industry Agreement, 1994. The regulations have changed over the years 1973 to 1996 and consequently the "rules of the game" which applied in 1973 do not necessarily apply in 1996.

An important determinant of how growers and millers view the industry is the division of proceeds. This is the system specified in the sugar agreement of how income from the sale of sugar is divided amongst millers (the processors) and growers (the producers).

Figure 8.2 shows a simplified representation of the sugar industry division of proceeds. At the top of the figure proceeds are indicated as being received from the sale of sugar and molasses on the national and international markets. Costs, which were agreed as overall industrial charges eg cost of administering the South African Sugar Association etc., are then deducted. The amount remaining, net divisible proceeds, is then divided according to a formula, which involved costs of production and return on capital, detailed in the sugar industry agreement between growers and millers. This formula has changed over the years. As of 1994 the sugar industry agreed that it would provide for a fixed division of proceeds and not a variable system as it had been prior to that date.

Without delving into detail, the division of proceeds favoured mill involvement in small scale grower development for the period 1973 to \pm 1990. The cost of small scale grower development was included in miller costs of production. This meant that a portion of costs incurred by mills, according to the division of proceeds formula, was borne by the growing sector. This had the effect of reducing mills actual costs of developing small scale growers and made their development more attractive than if the full cost had to be borne.



Source : South African Cane Growers' Association, 1995

Figure 8.2 Simplified representation of the sugar industry division of proceeds

From 1990 small scale growers were classified as "A" pool sucrose producers. "A" pool sucrose was more profitable to both sugar mills and growers than "B" pool sucrose and there was a finite tonnage (see section 3.3). All effort was thus made by mills to process their full quota of "A" pool sucrose. This provided an incentive to mills to obtain as much small scale grower "A" pool production as possible.

With deregulation of the sugar industry mills were unable to recover portion of their small scale grower development costs via the division of proceeds and the incentive to acquire

"A" pool sucrose began falling away as the pool system began to be phased out, with it terminating in 1998 when an average sucrose price and a fixed division of proceeds will apply.

The economic incentive to be involved in small scale grower sugar cane production was a strong motivating force. With the incentive being removed mills involvement is being reassessed. Mills still require sugar cane throughput but the price of this throughput has to be justified in economic terms.

FAF was introduced and operated within the above background. Its developmental objectives were required to be applied alongside objectives established by sugar milling companies. Herein lay much of the conflict which arose.

Development of small scale farmers within highly regulated production systems involving production quotas and controlled pricing mechanisms appear to require careful analysis. Deregulation of such systems will have an impact on small scale farmer production. They are probably unable to adopt to changes rapidly and are probably in a less favourable position, compared to large scale farmers, to change their production systems and/or substitute other crops. Small scale growers have been serviced by a specialised credit organisation which, as a result of deregulation of the sugar industry, finds itself faced with economic realities from which it was previously shielded.

Diversification of agricultural activities which involves access to markets and inputs will require to be researched and addressed as a result of the adjustment which small scale growers will have to make following reduced mill incentives to promote production and an apparent decline in the real return to sugar cane production (see section 3.8). It may also be expected that low producing small scale growers in the distributions shown in section 3.7 may require alternative productive opportunities to substitute for their sugar cane producing activities.

Small scale farmer development has been subject to forces over which it has had no control and which were not considered when development commenced in 1973. Given changes in fundamentals the question which arises is how should restructuring be approached to minimise negative outcomes? The findings which follow lead to recommendations in this regard.

8.4 FAF and Its Objectives

In establishing whether FAF has achieved its objectives it is necessary to consider the objectives adopted in 1973 as apposed to those that currently pertain. The objectives appear to lack clarity and raise questions regarding their interpretation. Summarising the objectives they appear as follows :-

1. Provide economic assistance.
2. Improve and develop small scale growers productivity and efficiency.
3. Transfer skills and knowledge.
4. Provide supervision and management to obtain the maximum possible advantage.
5. Improve the living standards of small scale growers engaged in their own independent farming operations.

Evaluating whether FAF's objectives were achieved is complex. Firstly, as recorded in the study, FAF's objectives were subject to differing interpretations by growers and, especially, by mills. Secondly, objectives of the Government, whether they were implicit or explicit, which have not been referred to, would have impacted development. Given the Government's extensive provision of infrastructure it is assumed that it supported expansion of the sugar industry in small scale grower areas however, this support was reactive rather than proactive and it provided no direction. Lastly sugar cane production in small scale grower areas increased over 20 years from 346 763 to between 1 and 2 million tons (also see figure 8.1). This expansion, together with infrastructure

development enabled sugar cane production to become the most important commercial agricultural activity in rural areas concerned (see section 4.2).

FAF was expected to promote and support small scale grower development in the context of the sugar industry. Small scale grower area, numbers and sugar cane tonnage increased. Infrastructure development was undertaken and mills received an increased throughput of sugar cane from small scale growers.

Provision of credit, quota and inputs eg contractual, administrative and managerial capacity by the sugar industry enabled small scale grower development to take place at a rate which was probably greater than if such stimulus had not been applied. Overall small scale grower development has been positive. The focus on FAF's objectives and deeper issues in the achievement should not detract from the overall contribution which has been made to rural areas in which sugar cane is produced. Closer evaluation of FAF and elements closely associated with it should be interpreted in the light of seeking ways to improve the development process. To do this the evaluation of FAF is undertaken in a narrow sense of it being a provider of credit and in the light of methods and systems used in the provision of credit and allied services. It is expected that the results will enable debate to take place and adjustments, where necessary, to be made.

8.4.1 Provide Economic Assistance

In respect of FAF's first objective the definition of "economic assistance" requires clarifying. Is it financial assistance, ie. credit, or does it include a reference to efficiency, effectiveness and sustainability on the part of the provider of credit and the recipient? An initial interpretation by FAF referred to the provision of credit at subsidised rates of interest. At a later stage, 1979/80, questions of efficiency and sustainability arose. The issue with respect to the interest rate and the target group to be assisted were not resolved and continue to be an area of concern.

In attempting to provide "economic assistance" what did surface was conflict of objectives of the different structures involved in development of small scale growers viz. FAF, millers and growers themselves (see section 7.3). The principles of sound credit management, as expounded by theory and practice in small scale farmer development in other parts of the world, were accepted in principle but not applied as a result of conflicting positions which were taken (see section 8.2). Balance of involvement of growers and millers, as depicted in figure 6.7, favoured mills. This resulted from the economic incentive mills had and the structural power conferred on mills by the development process (see section 4.4).

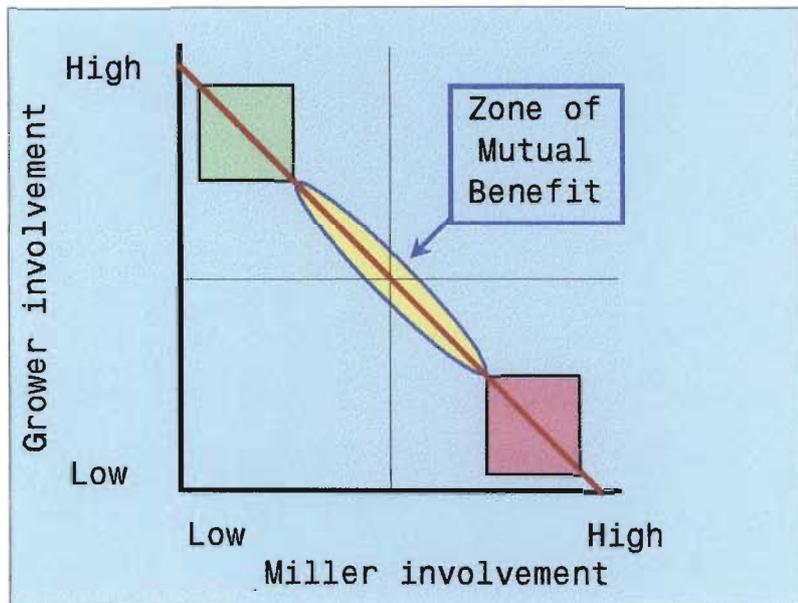


Figure 8.3 The relationship between growers and sugar mills indicating zone of mutual benefit

Figure 8.3, derived from figure 6.7, recognises that there is a required relationship between growers and millers. The zone of mutual benefit arises where small scale growers are empowered and where both parties are able to negotiate and reach agreement on how interaction will take place in a mutually beneficial way. Assessment of interventions should take place on the basis of where the balance of any such intervention lies on the isoquant depicted in figure 8.3.

Finance from FAF enabled the cost and risk of development and expansion of the small scale grower sector to be averaged over the sugar industry as opposed to being borne by individual growers, mills or other independent organisations. In summary it can be said that small scale grower development was promoted without consideration of issues of efficiency and sustainability. Significant expansion took place in the sector but whether this would have been as great without credit cannot be answered positively. However, given the objectives of sugar mills to increase their sugar cane supplies and looking at historical precedent, ie Eston, it can be concluded that development would have taken place, maybe not at the same level but nevertheless the small scale grower sector would have expanded.

8.4.2 Improve and Develop Small Scale Grower Productivity and Efficiency

With regard to the second objective, analysis would suggest that this was not wholly achieved. An increase in total production from the small scale grower sector was achieved, however performance of individual growers who used loans did not appear to be better than growers who did not use loans. Average production per grower declined as a greater number of small units were developed and, added to this, efficiency of production, as detailed in models presented in chapter 5, was not addressed adequately. The underlying dissatisfaction expressed by small scale growers regarding a low level of income from sugar cane would stem from this situation.

8.4.3 Transfer Skills and Knowledge

In terms of the third objective FAF was not directly charged with providing services for transfer of skills and knowledge. This function involved a number of organisations viz the Government's Department of Agriculture, sugar mills, the South African Cane Growers' Association and the South African Sugar Association's Experiment Station. At one stage, 1985 to 1992, FAF seconded an officer to head the KwaZulu Government Department of Agriculture sugar cane extension services. This intervention experienced

problems as identified by the Department of Agriculture Extension Officers in section 7.3.5.

Transfer of skills and knowledge was seen as being an important adjunct of the provision of credit and for this reason FAF had an interest or concern. Extension services, as recorded, were inefficient and suffered from conflicts which arose in the development process. As recommended, farm system research (FRS) requires to be undertaken amongst small scale sugar cane producers to determine appropriate technology and production methods and from this co-ordinated extension programmes should be established.

8.4.4 Provide Supervision and Management to Obtain the Maximum Possible Advantage

Objective four, as with objective one, raises questions rather than provides clarity. At the time of their adoption the objectives may have appeared clear but with hindsight they appear ambiguous. It is assumed that the provision of management and supervision applied specifically to the administration of FAF to enable it to achieve its objectives as opposed to management and supervision of small scale grower development in terms of the input of mill development companies.

FAF has provided innovative computer services, has maintained strict accounting methods and has adopted procedures to enable loans to be accessed, approved, drawdown and recovered. It has also established a savings system aimed at enabling growers to provide finance for ratoon management requirements. The systems are however reliant on being channelled through an administration service provided by sugar mills. FAF is, on the whole, removed from growers to whom it provides credit (see chapter 4).

Communication with its borrowers has been through mill services and where available extension services. Small scale grower structures have not proved effective in

communication with their members. The Small Growers' Development Trust is addressing this issue.

Communication with a predominantly illiterate and innumerate group of farmers has proved to be a shortcoming. As extension officers noted, communication of information needs to be repetitive and services need to be easily available. The qualitative survey indicated that a high percentage of small scale growers had radios and, as emphasis on oral communication is required in a situation of high illiteracy, this medium of communication requires optimising. To this end professional services should be obtained to harness its benefits.

Communication, in itself, is a complex subject and efforts to improve small scale grower communication within the sugar industry may require specialist personnel. It would appear that technology and procedures adopted by FAF may not be deficient to any great extent in themselves (see 7.4.7) but the link and transfer of information from FAF to growers and vice versa is.

In addressing the sustainability of FAF it was noted that administration services provided by sugar mills are not costed into the provision of credit advanced by FAF nor are the costs recovered directly by mills from growers and hence, if mills were to withdraw from providing these services, the costs would have to be met from some other source. These costs are estimated to be approximately R12 million per annum. The cost of operating FAF itself for the 1995/96 season was R10 million. The interest rate to recover FAF costs was estimated to be approximately 24%. With the additional cost borne by mills being included as a charge the interest rate would have had to be approximately 34% (see section 4.9). This is a rate which probably could not be borne by small scale growers (vide sections 5.6 and 5.2). It could therefore be concluded that without restructuring, sustainability of an organisation such as FAF is doubtful.

8.4.5 Improving Living Standards

With regard to objective five a definitive answer as to whether this has been achieved or not is difficult to provide. A majority of small scale growers, as shown by the positively skewed distribution of land and production and reinforced by the lorenz curves depicted in figures 3.16, 3.17 and 7.14, produce small tonnages of sugar cane with consequent low levels of income (see sections 7.4.4 and 7.5.6) which is inadequate to sustain a household (see section 5.5). Small scale growers in the qualitative survey, however, indicated that income from sugar cane production was important in meeting their basic needs and that they would experience difficulties if this income was not available to them. Further research, as recommended in section 8.4.3, is required to improve small scale farmers' income.

8.4.6 Concluding Remarks on 1973 Objectives and Consideration of 1992 Objectives

In summing up as to whether FAF's objectives have been met it could be concluded that overall they have not. The objectives of sugar mills to increase sugar cane supplies have been achieved. The sustainability of these supplies must however be questioned. Two issues arise. Firstly how can development in areas where mill development companies have operated be converted to a system of participation and self reliance and secondly, and probably more importantly, how can small scale grower sugar cane production be made economically viable.

It would appear from the distribution of small scale grower production that a minimum of 40% of current small scale growers are not sustainable. Of the next 40% a significant percentage may also not remain in sugar production under current conditions. The remaining 20%, which comprise high yielding producers, should remain in production as long as returns are adequate for their needs.

The above may be a harsh judgement but economic reality has to be faced. This is where a restructuring of the approach to small scale grower development may alter the above conclusion.

Looking at FAF's current Mission and Objectives and evaluating whether they have been achieved, a conclusion different from the above may not be reached. The mission starts by indicating that finance should be provided to "economically viable" growers. There is a problem of definition of terms and according to the analysis which has been undertaken the economic viability of growers is questioned.

FAF's objectives as adopted in 1992 are as follows :-

1. Securing financial facilities at lowest possible costs, so as to be able to meet the loan requirements of its borrowers.
2. Ensuring that its resources are managed efficiently.
3. Providing an efficient service employing methods and procedures which are relevant to the needs of its borrowers.
4. Through its lending policies and procedures it will promote an awareness amongst its borrowers of economic opportunities to enhance their disposable incomes.
5. Ensuring that its operations are supportive of the wider development of small cane growers being undertaken through other Sugar Industry bodies.

The revised objectives of FAF are broad and do not directly indicate the purpose of the provision of credit to small scale growers. The first objective deals with the raising of finance. Other than a period during the 1970's FAF has had adequate financial resources to provide loans to small scale growers. Resources have been acquired at rates below the prime rate of interest and, other than grant funding, could probably not have been obtained any cheaper. FAF has also embarked on raising finance by way of the issue of stock. The suitability of this method will only be able to be judged in the future. It must be pointed out that the interest cost was subsidised and that if the full cost had been

required to be met FAF could not have done so under its prevailing interest rate structure. With regard to the second and third objectives which relate to management of FAF, comments made in section 8.8.4 hold and are referred to.

The fourth objective is a broad information and communication issue and has not been addressed and hence achieved. The comments on extension and communication apply in respect of this objective.

The final objective relates again to a broad and amorphous objective which gives opportunity to confound FAF's objectives with objectives of other organisations and structures. This is where confusion of objectives, referred to in the discourse, may have arisen and/or have been reinforced (see chapter 6).

8.5 Small Scale Grower Development Strategy

The analysis identified the confusion which exists in small scale growers' understanding and the conflict of objectives as issues. The small scale grower sector is faced with the following organisations, institutions, committees and programmes together with their individual objectives :-

- Sugar mills
- South African Cane Growers' Association
- Small Growers Development Trust
- FAF Standing Committee
- Siyakha - Reconstruction and Development Programme promoted by the sugar industry
- Mill Group Boards - local mill/grower sugar cane production management
- Pest and Disease Committees
- Local Grower Councils - large scale/small scale grower mill area structure
- Mill Cane Committees - pinnacle structure of local small scale grower associations
- Mill Group Local Committees (FAF at mill level)
- Transport Committees
- Local Associations - farmers' associations and sub-committees
- Loans Committees (FAF at farmer association level)
- Extension programmes

- Planning implementation committees - infrastructure provision and maintenance
- Other community activities

The above is probably not a complete list. Recall of demographic data of small scale growers should raise a question regarding how growers are able to manage all the above as well as their day to day lives and income generating activities. A complaint which was voiced is that there are not sufficient people in a community who are able to handle matters and those that can are being overwhelmed. In respect of the sugar industry itself there is limited, and in some cases no linkage between the different programmes that it promotes.

It is consequently recommended that a formal analysis of the situation be undertaken and recommendations made. It is averred that a sugar industry structure to develop strategy and guide small scale grower development is required. In addition it is recommended that the respective Provincial Departments of Agriculture be brought closer to, if not be incorporated in, the above structure to promote co-ordination of activities.

Lack of co-ordination in multi-component projects has been identified as a root cause of project failure by IFAD (IFAD, 1996:32). This may refer to a single project and its components but should provide cause to view the sugar industry's small scale grower development as a single programme with a number of components.

Extension services have been distanced from the provision of finance over time. This was identified as an issue. There have been views that provision of credit should not be linked with extension services as the management/monitoring of credit may compromise extension services and break the trust relationship between extensionist and farmer. At the inception of FAF it was considered that this link was important. An analysis would suggest that not having this link may be a contributory cause to poor communication which has been identified. IFAD experience concurs that there should be a linkage between extensionists and loans officers to provide an integrated service. Constraints

inhibiting success of projects analysed by IFAD included the lack of effective extension services and financial profitability of messages (IFAD, 1996).

The recommendation that farm system research be undertaken for small scale growers is again referred to. Problems arising in projects in African countries refer to the "lack of the specific needs of resource poor farmers" being addressed in extension messages and lack of appropriateness of messages given the resource base that farmers have (IFAD, 1996:23). An issue which small scale growers raise is that they are given courses in physical land preparation and planting but not in the management and control of contractors etc. who usually carry out the operations - this is a matter of management which growers referred to as a training need (see chapters 6 and 7).

As an additional comment to the provision of extension and training the activities of the Small Growers' Development Trust (SGDT), which have not been referred to in detail, should be co-ordinated with activities of the other major services. The SGDT itself could be considered as a body to develop strategy and co-ordinate development as recommended above, whatever route is adopted the principle of linkage and co-ordination should however be followed.

8.6 Restructuring Financing of Small Scale Growers

Given the overall finding that FAF is not sustainable and that credit is not being used efficiently under the current system together with small scale growers' wish to participate to a greater degree, the following recommendation for restructuring of financing of small scale growers is made.

Figure 8.4 sketches the stages of FAF's involvement in small scale grower development. The ideal - "as intended" - scenario was how small scale grower development was envisaged in 1973. The environment in which a tri partnership of growers, mills and FAF was intended to operate involved relevant government departments and other service

providers. Consultation, involvement and participation were cornerstones of the initiative. The flaw was however that benefits from the initiative accrued in different proportions to participants. The partnership between millers and growers was not one of equal influence where common interests could be harnessed harmoniously by using an organisation such as FAF.

Small scale growers have requested a delinking of FAF procedures and operations from milling companies. They suggest that achieving this will resolve their dissatisfaction with financing and development of the sector.

Large scale sugar cane producers received no financial benefit. In fact they were to experience a degree of competition in respect of availability of quota and sharing of proceeds, specifically with the "A" pool. They did gain from "political" benefits which accrued to the sugar industry in terms of its contribution to small scale grower, principally black farmer, development. The development of disadvantaged and marginalised small farmers was addressed by the sugar industry in a way that no other agro-industry has done or is doing.

Sugar mills obtained an advantage of throughput as explained elsewhere. Small scale growers benefited from increased revenue accruing to rural areas, new and improved infrastructure and assimilation into the market economy.

As mentioned earlier the operation centrally by the sugar industry through FAF enabled a spread and sharing of costs and risks between all stakeholders. The Government's Department of Agriculture co-ordinated and provided finance for infrastructure. The most recent road and infrastructure development programme was costed at R126 million. This catered for upgrading of 464 kilometres of in-field roads, 2156 kilometres of field to zone roads and 312 kilometres of zone to mill roads as well as the construction of 3940 kilometres of in-field roads, 706 kilometres of field to zone roads and 33 kilometres of zone to mill roads. (KwaZulu Cane Growers' Support Programme, 1992:30). Forty two

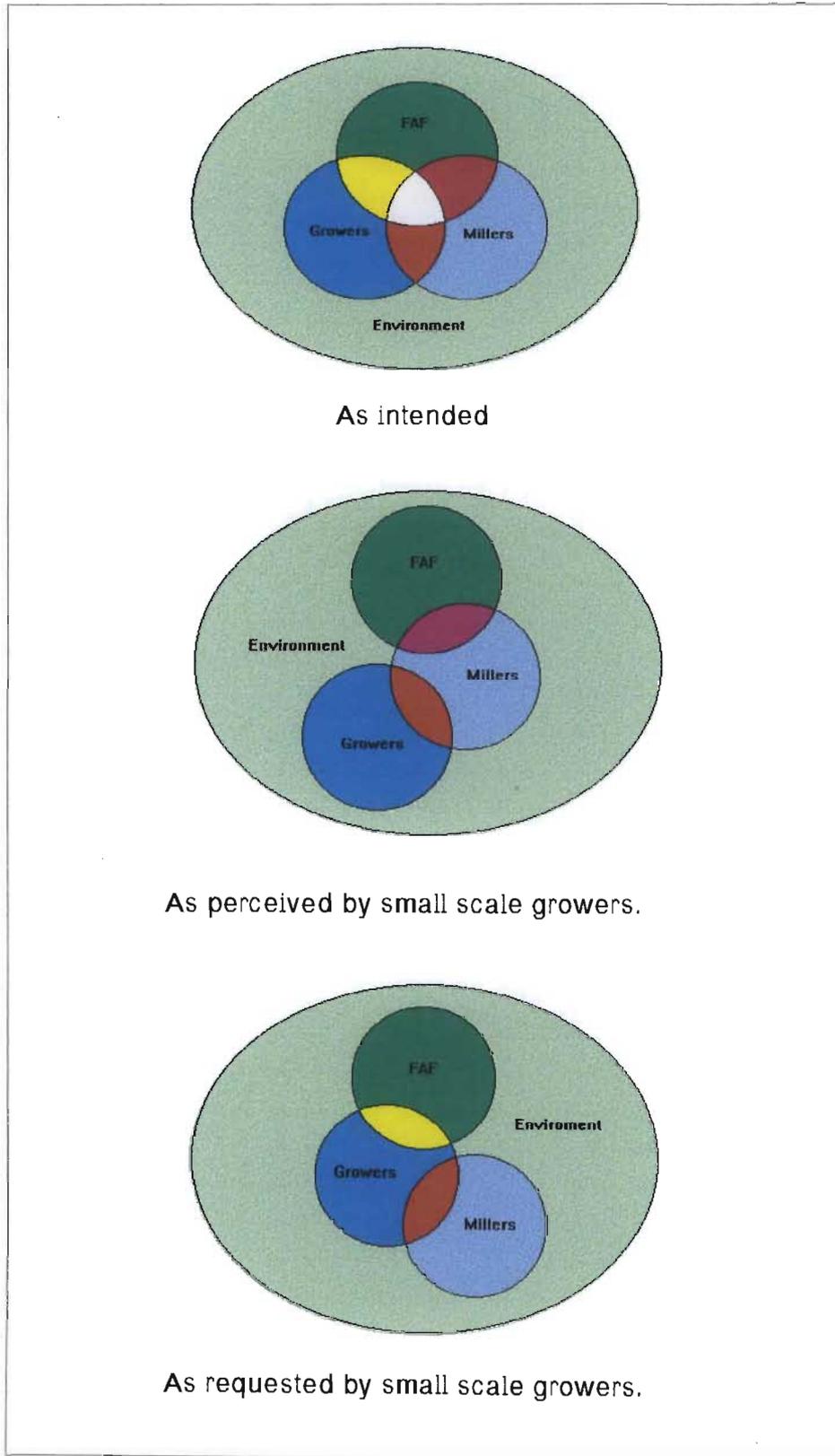


Figure 8.4 The perceived interaction between FAF, growers and millers

million rand of this has been expended and an evaluation, undertaken by Erasmus, indicated that the project is a "viable investment decision" (Erasmus, 1995:11).

Many kilometres of roads and conservation structures were established between 1973 and 1992 and an evaluation of these, if undertaken, would probably arrive at a similar conclusion. The South African Sugar Association Experiment Station has provided training, extension and planning facilities which have been an important input into small scale grower development. Small scale contractors, input suppliers and other service organisations have played a significant role. To evaluate the environment around the grower/miller/FAF interface would provide opportunity for a number of studies.

Moving from the "as intended" cameo to the "as perceived by small scale growers scenario" the situation as reported in the study is depicted. FAF operates through mills who in turn interact with small scale growers. FAF enters into a loan agreement with small scale growers and expects them to perform accordingly. Monitoring, correctional activities and sanctions have until 1993 gone through mill administrative services. Mill administration services have been, generally, reluctant to take corrective action and carry out sanctions on behalf of FAF as the miller/grower relationship is impacted as a result. This has, in turn, provided an opportunity for confusion, misinterpretation, misunderstanding and dissatisfaction to proliferate in the relationship. Problems created within the relationship have to a greater or lesser degree impacted on the broader environment as outlined by Department of Agriculture extension officers (see chapter 7).

The above has led to small scale growers requesting that restructuring, as depicted in the last cameo of figure 8.4, be undertaken. The question of how this can be achieved remains to be answered satisfactorily, given issues already raised.

Following discussions within the sugar industry it has been agreed that FAF should be restructured as depicted in figure 8.5. For an explanation of the different segments in the figure refer to section 4.4. It is proposed that agents replace mill group local

committees. It is anticipated that agents will be primarily grower driven. Linkages between FAF and growers are to be strengthened as shown by the red lines in the figure.

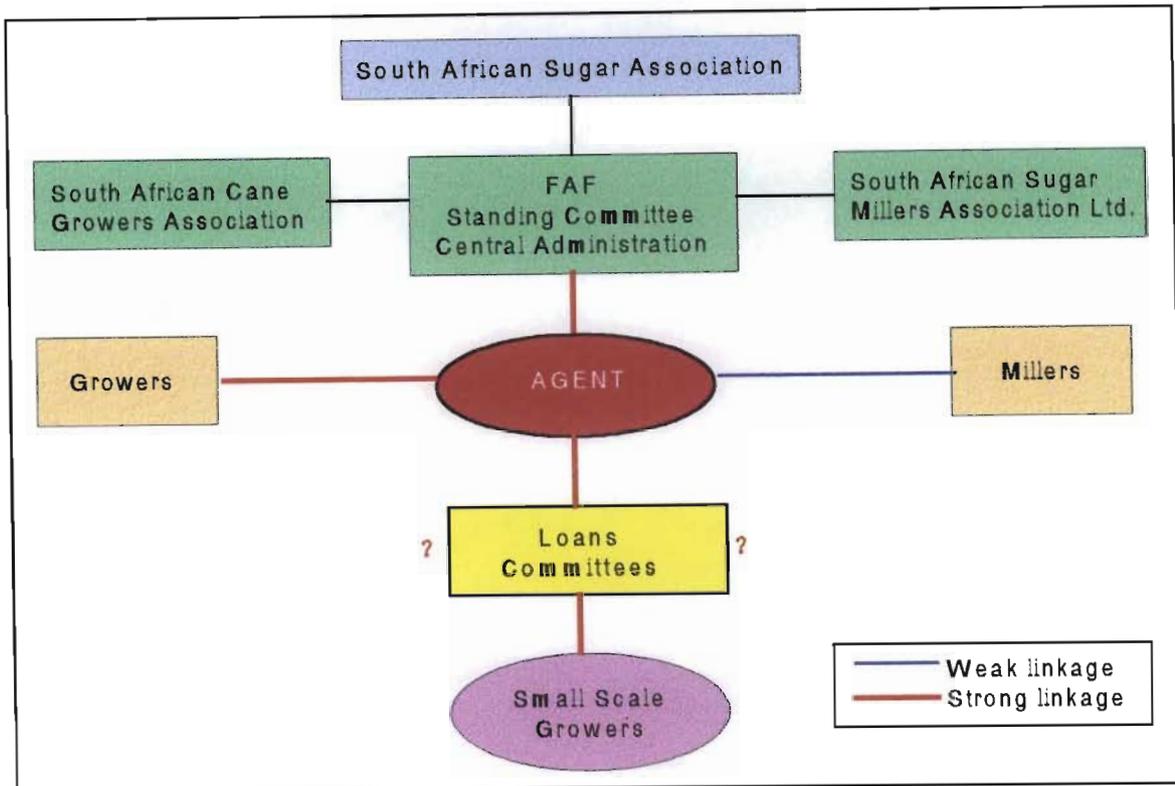


Figure 8.5 The structure of the Financial Aid Fund 1996/97 onwards

The proposal is that agents, following consultation, will carry out all the functions required to provide credit to small scale growers and will be responsible to FAF. Risk management will be undertaken by agents. It is envisaged that mills will assist agents but this is not a foregone conclusion. Negotiations at the time of writing have only recently commenced. The Small Growers' Development Trust will provide training to small scale growers to operate the agents.

A question mark is placed alongside loans committees as it is not known, at this stage, whether agents will utilize current or similar structures. FAF staff will not be involved

in decisions regarding granting or refusing of loans but will perform a monitoring role. If FAF policy and procedures are not adhered to discussions would be held with an agency concerned to rectify problems.

It is suggested that the above proposals will not resolve underlying problems of financing small scale growers. The structure shown in figure 8.5 is, in reality, no different from FAF's current structure shown in figure 4.5 (see chapter 4). The basic question of sustainability of the structure as well as economic issues surrounding growers are serious and require urgent addressing. In addition, questions arise around the issue of risk management in the proposed structure. Lessons expounded in chapter 2 appear to be being ignored. The system used to provide credit to small scale growers has faltered as a result of basic flaws and these need to be resolved in the restructuring exercise.

Figure 8.6 indicates, in diagrammatic format, the structure of the agricultural sector in South Africa. The sub division of small scale farmers into subsistence, emerging and commercial sub sectors was dealt with in chapter 2. Alongside the structure of the agricultural sector is a representation of financial services available to the sector. The shaded area of the triangle indicates services to medium, large and estate/company agricultural operations. The extension of the red triangle into the small farmer sector represents the financial markets interaction with development corporations and equivalent institutions providing finance to commercial and emerging small scale farmers. The only access to finance that subsistence farmers have is through NGO's, informal money-lenders and, if present, revolving savings and credit organisations (ROSCA's) eg stokvels.

Subsistence farmers would, if they have surplus cash, use commercial banks to deposit money but do not have access to credit facilities from these institutions. The triangles in figure 8.6 also reflect a reality of the economics of financial services to the agricultural sector. At the top of the diagram financial institutions experience low volumes of transactions with high value whereas at the foot of the diagram they experience high volumes of transactions with low value. In addition levels of risk are expected to increase

from the top of the diagram to the bottom. Transaction costs increase in the same direction. This is the reality and the conundrum of rural financial services.

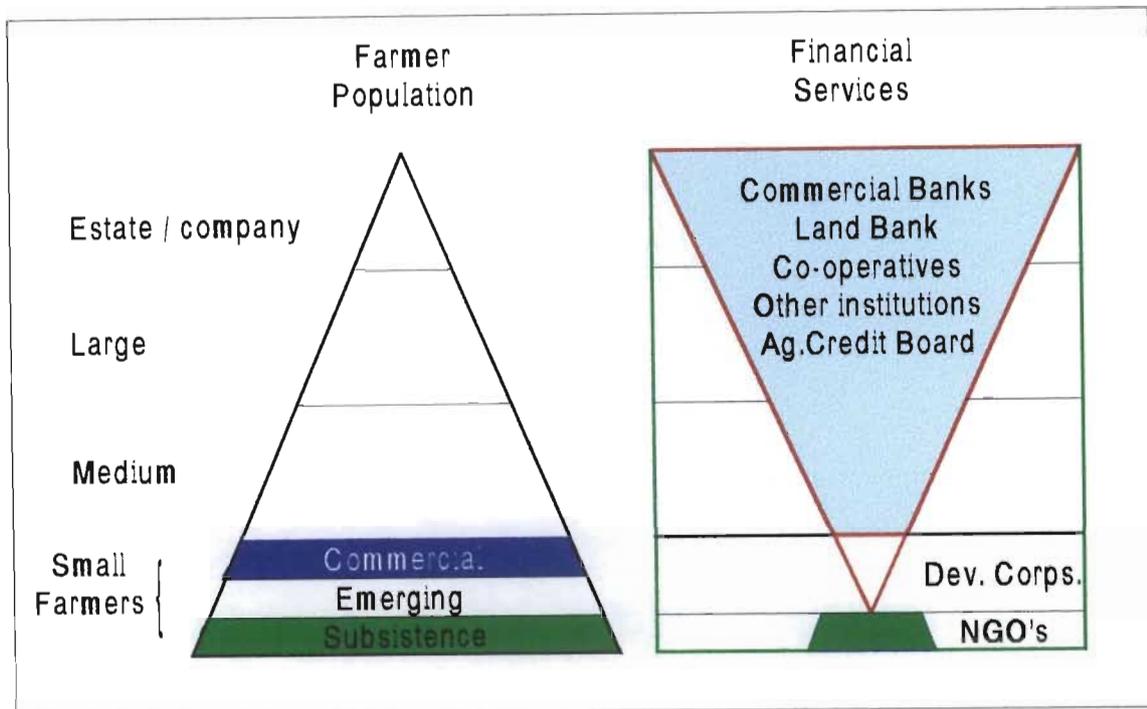


Figure 8.6 Agricultural finance

Organisations currently providing financial services to small scale farmers in South Africa are, in general, not sustainable according to the Strauss Commission report. The Commission states that "rural financial services must be commercially sound. Cost recovery is a central to this concept and the Commission does not support subsidy dependent entities" (Interim Report of the Commission of Inquiry into the Provision of Rural Financial Services, 1996:3) . Rural financial markets are required to be developed in South Africa which are not only sustainable but also provide equitable access to all communities and individuals as indicated by the green block in figure 8.6. Restructuring of the sugar industry's small scale grower financing should encompass the foregoing and focus on broader requirements as opposed to perpetuating the current system, albeit in a slightly different format.

It is suggested that equitable access to financial markets does not preclude segmentation of markets with different structures and instruments being applied to the markets. Segments should however be interactive and individuals should be able to shift between segments as the need arises.

The structure to service small scale growers should be cost effective. An element of rural financial services in the small grower sector which has not received attention is the mobilisation of savings. A weakness in the restructuring of FAF, as detailed above, is that this again has not received attention. The agency structure lacks a foundation on which security, responsibility and integrity of the system can be based. It is suggested that the current structure of FAF is exposed to a similar criticism excepting that mills had a commercial interest in the operation which led to risk management being addressed.

To provide financial services to small scale growers an organisation should have the following characteristics :-

- close contact with the sector
- know and understand the client
- have some form of security
- charge interest rates sufficient to make the operation viable
- be able to operate within the volume of business available
- have disciplined good management
- display integrity
- be responsible to the community/clients (see chapter 2)

Management and costs are required to be driven down to the lowest level possible in the link between small scale farmers and financial services. Transaction costs for institutions, as well as farmers, should be minimised for sustainability to be achieved. Although not agricultural financiers, the Ademi Bank of the Dominican Republic and the Grameen Bank of Bangladesh would appear to have achieved this (Jiménez, 1993 and Yunus, 1993). Mobilization of savings has also been an important element in the success of the foregoing organisations. The Strauss Commission identified savings mobilization as a necessary element of rural financial services.

Figure 8.7 shows a proposed structure of rural financial services in sugar producing areas. The interactions should be based on sound economic principles and services should only be provided on the basis of sustainability.

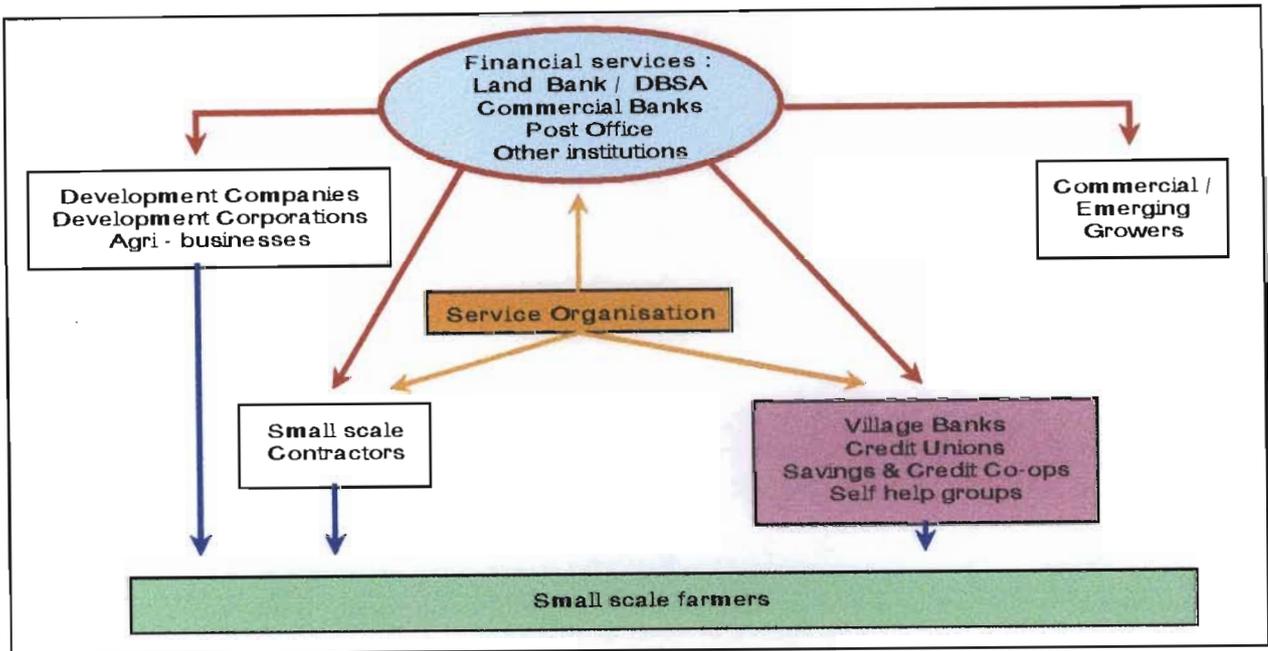


Figure 8.7 Proposed structure of rural financial services in sugar producing areas

Financial services, which include provision of credit and mobilisation of savings, are seen as being primarily provided by the Land Bank together with the Development Bank of Southern Africa, commercial banks, the Post Office, in respect of savings as recommended by the Strauss Commission (Final Report of the Commission of Inquiry into the Provision of Rural Financial Services, 1996:71), and other institutions providing financial services such as restructured development corporations. These organisations are seen as the primary source of financial services as a result of the need to broaden access to these services (see figure 8.6). The Land Bank, being a statutory body and according to the Strauss Commission, will be required to address small scale farmer requirements. Commercial banks have indicated an interest in the sector. The problems that are currently faced by all the above financial institutions are a lack of experience and infrastructure to provide services required. In addition to this they lack client information

or suffer from asymmetric information. Further to the information problem, financial institutions see a lack of security as a result of the system of land tenure in communal areas and they therefore identify a high level of risk in providing services to small scale farmers.

Formal financial institutions face lower covariant risk than does a specialised organisation such as FAF. This factor could be translated into lower interest rates, all things being equal.

The Standard Bank identifies the following as problems in servicing the rural market :-

- Wide dispersion of clients
- Competition from subsidised finance provided by government and government associated organisations
- Inadequate knowledge of the market
- Low levels of education
- Perceived high loan default rates
- Lack of security in respect of land
- Fungibility of loans
- Lack of law enforcement in rural areas
- Lack of a data base

(Agri Review, October 1996:3-4)

The Government's White Paper on agriculture states that credit provision should be at market related rates of interest (White Paper on Agriculture, 1995:16, Bignaut 1995:17). If recommendations made by the Strauss Commission are accepted by the South African Government then the issue of government subsidised credit distorting rural financial markets should be addressed. If this is not the case financial institutions will continue to have problems servicing rural markets.

Fungibility of loans in essence means "that loans in cash or kind can be used to buy any good or service available to the borrower in the market" due principally to the substitution of a loan for a borrower's own money which is then directed at a product or service

which is required but for which credit is not available (Von Pischke and Adams, 1979:4). It is suggested that fungibility of loans is a problem of markets not fully served and where provision of credit is targeted, as in the case of financing small scale growers. Given a competitive, broadened and fully served rural financial market fungibility should not be a major problem.

The lack of law enforcement was raised in chapter 4 and is an issue which requires attention by the authorities. The remainder of the issues raised by the Standard Bank require addressing in innovative and problem solving ways. Dispersion of clients, low levels of education, lack of security and lack of a data base and information are not issues which can be addressed by legislation. Security of land tenure may be the exception. However in all cases time is an important element. Rural development is required to address developmental issues in South Africa and problems identified can only be addressed over an extended period of time.

To progress it is recommended that the rural market be segmented and served accordingly. Organisations such as FAF, development corporations and NGO's have data bases with accumulated knowledge of clients. Use of their knowledge, experience and capacity need to be harnessed and linked to providers of finance. It is probably not necessary at this stage to develop new organisations. FAF could be converted to a service organisation providing a data base of approximately 40 000 clients, computerised information systems and risk management procedures to financiers such as the Land Bank and commercial banks.

An important element of a restructured system should be an ability for small scale growers to choose how they wish to interact with financial markets. It is recommended that the rural financial market be segmented such that there are four basic linkages between small scale growers and financial institutions. This segmentation would assist in addressing the problem of asymmetric information. The most important segment would be the block involving participative/co-operative based local banking structures. A foundation of these

would be individual and community savings. Savings would be channelled to formal financial institutions. Loans could be made by these "village banks" in terms of their own constitutions and resources. If they wished to provide loans beyond their own capacity they should be required to provide adequate security to a formal institution which would provide loan finance to gear up a village bank's ability to lend. An essential element would be savings - the credo "no savings no lending" should form the basis from which they operate. The credit rating of a village bank would have to be established by performance. Graham (1995:139-140) states that the process of establishing these structures requires "drawn out educational campaigns". He goes on to point out that an advantage of village bank type structures are their proximity to their clients which facilitates overcoming the principle-agent problem in terms of information and monitoring of agreements.

Currently village banks are being promoted by the Financial Services Association in the North West Province. The Association has approval from the Registrar of Banks to operate as a self regulating body in terms of deposit taking institutions (Schoeman, 1995). Although the village bank structure is new to South Africa it is similar to the principles of credit unions and savings and credit co-operatives. Whatever model is adopted the basis of their operations do not differ significantly. Appropriate legislation to enable village banks to operate should be drafted. With appropriate arrangements and agreements the FAF savings retention scheme (see section 4.9) could be used to prime a village bank structure.

The analysis of small scale growers indicated there are various levels of growers according to productivity (see chapter 7 and section 8.7). The upper 25% appeared to have a degree of self sufficiency and may in a number of instances be capable of accessing financial markets directly through formal institutions. These growers have cash flow and debt servicing ability. They lack secure entitlement to land ownership and hence the ability to pledge land as security. Other forms of security should be investigated and accepted. A lien on a crop, a pledge of insurance, savings and movable property are

examples. Innovative financial packages such as linkage of endowment policies to loans should also be investigated. Finally credit guarantee schemes could be considered. Would Bank experience however, indicates that these schemes are faced with difficulties and require efficient management (Levitsky and Prasad, 1989:13). The sugar industry could assist growers and banks concerned to cement a partnership by providing performance records etc. to enable creditworthiness of growers to be ascertained. FAF could operate as a service provider as indicated earlier.

Village banks are seen as catering to the needs of growers who do not wish to interact directly with formal financial institutions but would cater for growers who are creditworthy in terms of savings and productive ability. Those growers who are not creditworthy ie. have not built up a savings record and/or have no production record could have access to development by way of local small scale contractor/money-lenders who would assume the risk of lending. As indicated in chapter 5, this is not a new innovation but a current practice which has not been formally supported. Contractors could be financed according to established norms which would then allow them to undertake development operations on behalf of small scale growers according to a formal agreement. It is suggested that agreements between contractor/money-lenders and growers are formalised to avoid misunderstanding and exploitation taking place.

A final route of finance could be through development companies, development corporations (dependent on the restructuring of this sector) and agri-business such as mills in the case of the sugar industry. Development companies/organisations would raise finance from the financial market and on lend on terms and conditions determined by themselves. These organisations should assume the risk of lending as they generally acquire the product for processing and/or marketing purposes. It is however suggested that where such development takes place a formal agreement is entered into between farmers and a developer to ensure that farmers benefit from development and in addition have an understanding of the relationship. This would reduce and/or avoid issues as identified in small scale grower development arising (see chapters 6 and 7).

Provision of credit to commercial/growers and small scale contractors should be facilitated as soon as possible. As a transitional measure some form of credit guarantee may assist the process whether this is provided by the sugar industry or a third party would require negotiating. Weaknesses in credit guarantee schemes should be taken account of and addressed (see previous comment).

The village bank/credit union structure should be promoted. This however should be done on a sound basis with savings/loans ratios and ability to manage such organisations being principle criteria. FAF could provide a link between formal financial institutions and village banks/credit unions. The risk of lending should reside with the formal sector and village banks concerned and not with FAF.

Expert advice should be obtained, training programmes prepared and knowledgeable trainers appointed. The formal financial sector should be co-opted into this process. Staff entrusted with group formation should be well qualified, trained and motivated.

The above recommendations should provide access to credit and development for all sections of the small farmer community. It will also place the risk in areas where responsibility will reside for its management. This is a shortcoming of the current FAF structure. Interest rates and transaction costs will probably not be reduced but access to the market will be broadened. Attention should be focused on minimising transaction costs and sustainability of organisations should be paramount. The proposed restructuring of finance to small scale growers will introduce a range of choices which currently do not exist. Further savings mobilisation will be an important component.

For credit programmes to be effective they need to be "demand-driven" and "profitable opportunities" must exist for farmers to expand their "production capabilities" (IFAD, 1996:21). Amongst other success factors, such as secure land tenure, IFAD also highlighted mobilization of savings to "ensure farmers responsibility to the credit operations" (IFAD, 1996:22). IFAD found that failures in credit systems in African

countries resulted where there was "no savings mobilization as a measure of commitment to the group" thus giving rise to a lack of group peer pressure and, consequently, "very high delinquency rates" (IFAD, 1996:11).

IFAD suggests that group formation and group training should be promoted "as rural grass roots associations to assist in rural mobilization and promotion of joint-liability practices and the creation of an environment for peer pressure to ensure repayment and increase creditworthiness are components of success in the provision of credit" (IFAD, 1996:22).

The recommendations are made on the basis of lessons, as spelt out in section 8.2, being applied. The restructuring, as proposed, should address shortcomings found in FAF's current operations.

8.7 Conclusion

The sugar industry objectives in regard to FAF are currently :-

- Ensure the continued availability of finance to small scale growers on a viable basis.
- Increase small scale grower involvement in the operation of the Fund.
- Reduce the industry's exposure to banking risks.

It is suggested that the objectives can be achieved by adopting recommendations made. The second objective of increasing growers involvement in FAF should be refocussed on growers establishing their own local structures eg. village banks. FAF could be a catalyst and enable new structures to become established as it withdraws itself from providing finance. It may continue to provide services such as data processing facilities, management and training on a cost recovery basis as determined by the client base. The last objective would be achieved by restructuring the rural financial market and obtaining involvement of formal financial institutions as recommended.

It is essential that suitable expertise is used and that agreement is reached by all parties to proceed. It is suggested that continuation of the existing FAF structure, even in a revised format, will lead to continuing dissatisfaction amongst small scale growers as well as escalating costs of a non sustainable operation. This will lead to an eventual discontinuation of FAF's activities. Restructuring should take place on the basis of establishing a financial system which accords with experience in the field.

9. CONCLUSION

The establishment of FAF in 1973 addressed the provision of credit, and with it, access to other inputs for the development of small scale farmers within sugar cane producing areas of South Africa. The initiative originated in the private sector with consultation with relevant government departments to support development in respect of agricultural extension services and infrastructure.

The number of small scale growers increased from 3 628 in 1973 to 41 917 in 1992, their recorded sugar cane area increased from 14 861 hectares to 98 253 and their production increased from just over 300 000 tons to between 1.5 million to 2 million tons sugar cane over the same period. The provision of credit cannot be claimed to account for this growth on its own, many factors contributed, not least being the involvement of sugar mills with provision of administrative, extension and contracting services. The evaluation of FAF has required that these other factors be taken into account to enable relevant conclusions to be drawn. The evaluation and conclusions drawn therefrom are considered important as the sugar industry's small scale grower development initiative is one of the largest small scale farmer interventions in South Africa to-date, covering, as it does, areas in the Eastern Cape, KwaZulu-Natal and Mpumalanga.

FAF's original objectives, adopted in 1973, were broad and addressed more than just the provision of credit. They involved economic assistance to, improvement of productivity and efficiency of, transfer of skills and knowledge to and the improvement of living standards of small scale cane growers. Although they were amended in 1992, the original 1973 objectives underlay the ethos of the sugar industry's small scale grower intervention up to and including the industry's revised overall objectives adopted in 1995. FAF's objectives were approved and adopted by both growers and sugar millers. As they were applied, and development progressed, different emphases and approaches were evidenced. Enlightened self interest, accepted as a legitimate reason for being involved in development, dictated what, how and why things were done or not done in the process.

As a result evaluation would have been incomplete had it not addressed historical factors influencing small scale grower development and issues arising from the complex interactions emanating from the differing approaches.

From 1973 to 1992 FAF was the principal source of credit for small scale growers in KwaZulu-Natal. Other than a limited period in the late 1970's, there has been no shortage in the availability of credit to the sector. Guarantees provided by the sugar industry enabled FAF to access the financial market for funding. The majority of small scale growers, who FAF advances loans to, occupy communal land. These farmers are thus unable to provide land as security for a loan. The risk arising from this, as well as high costs of servicing small scale farmers, inadequate information and other related problems, has meant that normal financing channels, open to commercial farmers on freehold land, have not been available to small scale farmers. Although the problem of secure land tenure is being addressed by the South African government it is necessary that alternative forms of security are investigated and promoted to broaden access, by small scale farmers, to credit.

FAF used a lien on the crop as security for its lending. Financing of sugar cane production does have an advantage, which few agricultural products have, in respect of its single channel marketing system. Sugar cane has to be sent to a sugar mill for processing, mills are spatially dispersed which, in most instances, ensures that delivery of crops is to only one mill and recovery of loans etc. can be actioned and controlled accordingly. Notwithstanding the advantages of this system FAF incurred bad debts of approximately 10% of advances. This level of loan default is considered high by formal financial institutions. FAF did not have any form of security, other than the lien on the crop, on which to foreclose to reduce the default rate.

Although a lien on a crop provides some security it is insufficient where a crop fails. In this instance security provided by savings or other acceptable assets, insurance, which includes innovative use of instruments such as endowment policies, and credit guarantee

schemes require investigation. Developing acceptable forms of security, other than land, should encourage financial institutions to reconsider financing of small scale farmers and broaden opportunities for the sector.

Aligned to adequate security is the ability to enforce recovery of loans, if necessary, by legal action. This aspect was shown to have shortcomings and that action is required by government to ensure that the legal system is able to function effectively. The observation, that difficulties exist in taking legal action, is serious and unless addressed will eventually undermine any initiative which is contemplated.

The viability of small scale grower sugar cane production appeared to be impacted by a price/cost squeeze. This arises from a declining real price of sugar cane and escalating real costs of inputs. Exacerbating this problem was the apparent low average productivity of small scale growers. Their average productivity per hectare is 58% of the sugar industry's average. It is recommended that this be addressed. Current South African sugar cane production technology is available to small scale growers. It is recommended that its applicability, with specific reference to small scale growers, be researched and that appropriate systems be determined. Land, given the predominance of small units, 86% of small scale growers had less than 4 hectares, appears to be a scarce resource from which it is necessary to maximise production. A theoretical model indicated the importance of management in increasing a small scale grower's income. It is recommended that small scale grower farm systems research be undertaken so that extension programmes, to increase productivity, can be developed and implemented.

Further to improving small scale grower productivity, attention needs to be given to small scale contractor efficiency and quality of service. Data indicate inefficient use of resources and an environment in which there is a lack of competition. Improved contractor performance has a link to increased productivity of small scale growers. The efficiency and productivity issues require addressing simultaneously. As with most issues raised, complex relationships exist between contractors themselves and between

contractors and growers which require research so as to improve services to small scale growers as well as improve returns to the contractors who provide the services.

A majority of small scale growers are illiterate which poses special challenges for training and transfer of skills. Oral, pictorial and repetitive communication of information, as well as demonstration of technology and correct practices is recommended. Use of media such as radio and television to improve and extend communication, require investigation. A large percentage of small scale growers own radios. Agricultural extension has received a great deal of attention world wide with methods, such as the training and visit system being identified as useful. Systems suitable to South Africa require researching and implementing.

Within the sugar industry, agricultural extension and the provision of credit have been distanced. Although there are pros and cons for this, international experience suggests that they should be linked. When FAF was established there was a linkage between the two, this, however has changed over the years. It is recommended that extension and credit be coordinated as successful use of credit requires efficient use of inputs as well as application of effective management. Viewed from an extension service stance the promotion of improved inputs frequently requires additional investment which credit could address.

A specific area of skills in which small scale farmers require training is in understanding basic aspects of financing. This was identified as a severe shortcoming in the provision of credit to small scale growers. Implications of investment of capital, whether it be own savings or borrowed, and especially the importance of time as a component of investment decisions, were found to be poorly understood. Principles of decision making involving current consumption versus future consumption need to be included in such training. The challenge, for extensionists, is to transfer these principles to small scale farmers who have little or no numeracy. Evaluation of FAF showed that this is a necessity.

Results obtained from the study, indicating higher productivity from small, rather than from larger land holdings and other findings referred to suggest that further study is required in regard to small scale farm unit sizes. This research is important given the debate and initiatives on reforming land tenure and settlement of small scale farmers in South Africa.

Small scale grower development in the South African sugar industry was promoted within the context of maintaining and/or expanding its markets. The sugar industry division of proceeds and sucrose price advantage dispensations given to small scale growers made increased production from this sector attractive to sugar mills. This gave rise to two distinctly different approaches to development. One was directed and managed while the other rested on grower participation, involvement and self motivation. This contrast, in development procedures, gave rise to dissatisfaction, misunderstanding and mistrust being evidenced. The pressure and issues arising from the above may be concluded to be the prime reasons for many of the criticisms of and shortcomings identified in small scale grower development.

Arising from the above is a question of whether a third party, such as the government's department of agriculture, should not play a more active role in development to assist in negotiations, resolve conflicts and mediate where required. Small scale growers were clearly in a less powerful position than sugar mills. Development, in its full sense, should empower them to contend with economic and social issues as well as take advantage of opportunities to improve their well being. Small scale growers indicated that they wished to be more involved in their development and this should be strongly supported. The Small Growers' Development Trust is addressing institutional development and empowerment. Overall it was identified that there is no small scale grower development strategy and that the SGDT may, if appropriate, play a useful role in this regard.

The department of agriculture was identified as a body which could assist with the empowerment of small scale farmers, this suggestion does not derogate from the need for

small scale farmers to establish and strengthen their own structures to carry out the functions required. It is suggested that small scale growers address this issue as it was highlighted as a shortcoming in the evaluation.

To address small scale growers' perception of non involvement in their development when using contracting services it is suggested that consideration be given to promoting the use of negotiated and equitable contracts or agreements between small scale growers and contractors. This should be considered as a requirement where development, such as was undertaken in the sugar industry, is undertaken. These contracts should clearly specify the responsibilities of the parties and the benefits which will accrue. It is further recommended that contracts should be for the shortest time possible to allow for renegotiation and consequent amendment as small scale growers' abilities and circumstances change. More secure land tenure will facilitate such transactions. Problems identified with extension services and financing require addressing to ensure that the above recommendation can be constructively applied.

Moving from general findings and recommendations to FAF it was found that the provision of credit was a significant input contributing to the expansion of the small scale grower sector. However, in terms of individual circumstances of small scale growers, those utilising FAF loans and those utilising services of mill contracting companies do not appear to have been as successful as those growers who developed independently of credit and managed development procedures. Small scale growers using mill contractual services used more loans, had higher loan default rates, had larger areas planted to sugar cane, exhibited lower average yields per hectare and produced sugar cane for more seasons than those growers not utilising the services of mill contractors. Improved small scale grower productivity is linked to factors over and above larger land units and credit. The anomalous situation of growers who used loans obtaining lower yields than those not using loans, especially in the case of better performing growers, is indicated as an area where further research is required.

The overall conclusion, in respect of the evaluation of FAF, is that it is not sustainable in terms of present policy and procedures and that credit is not being used efficiently under the current system. The objectives of sugar mills to increase sugar cane supplies have been achieved. Many of the issues identified in the evaluation of FAF arise from focus not having been adequately directed at basic principles of the provision of credit. FAF approved and accepted basic principles of credit administration but did not apply them fully. Financing of small scale farmers requires that :-

- a real positive rate of interest should be charged
- small scale farmers should be able to identify the benefits of the use of credit and should have prospects of improved farm profits
- savings should be mobilised
- transaction costs should be minimised
- loan recovery should be facilitated by sound borrower assessment, loan decisions and risk management
- a participatory system based on small groups should be promoted

Deregulation and restructuring of the sugar industry have brought the weaknesses in FAF's current operations to the fore and necessitate that the principles listed above be addressed, especially as other institutions are being encouraged to finance small scale growers.

A problem facing the sugar industry is rationalisation of the development process and establishment of procedures and structures which are sustainable. Achievement of this will create an environment where small scale growers can take economically rational decisions, improve their productivity, decrease their reliance on mill contractual services and, where applicable, facilitate other agricultural or economic activities for those growers wishing to either supplement or discontinue sugar cane production.

Those growers in the lowest decile or quartile of production may not benefit from restructuring of the development process and may require a different approach to improve their economic wellbeing. This could involve provision of welfare or other forms of assistance which are outside the ambit of agricultural development but, nevertheless, may be the only way that certain issues, eg support of elderly, widows, incapacitated and resource deficient people, can be addressed.

Rural financial services, which include provision of credit and mobilisation of savings, should be supported by the Land Bank together with the Development Bank of Southern Africa, commercial banks, the Post Office, in respect of savings as recommended by the Strauss Commission, and other institutions such as restructured development corporations. These organisations are seen as the primary source of financial services and need to broaden small scale farmer access to these services. The Land Bank, being a statutory body will, according to the Strauss Commission, be required to address small scale farmer requirements. Commercial banks have indicated an interest in the sector. The problems that are currently faced by all the above financial institutions are a lack of experience and infrastructure to provide the required services. In addition to this they lack client information or suffer from asymmetric information. Further to the information problem financial institutions see a lack of security in respect of the system of land tenure in communal areas and they therefore identify a high level of risk in providing services to small scale farmers in these areas.

Organisations such as FAF, development corporations and NGO's have data bases with accumulated knowledge of clients. Use of their knowledge, experience and capacity needs to be harnessed and linked to providers of finance. It is probably not necessary at this stage to develop new organisations. FAF could be converted into a service organisation providing a data base of approximately 40 000 clients, computerised information systems and risk management procedures to providers of finance such as the Land Bank and commercial banks.

Restructuring of FAF, into a service organisation providing information systems and risk management to financial institutions serving small scale farmers, direct financing by formal financial institutions of productive small scale farmers and small scale contractors and establishment of village banks or savings and credit associations or co-operatives, will not be a quick process. Systems and procedures which were established over a long period require changing. Financial institutions which have not, up until the present, provided services in rural areas may wish, or be obliged by policy, to progress gradually to establish sound risk management procedures. This may require project by project involvement and will need pilot projects to be established and proved to be sound for confidence to be created. Restructuring FAF provides an opportunity to establish the proposed system from a sustainable base of small scale farmers who have knowledge of FAF's loan and saving systems. Small scale growers have indicated a wish to be more involved and to take responsibility for their development. This is a strength on which to build. The recommendations pertaining to restructuring FAF could also be usefully applied to rural financing as a whole and are supportive of the Strauss Commission's findings.

An important element of a restructured system should be an ability for small scale growers to choose how they wish to interact with financial markets. It is recommended that the rural financial market be segmented such that there are four basic linkages between small scale growers and financial institutions. These linkages would involve commercially viable small scale growers having direct access to financiers with the issue of security being addressed. Small scale contractors should be enabled to continue and expand their informal money lending activities, mill development companies could continue to provide services, but at their risk, and a village bank or a savings and loan cooperative structure should be promoted to service small scale growers not choosing or being able to use other alternatives.

Village banks, savings and loan cooperatives or credit unions should be promoted on a businesslike basis with savings/loans ratios and ability to manage efficiently and

effectively being principle criteria for assessing their performance. FAF, restructured into a service organisation, could provide a link between formal financial institutions and village banks/credit unions. Formal institutions would wholesale funds to village banks.

Attention is required to be paid to establishing a legal framework in which village banks, savings and credit associations/cooperatives and credit unions can operate. Further to this expertise should be harnessed to facilitate establishment of such organisations. It is only by broadening options available and accepting economic realities pertaining to sustainability that restructuring finance to small scale farmers will be achieved.

The above recommendations should provide access to credit and development for all sections of the small farmer community. It will also place the risk in areas where responsibility will reside for its management. This is a shortcoming of the current structure. Overall interest rates and transaction costs will probably not be reduced but access to the market will be broadened. Attention should, however, be focused on minimising transaction costs and sustainability of organisations should be paramount. The proposed restructuring of finance to small scale growers will introduce a range of choices which currently do not exist. Further, savings mobilisation will be an important component.

The sugar industry objectives in regard to FAF are currently to :-

- ensure the continued availability of finance to small scale growers on a viable basis;
- increase small scale grower involvement in the operation of the Fund; and,
- reduce the industry's exposure to banking risks.

It is suggested that the objectives can be achieved by adopting recommendations made. The second objective of increasing growers involvement in FAF should be refocussed on growers establishing their own local structures eg village banks. FAF could be a catalyst

to enable new structures to become established as it withdraws itself from providing finance. It may continue to provide services such as data processing facilities, management and training on a cost recovery basis as determined by the client base. The last objective would be achieved by restructuring the rural financial market and obtaining involvement of formal financial institutions as recommended.

In concluding, small scale grower development, promoted by the South African sugar industry, has contributed to development in rural areas where sugar cane is produced. The development of infrastructure, eg roads etc. , has been facilitated, institutional building has taken place, the market economy has been extended into rural areas which previously were largely subsistence orientated and a foundation has been laid for a new phase directed at broadening access to finance, promoting sustainability and increasing small scale growers' involvement in their own development.

10. SUMMARY

The research is an evaluative case study of the South African Sugar Industry's Small Cane Growers' Financial Aid Fund (FAF). FAF was established in 1973 to provide credit to small scale farmers who wished to produce or who already produced sugar cane for delivery to sugar mills in the Republic of South Africa.

At the close of the 1995/96 sugar production season (31 March 1996) FAF had, since its inception in 1973, approved an accumulative total of 59 597 loans amounting to R175 million to small scale farmers for production of sugar cane. In addition to providing loans, FAF made savings facilities available to 31 143 small scale farmers to save portion of their income from sugar cane to enable them to finance their continuing production expenses. FAF was the primary source of credit to small scale growers from 1973 to 1992.

The number of black small scale growers increased from 3 628 in 1973 to 41 917 in 1992, while their area under sugar cane increased from 14 861 to 98 253 hectares over the same period. During the period that FAF has been operating the tonnage of sugar cane delivered by small scale growers increased from 315 702 tons, harvested in the 1973/74 season, to a peak tonnage of 1 627 233 tons, delivered in the 1984/85 season.

Chapter 2 presented a broad overview of small scale farmers and development. The focus of the chapter was on rural finance and setting the framework in which FAF could be evaluated. Rural finance was recorded as a complex field with lessons indicating that :-

- a real positive rate of interest should be charged
- small scale farmers should be able to identify the benefits of the use of credit and should have prospects of improved farm profits
- savings should be mobilised
- transaction costs should be minimised

- loan recovery should be facilitated by sound borrower assessment, loan decisions and risk management
- a participatory system based on small groups would appear to be appropriate

Availability of and accessibility to credit by small scale farmers appears to be of greater importance than the actual interest rate charged. It is however noted that credit is not the only input that small scale farmers require and may not necessarily even be the most important one. Savings mobilization emerges as an important component of a rural financial market.

The South African sugar industry, its broad background having been sketched in chapter 3, is a large agro-industry based on innovative financial and technological methods of production operating in a world competitive market. Its underlying *raison d' être* is to make a satisfactory rate of return from its resources for its investors while meeting the demands of its consumers. It was against this background that investment in small scale grower development was made. It is also as a result of this *raison d' être* that continued investment in small scale grower development is being reassessed by the industry. The question of sustainability of investment in small scale grower development applies as much to the industry as a whole as it does to the Financial Aid Fund.

Data, presented in chapter 3, indicated that underlying the increased tonnage of sugar cane produced by small scale growers were a number of trends which showed a decreasing average area of sugar cane planted by new growers and a decreasing average yield per hectare. This underscored the conclusion that the increased total tonnage of sugar cane delivered by small scale growers was obtained from a larger total area and greater number of growers.

Concomitant with the decreasing average tonnage of sugar cane delivered per small scale grower was a declining real sucrose price. Not only was the sucrose price declining but the purchasing power of a ton of sugar cane in respect of a staple food, maize, and an

important input, tractor power, declined. Small scale growers are faced with a deteriorating economic situation with a price/cost squeeze in respect of sugar cane production. It was under the above circumstances that more and more small scale growers developed or were developed with the use of credit.

Chapter 4 detailed the background to FAF which was established to promote development of small scale growers and give them access to credit which was unavailable to them. Alongside credit other inputs were facilitated via sugar milling companies and suppliers. It was noted that sugar mills assumed and continue to hold a powerful position in the development process. They furnished administration services to FAF and provided contractual and extension services to small scale growers. They interacted very closely with small scale growers and promoted, as well as assisted, the establishment of or improvement of small scale grower representative structures, farmers associations, transport committees and regional grower representative committees.

The underlying driving force was an economic one - the acquisition and securing of sugar cane supplies by sugar mills. "Enlightened self interest" was an accepted reason for becoming involved in small scale grower development. The objective was that both mills and small scale growers would benefit from the intervention. The structure of FAF aimed to involve small scale growers in its administration, with a prime objective being promotion of participation of small scale growers in their own development.

Loan defaults, or bad debts, were maintained at approximately 10% of advances. The administrative structure, involving mills and the retention savings scheme, was an important factor in the loan recovery rate. An analysis of bad debts in two mill areas, Noodsberg and Eston, pointed to a highly directed or pressured/managed development model, involving mill development companies, being an important factor in the increase and decline of small scale grower production. Mill development companies promoted development by focusing management, services and inputs on the small scale grower sector. On withdrawal of these services production declined significantly. This then led

to loan defaults rising. With re-introduction of services, production levels lifted once again but the problem of sustainability remained.

Loan defaults were indicated as arising from social factors not being taken into account in the planning and implementation stages. This then led to lack of participation and involvement of growers which was manifested in poor management, neglect of crops and grazing of sugar cane by cattle. Adverse borrower selection was a consequence of pressurised or managed development. It was recorded that, in certain instances, growers were not present on their holdings when development was carried out, nor were they subsequently there to manage the crop. Sound borrower selection is a fundamental requirement of credit provision. It was indicated that FAF has changed its procedures in this regard and that results from these improved procedures should increase the loan recovery rate.

The introduction of a requirement that growers contribute financially to their own development and to a savings system led to further conflict, misunderstanding and dissatisfaction. The issues raised were exploited by both growers and mills according to how the requirements impacted their objectives. For mills, the requirements affected their administration and management of increased sugar cane throughput, for growers they were used as political issues in their institutional development. The objections raised fed off each other and led to extreme dissatisfaction being expressed by all stakeholders.

In time the savings system, although seen as an instrument of control of small scale grower sugar cane production by mills, has been recognised as having merit. Its administration, however, continues to be disputed and is an important subject in the restructuring of FAF. The need for a financial contribution by small scale growers towards their own development has not, however, received unequivocal support and remains a disputed issue. In terms of an organisation providing credit the above issues are serious and erode the foundation of sound credit management.

Loans to small scale growers from FAF were advanced at subsidised rates of interest. It was shown that for FAF to be sustainable interest rates varying from 34% to 63% should have been charged. FAF's interest rate has been and continues to be increased but it remains below market rates. Currently (1996) it is a real positive rate but still below that required for sustainability. The interest rate required is higher than the current (November, 1996) prime bank overdraft rate of 19.25%. The usury rate was 31% for amounts less than R6 000 and 28% for amounts above that figure.

Small scale grower viability was addressed in Chapter 5 by determining the profit margin obtained from sugar cane production. Small scale grower sugar cane production costs, which included harvesting, fertilizer, weed control and transport costs, were shown to have increased at an average rate of 13.6% per season from 1988 to 1996. The nominal sucrose price increased by an average rate of 14.3% over the same period. The real sucrose price however exhibited a decreasing trend up to 1993 when it exhibited a brief real increase, before continuing to decrease.

Using average small scale grower productivity levels of 32 tons sugar cane per hectare the net income from sugar cane production per hectare under dryland conditions, before debt servicing, was R1 500 per harvest. The average small scale grower crop cycle is 12 - 14 months. A small scale grower's net profit, after meeting production costs and servicing debt, was R500 per hectare per harvest.

Small scale growers, repaying FAF loans and including the costs of production, experienced an average of 90% of their sugar cane proceeds being used to cover expenditure. For small scale growers using loan finance the redemption and interest repayments accounted for an average of 27% of costs. Transport costs, from sugar cane loading zones to mills, were shown to be an important factor in the economics of sugar cane production accounting for an average of 24% of a small scale growers production costs. Depending on distance the cost varied between 19% and 30% of costs.

Average small scale grower productivity is estimated to be 58% of the industry average level. Small scale grower returns could be increased by applying improved husbandry and management practices. The technology employed by small scale growers is that developed for large scale production. Not all the technology may be appropriate to small scale growers. It is suggested that farm systems research (FSR) be undertaken for the small scale grower sector to establish the most suitable technology and methods which should be promoted.

The service provided by small scale contractors was shown to be inefficient and it is recommended that a greater element of competitiveness be encouraged in this sector. A factor which may play a role in problems facing small scale contractors is the depressed economic position in which small scale growers find themselves. Addressing contractor efficiencies without addressing small scale grower productivity may not lead to a resolution of the situation.

In the light of declining unit sizes, declining average deliveries per small scale grower, and the decrease in the real sucrose price the viability of small scale growers appears to be under increased pressure. The level of small scale grower productivity and different production methods were shown to have a significant impact on the income a grower receives. It was recommended that attention be directed to determining the most suitable production method for small scale growers to enable them to maximise their returns. It was suggested that the current model is inefficient, due to the low returns growers receive, and is contributing to, or underpinning, the poor economic position of small scale growers.

A comparison of two different approaches to small scale grower development was made in Chapter 6 by analysing development in the Maidstone and Amatikulu/Felixton areas. The underlying philosophy of Maidstone mill was to develop small scale grower areas as rapidly as possible, to achieve this a mill development company, Sukumani, was established to provide all necessary services, whereas Amatikulu/Felixton small scale

grower development was encouraged on a self help basis. The Amatikulu/Felixton mills provided extension and administration services which enabled co-ordination of small scale grower development. In these mill areas growers employed small scale contractors and arranged the acquisition of their own inputs.

An increasing number of new entrants to the industry were shown to be cultivating smaller areas of sugar cane. This led to the average delivery per small scale grower being lower in recent years compared to 1973 when FAF was established. The average size of small scale grower units were smaller in the Maidstone area than in the Amatikulu/Felixton areas.

Considering various investigations into small scale grower development it emerged that a highly managed development model, as practised in the Maidstone, Noodsberg, Eston and Sezela areas, gave rise to a great deal of criticism. Dissatisfaction was expressed by small scale growers regarding their non-involvement. A dependency relationship was indicated between small scale growers and mills. A diagrammatic model indicated that with high involvement of either party there was low involvement of the other. A balance of involvement is suggested. This requires an alignment of or complementarity of objectives. Training small scale growers and strengthening their representative structures to increase their negotiating powers was suggested as a solution.

Chapter 7 analyses data obtained from a qualitative survey of a sample of 602 small scale growers carried out in 1990. The analysis was extended by analysing production data for the sampled growers in respect of their earliest production records through to 1995. As underlying issues had not changed significantly from 1990 to 1995 the extension of the analysis was considered to be an enhancement to the evaluation.

The qualitative survey indicated that small scale growers were generally comprised of elderly people, 46% being older than 56 years of age, and that they were generally functionally illiterate. These statistics have an important bearing on training and

agricultural extension services in respect of how, what and how frequently information is communicated.

The distribution of land was positively skewed with 53% of growers having less than 2 hectares of land and 86% less than 4 hectares. Fifty one percent of growers delivered less than 30 tons of sugar cane per hectare while 20% delivered more than 40 tons sugar cane per hectare. It was shown that 20% of small scale growers surveyed produced 50% of the sugar cane tonnage. At the lower extreme 46% of growers accounted for only 16% of the tonnage. This trend in the distribution was found to apply overall in the small scale grower sector and is an important statistic.

An evaluation of small scale growers' use of FAF loans using linear discriminant analysis indicated that growers using loans were more likely to have used mill contractual services, to have produced sugar cane for a greater number of seasons and to have had larger areas planted to sugar cane than growers who did not use loans.

As a result of the importance of mill contractual services in small scale grower development a model comparing the use of these services by growers with the non-use thereof was constructed. It was shown that small scale growers using mill contractual services appeared to use a greater number loans, produce sugar cane for a greater number of seasons and to have had larger areas planted to sugar cane, but they exhibited lower yields per hectare and had higher loan default rates, than small scale growers not using mill contractual services. Lower yields did not necessarily result from poor contracting but probably arose from growers not carrying out weeding and fertilisation operations timeously or at all. The issue probably had more to do with adverse borrower selection, lack of participation and poor training than poor contracting.

The provision of credit appears to have enabled expansion of the small scale grower sector to have taken place. However, in terms of individual circumstances of small scale growers, those utilising FAF loans and those utilising services of mill contracting

companies did not appear to have been as successful as those growers who developed independently of credit and managed development procedures.

Chapter 8 concluded that overall FAF's original and revised objectives have not been met. It was noted that objectives of sugar mills to increase sugar cane supplies have been achieved. It was consequently recommended that FAF be restructured.

Organisations currently providing financial services to small scale farmers in South Africa are, in general not sustainable according to the Strauss Commission report. Rural financial markets are required to be developed in South Africa which are not only sustainable but also provide equitable access to all communities and individuals. The restructuring of the sugar industry's small scale grower financing should encompass the foregoing and focus on broader requirements as opposed to perpetuating the current system, albeit in a slightly different format.

BIBLIOGRAPHY

A'BEAR, D.R., AND A.VAUGHAN, AND R.HUDSON, 1994. Appraisal of the Small Grower Development Trust's pilot training programme for small scale growers, contractors and facilitators. Prepared for the British Development Division South Africa. Working Paper No. 114, Institute of Natural Resources, University of Natal, Pietermaritzburg.

ADAMS, D.W. 1977. Policy issues in rural development. Ohio State University. Unpublished.

ADAMS, D.W. 1978. The Economics of loans to informal groups of small farmers in low income countries. Economics and Sociology Occasional Paper No 525, Ohio State University, Columbus.

ADAMS, M.E. 1982. Agricultural extension in developing countries. Intermediate Tropical Agricultural Series. Longman, Essex.

ADAMS, D.W. AND R.L. MEYER, 1983. Effects of low interest rates on the poor in low income countries. In Greenshields, B.L. and M.A. Bellamy, Rural Development, Growth and Equity. International Association of Agricultural Economists. Gower. Aldershot:136-145.

AFRICAN NATIONAL CONGRESS, 1994. The Reconstruction and Development Programme : A Policy Framework. Umanyano Publications, Johannesburg.

✓ AGRI REVIEW, 1996. The lending needs of emerging farmers : Dividing the risk and responsibilities. Standard Bank. Johannesburg.

ARDRI, 1986. Ndwedwe development study : Report and recommendation on the agricultural and rural development potential of the Ndwedwe district of KwaZulu, Agricultural and Rural Development Research Institute, University of Fort Hare, Alice.

BARRY, P.J., J.A.HOPKIN AND C.B.BAKER, 1988. Financial management in agriculture. The Interstate Printers and Publishers, Inc. Danville, Illinois.

BATES, R.F. 1979. Zulu sugar cane production in Natal and KwaZulu with specific reference to agriculture in Reserve 9, Ongoye District. A socio-economic survey. Unpublished desertation submitted in partial fulfilment for a Master of Science in Agriculture, Faculty of Agriculture, Natal University, Pietermaritzburg.

BATES, R.F. 1983. Growers' obligatoriness in development (An evaluation of the Small Cane Growers' Financial Aid Fund), South African Sugar Association. Durban. Unpublished.

BATES, R.F. 1988 Small cane grower cutting and transport survey 1987/88. South African Sugar Association. Durban. Unpublished.

BATES, R.F. 1990. Aspects of the economic size of small farmers with specific reference to sugar cane growers. Unpublished paper delivered to a KwaZulu Department of Agriculture and KwaZulu Finance and Investment Corporation Workshop, Estcourt.

BATHRICK, D.D. 1981. Agricultural credit for small farmer development. Waterview Press, Boulder, Colorado.

BEMBRIDGE, T.J. 1987. Private sector council on urbanisation report for the working group on rural development. Urban Foundation, Johannesburg. Unpublished.

UBINSWANGER, H.P. AND K. DEININGER, 1996. South African land policy : the legacy of history and current options. In van Zyl, J, J. Kirsten and H.P. Binswanger, Agricultural land reform in South Africa - Policies, markets and mechanisms. Oxford University Press, Cape Town : 64-104.

BIRGEGÅRD, L-E, 1993. Rural Finance - A review of issues and experiences. Swedish University of Agricultural Sciences, International Rural Development Centre, Uppsala.

BLIGNAUT, C.S. 1995. The draft white paper on agricultural policy and related processes. Agrocon, Pretoria.

BOARD OF TRADE, 1947. The South African Sugar Industry - Review. Report No. 298. Government Printer, Pretoria.

BOTTRALL, A.F, 1976. Financing small farmers : A range of strategies. In Hunter G, A.H. Bunting and A.F Bottrall, Policy and Practice in Rural Development. Croom Helm, London : 81-90.

BRAXTON ASSOCIATES, 1995. Proceedings of the FAF workshop held at Durban Club Place, Durban. Braxton and Associates. Sandton. Unpublished.

BUSINESS DAY, 1992. Business Day Survey - Stokvels. Business Day, March 11, 1992. Business Day. Johannesburg.

BUSINESS DAY, 1996a. Government, banks fear non-repayment is spreading : Home loan defaulters "are untouchable", Robyn Chalmers, 30 May 1996. Business Day, Johannesburg.

BUSINESS DAY, 1996b. Sanco threatens mass action against evictions. Robyn Chalmers, 4 June 1996. Business Day, Johannesburg.

BUTHELEZI COMMISSION, 1982. The requirement for stability and development in KwaZulu and Natal. H&H Publications (Pty) Ltd, Pinetown.

BUTHELEZI, M.G. 1975. Umsunduze Farmers' Centre. Opening Speech. Ndwedwe, KwaZulu-Natal.

CENTRAL STATISTICAL SERVICE, 1996. Retail prices of commodities and services. Reports 11/02/06 to 11/02/19. The Government Printer. Pretoria.

✓ CHERRY, W.M.H. 1976. Appraisal Report : An evaluation of different methods of cane development in KwaZulu. Lugg, Harrison & Associates (Pty) Ltd, Pietermaritzburg.

✓ COBBETT, M. 1984. Sugar cane farming in KwaZulu : Two communities investigated. Second Carnegie inquiry into poverty and development in Southern Africa, Conference paper no. 58, University of Cape Town. Cape Town.

✓ COBBETT, M, 1988. The Land Question in a post-apartheid South Africa : A preliminary assessment. In Cross, C.R. and R. Hains. Towards Freehold : Options for land and development in South Africa's Black Rural areas, Juta & Co, Cape Town : 60 - 72.

COETZEE, J.K. 1987. Development is for people. Southern Book Publishers, Johannesburg.

COLEMAN, C. 1991. Development in transition : A summary report on the National Development Workshop, Consultative Business Movement, Johannesburg.

✓ CROSS, C.R. 1988a. Freehold in the homelands : What are the real constraints? In Cross, C.R. AND R. Hains, Towards Freehold : Options for land and development in South Africa's Black Rural areas, Juta & Co., Cape Town : 337 - 347.

CROSS, C.R. 1988b. Credit, mortgage and savings : What does rural agriculture need to succeed ? In Cross, C.R. and R. Hains, Towards Freehold : Options for land and development in South Africa's Black Rural areas, Juta & Co., Cape Town : 261 - 275.

CROXALL, H.E. AND L.P. SMITH, 1984. Factors limiting agricultural production. George Allen and Unwin, London.

DAMS, Th.J. 1992. The role of non-government organisations (NGO's) in the socio-economic development process : Peoples Participation as a Key. In Csaki, C. Th.J.Dams and J. van Zyl, Agricultural restructuring in Southern Africa. IAAE in association with Agricon, Windhoek Printers and Publishers, Windhoek : 431 - 422.

DARROCH, M.A.G. 1986. Factors affecting the availability of overdraft financing to Natal sugar cane. In Proceedings of the 24th Annual Conference of the Agricultural Economics Association of Southern Africa, Durban.

DAVENPORT, T.R.H. AND K.S HAART, 1974. The right to the land. Documents on Southern African History. David Philip Publisher, Cape Town.

DELL'AMORE, G. 1975. Agricultural credit for development. World Conference on credit for farmers in developing countries : Rome, 14-21 October 1975. FAO. Cassa di Risparmio delle Provincie Lombarde, Milan.

DEPARTMENT OF BANTU AFFAIRS AND DEVELOPMENT, 1953. Annual report. Chief Bantu Affairs Commissioner, Durban.

DEPARTMENT OF BANTU AFFAIRS AND DEVELOPMENT, 1963. Annual report. Chief Bantu Affairs Commissioner, Durban.

DEPARTMENT OF BANTU AFFAIRS AND DEVELOPMENT, 1968. Annual report. Chief Bantu Affairs Commissioner, Durban.

DEPARTMENT OF LAND AFFAIRS, 1996. Green paper on South African land policy. Department of Land Affairs, Pretoria.

DEVELOPMENT BANK OF SOUTHERN AFRICA, 1986. Policy guidelines in respect of FSP. Development Bank of Southern Africa, Halfway House. Unpublished.

DEVELOPMENT BANK OF SOUTHERN AFRICA, 1994a. South Africa's nine provinces: A human development profile. Development Information Paper. Development Bank of Southern Africa, Halfway House.

DEVELOPMENT BANK OF SOUTHERN AFRICA, 1994b. Community participation and Sustainable Development. Proceedings of the International Workshop on Small Holder Irrigation. Development Bank of Southern Africa, Halfway House.

DUMINY, A. AND B. GUEST, 1989. Natal and Zululand from the earliest times to 1910. A New History. University of Natal Press, Pietermaritzburg.

EICHER, C.R. AND M. RUKUNI, 1992. Zimbabwe's experience in restructuring institutions to support communal farmers : Lessons in Namibia. In Csaki C. Th.J Dams and J. van Zyl, Agricultural restructuring in Southern Africa. IAAE in association with Agrecona, Windhoek Printer and Publishers, Windhoek : 329 - 343.

ERASMUS, J. 1995. Economic evaluation of a transport development programme for small scale cane growers. Thesis submitted in partial fulfilment of the requirements for the degree Master of Agricultural Management, University of Natal, Pietermaritzburg.

ERSKINE, J.M. 1980. Extract from a strategy for involvement of the KwaZulu Development Corporation in agricultural development in KwaZulu. KwaZulu Development Corporation, Umlazi. Unpublished.

FAF, 1973. Administrative Rules of the Fund. South African Sugar Association. Durban.

FAF, 1974a. Report on Tongaat development in the Mona/Ndwedwe area of KwaZulu. South African Sugar Association. Durban. Unpublished.

FAF, 1974b. Memorandum regarding small grower development in the Ndwedwe area, KwaZulu. South African Sugar Association. Durban. Unpublished.

FAF, 1975. Report for the season 1 May 1974 to 30 April 1975. South African Sugar Association. Durban.

FAF, 1978. Report for the season 1 May 1977 to 30 April 1978. South African Sugar Association. Durban.

FAF, 1988. Notes of the sub-committee to investigate the technology employed and costs of small grower operations. South Africa Sugar Association. Durban. Unpublished.

FAF, 1992. Mission Objectives and Procedures. South African Sugar Association, Durban.

FAMORIYO, S. 1973. Some problems of the customary land tenure system in Nigeria. Land Reform : Land Settlement and Co-operatives, No 2, 1973 FAO. Rome.

FAO, 1973. Report on the FAO Seminar on Agricultural Credit for Selected Countries of the Near East Region and the Mediterranean Basin, FAO. Rome.

FAO, 1988. The Impact of Development Strategies on the Rural Poor. Second analysis of country experience in the implementation of the World Conference on Agrarian Reform and Rural Development Programme of Action, FAO. Rome.

FAO, 1994. Rural Finance in FAO. Position paper by rural finance group marketing and rural finance. Food and Agriculture Organisation of United Nations, Rome.

FAO, 1995. Safeguarding deposits - Learning from experience. FAO Agricultural Services Bulletin 116, Food and Agricultural Organisation, Rome.

FINAL REPORT OF THE COMMISSION INQUIRY INTO THE PROVISION OF RURAL FINANCIAL SERVICES, 1996. Government Printer, RP 108/1996. Pretoria.

FINANCIAL MAIL, 1996. Statistical indicators. November 8, 1996. Financial Mail. Johannesburg.

GCUMISA GROWERS' MEETING, 1989. Record of meeting held with small scale growers to address loan repayment problems. Noodsberg mill area, Gcumisa. South African Sugar Association Small Cane Growers' Financial Aid Fund. Durban. Unpublished.

GEVERS, E. 1996. KwaZulu Finance and Investment Corporation. Umlazi. Personal communication.

GILFILLAN, E.C. 1983. Tongaat Hulett Sugar Limited. Maidstone. Personal communication.

GILFILLAN, E.C. 1990. Tongaat Hulett Sugar Limited. Maidstone. Personal communication.

GILFILLAN, E.C. 1985. Harvesting and cost efficiency amongst Ndwedwe contractors. Sukumani Development Company. Paper presented at workshop in Ndwedwe. Tongaat Hulett Sugar Ltd. Maidstone. Unpublished.

GILFILLAN, E.C. 1993. Presentation at a workshop of the South African Sugar Technologists Association Conference, Mount Edgecombe. Tongaat Hulett Sugar Ltd. Maidstone. Unpublished.

GRAHAM, D.H. 1995. Simon Brand memorial address - Creating a sustainable supply of financial services for the rural poor : A challenge for the agricultural economics profession. *Agrokon*, Vol 34, No 4 (December 1995) : 138 - 145.

GUJARATI, D.N. 1988. Basic econometrics, McGraw-Hill Book Company, Singapore.

GUMEDE, C. 1993. Amatikulu Mill Cane Committee. Personal communication.

HAMDY, M.E. 1987. Upstream needs : Infrastructure, inputs and credit. In Davis, T.J. & I.A. Schirmer, Sustainable issues in agricultural development - Proceedings of the seventh agricultural sector symposium. The World Bank, Washington, D.C. : 335-351.

HANSEN, 1996. South African Sugar Association. Durban. Personal communication.

HEADY, E.O. 1952. Economics of agricultural production and resource use. Prentice-Hall, Inc. Englewood Cliffs, N.J.

HEYER, J. 1981. Rural development programmes and improvements. Some experiences in Tropical Africa. In Johnson, G. and A. Maunder. Proceedings of the 17th International Conference of Agricultural Economists. Gower Publishing Company Ltd. Aldershot : 215 - 225.

HOLSCHER, F. & N. ROMM, 1987. Development as a process of human consciousness: Elements of a humanist view on development. In Coetzee J.K.K, Development is for People. Southern Book Publishers, Johannesburg.

HUNTLEY, J.K. 1966. The Sugar Industry Central Board - Its origin and functions. South African Sugar Association. Durban. Unpublished.

IFAD, 1985. The role of credit projects in reaching the poor. IFAD Special Studies Series Vol 1. International Fund for Agricultural Development, Rome. Tycooly Publishing Ltd. Oxford.

IFAD, 1996. A review of IFAD experience in six countries of Southern Africa. Prepared by the Office for Evaluation and Studies IFAD, Workshop on approaches to rural poverty alleviation in SADC countries. IFAD. Rome.

INTERIM REPORT OF THE COMMISSION OF INQUIRY INTO THE PROVISION OF RURAL FINANCIAL SERVICES, 1996. Government Printer, RP38/1996. Pretoria.

INTERNATIONAL LABOUR ORGANISATION, 1984. Reduction of poverty and minimization of productivity and employment for basic needs fulfilment. Report prepared for Economic Commission for Africa. UNESCO. New York.

INTERNATIONAL SUGAR AGREEMENT, 1968. Agreement and rules. International Sugar Organisation, London.

JIMENEZ, P.J. 1993. Credit for micro-enterprises - The informal sector. In Small and Medium Business Enterprises Seminars - The development of small and medium business enterprises in economically disadvantaged sections of South African communities. Kagiso Trust and Consultative Business Movement, Durban. Also personal communication.

JOHNSTON, B.F. AND H.C. CLARKE, 1982. Rural development programmes : A critical review of past experiences in growth and equity in development. In Maunder, A. and K. Ohkawa. Growth and Equity in Agricultural Development. Proceedings of the 18th International Conference of Agricultural Economists. Gower Publishing, Aldershot : 405 - 416.

KADA, R. 1983. Changing Rural Employment Patterns : Role of off farm employment for balanced rural development. In Maunder, A. and K. Ohkawa, Growth and Equity in Agricultural Development. Proceedings of the 18th International Conference of Agricultural Economists. Gower Publishing Company Ltd. Aldershot : 369 - 378.

KHANDKER, S.R., B. KHALILY & Z. KHAN, 1995. Grameen Bank - Performance and sustainability. World Bank Discussion Papers No. 306. The World Bank, Washington.

KINSEY, B AND H.P. BINSWANGER, 1996. Characteristics and performance of settlement programmes : a review. In van Zyl, J, J. Kirsten and H.P. Binswanger, Agricultural land reform in South Africa-Policies, markets and mechanisms. Oxford University Press, Cape Town : 105-138.

KRIGE, E.J. 1936. The social system of the Zulus. Shuter and Shooter, Pietermaritzburg.

KWAZULU DEPARTMENT OF AGRICULTURE, 1988. Survey of sugar cane producing areas in KwaZulu. KwaZulu Department of Agriculture, Ulundi. Unpublished.

KWAZULU DEPARTMENT OF AGRICULTURE, 1992. KwaZulu cane roads support programme (Amended 18/5/92). Unpublished project ledger for funding by the Development Bank of Southern Africa. South African Sugar Association. Durban.

KWAZULU DEVELOPMENT CORPORATION, 1983. Umlazi. Personal communication.

KWAZULU GOVERNMENT, 1975. Interim Report : Select committee on land tenure. KwaZulu Government, Ulundi.

KYNOCH FERTILIZER LIMITED. Annual fertilizer price lists. Umbogintwini. KwaZulu-Natal.

LAND BANK, 1996. Interest rates. The Land Bank. Pretoria. Personal communication.

LEGOUPIL, J.C. 1994. Prospects for farmer management of small irrigation schemes. The West Africa experience. In Thomas, J.A. and W.J. Stilwell, Proceedings of the international workshop on small holder irrigation. Community participation and sustainable development. Development Bank of Southern Africa, Halfway House.

LELE, U. 1975. The design of rural development - Lesson from Africa. International Bank for Reconstruction and Development, Washington.

LENTA, G. & G. MAASDORP, 1988. Limiting factors on food production in the Homelands. In Cross, C.R. and R. Hains Towards Freehold : Options for land and development in South Africa's Black Rural areas, Juta & Co., Cape Town.

LEVITSKY, J AND R.N. PRASAD, 1989. Credit guarantee schemes for small and medium enterprises. World Bank Technical Paper, Number 58, Industry and Finance series. The World Bank, Washington.

LOMBARD REPORT, 1980. Alternatives to the consolidation of KwaZulu - progress report. Bureau for economic policy and analysis. Special focus No. 2. University of Pretoria. Pretoria.

LUGEMWA, W.H. & M.A.G. DARROCH, 1995. Discriminant analysis of seasonal agricultural loan repayment by small-scale farmers in Transkei. *Agrekon*, Vol 34 No. 4 (December 1995) : 231 - 234.

LYNE, M.C. 1985. Using linear and logit functions to identify adopters and non-adopters of farm technology : some policy considerations for KwaZulu. *Development Southern Africa*, Vol 2 No. 4. (November 1985) : 495 - 502.

LYNE, M.C. 1988. Household economic theory and its implications for agriculture in KwaZulu, Notes prepared for workshop for the development of agricultural policy for KwaZulu, Pim Goldby Management Consultants, Durban.

LYNE, M.C. & G.F. ORTMANN, 1988. Economic Data on Cropping in KwaZulu Areas. Results of a computer model extrapolated from detailed survey data. University of Natal, Pietermaritzburg.

LYNE, M.C. & D.N. THOMSON, 1996. Creating opportunities for farmers in communal areas : adapting institutions to promote an efficient rental market in arable land. Department of Agricultural Economics, University of Natal, Pietermaritzburg. To be published.

LYNE, M.C., D.N. THOMSON & G.F. ORTMAN, 1996. Institutional change to promote land rental markets in the developing regions of Southern Africa. *Agrekon* Vol 35, No 1 (March 1996) : 12 - 19.

MANNING, J. 1985. Tongaat Hulett Sugar Ltd. Amatikulu. Personal communication.

MAIZE BOARD, 1996. Pretoria. Personal communication.

MANLY, B.F.J. 1994. *Multivariate Statistical Methods*. Chapman and Hall. London.

MBONGWA, M., R. VAN DEN BRINK AND J. VAN ZYL, 1996. Evolution of the agrarian structure in South Africa. In van Zyl, J., J. Kirsten and H.P. Binswanger, *Agricultural land reform in South Africa - Policies, markets and mechanisms*. Oxford University Press, Cape Town : 36-63.

MBOWA, S & W.L. NIEUWOUDT, 1996. Size efficiency of sugar cane farms in KwaZulu-Natal. Department of Agricultural Economics, University of Natal. Pietermaritzburg. To be published.

MEYER, R.L. & G. NAGARAJAN, 1992. An assessment of the role of informal finance in the development process. In Peters, G.H., B.F. Stanton and G.F. Tyler, *Sustainable agricultural development : the role of international co-operation*. Proceedings of the twenty-first international conference of agricultural economists. Dartmouth Publishing Company Ltd. Aldershot : 644 - 654.

MHLONGO, A. 1983. Ndwedwe Cane Growers' Association. Ndwedwe. Personal communication.

MOOR, G.M. & W.L. NIEUWOUDT, 1996. The prospects for improving institutional arrangements and land use in Southern Africa. *Development Southern Africa*, Vol 13, No 1, February 1996 : 67 - 77.

MOSTERT, P.J. 1995. *Multivariate Statistical Analysis II - Functional and Structural Techniques*. Centre for Statistics, UNISA, Pretoria.

- √ NATTRASS, J. & N.D. MULLER, 1981. The structure and development of the economy of the Natal/KwaZulu region 1960 - 1976. In Inyanda News April 1981. Inyanda Chamber of Business. Durban.
- √ NATTRASS, J. 1981. Economic Realities of KwaZulu/Natal 1980/81. In Inyanda News April 1981.
- √ NIEUWOUDT, W.L. 1972. A principal component analysis of inputs in a production function. Journal of Agricultural Economics 23 : 277 - 283.
- NZIMANDE, A.B. 1984. Illovo/Eston Mill Cane Committee. Eston. Personal communication.
- OSBORN, R.F. 1964. Valiant Harvest. The South African Sugar Association. Durban.
- PETERS, A.H. & J.D. MAY, 1984. A study of income and expenditure and other socio-economic structures in rural KwaZulu - Mapumulo. KwaZulu Finance and Investment Corporation Occasional Paper No. 1 / 84, Umlazi.
- PIKE, D.R. 1982. A preliminary assessment of services available to registered KwaZulu cane growers in the sugar industry. South African Sugar Association Experiment Station, Mount Edgecombe.
- PIM GOLDBY MANAGEMENT CONSULTANTS, 1989. Agricultural Policy for KwaZulu. Working Papers. Durban. Unpublished.
- PRESIDENTIAL COMMITTEE ON AGRICULTURAL CREDIT, 1981. A study on the informal financial markets in three selected provinces of the Philippines, Manila.

QUANTUM RESEARCH, 1990. Report prepared for the South African Sugar Association. Results of small grower development survey. South African Sugar Association. Durban. Unpublished.

RAITO, K.A. AND D.P. VILLANUEVA, 1978. Transaction costs of credit to the small scale sector in the Philippines. Domestic Finance Studies No. 53. Public and Private Finance Division. The World Bank. Washington, D.C.

RORICH COMMITTEE OF INQUIRY INTO THE SUGAR INDUSTRY, 1982. South African Sugar Association. Durban.

RUTHENBERG, H. AND E. JAHNKE, 1988. Innovation policy for small farmers in the tropics - The economics of technical innovations for agricultural development. Clarendon Press, Oxford.

SCHOEMAN, J.H. 1995. Village bank project : Project description. Financial Services, Eldoraigne.

SCHULTZ, T.W. 1968. Economic growth and agriculture. McGraw-Hill Book Company, New York.

SEYMOUR, S.M. 1975. Bantu law in South Africa. Third edition Juta and Company, Cape Town.

SHANER, W.W, P.F. PHILIP AND W.R. SCHMIHL, 1982. Farming systems research and development - Guidelines for developing countries. Westview Press, Boulder, Colorado.

SIMKINS, C.E.W. 1981. Agricultural production in the African Reserves of South Africa, 1918 - 1969. Journal of South African Studies, No. 7 : 256-283.

SINGH, J. 1979. Small farmers and the landless in South Asia. World Bank Staff Working Paper No. 320, The World Bank, Washington.

SMALL GROWERS' DEVELOPMENT TRUST, 1993. Review - 1993 and annual financial statements. South African Cane Growers' Association. Durban.

SOKHELA, M.P. 1988. Attitudes of a cane grower towards participation in cane growing, a comparative study of two communities in Inanda District, KwaZulu. Unpublished thesis submitted for the requirements for the degree of Master of Agricultural Extension, Faculty of Agriculture, University of Fort Hare, Alice.

SOKHELA, M.P. 1996. South African Cane Growers' Association. Durban. Personal communication.

SOUTH AFRICAN CANE GROWERS' ASSOCIATION, 1977. The First 50 Years : 1927 - 1977. South African Cane Growers' Association, Interprint (Pty) Ltd, Durban.

SOUTH AFRICAN CANE GROWERS' ASSOCIATION, 1996. The Cane Grower. Costs of Production, June 1996. South African Cane Growers' Association, Durban.

SOUTH AFRICAN SUGAR ASSOCIATION 1970 - 1986. Year Books. South African Sugar Association, Durban.

SOUTH AFRICAN SUGAR ASSOCIATION, 1994. Annual report 1993 - 1994. South African Sugar Association, Durban.

SOUTH AFRICAN SUGAR ASSOCIATION, 1995. Industry Directory, South African Sugar Association, Durban.

SOUTH AFRICAN SUGAR ASSOCIATION, 1996. Annual Report 1995-1996, South African Sugar Association, Durban.

SOUTH AFRICAN SUGAR JOURNAL, 1968. The Bantu Grower in the Sugar Industry. July 1968, South African Sugar Association, Durban : 621 - 623.

SOUTH AFRICAN SUGAR JOURNAL, 1972a. Millers' Chairman recommends R5 million "crash" mechanisation programme. July 1972, South African Sugar Association, Durban : 285 - 287.

SOUTH AFRICAN SUGAR JOURNAL, 1972b. Discussion on future planning for African growers. May 1972, South African Sugar Association, Durban : 213.

SOUTH AFRICAN SUGAR JOURNAL, 1972c. Sugar Association establishes R5m fund to assist sub-economic growers. December 1972, South African Sugar Association, Durban : 559.

SOUTH AFRICAN SUGAR JOURNAL, 1973. Economic Growth is the answer; industry cannot stand still. June 1973, South African Sugar Association, Durban : 289 - 291.

SOUTH AFRICAN SUGAR JOURNAL, 1995. FAF's Future Holds Great Promise. December 1995, South African Sugar Association, Durban : 227 - 278.

STANDARD BANK, 1996. Provincial Head Office, Durban. Personal communication.

STUTLEY, P.W. 1979. A note on agricultural credit. Principal Natural Resources Economics and Management Advisor. Ministry of Agriculture. United Kingdom. London.

SUBSISTENCE AGRICULTURAL STUDY GROUP, 1980. Annual report. University of Natal, Pietermaritzburg.

SUGAR INDUSTRY AGREEMENT, 1979. Sugar Act, 1978 and Sugar Industry Agreement, 1979. South African Sugar Association, Durban.

SUGAR INDUSTRY AGREEMENT, 1994. Sugar Act, 1978 and Sugar Industry Agreement 1994. South African Sugar Association, Durban,

SUGAR INDUSTRY CENTRAL BOARD, 1962. The development of production control in the South African Sugar Industry, South African Sugar Association, Durban.

THE WORLD BANK, 1973. Address to the Board of Governors by Robert S. McNamara, World Bank Group, Nairobi, Kenya.

THE WORLD BANK, 1976. Operations evaluation report : Agricultural Credit Programmes. Report No. 1357. The World Bank, Washington, D.C.

THE WORLD BANK, 1988. Rural development - World Bank experience, 1965-86. A World Bank Operations Evaluation Study. The World Bank, Washington, D.C.

THE WORLD BANK, 1989. Sub Sahara Africa : From crisis to sustainable growth. A Long-term Prospective Study, The World Bank, Washington, D.C.

THE WORLD BANK, 1991. World development report, 1991. The challenge of development. The World Bank, Oxford University Press. New York.

THE WORLD BANK, 1992. World Development Report 1992. Development and the Environment. The World Bank, Oxford University Press, New York.

THE WORLD BANK, 1994. The World Bank and participation. The World Bank Operations Policy Department, The World Bank, Washington D.C.

THIS WEEK IN PARLIAMENT, 1996. Questions and Answers, Provincial population, job and economic distributions, QA 8.62, 14 May 1996. SACOB PIC, Johannesburg.

THOMAS, J. & C.J. VAN ROOYEN, 1991. Can farmer support programmes generate employment and promote development in South Africa. In Beukes, E.P., W.J. Davies, R.W. van der Kooy and L.P. van Wyk, Development Society of South Africa, Innesdale : 297 : 316.

TOMLINSON, F.R., 1955. Summary of the Report of the Commission for Socio-Economic Development of the Bantu Areas within the Union of South Africa. UG 61/1955. The Government Printer, Pretoria.

THOMPSON, R.G. 1983. Illovo Sugar Ltd. Eston. Personal communication.

THOMSON, D.N. & M.C. LYNE, 1995. Is tenure secure in communal areas ? Some empirical evidence from KwaZulu-Natal. *Agrekon*, Vol 34, No. 4 (December 1995) : 178 - 182.

TINNERMEIER, R.L. 1983. Agricultural finance and rural development. In Nobe, K.C. & R.K. Sampath, *Issues in third world development*. Westview Press, Boulder, Colorado : 67 - 75.

UNITED NATIONS SUGAR CONFERENCE, 1973. Resolutions adopted by the United Nations Sugar Conference 1973 and International Sugar Agreement 1973, United Nations Publication E.74.II.D.16, New York.

USAID, 1973. Small farmer credit in Africa. USAID Spring Review of Small Farmer Credit, Vol VI, February 1973, USAID, Washington.

USUARY ACT, 1968. Act 73 of 1968. Government Printer, Pretoria.

VAN BILJON COMMISSION OF ENQUIRY INTO THE SUGAR INDUSTRY, 1967. Government Printer, Pretoria.

VAN ROOYEN, C.J. 1987. Agricultural and the Southern African regional development policy : Strategies for action. LEBCOC Annual Congress. Magoebaskloof, Unpublished.

VAUGHAN, A. 1990. Competing images of a future South African peasantry. Institute for Social and Economic Research, University of Durban-Westville, Durban.

VAUGHAN, A. 1992. Commercial cane production in KwaZulu : A modernising initiative ?. Paper presented at the Seventh Biennial Conference of the Economic History Society of Southern Africa, University of Natal, Pietermaritzburg.

VOGEL R.C. AND D.W. LARSEN, 1981. An analysis of planned versus actual allocation of agricultural credit in Columbia. In Bellamy, M.G. and B.L. Greenshields, The Rural Challenge. Contributed papers read at the 17th International Conference of Agricultural Economists. Grower Publishing Company Ltd. Aldershot : 52 - 53.

VON PISCHKE, J.D. 1978. Towards an operational approach to savings for rural developers. Finafrica Cassa Di Risparmio, Selle Provincie, Lombarde Quarterly Review No. 1 1978, Rome : 43 - 56.

VON PISCHKE, J.D. AND D.W. ADAMS, 1979. Fungibility and the Design and Evaluation of Agricultural Credit Projects. Second International Conference on Rural Finance Research Issues, Calgary, Canada.

WALLIS, F. 1974. Illovo Sugar Ltd. Illovo. Personal communication.

WALLIS, F. 1976. Illovo Sugar Ltd. Illovo. Personal communication.

WHITE PAPER ON AGRICULTURE, 1995. Department of Agriculture, Pretoria.

WISEMAN, G.D. 1996. Tongaat Hulett Sugar Ltd. Amatikulu. Personal communication.

YARON, J. 1992. Successful Rural Finance Institutions. World Bank Discussion Papers No. 150. The World Bank, Washington, D.C.

YUNUS, M. 1993. Grameen Bank. Bangladesh. Personal communication.