

**The accountancy implications of commodity derivatives in the
agricultural sector**

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Thesis Abstract

Title: The accountancy implications of commodity derivatives in the agricultural sector

Keywords: agribusiness, commodity derivatives, IAS 39, agricultural sector, agricultural companies

Food security is a global topic of discussion and agricultural sectors play a vital role in the provision thereof. In South Africa the agribusinesses are some of the key players in providing financing, risk management and market advisory services to producers. Since the deregulation of the grain industry during 1996, many of these agribusinesses have converted their business form from cooperative to company and therefore adhere to International Financial Reporting Standards (IFRS). These agribusinesses trade commodity derivatives on the South African Futures Exchange (SAFEX) to hedge themselves and their producers against commodity price risk. Globally there has been a tremendous increase in the use of derivatives and other financial instruments and with the emergence of these new and more complex financial instruments, accounting regulations had to follow these developments. The applicable accounting practices at the time were considered as being *insufficient* and being applied inconsistently. The major global standard setters namely IASB and FASB separately tried to develop adequate standards to address the accounting treatment of these products. The IASB developed International Accounting Standard (IAS) 39 dealing with the recognition and measurement of financial instruments, while the FASB issued Financial Accounting Standard (FAS) 133. These two standard setters have signed the Norwalk Agreement committing to plans to converge the IFRS and US accounting standards.

This study focused on the application of IAS 39, with reference to commodity derivatives, with the main research objective being to investigate the accountancy implications of commodity derivatives in the South African agricultural sector. Furthermore it also serves to establish a standard methodology for the interpretation of IAS 39 and to serve as a benchmark and best practise for South African agribusinesses and commodity processors. For this purpose seven case studies were investigated by utilising a developed questionnaire, an illustrative flow diagram of

IAS 39 and recorded structured interviews with the respondents. The accounting treatment of commodity derivatives was investigated by utilising nine transaction types which are typically found when producers sell grain to an agribusiness or a processor purchases grain from an agribusiness. The seven case studies were identified by utilising convenience sampling (unrestricted non-probability sampling). A literature review and empirical study were conducted.

The findings on the accounting treatment of commodity derivatives were communicated thematically. The main findings were discussed during interviews with representatives of the technical departments of three of the Big Four audit firms in South Africa. A discussion of similar studies performed globally was performed.

The recommendations following from this research study include that entities carrying “own use” inventory and applying hedge accounting can elect to apply the base adjustment consistently as part of their accounting policy on the valuation of inventory. Entities holding grain inventory for trading purposes should, based on industry practice, fair value such inventory. Various recommendations regarding the classification of a supply contract with a producer (as defined in a pre-season fixed price contract) depending on whether an entity applies hedge accounting or not, were made. Recommendations regarding the determination of fair value include that, based on industry practice and guidance by IAS 39, the SAFEX-based price should be utilised to fair value derivatives and to fair value inventory held by commodity-broker traders. The fair value movement on the option contracts taken out on behalf of the producer by an agribusiness should be transferred to the relevant producer’s loan account. The recommendations concluded with a recommendation that entities should proactively consider and plan the impact of the replacement of IAS 39 on current business practices.

Areas for further research could include investigating the accounting treatment of commodity derivatives of the newly issued accounting standards on financial instruments by IASB and the impact of these new standards on the business practices of entities.

Proefskrif Opsomming

Titel: Die rekeninkundige implikasies van kommoditeitsafgeleides in die landbousektor

Sleutelwoorde: agribesigheid, kommoditeitsafgeleides, IAS 39, landbousektor, landbou maatskappye

Voedsel sekuriteit is 'n wêreldwye onderwerp van bespreking en die landbousektor speel 'n belangrike rol in die voorsiening daarvan. In Suid-Afrika is die landboubesighede van die sleutel spelers in die verskaffing van finansiering, risikobestuur en markadviesdienste aan produsente. Sedert die deregulering van die graanbedryf gedurende 1996, het baie van hierdie landboubesighede hul besigheidsvorm omskep van koöperasie na maatskappye en moet daarom voldoen aan Internasionale Finansiële Verslagdoening Standaarde (IFRS). Hierdie landboubesighede dryf handel in afgeleide instrumente op die Suid-Afrikaanse Termynbeurs (SAFEX) om hulself en hul produsente te verskans teen kommoditeitsprysrisiko. Wêreldwyd is daar 'n geweldige toename in die gebruik van afgeleide instrumente en ander finansiële instrumente en met die toename van hierdie nuwe en meer komplekse finansiële instrumente, moes die rekeningkundige regulasies hierdie ontwikkelings volg. Tans word die toepaslike rekeningkundige praktyke beskou as onvoldoende en die toepassing daarvan is inkonsekwent. Die vernaamste internasionale standaardstellers naamlik IASB en FASB, het afsonderlik probeer om voldoende standaarde te ontwikkel om die rekeningkundige hantering van hierdie produkte aan te spreek. Die IASB ontwikkel die Internasionale Rekeningkundige Standaard (IAS) 39 wat handel oor die erkenning en meting van finansiële instrumente, terwyl die FASB die Finansiële Rekeningkunde Standaard (FAS) 133 uitgereik het. Hierdie twee standaardstellers het die Norwalk-ooreenkoms onderteken en daardeur hul bereidwilligheid getoon om die IFRS-rekeningkundige standaarde en die Amerikaanse standaarde met mekaar te versoen.

Hierdie studie fokus op die toepassing van IAS 39, met verwysing na kommoditeitsafgeleides, met die hoofnavorsingsdoelwit synde die rekeningkundige implikasies van kommoditeit afgeleides in die Suid-Afrikaanse landbousektor te ondersoek. Verder is die doel ook om 'n standaardmetodiek daar te stel vir die

interpretasie van IAS 39 wat as 'n maatstaf en as beste praktyk vir die Suid-Afrikaanse landboubesighede en kommoditeit verwerkers kan dien. Vir hierdie doel is sewe gevallestudies ondersoek deur gebruik te maak van 'n ontwikkelde vraelys, 'n illustratiewe vloediagram van IAS 39 en opgeneemde gestruktureerde onderhoude met die respondente. Die rekeningkundige hantering van die kommoditeitsafgeleides is ondersoek deur gebruik te maak van nege transaksietipes wat tipies gevind word wanneer produsente graan verkoop aan 'n agribesigheid of wanneer 'n verwerker graan van 'n agribesigheid aankoop. Die sewe gevallestudies is geïdentifiseer deur gebruik te maak van gerieflikheidsteekproefneming (onbeperkte nie-waarskynlikheidsteekproefneming). 'n Literatuurstudie en empiriese studie is gedoen.

Die bevindings ten opsigte van die rekeningkundige hantering van die kommoditeit afgeleides is volgens tema gekommunikeer. Die belangrikste bevindings is bespreek tydens onderhoude met verteenwoordigers van die Tegniese Departemente van drie van die Groot Vier ouditeursfirmas in Suid-Afrika. 'n Bespreking van soortgelyke studies wat globaal uitgevoer is, is ook gedoen.

Die aanbevelings voortspruitend uit hierdie navorsing sluit in dat die entiteite wat “eie-gebruik-voorraad” het en verskansingsrekeningkunde toepas, kan kies of hulle die voorraad basis aanpassing op die waardasie van voorraad wil doen en as hulle kies om dit wel te doen behoort dit konsekwent toegepas te word as deel van hul rekeningkundige beleid. Entiteite wat graanvoorraad hou vir doeleindes van handeldryf moet, gebaseer op industrie praktyk, hierdie voorraad teen “billike waarde” aantoon. Verskeie aanbevelings ten opsigte van die rekeningkundige klassifikasie van die afgeleide instrument in 'n voorsieningskontrak met 'n produsent (soos omskryf in 'n voorseisoen vastepryskontrak) is gemaak. Aanbevelings, ten opsigte van die bepaling van die “billike waarde”, sluit in dat, gebaseer op die industrie praktyk en die leiding van IAS 39, die SAFEX-gebaseerde prys aangewend moet word om die afgeleides se “billike waarde” te bepaal asook die “billike waarde” van die voorraad deur 'n kommoditeitsmakelaar gehou. Die beweging in “billike waarde” van opsiekontrakte namens die produsent deur 'n agribesigheid uitgeneem, moet oorgedra word aan die betrokke produsent se leningsrekening. Die aanbevelings word afgesluit met 'n aanbeveling dat entiteite proaktief die impak van die nuut

uitgereikte rekeningkundige standaarde wat IAS 39 vervang, op huidige besigheidspraktyke moet oorweeg.

Areas vir verdere navorsing kan insluit die ondersoek na die rekeningkundige hantering van die kommoditeitsafgeleides van die nuut uitgereikte rekeningkundige standaarde op finansiële instrumente deur die IASB en die impak van hierdie nuwe standaarde op die korporatiewe praktyke van entiteite.

TABLE OF CONTENTS

THESIS ABSTRACT	II
PROEFSKRIF OPSOMMING.....	IV
LIST OF TABLES	XVI
LIST OF FIGURES.....	XVII
LIST OF FIGURES (CONTINUED)	XVIII
LIST OF EXAMPLES	XIX
LIST OF GRAPHS.....	XX
LIST OF SCENARIOS	XXI
CHAPTER 1	1
1 INTRODUCTION	1
1.1 BACKGROUND	1
1.1.1 Marketing of grain.....	2
1.1.2 South African Futures Exchange (SAFEX).....	3
1.1.3 Defining agribusiness	4
1.1.4 Derivatives / Financial instruments	5
1.2 THE OBJECTIVE OF THE RESEARCH.....	8
1.2.1 Knowledge gap and research contribution.....	8
1.2.2 Problem statement	9
1.2.3 Research objectives	9
1.3 RESEARCH METHODOLOGY.....	10

1.3.1	Context of accountancy	10
1.3.2	Research paradigm	13
1.3.2.1	The Burrell and Morgan framework	13
1.3.2.2	The Three World's Framework.....	15
1.3.2.3	Paradigm selection for thesis	16
1.3.3	Research design.....	17
1.3.3.1	Literature study.....	18
1.3.3.2	Empirical research	18
1.4	TERMS OF REFERENCE	19
1.5	STUDY OVERVIEW	22
	CHAPTER 2	24
2	AGRIBUSINESSES AND COMMODITY DERIVATIVES.....	24
2.1	INTRODUCTION	24
2.2	BACKGROUND OF AGRICULTURAL COOPERATIVES	25
2.2.1	Definition of agricultural cooperatives.....	26
2.2.2	History of agricultural cooperatives	26
2.2.2.1	Establishment.....	26
2.2.2.2	Deregulation of the maize industry	27
2.2.2.3	Modern day agribusinesses	30
2.3	COMMODITY DERIVATIVES	30
2.3.1	Definition of commodity derivatives.....	31
2.3.2	Derivative classification	32
2.3.3	Derivative categories.....	33

2.3.3.1	Futures contracts	34
2.3.3.2	Forward contracts	37
2.3.3.3	Options contracts	38
2.4	SAFEX AS PRICE DETERMINANT	40
2.4.1	Trading of agricultural derivatives	43
2.4.1.1	Mark-to-market calculation for futures	44
2.4.1.2	Mark-to-market calculation for options	44
2.4.2	Settlement procedures of agricultural derivatives.....	46
2.5	SERVICES PROVIDED BY AGRIBUSINESSES.....	47
2.5.1	Financing.....	47
2.5.2	Risk management	50
2.5.3	Market advisory service	53
2.5.4	Storage	61
2.6	SUMMARY	62
CHAPTER 3	64	
3	ACCOUNTING TREATMENT OF COMMODITY DERIVATIVES	64
3.1	INTRODUCTION	64
3.2	THE GLOBAL DEVELOPMENT OF ACCOUNTING STANDARDS	65
3.2.1	Key role players	66
3.2.1.1	IASB	66
3.2.1.2	FASB	68
3.2.1.3	ASB	69
3.2.2	Key differences in the accounting standards	70

3.2.2.1	Prior 2008/2009	70
3.2.2.2	After 2008/2009	72
3.3	INTERNATIONAL FINANCIAL INSTRUMENTS' STANDARDS	73
3.3.1	Fair value defined	75
3.3.2	Scope	77
3.3.2.1	First step: Definition of financial instrument and financial asset / liability	78
3.3.2.2	Second step: Inclusion of contracts	79
3.3.2.3	Third step: Partially or totally included	81
3.3.2.4	Gross versus net settlement of contracts	81
3.3.3	Definitions and classifications	84
3.3.3.1	Category: At fair value through profit or loss	84
3.3.3.2	Category: Held-to-maturity investments	85
3.3.3.3	Category: Loans and receivables	85
3.3.3.4	Category: Available-for-sale financial assets	85
3.3.4	Initial recognition and measurement	86
3.3.5	Subsequent measurement and treatment of gains and losses	86
3.3.6	Re-classification	88
3.3.7	Derecognition	89
3.3.8	Hedge accounting	89
3.3.8.1	Definitions: hedge accounting	90
3.3.8.2	Qualifying for hedge accounting	91
3.3.8.3	Hedging relationships	93
3.3.8.4	Discontinuing hedge accounting	96
3.3.9	Disclosure requirement	96

3.3.10	Conclusion.....	97
3.4	EXAMPLE OF DIFFERENT ACCOUNTING TREATMENTS	97
3.5	COMPARABILITY OF FINANCIAL STATEMENTS	104
3.6	REPLACEMENT OF IAS 39	105
3.7	CHANGING BUSINESS PRACTICES	106
3.8	SUMMARY	107
CHAPTER 4	108
4	RESEARCH DESIGN AND METHODOLOGY	108
4.1	INTRODUCTION	108
4.2	CASE STUDY RESEARCH	111
4.2.1	Definition	111
4.2.2	Strengths of case study research.....	111
4.2.3	Limitations of case study research.....	111
4.2.4	Comparison between case study research and other methods	112
4.2.5	Previous case study research literature reviewed.....	113
4.3	TYPES OF RESEARCH	114
4.3.1	Exploratory, descriptive and explanatory research	114
4.3.2	Applied and basic research	114
4.3.3	Quantitative and qualitative research.....	115
4.4	RESEARCH SAMPLE SELECTION	115
4.4.1	Sample design	115
4.4.2	Sampling technique	116

4.5	DATA COLLECTION TECHNIQUES	117
4.5.1	Questionnaire	118
4.5.2	Interviews.....	118
4.5.3	Validity and reliability.....	118
4.5.4	Pilot testing.....	120
4.6	DATA ANALYSIS.....	121
4.7	RESEARCH ETHICS.....	121
4.8	SHORTCOMINGS AND SOURCES OF ERROR.....	122
4.9	SUMMARY	122
	CHAPTER 5	124
5	EMPIRICAL RESEARCH FINDINGS.....	124
5.1	INTRODUCTION	124
5.2	GENERAL INFORMATION AND SERVICES	125
5.2.1	General.....	125
5.2.2	Services	127
5.2.3	Financial instruments	128
5.3	ACCOUNTANCY IMPLICATIONS OF COMMODITY DERIVATIVES	130
5.3.1	Transaction types.....	131
5.3.1.1	Transaction type 1: Pre-season fixed-price contract	131
5.3.1.2	Transaction type 2: Fixed-price purchase contract.....	133
5.3.1.3	Transaction type 3: Pre-season minimum-price contract	133
5.3.1.4	Transaction type 4: Un-priced contract.....	134

5.3.1.5	Transaction type 5: Delayed-price contract	135
5.3.1.6	Transaction type 6: Mill-door contract.....	136
5.3.1.7	Transaction type 7: Un-priced delivery contract	136
5.3.1.8	Transaction type 8: Priced delivery contract.....	136
5.3.1.9	Transaction type 9: Other delivery contracts	136
5.3.2	Transaction types analysed per respondent	137
5.3.3	Findings of interviews with respondents	141
5.3.3.1	Theme 1: Hedging	142
5.3.3.2	Theme 2: Treatment of gains or losses on hedging.....	142
5.3.3.3	Theme 3: Own use inventory	143
5.3.3.4	Theme 4: Holding of grain inventory for trading.....	143
5.3.3.5	Theme 5: Measurement or valuation of inventory	143
5.3.3.6	Theme 6: Derivatives.....	144
5.3.3.7	Theme 7: Fair value measurement	146
5.3.3.8	Theme 8: Hedge accounting	147
5.3.3.9	Theme 9: Option valuation	148
5.4	Findings of interviews with audit firms	155
5.4.1.1	Theme 1: Treatment of gains or losses on hedging.....	155
5.4.1.2	Theme 2: Measurement or valuation of inventory	156
5.4.1.3	Theme 3: Derivatives.....	157
5.4.1.4	Theme 4: Fair value measurement	162
5.4.1.5	Theme 5: Option valuation	162
5.5	BUSINESS PRACTICES	163

5.6	REPLACEMENT OF IAS 39	168
5.7	DISCUSSION OF SIMILAR STUDIES PERFORMED GLOBALLY	168
5.7.1	Accounting for electricity derivatives under IAS 39	168
5.7.2	Accounting for financial instruments: an analysis of the determinants of disclosure in the Portuguese stock exchange.....	169
5.7.3	Accounting for financial instruments in the banking industry: conclusions from a simulation model	170
5.8	SUMMARY	171
CHAPTER 6		173
6	DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS	173
6.1	INTRODUCTION	173
6.2	GENERAL INFORMATION AND SERVICES	174
6.2.1	Business forms	174
6.2.2	External auditors	174
6.2.3	Compliance with IFRS	175
6.2.4	Financial instruments	175
6.3	ACCOUNTANCY IMPLICATIONS OF COMMODITY DERIVATIVES	176
6.3.1	Hedging.....	177
6.3.2	Treatment of gains or losses on hedging	177
6.3.3	Own use inventory	178
6.3.4	Holding of grain inventory for trading	178
6.3.5	Measurement or valuation of inventory.....	179
6.3.6	Derivatives	180

6.3.7	Fair value measurement.....	185
6.3.8	Hedge accounting.....	186
6.3.9	Option valuation.....	187
6.4	BUSINESS PRACTICES	189
6.5	REPLACEMENT OF IAS 39	189
6.6	CONCLUSIONS AND CONTRIBUTIONS.....	190
6.7	LIMITATIONS OF THE RESEARCH.....	192
6.8	AREAS FOR FURTHER RESEARCH.....	193
	BIBLIOGRAPHY	194
	APPENDIX 1	218
	APPENDIX 2	220
	APPENDIX 3	221

List of tables

Table 2.1: Futures contract specifications for white maize traded on SAFEX	35
Table 3.1: A comparative analysis of derivatives reporting	71
Table 3.2: Subsequent measurement of financial assets and treatment of gains / losses	87
Table 4.1: Framework for investigating the methodological rigor of case studies	120
Table 5.1: Findings of general information	126
Table 5.2: Extract from questionnaire	139
Table 5.3: Sections of questionnaire addressing themes	141

List of figures

Figure 1.1: High-level overview of the agricultural industry	5
Figure 1.2: Accountancy in context	11
Figure 1.3: Four Paradigms of social theory	14
Figure 1.4: The Three Worlds Framework	16
Figure 2.1: A transaction on the Futures Exchange	37
Figure 2.2: World maize production for marketing year 2007/2008	41
Figure 2.3: Prices of USA white maize delivered in Randfontein for May 2007 to June 2009	43
Figure 2.4: Information requirement for evaluation of financing	48
Figure 2.5: Closing prices of white / yellow maize for May 2009 futures contract	54
Figure 2.6: Profit from bull spread created using call options	57
Figure 2.7: Profit from bear spread created using put options	58
Figure 2.8: Profit from butterfly spread using put options	60
Figure 2.9: Profit from calendar spread using call options	61
Figure 3.1: Major standard setters	66
Figure 3.2: Accounting standards on financial instruments	75
Figure 3.3: Hedging relationship types	94
Figure 3.4: Flow of transactions between Producer A and ABA	99
Figure 4.1: A metaphor for research design	110
Figure 4.2: Comparison of research techniques	112

List of figures (Continued)

Figure 5.1: Pre-season fixed price contract	132
Figure 5.2: Extract from the flow diagram	138
Figure 5.3: Transaction flow of pre-season fixed price contract	145
Figure 5.4: Transaction flow of pre-season fixed price contract	158
Figure 5.5: IAS 39 scope test	160
Figure 6.1: Transaction 1 - Pre-season fixed price contract	181

List of examples

Example 2.1: Margining	33
Example 2.2: A futures contract	37
Example 2.3: A call option	39
Example 2.4: Put options	39
Example 2.5: Financing	49
Example 2.6: Commodity price risk	51
Example 2.7: Call option	52
Example 2.8: Location differential basis trading	55
Example 2.9: Bull spread	56
Example 2.10: Bear spread	57
Example 2.11: Butterfly spread	59
Example 3.1: Gross versus net settlement of contracts	82

List of graphs

Graph 5.1: Services offered	128
Graph 5.2: Findings of financial instruments	129
Graph 5.3: Percentage of total respondents per transaction type	140
Graph 5.4: Findings of questions regarding development of new IT system	164
Graph 5.5: Findings of questions regarding appointment of new administrative staff	165
Graph 5.6: Findings of questions regarding training of staff	166
Graph 5.7: Findings of questions regarding decision-making	167

List of scenarios

Scenario 5.1: SAFEX options	149
Scenario 5.2: Mark-to-market of options	151
Scenario 5.3: Accounting for options	152

CHAPTER 1

1 INTRODUCTION

1.1 BACKGROUND

High food prices, combined with a growing concern over the shortage of food, are a global topic of discussion and the term “food crisis” is openly used (Gumede, 2008:1). During the Group of Eight (G8) summit held in Italy in July 2009, the leaders of the G8 countries pledged \$20 billion in food aid to developing countries that are facing such food crises (Taiwo, 2009), while a year earlier, on July 18th, 2008 José Manuel Barroso, the President of the European Commission, announced that a facility of €1 billion was established in response to the soaring food prices in developing countries (EU, 2008). These funds are aimed at increasing the agricultural production by assisting farmers in developing countries, especially in Africa. Furthermore, during the International Conference on Food Security held in Madrid during January 2009, Dr Jacques Diouf, the Director-General of the Food and Agriculture Organisation of the United Nations (FAO), commented that global food production must double by 2050 to ensure that there is enough food for the projected global population of nine billion people (Anon, 2009a). Considering the above, it is clear that the agricultural sectors throughout the world will have to play a vital role in providing consistent quality crops in order to feed the growing world population.

Unlike the rest of Africa, the *food crisis* concern in South Africa is rather more on high food prices than the actual shortage of food (Landman, 2008:1). Due to high levels of unemployment in South Africa, which according to the Central Intelligence Agency (CIA) (2007) stood at an estimated 24% in 2007, the impact of high food prices is even more pronounced than in many other parts of the world. The local agricultural sector plays a crucial role in the supply of affordable foodstuffs with the sector’s share of Gross Domestic Product (GDP) of R1 236 billion (R represents the abbreviation for the South African Rand, which is the local currency) in 2007, or 2.4% (NDA, 2007). In order for producers to keep supplying quality and affordable food, they require not only financing, but also an effective market to sell their products.

As a key part of the agricultural sector, the grain producers play a vital role in the production of key South African staple foods, which include mealie pap, bread, stamp mealies and other grain-based staple foods.

According to Webster's Dictionary and Thesaurus (2006:164) grain can be defined as any cereal plant's seed such as wheat and corn, while the Longman Business English Dictionary (2001:209) defines grain as crops such as corn, rice and wheat. As part of these definitions wheat and maize would be classified as grain products. Grain is mainly produced in the Free State, North West and Mpumalanga provinces, which jointly not only account for 78% of the domestic annual production of grain (Ueckermann, Blignaut, Gupta & Raubenheimer, 2008:228), but also for 60% of all the grain farmers in South Africa (Ueckermann *et al.*, 2008:228).

1.1.1 Marketing of grain

The Marketing Act of 1937, which was revised as the Marketing Act 59 during 1968, controlled the marketing of commodities through 23 control boards (Doyer, D'Haese, Van Rooyen, Kirsten & D'Haese, 2008:270; Piesse, Doyer, Thirtle & Vink, 2005:201). Historically the South African grain producers used a one-channel marketing system whereby all the grain was dumped into a single pool and one person or organisation was responsible for selling all the grain. Individual producers were therefore not able to negotiate the price for their grain (Mouton, 2006:31). During 1996, however, this one-channel system for the marketing of such grain was abandoned in favour of a free market system, which meant that the prices and marketing of grain were no longer regulated (NAMC, 2008:13; Mouton, 2006:31; NAMC, 1999:20). Deregulation however, forced producers to market their own products. Price fluctuations of grain occur daily due to *fundamental* factors such as changes in international and local supply and demand, fluctuations of Rand/US Dollar exchange rates, weather conditions, etc. (NAMC, 2008:ii; Geysler & Cutts, 2007:296; Anon, 2004a:42). Furthermore, *technical* factors such as the behaviour of speculators' trading derivative instruments on exchanges and the support and resistance levels on prices, also affect grain prices (Parihar, 2003:3). Sellers (producers) and buyers (processors) are therefore exposed to price risk. A need arose for a central place where buyers and sellers could meet to negotiate grain prices based on the best

possible available information. The South African Futures Exchange (SAFEX) was therefore founded (Grönum, 2001a:12).

1.1.2 South African Futures Exchange (SAFEX)

The concept of a “futures exchange” is relatively new in South Africa when compared to other countries in the world. The Dojima Rice Exchange in Osaka, Japan, the world’s first organised futures exchange, traded derivative instruments from as early as the late seventeenth century (West, 2000:2574), while the Chicago Board of Trade (CBOT) in the United States of America was founded in 1848 (CBOT, 2009; Geman, 2005:1). In South Africa the first (informal) futures exchange was started by the Rand Merchant Bank Limited (RMB) in April 1987, while the SAFEX Agricultural Derivatives Division was opened in January 1995, which in turn was bought out in May 2001 by the then JSE Securities Exchange (currently known as the JSE Limited). Two trading divisions were created namely the SAFEX Agricultural Derivatives and the SAFEX Financial Derivatives (SAFEX, 2008).

Price determination on SAFEX is resultant of the cumulative action of thousands of sellers and buyers, including producers, processors, importers, exporters, handlers and speculators (NAMC, 2008:13). The traded instruments are referred to as derivatives, which are defined as *a financial instrument that changes in value in response to changes in a specified interest rate, commodity price or foreign exchange rate, requires little or no initial investment and is settled at a future date* (IASB, 2008b:1998; Skerritt, 2006:378; Shin, 2004:4).

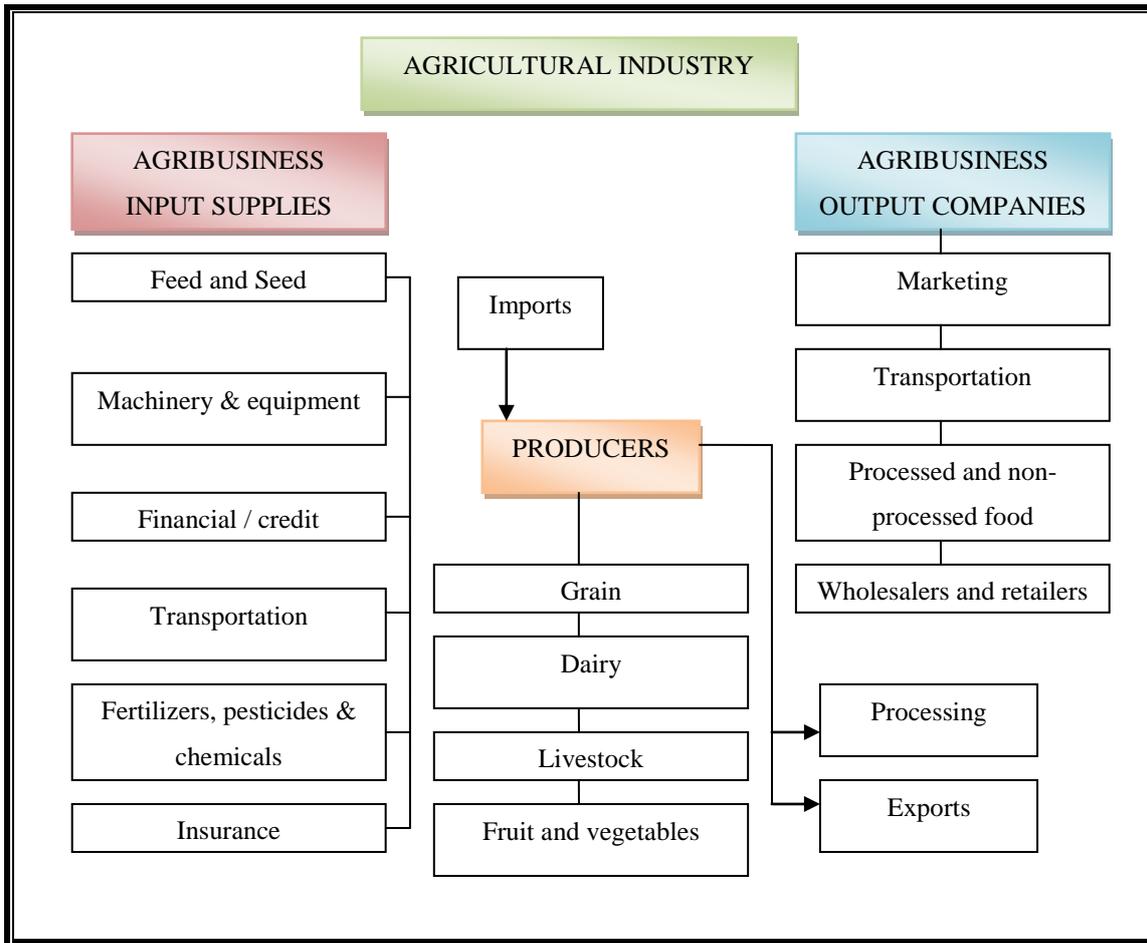
Grain producers cannot ignore the importance of marketing their grain properly (Dhuyvetter & Kastens, 2004). Producers’ and milling processors hedging themselves against price risks by effectively trading derivatives on SAFEX can gain a competitive advantage over those that do not trade on SAFEX. By doing so, they can ensure that a long-term sustainable business is maintained and it can lead to an improved financial position (NAMC, 2008:13; Grönum, 2001b:29). Research conducted at the University of Illinois in America indicated that the hedging of grain is a cause of concern to many producers (Anon, 2006a). This research found that around two thirds of producers sell their grain in the lower third of the price band, mainly because they i) do not spend sufficient time marketing their grain, ii) are

ignorant regarding the market instruments available and iii) getting emotionally involved in the marketing of their grain (Anon, 2006a). For these reasons, many producers opt to make use of a market advisory service. Agricultural companies and agricultural cooperatives generally are able to provide these services to both producers and processors. In South Africa, a study was conducted by Ueckermann *et al.* (2008) to investigate producers' preferences to adopt derivative contracting. These findings indicated that grain producers' preference to utilise derivative contracting is mostly influenced by their prediction of grain prices and trends, farm size and certain geographic characteristics. The overall agricultural industry is very broad, and encompasses many aspects from plant seeds, livestock feeds and machinery on the one side, to marketing and transport on the other side. The concept of agribusiness, as per this research project, is a component of this larger industry.

1.1.3 Defining agribusiness

Ray A. Goldberg and John H. Davis, both from the Harvard Business School at the time, coined the term "agribusiness" in 1957 when they published a book entitled *A concept of agribusiness* (HBS, 2009). They defined agribusiness as those businesses that support the delivery of food, clothing and shoes, tobacco, flowers and agricultural exports to their final consumers (Davis & Goldberg, 1957). Cook and Chaddad (2000) concur when defining agribusiness as the sum total of the operations involved in the *production* and *distribution* of not only food and fibre. More recently, Esterhuizen (2006:26) defined the agribusiness *sector* as businesses with a direct interaction with primary agriculture, but also value adding enterprises further down the agricultural value chain. Figure 1.1 below illustrates the big picture of the agricultural industry and where the concept of agribusiness fits.

Figure 1.1: High-level overview of the agricultural industry



Source: (adapted from Ricketts & Ricketts, 2009:7)

Considering all the above, agribusinesses can therefore be defined as enterprises that provide services to the primary producer, including finance, market advisory services and/or storage facilities and purchasing products directly or indirectly from the primary producers. For purposes of this study in the South African context, both agricultural companies and agricultural cooperatives will be referred to as agribusinesses.

1.1.4 Derivatives / Financial instruments

Prior to the South African deregulation, agricultural products were sold, both domestically and internationally, through control boards at a fixed price. The agricultural cooperative was perceived as the link between the different control boards and the grain producer (Ortmann & King, 2007b:219-220; D’Haese, 2000:16). Since

the deregulation, most of these *cooperatives* have transformed into *companies* (either public or private) (D’Haese & Bostyn, 2001:3). This change in business format did not seem to influence producers much and they still utilise these agricultural companies as providers of financing services, market advisory services and/or storage facilities (Ortmann & King, 2007b:220). According to Van Burick (2008:70), the Director General of Agriculture, Njabulo Nduli, stated that producers’ access to financing is currently the biggest challenge in agriculture. This challenge, combined with an environment where it is perceived that government is not really supporting commercial farming, stresses the fact that strong agricultural companies and agricultural cooperatives are essential in providing financing and support to producers in South Africa.

The Companies Act of 1973 imposed a statutory audit requirement of the financial statements for all companies irrespective of their size, capital structure or business activity. A new Companies Act (No 71 of 2008) was signed into law on the 8th of April 2009. A major difference between the two acts, is the removal of the audit requirement of private limited liability companies by the new act. The reason provided by the government for the removal of the audit requirement for small companies is the elimination of bureaucracy and unnecessary administrative requirements (Firer, 2009). The implementation of this new Act has however been deferred to 1 April 2011 (SAICA, 2011; Gloeck, 2009). Furthermore, all South African listed companies are required to adhere to the International Financial Reporting Standards (IFRSs) as per the International Accounting Standards Board (IASB) (Anon, 2003:1). Therefore, the derivatives traded by these companies, either on behalf of their customers (producers), for speculative purposes or for hedging purposes, have to be disclosed as prescribed by IFRS. There are three IFRS statements specifically applicable to financial instruments, namely:

- IAS 32: Financial instruments: Presentation
- IAS 39: Financial instruments: Recognition and Measurement
- IFRS 7: Financial instruments: Disclosures

The US-based Financial Accounting Standards Board’s (FASB) Statement No.133 is the counterpart of the IASB’s statement IAS 39 on the recognition and measurement

of financial instruments (Green & The Accounting Research Manager Group, 2006:13). During 2002, the FASB and the IASB, signed a memorandum of understanding, referred to as the Norwalk Agreement, where they committed to intensifying their plans to converge the IFRS and US accounting standards (Cheney, 2009:5; FASB, 2002). Notwithstanding these conversion efforts, the accounting process for financial instruments can be very intimidating (Du Toit & Human, 2006:4) because of the inherent complexity thereof combined with a wide range of possible hedging situations (Coetsee, 2006:v; Wallace, 2003:1). This is also the opinion of Sir David Tweedie, the chairman of the IASB, who stated that the accounting rules for financial instruments needed to be addressed urgently as they are very complex (Temkin, 2009). The president of the United States of America, Barak Obama, reiterated this when he highlighted at the G20 conference held in Toronto, Canada, during June 2010, that complex trades (like derivatives) should be brought into the light (Lavin, 2010). In South Africa, Mr Trevor Manuel, the newly appointed head of the National Planning Commission, commented that derivatives have the ability to collapse an entire firm and that globally and locally, more clarity is needed on what he referred to as *this somewhat obscure area of accounting* (Pickworth, 2009). Include the wide spectrum of industries that utilise derivatives in this equation, and it opens the door for many different interpretations of these IFRS statements, so much that according to Ramirez (2007:29) even auditors have different interpretations of IAS 39.

The inherent risk is that the agricultural companies and agricultural cooperatives providing financing and advisory services to the producers have to remain sustainable by presenting sound financial statements to all their stakeholders. A key goal of IFRS is to safeguard investors by achieving uniformity and transparency in the accounting principles (Ramirez, 2007: Preface). Furthermore, financial statements should provide information that is useful and will enable the users thereof to make economic decisions (Hernández Hernández, 2003:784). Misinterpretation and inconsistency in application of the accounting standards may affect the financial statements negatively, which may lead to unsatisfied stakeholders and thereby not safeguarding investors' interests. Finally, these agricultural companies and cooperatives exist primarily to assist producers and their downfall could negatively affect producers and the agricultural industry as a whole.

1.2 THE OBJECTIVE OF THE RESEARCH

1.2.1 Knowledge gap and research contribution

IAS 39 issued by the IASB is accompanied by i) the basis of conclusions that summarises the IASB's considerations in reaching the conclusions on the revisions of IAS 39 (IASB, 2008b:2091-2174), ii) an illustrative example (IASB, 2008b:2175-2183), and iii) a guidance on implementing IAS 39 (IASB, 2008b:2184-2297). When considering the complexity of this subject matter as discussed earlier, these appendixes may not be sufficient when interpreting and implementing the IFRS statements with reference to contracts to buy / sell non-financial items. Furthermore, it does not provide guidance on the business implications that entities face when implementing the IFRS statements. Limited research has been conducted on the types of commodity derivative transactions entered into by agribusinesses and processors and the accounting treatment thereof.

Commodity derivative contracts form a major part of the business operations of South African agribusinesses and processors and the interpretation of IAS 39 relating to the accounting treatment of such commodity derivatives contracts by these entities varies. The external auditors of South African agribusinesses and processors verify and agree with such accounting treatments and consequently sign off these entities' annual financial statements. Varying interpretations and applications of IAS 39 therefore results in incomparability of financial statements of South African agribusinesses and processors by market participants and investment analysts. The envisioned contributions to be made by this research study can therefore be summarised as:

- The identification of key different transaction types utilising commodity derivative contracts that are specific to South African agribusinesses and processors.
- The varying accounting treatments of these transaction types by South African agribusinesses and processors will be determined and it will be established whether the accounting standards on commodity derivatives (financial instruments) are interpreted and applied differently.
- A standard interpretation and methodology on the interpretation of the accounting standards on specifically commodity derivatives will be developed which can serve

both as a benchmark and as best practise to South African agribusinesses, processors and auditors.

1.2.2 Problem statement

Due to rising food prices and a concern over the shortage of food in coming years, it is imperative to ensure that the agricultural sector in South Africa is functioning optimally. This will require strong agricultural companies and agricultural cooperatives supporting the agricultural sector in providing financing and market advisory services. However, as indicated above, the interpretation of IAS 39 and the resultant accounting treatment of derivatives may not be as good as can be. For purposes of this research project, the primary research problem can therefore be defined as follows:

P₁. Does a standard interpretation and application of IAS 39 in terms of commodity derivatives exist in South African agribusinesses?

1.2.3 Research objectives

Based on the aforementioned, the main objective of this study is to investigate the accountancy implications of commodity derivatives in the South African agricultural sector. Furthermore it may also serve to establish a standard methodology for the interpretation of IAS 39 to serve as a benchmark and best practise for South African agribusinesses and processors. Following from this, the following seven secondary objectives can be identified:

- i. To obtain general information about South African agribusinesses and processors and the services they offer their customers and investigate the extent to which the agribusinesses use derivatives for their own business practices (transaction types) and financial management purposes.
- ii. Identify various transaction types utilised by South African agribusinesses and processors. This will be done in order to determine the accounting treatment of these transaction types by South African agribusinesses and processors, which will then establish the varying applications and interpretations of IAS 39 in terms of commodity derivatives.

- iii. Based on the findings of the accounting treatment of IFRS on the commodity derivatives, the opinions of the Big Four audit firms; Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers; will be obtained and compared.
- iv. Consideration of whether the agribusinesses are changing their business operations and practices to comply with the IFRS requirements.
- v. Consideration of the primary purpose of financial statements, especially in the context of decision making in the agricultural industry.
- vi. Consideration of whether the financial managers in the agribusinesses and processors are up to date in respect of the IFRS requirements for derivatives.
- vii. Based on the findings of the above objectives, a comparison will be made to similar studies conducted in other parts of the world.

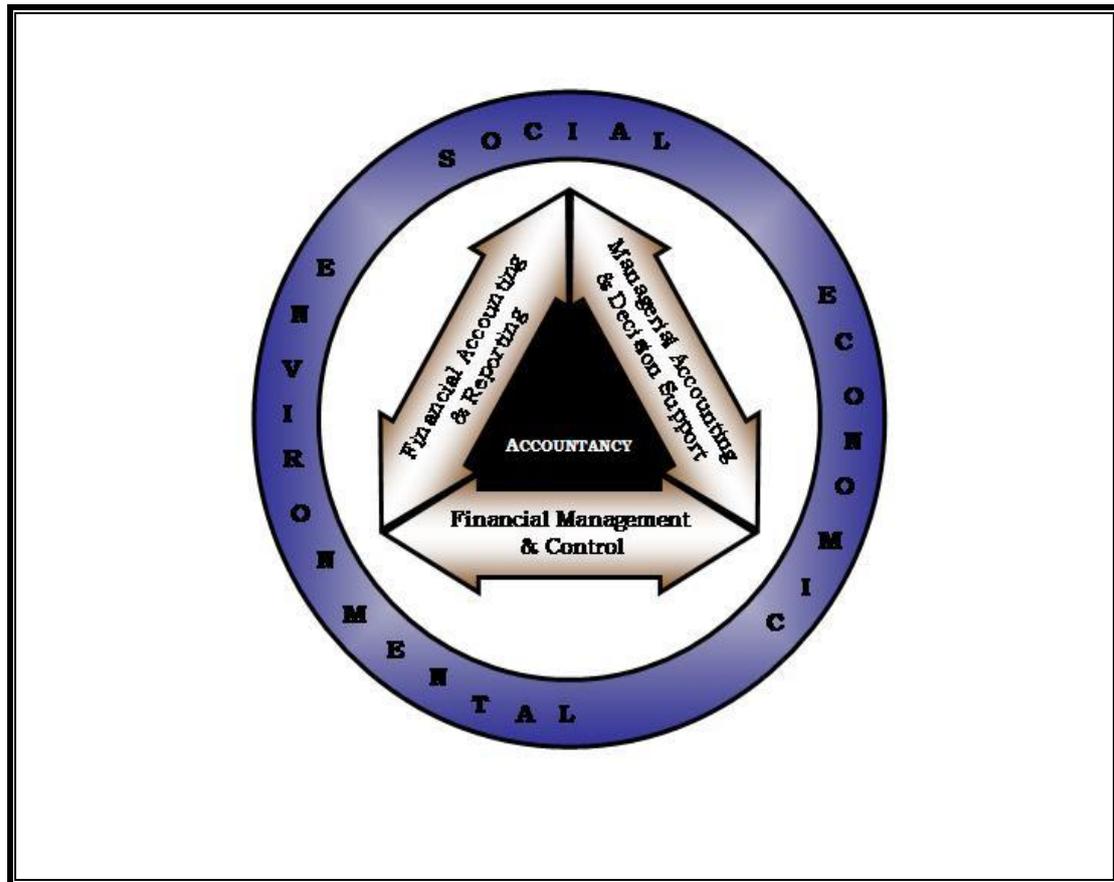
The focus of this study is **not** to analyse and compare the annual financial statements, but rather to consider the impact of these IFRS statements on the agribusiness and processors' financial operations.

1.3 RESEARCH METHODOLOGY

1.3.1 Context of accountancy

Accounting is a diverse discipline with many areas of specialisation (Glautier & Underdown, 2001) and the economy, environment and society all influence these specialisation areas. In order to obtain a better understanding of the objectives and scope of the study, it is imperative to define and differentiate between financial accounting, financial management and management accounting as disciplines in its context of accountancy as a whole. Figure 1.2 below attempts to provide a possible schematic presentation of the interaction of certain key focus areas.

Figure 1.2: Accountancy in context



Source: (Author)

Financial accounting is defined by the Dictionary of Finance and Banking (2005:152) as the branch of accounting associated with the recording, measuring and classifying of the transactions of a business and is primarily concerned with providing a true and fair view of the activities of a business to external parties. The Longman Business English Dictionary (2001:5) defines it as accounting concerned with the preparation of financial statements rather than with the examination of costs and profits in each business segment, while Drury (2008:7) highlights that financial accounting is concerned with providing financial information to external parties, and as such the financial accounting statements must be prepared in compliance with the generally accepted accounting principles (GAAP) set by the regulatory bodies such as the IASB (based in the UK), or the Financial Accounting Standards Board (FASB) in the United States. It can therefore be concluded that financial accounting is concerned with the provision of financial reports, set in accordance with GAAP, to external parties. Such

external parties include investors, banks, shareholders, suppliers and regulators, while internal parties include employees such as managers.

Financial management is defined by the Dictionary of Finance and Banking (2005:154) as the branch of financial economics that is concerned with the questions of business funding and the management of the business in the interests of its shareholders. Correia, Flynn, Uliana and Wormald (2007:1-3) highlights that financial management relies heavily on disciplines such as economics and accounting and that the financial manager will be required to analyse and interpret financial accounting data as found in organisations. The financial manager needs to place reliance on information published in the financial statements of companies. The financial management function revolves around the financial manager obtaining and securing scarce resources and allocating these to the most productive uses with the objective of maximising shareholder wealth (Kriek, Beekman & Els, 2008:11). It can therefore be concluded that financial management is concerned with managing a business with the aim of maximising shareholder wealth.

Drury (2008:7) defines management accounting as accounting concerned with the provision of decision-useful information to internal parties to assist them with improving efficiency and effectiveness of existing operations. According to Horngren, Datar, Foster, Rajan and Ittner (2009:30) management accounting measures, analyses and reports financial and non-financial information to assist managers in making decisions to fulfil the strategic goals of the organisation. There are no rules or principles that management accounting information or reports have to follow. Management accounting is defined by the Dictionary of Finance and Banking (2005:252) as the techniques used to collect, process and report financial and quantitative data in an organisation to assist with its effective performance measurement, planning, control, pricing and decision making. It can therefore be concluded that management accounting is concerned with providing decision support to management in order to ensure effectiveness and efficiency in primarily the internal business operations.

As illustrated in the above figure, all three these specialisation areas operate and interact within the broader social responsibility areas of the society, the environment and the economy. The accounting research focus area of this study is more on the

financial accounting (externally focused) and financial management (internally focused) disciplines and the terms accounting and accountancy are used in this context.

1.3.2 Research paradigm

When designing a research project, it is imperative not only to consider the area of research, but also the theoretical frameworks applicable to the study. Differing research approaches will therefore be explored by considering the differing paradigms to sociological research. A paradigm can be defined as system of thinking and practice, defining the nature of the researcher's enquiries (Terre Blanche, Durrheim and Painter, 2006:562). Therefore, depending on a researcher's paradigm, different researchers may give varying accounts of the same research conducted. It is therefore important to understand the paradigm within which a researcher operates. Burrell and Morgan (1979) developed a two-by-two matrix to assist in classifying and understanding the existing sociological theories based on four major paradigms. On the other hand, the "Three Worlds Framework" was developed by Mouton (1996) and can be used to illustrate the methodological differences between research approaches in the social sciences (see Figure 1.4 below). Burrell and Morgan's "Four Paradigms of Social Theory" (refer to Figure 1.3 below) will first be discussed, followed by the "Three Worlds Framework" developed by Mouton (refer to Figure 1.4 below).

1.3.2.1 The Burrell and Morgan framework

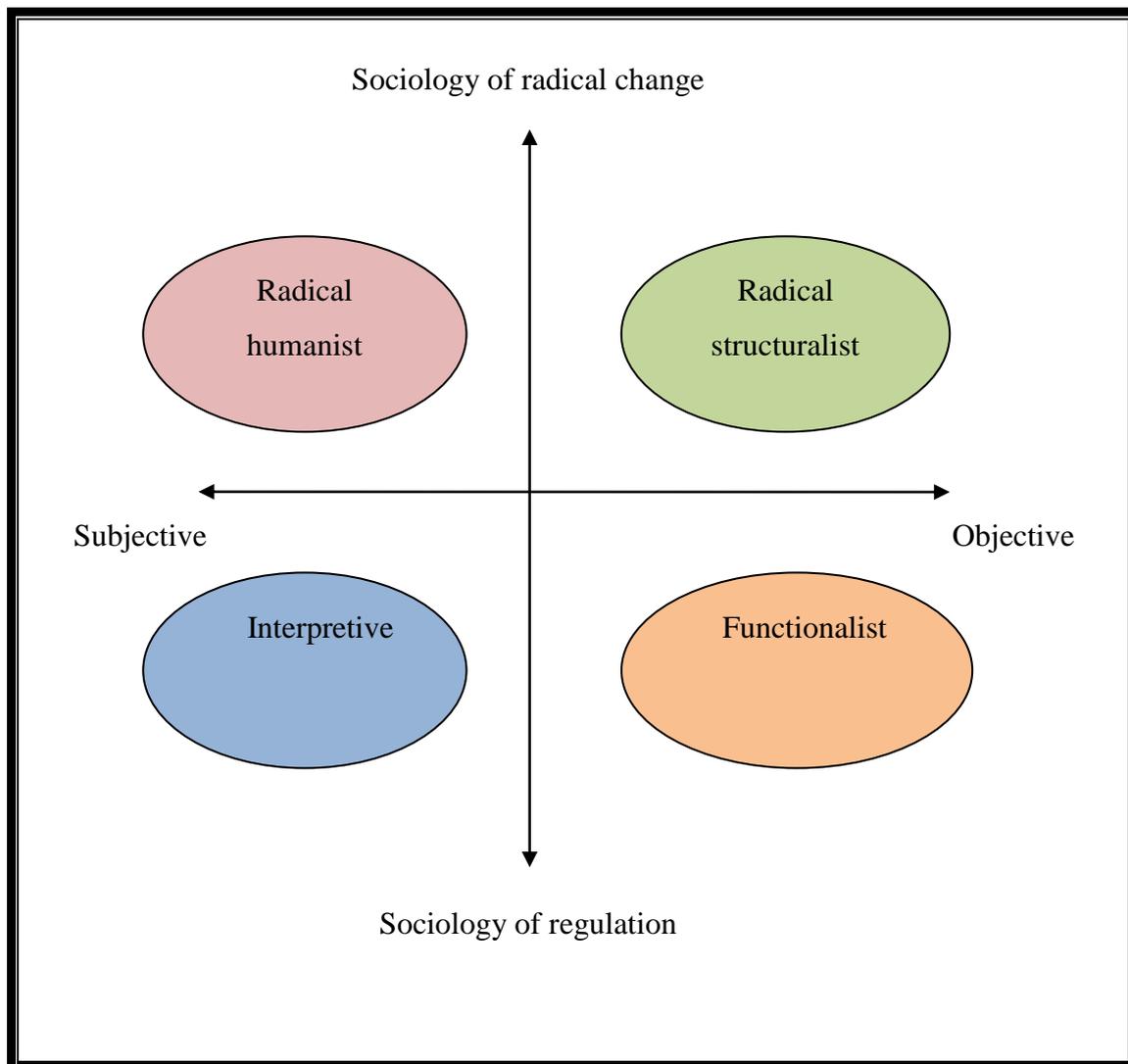
As mentioned previously, Burrell and Morgan's framework is a two-by-two matrix with two fundamental issues forming the foundational axes of this matrix. These are:

- Social theories that emphasizes regulation versus those highlighting radical change; and
- Subjective theories versus objective theories.

Moving on the horizontal axis of the matrix, a subjective researcher will focus on how individuals interpret, create and modify the world where reality is found, while objective researchers on the other hand will focus more on the relationships and human affairs. Figure 1.3 shows the four paradigms of the analysis of social theory as

seen by Burrell and Morgan. Moving on the vertical axis of the matrix, the framework considers social order. The notion of sociology of radical change is interested in studying the existence of structural conflict and radical change, while the sociology of regulation reflects unity and the need for regulation in human affairs.

Figure 1.3: Four Paradigms of Social Theory



Source: (Burrell and Morgan, 1979)

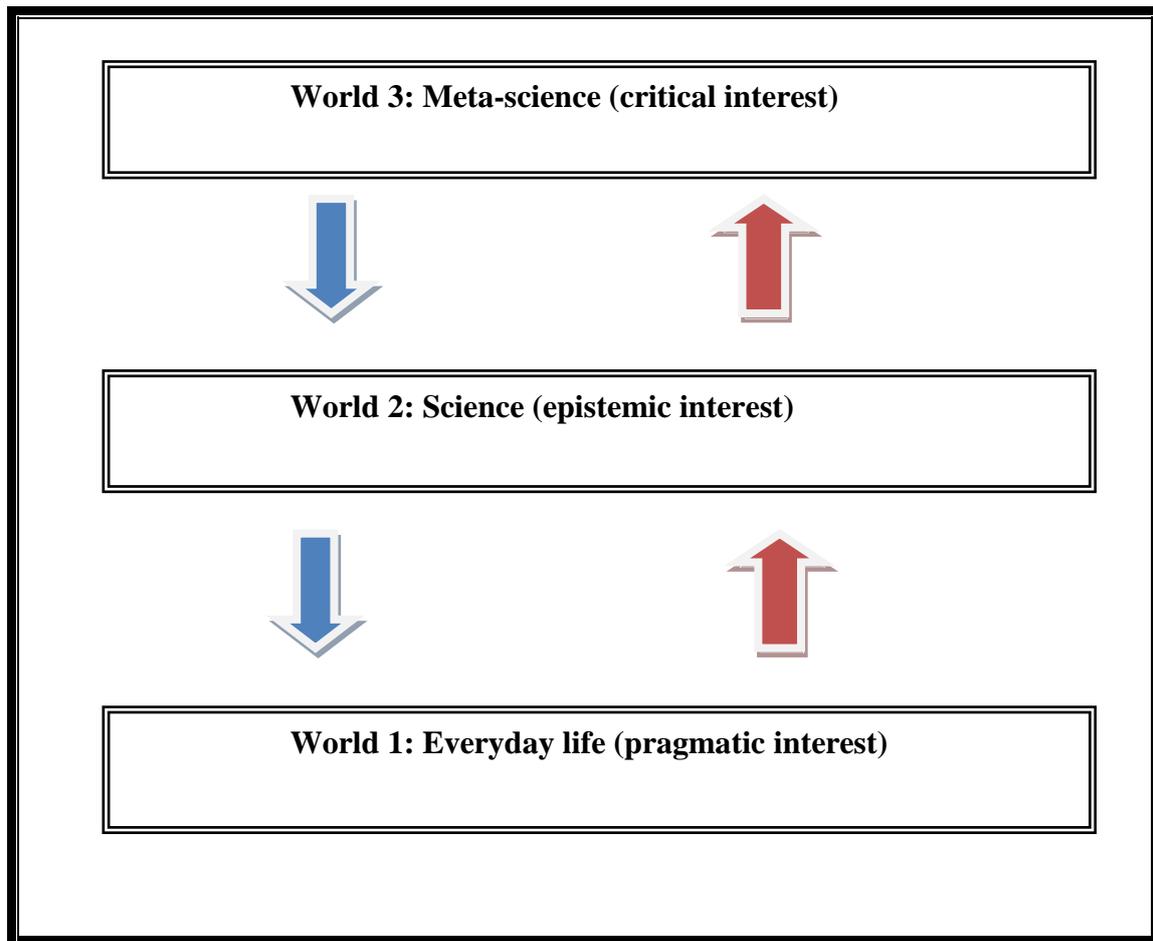
Each quadrant of the matrix represents a paradigm. The first paradigm is the **radical humanist** (subjective – radical change) paradigm. In this view the consciousness of man is dominated by ideological superstructures which drive a wedge between himself and his true consciousness and prevents true fulfilment. The second paradigm is the **radical structuralist** (objective – radical change) who believes that radical

change is built into the nature of society's structures. The **interpretive** paradigm (subjective – regulation) aims to understand society from an individual's viewpoint. Finally, the **functionalist** paradigm (objective – regulation) seeks to provide rational explanations for human behaviour, therefore aiming to find practical solutions to a problem. The functionalist paradigm is deeply rooted in sociological positivism. The four paradigms have been explained in this paragraph, the paradigm selection for this thesis will be explained more in paragraph 1.3.2.3.

1.3.2.2 The Three World's Framework

The Three Worlds framework is illustrated in Figure 1.4. The context of World 1 as illustrated, is the pragmatic interest which refers to the lay knowledge used to perform our everyday tasks. This can include social or practical problems in accounting, for example the interpretation of accounting standards and revisiting the objectives of financial statements. World 2 encompass the epistemic interest in which World 1 phenomena are selected and turned into objects of inquiry. This World provides the body of knowledge in areas such as accounting and commodity derivative contracts. This information will be obtained in this research study through concepts and definitions, accounting standards and questionnaires and interviews. World 3 represent the critical interest which is the reflection of science and scientific research by concentrating on the reasons and justifications for certain actions (Mouton, 2009:138; Van der Schyf, 2008:5). Schroeder, Clark and Cathey (2005:102) has highlighted that paradigms in the philosophy of accounting as a science can be formed by developing accounting theories using multiple research methodologies.

Figure 1.4: The Three Worlds Framework



Source: (Mouton, 2009:139-141; Van der Schyf, 2008:5; Babbie & Mouton, 2001:15 adapted)

1.3.2.3 Paradigm selection for thesis

As stated earlier, the main objective of this study is to investigate the accountancy implications of commodity derivatives in the South African agricultural sector. Furthermore it is also intended to help establish a standard methodology for the interpretation of IAS 39 to serve as a benchmark and best practise for South African agribusinesses and processors. Therefore two phenomena merit investigation into this area. Firstly, the South African agribusinesses and processors and their use of commodity derivatives in their daily operations should be explored, which will be done by identifying transaction types utilising commodity derivate contracts unique to the sector. Secondly, the accounting treatment of these transaction types should be researched and compared against the accounting treatment prescribed by IAS 39. The

above research objectives were formulated based on these two aspects. The research study will encompass both a literature study and empirical study. The empirical study will be conducted by using a developed questionnaire completed during structured interviews (refer Chapter 4, page 118).

When considering Burrell and Morgan's framework, this research study can be categorised in both the interpretive and functionalist paradigm. A multi-paradigm approach will therefore be followed. According to Gioia and Pitre (1990:584) a multi-paradigm approach produce a more comprehensive view of phenomena. Some view accounting as a multi-paradigm science (Chau, 1986:602). Case studies are preferred methods in the interpretive paradigm and findings cannot always be generalised. A functionalist tries to find practical solutions to everyday problems. This research project follows a case study approach and the findings and recommendations will be unique to the agricultural sector. Clear and practical recommendations will be provided to the respondents on how to account for commodity derivatives.

Considering the Three Worlds framework, the research approach utilised in this study falls primarily into two areas. On the one hand, there are the pragmatic aspects of the daily activities and the different interpretations of the accounting standards, which may typically be considered as falling in the domain of World 1. On the other hand there is the epistemic interest in why certain actions are taken and understanding why certain conclusions regarding the accounting standards are made, which in turn may be considered as being part of the World 2 domain. Furthermore, the theoretical framework in which the study will be concluded falls primarily in the interpretivist framework, which according to Carson, Gilmore, Perry & Gronhaug (2009:153) and Levy (2006:373) allows the focus of the research to be an understanding of what is happening in a given context.

1.3.3 Research design

The above discussions and objectives have facilitated the need to conduct both a thorough literature review and empirical study, both of which are discussed in more detail below.

1.3.3.1 Literature study

The literature study will follow a two-pronged approach. Firstly, consideration will be given to published academic research in this area and secondly, a review of the practical applications and regulatory compliance will be conducted in the form of the review of annual financial statements of agribusinesses nationally, governmental reports, statistical information regarding agriculture from institutions including the Big Four audit firms, the National Agricultural Marketing Council and SAFEX. In support hereof reviews of the relevant IFRSs as well as the accompanying user guides, application guidelines, bases of conclusions, illustrative examples and implementation guides will also be performed. The literature study aims to achieve the following and fill the knowledge gap:

- To obtain a sound foundation of the key principles and problems set against the background of the agricultural sector in South Africa; and
- To use this knowledge to develop the questionnaire (refer Appendix 3) to be used in structured interviews with the agribusinesses and processors during the empirical study.

1.3.3.2 Empirical research

The empirical study will use the questionnaire developed following the literature study. It will be developed in such a way as to obtain the required information in the most effective manner. The study field will consist of seven respondents: one agricultural cooperative, four agricultural companies, one miller and a processor and include AFGRI Limited, Free State Maize (Pty) Ltd, NWK Limited, Ruto Mills, SENWES Limited, Tongaat Hullett Starch and Vrystaat Koöperasie Beperk, all of which have given permission to mention that they are part of the study field. Interviews will be conducted with chief financial officers, chief operating officers, financial directors, financial managers, senior accountants and representatives from trading departments of these agribusinesses and processors. After the interviews with the seven respondents, interviews will be conducted with representatives of the technical departments of three of the Big Four audit firms (Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers) that agreed to take part in the study under condition of anonymity. The aim of these interviews was to obtain and contrast

opinions regarding the accounting treatment of commodity derivatives by the seven respondents.

The study will be conducted and approached as a case study in the context of the agribusiness industry, for the following reasons:

- The focus will be on the treatment of commodity derivatives;
- in its context as a financial instrument;
- within a specialised industry;
- focusing on entities involved in grain trading;
- with a limited number of companies selected using convenience sampling as sampling technique; and
- by analysing nine different transaction types or products offered to customers.

The results from the questionnaires that will be completed during the research will be specific to the South African agricultural sector and as such it will be unique. Therefore it may not necessarily be possible to generalise the results, which is another reason why the case study approach was decided upon. Cooper & Morgan (2008:159) have illustrated the value of case study research in financial accounting and managerial accounting by emphasising its potential for theory development and generating new knowledge. Refer to Chapter 4 from page 108 onwards for more detail on the research design of this study.

1.4 TERMS OF REFERENCE

For purposes of this study, the following serves as a terms of reference.

Agribusiness: Businesses that support the operations involved in the production and distribution of primary agriculture including value-adding enterprises further down the agricultural value chain (Esterhuizen, 2006:26; Cook & Chaddad, 2000; Davis & Goldberg, 1957). For purposes of this study, an agribusiness represents either an agricultural company or an agricultural cooperative or both. These agribusinesses are responsible for providing services such as financing, risk management, market advisory services or storage to primary producers.

Agricultural company: A company operating in the agricultural sector delivering services to producers and processors with the aim of increasing shareholders wealth. Agricultural companies generally represent agricultural cooperatives converting to private ownership as a private company or listing on the JSE Limited as a publicly owned company (Ortmann & King, 2007b:220; Piesse *et al.*, 2005:205).

Agricultural cooperative: A cooperative operating in the agricultural sector delivering services to producers and processors for the benefit of its members (ICA, 2009; Webster's Dictionary and Thesaurus, 2006:84; Longman Business English Dictionary, 2001:99).

Case study research: The study of an individual or group as an object of interest in its own right in order to answer specific research questions (Bryman & Bell, 2007:63; Lindegger, 2006:460-461; Gillham, 2005:1; Yin, 2003:4).

Derivative: A financial instrument that changes in value in response to changes in a specified interest rate, commodity price or foreign exchange rate, requires little or no initial investment and is settled at a future date (Van der Merwe, 2009:62; IASB, 2008b:1998; Ramirez, 2007:6-7).

Epistemology: Research driven by the pursuit of valid knowledge (Mouton, 2009:138; Terre Blanche & Durrheim, 2006:6; Webster's Dictionary and Thesaurus, 2006:129).

Ethics: Involving human behaviour or morality that should guide a member of a profession (Tseng, Duan, Tung & Kung, 2010:587; Longman Business English Dictionary, 2001:160; Taylor, 1975).

Financial accounting: Accounting concerned with the provision of financial reports set in accordance with GAAP to external parties (Drury, 2008: 7; Dictionary of Finance and Banking, 2005:152; Longman Business English Dictionary, 2001:5).

Financial instrument: Any contract that gives rise to both a financial asset in the one entity and a financial liability or equity instrument in another entity. Sometimes the word financial instrument is used interchangeably with derivative (Van der Merwe, 2009:60; IASB, 2008a:1562; Coetsee, 2006:2).

Financial management: Financial management is concerned with managing a business with the aim of maximising shareholder wealth (Kriek, Beekman & Els, 2008:11; Correia *et al.*, 2007:1-3; Dictionary of Finance and Banking, 2005:154).

Interpretivism: Allowing the focus of research to be an understanding of what is happening in a given context (Carson *et al.*, 2009:153; Levy, 2006:373).

Management accounting: Accounting concerned with the provision of decision support to management in order to ensure effectiveness and efficiency in business operations (Horngren *et al.*, 2009:30; Drury, 2008:7; Dictionary of Finance and Banking, 2005:252)

Positivism: The central task of research is to develop explanations of phenomena by concentrating on discovering pure fact (Van der Walt, 2005:29; Otley & Berry, 1998:S108; Moore, 1982:70)

Processor: An entity refining or preparing substances to be sold or to be used as part of another product (Longman Business English Dictionary, 2001:374)

Research: A systematic investigation of a certain subject towards increasing the sum of knowledge (Webster's Dictionary and Thesaurus, 2006:319; Longman Business English Dictionary, 2001:411).

Research design: A research design provides a map whereby a researcher should travel in order to reach conclusions with the research objectives being the landmarks along the way (Mouton, 2009:55; Blumberg, 2008:69; Cooper & Schindler, 2008:140; Durrheim, 2006:34; Selltiz, Jahoda, Deutsch & Cook, 1965:50).

Research methodology: Refers to the methods (tools) used to obtain answers to the research questions and thus achieving the set objectives (Henning, Van Rensburg & Smit, 2009:36; Leedy & Ormrod, 2005:12; Babbie & Mouton, 2001:75).

Respondents: Individuals, companies or cooperatives partaking in the research study by providing data in free will (Webster's Dictionary and Thesaurus, 2006:320; Longman Business English Dictionary, 2001:413).

Sustainability: The ability to maintain or continue existing for a long time (Webster's Dictionary and Thesaurus, 2006:382; Longman Business English Dictionary, 2001:480). (Economic) sustainability is described by (Jennings, 2004; Nelson & Wilson, 2003; Doane & MacGillivray, 2001:15) as the interpretation of how entities could stay in business, without harming the environment or damaging the social fabric of the community.

1.5 STUDY OVERVIEW

The study will be conducted in six chapters as follows:

Chapter 1: Introduction

The first chapter served as an introduction to the research study. The background to the study, the research objectives, foreseen contributions and a discussion of the proposed research method were provided. The terms of reference were also clearly stated.

Chapter 2: Agribusinesses and commodity derivatives

The second chapter will consist of a literature review on the history and operations of South African agribusinesses. An overview of the relevant commodity derivatives traded by these agribusinesses will be provided followed by a discussion of SAFEX as price forming mechanism in South Africa. A list of services offered by agribusinesses will conclude the chapter.

Chapter 3: Accounting treatment of commodity derivatives

The third chapter will mainly consist of a literature review of the history of the relevant IFRSs, a comparison between the IFRSs and US GAAP and the impact thereof globally and on the agricultural sector in South Africa. Consideration will be given to the purpose of financial statements and ethical considerations in the application of financial standards.

Chapter 4: Research design and methodology

The fourth chapter will elaborate on the research methodology and research design followed by providing details regarding case study research, the sampling technique utilised and data collection techniques. Research ethics will also be discussed in this chapter.

Chapter 5: Empirical research findings

The fifth chapter of the study will cover the findings obtained during the empirical study by comparing the research objectives with the research findings.

Chapter 6: Conclusions and recommendations

The final chapter of the study will conclude with the conclusions and recommendations based on the research conducted.

CHAPTER 2

2 AGRIBUSINESSES AND COMMODITY DERIVATIVES

2.1 INTRODUCTION

The main research objective of this research study is to investigate the accountancy implications of commodity derivatives in the South African agricultural sector. Furthermore it may also serve to establish a standard methodology for the interpretation of IAS 39 to serve as a benchmark and best practise for South African agribusinesses and processors. This chapter will provide background to the history of South African agribusinesses and their day-to-day business operations. Knowledge of this is required in order to gain a better understanding of the environment in which these entities operate. An overview of the commodity derivative contracts used in these agribusinesses is then provided in order to better understand the context of the accounting treatment of these relevant commodity derivatives.

According to Esterhuizen (2006:1) agribusinesses have to compete both locally and internationally and in order to survive, these entities have to become and remain *competitive*. It is also imperative that agribusinesses become and remain *sustainable* in order to support primary producers responsible for basic food production. Many producers and industries are heavily exposed to the price fluctuations of commodities resulting in exposure to financial risk (Geyser & Cutts, 2007:291). These price fluctuations may have a significant impact on their competitive position (Ramirez, 2007:391) and therefore the financial risk should be managed very carefully. Derivative contracts serve a valuable purpose by providing a means to manage financial risk (Chance & Brooks, 2008:1). Many commodity derivative contracts are utilised by companies as an integral part of their day-to-day operations (Ramirez, 2007:391).

The global derivatives market has experienced explosive growth over the last few decades and derivatives have been globally accepted by large organisations as the premier vehicles to manage and mitigate financial risk (Chance & Brooks, 2008:1; Skerit, 2006:384; Gebhardt, Reichardt & Wittenbrink, 2004:341; Shin, 2004:3). This was evident in a survey conducted during 2003 by the International Swaps and

Derivatives Association (ISDA), which indicated that 459 of the world's 500 largest companies used derivative products as part of their risk management strategies (ISDA, 2003). According to Chance and Brooks (2008:2) the Bank for International Settlements of Basel in Switzerland estimated that at the end of 2005 over-the-counter derivatives contracts outstanding worldwide covered underlying assets of over US\$285 trillion. In comparison, gross domestic product in the United States at the end of 2005 was approximately \$13 trillion. During 2008 the Futures Industry Association (FIA) ranked the JSE in *South Africa* as the 10th largest derivative exchange in the world by the number of contracts traded. The number of contracts traded during the first six months of 2008 were more than 216 million, a growth of 61% over the corresponding period in 2007 (Anon, 2008a). During 2007, the Agricultural Products Division of the JSE in South Africa, commonly known as SAFEX, traded 2.4 million contracts. SAFEX trades white maize, yellow maize, wheat, sunflower seeds and soy beans with white maize considered as the most liquid contract (SAFEX, 2009b).

In order to gain an understanding of the accountancy implications of commodity derivatives in the agricultural sector in South Africa, four aspects have to be considered. Firstly an understanding of the agribusiness sector has to be gained and secondly foundational knowledge of the derivative instruments that these agribusinesses utilise to manage their risks and the services they provide, is required. Thirdly an understanding of how price determination on SAFEX works and fourthly a knowledge of the services that are provided by the agribusinesses are required. These concepts are considered in more detail in the following sections.

2.2 BACKGROUND OF AGRICULTURAL COOPERATIVES

In South Africa the agricultural cooperatives were traditionally seen as the link between the primary producer and the various grain control boards (before deregulation). In later years these agricultural cooperatives transformed to agricultural companies. In order to gain an understanding of the agribusiness sector, the history of agricultural cooperatives has to be considered.

2.2.1 Definition of agricultural cooperatives

The Webster's Dictionary and Thesaurus (2006:84) defines a cooperative as an organisation or enterprise owned by its users and operated for the benefit of those utilising its services. The Longman Business English Dictionary (2001:99) defines a cooperative as any company, factory or organisation whose employees own an equal share of it, while an agricultural cooperative is defined by Longman as a cooperative bringing together and selling the products produced by small farmers. The International Co-operative Alliance (ICA, 2009) defines a cooperative as an autonomous association of persons voluntarily united to meet their common economic, social, and cultural needs and aspirations through a democratically-controlled and jointly-owned enterprise. According to Ricketts & Ricketts (2009:133) cooperatives are typically not formed to make profits, but rather to serve its members. The conclusion could therefore be reached that cooperatives are owned by their members to provide goods and services to members for their personal benefit and not to make profits.

2.2.2 History of agricultural cooperatives

In order to gain a better understanding of the agribusiness sector today, the establishment of cooperatives, the effect of deregulation of the maize industry and its effect on the modern day agribusiness will now be considered.

2.2.2.1 Establishment

The Pietermaritzburg Cooperative Society Limited that was registered in 1892 in South Africa, Natal province, is generally seen as the first cooperative established in the country (Ortmann & King, 2007a:45; Grobler, 2006:12; Van Niekerk, 1986:19). However, the cooperative was registered according to the Companies Act because a cooperatives act did not exist at that time (Van Niekerk, 1986:19-20; Ortmann & King, 2007a:45). Several more cooperatives, mainly agricultural cooperatives, were registered under the Companies Act until 1922, when the first Cooperatives Act, Act No. 28 of 1922, was passed (Ortmann & King, 2007a:45; Van Niekerk, 1986:24). The Land and Agricultural Bank (Land Bank) was established in 1912 in order to assist with the development of agriculture in South Africa (Piesse *et al.*, 2005:200;

D'Haese, 2000:33). This Act defined the function of the Land Bank as a provider of *financing* vital to the further development of cooperatives to both producers and cooperatives (Grobler, 2006:14; Van Niekerk, 1986:26). Furthermore the Land Act of 1913 included measures to support white commercial producers and initiatives that provided the foundations for the establishment of cooperatives (Ortmann & King, 2007a:46; Piesse *et al.*, 2005:200).

The Cooperative Societies Act No. 28 of 1922 was introduced in order to regulate cooperatives focusing mainly on agricultural cooperatives (Ortmann & King, 2007a:45; Piesse *et al.*, 2005:200; Van Niekerk, 1986:28). The result of the legislation was a national recognition of cooperatives and an increase from 81 cooperatives in 1922 to 405 cooperatives in 1929. The new act determined that cooperatives previously registered under the Union Act of 1910 (Anon, 2010) or the Companies Act of 1926 (Act 46 of 1926) (CIPRO, 2010) were now registered under the new cooperatives act and it was also the first *national* legislation, therefore controlling cooperatives in all four provinces of South Africa at that stage. The Registrar could therefore manage and advise all cooperatives uniformly (Van Niekerk, 1986:28). The Marketing Act of 1937 affected the development of cooperatives directly because control over most of the agricultural products was handed over to control boards overseen by the Minister and the National Agricultural Marketing Council (NAMC) (Grobler, 2006:15). The cooperatives were appointed as agents to the respective control boards (Piesse *et al.*, 2005:201).

In 1939 the Cooperative Societies Act 29 of 1939 consolidated Act 28 of 1922 and changes thereto. One of the most important amendments was that provision was made for a new type of cooperative with limited liability that focused on agricultural activities (Ortmann & King, 2007a:45; Van Niekerk, 1986:32). This Act was the start of a new era of growth in the turnover of cooperatives and also represented the framework, broad basis and contents of Act 91 of 1981 that was passed by the SA Parliament in October 1981 (Van Niekerk, 1986:32).

2.2.2.2 Deregulation of the maize industry

During the late 1980s the first steps were taken to deregulate the maize market (NAMC, 2003:7). Several market research studies and reports (BTT, 1992; Van Zyl,

Fényes & Vink, 1992; Pringle, 1980) were conducted and cooperatives realised that a movement towards a free market system was imminent (Grobler, 2006:20). The market was finally deregulated during 1996 by the promulgation of the Marketing Act No 47 of 1996 (Doyer *et al.*, 2008:270). The role of cooperatives in South Africa changed with deregulation because they were no longer agents for the control boards and the state did not utilise them as a channel to allocate subsidies (Piesse *et al.*, 2005:202).

A result of political changes occurring leading up to the 1994 South African elections was the elimination of support to commercial farmers and cooperatives (Doyer *et al.*, 2008:270), which placed pressure on the incomes of agricultural cooperatives due to the fact that sales through control boards were abolished. Since producers were no longer obligated to sell their products through agricultural cooperatives they became its competitors (Lubbe, 1994). These major policy reforms combined with deregulation during 1996 prompted many producers, cooperatives and agribusinessmen to reconsider their role in the sector and rethinking their marketing strategies (Doyer *et al.*, 2008:270). A positive change flowing from all this was that agricultural cooperatives were no longer bound to their borders of operation and they could enter into alliances, associations and other forms of cooperation to enable them to better cope with the free market system (Lubbe, 1994). All these changes led to agricultural cooperatives converting to either private ownership or public ownership by listing on the JSE (Ortmann & King, 2007b:220; Piesse *et al.*, 2005:205). Many studies were conducted to investigate the changing role of agricultural cooperatives after deregulation. A study conducted by Grobler (2006) investigated the reasons as to why an agricultural cooperative would want to change to an agricultural company. Grobler (2006) found that the main differences between an agricultural cooperative and an agricultural company include the following:

- Agricultural *cooperatives*' main objective is not make a profit but is operated for the benefit of their members. An agricultural *company* on the other hand is focused on maximising wealth to the advantage of its shareholders.
- With reference to the composition and structure of a business form, an agricultural *company* is controlled by its shareholders depending by the number of votes a

shareholder has while an agricultural *cooperative* is controlled by its members with each member limited to one vote.

- When considering the value of shares combined with the potential growth, shares in an agricultural *company* are very different from shares in an agricultural *cooperative*. The share value in an agricultural company is more volatile and grows as the company performs, while a share's value in a cooperative cannot grow and the nominal value thereof is paid out at retirement.

The main reasons provided by the respondents for changing business ownership include political reasons, business considerations and the advantages that a company can offer over the possibilities offered by a cooperative (Grobler, 2006:147). A study conducted by D'Haese and Bostyn (2001) focused on the strategic challenges confronting South African agricultural cooperatives and their need for transformation from cooperatives to agricultural companies. Their findings included that deregulation and the resultant exposure to international competition changed the economic environment of agricultural cooperatives. This new economic environment is characterised by increased competition and a need to be more efficient (D'Haese & Bostyn, 2001:10). An article examining the changing governance structures in South African agribusinesses were published during 2008 by Doyer, D'Haese, Van Rooyen, Kirsten and D'Haese (2008:269), which found that in order for agribusinesses to ensure competitiveness, they had to adapt to changing governance structures in a relatively short time. Another study by Piesse, Doyer, Thirtle and Vink (2005), which investigated the changing role of grain cooperatives in their transition to competitive markets in South Africa, found that the increased competition resultant from deregulation and the subsequent removal of subsidies led to increased efficiency levels by South African grain cooperatives.

Despite the conversions from agricultural cooperatives to agricultural companies, the South African government is promoting the use of cooperatives to assist the development of small-scale farmers and has therefore promulgated a new Cooperatives Act in 2005, Act 14 of 2005 (Ortmann & King, 2007b:220), which is based on international cooperative principles as promoted by the International Cooperative Alliance (ICA). Due to the conversion from cooperative to company, these companies now adhere to the Companies Act compared with cooperatives

adhering to the Cooperatives Act. By 2001 an estimated 70 out of 246 agricultural cooperatives registered with the Registrar of Cooperatives have transformed to companies (D'Haese & Bostyn, 2001:3).

Considering the above history, a clear distinction has to be made between an agricultural cooperative and an agricultural company. Both types of entities trade derivative instruments either for hedging themselves or their customers against price risk. Other agribusinesses also trade commodity derivatives to protect themselves against price risk.

2.2.2.3 Modern day agribusinesses

A study conducted by Esterhuizen, Van Rooyen and D'Haese (2008:45) found that even though the agribusiness sector in South Africa is only marginally competitive, the situation is continuously improving. According to this study the executives in the agribusiness sector indicated that the factors constraining competitiveness are inflexible labour policies, high cost of crime and the incompetence of personnel in the public sector. However, the key success factors enhancing the competitiveness of the sector include the production of affordable, quality products, continuous innovation and intense competition in the local market.

Agricultural companies therefore have to ensure that they operate efficiently and effectively in order to increase their own competitiveness. Their use of derivative instruments to transfer and mitigate risks has to be optimised to ensure that long-term sustainability is achieved. The different derivatives utilised and the markets and exchanges they trade on will now be discussed.

2.3 COMMODITY DERIVATIVES

As mentioned earlier derivatives are typically utilised to manage financial risk. Producers either sell their products to agricultural companies, or utilise their market advisory services. In both instances the agricultural company has the option of hedging itself against agricultural commodity price fluctuations, and commodity derivatives are the vehicles used to manage and mitigate these risks (Lu & Neftci, 2008:138). Research conducted by Botha (2005) investigated the use of derivatives

by South African agricultural cooperatives to hedge financial risks. This research firstly focused on identifying the derivative instruments and their applicability to mitigate risks faced by South African cooperatives. Secondly this research considered to what extent cooperatives utilised these derivatives to hedge financial risks. The conclusion was that although many derivatives were available, not all cooperatives made use of these instruments to hedge financial risks.

However, it is not only the producers that utilise commodity derivatives (more specifically options and futures) to manage price risk, processors, as *buyers* of commodity products and inclusive of grain millers, also make extensive use thereof for hedging purposes as was highlighted by research conducted by Bullock, Wilson and Dahl (2003:1).

2.3.1 Definition of commodity derivatives

Group of Thirty (1993) provides a classic definition for a derivative as a contract which value is dependant on (or derives from) the value of an underlying asset, index or reference rate. A derivative can also be defined as a contract between two parties that requires a payment (or multiple payments) from one party to the other depending on some underlying value or price (Trombley, 2003:9). IAS39 defines a derivative as a financial instrument which value changes in response to changes in the “underlying” price or index, no or very little initial investment is required, and it is to be settled at a future date (Van der Merwe, 2009:62; IASB, 2008a:1832; Ramirez, 2007:6-7). It can therefore be concluded that a derivative can be defined as a financial instrument with its value dependant on the value of its underlying commodity.

Derivatives can be utilised for various purposes, but are mainly used to hedge risks that are otherwise not hedgeable and can also be used to generate income (Koya, 2004:23). By utilising derivatives, an entity can transfer, at a price, an undesired risk to another party that has risks requiring offsetting, or who wants to assume that risk (Chance & Brooks, 2008:1). Furthermore, derivatives can be based either on *real assets*, which are physical assets including agricultural commodities, or on *financial assets* which include shares, bonds / loans and currencies (Chance & Brooks, 2008:2).

2.3.2 Derivative classification

Derivatives can either be classified as *exchange-traded* or *over the counter*. Exchange-traded refers to derivatives traded on organised exchanges such as SAFEX and are generally less complex and more liquid than those found in the over-the-counter (OTC) markets (Vorster, Koornhof, Oberholster, Koppeschaar, Coetzee, Janse van Rensburg, Binnekade, Leith & Hattingh, 2008:585). The OTC markets comprise mainly banks and other market makers, such as agricultural companies, that quote customised derivatives to their clients or directly to one another. In South Africa agricultural companies and cooperatives are sometimes considered as the writer of options, but these entities are moving towards exchange-traded options. SAFEX does not trade in sorghum-, ground nuts- and dry beans derivative contracts, and options for these products have to be traded in an OTC market. OTC derivatives have to be settled in full when a contract is entered into while exchanges operate differently (Skerritt, 2006:386). In order for exchanges to operate effectively, it is imperative that they avoid the risk that either the buyer or seller defaults on their obligations. Two systems have been put in place to ensure that such defaults do not occur (Skerritt, 2006:385):

- **Clearing:** Firstly all trades are settled or cleared through a clearing house, which operates as a separate legal entity and acts as the principal counterparty to all trades going through an exchange. The clearing house does not take a position in any trade but interposes itself as the “buyer to every seller” and “seller to every buyer”. This is known as **novation** (Skerritt, 2006:385, Smithson, 1998:95-96). In SAFEX’s case the clearing house is called SAFEX Clearing Company (SAFCOM). A clearing house has enough capital to make defaulting extremely unlikely (Stulz, 2003:132). An example of the effectiveness of a clearing house is found in the USA at the Chicago Board of Trade (CBOT). Since the development of the CBOT’s clearing system in the mid-1920’s, no customer has suffered a loss from the default of a counterparty (Schap & Dan, 2003:23).
- **Margining:** Secondly, a system of margining is employed (Hull, 2008:26; Skerritt, 2006:385). According to Chance & Brooks (2008:267) each derivative contract has an *initial margin*, *variation margin* and *maintenance margin*. An initial margin is the amount payable on the day the transaction is opened and varies from one

exchange-traded contract to another (Megginson, Smart & Lucey, 2008:540; Skerritt, 2006:386; Stulz, 2003:132; Smithson, 1998:93). The differences between the required initial margins for contracts lie in the volatility of the underlying market to which the derivative relates. This initial margin payment is deposited by the broker into a *margin account* held at the exchange (Megginson *et al.*, 2008:540). Generally the investor deposits a required amount into the broker's account. At the end of each trading day, the exchange calculates a **mark-to-market** price for each contract. In the case of SAFEX, the calculation of the mark-to-market price for each exchange-traded contract is different. A valuation of the current position is performed using the mark-to-market price, which is referred to as *mark-to-market*. If the mark-to-market price is higher than the initial margin, the buyer will be required to pay a *variation margin* into the margin account while the seller will receive that variation margin, thus making a profit. This process of mark-to-market occurs daily and is performed by the relevant exchange. The effect thereof is that a futures contract is settled daily rather than at the end of its life (Chance & Brooks, 2008:267; Hull, 2008:26; Skerritt, 2006:386). An investor can withdraw any balance in the margin account in excess of the initial margin. To ensure that the balance in the margin account never becomes negative, a *maintenance margin* is set. This maintenance margin is slightly lower than the initial margin. An example the effect of margining is provided below.

Example 2.1: Margining

A trader enters into a long futures position on behalf of a producer of 10 July 20x9 white maize contracts at a price of R1 300 per ton. Suppose the initial margin requirement is R11 000 per contract. The producer is required to pay an initial margin of $R11\ 000 \times 10 \text{ contracts} = R110\ 000$ into the margin account.

Source: (Author)

2.3.3 Derivative categories

Different opinions exist on the various categories of derivatives. According to Trombley (2003:9) there are two main types of derivatives from which variations and combinations are derived namely options and forward contracts. Skerritt (2006:389)

divides derivatives into three generic categories: futures and forwards, swaps, and options and warrants. For purposes of this study, the following categories will be discussed to illustrate the various categories: futures contracts and forward contracts, option contracts.

2.3.3.1 Futures contracts

A *futures contract* is an agreement between two parties to buy or sell an asset at a future date for a price agreed upon on the current day (Chance & Brooks, 2008:3; Hull, 2008:1). The futures price is considered a forecast of what the commodity cash price will be for a given *future* month based on current information and as such reflects a consensus of the market opinion (NAMC, 2008:13). Futures contracts trade on a futures exchange and are subject to a daily settlement procedure. Daily settlement occurs because of futures price movements leading to investors incurring losses to pay the losses while investors making profits to realise the profits (Chance & Brooks, 2008:3).

Each futures exchange sets contract specifications for each traded contract. These contract specifications include the grade, trading hours, underlying commodity, contract size, expiry date and times, settlement method, quotation unit, minimum price movement and daily limits (SAFEX, 2009a, Chance & Brooks, 2008:258-259; Hull, 2008:22-24; Schap & Dan, 2003:21). In the case of commodity contracts the settlement method indicates the physical delivery of the “underlying” traded commodity. The location of delivery and date of delivery are part of the contract specifications that have to be agreed upon between the parties. SAFEX trades derivative contracts in white maize, yellow maize, wheat, sunflower seeds and soya beans. Below is an example of a futures contract’s specifications for white maize traded on SAFEX:

Table 2.1: Futures contract specifications for white maize traded on SAFEX

Futures contract	WHITE MAIZE
ATS code	WMAZ
Trading hours	09:00 to 12:00
Underlying commodity	“Maize” means white maize from any origin, of the grade “WM1” as defined in the South African Grading regulations, that meets all the phyto-sanitary requirements and import regulations, but is not subject to the containment conditions for the importation of genetically modified organisms.
Contract size	100 metric tons
Expiry dates & times	12h00 on eighth last business day of May, July, September and December and March. Physical deliveries from first business day to last business day of expiry month.
Constant Month Contract	All other calendar months are introduced 20 business days preceding the new month. Once the month is introduced it is traded in the same fashion as the 5 hedging months.
Settlement method	Physical delivery of SAFEX silo receipts giving title to maize in bulk storage at approved silos at an agreed storage rate.
Quotations	Rands/ton
Minimum price movement	Twenty cents per ton
Daily limits	R50 per ton (extended limits R75 per ton)

Table 2.1: Futures contract specifications for white maize traded on SAFEX (continued)

Initial margin	R11 000 per contract up to first notice day. R15 000 per contract up to first notice day at extended limits. R15 000 per contract up to expiry day. R30 000 per contract up to last delivery day. R3 300 per contract for calendar spreads. Series spread of R4 500 per contract for white/yellow/corn series, in addition to the series spread margin requirement add the difference in initial margin between the products.
Maximum position limits	Position limits for speculators – see rule 10.40
Expiry valuation method	Closing futures price as determined by the Clearing House
JSE booking fees (incl VAT)	R12.00 per contract
JSE delivery fees (incl VAT)	R200.00 per contract

Source: (SAFEX, 2009a)

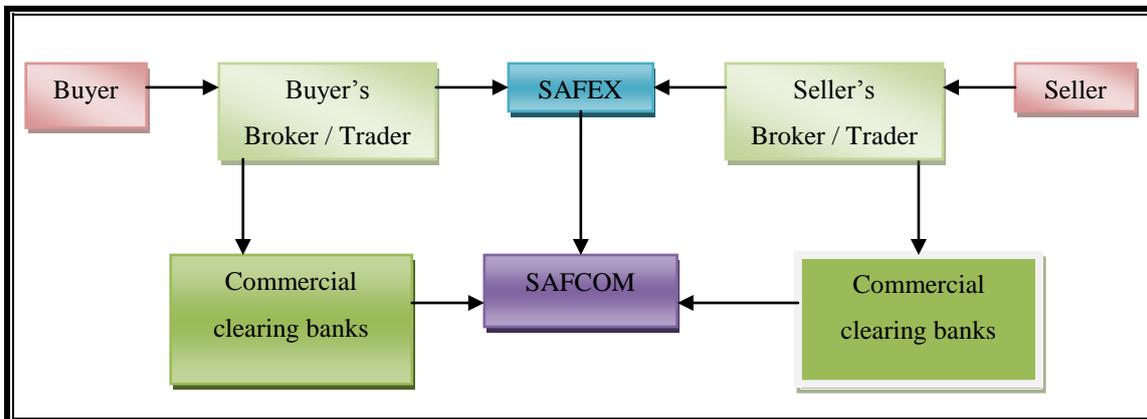
The majority of futures contracts initiated do not lead to delivery. Sometimes taking or making delivery is inconvenient or may be expensive. Such a hedger can then choose to close out the futures position and then buy or sell the asset in the usual way. In order for an investor to close a position involves entering into an opposite trade. This process is referred to as offsetting. The resulting change in price from the first transaction to closing out the position will be recognised as the total gain or loss (Chance & Brooks, 2008:270; Hull, 2008:21). An example of a futures contract is provided below.

Example 2.2: A futures contract

During March a trader in Cape Town might contact a broker in Johannesburg with instructions to purchase 1 000 tons of white maize for delivery in July. The broker immediately enters a bid on the SAFEX automated trading system. During the same time a trader in Lichtenburg might contact a broker to sell 1 000 tons of white maize for delivery in July. The broker would enter an offer on the SAFEX automated trading system. A price would be determined, for example at R1 300 per ton and a deal would be done. Both the producer in Lichtenburg and the miller in Cape Town are required to pay an initial margin of say R110 per ton. Daily mark-to-market calculations are performed until the physical delivery in July when the contract expires. The trader in Cape Town that agreed to purchase has what is termed as a *long futures position* while the trader in Lichtenburg has what is termed as a *short futures position*. The price agreed upon is the *futures price* for delivery in July (Hull, 2008:1-2). A flow diagram of the above transaction is shown in Figure 2.1.

Source: (Author)

Figure 2.1: A transaction on the Futures Exchange



Source: (Author)

2.3.3.2 Forward contracts

A forward contract and futures contract's definition is similar in the sense that both entail an agreement between a buyer and a seller to buy or sell an asset at a future date at an agreed price. The first key difference is that future contracts are traded on

exchanges while forward contracts are traded in the over-the-counter market. Another difference is that futures contracts have a fixed contract size, while the size of forward contracts can be specified by the parties (Chance & Brooks, 2008:3; Hull, 2008:5). Forward contracts are rarely used by agribusinesses in South Africa with the exception of forward contracts between feedlots and millers.

2.3.3.3 Options contracts

An option contract is an agreement between the buyer and the seller that gives either the buyer or seller the *right*, but not the *obligation*, to buy or sell an asset at a future date at a price agreed upon today (Chance & Brooks, 2008:2; Hull, 2008:6). The option buyer pays the seller a sum of money referred to as the *price* or *premium*. The option premium is depends on market conditions such as the volatility of the market, time to expiration, direction of the market and the general supply and demand for options (SAFEX, 2009a). A *put option* gives the holder the right to sell an asset while a *call option* provides a right to buy an asset. The price in the contract is referred to as the *strike price* or the *exercise price*, while the date in the contract is known as the *maturity date* or *expiration date*. An European option may only be exercised at the maturity date, while an American option can be exercised at any time up to its maturity date. Mostly American options are traded on exchanges (Chance & Brooks, 2008:2-3; Hull, 2008:185). Options can be traded either on an organised exchange or over-the-counter.

The difference between an options contract and a futures contract is that the holder of an options contract does *not have to* exercise the right while a futures or forward contract holder is committed to buying or selling an asset at the agreed price at the set date. On the other hand, it costs very little to enter into a futures contract while an investor must pay an up-front price, the option premium, to enter into an options contract (Chance & Brooks, 2008:22; Hull, 2008:6).

- Call options

A call option is an option to buy an asset. A call option is **in-the-money** when the exercise price is lower than the spot price. When a call option is in-the-money, it should be exercised. A call option is **out-of-the-money** when the spot price is lower

than the exercise price. An option is **at-the-money** if the strike price of the option is equal to the market price of the underlying asset (SAFEX, 2009b).

Example 2.3: A call option

The market expects the price of white maize to increase, therefore a trader purchases on behalf of a miller one call option contract with a strike price of R1 400 expiring in July for an option premium of R180 per tons. The underlying commodity is white maize futures. At the expiration date of the option, the spot price for white maize is R1 500 per ton. The trader would therefore exercise the option and purchase white maize at the strike price of R1 400 per ton. A profit of R100 per ton less the option premium of R180 per ton therefore findings in a loss of R80 per ton.

Source: (Author)

- Put options

A put option gives the owner the right to sell the underlying asset. A put option is **in-the-money** when the exercise price is lower than the spot price for the underlying asset.

Example 2.4: Put options

The market expects the price of white maize to decrease. A trader purchases on behalf of a producer one put option contract with a strike price of R1 400 expiring in July for an option premium of R180 per ton. The underlying commodity is white maize futures. At the expiration date, the spot price for white maize is R1 300 per ton. The trader would therefore exercise the option and sell white maize at the strike price of R1 400 per ton, rather than paying the spot rate of R1 300 per ton. A profit of R100 per ton less the option premium is therefore achieved by entering into the put option contract.

Source: (Author)

A large over-the-counter market exists for options. The options writer can be large corporations, financial institutions and even the government. A major disadvantage of

the over-the-counter market is the risk that either party can default. Option buyers are usually either familiar with the option writer's creditworthiness or the buyer reduces its credit risk by posting some type of collateral. Option writers receive only option premiums as income, but the risks are unlimited (Chance & Brooks, 2008:26; Hull, 2008:203).

The advantage is however, that the contract terms can be tailored to the counterparties needs. The exchanges have strict rules and their contract specifications are fixed. In the OTC market, these can be adjusted to suit your specific demands. Another advantage is that it is a private market. The general public or other investors do not know when transactions are entered into or are concluded. The third advantage is that it is essentially an unregulated market ruled by courtesy and logical business integrity. Parties that do not conform to these rules would soon find themselves with no parties to trade with (Chance & Brooks, 2008:26; Hull, 2008:203).

After discussing the different derivative contracts, it is imperative to understand how grain prices, more specifically maize prices, are determined in South Africa and how the futures exchange in South Africa, SAFEX, operates.

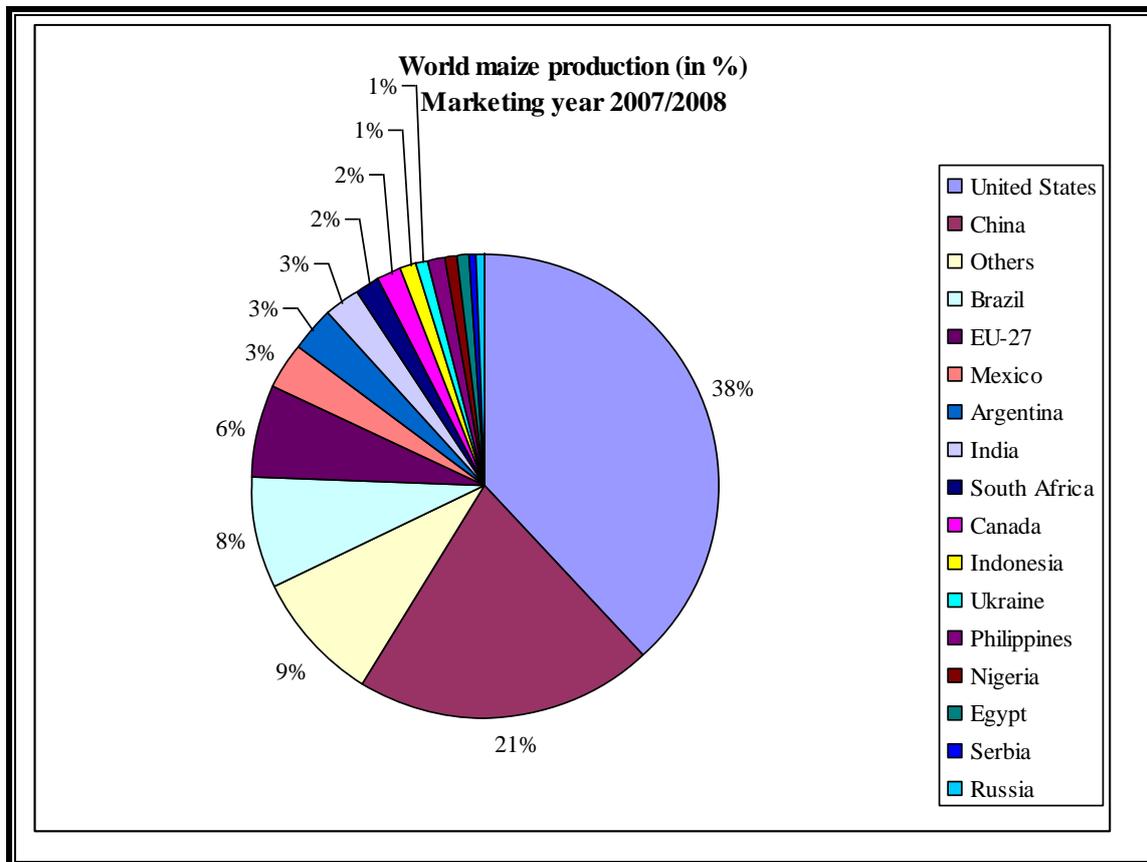
2.4 SAFEX AS PRICE DETERMINANT

SAFEX trades derivative contracts in white maize, yellow maize, wheat, sunflower seeds and soy beans. White and yellow maize production formed an estimated 70% of the total summer crops production for the 2008/09 production season in South Africa (SAGIS, 2009). It is therefore important to focus on how South African maize prices are determined. Geysler and Cutts (2007) conducted a study to investigate the volatility of the SAFEX maize price. It was found that the SAFEX price levels are determined by the fundamentals namely the Rand/Dollar exchange rate, CBOT prices, weather patterns and domestic stock levels (Geysler & Cutts, 2007:303). Furthermore, a study was conducted by the NAMC (2008) to investigate the functioning of SAFEX as a price determinant for grains and oilseeds in South Africa. The conclusions reached include that SAFEX is a *well functioning* market for maize price setting in South Africa. It was also concluded that even though price volatility was high on SAFEX, it still corresponds with the price volatility on CBOT. In contrast, a similar study of the futures market in India as an efficient price discovery instrument was

conducted by Easwaran and Ramasundaram (2008). The conclusions were that based on a sample of four agricultural commodities traded, the futures market in those commodities are *not* efficient therefore failing to provide an efficient hedge against price volatilities.

The primary maize producing countries globally include (percentage of 2007/2008 global production figures) the United States of America (USA) (38%), China (21%), Brazil (8%), EU (6%), Mexico (3%), Argentina (3%), India (3%) and South Africa (2%) (USDA, 2009). The total world production for white and yellow maize for 2007/2008 comprised 742,687 thousand metric tons. The USA is the world's largest producer, exporter and consumer of maize and the Chicago Board of Trade (CBOT) is the largest commodities exchange on which maize is traded (Auret & Schmitt, 2008:103). World production figures for white and yellow maize for the 2007/2008 marketing year are shown in Figure 2.2.

Figure 2.2: World maize production for marketing year 2007/2008

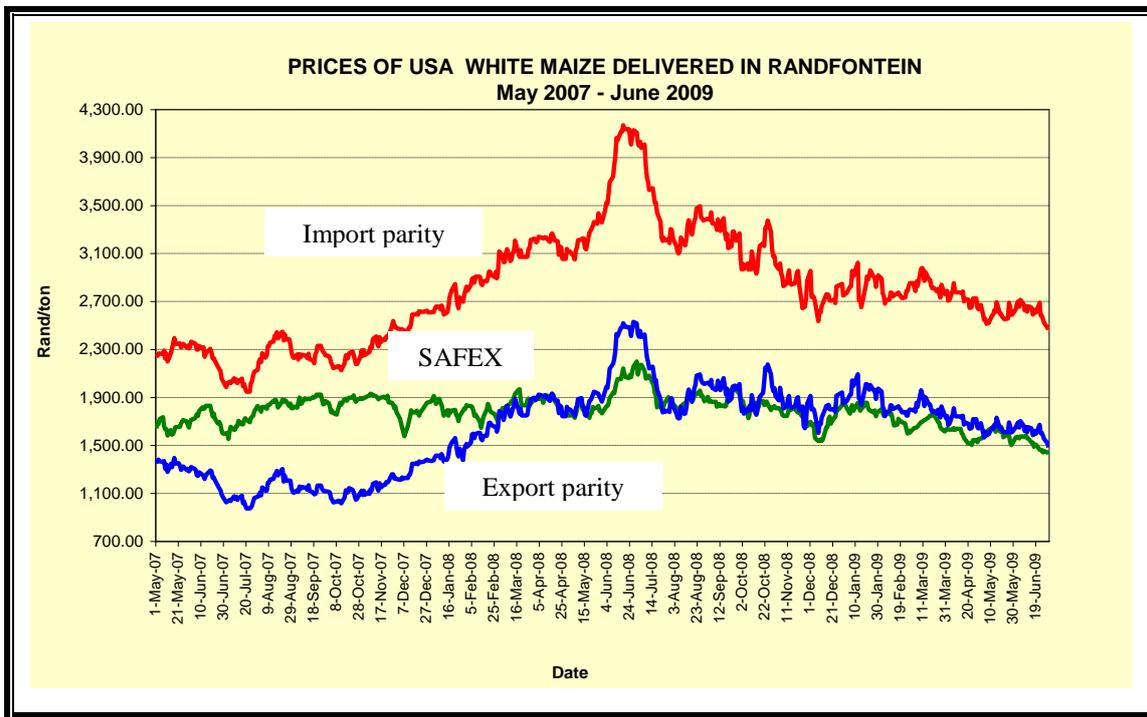


Source: (USDA, 2009)

For a South African buyer the price of maize are primarily influenced by the world maize prices, the currency exchange rate, global stock levels and the relative size of the domestic crops (Geysler & Cutts, 2007:296). The prices of maize in different markets have to be adjusted to take into account transport costs, exchange rates, etc. to make comparisons possible. Such an adjusted price is called a *reference price* and is calculated with respect to a reference point. In the case of SAFEX, Randfontein is the reference point from where the transport differential is calculated (NAMC, 2008:14).

In theory, all maize prices fluctuate between two extreme points, *import parity* level and *export parity* level. If grain millers can import maize cheaper (including transport, insurance, exchange rate, etc.) than what local producers can produce it at, they will continue importing until local grain producers are able to supply grain as cheaply. This is called the import parity price. The price of import parity is therefore generally a ceiling price, because the price of local grain tends not to go higher than the import parity price as millers will merely increase imports. In practice however, South Africa's infrastructure (railroads, harbours and storage) cannot handle constant imports. Vice versa is also true: if South African grain farmers can obtain a higher price by exporting their maize to foreign millers, they will continue to do so until the local price has increased to the level of the export price. This is called the export parity price. The export parity price is therefore, in theory, the floor price, the lowest possible price, because producers will continue to export until the local price has adjusted to the export parity price. Therefore the domestic price of grain will trade between these two points (NAMC, 2008:14). An example of how the price of USA white maize fluctuates between import parity and export parity with reference to the SAFEX price is shown in the following figure.

Figure 2.3: Prices of USA white maize delivered in Randfontein for May 2007 to June 2009



Source: (GSA, 2009)

2.4.1 Trading of agricultural derivatives

Price determination of agricultural derivatives traded on SAFEX occurs purely on the basis of supply and demand. Buyers (bids) and sellers (offers) negotiate prices for each contract via an electronic order matching platform called the Automated Trading System (ATS). Only registered agricultural derivative brokers, commonly referred to as members, can input orders into the ATS. These can be performed from remote locations during the trading hours of 09h00 to 12h00. Orders are automatically matched on the basis of price and time priority. SAFCO guarantees the fulfilment of the transaction in a futures contract. Prices for agricultural derivatives are quoted at Rands per ton, delivered on truck alongside silo basis Randfontein (SAFEX, 2009b). Only white maize, yellow maize, wheat and sunflower seeds are quoted inclusive of transport, the price of soy beans does not include transport (NAMC, 2008:13). For white and yellow maize the contract size for one contract is 100 tons, while for wheat and sunflower seeds the size for one contract is 50 tons. Soy beans' contract size is set at 25 tons. SAFEX sets the daily price limit that limits the daily movement of

prices, which adds security to the market. The price limits are increased to 150% of the original limit if the limit is reached on two similar contracts on two consecutive days. This extended limit will remain in place until the daily movement on all like contracts is less than the original limits. Extended price limits result in increased initial margin requirements for those periods when the extended limits apply (SAFEX, 2009b).

2.4.1.1 Mark-to-market calculation for futures

In order to perform the daily mark-to-market SAFEX determines the mark-to-market price at random any time in the last five minutes of the current day's trading at the discretion of the exchange. When determining the mark-to-market price, two procedures are followed depending on the liquidity of the futures contract (SAFEX, 2009c):

- **Liquid futures contracts:** A liquid contract can be defined as any expiring contract trading a 100 or more contracts in the last 30 minutes of a trading session. When a contract is regarded as liquid, the volume weighted average price (VWAP) method is followed to determine the mark-to-market price for that contract. The VWAP is calculated by using the weighted average of only on-screen traded prices for the last 30 minutes of that trading session.
- **Illiquid futures contracts:** A contract is regarded as illiquid if any expiring contract traded less than a 100 contracts in the last 30 minutes of a trading session. The mark-to-market price is then determined by referencing the last traded price *unless* the closing bid is above the last traded price in which case the closing bid will be regarded as the mark-to-market price. If the offer price is lower than the last traded price, the offer price will be regarded as the mark-to-market price (SAFEX, 2009b; SAFEX, 2009c).

2.4.1.2 Mark-to-market calculation for options

SAFEX also performs daily mark-to-market calculations for options. The method utilised to calculate the mark-to-market is based on the Black-Scholes option pricing model. The Black-Scholes industry-standard option pricing model for European options was developed by Fischer Black, Myron Scholes and Robert Merton during

the 1970s. Myron Scholes and Robert Merton received the Nobel price for their work in 1997 (Fischer Black having died two years earlier). This model made it possible to value European options using a common and consistent method. (Chisholm, 2004:5). In order to determine the mark-to-market for option contracts, the option volatility is calculated by using the following methodology (SAFEX, 2009b):

- Options traded over the last **hour** of a trading session are considered.
- Two strike prices of 20 points or 20 cents, either side of an option at-the-money will be considered. For example, if at-the-money strike is 500, 480 and 460, and 520 and 540 will be considered.
- The contract will be considered liquid if 60 or more contracts have been traded for the **entire day** and if less than 60 contracts were traded it will be regarded as illiquid.
- If a contract is regarded as **liquid**, a volume weighted average of 40 or more contracts will be required to trade within the last hour of trade for the mark-to-market volatility to change. If this requirement is not met, the mark-to-market volatility will remain unchanged.
- If a contract is regarded as **illiquid**, a volume weighted average of 20 or more contracts will be required to trade within the last hour of trade for the mark-to-market volatility to change. If this requirement is not met, the mark-to-market volatility will remain unchanged.
- An exception is that only options traded on the *delta option window* will be considered for mark-to-market volatility purposes if the *futures contracts* trade limit up or down for most of the option mark-to-market period. A delta option window reflects the trading of options with an underlying futures contract, while a naked option window reflects options traded without an underlying futures contract.
- Options traded on price through the *naked option window* will not be considered.
- If the criteria of liquid or illiquid based on the number of delta options traded are not met, the bids and offers on the *delta window* will be considered as a last resort and at the exchange's discretion.
- The exchange retains the right to make a final decision regarding the mark-to-market volatility and may exercise its discretion if need be.

The implied volatility is then used to value all option positions.

2.4.2 Settlement procedures of agricultural derivatives

Physical delivery

All products traded on SAFEX can be physically delivered at expiry in order to fulfil a contract. Products are physically delivered at a SAFEX approved silo using a **silo receipt**. A silo receipt is a transferable but not negotiable document that represents a specific quantity of product in a SAFEX silo waiting to be delivered. Paper and electronic silo receipts are issued by registered silo owners and accepted by SAFEX. The silo owner guarantees the quality and quantity of product as per detailed grading methodology specified by the National Department of Agriculture. Delivery can occur at any SAFEX approved silo and each delivery point is subject to a location differential determined by the exchange. Randfontein is used as the basis for determining the location differential. Physical delivery takes place over a two business-day period during the month of delivery. The notice of intention day and the delivery day are two important days (SAFEX, 2009b:4-5).

Notice of intention day

When the party with the short position (the seller) is ready to deliver, it notifies its broker of its intention who in turn notifies SAFEX (SAFEX, 2009b:5; Chance & Brooks, 2008:270; Hull, 2008:22). Notice must be given before 12h45 on any business day during the delivery month. The last notice day is the second last business day of the month, because two business days are required for a transaction to be finalised. The long position holders are then randomly selected using a computer program and notified through the clearing member of the allocation. The silo receipt for the delivery is then issued from SAFEX to the long position holders. If the location of the physical grain is not convenient for the buyer of the grain, he can enter into location differential basis trading (refer paragraph 0, page 52). The closing price on the notice day is the price at which the contract is closed. The long position holder will be liable to pay the closing price less the location differential and any outstanding storage. A standard daily storage rate is charged to long position holders (SAFEX, 2009b:5).

Delivery day

The silo receipts have to reach SAFEX no later than 12h00 on the delivery day. Payments for the products then occur at 12h00 while the long position holders can collect the silo receipts from 14h00 onwards (SAFEX, 2009b: 5).

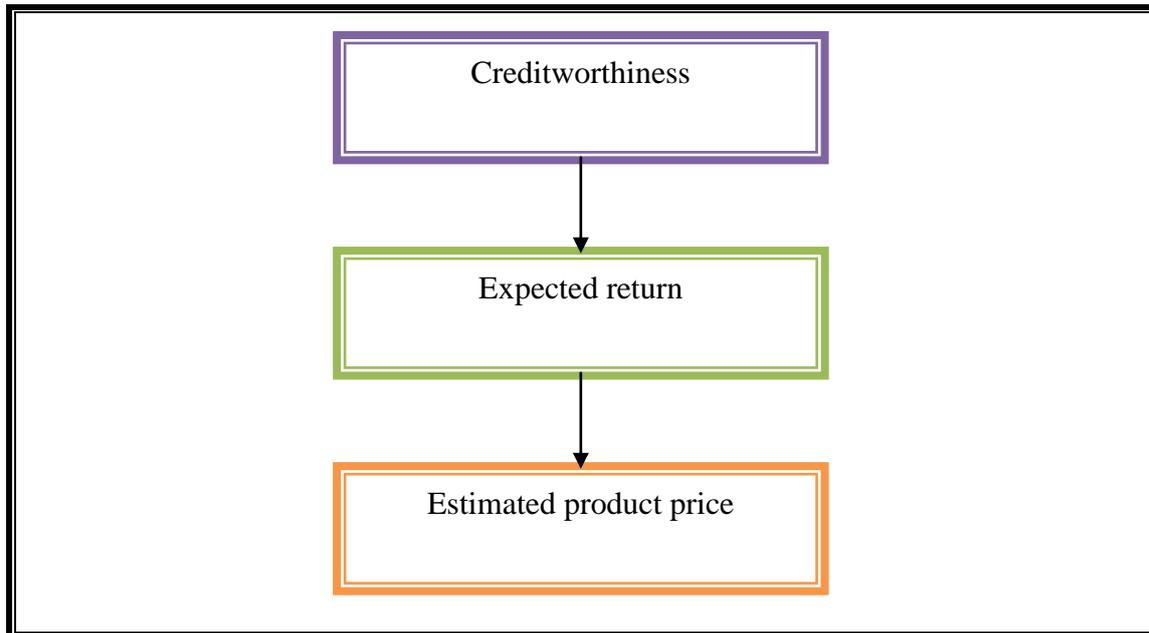
2.5 SERVICES PROVIDED BY AGRIBUSINESSES

The agricultural companies render similar services as agricultural cooperatives, their key goal is to maximise the wealth of shareholders and not to render services necessarily beneficial to its members. The only agricultural company currently listed on the JSE is AFGRI Limited. The services delivered by the agricultural companies and cooperatives to their customers, will now be discussed.

2.5.1 Financing

Globally credit is needed in the agricultural industry to overcome a shortage of equity capital. Problems facing many producers include restricted capital, changing interest rates and a lack of credit information (Ricketts & Ricketts, 2009:143). South African grain producers often do not have sufficient equity to cover production costs and due to higher production costs, they often do not have sufficient *security* to provide access to financing (Van Burick, 2008:70). The head of the agricultural division at Standard Bank, Mr Bertie Smith, has commented that it is almost impossible for commercial banks to provide financing to subsistence farmers due to lack of security (De Waal, 2007:32). Agricultural companies and agricultural cooperatives therefore serve as an important (alternative) provider of production credit to producers in assisting them to plant and grow grain crops (Willemse, 2009:9). Before these entities determine how much they are prepared to finance, the following information about the producer and its products is needed:

Figure 2.4: Information requirement for evaluation of financing



Source: (Author)

- Creditworthiness

Before financing can be provided, a producer's creditworthiness has to be determined. The Dictionary of Finance and Banking (2005:100) defines creditworthiness as the assessment of a person or entity's ability to pay for services received or goods purchased and it may be presented in the form of a credit rating. Each agribusiness has its own credit rating model that they utilise to determine the percentage financing that they are prepared to offer the producer based on the producer's creditworthiness. Generally 100% financing is not provided. The expected harvest is generally utilised as security for the financing that the producer requires. Therefore the value of the harvest has to be determined by multiplying the expected return with the expected product price (Styger, 2009)

- Expected return

The producer approaches the agribusiness *before* he can plant his grain seed. For this reason, the financier has to forecast the producer's return. Most agricultural companies and cooperatives utilise a long-term average return (LAR) which represents the particular producer's average return over the last three to five years.

Some agricultural companies and cooperatives have even divided their region into different areas and determined the area's LAR in order to forecast the harvest that a particular producer would achieve. The LAR is multiplied by the percentage financing that the agribusiness is prepared to provide the producer (Styger, 2009).

- Estimated product price

In order to determine the total value of security that the producer can provide, the price the producer is able to obtain for his expected harvest is determined. This price is determined by taking the current SAFEX price for the producer's product or products for delivery in the month of harvest. For maize the delivery month is usually from the end of May until July and for wheat, which is a winter grain, is generally during October to December. The agribusinesses' commission has to be subtracted, to reach a net price. Producers' are therefore price takers and not determinants thereof.

Following the above, the financing amount is determined by multiplying the percentage financing provided with the LAR and the net price payable to the producer, as illustrated in Example 2.5 below.

Example 2.5: Financing

During July 20x8 Producer A approaches Agribusiness A (ABA) requesting financing to produce a 250 hectares of white maize. ABA determines that the LAR for white maize in Producer A's region is 4 tons per hectare. ABA's financing department has considered the request and rated Producer A based on the risk posed to their business. Based hereupon it is determined that the producer qualifies for a 75% financing of his LAR. Assume that the current SAFEX price for white maize for delivery in July 20x9 is R1 300 per ton. The producer therefore settles the sale at R1 300 per ton.

The financing ABA is prepared to provide Producer A is therefore:

Percentage financing x LAR x selling price

$$75\% \times 4 \text{ tons per hectare} \times R1\ 300 \times 250 \text{ hectares} = R975\ 000$$

Source: (Author)

Some agribusinesses also provide the service of financing the required margins on derivatives traded.

2.5.2 Risk management

Several categories of risks are created by the credit agreement between the producer and the agribusiness including the *commodity price risk*, *credit risk* and the risk of *non-delivery* by the producer. For the agribusiness, it is important to manage all three these risks in order to remain competitive. Each one of these three risks will now be discussed.

- **Commodity price risk**

In order to mitigate the price risk an agribusiness would require the producer to take out some form of security in order to reduce both parties' risk of the price of the commodity changing. A producer is hedging himself against a decrease in the price, while the agribusiness is hedging itself against an increase in the price. A *hedge* is a contract that is entered into in order to reduce some form of risk (Shin, 2004:5). When a hedge accomplishes the goal of reducing risk, it is commonly referred to as being effective (Shin, 2004:5; IASB, 2008b:1903). The most common method utilised to transfer both parties' price risk, is to enter into a derivative contract (Chance & Brooks, 2008:1; Skerrit, 2006:384; Gebhardt, Reichardt & Wittenbrink, 2004:341; Shin, 2004:3). Futures contracts, options contracts or a combination of both are entered into in order to suit the individual need of the producer and to address the specific credit risk faced by the agribusiness. Some agricultural companies and agricultural cooperatives take out a future on behalf of the producer, while others take out a future in their own capacity in order to transfer their price risk.

Processors are also exposed to commodity price risk. The price risk is then managed by also entering into futures or options or a combination of both. The mechanics of these transactions are best explained by using an example (the same information as in Example 2.5 is used.)

Example 2.6: Commodity price risk

The broker at Agribusiness A enters a bid for 10* short futures contracts of white maize at R1 300 per ton for delivery in July 20x9. An offer of 10 long futures contracts of white maize for delivery in July 20x9 for R1 300 per ton is received and the transaction is automatically matched by SAFEX's automated trading system. Both the producer and the agribusiness are now protected or hedged against price fluctuations of white maize.

* 250 hectares x 4 tons per hectare = 1 000 tons. The contract size for white maize is 100 tons. Therefore 1 000 tons / 100 tons = 10 contracts

Source: (Author)

- Credit risk and risk of non-delivery

Credit risk is created by the financing agreement between the producer and the agribusiness. Credit risk can be reduced by a combination of crop insurance and the use of derivatives.

Crop insurance

Most producers take out multiple-peril crop insurance with the main categories of insurable risks including the following perils such as adverse climate conditions including drought, excessive rain and flooding, as well as disease and pest attacks and fire (FAO, 2009). The crop insurance serves as security for both parties that if the crop should fail because of the above circumstances (insurable risks), there are some sort of compensation. The producer will therefore only have to pay the agribusiness the difference between the contracted price and the amount received from the insurance payout.

Use of derivatives

The other method utilised to reduce the credit risk is for the producer to enter into a derivative contract. According to Skerritt (2006:385) the exchanges of derivatives seek to avoid the chance of one of the counterparties defaulting on their obligations,

i.e. avoiding credit risk. In this case a call option is traded with the strike price equal to (or as close as possible to) the agreed upon futures price. A call option is only obtained for the percentage of harvest that is usually not covered by insurance. Historically, it is assumed that insurance companies generally have a payout ratio of between 60% and 65% of the LAR, depending on the producer's location (Morkel, 2010). Agricultural companies and agricultural cooperatives usually stipulate that a producer purchases a call option in case of non-delivery. These two methods, crop insurance and purchasing a call option, hedge producers against *force majeure* (also known as "an act of God"). The option is then only exercised if the producer cannot deliver due to force majeure. An example of entering into a call option contract will now be discussed (Same information as in examples 2.5 and 2.6).

Example 2.7: Call option

The producer has given 1 000 tons of white maize as security for obtaining production credit. Historically it has been determined that insurance covers approximately 70% of all damage incurred therefore Agribusiness A stipulates that Producer A purchases call options for $1\ 000 \times 30\% = 300$ tons of white maize. The broker at Agribusiness A therefore enters a bid for 3 contracts of call options with the strike price of R1 300 per ton of white maize for delivery in July 20x9. The option writers enter offers into the delta option window of SAFEX. Suppose the option premium is R180 per ton. The option writer and the broker of Producer A enter into a contract and Producer A therefore pays the option premium of R54 000 for the three contracts.

Suppose a hail storm destroys 80% of the producer's harvest, and he only recovers 200 tons of his expected 1 000 tons of white maize. The insurance covers 70% of the damage incurred (800 tons), which in this case are 560 tons of white maize. He now has to take responsibility for the remaining 240 tons of white maize that he is short in order to fulfil his obligation of 1 000 tons. In the mean time the price of white maize has risen to R1 500 per ton for delivery in July 20x9. Producer A now exercises the three contracts of call options, because a R1 300 per ton is cheaper than R1 500 per ton. Producer A can now fulfil his obligation.

Source: (Author)

2.5.3 Market advisory service

Another service that agricultural companies and agricultural cooperatives provide is market information. They also act as a broker on behalf of the producer by taking a speculative view on the market in the hope of making a profit (Skerrit, 2006:414). Speculating is risky and collapses have been caused by extensive speculation involving commodities (Ramirez, 2007:391). The brokers / traders of the agricultural companies and agricultural cooperatives would either trade on instruction from the producer or processor or would trade based on their own knowledge and feeling for the market. The resultant profit or loss would then be carried by the producer or processor.

A trader usually makes decisions before trading based on *fundamental* information and *technical* analysis (Mayall, 2008:207,209). Fundamental information is information about domestic supply of stocks, current stock levels and supply and demand at international level (Geysler & Cutts, 2007:296). Technical analysts examine the price actions of financial markets instead of the fundamental factors that affect market prices. The technical analysts believe that all the relevant market information is reflected in the price except news such as natural disasters, etc (Bertschi, 1999:3). There are numerous forms of speculation, but only three types will be discussed here, namely:

- The white / yellow maize spread;
- location differential basis trading; and
- bull, bear and butterfly spread

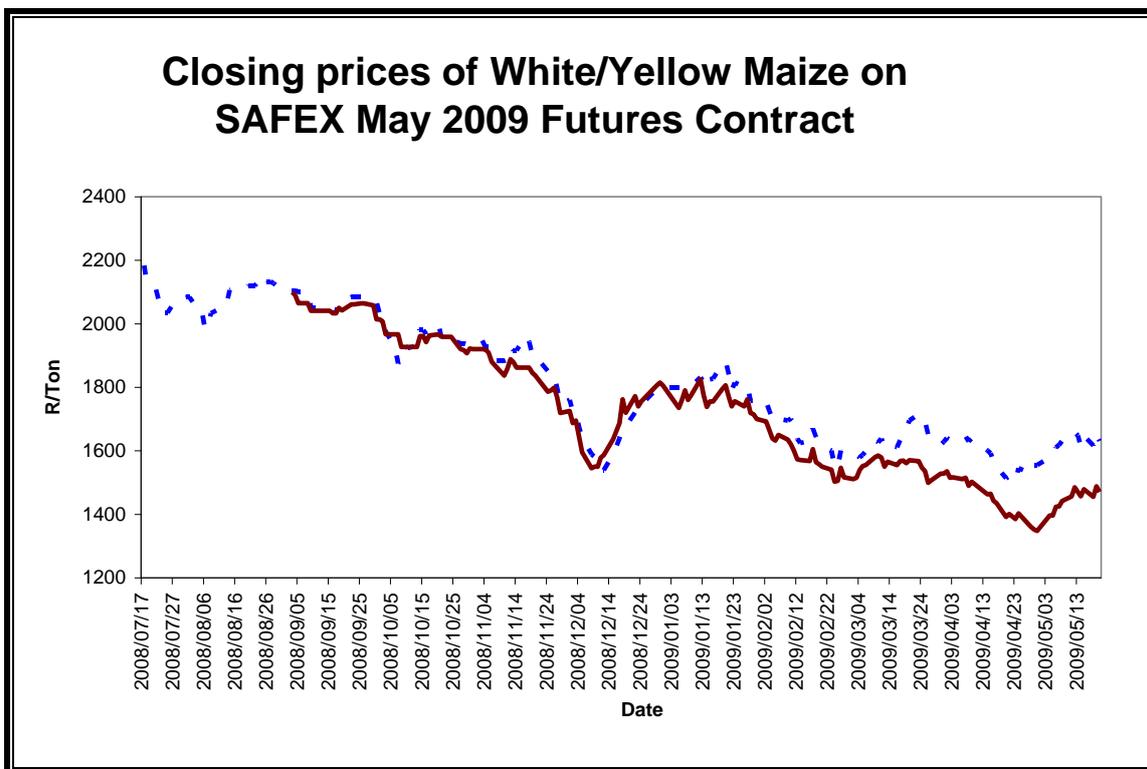
Each one of these types will now be discussed.

- White / yellow maize spread

Globally two types of maize are produced, white and yellow. In South Africa approximately 60% of the maize produced is white and 40% is yellow maize with white maize generally produced for human consumption while yellow maize is mostly produced for animal feed production (Warne, 2008:7; Kargbo, 2007:2215). Globally, SAFEX is the largest futures exchange for *white* maize (Auret & Schmitt, 2008:104).

Generally, larger price variations within the white maize industry occur than within the yellow maize industry due to the strategic importance of white maize for the milling companies (Krugel, 2004:59). When the supply of *yellow maize* decreases in the rest of the world, while in South Africa there is an oversupply of *white maize*, the spread between the white and the yellow maize price would decrease. Traders would speculate on this spread between the white and the yellow maize price. An example of the white/yellow maize spread for a May 2009 futures contract can be found below.

Figure 2.5: Closing prices of white / yellow maize for May 2009 futures contract



Source: (SAFEX)

- Location differential basis trading

When SAFEX introduced the maize and wheat contracts, a reference delivery point of Randfontein was elected. Randfontein has very good rail links to the rest of South Africa as well as a concentration of milling capacity. The use of reference location in futures market design is well accepted. A futures contract has contract specifications that include location. When a buyer then buys a futures contract, the price it will receive will be the SAFEX futures price minus the location differential. Yellow maize is a seller

will also receive the SAFEX futures price minus the transport differential (Roberts, 2009:3). Controversy around the location differential has been ongoing since 2002. The NAMC has requested an independent party from the Ohio State University in the USA, Dr Roberts, to conduct an investigation into this controversy and make a recommendation on whether this location differential should be abolished. In his final report Dr Roberts has recommended that SAFEX maintain the current location differential system and continue to calculate the differential using the current methodology (Roberts, 2009:2).

Location differential basis trading can be defined as speculation to optimise the transport differential. An example is used to illustrate the methodology.

Example 2.8: Location differential basis trading

Producer A has a long futures position of 10 contracts of white maize for delivery in July 20x9. During July 20x9 SAFEX informs Producer A that physical delivery of the white maize will be performed at Town A's silo. The location differential for Town A's silo is R150 per ton. A corresponding silo receipt is issued by SAFEX. Producer A is located in Town B a long way from Town A's silo. Town B has a silo with a location differential of R100 per ton. Producer A's broker contacts another broker offering 10 contracts of white maize located at Town A's silo and in return Producer A's broker purchases 10 contracts of white maize located at Town B's silo, thereby making a profit of R50 per ton for 10 contracts = R50 000.

Source: (Author)

- Option trading strategies

As part of the market advisory service, traders would employ option trading strategies. The option trading strategies followed by agricultural companies are mainly bull spreads, bear spreads, butterfly spreads and calendar spreads. A spread trading strategy involves purchasing one option and selling another (Chance & Brooks, 2008:219; Hull, 2008:231). These positions do not include a position in the underlying stock (Rendleman, 2003:17). Option spreads are used by traders as they offer small profits while limiting the risk (Chance & Brooks, 2008:219). The first

option trading strategy is a bull spread. A bull spread strategy will be followed if a trader believes that the underlying commodity price will increase (Hull, 2008:233). Bull spreads can be performed using either call options or put options. It entails purchasing a call option on a future date with a certain strike price and selling a call option with a higher strike price, or by purchasing a put option with a low strike price and selling a put option with a higher strike price. These options all have the same expiration date. An example of the result of a bull spread is given below.

Example 2.9: Bull spread

Trader A believes the price of white maize is going to increase. He purchases a call option with a strike price of R1 300 per ton (K_1) for a premium of R180 per ton. He sells a call option to his client with a strike price of R1 500 per ton (K_2) for R120 per ton. The cash flow is therefore: $R180 - R120 = R60 \times 100 \text{ tons} = R6\ 000$ outflow. Let us assume three different scenarios:

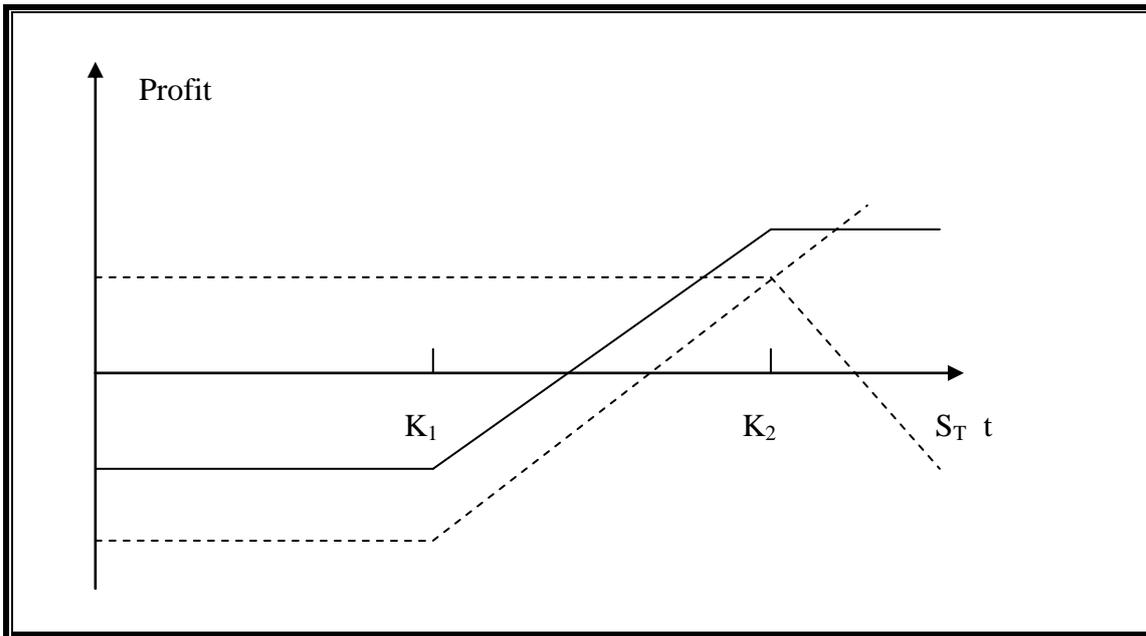
Scenario 1: The price does not increase, but decreases to a spot price of R1 200 per ton (S_T). The option is not exercised by either party and white maize is purchased on the spot market for R1 200 per ton by both the trader and the client. The loss incurred is therefore the R6 000 expenditure of the option premium.

Scenario 2: The price of white maize increases to R1 400 per ton (S_T). The trader exercises his option at R1 300 and makes a profit of R100 per ton. $R100 \text{ per ton} \times 100 \text{ tons} = R10\ 000$ profit less the cost of R6 000 = R4 000 profit. The client does not exercise his option and purchases white maize at R1 400 per ton.

Scenario 3: The price of white maize increases to R1 600 per ton (S_T). Both the trader and the client exercise their options. The trader exercises his option at R1 300 per ton and the client exercises his option at R1 500 per ton. The trader's profit is R300 per ton. The trader purchases white maize at a spot price of R1 600 per ton and sells to the client at R1 500 ton, thereby losing R100 per ton. The net profit is then R300 less $R100 \times 100 \text{ tons} = R20\ 000$ less R6 000 expense of option premiums = R14 000 profit.

Source: (Author)

Figure 2.6: Profit from bull spread created using call options



Source: (Hull, 2008:231)

A second option trading strategy is a bear spread. According to Chance and Brooks, (2008:224) and Hull (2008:233) a bear spread is the mirror image of a bull spread but this strategy will be followed if a trader believes that the underlying commodity price will decrease. The trader will then go long with a high-exercise price put option and go short with a lower-exercise price put option or purchasing a call option with a high strike price and selling a call option with a low strike price. Again the options will have similar expiration dates. The following is an example of a bear spread.

Example 2.10: Bear spread

Trader A believes the price of white maize is going to decrease. He purchases a put option with a strike price of R1 500 per ton (K_2) for a premium of R180 per ton. He sells a put option to his client with a strike price of R1 300 (K_1) for R120 per ton. The cash flow is therefore: $R180 - R120 = R60 \times 100 \text{ tons} = R6\ 000$ outflow. Let us assume three different scenarios:

Scenario 1: The price does not decrease, but increases to a spot price of R1 600 per ton (S_T). The option is not exercised by either party and white maize is sold on the

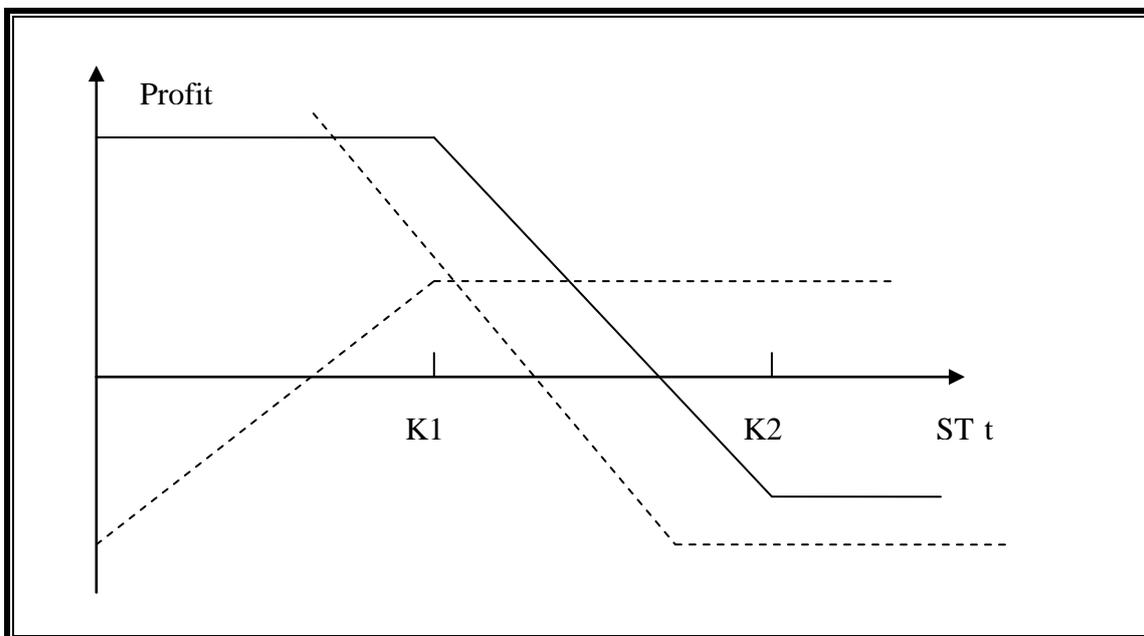
spot market for R1 600 per ton by both the trader and the client. The resulting loss is the difference between the option premium of R6 000.

Scenario 2: The price of white maize decreases to R1 400 per ton (S_T). The trader exercises his option at R1 500 and makes a profit of R100 per ton. R100 per ton x 100 tons = R10 000 profit less the cost of R6 000 = R4 000 profit. The client does not exercise his option and sells white maize at R1 400 per ton.

Scenario 3: The price of white maize decreases to R1 200 per ton (S_T). Both the trader and the client exercise their options. The trader exercises his option at R1 500 per ton and the client exercises his option at R1 300 per ton. The trader's profit is R300 per ton. The trader sells white maize at a spot price of R1 200 per ton and purchases from the client at R1 300 ton, thereby losing R100 per ton. The net profit is then R300 less R100 x 100 tons = R20 000 less R6 000 loss of option premiums = R14 000 profit.

Source: (Author)

Figure 2.7: Profit from bear spread created using put options



Source: (Hull, 2008:233)

A third option trading strategy is a butterfly spread. A butterfly spread is a combination of a bull and a bear spread and this strategy is followed when the market is moving sideways, i.e. there is no real movement in the underlying commodity price. Two call options are purchased, one with a high strike price and one with a lower strike price. The two call options are sold with a strike price in the middle of the high and low call options strike price. The alternative is selling two put options, one with a low strike price and one with a higher strike price. Then two put options are purchased with the strike price in the middle of the high and low price of the other put options. All these options have the same expiry dates (Chance & Brooks, 2008:230; Hull, 2008:235). Example 2.11 is used to explain the result.

Example 2.11: Butterfly spread

Trader A believes the price of white maize is not really going to go up or down. He purchases a put option with a strike price of R1 500 per ton (K_2) for a premium of R180 per ton. He purchases another put option with a strike price of R1 300 (K_1) for R120 per ton. The trader then sells two put options to his client with a strike price of R1 400 per ton at a premium of R140 per ton. The cash flow is therefore: $[- (R180 + R120) + (2 \times R140)] = [R20 \times 100 \text{ tons}] = R2\ 000$ loss. Let us assume four different scenarios:

Scenario 1: The spot price of the underlying commodity at expiry date is R1 600 per ton (S_T). The option is not exercised by either party and white maize is sold on the spot market for R1 600 per ton by both the trader and the client. The resulting loss is the difference between the option premium of R2 000.

Scenario 2: The spot price of the underlying commodity at expiry date is R1 450 per ton (S_T). The trader exercises his option at R1 500 and makes a profit of R50 per ton. $R50 \text{ per ton} \times 100 \text{ tons} = R5\ 000$ profit less the cost of R2 000 = R3 000 profit. The client does not exercise his options and sells white maize at R1 450 per ton.

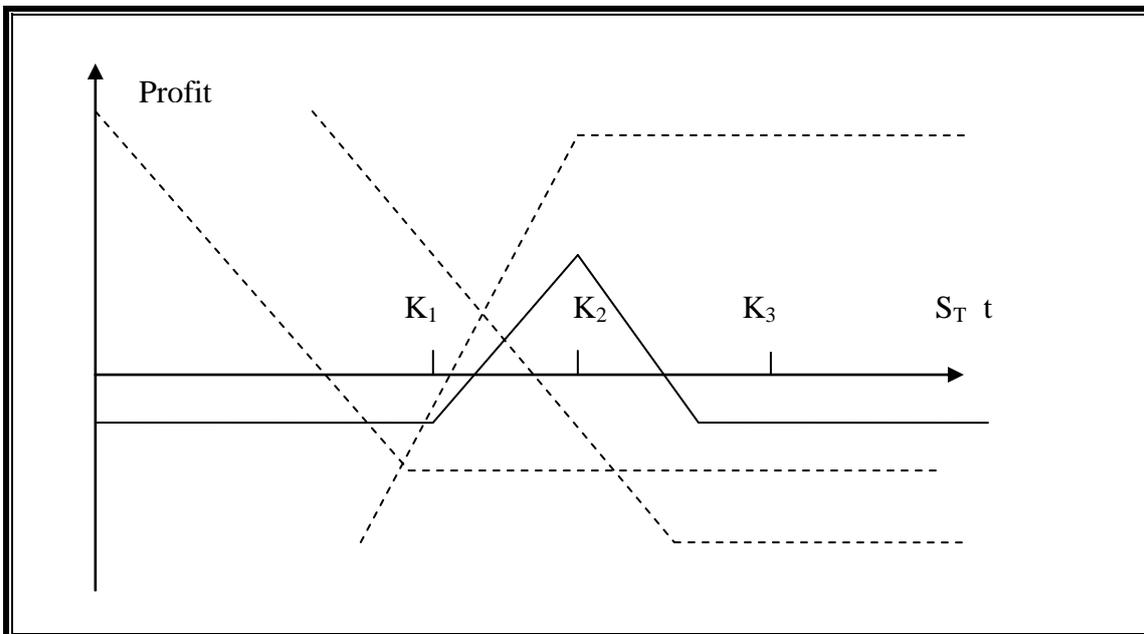
Scenario 3: The spot price of the underlying commodity at expiry date is R1 350 per ton (S_T). Both the trader and the client exercise their options. The trader exercises his option at R1 500 per ton and makes a profit of R150 per ton. $R150 \text{ per ton} \times 100 \text{ tons}$

= R15 000 profit less the cost of R2 000 = R13 000 profit. The client exercises his options and sells white maize at R1 400 per ton. The trader has to purchase two white maize contracts at R1 400 per ton from the client and sell two contracts at R1 350 per ton, therefore making a loss of R50 per ton per contract. The total profit for the spread is therefore $R13\,000 - (R50 \times 200 \text{ tons}) = R3\,000$.

Scenario 4: The spot price of the underlying commodity at expiry date is R1 200 per ton (S_T). Both the trader and the client exercise their options. The trader exercises both his options, one at R1 500 per ton and the other with a strike price of R1 300 per ton. The client exercises his option at R1 400 per ton. The trader's profit is R300 per ton for the first option and R100 per ton for the second. The client exercises both his option contracts at the strike price of R1 400 per ton. The trader has to purchase the two contracts from the client at R1 400 per ton and sell it at R1 200 per ton. The net profit is $R300 + R100 - (2 \times R200) = R0$ less R2 000 loss of option premiums = R2 000 loss.

Source: (Author)

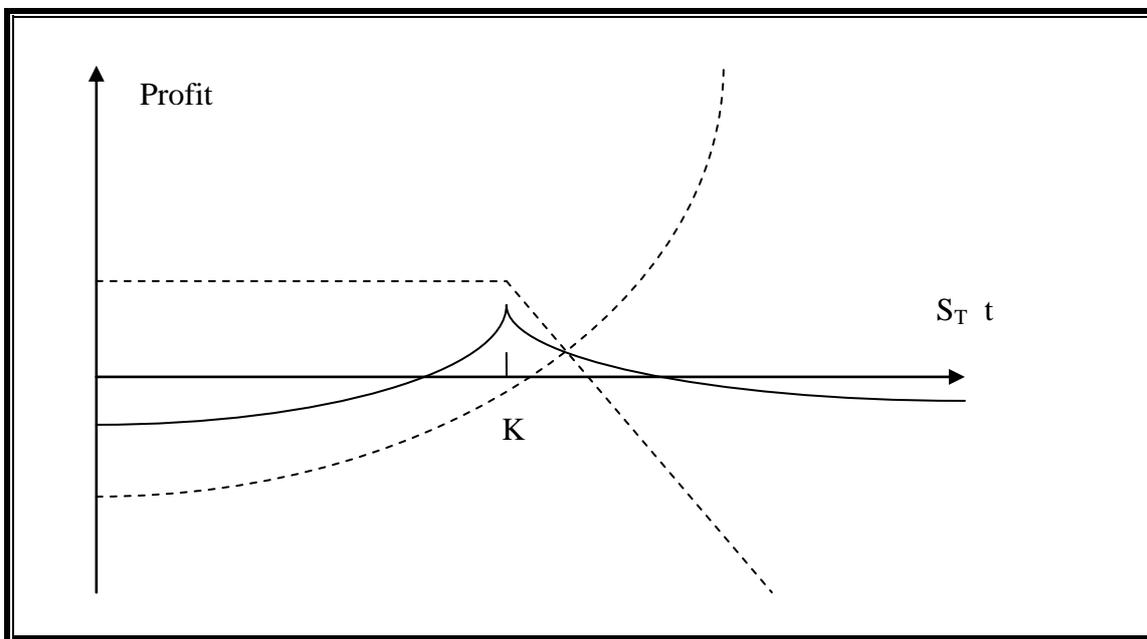
Figure 2.8: Profit from butterfly spread using put options



Source: (Hull, 2008:238)

A fourth option trading strategy is a calendar spread. According to Chance and Brooks (2008:234-235) and Hull (2008:237) the options used to create a spread up to now, have all expired at the same date. A calendar spread involves two options with the same strike price but different expiration dates. A call option is sold with a certain strike price while a call option with the same strike price but a longer maturity expiration date is purchased. The longer an option takes to expire, the more expensive the option premium becomes. The longer-maturity option is sold at the same time the short-maturity option expires.

Figure 2.9: Profit from calendar spread using call options



Source: (Hull, 2008:238)

2.5.4 Storage

Agricultural cooperatives and agricultural companies also provide storage facilities to buyers (processors) and sellers (producers) of grain. The Grain Silo Industry in South Africa, estimated in 2002 the total grain silo storage capacity at 17.5 million tons represented by 14.5 million tons in the northern provinces, 2.1 million tons at the harbours and private owners and 970 000 tons in the southern provinces (NAMC, 2008:9). Only three owners own 70.3% of all the domestic storage facilities (NAMC, 2008:9). Users of the storage facilities pay either daily or monthly storage fees, plus for the grading and handling of the grain.

2.6 SUMMARY

The objective of this chapter was to conduct a literature review of the history and operations of South African agribusinesses and also provide an overview of the relevant commodity derivatives traded by these agribusinesses. This was necessary in order to gain a better understanding of the environment in which these agribusinesses operate and the commodity derivatives utilised in their day-to-day operations for risk management purposes. This knowledge will better equip one to interpret the accounting treatment of transactions utilising commodity derivatives in specifically the South African agribusiness sector.

It was indicated that many producers and industries are heavily exposed to commodity price fluctuations that create financial risk. Globally the use of derivative contracts to mitigate this financial risk is increasing rapidly. From 2007 to 2008, the Agricultural Products Division of the JSE Limited in South Africa experienced a 61% growth in the number of contracts traded. Commodity derivatives may be exchange-traded or over-the-counter and the different commodity derivative categories include futures contracts and options contracts either classified as put or call options.

The agricultural industry has changed drastically since deregulation in 1996. Control boards were abolished and a free market system was introduced resulting in producers being responsible for marketing their own products. Most agricultural cooperatives have transformed to agricultural companies in order to adapt to the changing competitive environment. The remaining agricultural cooperatives and the agricultural companies both support primary producers and processors by providing finance, risk management, market advisory services and storage facilities.

Agribusinesses assist producers and processors to hedge themselves against price fluctuations of maize and other grains. The maize price in South Africa is mainly influenced by the world maize prices, the exchange rate, global stock levels and the relative size of the domestic crops. Maize prices fluctuate between two extreme points, namely import parity level and export parity level. In South Africa, commodity derivative contracts are traded on SAFEX and daily mark-to-market calculations are performed for futures and options contracts.

Chapter 3 will investigate the accounting treatment of these commodity derivative contracts and the fair value thereof.

CHAPTER 3

3 ACCOUNTING TREATMENT OF COMMODITY DERIVATIVES

3.1 INTRODUCTION

The main research objective of this study is to investigate the accountancy implications of commodity derivatives in the South African agricultural sector. A further objective is to establish a standard methodology for the interpretation of IAS 39 to serve as a benchmark and best practise for South African agribusinesses and processors. Within the context of this study, Chapter 3 will provide an overview of i) the history of the development of global accounting standards that influenced IAS 39, ii) the key role players, iii) the process followed to develop IAS 39 and iv) the technical details and principles of IAS 39 will be provided. The chapter will also then conclude with a discussion on the comparability of financial statements, the replacement of the current IAS 39 and how the implementation of IAS 39 influenced business practices.

During the 1990's large financial losses were incurred by several corporate users of novel derivative products (Dunne, 2004:75; Trombley, 2003:3). Globally there has been a tremendous increase in the use of derivatives and other financial instruments (Butler, 2009:41; Gebhardt *et al.*, 2004:341). In 2002, Warren Buffet, the CEO and company chairman of Berkshire Hathaway, expressed concern in a letter written to his shareholders about the use of derivatives, when he referred to these instruments as "weapons of mass destruction" (Anon, 2008b). Mark Mobius, the executive chairman of Templeton Asset Management's emerging market group, predicted during 2011 that another financial crisis is inevitable as the causes of the previous one haven't been resolved and he specifically highlights that derivatives are not regulated (Sharp, 2011).

With the emergence of these new and more complex financial instruments, accounting regulations had to follow these developments. The accounting practices at the time were considered as being *insufficient* and being applied inconsistently (Abhayawansa & Abeysekera, 2006:22; Dunne, 2004:75; Gebhardt *et al.*, 2004:342; Kawaller, 2004:24). According to Ramirez (2007) the resources devoted to the development of

these derivative products hugely exceed the resources devoted to the development of accounting standards to interpret these instruments.

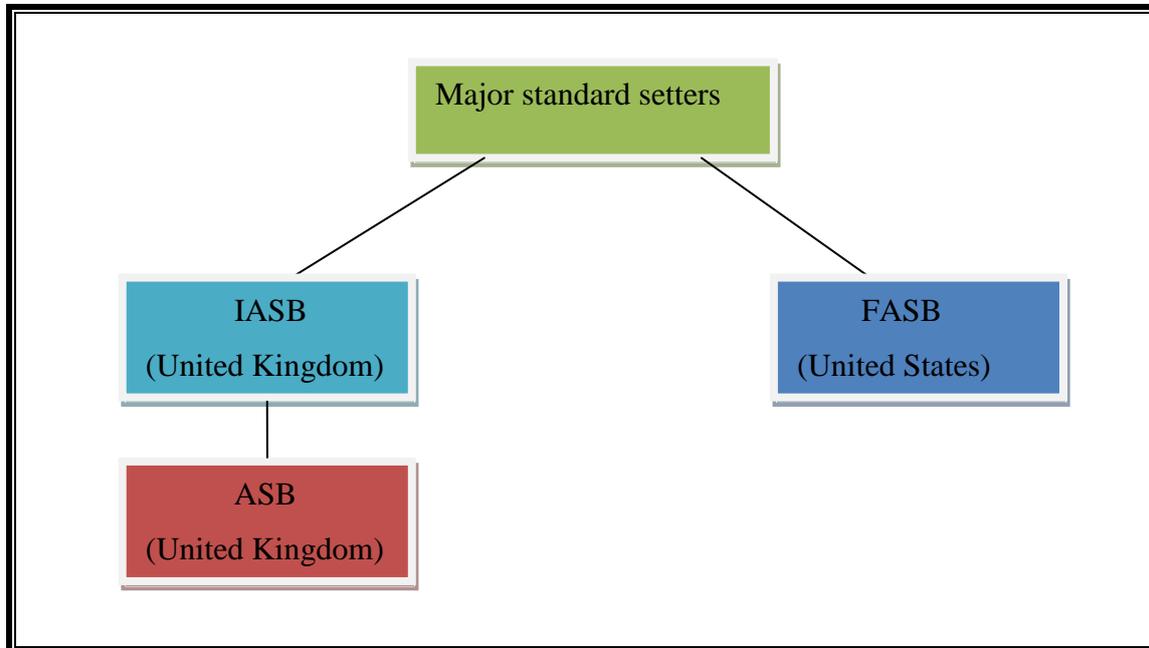
3.2 THE GLOBAL DEVELOPMENT OF ACCOUNTING STANDARDS

Globally accounting standard setters undertook to make the use of financial instruments more *transparent* and to incorporate the effects of these financial instruments on an entity's *financial position* (PwC, 2005:1; Dunne, 2004:75). However, the standard setters went about achieving this goal in very different ways (Dunne, 2004:75). Two of the major standard setters are the International Accounting Standards Board (IASB), headquartered in London, United Kingdom (UK) and the Financial Accounting Standards Board (FASB) located in Connecticut in the USA. The IASB and FASB seem to represent two sides of the accounting standards spectrum, with the IASB following a principles-based approach while the FASB follows a rules-based approach (Buys, 2008:10; Epstein, Nach & Bragg, 2005:12; Schroeder, Clark & Cathey, 2005:59). Other relevant standard setters to this study include the Accounting Standards Board (ASB) also headquartered in London, UK and in South Africa, the Accounting Practices Board (APB) residing as a committee of the South African Institute of Chartered Accountants (SAICA) headquartered in Johannesburg (SAICA, 2010).

The IASB and FASB have for a number of years, been pursuing a policy of increased accounting harmonisation (Heffes, 2009:14; Dewing & Russell, 2008:243). After a joint meeting between the IASB and the FASB in September 2002, the Norwalk Agreement was issued with the aim of converging the US GAAP and International Financial Reporting Standards (IFRS) (Cheney, 2009:5; Dewing & Russell, 2008:245). The move towards harmonisation led to the issuing of IFRS 1 by the IASB, which sets out the procedure an entity should follow when adopting IFRS for the first time. In South Africa, the JSE Securities Exchange also required compliance with IFRS for financial year-ends commencing on or after 1 January 2005 (Anon, 2003:1). Currently companies listed in the UK have the option of using the IFRS or the British accounting standards often referred to as UK Generally Accepted Accounting Principles (GAAP) (ASB, 2010:13; Michael, 2004:123). The ASB, along with other standard setters, are bringing British accounting standards progressively in line with IFRS (ASB, 2009). Some international companies are listed on more than

one exchange around the world and consequently publish accounts according to different accounting standards (Michael, 2004:122).

Figure 3.1: Major standard setters



Source: (Author)

3.2.1 Key role players

The history behind the process that the key role players (standard setters) mentioned above followed to develop accounting standards for financial instruments will now be discussed.

3.2.1.1 IASB

All publicly quoted companies in the European Union (EU) are required to adopt the IFRS as issued by the IASB as from the 1st of January 2005 (Kane, 2005; Shin, 2004:xiv; Anon, 2003:1; Dunne, Helliard & Power, 2003:25). Controversy, however, was abundant in the run-up to the deadline, especially surrounding the implementation of IAS 39: Financial Instruments: Recognition and Measurement (Shin, 2004:xiv). It seems that this controversy is far from being resolved and is still causing implementation difficulties (Lopes, 2007b:38). During 2004, the European Commission even made a proposal to only partially endorse IAS 39 leaving

companies the option to choose whether or not to adhere to IAS 39 (Bolton, 2004:6). The IASB stood firm against the intense pressure from the European Commission and voted against changing its reporting rules for financial instruments such as derivatives (Anon, 2004b:12). The controversy was part of a larger public policy debate on the reform of accounting standards towards fair value accounting. The opponents lobbying the most against this reform were financial institutions, especially banks and insurance companies (Shin, 2004:xiv; Bolton, 2004:12). IAS 39 has brought derivatives, historically treated as off-balance sheet onto the financial statements of corporations in order to increase transparency (Abhayawansa & Abeysekera, 2006:22; Kane, 2005).

IAS 39 became effective on 1 January 2001 (IASB, 2009a; Anon, 2009b) and is perceived as a complex standard, wide in scope that also interacts with a number of other standards (Ramirez, 2007:1). Prior to IAS 39 the accounting standards relating to financial instruments were inadequate and inconsistent (Abhayawansa & Abeysekera, 2006:22). Traditionally financial derivatives were accounted for using historical cost accounting but since many derivatives attract very little or no initial cost, the presentation was limited to a note to the financial statements not revealing a company's real exposure (Dewing & Russell, 2008:248; Abhayawansa & Abeysekera, 2006:22). The complexity of financial instruments, including the measurement, recognition and subsequent disclosure is reflected in the length of the IASB's work programme on financial instruments. It commenced during 1988 and final agreement was reached in June 2005 (Dewing & Russell, 2008:248).

It seems that the goal of the IASB to make the use of financial instruments more transparent and to incorporate the effects of these financial instruments on an entity's financial position has not been achieved if you refer to recent comments made. Sir David Tweedie of the IASB confessed that the accounting rules of financial instruments were too complex (Temkin, 2009) and in South Africa Mr Trevor Manuel, the previous Minister of Finance has said that more light is needed on the accounting of derivatives (Pickworth, 2009). Comments such as that IAS 39 is "conceptually flawed" and "unworkable in practice" have also been made (Dunne *et al.*, 2003:27)

Since March 2006, when IASB and FASB reaffirmed their commitment and further clarified their intentions to converge financial reporting standards, the Boards worked closely together on a research project to reduce the complexity of the accounting treatment of financial instruments. This joint effort led to the IASB's issuance in March 2008 of a discussion paper entitled "Reducing complexity in reporting financial instruments" (IASB, 2008c). The FASB also issued this discussion paper to its members for comments. The respondents from both Boards supported a significant change in the current requirements for reporting financial instruments and agreed that the Boards continue working together to reduce the complexity of the accounting for financial instruments. Since November 2008 IASB has added this project to their active agenda (IASB, 2009a). During July 2009 an exposure draft, ED/2009/7, was issued regarding the classification and measurement of financial instruments which led to the issuance of IFRS 9: Financial instruments during November 2009 (IASB, 2009d).

3.2.1.2 FASB

During 1986 the FASB added a major project on financial instruments to its working agenda (Hernández Hernández, 2003:777; Trombley, 2003:3) resulting in the Financial Accounting Statement (FAS) 133, Accounting for Derivative Instruments and Hedging Activities, issued in June 1998 (Zhang, 2008:1; Dunne *et al.*, 2003:25). This statement was in response to concerns that previously issued standards were inconsistent, inadequate and frequently did not result in timely recognition of the consequences of using derivatives (Abhayawansa & Abeysekera, 2006:22; Trombley, 2003:3). This statement has been amended over a six year period by the following FASB Statements (Green & The Accounting Research Manager Group, 2006:13):

- No.137: Accounting for Derivative Instruments and Hedging Activities – Deferral of the Effective Date of FASB Statement No. 133;
- No.138: Accounting for Certain Derivative Instruments and Certain Hedging Activities; and
- No.149: Amendment of Statement 133 on Derivative Instruments and Hedging Activities.

The goal of Financial Accounting Standard (FAS) 133 is to provide the users of financial statements, including investors, with more information on a company's risk management practices and derivative transactions (Dunne *et al.*, 2003:25). According to FAS 133 derivative instruments are recorded in the balance sheet at *fair value* as either an asset or a liability. The accounting definition of a derivative instrument has also been expanded from only including contracts such as options and futures to include many commodity contracts and embedded derivative instruments. The changes in the fair value of the derivative instruments are recognised in earnings, unless the specific hedge accounting criteria are met. FAS 133 took effect in July 2000 (Kane, 2004). Hernández Hernández (2003) conducted a study investigating the impact of FAS 133 on visibility and transparency of companies, which found that the applications of FAS 133 can lead to comparability problems because derivatives can be accounted for in different ways depending on whether they have been designated as a hedging instrument. On the other hand, once an asset or liability has been recorded, it can be measured in different ways depending on whether the asset or liability is a part of a hedging relationship or not.

The initial response towards FAS 133 was negative, with a survey conducted by the Association for Finance Professionals (AFP) finding that more than two-thirds of the respondents considered FAS 133 to place an excessive burden on their reporting requirements (AFP, 2001:3).

3.2.1.3 ASB

In the UK during 1993 an international association of former government officials and bankers published a document requesting improved disclosure of derivatives and other financial instruments in financial statements (Group of 30, 1993). The ASB responded very slowly and only issued a discussion paper three years later in July 1996 and in September 1998 issued Financial Reporting Standard (FRS) 13 dealing with the disclosure of financial instruments (Dunne, 2004:76). The stated objective of FRS 13 is to ensure that entities, in their financial statements, provide disclosures that enable users to assess that entity's objectives, policies and strategies for issuing or holding financial instruments (Woods & Marginson, 2004:373; Dunne *et al.*, 2003:23). However, information regarding the recognition and measurement of financial instruments was still lacking (Abhayawansa & Abeysekera, 2006:22).

Certain aspects of FRS 13 were criticised as being unclear and much of the early commentary by professionals and academia was negative (Dunne, 2004:81). Woods and Marginson (2004) conducted a study on the accounting of derivatives by UK banks, by evaluating their reporting practices, which concluded that the current reporting practices required under FRS 13 provide limited information to assist the users thereof to make decisions.

With this background of the process each standard setter followed in terms of the accounting standards of financial instruments, it is necessary to consider the differences between these standards.

3.2.2 Key differences in the accounting standards

The key differences in the accounting standards will be discussed with reference to the differences prior to the financial crisis during 2008/2009 and after.

3.2.2.1 Prior 2008/2009

Differences between the different accounting standards on financial instruments do exist. These differences will be highlighted by reflecting on two examples. The first example will reflect on the differences between US and UK GAAP, while the second example will consider the differences between US GAAP and IFRS.

- Key differences between US and UK GAAP

There are a *number* of differences specifically between UK GAAP and US GAAP, but a major difference between FRS 13 and FAS 133, is the accounting treatment of derivatives (Shin, 2004:xxi). An example of the difference due to the varying accounting treatment of derivatives is evident in Barclays plc's accounts. The effect of fair value accounting for derivatives according to FAS 133 in contrast to UK GAAP carrying derivatives at historic cost lowered Barclays plc's net income by £1.1 billion for their financial year ending 2003 (Michael, 2004:122). The application of the same standard would have increased Barclays' net income by £553 million in 2002 and by £278 million in 2001 (Michael, 2004:122).

- Key differences between US GAAP and IFRS

Derivatives and hedging represent one of the more complex and topical areas within both US GAAP and IFRS. Generally IFRS is viewed as less rules laden than US GAAP, but in relation to derivatives and hedging both US GAAP and IFRS embody a significant volume of detailed implementation guidance. The hedging models under IFRS and US GAAP are founded on similar principles. However a number of application differences exist as evident in table 3.1 (PwC, 2008:120). Currently both the IASB and the FASB are reconsidering the classification, measurement and impairment of financial instruments to try and remove inconsistencies between these standards (IASB, 2009a). Table 3.1 below provides a comparative table analysis of the main derivatives reporting standards.

Table 3.1: A comparative analysis of derivatives reporting

IAS 39	FAS 133	FRS 13
Application		
All companies reporting under IAS	US companies and companies reporting under SFAS	UK companies (other than insurance companies)
Coverage		
Measurement and recognition	Measurement and recognition	Disclosure only
Principal disclosures		
All derivative financial instruments should be reflected at fair value. Hedge accounting allowed	All derivative financial instruments should be reflected at fair value. Hedge accounting allowed	Objectives and policies, interest rate risk, currency risk, liquidity risk
Effective date		
1 January 2001 1 January 2005 (for European companies)	15 June 2000	23 March 1999

Source: (Dunne *et al.*, 2003:24)

3.2.2.2 After 2008/2009

The global financial crisis in 2008 and 2009 highlighted that the growing use of various kinds of financial instruments by numerous entities, especially banks, has created systematic risks that were not recognised until disaster struck in the form of the credit crunch (Pounder, 2009:19). The IASB and FASB have responded to the widespread belief that the financial instruments' accounting standards need to be revised. As discussed earlier, the standard setters have been actively working for many years to improve and simplify the financial instruments accounting standards. The priority of their various financial instruments' projects have been severely affected by the global financial crisis relative to many other pressing standard-setting issues on their respective agendas. Since late 2008 the respective Boards have invested unprecedented time and effort into overhauling financial instruments accounting standards (Pounder, 2009:19). The high-level strategy that the two main setters are following to overhaul these standards are as follows.

- IASB

The IASB chose a three-phased approach with the first phase concluding with the issuance of IFRS 9: Financial instruments on 12 November 2009 with financial liabilities specifically excluded from its scope. Financial assets under IFRS 9 can be measured either at their fair value or at amortised cost. A “business model” test is followed to determine their measurement for classification purposes (Pounder, 2009:19-20). On 5 November 2009 the IASB issued its second phase deliverable on the impairment methodology. The exposure draft (ED/2009/12), Financial instruments: amortized cost and impairment, deals with the impairment methodology (IASB, 2010a). An ED on the third phase on hedge accounting is expected during the first quarter of 2010 (Pounder, 2009:20). IAS 39 will eventually be replaced as each phase is completed and the aim is for the replacement project to be completed during 2010. IFRS 9 must be applied starting 1 January 2013 (IASB, 2010b).

- FASB

In contrast to the IASB's three-phased approach, the FASB is taking a “one-shot” approach to revising Accounting Standards Codification (ASC) Topic 825, Financial

instruments, and Topic 815, Derivatives and hedging. The FASB has not yet issued an ED on the proposed changes but it is expected that a single ED covering all aspects of financial instruments including recognition, measurement, impairment and hedge accounting will be issued during the first quarter of 2010. The FASB is expecting to complete their work on financial instruments by the end of 2010 (Pounder, 2010:17).

Even though the IASB and FASB both are in agreement that some financial instruments should be measured at fair value and others at amortised cost, the FASB has a tendency more towards measurement at fair value with measurement at amortised cost only in limited circumstances. The FASB has tentatively communicated that they are considering three classifications of financial instruments (Pounder, 2010:18):

- Fair value with changes recognised in net income;
- fair value with changes recognised in other comprehensive income; or
- amortised cost.

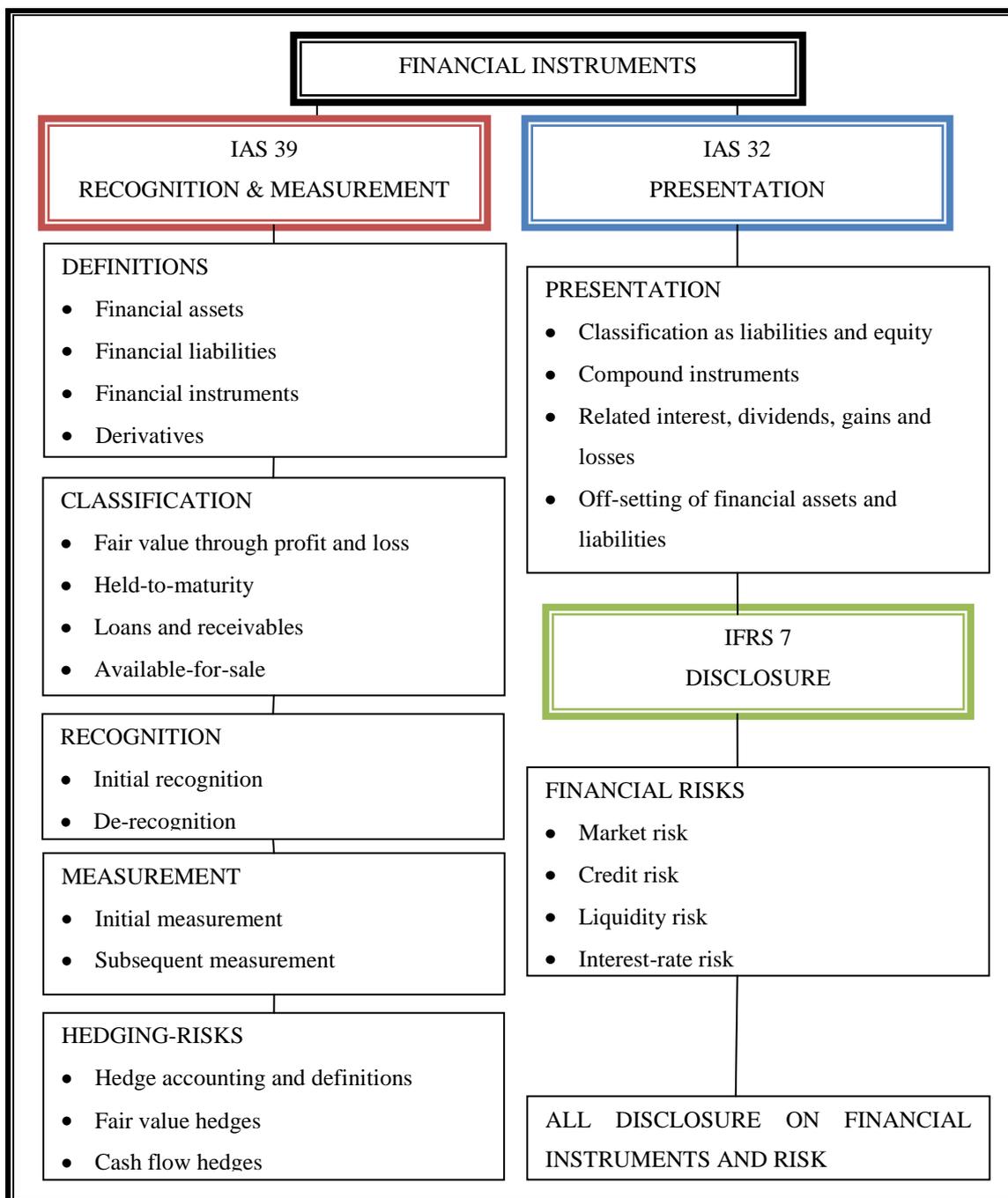
With respect to the convergence of IFRS and US GAAP, many consider 2010 to be a year of “make or break” (Pounder, 2010:18). The current IFRS on financial instruments’ recognition and measurement, IAS 39 will now be discussed.

3.3 INTERNATIONAL FINANCIAL INSTRUMENTS’ STANDARDS

The focus of this study will be on the accounting treatment of commodity derivatives with reference to IFRS. It seems that the initial controversy in the EU towards the implementation of IAS 39 is far from over. Triana (2007:44) published an article with the title “Burn these rules”, which lists ten reasons why to detest IAS 39 and FAS 133, highlighting the onerous and unnecessary burdens these two standards place on companies and requesting accounting regulators to address the “accounting malaise” caused by these “irritatingly” complex standards. Another article published in 2006 mentions the “continued concern caused by IAS 39” (Anon, 2006b:77). During January 2008, in the wake of the credit crunch, it was reported that the six largest international accountancy firms (BDO, Deloitte, Ernst & Young, Grant Thornton; KPMG and PricewaterhouseCoopers) have called for greater consistency in the valuation of complex financial instruments because the illiquid market raised

questions on how to determine fair value (Smith, 2008:5). With this background information in mind, the technical aspects of the accounting standards dealing with financial instruments will be discussed. Although this study focuses on the application of IAS 39, an illustration of how the three international accounting standards on financial instruments, IAS 39, IAS 32 and IFRS 7 interact is shown below. This is followed by a definition of fair value and how it can be determined. Next the scope of IAS 32 and IAS 39, relevant definitions pertaining to the standards and the financial instruments classifications are discussed. The initial and then subsequent recognition and measurement of financial instruments are covered. The re-classification of financial instruments, the derecognition thereof and hedge accounting conclude the technical aspects of the financial instruments' standards.

Figure 3.2: Accounting standards on financial instruments



Source: (Vorster *et al.*, 2008:587 adapted)

3.3.1 Fair value defined

IAS 39 defines **fair value** as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction (IASB, 2008b:2001; Lopes, 2007a:236; PwC, 2005:8). Quoted prices in an active

market are the best evidence of fair value (IASB, 2008b:2012). Fair value accounting requires the measurement of assets and liabilities as opposed to their original cost. Assets and liabilities carried under this method are updated at each reporting period for changes in their fair value due to current market conditions. These fair value adjustments are often posted through profit or loss. In times of economic instability, this can cause a significant amount of volatility in an entity's statement of comprehensive income (Truscott, 2009:45). The FASB issued FAS 157: Fair value measurements in September 2006 addressing how companies should measure fair value when they are required to use a fair value measurement for recognition or disclosure purposes (Ronen, 2008:181). During May 2009 the IASB issued an exposure draft (ED/2009/5) on fair value measurement. A proposed definition for fair value in the exposure draft is the price being received to sell an asset or paid to transfer a liability in a transaction between market participants at the measurement date (IASB, 2009b:7).

IAS 39 further sets out a hierarchy to be applied when determining fair value in respect of a financial instrument (IASB, 2008b:2012; PwC, 2005:8).

- If a quoted market price exists for the instrument traded, that price should be used to value the instrument. The price for an asset held, should be the bid price, while the price for a liability held should be the offer price;
- when no active market exists for the instrument, the following valuation techniques could be used:
- recent market prices or arm's length transaction prices, adjusted for subsequent circumstances;
- reference to the current fair value of another instrument that is substantially the same;
- discounted cash flow analysis;
- option pricing models.

According to a discussion paper (DP), Reducing complexity in reporting financial instruments (March 2008), it is proposed that a long-term solution to measure financial instruments is at *fair value* (Lane, 2008:11, IASB, 2008c:5). Currently under IAS 39 the usage of the fair value option is severely restricted in order to avoid

its inappropriate use by financial institutions (Ramirez, 2007:4). While fair value accounting may be preferable to amortised cost accounting, it does not constitute a complete description of financial instruments (Ryan, 2002:2). While the DP includes a number of arguments for using fair value, concerns about fair value measurement and implementing fair value, there is no solution yet as to the valuation of derivative instruments traded in an inactive or illiquid market (Lane, 2008:11). Estimation errors on the valuation of derivative instruments that are highly sensitive to valuations assumptions, are a cause for concern. In order to make financial statements more comparable, information about these derivatives' market and other risks should be disclosed (Ryan, 2002:2).

A study was conducted by Baker (1997) on accounting for the financial instruments listed on the SAFEX in the context of the International Accounting Standards Committee conceptual framework. The objective of the study was to evaluate the views of both the preparers of financial statements and the users thereof on the perception whether the SAFEX market price was an accurate measure of *fair value* for financial reporting purposes. The findings indicated that the *users* of financial statements do consider the SAFEX mark-to-market price to be a reliable measure of the fair value of options and futures. The *preparers* of financial statements also indicated that the mark-to-market SAFEX price was considered to be the most preferred method of determining fair value for the purpose of financial reporting for both options and futures.

Based on this background of controversy and complexity, the scope of IAS 32 and IAS 39 will now be discussed. Although IFRS 7 has been mentioned earlier, it is not specifically included in the scope of the empirical study.

3.3.2 Scope

The history of the development of accounting standards for financial instruments has been discussed at length. However, the question may be asked as to whether commodity derivative contracts fall within the scope of IAS 32, IAS 39 and IFRS 7? Coetsee (2006:2) proposed a three-step approach to be followed when determining whether such a contract should be included in the scope of IAS 32, IAS 39 and IFRS 7:

- Does the contract fit into the definition of a *financial instrument* and the definition of a *financial asset* or a *financial liability*?
- Is the contract specifically included or excluded from the scope of the above-mentioned accounting standards?
- Does the scope include the total contract or only parts of it because of other provisions, such as hedge accounting and embedded derivatives?

Each one of these criteria will now be discussed.

3.3.2.1 First step: Definition of financial instrument and financial asset / liability

A *financial instrument* is defined by IAS 32 as any contract that gives rise to both a financial asset in the one entity and a financial liability or equity instrument in another entity (Van der Merwe, 2009:60; IASB, 2008a:1562; Coetsee, 2006:2). It is therefore important to note that a contractual relationship should exist between parties which have clear economic consequences (Everingham, Kleynhans & Posthumus, 2007:248). According to the Application Guidance of IAS 32 (IASB, 2008a:1585) contracts to buy or sell a *non-financial* item (commodity contracts) **do not** meet the definition of a financial instrument. The contractual right of one party to receive a *non-financial asset* (commodity contract) and the corresponding obligation of the other party **do not** establish a present right or obligation of either party to receive, exchange or deliver a *financial asset*. In effect, the parties buying and selling the contracts are trading the underlying commodity. The example used by IAS 32 of contracts providing settlement only by the receipt or delivery of a non-financial item is option, futures or forward contracts on silver (IASB, 2008a:1585). However, some contracts to buy or sell non-financial items that can be settled net or by exchanging financial instruments, or in which the non-financial item is readily convertible to cash, are within the scope of the Standard as if they were financial instruments. These exceptions will be discussed in paragraph 3.3.2.2 on page 79.

According to IAS 32 (IASB, 2008a:1562) a *financial asset* is defined as any asset that is:

- Cash;
- an equity instrument of another entity;

- a contractual right to either receive cash or another financial asset from another entity or to exchange financial assets or financial liabilities with another entity under conditions that are potentially favourable to the entity; or
- a contract that will or may be settled in the entity's own equity instruments.

In contrast a *financial liability* is defined by IAS 32 (IASB, 2008a:1562-1563) as a contractual obligation:

- To deliver cash or another financial asset to another entity; or
- to exchange financial assets or financial liabilities with another entity under conditions that are potentially unfavourable to the entity; or
- a contract that may be settled in the entity's own equity instruments and is either a non-derivative or a derivative that may be settled for a fixed number of the entity's own instruments.

Considering the above, it can be concluded that commodity derivative contracts may in all likelihood **not** fall within the scope of IAS 32, IAS 39 and IFRS 7 based on the first step of the three-step approach suggested by Coetsee (2006:2).

3.3.2.2 Second step: Inclusion of contracts

The basic principle is that all financial instruments, irrespective of entity or type, fall within the scope of IAS 32 and IAS 39 unless specifically excluded (IASB, 2008a:1560; IASB, 2008b:1995). Even though a number of specific exclusions are listed in IAS 32 and IAS 39, none of these exclusions are relevant to commodity derivatives.

Contracts that are specifically included in IAS 32 and IAS 39 are contracts to buy or sell a *non-financial* item that can be settled **net in cash** or another financial instrument (including commodity derivative contracts) or by exchanging financial instruments. Exceptions to this rule exist when contracts were entered into for the purpose of the receipt or delivery of a non-financial item in accordance with the entity's expected purchase, sale or usage requirements i.e. a "normal" purchase/sale (Van der Merwe, 2009:60; IASB, 2008b:1997, Lopes, 2007b:38). Three conditions have to be met in order to qualify for this exemption (Lopes 2007a:235):

- Contracts are entered into and continue to meet the organisation's own purchase, sale or usage criteria;
- the contracts are designated for this purpose at inception of the contract; and
- the contracts are settled by physical delivery.

If an organisation qualifies for all three conditions, the contract is accounted for as an *executory* contract that is it is treated as off-balance sheet until the contract is completed (Lopes, 2007a:235). Furthermore, such a “normal” purchase / sale, falls within the scope of IAS 2: Inventories (IASB, 2008d:985), which prescribes that it should be valued at the lower of cost or net realisable value. A distinction can be made between inventory held for own use and inventory held by commodity broker-traders according to IAS 2 paragraph 3 and 5 (IASB, 2008d:985). IAS 2 specifies that inventory held for own use are measured at the lower of cost or net realisable value. On the other hand, the inventory held by commodity broker-traders are measured at fair value less costs to sell (IASB, 2008d:985-986).

There are a number of ways in which a contract to buy or sell a non-financial item can be settled net in cash or another financial instrument or exchanging financial instruments. The conditions are as follows: (IASB, 2008b:1997; Lopes, 2007b:38; Ramirez, 2007:391; Coetsee, 2006:9):

- When the contract permits it; or
- it is common practice to settle similar contracts net in cash, or entering in *offsetting contracts*, or selling the contracts;
- it is common practice to take delivery, and shortly after, selling it so as to profit from the short-term fluctuations in the commodity price or a dealer's margin;
- when the underlying non-financial item is readily convertible to cash.

Thus, whether or not a contract falls within the scope of IAS 39, is determined by business practices, management's intent about physical delivery and control objectives (Lopes, 2007a:235). Generally it is business practice for agricultural companies / cooperatives to enter into commodity derivative contracts to reduce price risk and therefore the practice is to offset the contracts before its expiry. It is also practice to take delivery of the underlying commodity from the producer and selling it shortly after to a processor. Commodity derivatives are actively quoted in both the

spot and futures markets which means that it always meets the “readily convertible to cash” criterion.

Commodity contracts falling outside the scope of IAS39 are referred to as “own-use” contracts. On the face of it, it seems that a contract should be treated as an “own-use” contract if the entity intends to take delivery of the underlying commodity in order to meet its purchase, sale or usage requirements. However, if an entity has a practice of entering into contracts for physical delivery to utilise as inventory for trading purposes, it cannot treat the contracts for physical delivery as “own use” because a rigid application of the above-mentioned conditions may invalidate this consideration (Ramirez, 2007:391).

In conclusion, commodity derivative contracts are therefore specifically included in IAS 32 and IAS 39 **only** if the underlying commodity is not purchased for the entity’s own use.

3.3.2.3 Third step: Partially or totally included

The third step according to Coetsee’s three-step approach is to determine whether the commodity contract is partially or totally included within the scope of IAS 32, IAS 39 and IFRS 7. Based on the preceding discussion, commodity derivative contracts are totally included in the relevant financial accounting standards’ scope, except for commodity derivative contracts leading to physical delivery of the underlying commodity for the “own-use” of the entity.

Once it has been determined that a commodity derivative contract falls within the scope of IAS 32, IAS 39 and IFRS 7, it has to be determined **when** it is recognised and **how** it is measured. A few definitions and classifications have to be considered before recognition and measurement are discussed.

3.3.2.4 Gross versus net settlement of contracts

Derivative contracts have to be *settled* at a future date. Two options for settlement exist:

- Gross physical basis: A derivative contract which can be settled by purchasing the actual item or commodity (Vorster *et al.*, 2008:596).
- Net basis: If a derivative contract that is settled on the net basis, i.e. the underlying commodity is not purchased but rather settled by paying the net movement in the price of the commodity involved (Vorster *et al.*, 2008:596).

The difference in accounting treatment between gross and net settlement of contracts can be explained by utilising an example.

Example 3.1: Gross versus net settlement of contracts

Agribusiness A (ABA) is interested in purchasing white maize from a producer. An increase in the price of white maize is expected within the next six months. On the 1st of March 20.9 ABA enters into an agreement to buy 20 000 tons of white maize on the 31st of August 20.9 at a price of R800 per ton. The current market value of the white maize is R790 per ton. On 31st of August 20.9 the market value of the white maize is R900 per kilogram.

Source: (Author)

This contract represents an agreement to purchase a non-financial asset (commodity) and can be treated in two ways.

Example 3.1: Accounting treatment 1

If it is ABA’s intention to take physical delivery of the white maize and utilise it as “own use” inventory, the contract will fall outside of the scope of IAS 39 and will therefore not be accounted for as a derivative financial instrument. When settling the contract on a gross basis, the journal entry will be as follows:

Journal entry: Accounting treatment 1

	Dr	Cr
	R	R
31 August 20.9		
Inventory – white maize	16 000 000	
Bank (20 000 ton x R800)		16 000 000
Payment of agreed price for physical delivery of maize		

Source: (Author)

Example 3.1: Accounting treatment 2:

If it is ABA's intention and the contract allows net settlement, the contract *will* fall within the scope of IAS 39 and will therefore be accounted for as a derivative financial instrument. The journal entries will then be:

Journal entries: Accounting treatment 2

	Dr	Cr
1 March 20.9		
Loss at initial recognition	200 000	
Derivative financial liability (20 000 x (R790 – R800))		200 000
Recognise derivative instrument at fair value		
31 August 20.9		
Derivative financial asset (20 000 x (900 – 790))	2 200 000	
Fair value adjustment (through profit / loss)		2 200 000
Adjusting contract to fair value at settlement		
31 August 20.9		
Bank (20 000 x 100)	2 000 000	
Derivative financial liability	200 000	
Derivative financial asset		2 200 000
Settle contract in cash on a net basis		

Source: (Author)

3.3.3 Definitions and classifications

IAS 32 defines a financial instrument, financial asset and financial liability while IAS 39 defines a **derivative** as a financial instrument with *all* of the following characteristics (Van der Merwe, 2009:62; IASB, 2008b:1998; Ramirez, 2007:6-7):

- Its value changes in response to changes in the “underlying” price or index, which might include an interest rate, a foreign exchange rate, a **commodity price**, etc.;
- no initial investment is required, or the amount required is significantly less than the investment required to purchase the underlying instrument; and
- it is settled at a future date

The Dictionary of Finance and Banking (2005:113) defines a derivative as a financial instrument that’s price has a strong relationship with an underlying currency, commodity, financial instrument or economic variable. Forward contracts and option contracts with the “underlying” being a commodity, are excluded from the definition because these contracts are normally settled by the delivery of a non-financial item. However, if these contracts can be settled net in cash or by another financial instrument, it can be regarded as a derivative contract. On the other hand, a futures contract is traded on an exchange and therefore has been standardised. They are defined as derivatives, since normally they can be settled in cash (IASB, 2008b:2037; Coetsee, 2006:49-50).

IAS 39 identifies four categories of financial instruments, which will be discussed below.

3.3.3.1 Category: At fair value through profit or loss

The following conditions have to be met for a financial instrument to be classified as at fair value through profit or loss:

- It is classified as *held for trading*. The criteria for held for trading are if the financial asset or liability was principally acquired for the purpose of *trading* it (i.e. selling it) in the near future or it is part of a portfolio investment with a view of *short-term profit taking* or it is a *derivative*.

- The entity decides to designate the financial instrument *at initial recognition* as at fair value through profit or loss.
- An entity may choose to classify all financial instruments as fair value through profit or loss, but then it has to be done at initial recognition because it cannot be reversed later (Everingham *et al.*, 2007:253). The two sub-categories, namely “held for trading” and “designated by the entity at fair value through profit or loss” are treated similarly but must be classified separately in the balance sheet as prescribed by IFRS 7 (Coetsee, 2006:19-20).

3.3.3.2 Category: Held-to-maturity investments

Financial instruments classified as held-to-maturity investments are *non-derivative* financial assets with fixed or determinable payments with a fixed maturity date. The entity has to have a positive intent and ability to hold such investments to maturity (IASB, 2008b:1999). Ordinary shares held in another company do not constitute a held-to-maturity investment because ordinary shares do not mature or expire (Vorster *et al.*, 2008:600).

3.3.3.3 Category: Loans and receivables

Loans and receivables are also non-derivative financial instruments with fixed or determinable payments not quoted in an active market and which have not been classified as another category of financial instruments. Another exception is if it is not expected that substantially all of the principal (capital) will be recovered. Typically trade and other receivables will be categorised under this classification (Van der Merwe, 2009:63; Everingham, 2007:253).

3.3.3.4 Category: Available-for-sale financial assets

The last classification is usually financial instruments designated by the entity as such or it does not satisfy the definitions of the other three classifications (Van der Merwe, 2009:63).

3.3.4 Initial recognition and measurement

The basic principle for *initial recognition* as determined by IAS 39 is that an entity shall recognise a financial asset or financial liability on its statement of financial position when it becomes a party to the contractual provisions of the instrument (IASB, 2008b:2003; Coetsee, 2006:11). Practically this means that a financial instrument should be recognised from the date an entity becomes party to the financial instrument's contract (Coetsee, 2006:11).

Initially the financial instrument is *measured* at fair value including transaction costs directly attributable to the issuing or acquisition of the instrument. However, financial instruments classified as "at fair value through profit or loss", are measured excluding transaction cost (Van der Merwe, 2009:67; IASB, 2008b:2010). *Transaction cost* includes fees and commissions paid to brokers and dealers, agents, advisers, levies by regulatory agencies and security exchanges, as well as transfer taxes and duties. It does however, exclude debt premiums or discounts, financing costs, internal administrative or holding costs (Coetsee, 2006:15). Further guidelines are given by the Application Guide to IAS 39 that the fair value on initial recognition is normally the transaction price (IASB, 2008b:2058).

3.3.5 Subsequent measurement and treatment of gains and losses

IAS 39 stipulates that after initial recognition financial assets have to be measured at fair value, excluding transaction costs. Loans and receivables, held-to-maturity investments and investments in equity instruments that do not have a quoted market price in an active market, are measured at amortised cost. The accounting treatment of each category of financial assets is summarised in Table 3.2.

Table 3.2: Subsequent measurement of financial assets and treatment of gains / losses

Category	Subsequent measurement	Gain or loss
Fair value through profit or loss: Held for trading	Fair value	Fair value adjustments to profit / loss
Fair value through profit and loss: Designated	Fair value	Fair value adjustments to profit / loss
Held-to-maturity	Amortised cost (effective interest rate method)	Finance cost / income (interest) to profit / loss
Loans and receivables	Amortised cost (effective interest rate method)	Finance cost / income (interest) to profit / loss
Available-for-sale	Fair value	Fair value adjustments to other comprehensive income. Upon derecognition the other comprehensive income realise to profit / loss

Source: (Van der Merwe, 2009:68)

It can be seen that the categories at fair value through profit or loss (held for trading and designated) and available for sale are to be subsequently valued at fair value, while the amortised-cost model is utilised to subsequently measure held-to-maturity investments and loans and receivables. *Amortised cost* is defined as the amount of initial recognition less principal repayments and impairment losses, plus accumulated amortisation according to the effective interest rate method. The *effective interest rate method* on the other hand, is defined as the method according to which amortised cost and related finance costs are calculated. The *effective interest rate* is the rate that discounts future cash flows, that includes transaction costs and premium/discount, but excluding credit losses, to the net carrying amount of the instrument (Van der Merwe, 2009:62; IASB, 2008b:2000-2001).

Coetsee (2006:25) suggests using the following steps in determining the amortised cost:

- Determine the initial amount, including transaction cost.
- determine estimated future cash payments or receipts;
- determine the effective interest rate;
- determine the effective interest for the period, i.e. the amortisation for the period;
- determine the amortised cost at the end of the period.

3.3.6 Re-classification

IAS 39 does allow reclassification of financial assets or liabilities from one category to another, only under limited circumstances. Reclassification of financial instruments **into** the category “fair value through profit or loss” is prohibited, but reclassification **out** of this category is allowed under rare circumstances. Reclassification out of this category was previously prohibited, but after the sub-prime crisis of 2008/9 the IASB issued an emergency amendment to IAS 39 in which entities are allowed to reclassify certain items in this manner, with the exception of the following (Vorster *et al.*, 2008:614-616; IASB, 2008b:2012):

- Reclassifying a *derivative* out of this category is not allowed;
- reclassifying any financial instrument out of this category that was *designated* into this category at initial recognition is not allowed;
- if a financial asset is no longer held for the purpose of selling or repurchasing it in the near future, it may be reclassified out of this category. Certain requirements, specified in IAS 39 should be met before an entity can do this.
- a held-to-maturity investment’s classification (carried at amortised cost) may change due to an entity’s change in intention or ability. The held-to-maturity investment is then reclassified into the available-for-sale category (carried at fair value). If this does happen, the difference between the carrying amount and fair value would then be recognised in other comprehensive income.

3.3.7 Derecognition

In contrast to the recognition of a financial asset, derecognition refers to the removal of an asset from the statement of financial position. Due to the complexity of transactions related to financial assets and liabilities, it is not always clear when it should be derecognised. IAS 39 specifies the circumstances in which an entity must derecognise a financial asset as only when (IASB, 2008b:2004; Vorster *et al.*, 2008:624; Everingham *et al.*, 2007:256):

- The contractual rights to the cash flows from the financial asset expire; or
- the financial asset is transferred and the transfer qualifies for derecognition.

3.3.8 Hedge accounting

As was mentioned earlier many companies hedge themselves against risks such as price risk and financial risk. Derivatives are used by many entities to mitigate risk. The Dictionary of Finance and Banking (2005:194) defines a *hedge* as a position or transaction designed to mitigate or transfer the risk of other financial exposures or something that provides protection against a financial risk (Longman Business English Dictionary, 2001:219). The concept of *hedging* on the other hand is designed as the offsetting of gains and losses on two transactions whose values move in opposite directions in relation to a given risk, for example a change in exchange rates (Everingham *et al.*, 2007:259). Vorster *et al.* (2008:629) also define hedging as the designation of two or more hedging instruments in order for the changes in their value fair value to off-set, in whole or in part, the changes in fair value or cash flows of a hedged item. It can therefore be interpreted that a hedge or the term hedging refers to the protection against a financial risk by utilising hedging instruments.

The basic principle in IAS 39 is that all derivatives are recognised and measured at fair value with gains and losses recognised in the Statement of Comprehensive Income. However, derivatives are commonly used to hedge recognised assets and liabilities that are measured either at cost, amortised cost or at fair value with gains and losses in equity and items such as firm commitments or forecast transactions that are not recognised in the Statement of Financial Position (or Balance Sheet as it was known previously). This creates a mismatch in the timing of gains and losses leading

to volatility in the Statement of Comprehensive Income that does not reflect economic volatility (Butler, 2009:39; Lopes, 2007b:238). The aim of hedge accounting is to reflect the findings of hedging activities, in particular hedging using derivatives, by reporting the effects of the risk being hedged and the derivative *in the same period*. With hedge accounting an entity can override the normal accounting treatment of derivatives, i.e. fair value through profit or loss.

An entity cannot simply apply hedge accounting but has to earn the right to do so by adhering to strict criteria (refer page 91). When an entity applies hedge accounting much of the volatility created in the Statement of Comprehensive Income by normal accounting treatment of derivatives' gains and losses is avoided. A prerequisite for hedge accounting is that a hedging instrument has to be designated as an offset to the changes in the fair value or cash flows of a hedged item (Vorster *et al.*, 2008:629; PwC, 2005:7). A few definitions have to be provided before the details of hedge accounting are discussed.

3.3.8.1 Definitions: hedge accounting

The following definitions and concepts relating to hedge accounting are provided by IAS 39. It is important to grasp each definition in order to understand hedge accounting.

A *hedged item* is an asset, liability, firm commitment, highly probable forecast transaction or net investment in a foreign operation that (a) exposes the entity to risk of changes in fair value or future cash flows and (b) is designated as being hedged. It is therefore the transaction which creates the original exposure to the risk (Vorster *et al.*, 2008:629; Everingham *et al.*, 2007:259). Four categories of hedged items are identified by paragraph 78 of IAS 39, namely:

- A recognised asset or liability;
- an unrecognised firm commitment;
- a highly probable forecast transaction; and
- a net investment in a foreign operation

A *firm commitment* is regarded as a binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date (IASB, 2008b:2001; Vorster *et al.*, 2008:631). A *forecast transaction* on the other hand, is an uncommitted but anticipated future transaction (IASB, 2008b:2001; Vorster *et al.*, 2008:631). Paragraph 78 of IAS 39 further qualifies a *hedged item* as (IASB, 2008b:2019; Everingham *et al.*, 2007:259; Coetsee, 2006:89-90):

- A single item such as an asset, liability, firm commitment;
- a group of such items with similar risk characteristics;
- a portion of the portfolio.

A *hedging instrument* is defined by IAS 39 (IASB, 2008b:2001) as a designated derivative or a designated non-derivative financial asset or non-derivative financial liability whose fair value or cash flows are expected to *offset* changes in the fair value or cash flows of a designated hedge item. The transaction therefore aimed at reducing or offsetting the risk (Everingham *et al.*, 2007:259; PwC, 2005:11). The following are *qualifying* hedging instruments:

- Derivatives, except certain *written* options;
- written options may qualify as hedging instruments if designated to offset a purchased option;
- non-derivative financial assets or liabilities (only for the hedging of a foreign currency risk); and
- purchased options.

Based on the above, futures traded on SAFEX are thus eligible for entering hedging relationships and can be treated under hedging accounting rules.

Hedge effectiveness is the degree to which changes in fair value or cash flows of the hedged item that is attributable to a hedged risk are offset by changes in the fair value or cash flows of the hedging instrument (IASB, 2008b:2001; Coetsee, 2006:85).

3.3.8.2 Qualifying for hedge accounting

Five conditions have to be met in order for a hedging relationship to qualify for hedge accounting. All of these five conditions have to be met in order to qualify. Each one

of the five conditions will now be discussed (Van der Merwe, 2009:81; IASB, 2008b:2022; Vorster *et al.*, 2008:631; Everingham *et al.*, 2007:261; PwC, 2005:13-14).

- Documentation

At the inception of the hedge, formal designation and documentation indicating the hedging relationship and the entity's risk management objective and strategy for undertaking the hedge, must exist.

- Hedge effectiveness

There is an expectation that the hedge will be highly effective (between 80% and 125%) in achieving off-setting changes in fair value or cash flows attributable to the hedged risk. This is referred to as prospective effectiveness testing which is a forward-looking test of whether a hedging relationship is expected to be highly effective in the future.

- Cash flow hedges

When considering cash flow hedges (refer definition below), a forecast transaction, that is the subject of the hedge, must be highly probable.

- Measurement of hedge effectiveness

The effectiveness of the hedge can be reliably measured, i.e. the fair value or cash flows of the hedged item attributable to the hedged risk, as well as the fair value of the hedging instrument must be reliably measured.

- Assessment of hedge effectiveness

The hedge effectiveness should be assessed on an ongoing basis and determined to have been highly effective throughout the financial reporting periods for which the hedge was designated. This is referred to as retrospective effectiveness testing which is a backward-looking test of whether a hedging relationship has indeed been highly effective throughout the hedging period.

3.3.8.3 Hedging relationships

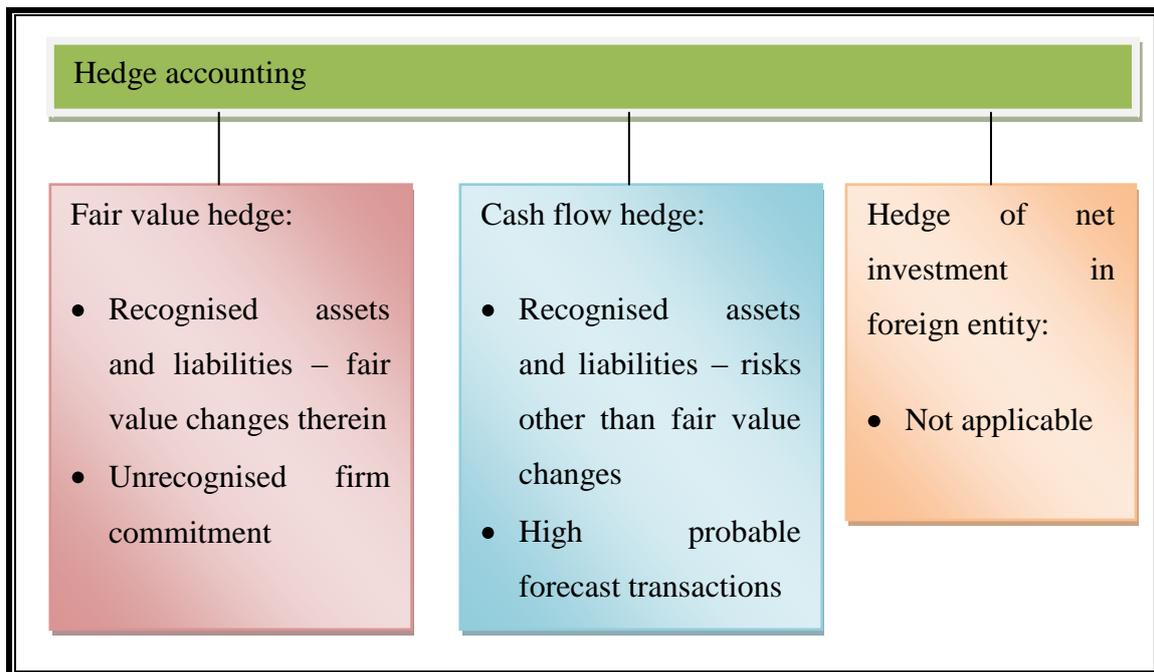
Three types of hedging relationships are identified by IAS 39 (refer Figure 3.2) (Van der Merwe, 2009:81; IASB, 2008b:2021; Vorster *et al.*, 2008:631; Everingham *et al.*, 2007:261):

Fair value hedge: a hedge of the exposure to changes in the fair value of a **recognised** asset or liability, or an **unrecognised** firm commitment or an identified portion of such an asset, liability or firm commitment, that is attributable to a particular risk and that could affect reported profit or loss.

Cash flow hedge: a hedge of the exposure to variability in cash flows attributable to a particular risk associated with a **recognised** asset or liability, or of a **highly probable forecast transaction** that may influence profit or loss. The guidance on implementing IAS 39, F 3.7 (IASB, 2008b:2256; Coetsee, 2006:87) specifies that the term “highly probable” should not be based on management’s intentions but should be supported by observable facts and circumstances. Vorster *et al.* (2008:632) estimate an 80% to 90% probability of the transaction occurring.

Hedge of a net investment in a foreign operation as defined by IAS 21: Accounting for the effects of changes in foreign exchange rates.

Figure 3.3: Hedging relationship types



Source: (Vorster *et al.*, 2008:632)

The first two types of hedging relationships will now be discussed. The third type of hedging relationship falls outside the scope of this study due to most of the entities not having foreign operations.

- Fair value hedges

The objective of a fair value hedge is to *match* the fair value of the hedging instrument with the gain or loss of the hedging item being hedged, in profit or loss. A fair value hedge will therefore only arise when there are both a hedging instrument and a hedged position. With reference to the firm commitment, the hedged position is the commitment itself. The cumulative change in the fair value of the commitment is recognised as an asset or liability, while the corresponding gain or loss is recognised in profit or loss, thereby achieving matching in profit or loss.

The gain or loss on the hedged item is recognised in profit or loss, even if the hedged item is measured at cost or if the hedged item is classified as an available-for-sale financial instrument and thus changes in fair value would normally be recognised

directly in equity. This ensures that the matching intended by hedge accounting is achieved (Everingham *et al.*, 2007:261; Coetsee, 2006:91-92).

- Cash flow hedges

If a cash flow hedge meets the five conditions required to qualify for hedge accounting, the cash flow hedge would be accounted for as follows (IASB, 2008b:2024; Everingham *et al.*, 2007:262; Coetsee, 2006:92):

- The portion of the gain or loss on the hedging instrument that is determined to be *effective* shall be recognised directly in equity through the statement of changes in equity; and
- the *ineffective* portion of the gain or loss on the hedging instrument shall be recognised in profit or loss.

The effective portion of the hedge is deferred to equity until the underlying transaction is recognised in profit and loss. IAS 39 (IASB, 2008b:2024) specifically states how the effective portion should be calculated in order to defer it to equity and is the *lesser* of the following:

- The cumulative gain or loss on the hedging instrument from the inception of the hedge; and
- the cumulative change in the fair value of the expected future cash flows on the hedged item from the inception of the hedge.

The ineffective portion of the hedge is the remaining gain or loss on the hedging instrument. This portion is not deferred to equity and should be recognised in profit or loss. When the entity's documented risk-management strategy for a particular hedging relationship excludes a certain component of the gain or loss or related cash flows of the hedging instrument from the assessment of hedge effectiveness, this portion would also be classified as ineffective (IASB, 2008b:2024; Everingham *et al.*, 2007:262; Coetsee, 2006:92-93).

3.3.8.4 Discontinuing hedge accounting

Hedge accounting for fair value hedge or cash flow hedges should discontinue based on the following circumstances (IASB, 2008b:2025-2026; Everingham *et al.*, 2007:262; Coetsee, 2006:100):

- The hedging instrument expires, is sold, terminated or exercised.
- The hedge no longer meets the five conditions in paragraph 88 for hedge accounting.
- The committed or forecasted transaction is no longer expected to occur.
- The entity revokes the designation.

3.3.9 Disclosure requirement

During March 2009 the IASB announced an amendment to IFRS 7 Financial Instruments: Disclosure. Enhanced disclosures about fair value measurements and liquidity risk are required. These amendments move the standard closer to the U.S. accounting standard SFAS 157: Fair value measurements, by introducing a three-level hierarchy for fair value measurement disclosures. These three levels are (McCollum, 2009:14; Deloitte Touche, 2009:2):

- Level 1: assets can be valued based on quoted prices in an active market for identical assets or liabilities.
- Level 2: valuation of assets is based on observable market prices and inputs.
- Level 3: assets considered as illiquid, are valued based on management's best estimate from mathematical models and not on observable data.

These amendments apply to financial years beginning on or after 1 January 2009. Sir David Tweedie, the IASB chairman, has commented that these additional disclosure requirements combined with the three-level hierarchy will assist in clarifying information (McCollum, 2009:14).

3.3.10 Conclusion

Many entities do not choose to apply hedge accounting because of the strict rules governing it. However, hedge accounting is a means to achieve matching in the Statement of Comprehensive Income and the Statement of Financial Position.

The accounting principles for the recognition and measurement of information about financial instruments are established by IAS 39 and these general principles can be summarised as that the intent of management *directs* the classification and accounting of financial instruments as assets or liabilities, that derivative instruments are measured at *fair value*, that the changes in fair value of derivatives are accounted for depending on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged and hedge accounting can only be applied if an entity adheres to the strict hedge accounting criteria.

3.4 EXAMPLE OF DIFFERENT ACCOUNTING TREATMENTS

The accounting treatment of commodity derivatives by an entity that has adopted IFRS can vary as highlighted by the preceding discussions. In order to assist one to determine the accounting treatment of a commodity contract, a flow diagram, based on IAS 39, was developed (refer Appendix 2, page 218). The flow diagram was utilised in the empirical study.

To further explain the different accounting treatments of commodity contracts, a short case study has been developed.

Case study 1: Examples of different accounting treatments for commodity contracts
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During July 20.8 Producer A approaches Agribusiness A (ABA) requesting production financing to produce 250 hectares of white maize. ABA determines that the LAR for white maize in Producer A's region is 4 tons per hectare. After ABA's finance department has considered Producer A's request and was rated based on the risk to their business, Producer A qualified for 80% financing of 75% of his LAR.

Assume the current SAFEX price for white maize for delivery in July 20.9 is R1 300 per ton. The producer therefore settles the sale at R1 300 per ton. Transaction costs, margin requirements and transport differential are ignored in this case study.

The financing ABA is prepared to provide Producer A is therefore:

Percentage financing x LAR x 80% x selling price

$$75\% \times 4 \text{ tons per hectare} \times 80\% \times R1\ 300 \times 250 \text{ hectares} = R780\ 000$$

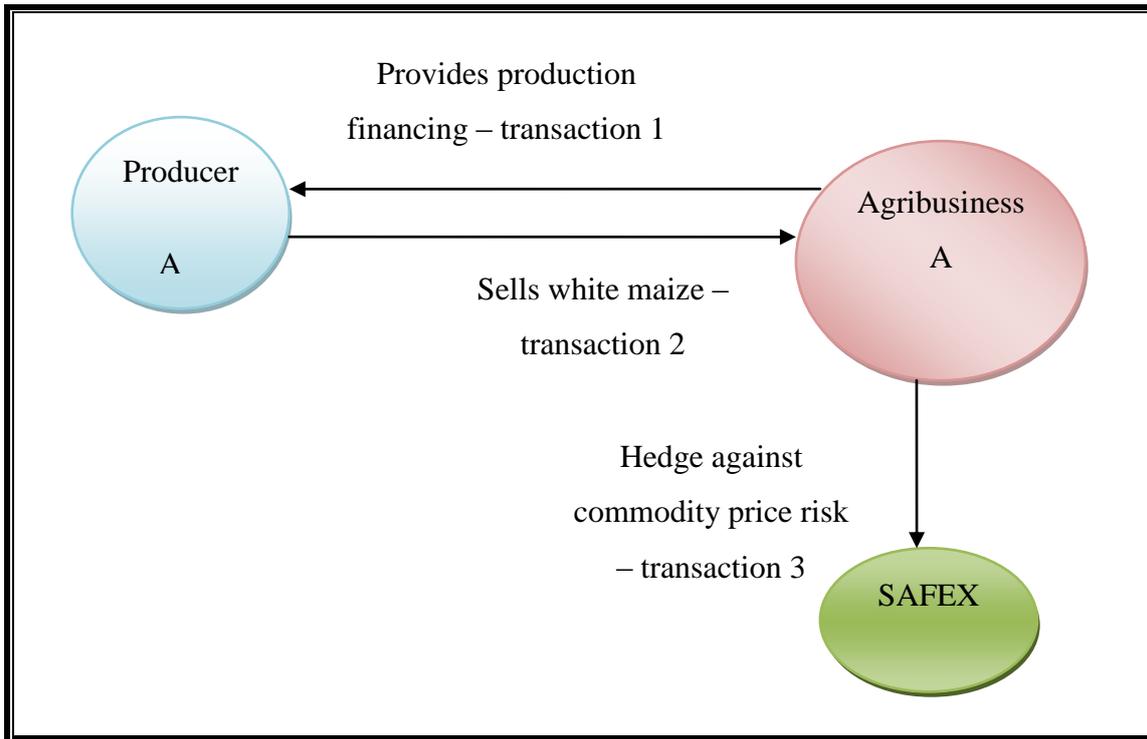
ABA is exposed to commodity price risk. In order to hedge the company against the price risk, ABA sells 10 SAFEX futures contracts (250 hectares x 4 tons per hectare = 1 000 tons / 100 tons) of white maize for delivery in July 20x9 at the current price of R1 300 per ton. At 30 June 20.9 the SAFEX white maize price (spot price) is R1 200 per ton.

Producer A's production financing agreement specifies that 50% of the agreed financing is provided during September 20.8, 30% during December 20.8 and 20% during May 20.9. Interest is charged annually at 30 June by ABA at prime plus 4%. The current prime rate is 12%.

ABA complies with IFRS and has a financial year-end of 30 June. It is assumed that ABA captures the mark-to-market movement annually at the financial year-end. ABA withdraws cash for profits and contributes cash for losses as and when they occur.

The relevant transactions can be schematically shown as follows:

Figure 3.4: Flow of transactions between Producer A and ABA



Source: (Author)

ABA can treat the supply contract of Producer A (transaction 2) and the SAFEX futures contract (transaction 3) in four possible ways. The accounting treatment of the finance agreement (transaction 1) is similar in these four different treatments and will be as follows:

Journal entries: Case study 1

	Dr	Cr
	R	R
July 20.8		
No entry, as no cash flows yet.		
Sept 20.8		
Loans and receivables	390 000	
Bank		390 000
Payment of 50% production financing		

Dec 20.8		
Loans and receivables	234 000	
Bank		234 000
Payment of 30% production financing		
May 20.9		
Loans and receivables	156 000	
Bank		156 000
Payment of 20% production financing		
30 June 20.9		
Bank $(390\,000 \times 3/12 \times 16\%) + (624\,000 \times 5/12 \times 16\%)$	67 600	
+ $(780\,000 \times 1/12 \times 16\%)$		
Finance income		67 600
Receipt of interest on production loan		

Source: (Author)

The loans and receivables asset is shown at the face value of the loan, and not at amortised cost. Finance cost is charged for the loan therefore it is not necessary to calculate an effective interest rate and the amortised cost.

The four different accounting treatments by ABA of transaction 2 and transaction 3 will now be discussed.

Case study 1: Accounting treatment 1

Agribusiness A's intention can be to take physical delivery of the maize based on their "normal" usage requirements. The contract will then fall outside the scope of IAS 39 and the contract will be treated as inventory. The journal entries are as follows:

Journal entries: Accounting treatment 1

	Dr	Cr
	R	R
July 20.8		
No entry, as contract is not a derivative		
July 20.9		
Inventory (1 000 tons x 1 300)	1 300 000	
Bank		1 300 000
Adjusting contract to fair value at settlement		

Source: (Author)

Transaction 3 would be treated as a financial instrument, because it is defined by IAS 32 as a *derivative*. It will be classified as a “fair value through profit or loss” and will be measured at fair value.

Case study 1: Accounting treatment 2

It could be practice for Agribusiness A to take physical delivery of the white maize sold in transaction 2 and then sell it shortly after. The agreement will then be treated as a derivative and classified as “*fair value through profit or loss*”. The mark-to-market movement (fair value movement) on the derivative will be recognised in profit or loss.

Transaction 3 would also be treated as a financial instrument, because it is defined by IAS 32 as a *derivative*. It will be classified as a “*fair value through profit or loss*” and will be measured at fair value. The journal entries of transaction 2 will be as follows:

Journal entries: Accounting treatment 2

	Dr	Cr
	R	R
July 20.8		
No entry as derivative has no value.		

30 June 20.9		
Fair value adjustment (profit or loss) (1 000 x (1 300 – 1 200))	100 000	
Derivative financial liability		100 000
Recognise loss on derivative at year-end		

Source: (Author)

For the benefit of the next two accounting treatments it is assumed that ABA adopts hedge accounting after qualifying based on the strict criteria prescribed by IAS 39. Three possible hedging relationships can exist namely:

- Fair value hedge of a recognised asset or liability; or
- Fair value hedge of a firm commitment; or
- Cash flow hedge

In this case study an asset or liability has not been recognised yet. Only when Producer A physically delivers the white maize, the asset and liability can be recognised. Therefore only the last two hedging relationships will be discussed.

Case study 1: Accounting treatment 3

Transaction 2 could be regarded as a *firm commitment* by ABA. The definition of a firm commitment is: a binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date (IASB, 2008b:2001; Vorster *et al.*, 2008:631). The contract could then be treated as a *fair value hedge* of a firm commitment with the white maize (the underlying commodity) being the hedged item and the supply contract of Producer A (the derivative), being designated as the hedging instrument.

Transaction 3 would also be treated as a *derivative* and will be used to off-set the movement on transaction 2. The journal entries relating to the fair value hedge of a firm commitment are shown below:

Journal entries: Accounting treatment 3

	Dr	Cr
	R	R
July 20.8		
No entry as derivative has no value.		
30 June 20.9		
Statement of comprehensive income (profit or loss) (1 000 x (1 300 – 1 200))	100 000	
Derivative financial liability		100 000
Fair value of supply contract at year-end		
30 June 20.9		
Bank	100 000	
Gain on futures		100 000
Fair value adjustment of futures to profit or loss		

Source: (Author)

This is an effective hedge, because the gain on the futures is 100% offsetting the loss on the supply contract.

Case study 1: Accounting treatment 4

The definition of a cash flow hedge is a hedge of the exposure to variability in cash flows attributable to a particular risk associated with a **recognised** asset or liability, or of a **highly probable forecast transaction** that may influence profit or loss (IASB, 2008b:2022). A highly probable forecast transaction is estimated at 80% to 90% probability of the transaction occurring (Vorster *et al.* 2008:632). ABA could argue that the supply contract with Producer A is a highly probable forecast transaction and not a firm commitment. The journal entries would then be as follows:

Journal entries: Accounting treatment 4

	Dr	Cr
	R	R
July 20.8		
No entry as derivative has no value.		
30 June 20.9		
Hedge asset	100 000	
Hedging reserve (mark-to-market via other comprehensive income)		100 000

Source: (Author)

The difference in accounting treatments, leads to differences between financial statements which in turn affect the comparability of financial statements. The objective of financial reporting and the relevance to the comparability of financial statements will now be discussed.

3.5 COMPARABILITY OF FINANCIAL STATEMENTS

The primary objective of financial reporting as proposed in the joint conceptual framework (Exposure Draft No. 1570-100) that is currently under development by the IASB and the FASB is two-pronged. *Firstly* to provide financial information about the reporting entity that is useful to present and potential *investors, lenders and capital providers* and *secondly* stewardship to determine how effective and efficient managers utilised resources (FASB, 2008:x; Ronen, 2008:181). The ASB's *statement of principles* also indicates that the objective of financial statements is to provide information that is useful for assessing *stewardship* and for making *decisions*. Decision usefulness is deemed by both the IASB and FASB to be the most important objective, especially to capital providers (Buys, 2010; Woods & Marginson, 2004:374). Buys (2011) argues that decision-usefulness as a key financial reporting and accounting objective, is devoid of any substantive meaning and instead it should be replaced by a more realistic key objective such as to provide factual economic and financial information.

Present and potential investors generally find information more useful when *compared* with information from another company in the same industry. Even as early as 1963, George Holdren (1963:101) argued that if published financial statements were truly comparable, it would be of great value to the financial analyst and/or private investor considering an investment possibility. Cole, Branson and Breesch (2009) have highlighted that even though companies are, since 2005, applying IFRS to prepare financial statements, differences in the application of IFRS still exist. These differences can negatively impact the comparability of financial statements.

It is therefore imperative that agribusinesses interpret and apply the financial instruments' standards consistently. What further complicates the application and interpretation of accounting standards is that it is constantly changing.

3.6 REPLACEMENT OF IAS 39

The replacement of the current IAS 39 is in response to users of financial statements indicating to the IASB that IAS 39 is difficult to understand, apply and interpret (IASB, 2009c:4). The project objective is to improve the decision-usefulness of financial statements for users by simplifying the classification and measurement of financial instruments (IASB, 2009a). The IASB has chosen a phased approach in order to facilitate the replacement of IAS 39. Both the IASB and FASB have, since 2005, intensified their plans to improve and simplify the reporting of financial instruments (IASB, 2009c:4). This effort led to the issuance of a discussion paper "reducing complexity in reporting financial instruments" by the IASB on the 19th of March 2008 (IASB, 2009a). It was the first step towards replacing IAS 39 and an intermediate approach is suggested to reduce the current complexity of IAS 39. The number of suggestions in the discussion paper includes the elimination of either the held-to-maturity or available-for-sale category (Lane, 2008:11). The two Boards received 162 comment letters in response to the discussion paper and as a result issued an exposure draft (ED/2009/7) during July 2009 regarding the classification and measurement of financial instruments (IASB, 2009c). The exposure draft sets out the requirements for the recognition and measurement of financial assets, financial liabilities and some contracts to buy or sell non-financial items. The IASB planned to

develop an IFRS from the proposals suggested in this exposure draft (IASB, 2009c:5-6).

Two primary measurement categories are proposed by the exposure draft, namely at amortised cost or at fair value. Financial assets or financial liabilities should be measured at **amortised cost** if the following two conditions are met (IASB, 2009c:8):

- The financial instrument has basic loan features, and
- the financial instrument is managed on a contractual yield basis.

Any other financial instruments that do not meet both conditions would be measured at **fair value**.

As per the project plan's schedule, the first phase of the three-part project to replace IAS 39 was completed with the issuance of IFRS 9: Financial Instruments on the 12th of November 2009 (IASB, 2009d). During the same time an exposure draft (ED/2009/12) was issued on amortised cost and impairment. The third phase of the project was addressed with the issuance of an exposure draft (ED/2010/13) on hedge accounting (IASB, 2011). The IASB aims to replace all the requirements of IAS 39 during the second quarter of 2011 (IASB, 2011).

The current IAS 39 and its US and UK counterparts have impacted the business practices of many entities. The newly developed standards on financial instruments will again impact business practices.

3.7 CHANGING BUSINESS PRACTICES

A study was conducted by Tosen (2004) investigating how a move towards an integrated internet-based treasury system could have a significant impact on the systems that have to support the compliance with the requirements of IAS 39. The conclusion reached indicated that an integrated treasury function could be implemented whilst still complying with IAS 39, if identified problems could be overcome. An American study was conducted by Zhang (2008) on the effect of derivative accounting rules on corporate risk-management behaviour. Zhang found that SFAS 133 has encouraged companies to engage in more prudent risk-management activities.

We can therefore conclude that the requirements of IAS 39 generally do impact business practices. The extent to which IAS 39 impacts the study field's business practices, will be investigated and the findings communicated in Chapter 5.

3.8 SUMMARY

This chapter provided information regarding the history of the development of global accounting standards that influenced IAS 39, the key role players involved, the process followed to develop IAS 39 and the technical details and principles thereof. It was highlighted that with the development of new and more complex financial products, the current accounting standards on financial instruments are insufficient. The major standard setters namely IASB and FASB separately tried to develop adequate accounting standards to address the accounting treatment of these novice products. IASB developed IAS 39, while FASB issued FAS 133. Controversy was abundant with the issuance of IAS 39 with the EU trying to persuade the IASB to opt for partial implementation thereof. The differences in these three accounting standards create problems when companies are dual-listed and therefore the FASB and IASB are moving towards convergence of accounting standards globally.

The technical aspects of IAS 32, IAS 39 and IFRS 7 were also considered, and it was concluded that commodity derivatives do fall within the scope of IAS 32 and IAS 39. The different categories of financial instruments, their initial recognition and subsequent measurement were considered. Hedge accounting and the criteria that a company has to adhere to before the adoption of hedge accounting are important. A hedging relationship could be classified as a fair value hedge, cash flow hedge or hedge of a firm commitment. The technical aspects were demonstrated by utilising a case study that considered the four different accounting treatments of a transaction related to commodity derivatives. Finally the ethical considerations of the comparability of financial statements, the replacement of IAS 39 and the impact of financial instruments' accounting standards on business practices concluded the chapter.

In chapter 4 the research design and research methodology will be discussed.

CHAPTER 4

4 RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The aim of this chapter is to provide insight into the research design and methodology used in this study and the motivation behind the selected design. Research designs are tailored to address various kinds of research questions. This study was conducted as case study research and more information about this type of research will be provided in this chapter and how it can be differentiated from other social sciences research methodologies. The different types of research studies will be considered, followed by the research sample selection, the data collection techniques and data analysis utilised in this study. The effect of ethics when conducting research will also be considered.

The research design and methodology are aimed at answering the research questions formulated in chapter one (refer page 9). It is therefore important to understand the terminology used, hence certain key concepts are defined briefly.

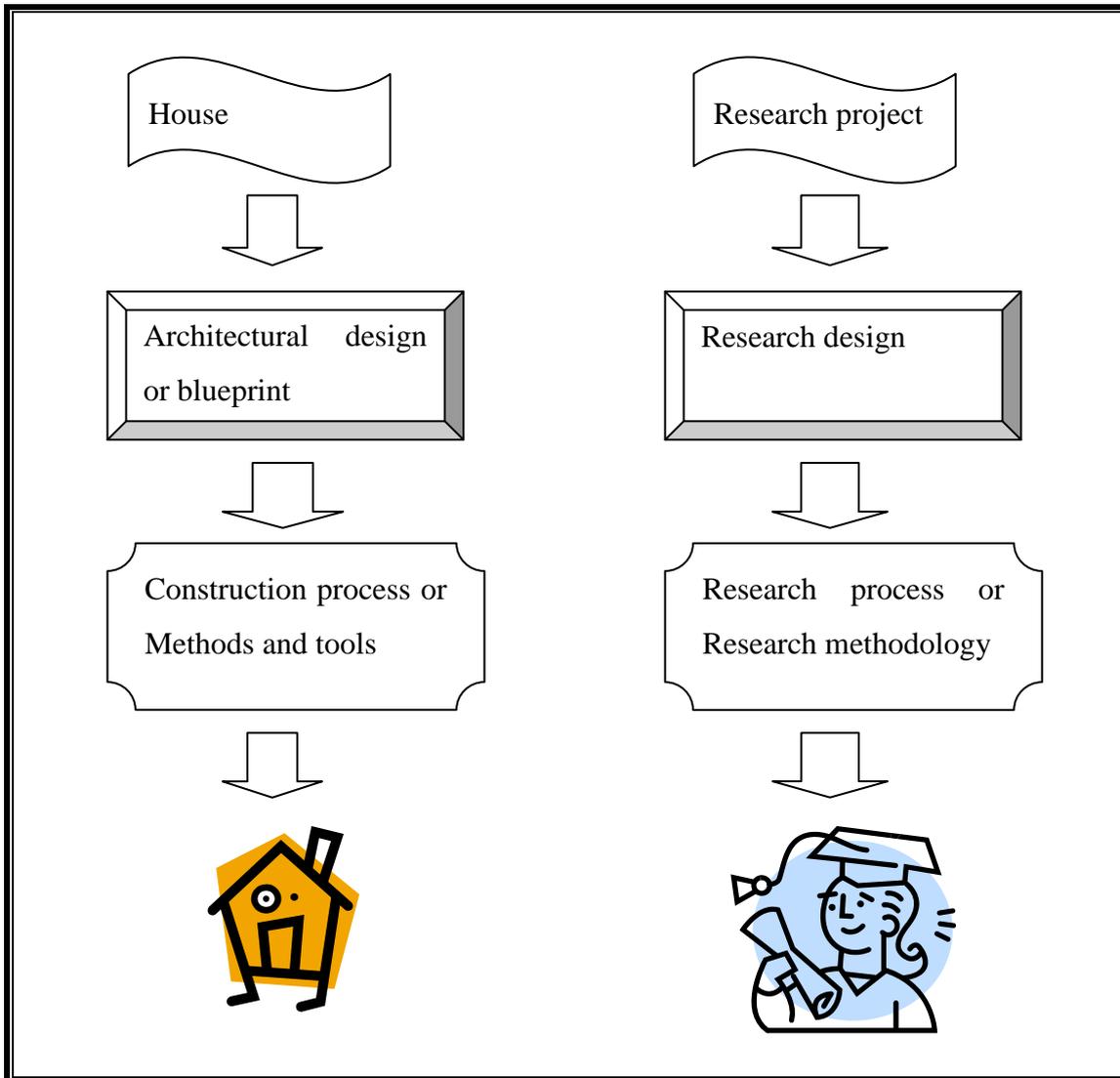
Research design presents the strategic framework stipulating action plans and serving as a bridge between the research questions and the execution or implementation of the research (Durrheim, 2006:34). Selltiz, Jahoda, Deutsch and Cook (1965:50) define research design as a plan that guides the arrangement of the conditions for collection and analysis of data in a way that aims to combine relevance to the research purpose with economy in procedure. A research design can also constitute the blueprint for the collection, measurement and analysis of the relevant data (Mouton, 2009:55; Blumberg, 2008:69; Cooper & Schindler, 2008:140). It can be concluded that a **research design** provides a map whereby a researcher should travel in order to reach conclusions with research objectives being the landmarks along the way. It is therefore imperative to choose an appropriate research design to answer the research problem.

Research methodology refers to a coherent group of methods complementing each other in order to deliver data and findings reflecting the research question and suiting

the research purpose (Henning, Van Rensburg and Smit, 2009:36). Leedy and Ormrod (2005:12) define research methodology as the general approach the researcher follows while conducting the research. This approach prescribes, to some extent, the particular tools that the researcher selects. Another definition of research methodology is provided by Babbie and Mouton (2001:75) indicating that research methodology focuses on the process and the kinds of tools and procedures used. The research methodology that the researcher follows refers to the methods (tools) used to obtain answers to the research questions and thus achieving the set objectives.

The difference between research design and research methodology is that research design focuses on the end product, while research methodology focuses on the research process and the kind of tools and procedures to be used (Mouton, 2009:56). The research design and chosen research methodology followed complement each other. Mouton (2009:56) draws the similarities between building a house and conducting research studies as evident in Figure 4.1.

Figure 4.1: A metaphor for research design



Source: (Adapted from Mouton, 2009:56)

This research project into the accounting treatment of commodity derivatives was conducted as case study research (refer page 18). Case study research entails five key components namely i) the research questions, ii) its propositions (if any), iii) the unit of analysis, iv) the logic linking the data to the propositions and v) the criteria for interpreting the data (Yin, 2009:27). The detailed definition of a case study and its strengths and limitations will now be considered.

4.2 CASE STUDY RESEARCH

4.2.1 Definition

A *case study* is defined by Gillham (2005:1) as the investigation of an individual, group, institution or community to answer specific research questions. Bryman & Bell (2007:63) specify a case study as an object of interest in its own right with the researcher aiming to provide an in-depth elucidation of it. According to Yin (2003:4), a case study is defined as the method of choice when the project or programme that is studied, is not distinguishable from its context. Lindegger (2006:460-461) defines a case study as an ideographic research method that studies individuals as individuals rather as members of a population. For the purpose of this project a case study can therefore be defined as the study of an individual or group as an object of interest in its own right in order to answer specific research questions.

4.2.2 Strengths of case study research

In the literature, many advantages of case study research have been mentioned. Merriam (2009) highlighted that a researcher selects case study research based on the nature of the research problem and research questions being asked. In her opinion the strengths of case study research outweigh its limitations by offering insights to real-life situations and advancing a certain field's knowledge base. According to Gibbert, Ruigrok and Wicki (2008:1465) case studies have been utilised as tools for generating and testing theory. The findings of case studies have provided ground-breaking insights into the strategic management field resulting in a methodology that is ideally suited for creating managerial relevant knowledge. Knights and McCabe (1997:377) state that a case study provides a vehicle through which to combine several qualitative methods in order to avoid too great reliance on a single approach. Otley and Berry (1998:S106) state that case study research has numerous potential roles to play, albeit that the central role seems to be that of exploration.

4.2.3 Limitations of case study research

Despite the strengths of case study research, the case study method has also been cited concerning the methodological rigor in terms of reliability and validity (Gibbert *et al.*, 2008:1465). In order to overcome this limitation, a framework to ensure the

methodological rigor of case studies has been developed by providing guidelines on how to ensure internal validity, construct validity, external validity and reliability (refer to paragraph 4.5.3). According to Merriam (2009) case study research are limited by the integrity and sensitivity of the investigator because the researcher is the primary instrument in the collection and analysis of the data.

4.2.4 Comparison between case study research and other methods

It is important to draw a comparison between the various research methods utilised in social sciences. The various research methods that exist are experiments, surveys, historical studies, case studies etc. (Mouton, 2009:107; Yin, 2009:5). Every research method can be used for either exploratory, descriptive or explanatory research but what distinguish the differences between these types of research are the following three conditions (Yin, 2009:5):

- The type of research question posed;
- the extent of control that a researcher has over actual behavioural events, and
- the degree of focus on contemporary rather than historical events.

Figure 4.2: Comparison of research techniques

METHOD	Form of research question	Requires control of behavioural events?	Focuses on contemporary events?
Experiment	How, why?	Yes	Yes
Survey	Who, what, where, how many, how much?	No	Yes
Archival analysis	Who, what, where, how many, how much?	No	Yes / No
History	How, why?	No	No
Case study	How, why?	No	Yes

Source: (Yin, Bateman & Moore, 1985)

This study aims to answer the how and why questions of *how* commodity derivatives are accounted for in the agricultural sector and *why*. This study does not require control over behavioural events and it focuses on contemporary events. Case study research can include multiple-case studies and still draw a single set of “cross-case” conclusions (Yin, 2009:19). This research study does include multiple-case studies and a single set of “cross-case” conclusions, which will be drawn in chapter six.

4.2.5 Previous case study research literature reviewed

Various research projects have been performed on the suitability of using case studies during research (Cooper & Morgan, 2008; Gerring & McDermott, 2007; McDonnell, Jones & Read, 2000; Otley & Berry, 1998; Keating, 1995). Cooper and Morgan (2008:159-178) conducted research on the suitability of case study research in *accounting*. The study focused on case study examples from financial accounting, managerial accounting and auditing and its respective contributions towards the development of theory and in the improvement of practice. It is stated that case studies are valuable in describing the details of how new accounting innovations are actually performed. According to the study the most well-known type of case study research in financial accounting relates to how the accounting rules affect the behaviour of managers and investors. An example of this is a case study conducted by Lys and Vincent (1995) on the motivation of AT&T to acquire NCR despite a decline in the value of AT&T’s shares. Other issues examined in financial accounting case study research include issues in accounting regulations, including negotiations over specific standards and exploring the innovative theories followed by specific standard-setting bodies when making decisions.

Otley and Berry (1998) conducted a study on case study research in management accounting and control. The study reviewed four case studies conducted by the Management Control Association. The findings of the study included that the methodology followed in collecting data in all four case studies was similar: the use of semi-structured interviews with management; the observation of meetings and the use of questionnaires. Preference was given to interviews and questionnaires as measuring instruments. The methodology followed in this study, is similar to the study conducted by Otley and Berry (1998). The conclusions of the Otley and Berry

(1998:S117) study recommended that case researchers should be clear about their *epistemological* (refer page 19) stance.

4.3 TYPES OF RESEARCH

Within a case study research approach it is also possible to distinguish various types of research. According to Durrheim, (2006:44), the types of research can be distinguished in three different ways 1) exploratory, descriptive and explanatory research, 2) applied and basic research, and 3) quantitative and qualitative research. Each one will now be discussed.

4.3.1 Exploratory, descriptive and explanatory research

The type of research conducted in this study can be classified as a **descriptive case study**. A descriptive study attempts to describe, or define a subject by creating a profile of a group of problems. Such studies may involve the collection of data and an examination of the distribution and number of times the researcher observes a single event or characteristic (Blumberg, 2008:10, Brynard & Hanekom, 2008:7-8). An explanatory study attempts to go beyond the description and explain the reasons for the phenomenon that the descriptive study has only observed (Blumberg, 2008:11). Exploratory studies' immediate purpose is usually to develop questions or hypothesis for further research and tend towards loose structures with the objective of discovering future research tasks (Cooper & Schindler, 2008:146).

4.3.2 Applied and basic research

The distinction between applied and basic research refers to the uses to which the research will be put. The findings from basic research are typically used to advance our fundamental knowledge of the world. In contrast, the findings derived from applied research, have an immediate practical application. Applied research aims to contribute towards practical issues of problem solving, decision making, policy analysis, and community development (Durrheim, 2006:45). The research conducted during this study can be classified as **applied** research.

4.3.3 Quantitative and qualitative research

A widely used distinction in research studies is between quantitative and qualitative studies (Blumberg, 2008:191). The distinction between these studies mainly refers to the different kind of information that researchers base their conclusions on. Quantitative studies therefore refer to quantitative information used while qualitative studies base their findings on qualitative information (Blumberg, 2008:191-192; Durrheim, 2006:47). In a qualitative study the “variables” are usually not controlled, while in a quantitative study the focus will be on control of all the components in the actions and presentations of the participants (Henning *et al.*, 2009:3). Onwuegbuzie and Leech (2005:375) advocate that in order to become a pragmatic researcher students should appreciate both qualitative and quantitative research. Mellenbergh, Adér, Baird, Berger, Cornell, Hagenars and Molenaar (2003:215) argue that quantitative and qualitative research is not contradictory and can supplement each other. The accounting treatment of commodity derivatives can be regarded as a quantitative study, while the interpretation of interviews conducted can be regarded as qualitative. The research conducted in this study therefore embraces both **quantitative** and **qualitative** perspectives.

Furthermore, there are two classifications of the reasoning processes used in research. The reasoning approach used in this process is inductive reasoning. Inductive reasoning is moving from the particular to the general (Brynard & Hanekom, 2008:16). Deduction is a form of inference that purports to be conclusive, meaning that the conclusion must necessarily follow from the reasons given (Blumberg, 2008:25).

4.4 RESEARCH SAMPLE SELECTION

4.4.1 Sample design

A **population** refers to a group that possesses specific characteristics that the researcher is interested in and from which the sample is taken (Blumberg, 2008:228; Brynard & Hanekom, 2008:55). The target population in this study has the following characteristics:

- South African entities: either companies or cooperatives;

- Operating in the agricultural sector; and
- Trading with commodity derivatives.

Sampling is a technique employed to select a smaller, representative group with a view of determining the characteristics of the larger group (Brynard & Hanekom, 2008:54). A sample forms part of the target population and is carefully selected to represent that population (Blumberg, 2008:69; Durrheim, 2006:49). The basic idea behind sampling is that by selecting some of the elements of a population, conclusions can be drawn about the entire population (Cooper & Schindler, 2008:374). A key concern about sampling is that it should be representative of the population (Brynard & Hanekom, 2008:55, Durrheim, 2006:49). The sampling technique used to determine the study field, will now be discussed.

4.4.2 Sampling technique

The study field consists of seven participants who were selected by utilising unrestricted non-probability sampling referred to as convenience sampling (Blumberg, 2008:252; Durrheim & Painter, 2006:139). Non-probability sampling refers to a type of sampling where the selection of participants is not determined by the statistical principle of randomness (Durrheim & Painter, 2006:139). This method of sampling is appropriate for qualitative and quantitative research (Durrheim & Painter, 2006:139). Eisenhardt (1989:545) suggested that although it is difficult to determine the ideal amount of *cases* researchers should include, four to ten *cases* are advisable. The seven cases that the study field consists of therefore fall within this suggested range of between four to ten cases.

In order to determine whether the sample size is representative of the population, information on the national average grain received at storage facilities was obtained from the Grain Silo Industry (GSI). The GSI represents the commercial grain silo owners in South Africa, has 17 members who jointly own 254 silos in South Africa with a capacity of approximately 15 million tons (GSI, 2009). Of the seven respondents, four agricultural companies/cooperative are members of GSI. These four respondents jointly handled an average over the last five years of 68% of all the grain handled by its members (Kok, 2009).

All seven participants are operating in the agricultural sector and use and trade commodity derivatives. The respondents were selected based on the various services delivered to their customers and/or commodity derivatives traded. Five of the respondents are offering various services to primary producers assisting them in marketing (selling) their grain products and then selling it to processors. The other two respondents are processors, i.e. purchasing the producers' grain, processing and / or milling it. Both these components of the value chain should be included: seller of grain and purchaser of grain. Another reason these entities were selected is the respondents' agreement to partake in the study. The agricultural industry is highly competitive and it is perceived that the information required for this study can be sensitive in nature and compromise an entity's competitive advantage. The entities therefore agreeing to partake in the study were selected and included and generously agreed to be named. The respondents, listed in alphabetical order, are:

- AFGRI Limited
- Free State Maize (Pty) Ltd
- NWK Limited
- Ruto Mills
- Senwes Limited
- Tongaat Hullett Starch
- Vrystaat Koöperasie Beperk

Interviews will also be conducted with relevant representatives of the technical departments of three of the Big Four audit firms (Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers) and were elected because they are represented both locally and globally. The audit firms agreed to partake in the study under condition of anonymity.

4.5 DATA COLLECTION TECHNIQUES

Two basic methods for collecting the research data can be distinguished, namely qualitative and quantitative methods (Brynard & Hanekom, 2008:35). Qualitative techniques include in-depth interviewing, participant interviewing, case studies, document analysis, etc. (Blumberg, 2008:201-202). Data in this study was collected

using questionnaires and conducting in-depth interviews based on knowledge acquired through the literature review.

4.5.1 Questionnaire

A questionnaire was prepared based on the literature review and the knowledge obtained during such literature study. This questionnaire provided structure to each interview, while also providing a basis for comparison between the respondents. A copy of the questionnaire utilised during the structured interviews, is provided as appendix 1.

4.5.2 Interviews

Face-to-face or personal interviews were conducted and are the most common method to collect survey data in South Africa (Babbie & Mouton, 2001:249). Yin (2009:106) highlights that interviews are one of the most important sources of *case study* information. A personal interview is a two-way conversation initiated by an interviewer to obtain information from the interviewee (Blumberg, 2008:281). As a method of collecting data, interviewing allows the researcher to explain the questions to the respondent (interviewee) when it is not clear what is being asked. It also allows the researcher to probe for in-depth information and detail following the answer of a respondent (Blumberg, 2008:281; Brynard & Hanekom, 2008:40; De Wet, Monteith, Venter & Steyn, 1981:161-163).

This study used as a **structured** interview as communication approach. In a structured interview the researcher uses a very detailed interview guide similar to a questionnaire (Blumberg, 2008:385). The validity and reliability of the data will now be discussed.

4.5.3 Validity and reliability

Validity refers to the potential of a design or an instrument to achieve or measure what it is suppose to achieve or measure. It is concerned with the “what” of data collection procedures and measures (Brynard & Hanekom, 2008:47-48). According to Henning *et al.* (2009:147) validity measures whether we are investigating what we say we are investigating by using certain methods. Cooper & Schindler (2008:714) defines

validity as a characteristic of measurement concerned with the extent to which a measurement tool measures what the researcher actually wishes to measure. It can be concluded that validity uses certain methods to measure the extent to which a measurement tool investigates what we say we are investigating.

Reliability pertains to the accuracy and consistency of measures (Bryman & Bell, 2007:162). The same instrument must be able to produce the same data at a later stage under similar conditions (Brynard & Hanekom, 2008:48). Reliability is the extent to which a particular technique, applied repeatedly to the same object, consistently yields the same findings each time. Validity should not be confused with reliability (Neuman, 2006:188; Babbie, 2004a:141). Reliability measures the extent to which an instrument produces the same data under similar conditions. Cronbach Coefficient Alpha, expressed as a numerical coefficient of reliability, determines the internal consistency of items in a survey instrument to gauge its reliability (Yu, 2001; Santos, 1999). The questionnaire utilised in this study is not a standard questionnaire and was utilised during structured interviews that resulted in non-uniformed responses by the respondents. The responses to the questionnaires were individually analysed and no statistical software were utilised. The Cronbach Coefficient Alpha was therefore not calculated.

Various validity types are distinguished in research, such as internal validity, external validity, measurement validity, interpretative validity, statistical validity, ecological validity, content validity, construct validity, etc. (Cooper & Schindler, 2008:290; Bryman & Bell, 2007:41-42; Van der Riet & Durrheim, 2006:90). However, in the *positivist* tradition (refer terms of reference, chapter one page 19) only four criteria are commonly used to assess the rigor of field research: internal validity, construct validity, external validity and reliability (Yin, 2009:40; Gibbert *et al.*, 2008:1466). The definitions of these four criteria are (Gibbert *et al.*, 2008:1466-1468; Cooper & Schindler, 2008: 289-292; Van der Riet & Durrheim, 2006:90-92):

- *Internal validity*: It is also referred to as “logical validity” and refers to the extent to which causal relationships can be drawn.
- *Construct validity*: The extent to which a study investigates what it claims to investigate; the procedure leads to an accurate observation of reality.

- *External validity*: The extent to which the conclusions that are drawn from the data can be generalised.
- *Reliability*: The degree to which the findings are repeatable and therefore consistent.

Yin (2009:41-45) has adapted these criteria for use in case studies and has suggested tactics to follow in order to increase the validity and reliability of the data collection techniques. Gibbert *et al.* (2008:1467) have adapted these criteria and provided a framework for investigating the methodological rigor of case studies. This framework is provided in table 4.1.

Table 4.1: Framework for investigating the methodological rigor of case studies

Internal validity	Construct validity	External validity	Reliability
Research framework explicitly derived from literature	Data triangulation: interview data (original interviews conducted by researchers)	Cross-case analysis: multiple case studies (case studies of different organisations)	Case study protocol (report of there being protocol, report of how the entire case study was conducted)
	Data triangulation: direct observation derived data (direct observation by researchers)	Rationale for case study selection (explanation why this case study was appropriate in view of research question)	Case study database (database with all available documents, interview transcripts, archival data, etc.)
	Review of transcripts and drafts by peers (peers are academics not co-authoring the paper)		Organisation's actual name given (actual name mentioned explicitly – as opposed to anonymous)

Source: (Gibbert *et al.*, 2008:1467 Adapted)

4.5.4 Pilot testing

It is important to conduct pilot testing to assist the researcher in refining the data collection plans. Pilot testing is performed to detect weaknesses in design and

instrumentation and to permit refinement before the final testing (Yin, 2009:92; Bryman & Bell, 2007:273). A pilot test was performed with the researcher conducting a structured interview and completing the questionnaire with a colleague before final interviews were conducted in order to achieve the above-mentioned objectives.

4.6 DATA ANALYSIS

During the process of data collection the researcher was engaged in what can be referred to as a preliminary analysis of the data. Once the data collection was completed, an in-depth analysis of the data was conducted. Data analysis involves reducing accumulated data to a manageable amount, developing summaries, looking for patterns and applying statistical techniques. Furthermore, researchers must interpret these findings in light of the research question or determine if the findings are consistent with their hypothesis and theories (Blumberg, 2008:75). The findings of the data analysis will be summarised in chapter five.

4.7 RESEARCH ETHICS

Ethics is defined as the study and philosophy of human conduct with an emphasis on the determination of right and wrong (Tseng, Duan, Tung & Kung, 2010:587). Taylor (1975) defines ethics as an inquiry into the grounds and nature of morality, while the Longman Business English Dictionary (2001:160) defines ethics as the moral principles or rules of behaviour that should guide professional members or organisations. It can therefore be concluded that ethics involves human behaviour or morality that should provide guidance to a member of a profession.

Over the last three decades, social scientists have become more conscious about the ethical dimensions in research design and execution (Babbie, 2004b:12). Social sciences research often involves collecting data from people. Inevitably this raises concerns about the way in which people that provide data should be treated by researchers. These concerns are often ethical in nature and should be considered from the early stages of a research project. Ethical considerations should form part of the research design process, during the decisions regarding the nature of the research sample and of the research methodology to follow (Oliver, 2003:9). It is imperative

when data is collected from people, that the essential elements of the humanity and dignity of participants be considered. The researcher should avoid causing the participants any harm, distress, anxiety or any other negative feeling. Participants should be fully informed about all relevant aspects of the research before they agree to partake in the study (Oliver, 2003:9).

In accountancy, the ethical conduct is governed by accountancy's professional codes of conduct. A study was conducted by Buys (2009) relating to ethical accounting conduct. In this study, the researcher considered four of the global accounting institutes' codes of conduct and summarised four basic principles that promote the objectives of the accountancy profession. These four principles are: professional competency, integrity, objectivity and confidentiality. These four principles should also be upheld during research in accountancy. A study conducted by Bakar, Saat and Majid (2003) on ethics and the accounting profession in Malaysia found that if accountants wanted to be relevant, they have to behave more ethical and act more diligent.

4.8 SHORTCOMINGS AND SOURCES OF ERROR

There is a lack of research on the accounting treatment of financial instruments for non-financial items and there is limited literature available on the agricultural industry in South Africa with regard to marketing strategies and products offered to producers. Much of the information gathered in this study is based on interviews conducted with role players in the industry and their personal understanding of concepts and theories.

4.9 SUMMARY

This chapter aimed to provide an understanding of the reasoning behind the research design and methodology followed in this study. The research design provides the map whereby a researcher should travel in order to reach valid conclusions with research objectives being the landmarks along the way. The research methodology that the researcher follows refers to the methods or tools used to obtain answers to the research questions and thus achieving the set objectives. The difference between research design and research methodology is that research design focuses on the end

product, while research methodology focuses on the research process and the kind of tools and procedures to be used.

Case study research was conducted with the research type being descriptive, applied and both qualitative and quantitative. The case study research methodology was scrutinised and a motivation for utilising this research methodology was provided. Multiple cases with the characteristics of i) South African entities, ii) operating in the agricultural sector and iii) trading with commodity derivatives, form the sample. The sampling technique used is convenience sampling with the sample size at seven participants which is within the recommended range of Eisenhardt (1989:545) of between four to ten cases. The data collection technique utilised is a questionnaire used during structured interviews. The framework to ensure the methodological rigor of Gibbert *et al.* (2008:1467) was followed that investigates the internal validity, construct validity, external validity and reliability of the instruments used. Research ethics was discussed next with the chapter concluding with the data analysis and the shortcomings and sources of error.

Chapter 5 will describe the findings of the empirical study.

CHAPTER 5

5 EMPIRICAL RESEARCH FINDINGS

5.1 INTRODUCTION

As set out in Chapter 1, the main research objective of this study is to investigate the accountancy implications of commodity derivatives in the South African agricultural sector. The results will be used to formulate a standard methodology for the interpretation of IAS 39 to serve as benchmark and best practice for South African agribusinesses and processors (refer Chapter 1, page 9). In order to address the main and secondary objectives, a questionnaire was compiled which was discussed during scheduled structured interviews with the seven respondents. The questionnaire consisted of six sections, namely i) general information, i) services, ii) financial instruments, iv) accounting treatment, v) business practices and vi) replacement of IAS 39 (refer to Appendix 3 on page 221 for the detailed questionnaire). The questionnaire was utilised to highlight the varying accounting treatments of nine transaction types making use of commodity derivative contracts and typically found in South African agribusinesses and processors.

From the main objective, several secondary objectives have been formulated each of which was addressed by different sections of the research questionnaire. The first secondary objective, namely to obtain general information about agribusinesses and processors and the services they offer their customers and to investigate the extent to which agribusinesses use derivatives for their own business practices and financial management purposes, was covered by the first three sections of the questionnaire: general information, services and financial instruments. The second secondary objective, which is to identify various transaction types utilised by South African agribusinesses and processors and to establish the varying accounting treatments of these transaction types by analysing the prescribed IFRS accounting treatment of commodity derivatives in the context of IAS 39 for the sampled cases, was covered by section four of the questionnaire. The third secondary objective is to, based on the findings of the accounting treatment of IFRS on the commodity derivatives, obtain the opinions of representatives of the technical departments of the “Big Four” audit firms; Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers. Section five and six

of the questionnaire (business practices and replacement of IAS 39) are aimed at providing answers to the fourth, fifth and sixth secondary objectives namely:

- Consideration of whether the agribusinesses are changing their business operations and practices to comply with the IFRS requirements;
- consideration of the primary purpose of financial statements, especially in the context of decision-making in the agricultural industry; and
- consideration of whether the financial managers in the agribusinesses are up to date in respect of the IFRS requirements for derivatives.

The seventh objective is that similar studies performed in other parts of the world will be compared with the findings of the study. The findings of these opinions will be incorporated into the conclusions and recommendations.

The overall findings of this were compiled by referring to the completed questionnaires and the recorded discussions during scheduled interviews, which were in turn supported by the literature study as per Chapter 2 and 3. The findings of the study will be discussed in accordance with the findings of each section of the questionnaire. This chapter will conclude with an overview of similar studies performed in other parts of the world, as per the seventh secondary research objective set out in chapter one (refer page 9).

5.2 GENERAL INFORMATION AND SERVICES

This section will address the first objective and covers the findings of the questions covered in sections one, two and three in the questionnaire (refer Appendix 3, page 221), focusing primarily on general information and services provided by the respondents.

5.2.1 General

Section one of the questionnaire referred to general information about the respondents. Of the seven respondents, two are classified as processors and five as agribusinesses. Therefore, when referring to “respondents” in this study, both the agribusinesses and the processors are included, otherwise specific reference will be

made to either the agribusiness, or the processors, that took part in the study. The following table provides the findings of the general information:

Table 5.1: Findings of general information

General	No. of respondents	Percentage of total (%)
Type of business form:		
Cooperative	1	14.3%
Private company	2	28.6%
Public non-listed company	2	28.6%
Listed public company	2	28.6%
Compliance with IFRS		
Scale 7	4	57.1%
Scale 6	2	28.6%
Scale 5	1	14.3%
Financial year-end:		
28 February	2	28.6%
31 March	1	14.3%
30 April	1	14.3%
30 June	2	28.6%
31 Aug	1	14.3%
Name of external auditors:		
PricewaterhouseCoopers	3	42.8%
Deloitte	2	28.6%
KPMG	0	
Ernst & Young	1	14.3%
Other	1	14.3%

Source: (Author)

* Note: All figures used in the graphs are rounded to one decimal, therefore rounding errors might occur.

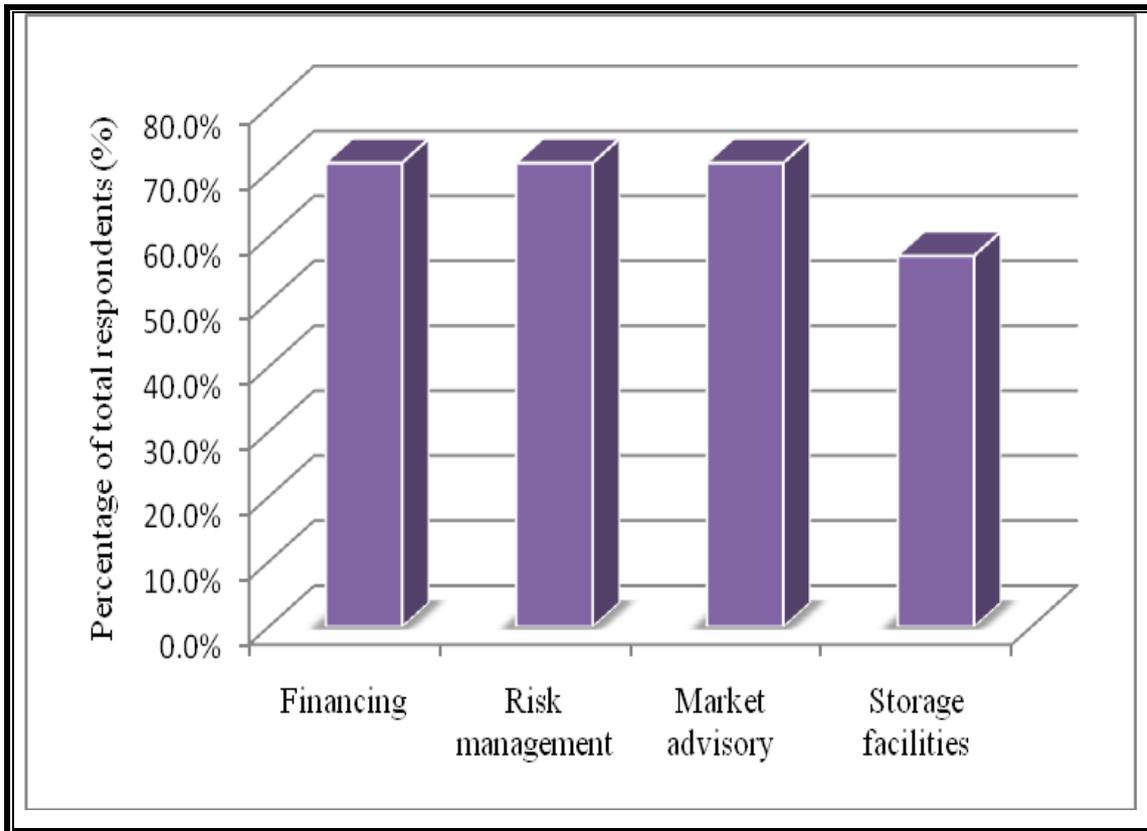
As indicated in the table above, one agribusiness has the business form of agricultural cooperative, while the remaining four agribusinesses have changed their business form from agricultural cooperatives to agricultural companies since deregulation in 1996. The two remaining respondents are processors with the business form of company. Two of the seven respondents are listed public companies and based on the requirements of the JSE Securities Exchange, which requires them to be compliant with IFRS (Anon, 2003:1). In respect of the IFRS compliance, the respondents were asked to rate their own compliance on a scale of 1 to 7 where “1” was no compliance and “7” was fully compliant. The findings on the compliance with IFRS indicate that four of the seven respondents claim to be fully compliant with IFRS. In respect of the year-end, there is no single preferred date, but is instead spread over several dates.

With reference to the external auditors utilised, PricewaterhouseCoopers are the dominant external auditors of the sample (42.8%) of seven respondents. During the interviews conducted and relevant discussions that followed, it was noted that some of the respondents have spent many hours consulting with their auditors to determine the most accurate interpretation of the international accounting standards on financial instruments. One of the respondents has even changed to another external audit firm due to material disagreement in the interpretation of the international accounting standard on financial instruments.

5.2.2 Services

The findings of the services offered by the agribusinesses are highlighted in Graph 5.1 below.

Graph 5.1: Services offered



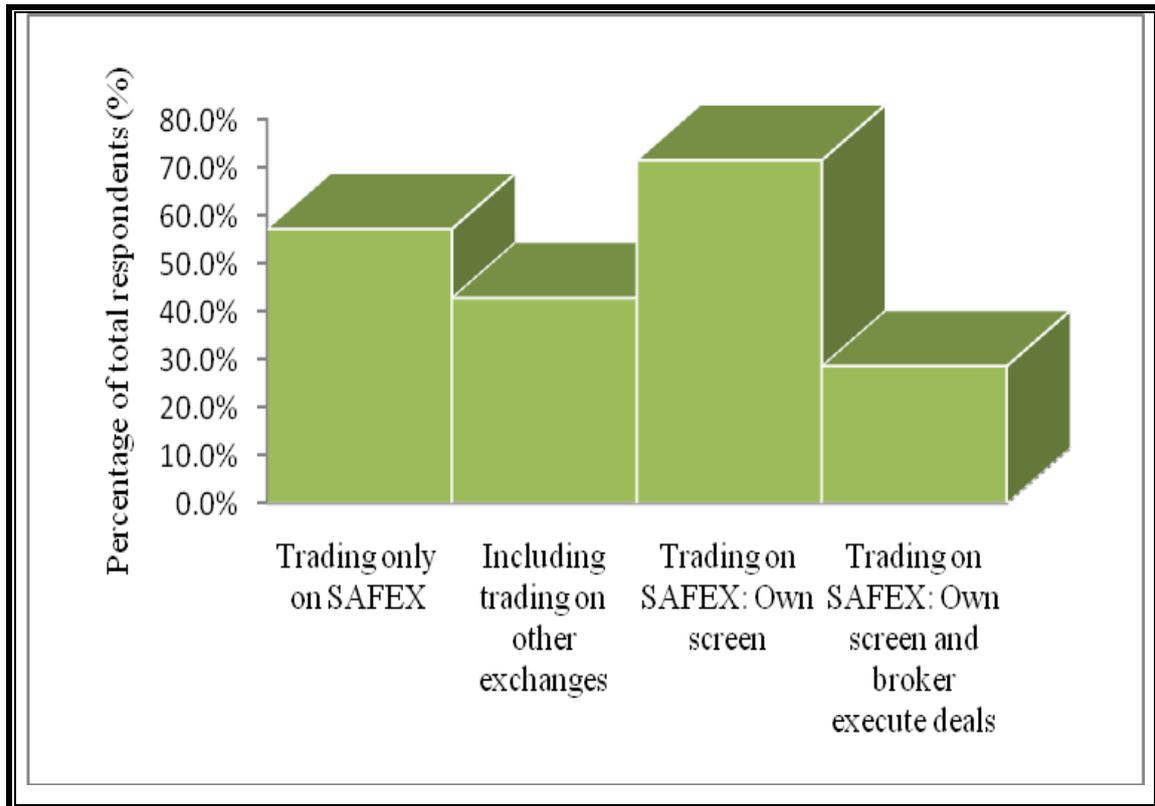
Source: (Author)

Each of the services offered by the agribusinesses, namely financing, risk management, market advisory and storage facilities, is covered in the literature study as part of chapter two (refer page 47). Although five (71.4%) agribusinesses offer financing, risk management services and market advisory services, only four (57.1%) also own their own storage facilities. The two processors sampled do not offer services such as financing, risk management services, market advisory services or storage facilities to their customers.

5.2.3 Financial instruments

Section 3 of the questionnaire consisted of questions with regards to where, how and why commodity derivatives were traded. Graph 5.2 below indicates the findings to Section 3.

Graph 5.2: Findings of financial instruments



Source: (Author)

Four of the seven respondents (57.1%) trade commodity derivatives only on SAFEX while three (42.9%) respondents also trade on other exchanges such as CBOT, over-the-counter (OTC) exchanges or Kansas City Board of Trade (KCBT) in the United States of America. Five of the seven (71.4%) respondents trade via their own seat on SAFEX, while two respondents have their own screen but have brokers that execute their deals.

Furthermore, it was found that none of the respondents are OTC option writers or trade OTC options, while six out of the seven (86%) respondents trade SAFEX options. In respect of trading frequency, five respondents indicated that they trade SAFEX options daily, while one respondent trades SAFEX options monthly. The remaining respondent trades on a “when-ever” basis. All of the respondents trade futures on a daily basis. Forward contracts, foreign exchange and interest rate swaps are not traded frequently. The commodity derivatives are traded and utilised to hedge

price risk, delivery risk and to a lesser degree for speculation purposes. Section 4 of the questionnaire will now be discussed.

5.3 ACCOUNTANCY IMPLICATIONS OF COMMODITY DERIVATIVES

The second secondary objective (page 9) is to identify various transaction types utilised by South African agribusinesses and processors and to determine the accounting treatment of these transaction types in the context of IAS 39. Much consideration was given to the method of investigation of the accounting treatment of commodity derivatives due to the wide variety of complex instruments currently available being utilised in various types of transactions. Initially, it was thought that to only consider the disclosure of financial instruments in the annual financial statements of the seven respondents, would be inadequate in determining whether the interpretation and application of IAS 39 are similar across the board by all respondents. It was therefore decided that in order to achieve the set objective of analysing the accounting treatment of IFRS on commodity derivatives in the context of IAS 39, the researcher had to identify, with the assistance of the respondents, the key transaction types that generally occur in their business operations. This resulted in *nine* different transaction types being identified which are i) a pre-season fixed price contract, ii) a fixed-price purchase contract, iii) a pre-season minimum-price contract, iv) an un-priced contract, v) a delayed-price contract, vi) a mill-door contract, vii) an un-priced delivery contract, viii) a priced delivery contract and ix) other delivery contracts. Many of these transaction types are based on products offered to customers, and can either be viewed from the perspective of a buyer or a seller of agricultural commodities. Therefore, some of these transaction types can be entered into by either processors or agribusinesses or both. Variations of these transaction types exist and these variations will be discussed on page 131 to page 136 of this chapter. These nine transaction types provided much insight into the business processes and services offered in this complex industry. As mentioned in Chapter 2, the agricultural industry remains a competitive industry and the products offered often evolve as the needs of the producers and processors change.

The third secondary objective mentioned in Chapter 1 (refer page 9), is that based on the findings of the accounting treatment of IFRS on the commodity derivatives, the opinions of representatives of the technical departments of the “Big Four” audit firms,

namely Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers, will be obtained and compared. The findings of the questionnaire and interviews conducted with the seven respondents have also been discussed with representatives of the technical departments of the above-mentioned audit firms in South Africa. The findings of these interviews with the audit firms will be communicated in section 5.4 (refer page 155) following the findings of the interviews with the seven respondents. Firstly the nine different transaction types will be discussed.

5.3.1 Transaction types

The nine transaction types can be divided into two broad types of contracts, namely i) contracts with producers and ii) delivery contracts. The first five transaction types can be classified as contracts with the producers in which the agribusinesses offer various options to market and sell grain. These options differ based on *when* the contract is entered into, *how* the price is determined, *when* the price is determined and *if* additional protection against price fluctuations is required. The different options, referred to as products, have been developed over time, driven by demand from producers. However, variations of the products do exist. A list of the “main” products, (or transaction types), offered was obtained from the respondents. These are the general transaction types that occur within the industry, not all the respondents offer all these products. Processors enter into contracts with agribusinesses in order to purchase grain for their normal usage requirement. It should be noted that transaction types one to five listed below, are not always applicable to all processors.

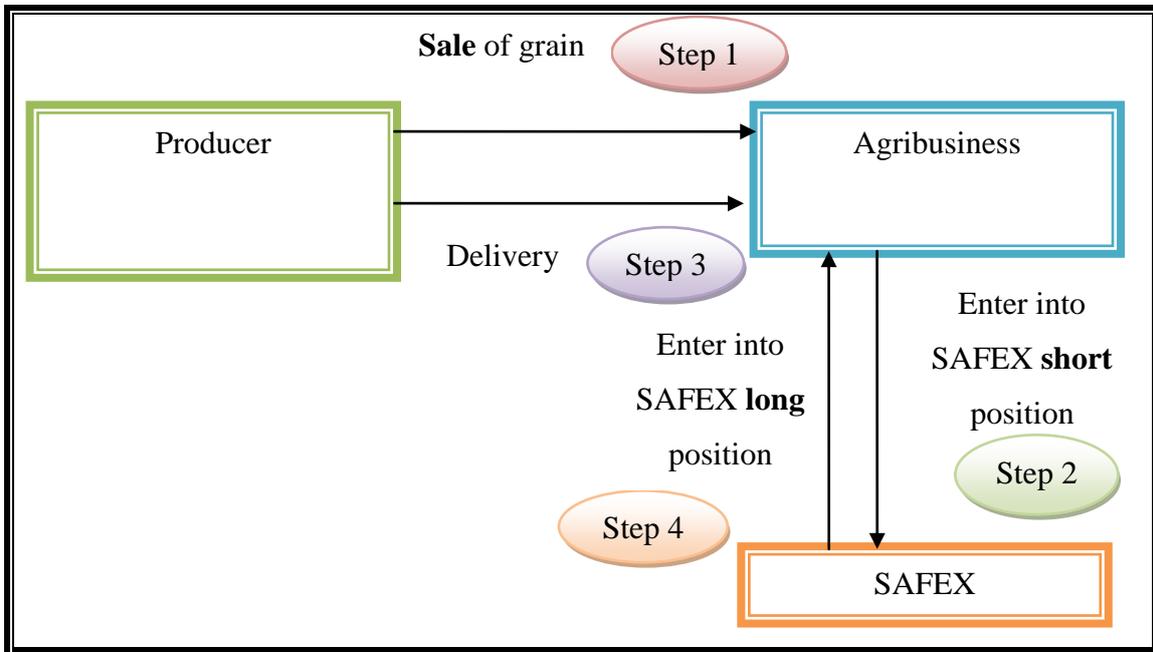
Transaction type six to nine can be classified as delivery contracts with agribusinesses, not only to purchase grain, but also to sell grain to processors. Four types of products, classified as delivery contracts, are offered namely i) mill-door, ii) un-priced delivery, iii) priced delivery and iv) other delivery contracts. Each one of the nine transaction types based on the information obtained during structured interviews, will now be discussed.

5.3.1.1 Transaction type 1: Pre-season fixed-price contract

The first transaction type identified by the respondents is the “pre-season fixed price contract” and can occur either between a producer and an agribusiness, or between an

agribusiness and a processor. A pre-season contract is generally entered into before the commodity's planting season commences. Refer to Figure 5.1 below for a transaction flow of a pre-season fixed price contract.

Figure 5.1: Pre-season fixed price contract



Source: (Author)

A pre-season contract can be split into two contracts, namely the *supply contract* with the producer and the *SAFEX derivative contract*. The supply contract (refer to Step 1 in Figure 5.1) represents a supply transaction between the producer and the agribusiness where the agribusiness offers a SAFEX-based price for the producer's grain. After the producer harvested its crop, it is delivered to the agribusiness at the agreed price. The SAFEX derivative contract (refer to Step 2 in Figure 5.1) represents a SAFEX short position that is entered into by the agribusiness in order to hedge itself against commodity price fluctuations.

After the harvest time, the producer delivers the grain (refer to Step 3 in Figure 5.1). The SAFEX position is then off-set by the agribusiness by entering into a corresponding SAFEX long position (refer to Step 4 in Figure 5.1). This is done in order to "close out" the SAFEX position.

With reference to a *pre-season fixed price contract* between a processor and an agribusiness, the pre-season contract refers to a contract to deliver grain at an already agreed upon SAFEX-based price to the processor. Depending on the entity's risk policy, processors do not *always* enter into a corresponding contract on SAFEX to hedge themselves against the commodity price fluctuations. When the market foresees an increase in the relevant commodity price, the processor will enter into a long SAFEX futures position to hedge it against a price increase.

5.3.1.2 Transaction type 2: Fixed-price purchase contract

The second transaction type identified by the respondents is the “fixed-price purchase contract”. It was found that several versions of a fixed-price purchase contract were utilised by the respondents. The version described here refers to cash purchases (spot purchases) of a commodity at a SAFEX-based price and usually occurs after harvest time with no pre-season contract in place. Such purchases can either be made by the agribusiness or by the processor, directly from a producer. In the case of an agribusiness purchasing grain from a producer and if the agribusiness has not yet found a corresponding buyer for that grain, the agribusiness may enter into a short SAFEX position in order to protect itself against commodity price fluctuations until that grain is sold. At a later stage when that grain is sold, the SAFEX short position is off-set by the agribusiness by entering into a corresponding SAFEX long position in order to “close out” the SAFEX position.

5.3.1.3 Transaction type 3: Pre-season minimum-price contract

The third transaction type as per the respondents is the “pre-season minimum-price contract”. A minimum price contract is entered into before planting season commences. It was found that three variations of the minimum price contract were typically in use by the respondents, namely i) minimum-price contract, ii) minimum-maximum price contract and a iii) synthetic put contract.

- **Minimum-price contract:** This product affords the producer the opportunity to guarantee a *minimum* price without setting a fixed price for its commodity yet. A put option is purchased with a strike price equal to that of the minimum price. If the market price of the commodity or the contract increases, the put option

becomes worthless and is not exercised. When the producer finally decides to sell at the SAFEX-based price, the entity enters into a corresponding short futures position on SAFEX in order to hedge themselves against future commodity price fluctuations. On the other hand if the market price of the commodity decreases, the put option is exercised, thus ensuring that the minimum price is paid.

- **Minimum-maximum price contract:** A variation of the minimum price contract is found in the instance where a producer has the option of purchasing a put option and selling a call option. The producer thereby creates a *band width* in which the commodity price can fluctuate. This product in effect locks the price in that a producer receives for his commodity within the band width. This type of contract reduces the option premium payable due to the fluctuating market movements.
- **Synthetic put contract:** Another variation of the minimum price contract found is (commonly referred to as) a synthetic put contract. A futures contract is sold at a certain price, and a call option is purchased with a strike price at the same price level. If the market price of the commodity on the contract decreases, the short futures position is already in place and the call option becomes worthless and is not exercised. In contrast, if the market price increases, money is lost on the short futures position but the call option increases in value. When the producer decides to price the grain, the entity enters into an off-setting long futures position and exercises the call option.

5.3.1.4 Transaction type 4: Un-priced contract

The fourth transaction type identified is a pre-season un-priced contract, which is similar to transaction type 1, except that the price at which the commodity is purchased, either by the agribusiness or by the processor, is decided upon at a later stage. A specified period in which a producer could (and should) set the price based on the SAFEX price, is agreed upon beforehand. The transaction type is translated to a pre-season fixed price contract the moment the producer decides to price his or her grain based on the SAFEX price.

A variation of an un-priced contract is when, during harvest time, a producer delivers more grain than what the agribusiness has contracted for. The excess grain the producer has supplied is not yet priced. The producer can then decide to deliver the

grain to the agribusiness, but is not in a position to price it yet. In such cases, the agribusinesses generally do not protect themselves against price fluctuations of the excess grain, because the producer is still the legal owner of the grain.

A further variation on the un-priced contract is when an entity provides the producer with a basis price, but the producer can still set the final price within a specified period.

5.3.1.5 Transaction type 5: Delayed-price contract

The fifth transaction type identified by the respondents is the delayed-price contract. This contract is similar to a pre-season un-priced contract between a producer and an agribusiness. A producer wants to sell the commodity but is not yet willing to set a price at the time of the supply contract. However, at the time of the contract the producer has a cash requirement. To accommodate the producer a cash advance, based on a specific formula, may be provided by the agribusiness. Various formulas are in use to determine such a cash advance, including:

- A SAFEX-based price is set and an agreed upon percentage of the base price is paid as a cash advance.
- A SAFEX-based price is set and a put option is purchased with the same strike price as the SAFEX-base price. The put option premium is deducted from the strike price and the result is provided as an advance. The agribusiness enters into a long futures position for a future month and the producer is given the opportunity to price against that future month position. If the market price of the hedged commodity decreases, the entity is hedged and will receive its cash advance.
- An agribusiness will not offer this product, if the grain price is high on the import parity differential level. This product will therefore only be offered if grain prices are aiming towards export parity level. The moment the producer sells its grain, the SAFEX price is determined and the entity enters into a short futures SAFEX position. The agribusiness also enters into another SAFEX position, but this time as a long position for a future month. The producer then has to price between the current period and the future month. The producer is then given a cash advance based on calculations performed by the entity generally based on a percentage differential from export parity level. As an additional risk cover, a top-up clause is

written into the contract. If the grain price drops below export parity level, the producer is required to pay additional funds in order to top-up the funds the agribusiness holds as security.

5.3.1.6 Transaction type 6: Mill-door contract

The sixth transaction type identified is a mill-door contract, which can either be the case where a producer delivers grain to a miller, or a producer has already delivered to an agribusiness who in turns sells and delivers it to a miller.

With reference to a processor, transaction type 1 (pre-season fixed-price contract) and transaction type 6 (mill-door contract) are treated the same.

5.3.1.7 Transaction type 7: Un-priced delivery contract

The seventh transaction type identified by the respondents is an un-priced delivery contract which represents a contract with a buyer of a commodity with the option of pricing the commodity within a specified period. The accounting treatment of this contract is similar to transaction type 4 (un-priced contract).

5.3.1.8 Transaction type 8: Priced delivery contract

The eighth transaction type identified by the respondents is a priced delivery contract. This contract represents a contract with a buyer of a commodity with the buyer setting the price in advance. The accounting treatment of this contract is similar to transaction type 1 (pre-season fixed price contract).

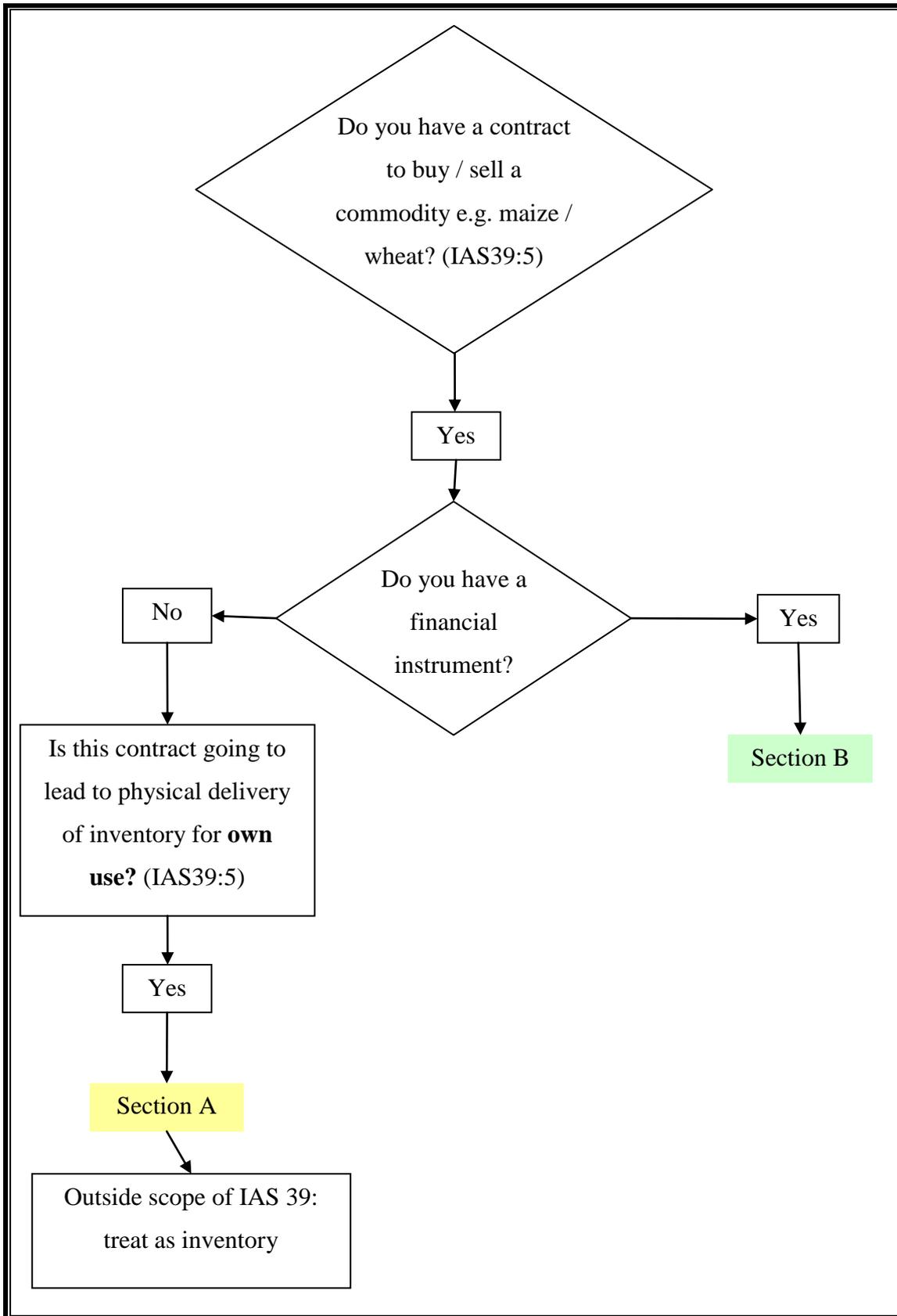
5.3.1.9 Transaction type 9: Other delivery contracts

The final transaction type identified is referred to as other delivery contracts. This contract represents basis trading where contracts are entered into for the purpose of optimising the transport location differential. Basis trading is generally speculative in essence. A more thorough description can be found in chapter 2 (refer page 52) of these types of transactions.

5.3.2 Transaction types analysed per respondent

In order to determine the accounting treatment of each of the above-mentioned transaction types, section 4 of the developed questionnaire (refer Appendix 3, page 221) and flow diagram of IAS 39 (refer Appendix 2, page 220) were used. Firstly, the nine transaction types were discussed in detail with the respondents in order to identify whether they do enter into these types of transactions or variations thereof. Secondly, each transaction type was treated separately with a standard set of questions from the questionnaire by referring to the flow diagram of IAS 39 (Appendix 2, page 220). The flow diagram was utilised to determine whether the contract entered into could be classified as a financial instrument. Based on the outcome, the respondent was referred to a specific set(s) of questions within the questionnaire. This procedure was repeated until the accounting treatment of each of the nine transaction types was covered and completed. For illustrative purposes an *extract* from the flow diagram combined with an extract from the questionnaire is provided below:

Figure 5.2: Extract from the flow diagram



Source: (Author)

Table 5.2: Extract from the questionnaire

Section A				
For the questions below, please indicate the frequency of each, based on the following scale:				
1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

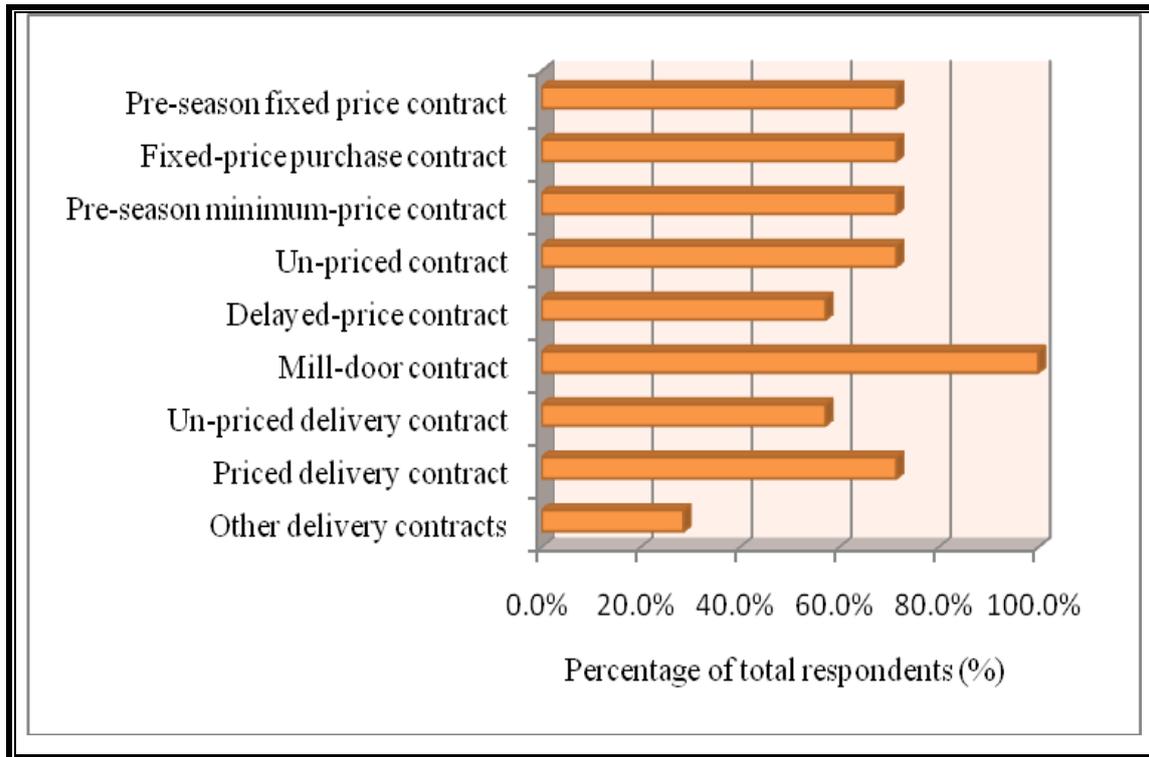
1	How do you recognise the own use inventory?	
	As inventory	
	As financial instruments	
	Other (specify)_____	

2	How do you measure the own use inventory?	
	Net realisable value	
	At cost	
	At lower of cost or net realisable value	
	At fair value	
	Other (specify)_____	

Source: (Author)

A breakdown of the percentage of the total respondents utilising each transaction type is provided below in Graph 5.3.

Graph 5.3: Percentage of total respondents per transaction type



Source: (Author)

Transaction type 6 (mill-door transaction, refer page 136) is the only transaction type that is utilised by all the respondents. Five of the remaining eight transaction types are entered into by 71% of the respondents, two of the remaining eight transaction types are entered into by 57% of the respondents. It is therefore evident that not all the transaction types are applicable to every respondent. The accounting treatment of some of the transaction types per respondent is similar, although the accounting treatment per transaction type compared between the respondents may vary. These variations can occur due to i) the hedge accounting practices of some respondents, ii) the nature of the inventory acquired (either for “own use” or for grain trading), or iii) the intent of acquiring the financial instrument. To present the findings per transaction type in the research report may therefore not be representative of reality. Instead it was decided to rather present the findings *thematically*. The transaction type themes were identified based on the questions presented in the questionnaire (refer Appendix 3, page 221). A standard set of questions ranging from Sections A to I was used to identify the accounting treatment of each transaction type. Each theme corresponds to the sections per the questionnaire. These themes are i) hedging, ii) the

treatment of gains or losses on hedging, iii) own use inventory, iv) holding of grain inventory for trading, v) measurement or valuation of inventory, vi) derivatives, vii) fair value measurement, viii) hedge accounting and ix) option valuation. Table 5.3 below indicates which sections of the questionnaire addressed which theme/s.

Table 5.3: Sections of questionnaire addressing themes

	Sections									
	3	A	B	C	D	E	F	G	H	I
Themes	<input type="checkbox"/>									
Hedging	<input type="checkbox"/>									
Treatment of gains or losses on hedging	<input type="checkbox"/>									
Own use inventory	<input type="checkbox"/>									
Holding of grain inventory for trading	<input type="checkbox"/>									
Measurement or valuation of inventory	<input type="checkbox"/>									
Derivatives	<input type="checkbox"/>									
Fair value measurement	<input type="checkbox"/>									
Hedge accounting	<input type="checkbox"/>									
Option valuation (Transaction type 3)	<input type="checkbox"/>									

Source: (Author)

The findings of the questionnaire and interviews will now be discussed.

5.3.3 Findings of interviews with respondents

The empirical phase of the research consisted of questionnaires that were completed during structured interviews with key representatives of the agribusinesses and processors. These representatives included chief financial directors, chief operating officers, financial managers and grain trading managers. During these discussions, the accounting treatment of the nine transaction types was discussed at length. As mentioned in paragraph 5.3.2 (page 137) the findings of these discussions will be communicated thematically.

5.3.3.1 Theme 1: Hedging

Even though all of the respondents mostly utilise SAFEX to hedge themselves against commodity price risk, it is rarely used by processors and agribusinesses to provide inventory security, that is, a SAFEX position will seldom lead to physical delivery but will usually be off-set before expiry of the contract. SAFEX is generally utilised by processors and agribusinesses for protection against commodity price risk and protection against non-delivery of producers or grain handlers. Only one of the two *processors* consistently hedges the inventory for their own use against commodity price risk, a view of the market will sometimes be taken and then a decision made whether to hedge against commodity prices increasing or not.

The research indicated that there are two ways in which an agribusiness can hedge, i) either the *total* inventory holding or future holding is hedged using SAFEX derivative contracts or ii) each SAFEX derivative contract has a corresponding supply or delivery contract. One respondent has specialist information technology systems that can allocate each and every SAFEX derivative contract (hedging instrument) to a corresponding contract (hedged item) either with a producer or with a processor.

It was found that most of the agribusinesses in this study's risk management policies prohibit speculative trading, however these agribusinesses do *speculate* with SAFEX contracts in order to generate a profit, but in these cases, speculative trades are entered into through a separate trading company.

5.3.3.2 Theme 2: Treatment of gains or losses on hedging

In respect of the treatment of gains or losses on hedging, the research found that six of the seven respondents recognise the gains or losses on the hedging transactions in the Statement of Comprehensive Income as either an income (gain) or an expense (loss) as prescribed by IAS 39. In contrast to the majority, one of the respondents recognised the gain or loss on the hedging of commodity price risk as part of inventory cost utilised in their normal inventory usage requirement. The hedging profit or loss is thereby included in the cost of its inventory.

5.3.3.3 Theme 3: Own use inventory

When considering own use inventory, three (42.9%) of the respondents indicated that they have grain inventory that is utilised as part of the normal inventory usage requirement, such as for milling purposes. Furthermore, one respondent reflected grain inventory held as safety stock as “own use” inventory. As mentioned in chapter three (refer page 79), IAS 39 makes a clear distinction between buying or selling a non-financial item in accordance with an entity’s expected purchase, sale or usage requirements (IASB, 2008b:1997). Inventory held for “own use”, falls outside the scope of IAS 39 and within the scope of IAS 2: Inventories (IASB, 2008d:985). IAS 2 prescribes that inventory held for “own use” should be valued at the lower of cost or net realisable value. The research indicated that the respondents entering into this type of contract, do comply with IFRS and value the “own use” inventory according to the method prescribed in IAS 2.

5.3.3.4 Theme 4: Holding of grain inventory for trading

The research indicated that in order to protect themselves against commodity price risk, all the agribusinesses attempt to have the grain they purchased or sold, hedged using a SAFEX future. The two processors do not always hedge themselves against commodity price risk but take a view of the market. Irrespective of whether the agribusinesses are hedging the price movement on a supply contract that has not resulted in physical delivery, or whether the supply contract has already been fulfilled with the producer physically delivering the grain, the price movement on the grain is still hedged on SAFEX. The agribusinesses would therefore carry inventory utilised for commodity trading. At the same time a SAFEX “open” position would be held that would protect the entity against commodity price risk.

5.3.3.5 Theme 5: Measurement or valuation of inventory

As highlighted in Chapter 3 (refer page 79) a distinction can be made between inventory held for “own use” and inventory held by commodity broker-traders according to IAS 2 paragraph 3 and 5 (IASB, 2008d:985). Even though the statement requires that inventory held for “own use” is measured at the lower of cost or net realisable value, it does not apply to inventory held by commodity broker-traders

which is measured at fair value less costs to sell (IASB, 2008d:985-986). Such inventories are generally acquired for the purposes of selling it in the near future. During the interviews it was found that only one respondent, trading as a commodity broker-trader, reflects the inventory held by commodity broker-traders at the lower of cost or net realisable value, rather than at fair value.

5.3.3.6 Theme 6: Derivatives

In all of the interviews conducted, there were discussions around the issue whether a specific transaction can and should be classified as a derivative or not. Statement IAS 39 specifies that a derivative has the following characteristics (IASB, 2008; Skerritt, 2006:378; Shin, 2004:4):

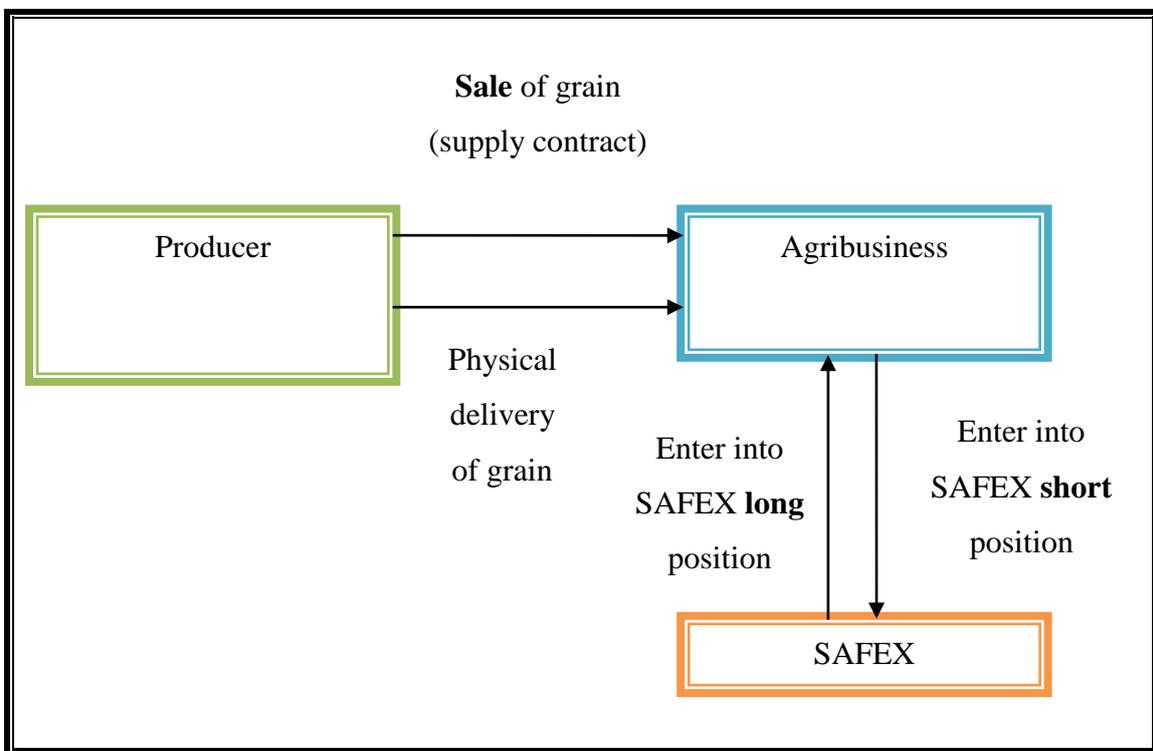
- A financial instrument that *changes in value* in response to changes in a specified interest rate, commodity price or foreign exchange rate;
- requires little or no initial investment; and
- is settled at a future date.

During the research it was found that in seven (77.8%) of the nine transaction types analysed (transaction types one, three, four, five, six, seven and eight), the agribusiness enters into a SAFEX hedge transaction before the *physical inventory* is delivered by the producer. This is done in order to protect the agribusiness or processor against commodity price movements from the date on which the contract was entered into until the physical inventory has been received. The research indicated that transaction type 2 (fixed price purchase contract) (refer page 133) or a spot purchase is an exception to this because the physical inventory is received at the same time as when the SAFEX hedging transaction occurs. The agribusiness does not enter into a supply contract with the producer before the inventory is received, the producer will deliver its grain at the same time that the sale to the agribusiness occurs. The supply contract is not classified as a derivative and the inventory is reflected in the accounting records at the cost price thereof.

The empirical research also indicated that, when referring to transaction type 1 (pre-season fixed price contract) (refer page 131), a producer enters into a contract to supply grain to an agribusiness at a SAFEX-based price at a specified future date. At

the date of the contract the agribusiness or processor enters into a SAFEX short position to hedge themselves against commodity price risk. The SAFEX position is subject to mark-to-market or fair value movements and these movements are recognised in the Statement of Comprehensive Income, depending on whether hedge accounting is applied or not. When the physical inventory is received, accounting entries are created to recognise the inventory and create the liability to the supplier of the commodity. The agribusiness enters into a SAFEX long position in order to “close out” the SAFEX short position. A flow diagram of the transaction is provided below.

Figure 5.3: Flow diagram of pre-season fixed price contract



Source: (Author)

With reference to this type of transaction, it was indicated earlier (transaction type 1 on page 131) that two contracts form part hereof, namely i) the supply contract with the producer and ii) the SAFEX derivative contract. The findings of the empirical research conducted surrounding the accounting treatment of the supply contract (as in transaction type 1) found that there are *three* different treatments of the two contracts.

- First treatment: The research indicated that hedge accounting is not applied. The supply contract with the producer is classified separately as a derivative. The mark-to-market movement on the supply contract derivative is then off-set with the mark-to-market movement on the SAFEX derivative in a profit or loss account in the Statement of Comprehensive Income.
- Second treatment: The research found that hedge accounting is applied. The supply contract with the producer is classified as a firm commitment and designated as the hedged item with the SAFEX contract designated as the hedging instrument. The mark-to-market movement on the hedged item is then matched with the mark-to-market movement on the hedging instrument.
- Third treatment: The empirical study indicated that hedge accounting is irrelevant. The supply contract with the producer or agribusiness is treated as an “own use” contract. The inventory is only recognised as an accounting entry when the physical inventory is received. The inventory is then recognised at the lower of cost or net realisable value.

5.3.3.7 Theme 7: Fair value measurement

In respect of fair value measurement, fair value is defined by all the respondents as the *SAFEX-based price*. With the exception of two respondents, the other respondents measure the fair value daily for trading purposes, but record only the month-end fair value for accounting purposes. The two exceptions however, record and measure it daily.

As far as the actual business operations are concerned, it was found that at month-end, an entity could have SAFEX open positions, i.e. SAFEX contracts that have not yet expired and are still “open”, and grain inventory to value. With reference to SAFEX open positions, two options are used when determining the fair value thereof.

- Firstly: Determining the fair value of the SAFEX open positions based on the SAFEX value of the contract month, for example: if it is the month of January and a SAFEX July contract is held, the quoted price for July contracts would be used.
- Secondly: The SAFEX spot price could be used to value the open positions irrespective of the SAFEX contract months of the open positions.

The mark-to-market of SAFEX futures or options is performed daily by SAFEX (refer Chapter 2, page 32) based on the product traded (for example white maize future) and the contract month. The difference between the current day's mark-to-market and the prior day's mark-to-market is subsequently settled in the margin account. The effect thereof is that a futures contract is settled daily rather than at the end of its life.

All the agribusinesses have grain *inventory* held for commodity trading that they value at the spot SAFEX price while the *SAFEX open positions* are valued at the SAFEX contract month. These differing valuation methods lead to a mismatch between the fair value of the grain inventory held and the SAFEX open positions utilised to hedge the commodity price movement when an entity does not apply hedge accounting.

5.3.3.8 Theme 8: Hedge accounting

In respect of hedge accounting, the basic principle, according to IAS 39, is to avoid the mismatch in the timing of gains and losses (Lopes, 2007a:233), which is caused by recognising the fair value of recognised assets and liabilities with the gains and losses of equity or items such as firm commitments or forecast transactions that are not recognised in the statement of financial position (PwC, 2005:7). However, before an entity can apply hedge accounting, strict hedge accounting criteria have to be adhered to (refer page 91) which are inter alia:

- At the inception of the hedge *formal documentation* exists that indicates the hedging relationship;
- there is an expectation that the hedge will be highly *effective*;
- for cash flow hedges, a forecast transaction that is the subject of the hedge must be highly probable;
- the effectiveness of the hedge can be reliably *measured*; and
- the hedge effectiveness is assessed on an *ongoing basis* and determined actually to have been highly effective throughout the financial reporting periods for which the hedge was designated.

The research indicated that three of the seven respondents (42.8%) apply hedge accounting and therefore adhere to the hedge accounting criteria. The remaining four

respondents have provided various reasons for not applying hedge accounting, including the following:

- The criteria to qualify for hedge accounting are not met;
- it is not practical due to large volumes of grain handled;
- the application of hedge accounting is too complicated;
- to document the hedging relationship requires extensive paperwork; and
- the application of hedge accounting requires radical changes to the information technology utilised by an entity.

5.3.3.9 Theme 9: Option valuation

It was found that some of the products offered by the agribusinesses require that an *option contract* (refer page 38) be purchased by the producer. An option contract adheres to the definition of a *derivative*, in other words it is a financial instrument which's value changes in response to changes in a specified commodity price, requires little or no initial investment and it is settled at a future date (IASB, 2008; Skerritt, 2006:378; Shin, 2004:4). According to IAS 39, derivatives fall within the "fair value through profit or loss" financial instrument category (refer page 84). Therefore the option contracts have to be fair valued which means that the mark-to-market valuation must be recorded. There are two relevant aspects related to the accounting treatment of options that should be considered. The first aspect is the methodology behind how these options are marked-to-market and the second aspect is accounting for the options.

- First aspect: Mark-to-market of options

The mark-to-market of these option contracts forms part of the mark-to-market calculations that an entity performs either daily or monthly. SAFEX prescribes a method that they follow in order to perform the daily mark-to-market calculations of options (refer Chapter 2, page 44). The findings of the research show that six (85.7%) of the seven respondents trade SAFEX options, and the respondents fair value such option contracts using various methods including the following:

- Four of these six respondents do so according to the mark-to-market calculation as performed and published by SAFEX.
- One of these six respondents developed a computer software application based on to the option valuation method prescribed by SAFEX, which automatically performs the valuations and the adjustments (gain or loss) on the options. This application is used as a management tool to ensure that the SAFEX mark-to-market calculations on options are accurate.
- The last respondent indicated that the options are not valued because the movement on the options is for the account of the producer, not the agribusiness. Therefore, no accounting entry is performed for purposes of the valuation of the options. The option contract however is taken out on behalf of the producer.

When considering options utilised by the producer, the research uncovered the following typical scenario occurring in practice.

Scenario 5.1: SAFEX options

The agribusiness, with which a producer has a supply contract, has a SAFEX margin account held at SAFEX. The option contract is acquired by the agribusiness on behalf of the producer. In order to acquire an option contract, SAFEX has a certain initial margin requirement (refer page 32). When the agribusiness enters into an option contract on behalf of the producer, the agribusiness will either allocate the *mark-to-market movement* of the options to i) the producer's loan account on a daily basis; or ii) when the producer physically delivers the contracted maize. The daily mark-to-market movement is performed leading to SAFEX either withdrawing or depositing the movement between the initial margin and the mark-to-market value in the agribusiness's account held at SAFEX. The agribusiness enters a corresponding entry either in the producer's loan account or against the deposit held at the agribusiness.

When considering the *initial margin requirement* of SAFEX futures, it is a fixed amount (refer Table 2.1 page 35 for SAFEX white maize futures example), while for SAFEX option contracts the initial margin requirement may vary (SAFEX, 2009d). SAFEX re-calculates and publishes the initial margin requirement daily.

Scenario 5.1: SAFEX options (continued)

After the SAFEX option contract has expired, the initial margin requirement is repaid by SAFEX. Agribusinesses again have different *business practices* of accounting for the initial margin when entering into an options contract on behalf of the producer. SAFEX charges the agribusiness' margin account held at SAFEX but repays the initial margin requirement on the option expiry date. The study found that actual business practices include the following:

- The agribusiness can either allocate the margin requirement to the producer's loan account; or
- the agribusiness will not charge the producer for the initial margin but interest will be raised by the agribusiness for providing the finance for the initial margin to the producer; and / or
- the agribusiness will require a deposit that will include funds to cover the option premium (discussed on page 38) and additional funds for the mark-to-market movement still to occur.

Source: (Author)

As mentioned earlier the method used by SAFEX to calculate the mark-to-market for options is based on the Black-Scholes option pricing model (refer Chapter 2, page 44). The variables used in this model include *option volatility* and the *underlying commodity price*. A scenario will now be utilised to explain the accounting of the mark-to-market of options. In this scenario the producer markets its maize by entering into a pre-season minimum price contract (refer transaction type 3, page 133) with the agribusiness entering into a put options contract on behalf of the producer.

Scenario 5.2: Mark-to-market of options

A SAFEX July white maize put option contract is purchased on 15 April with a strike price of R1 000 per ton with the spot July white maize price at R1 000 per ton. The option premium is R150 per ton. The producer has a loan account with the agribusiness and the option premium is immediately charged to the producer's loan account. SAFEX requires an initial margin of R120 per ton. The agribusiness has a practice of providing the initial margin as an advance and transferring it to an interest-bearing account. Assume that the initial margin account is zero at the beginning of the transaction and that the agribusiness has to first fund the initial margin account. *The producer's loan account is adjusted with the mark-to-market movement when the inventory is received.* The mark-to-market movements are as follows:

Date	M-to-m: option contract	M-t-m: futures contract
30 April	R 200 per ton	R 800 per ton
31 May	R 100 per ton	R 900 per ton

The journal entries in the agribusiness's accounting records will be as follows:

	Dr	Cr
15 April		
Producer loan account (R150 x 100)	R 15 000	
Financial instrument liability		R 15 000
Bill the producer with the option premium		
Interest-bearing account (SAFEX) (R120 x 100)	R 12 000	
Bank		R 12 000
Funding SAFEX margin account with initial margin		
30 April		
Bank (R20 000 – R15 000)	R 5 000	
Financial instrument liability		R 5 000
Profit on mark-to-market of option contract		
31 May		
Financial instrument liability (R10 000 – R20 000)	R 10 000	
Bank		R 10 000
Loss on mark-to-market of option contract		

Source: (Author)

- Second aspect: Accounting for options

We will now consider how to account for these options once a producer physically delivers the grain. Options can be used in two different situations, either by i) the *producer or processor* or by ii) the *agribusiness* to hedge against commodity price risk. An example of a *producer* using an option to hedge against commodity price risk is relevant in transaction type 3 which represents a pre-season minimum price contract (refer page 131). The producer purchases a put option in order to guarantee a minimum price. An *agribusiness* can also utilise option contracts when hedging against commodity price fluctuations. The accounting treatment of these two situations is different. Only the accounting treatment of the first situation will be considered.

In order to simplify the transaction flow, scenario 5.3 (based on the information in scenario 5.2) is provided below.

Scenario 5.3: Accounting for options

A SAFEX put option contract on a white maize future is purchased with a strike price of R1 000 per ton. The option premium is R150 per ton. SAFEX requires an initial margin of R120 per ton. The option premium is immediately charged to the producer's loan account. The agribusiness has a practice of providing the initial margin as an advance by transferring it to an interest-bearing account with interest charged at 10% per annum. The mark-to-market movement is settled when the producer physically delivers the maize. The producer physically delivers the maize on 30 June. The last mark-to-market was performed at the following prices:

Date	M-to-m: option contract	M-t-m: futures contract
31 May	R 100 per ton	R 900 per ton
Situation 1 (30 June)	R 0 per ton	R1 100 per ton
Situation 2 (30 June)	R 50 per ton	R 950 per ton

Two different situations will be discussed. In *situation 1* the spot price of white maize futures increases to R1 100 per ton on delivery date while in *situation 2* the spot price reduces to R950 per ton on delivery date. The option contract will expire a few days

Scenario 5.3: Accounting for options (continued)

before delivery date. SAFEX repays the initial margin on the expiry of the contract.

In both situations SAFEX will reduce the margin account of the agribusiness with the R120 per ton initial margin and the mark-to-market movement on the option contract. Each producer has a loan account with the agribusiness which will increase with the option premium of R150 per ton. The producer always delivers the physical maize at the spot price.

Situation 1: The option contract is “out of the money” with R100 per ton [R1 100 (mark-to-market price) less R1 000 (strike price)]. The option is regarded as worthless and lapses which means that the entire option premium of R150 per ton is lost. The producer delivers the maize at the spot price of R1 100 per ton and the funds are settled against his or her loan account with the agribusiness. SAFEX repays the initial margin of R120 per ton. The producer therefore receives R950 per ton (R1 100 less R150).

	Dr	Cr
30 June		
Inventory	R 110 000	
Producer loan account (R1 100 x 100)		R 110 000
Producer physically delivers maize and receives R1 100 per ton		
30 June		
Bank	R 12 000	
Interest-bearing account (SAFEX)		R 12 000
Repayment of initial margin by SAFEX		
30 June		
Bank	R 300	
Interest received		R 300
Receiving interest on funding initial margin (12 000 x 3/12 x 10%)		
30 June		
Producer loan account (R110 000 – R15 000)	R 95 000	
Bank		R 95 000
Settling producer’s loan account		

Scenario 5.3: Accounting for options (continued)

Situation 2: The option contract is “in the money” with R50 per ton [R1 000 (strike price) – R950 (mark-to-market)]. The option is exercised at the strike price of R1 000. The producer delivers the maize at the spot price of R950 per ton with the funds settled against the producer’s loan account with the agribusiness. SAFEX reduces the agribusiness’ margin account with the R50 per ton mark-to-market of the option contract, while the agribusiness transfers the R50 per ton profit on the cumulative mark-to-market of the option contract to the producer’s loan account. SAFEX repays the initial margin of R120 per ton. The producer therefore receives R850 per ton (R950 + R50 – R150).

	Dr	Cr
30 June		
Inventory	R 95 000	
Producer loan account (R950 x 100)		R 95 000
Producer physically delivers and receives R950 per ton		
30 June		
Bank	R 12 000	
Interest bearing account (SAFEX)		R 12 000
Repayment of initial margin by SAFEX		
30 June		
Bank	R 300	
Interest received		R 300
Receiving interest on funding initial margin (12 000 x 3/12 x 10%)		
30 June		
Financial instrument liability (R10 000 – R5 000)	R 5 000	
Bank		R 5 000
Loss on mark-to-market of option contract		
30 June		
Financial instrument liability	R 5 000	
Producer loan account		R 5 000
Transferring mark-to-market movement to producer’s loan account		
30 June		
Producer’s loan account (95 000 – 15 000 + 5 000)	R 85 000	
Bank		R 85 000
Settling producer’s loan account		

Source: (Author)

5.4 Findings of interviews with audit firms

The third secondary research objective specified in Chapter 1 (refer page 9) was that subsequent to the information obtained from the respondents, the opinions of the Big four audit firms (Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers) would be obtained, compared and considered in this context. Even though one of the afore-mentioned audit firms declined to take part in the study, the remaining three audit firms were gracious enough to participate in the study under condition of anonymity.

Interviews were conducted with representatives of the technical departments of the three audit firms which were all located in Johannesburg, South Africa. The technical departments are responsible for analysing and interpreting all the IFRS statements from the perspective of the firm and then providing its partners working with the external clients with guidance regarding the technical aspects and interpretations of such IFRS statements. This is done to ensure a consistent interpretation and application of the IFRS statements throughout the firm.

The opinions of firms will be discussed under the themes: i) treatment of gains or losses on hedging, ii) measurement or valuation of inventory, iii) derivatives, iv) fair value measurement and v) option valuation. It was decided to only focus on these five themes due to the differences in accounting treatment found between the respondents in respect to these five categories.

5.4.1.1 Theme 1: Treatment of gains or losses on hedging

As discussed earlier, six of the seven respondents recognised the gains or losses on the hedging transactions in the Statement of Comprehensive Income as either an income (gain) or an expense (loss) as prescribed by IAS 39. Furthermore, one of these respondents recognised the gain or loss on the hedging of commodity price risk as part of inventory cost utilised in their normal inventory usage requirement. The hedging profit or loss is thereby included in the cost of their inventory. The audit firms all agreed with this treatment of the gains and losses by the respondents. With regard to the respondent that recognised the gain or loss on the hedging of commodity price risk as part of inventory cost, the auditors reacted as follows: Firstly it should be

established whether this entity applies hedge accounting or not and secondly whether this inventory is purchased for their normal (own) usage requirement. If both apply, a base adjustment could be made (refer page 177) in terms of IAS 39 paragraph 98. Whether or not to make a base adjustment is an election, it is not mandatory, therefore it is not required by IAS 39 and it remains the choice of the entity. A base adjustment can only be made when an entity applies hedge accounting. Whether or not a base adjustment is made, the end result is still reflected in the Statement of Comprehensive income. This choice is often made by entities that prefer the cost of sales, and therefore gross profit margin figures, to be accurate. One audit firm highlighted that if an entity elects to apply a base adjustment, it is imperative that the application thereof should form part of the accounting policy of the entity and must therefore be *consistently* applied.

5.4.1.2 Theme 2: Measurement or valuation of inventory

According to IAS 2, inventory can be measured either at the lower of cost or net realisable value or at fair value in the case of a commodity broker-trader. During the interviews with the seven respondents it was found that one respondent reflects the inventory held as a commodity broker-trader not at fair value, but rather at the lower of cost or net realisable value.

The audit firms' were all in agreement that the application in IAS 2 paragraph 5, which states that the IFRS statement is not applicable to inventory held by commodity broker-traders and that such inventory should be measured at fair valued, is not mandatory and can be elected. This can be interpreted that an entity acting as a commodity broker-trader has a choice whether to fair value their inventory or to value it at the lower of cost or net realisable value. However, once a choice is made, it should be applied *consistently*.

With reference to a situation where an entity has both "own use" inventory and inventory held for trading, the following (perhaps diverse) opinions were obtained:

- The first audit firm indicated that they generally consider the structure of the trader section within that entity. If the entity has a clear segregation of duties between the procurement for "own use" inventory and inventory utilised for trading, i.e. a split

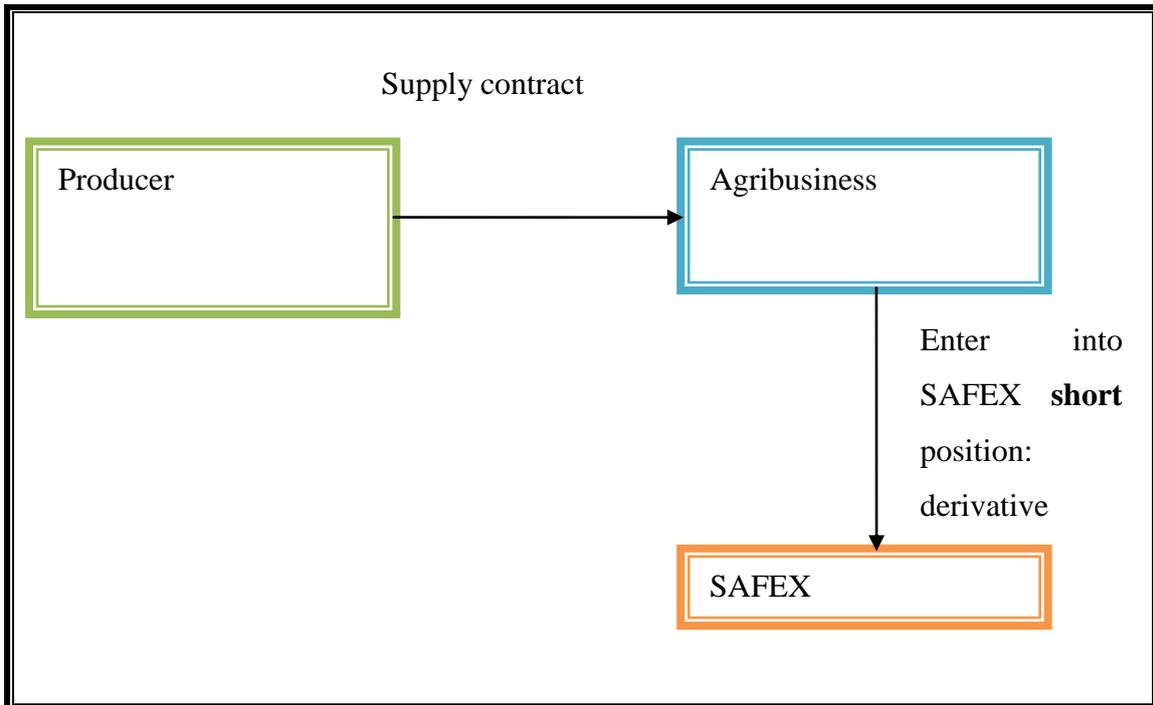
business model, the inventory can be valued separately. Inventory held for “own use” will then be valued at the lower of cost or net realisable value, while the inventory held for trading at fair value. If there is no clear split in the business model, the entity has to choose one valuation method, either lower of cost or net realisable value or fair value, and then apply it consistently.

- The second audit firm was of the opinion that the “own use” inventory should be separately identifiable and be consistently managed separately from the grain inventory traded and held as a commodity broker-trader.
- The third audit firm’s requirement is a clear distinction between inventory held for trading and “own use” inventory.

5.4.1.3 Theme 3: Derivatives

During the interviews conducted with the seven respondents, it became evident that there are differences with regard to the classification of whether a contract or transaction can be classified as a derivative. One example of this was found in the accounting treatment of the first of the nine transaction types selected for the analysis of the accounting treatment thereof (refer page 131), namely the pre-season fixed price contract. Refer to the figure below for the illustration of the flow of transactions.

Figure 5.4: Transaction flow of pre-season fixed price contract



Source: (Author)

Three treatments of the supply contract between the producer and the agribusiness were found (refer page 144). The first treatment found was when hedge accounting was not applied by the respondent with the supply contract classified separately as a derivative, the second treatment related to when a respondent applied hedge accounting and the supply contract with the producer was classified as a firm commitment and designated as the hedged item with the SAFEX contract designated as the hedging instrument. With the third and last treatment it was found that hedge accounting was irrelevant with the supply contract with the producer treated as an “own use” contract. Each of these treatments was discussed with the representatives of the technical departments of the selected audit firms. The following opinions of the audit firms were obtained.

Audit firm 1

The representatives of Audit firm 1 indicated its definite approach in how to determine whether a contract could be classified as a derivative or not. This approach follows a question and answer format:

Q: Can the contract be classified as a financial instrument according to IAS 39?

A: When considering the scope of IAS 39 as discussed in Chapter 3 (refer paragraph 3.3.2, page 77) a financial instrument can be defined as a contractual right to receive or a contractual obligation to deliver cash or another financial instrument. The question should be raised whether a normal purchase or supply contract meets the definition of a financial instrument. Based on the definition of a financial instrument, the entity will have a contractual right to receive cash or a contractual obligation to deliver cash in return for the delivery or receipt of goods or services. These contracts may however not be accounted for as a financial instrument until the parties have performed in terms of the contract, i.e. rendered the services or delivered the goods. This is due to the “own use” exemption.

Q: Does the own-use exemption apply?

A: The “own use” scope exemption in IAS 39 paragraph 5 (refer Chapter 3, page 79) applies to contracts to buy or sell a non-financial item, i.e. a commodity, which can be settled *net in cash*, except where the contracts were entered into and continue to be held for the purpose of the receipt or delivery of non-financial items in accordance with an entity’s expected purchase, sale or usage requirements.

Q: Does the contract allow for net settlement?

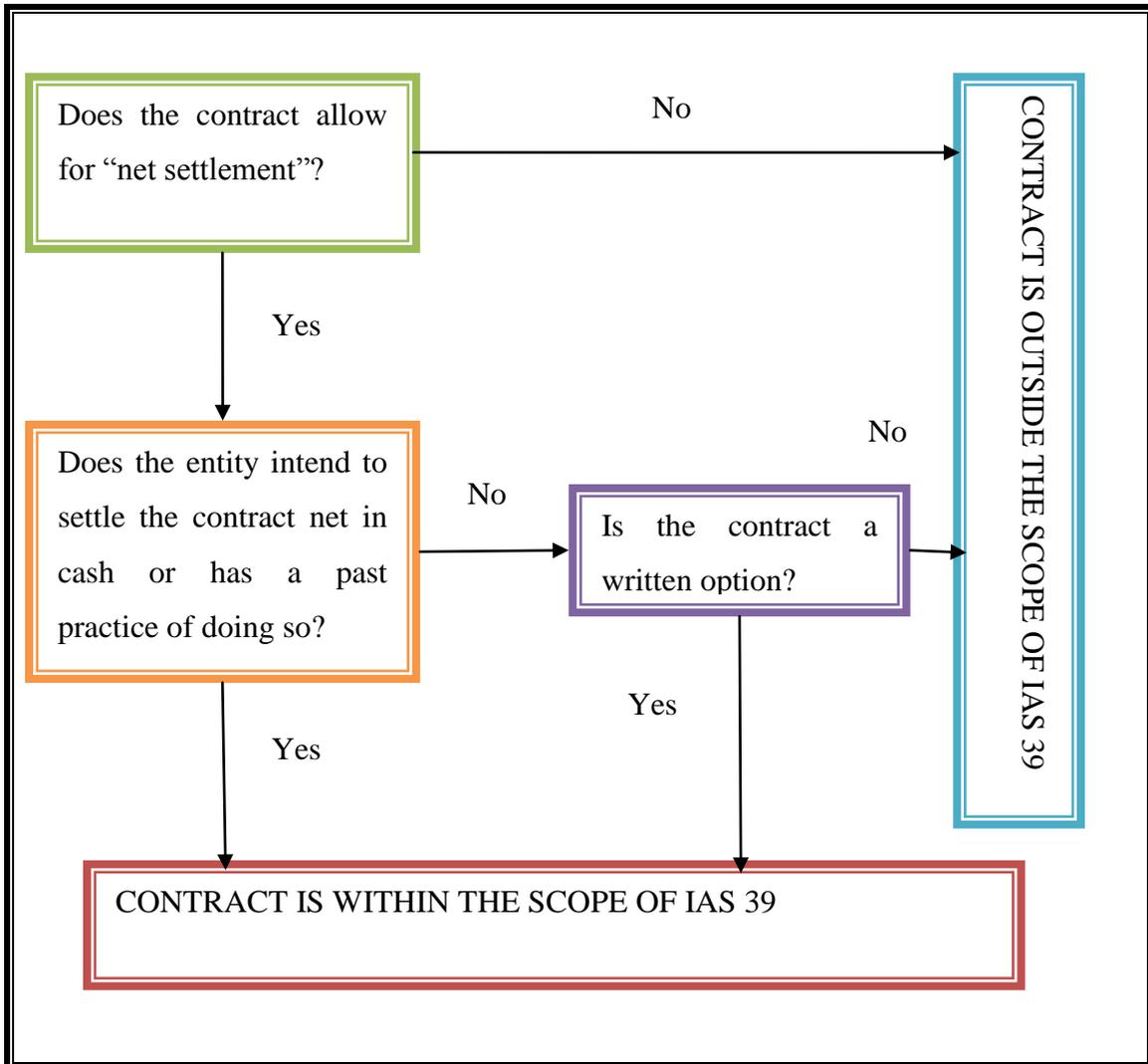
A: There are four instances in which a contract is normally considered to be *net settled* (refer Chapter 3, page 79):

- The contracts are *contractually* settled net in cash or by exchanging another financial instrument; and/or
- it is common *practice* in the entity to settle similar contracts net in cash; and/or
- it is common practice in the entity to take delivery of the non-financial item and *selling it within a short period of time* in order to benefit from the short-term price fluctuations or a dealer’s margin; and/or
- the non-financial item is *readily convertible to cash*.

If a contract is net settled, it is classified as a derivative.

In order to test whether a contract falls within the scope of IAS 39, the following figure is utilised by Audit firm 1.

Figure 5.5: IAS 39 scope test



Source: (As provided by Audit Firm 1)

If the contract does fall within the scope of IAS 39, it can be classified as a derivative.

Based on the above approach, Audit firm 1 agreed with the *first* accounting treatment of a supply contract as per a pre-season fixed price contract which classified the supply contract as a derivative and fair valued the contract while the SAFEX contract was also classified as a derivative and fair valued. The fair value movement of the two contracts was then off-set in profit and loss. Hedge accounting was not applied. The firm also agreed with the *third* accounting treatment which referred to an entity

purchasing inventory for their normal usage requirement and treated the supply contract with the producer or the agribusiness not as a derivative and only recognised the contract once the inventory was received. The SAFEX contract was classified as a derivative and fair valued. Whether or not an entity applies hedge accounting is not relevant.

The audit firm however, did not agree with the *second* treatment with hedge accounting being applied and the supply contract classified as a firm commitment and designated as the hedged item with the SAFEX contract designated as the hedging instrument. Utilising the approach described above, the contract does allow for “net settlement” and it is common practice in the entity that the contract is “net settled”. Therefore the contract does fall within the scope of IAS 39 and is classified as a derivative. Their opinion is that a derivative cannot be designated as a hedged item (refer page 180). The supply contract can therefore not be classified as a hedged item and the second treatment is therefore not accurate.

Audit firm 2

Representatives of the second firm agreed with the *first* accounting treatment of the supply contract being classified as a derivative and off-setting the fair value movement of the supply contract with the fair value movement of the SAFEX derivative. They did however reiterate that IAS 39 allows you to off-set the profit and loss on the two derivative contracts but the asset and liability in the Statement of Financial Position should be shown separately, it is not allowed by the standard to off-set it due to the two contracts having different counterparties, i.e. the producer and SAFEX. The firm also agreed with the *third* treatment of the supply contract where the inventory is held for the normal purchase or sale requirement of an entity.

In terms of the *second* accounting treatment of the supply contract where an entity applies hedge accounting, the second firm shared the opinion of Audit firm 1 on how to treat this transaction. With reference to an entity classifying the supply contract as a firm commitment, the audit firm disagrees by highlighting that once you have entered into a contract with a producer, a firm commitment is disqualified because you now have a contract. The supply contract would therefore be classified as a derivative. Although an entity applies hedge accounting, the application thereof in

this transaction type would not be relevant. The transaction type would then be treated the same as the first accounting treatment with the supply contract being classified as a derivative and the movement of the contract fair valued and off-set against the fair value movement of the SAFEX derivative.

Audit firm 3

Audit firm 3 did not have such a clear approach to classifying a derivative than Audit firm 1 did, but was in agreement with the first and third treatment of the supply contract. With regard to the second treatment of the supply contract, Audit firm 3 shared the opinion of the first two audit firms' treatment of the supply contract.

5.4.1.4 Theme 4: Fair value measurement

During the interviews with the respondents, it was identified that two options exist when determining the fair value of the SAFEX open positions, namely based on the SAFEX value of the contract month or the SAFEX spot price irrespective of the SAFEX contract months of the open positions (refer page 146).

One of the audit firms highlighted that the daily mark-to-market and resultant settlement performed by SAFEX mostly address the valuation of open positions by utilising the contract month and product traded when performing the mark-to-market calculation. This therefore indicates that the SAFEX open positions are valued using the first described method. With SAFEX closing at 12h00, the only discrepancy might be the last day's trade that has not been recorded in the fair value of the contracts yet. The other two audit firms were in agreement with this approach.

5.4.1.5 Theme 5: Option valuation

As indicated earlier, six of the seven respondents trade SAFEX options, and fair value these option contracts following various methods that include the method prescribed and published by SAFEX while another respondent has their own written computer programme that is utilised as a management tool to ensure the calculation performed by SAFEX is accurate. One respondent does not mark-to-market the options highlighting that the movement on the option contracts is for the account of the producer and not the agribusiness.

All the representatives of the audit firms considered the first method of determining the mark-to-market calculation as performed and published by SAFEX and the second method of utilising a computer software application based on the option valuation method as prescribed by SAFEX, as accurate. With reference to the third method where the respondent does not fair value options, they are in agreement that it has to be determined in whose name the option contract is issued, the producer or the agribusiness. If the option contract is in the name of the producer, the agribusiness does not need to fair value these options. In their opinion, the accurate method to value the options is to use the SAFEX-prescribed method.

With regard to accounting for the options (refer page 148) one audit firm was of the opinion that for the mark-to-marketing of the option contract in the agribusiness's accounting records, a financial instrument asset or liability should be created in the Statement of Financial Position with the opposite movement reflected in the profit or loss account of the *agribusiness*. The motivation behind why it should be accounted for in the profit or loss account of the agribusiness, is that the agribusiness carries the risk and should be rewarded accordingly.

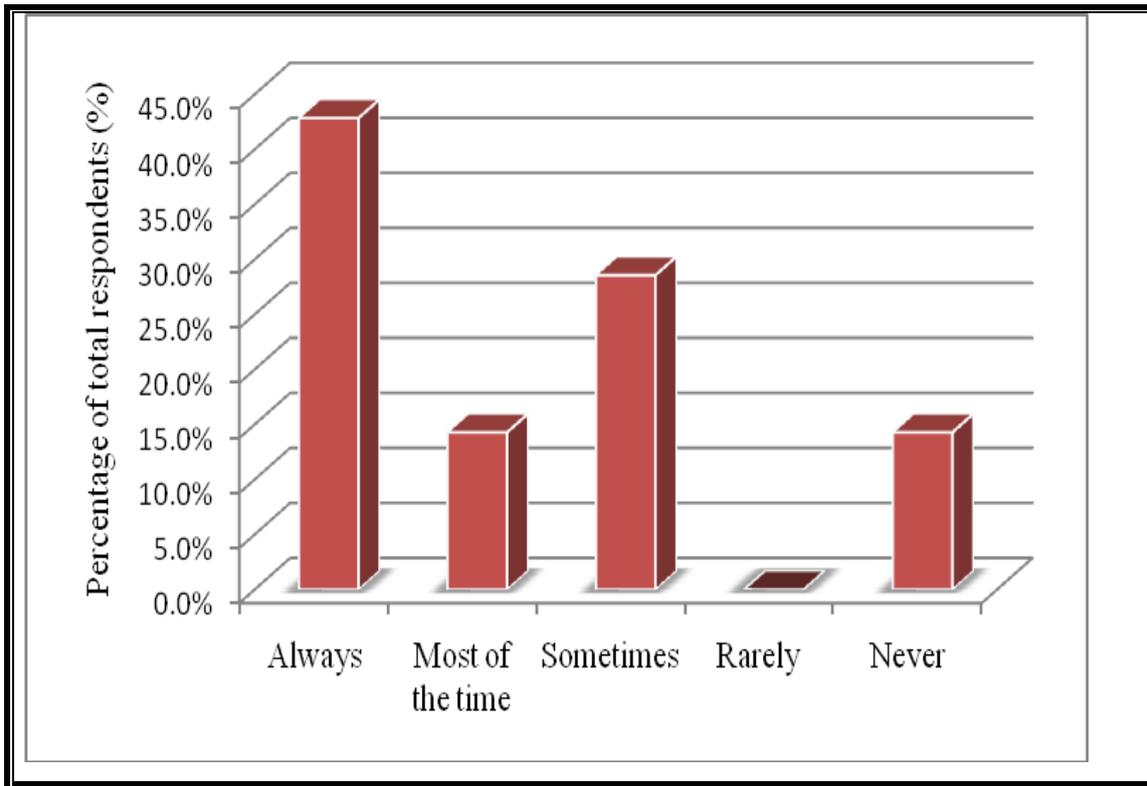
5.5 BUSINESS PRACTICES

Section 5 of the questionnaire measured how the application of IAS 39 impacted an entity's business practices. The respondents were requested to rate the frequency of the impact on the entity based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

The following four graphs illustrate the findings of the questions regarding business practices.

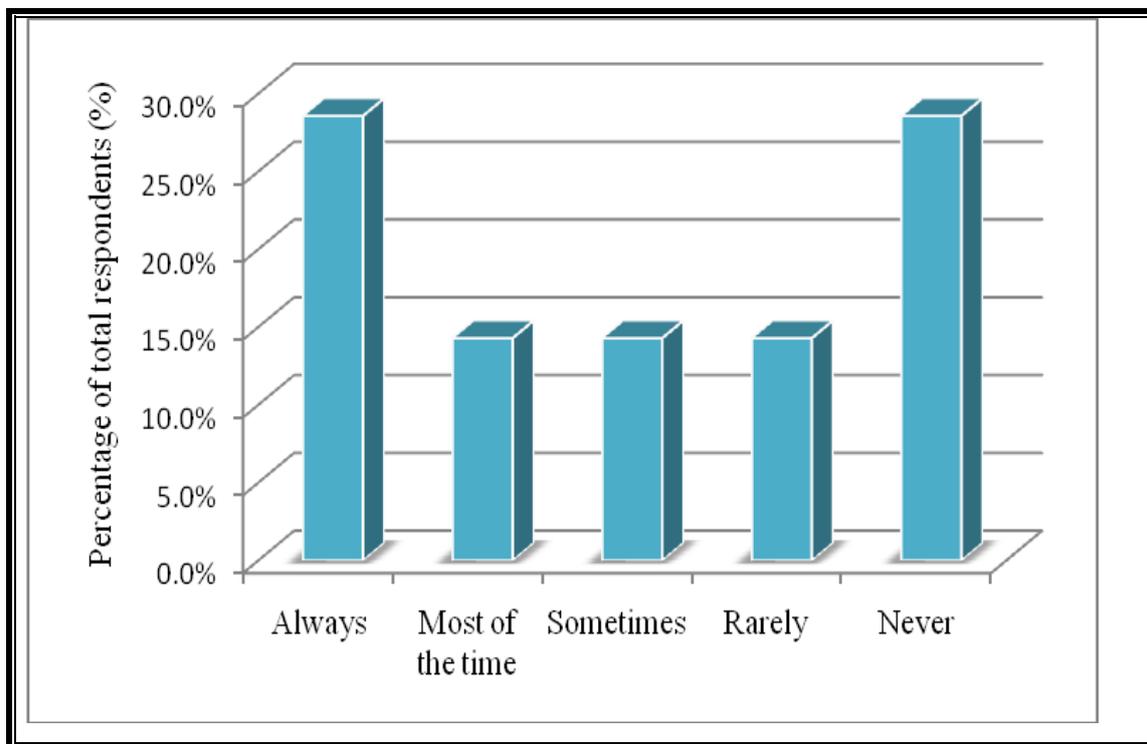
Graph 5.4: Findings of questions regarding development of new IT system



Source: (Author)

The findings indicated that three of the seven respondents (42.8%) were in agreement that the application of IAS 39 always impacted the development of a new IT system and one respondent indicated that it was not necessary to develop a new IT system to assist with the application of IAS 39.

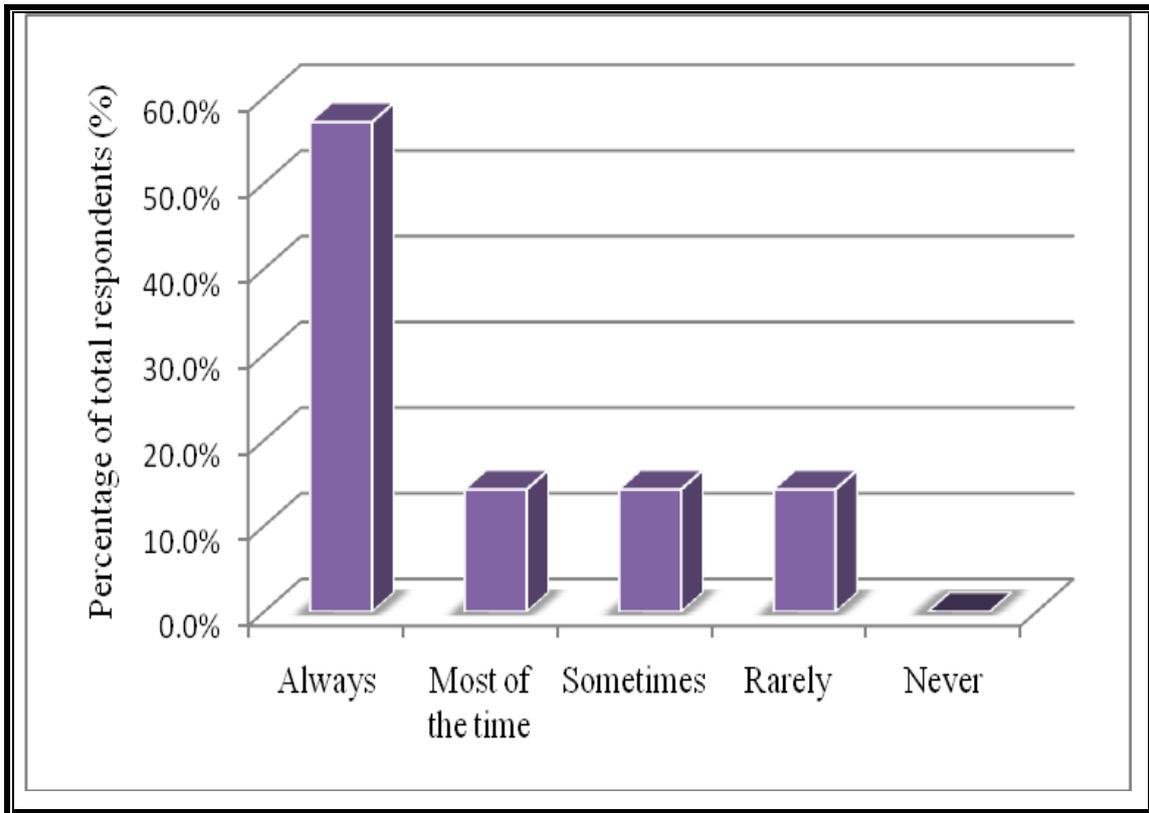
Graph 5.5: Findings of questions regarding appointment of new administrative staff



Source: (Author)

Two of the respondents (28.9%) indicated that new administrative staff had to be appointed to assist with the implementation of IAS 39, while the same number of respondents (28.9%) indicated that it was not necessary to appoint new administrative staff. The remaining three respondents each indicated a different scale ranging the impact of appointing new administrative staff from “most of the time” to “rarely”.

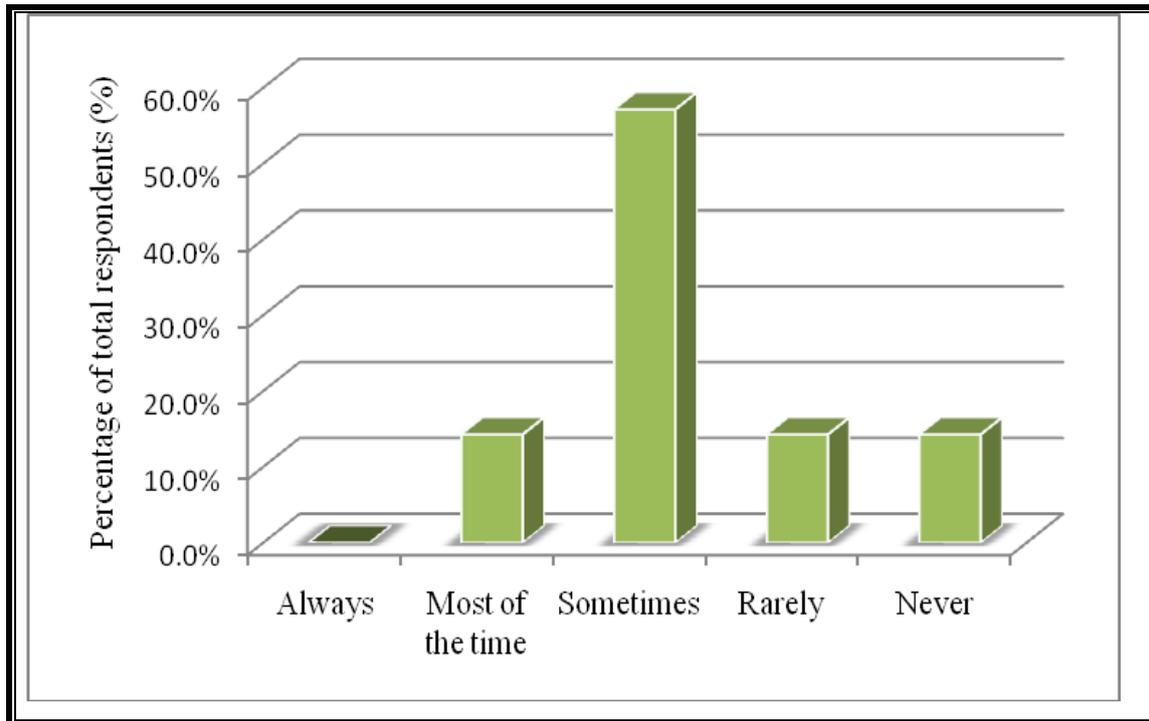
Graph 5.6: Findings of questions regarding training of staff



Source: (Author)

With regard to the question regarding the training of staff on the implementation of IAS 39, the majority respondents (57.1%) indicated that staff had to be trained.

Graph 5.7: Findings of questions regarding decision making



Source: (Author)

The last question with regard to the section on business practices, raised the question on whether IAS 39 impacted decision making. The majority respondents (57.1%) indicated that the impact of IAS 39 on the business only sometimes impacted decision-making, with one respondent indicating that it rarely impacted decision-making and another respondent indicating that it never impacted decision-making.

From the above findings, it is evident that IAS 39 has impacted business practices. Only one respondent indicated that it was not necessary to develop a new information technology system in order to cope with the requirements of IAS 39. Not many new administrative staff had to be appointed in order to adjust to the requirements of IAS 39, but current and new staff had to be trained on the requirements of the new standard. Five of the respondents indicated that sometimes to always the requirements of IAS 39 impacted the decisions the company made.

5.6 REPLACEMENT OF IAS 39

Section 6 of the questionnaire addressed the replacement of IAS 39. In 2009 the IASB announced that IAS 39 will be phased out and replaced in three phases (IASB, 2009a). Phase 1 is set to address the classification and measurement of financial instruments, with phase 2 addressing impairment methodology and phase 3 addressing hedge accounting. The first phase has already been completed with the issuance of IFRS 9 during November 2009 (refer paragraph 3.6, page 105). In the sixth section of the questionnaire (refer appendix 3, page 221), a number of questions were asked to the respondents to determine whether they were aware that IAS 39 will be replaced. Five of the seven (71.4%) respondents indicated that they were aware that IAS 39 will be replaced but have not yet considered how it will impact their business operations. Two respondents indicated that they intend to be early adopters to ensure compliance with the new requirements.

5.7 DISCUSSION OF SIMILAR STUDIES PERFORMED GLOBALLY

The seventh research objective set out in Chapter 1 (refer page 9) is to compare and contrast similar studies in other parts of the world with this South African research project. The researcher could not find a replica of the study that was conducted to investigate the accounting treatment of commodity derivatives in the agricultural sector in another part of the world. Similar studies were however conducted and key findings thereof will now be discussed based on the title of each research project.

5.7.1 Accounting for electricity derivatives under IAS 39

This research study conducted by Lopes (2007:233-246) was published in the Journal of Derivatives and Hedge funds. The aim thereof was to analyse the impact of accounting standards on the accounting for hedges with energy derivatives and was performed in the context of the MIBEL (Mercado Ibérico de Electricidade) derivatives market, which was launched during July 2006 as a fundamental step towards the development of the Iberian Electricity Market. It was a joint initiative between the Portuguese and Spanish governments as an initial attempt to stimulate the development of an internal electricity market in the region.

As part of Lopes's study, the key aspects of accounting for non-financial items as raised by IAS 39, were analysed. The study considered hedge accounting and found that when a futures contract is for the same quantity of electricity and for the same period as the hedged position, it is assumed that the hedge with the futures contract is highly effective. In other words the futures contracts pay-off profile are generally the inverse of the underlying item and therefore tends to easily qualify for hedge accounting rules based on the way hedge effectiveness is measured. The research indicated that, as far as energy producers and users are concerned, when hedges are accomplished with exchange-traded futures, compliance with IAS 39 hedge accounting rules is fairly simple and straightforward.

When comparing this study with the study conducted by Lopes, the key differences in the accounting treatment of *electricity derivatives* traded on MIBEL are discussed while a *case study* of the accounting treatment of *commodity derivatives* specifically in the agricultural sector is performed. The MIBEL is a very young market (launched in 2006) as compared to SAFEX (initially launched during 1987). Only accounting for MIBEL futures contracts was considered, while this study considered both SAFEX futures contracts and options contracts. This study's empirical research included a questionnaire and structured interviews with management from the sampled cases and an opinion from the audit profession were obtained, whereas Lopes's study was more focussed on an interpretation of the literature.

5.7.2 Accounting for financial instruments: an analysis of the determinants of disclosure in the Portuguese stock exchange

This study was performed by Lopes and Rodrigues (2007:25-56) and was published in the International Journal of Accounting. The study investigated the determinants of disclosure level in accounting for *financial instruments* of Portuguese listed companies. The aim of the research was to study the characteristics of companies that came closest to the disclosure requirements of IAS 32 and IAS 39. These disclosure requirements became relevant due to the mandatory adoption of International Accounting Standards in 2005. The Portuguese Accounting Directive 18 specifies compliance with IAS when Portuguese accounting standards are not available. It was reported that since there is a lack of accounting standards for financial instruments,

Portuguese listed companies are required to comply with the international accounting standards on financial instruments.

For each company an index of disclosure based on IAS 32 and IAS 39 requirements was computed. The research revealed that the disclosure degree is significantly related to size, type of auditor, listing status and economic sector. Areas for improvement of Portuguese companies' reporting practices were identified and suggestions made on areas for intervention of the Portuguese capital markets regulator.

When comparing the above-mentioned study with this study, the above-mentioned study investigates the disclosure levels of financial instruments of Portuguese listed firms, while this study concentrates on South African agricultural firms and the impact on business operations, while the disclosure levels of financial instruments are not included in the scope of the study.

5.7.3 Accounting for financial instruments in the banking industry: conclusions from a simulation model

This research project was performed by Gebhardt, Reichardt and Wittenbrink (2004:341-371) and published in the European Accounting Review. The study analysed the effect of three sets of accounting rules for financial instruments:

- Old IAS before IAS 39 became effective;
- Current IAS or US GAAP; and
- The Full Fair Value (FFV) model as developed and proposed by the Joint Working Group (JWG) on the financial statements of banks.

When the International Accounting Standards Committee (IASC) (the IASB's predecessor body) commenced with the project that led to IAS 39, Financial Instruments: Recognition and Measurement in 1997, a Joint Working Group (JWG) of international standard setters on financial instruments was formed. The JWG consisted of standards setters from 13 countries (Deloitte Touche, 2001). Even though the project lasted for three and a half years which resulted in a JWG draft standard, the IASC did not issue it as either an IASC draft standard or exposure draft.

The research study developed a simulation model with characteristics of the modern investment banks and commercial banks. Simulations for different strategies such as fully hedged or partially hedged were conducted. The researchers applied the different sets of accounting rules to the activities of their “model bank” in different interest rate scenarios. The findings indicated that a fully hedged bank under the old IAS 39 could portray its economic earnings in its financial statements. Under current IAS or US GAAP banks cannot adequately portray their best-practice risk management activities due to the restrictive hedge accounting rules. When considering FFV, the accounting adequately reflects the economics of the banking activities.

In comparing the above-mentioned study with this study, the industries are different: the banking industry as opposed to the agricultural industry. Three sets of accounting rules for financial instruments were also considered in Gebhardt *et al.*'s study, while only current IAS are considered in the current study.

5.8 SUMMARY

Chapter 1 set out the main objective of this research study as an investigation into the accountancy implications of commodity derivatives in the South African agricultural sector and to establish a standard methodology of the interpretation of IAS 39 to serve as a benchmark and best practise for South African agribusinesses and processors. In order to address the main and secondary objectives, a questionnaire was compiled which served as the basis of discussion during scheduled interviews with the respondents. The findings of the questionnaire and in-depth discussions were communicated in this chapter based on the different sections (i.e. general information and services, financial instruments, accountancy implications of commodity derivatives, business practices and the replacement of IAS 39) of the developed questionnaire.

The findings of the accounting treatment of nine transaction types typically found in South African agribusinesses and processors were analysed and it was found that these accounting treatments vary based on different interpretations and applications of IAS 39. These varying findings were communicated thematically rather than per individual transaction type because not all the respondents utilise all transaction types.

The findings of a first-time study that discussed and compared the main findings of the accounting treatment of these nine transaction types, during interviews with representatives of the technical departments of three of the four largest audit firms in South Africa, were presented. These main findings include the treatment of gains or losses on hedging, the measurement or valuation of inventory, derivatives, fair value measurement and option valuation. Various scenarios were utilised to establish the accounting treatment of options where a knowledge gap existed in the literature.

The chapter concluded with a discussion of similar studies performed globally. This research study is unique in that an exact replica could not be found within the literature. Three similar studies were discussed. The first study considered the accounting for electricity derivatives, traded on MIBEL, under IAS 39. The key aspects of accounting for non-financial items were analysed and hedge accounting considered. The second research study considered the accounting for financial instruments by performing an analysis of the determinants of disclosure in the Portuguese stock exchange. For each of the Portuguese listed companies an index of disclosure based on IAS 32 and IAS 39 requirements was computed. The third and last study considered the accounting for financial instruments in the banking industry by utilising a simulation model. Three sets of accounting rules for financial instruments were analysed.

Chapter 6 will draw conclusions and make recommendations based on the findings communicated in this chapter.

CHAPTER 6

6 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

As was discussed in detail in Chapter 1, the main purpose of this study was to investigate the accountancy applications and implications of commodity derivatives in the South African agricultural sector. Furthermore it may also serve to establish a standard methodology of the interpretation of IAS 39 to serve as a benchmark and best practise for South African agribusinesses and processors. The secondary objectives as provided in Chapter 1 were:

- i. Obtaining general information about agribusinesses and processors and the services offered to their customers and investigation of the extent to which the agribusinesses use derivatives for their own business practices and financial management purposes.
- ii. The identification of various transaction types utilised by South African agribusinesses and processors. This is done in order to determine the accounting treatment of these transaction types by South African agribusinesses and processors, which will then establish the varying applications and interpretations of IAS 39 in terms of commodity derivatives.
- iii. The opinions of the Big Four audit firms; Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers; will be obtained and compared to the findings of the accounting treatment of IFRS on the commodity derivatives.
- iv. Consideration will be given to whether the agribusinesses are changing their business operations and practices to comply with the IFRS requirements.
- v. The primary purpose of financial statements will be considered, especially in the context of decision-making in the agricultural industry.
- vi. It will be determined whether the financial managers in the agribusinesses and processors are up to date in respect of the IFRS requirements for derivatives.
- vii. A comparison of this study's findings will be made with similar studies performed in other parts of the world.

The findings of the research conducted based on the literature review, the compiled questionnaire and the (recorded) structured interviews, were presented in Chapter 5. This final chapter aims to draw key conclusions from these findings and to make certain recommendations based on the findings in order to address the research objectives as set out earlier. These conclusions will be drawn from the findings discussed in Chapter 5, and will be presented based on the six key sections of the questionnaires completed during the structured interviews with the representatives of the agribusinesses and processors. The six sections of the questionnaire have been sub-divided into the various detailed questions as listed in the questionnaire (refer to Appendix 3, page 221). The conclusions will, where applicable, be followed by recommendations.

The chapter will conclude with a summary of the study and its main contributions.

6.2 GENERAL INFORMATION AND SERVICES

The conclusions on the first and second sections of the questionnaire will now be discussed. This section was primarily for informational purposes in respect of the business formats, auditor and general background information for each of the respondents and addressed the *first* secondary objective as set out in Chapter 1 (page 9). The knowledge obtained from the literature study conducted in Chapter 2 formed the foundation for the formulation of the questionnaire.

6.2.1 Business forms

The literature review conducted in Chapter 2 concerning the history of agricultural cooperatives and the deregulation of the maize industry noted that many agricultural cooperatives changed their business form from *cooperative* to *company* since the deregulation of the maize industry (refer page 27). This is evident in the findings indicating that six of the seven respondents' business forms are currently companies while only one respondent operates as an agricultural cooperative.

6.2.2 External auditors

According to the Companies Act, South African companies are obliged to have an annual statutory audit (refer paragraph 1.1.4, page 5), which is performed by an

external audit firm. Six of the seven external auditors of the respondents are from the Big Four auditing firms, of which PricewaterhouseCoopers is the best represented firm, being the external auditors of three of the six respondents (50%) with a business form of company. The external auditors play a pivotal role in assisting companies with the interpretation of accounting standards. Each of the Big Four auditing firms has their own technical division responsible for interpreting the accounting standards and providing guidelines to the rest of the audit firm on their interpretation thereof. A logical conclusion can therefore be drawn that three of the six respondents with the business form of company, should apply and interpret the accounting standards on financial instruments similarly. However in the literature review conducted it was found that even auditors have different interpretations of IAS 39 (refer paragraph 1.1.4, page 5) and the interpretation and application of IFRS still differ (refer paragraph 3.5, page 104).

6.2.3 Compliance with IFRS

Since most of the respondents claim to be fully compliant with IFRS, it should lead to the respondents' financial statements being *comparable*. However, as highlighted in the literature review on the comparability of financial statements (refer paragraph 3.5, page 104), IFRS can be interpreted and applied in numerous ways as was also indicated by the findings of this study. Based on the differences in the accounting treatment of commodity derivatives as presented in Chapter 5 (refer page 130 onwards), it does seem that the financial statements of all the cases analysed cannot necessarily be compared on face value.

6.2.4 Financial instruments

Section three of the questionnaire on financial instruments is aimed at addressing the secondary objective of investigating the extent to which the agribusinesses use derivatives for their own business practices and financial management purposes. Commodity derivatives and the derivative categories have been addressed in Chapter 2 (refer page 30).

Commodity derivatives are utilised by the seven respondents to a great extent with all of the respondents utilising SAFEX futures contracts on a daily basis in order to

hedge against commodity price risk. Furthermore, six of the seven respondents utilise option contracts for the same reason. SAFEX is the main futures exchange that the respondents trade commodity derivatives. SAFEX as price determinant in South Africa is discussed in Chapter 2 (refer paragraph 2.4, page 40) while an example of a SAFEX futures contract can be found in Table 2.1 (refer page 35).

The use of these financial instruments or derivatives is a very ‘personal’ and technical activity, very often closely linked to the individual entities’ business culture and even the individual trader. As such, specific recommendations regarding the trading thereof cannot be made.

6.3 ACCOUNTANCY IMPLICATIONS OF COMMODITY DERIVATIVES

Secondary objective number ii) of this study (refer Chapter 1, page 9) was to identify various transaction types utilised by South African agribusinesses and processors which was done to determine the accounting treatment of these transaction types. The varying applications and interpretations of IAS 39 in terms of commodity derivatives could therefore be identified. The formulation of questions in Section 4 of the questionnaire were based on the following: i) Knowledge obtained from the literature study conducted in Chapter 2 regarding the South African agribusiness and processor sector, and the commodity derivatives traded, ii) Knowledge obtained from the literature study pertaining to the technical aspects of IAS 39 conducted in Chapter 3 (refer paragraph 3.3, page 73) and iii) the nine different transaction types (or products) offered to customers by South African agribusinesses and processors, as identified in Chapter 5 (refer to page 131 for a discussion of these nine transaction types). These nine transaction types were identified by the seven respondents and are unique to South African agribusinesses and processors. Not all the respondents utilised all these transaction types, therefore the findings, conclusions and recommendations are presented thematically in the same sequence as the findings in Chapter 5. The conclusions will be discussed first, followed by recommendations, where relevant and possible.

The *third* secondary objective namely to obtain the opinions of the Big Four audit firms, were addressed in Chapter 5 and their opinions will be incorporated into the conclusions and recommendations.

6.3.1 Hedging

The price of commodities, agricultural and other commodities is subject to fluctuations and as such commodity price risk is a risk facing producers, agribusinesses and processors. In order to hedge this risk, commodity derivatives are utilised (refer paragraph 2.3, page 30). The empirical study indicated that the commodity derivatives traded on SAFEX are utilised to hedge the respondents against commodity price risk and not to provide inventory security (a SAFEX position will seldom lead to physical delivery but will be off-set before expiry). A definition of hedging is provided in Chapter 3 (refer page 90).

The research found that agribusinesses and processors either hedge i) their total inventory holding or ii) each SAFEX contract has a corresponding supply or delivery contract. The decision is based on an entity's business practice.

6.3.2 Treatment of gains or losses on hedging

The gains or losses on hedging recognised by the agribusinesses and processors were generally allocated and disclosed by six respondents in the Statement of Comprehensive Income. One of the respondents did however, recognise the gains or losses on hedging as part of their "own use" inventory cost.

There is an exception prescribed by IAS 39 paragraph 98 which states that when an entity *applies hedge accounting* and a future transaction findings in the recognition of a non-financial asset or liability, for example an agricultural commodity, then such an entity may make, what is referred to, as a base adjustment. A base adjustment findings in either including the cumulative amount in equity in the initial carrying amount of that asset or liability, or retain the amount in equity and transfer it to profit or loss when the asset or liability affects profit or loss (KPMG, 2008:496). This can be interpreted as meaning that in the case when an entity applies hedge accounting, and a future transaction findings in the recognition of a non-financial asset (for example inventory), the profit or loss on the hedging transaction can be included in the cost of the inventory. The entity in question does apply hedge accounting and the accounting treatment of the gains or losses on hedging by this respondent is therefore acceptable in terms of IAS 39. The opinion of the audit firms in this regard was that

this exception is allowable when an entity applies the base adjustment consistently by including it in their accounting policy on the valuation of inventory.

Considering the findings from both the literature and empirical research, the recommendation can therefore be made that: entities applying hedge accounting can elect to apply the base adjustment to “own use” inventory, provided this principle is applied consistently as part of their accounting policy on the valuation of inventory.

6.3.3 Own use inventory

The scope of IAS 39 identifies specific inclusions and exclusions of items as set out in Chapter 3 (refer paragraph 3.3.2, page 77). Contracts specifically included are contracts to buy or sell a non-financial item that can be settled net in cash, another financial instrument or by exchanging financial instruments. When contracts are entered into for the purpose of the receipt or delivery of a non-financial item in accordance with the entity’s expected purchase, sale or usage requirements (i.e. a “normal” purchase or sale transaction), three conditions have to be met in order for these contracts to fall **outside** the scope of IAS 39 (refer page 79). These three conditions are that contracts are entered into and continue to meet the organisation’s own purchase, sale or usage criteria, the contracts are designated for this purpose at inception of the contract, and the contracts are settled by physical delivery.

It was found that the entities meet these three conditions and therefore the “own use” inventory falls outside the scope of IAS 39. If the “own use” inventory falls outside the scope of IAS 39, IAS 2, the accounting standard on inventory, applies (refer page 79). All the respondents that have “own use” inventory do apply the accurate accounting treatment as prescribed by IAS 39 and IAS 2 with the own use inventory treated as outside the scope of IAS 39 and within the scope of IAS 2 thereby valuing the own use inventory at the lower of cost or net realisable value.

6.3.4 Holding of grain inventory for trading

All of the agribusinesses do hold grain inventory for trading purposes. These grain inventories are held in order to sell it to a processor in a short period of time after receipt in order to profit from a dealer’s margin. These grain inventories are hedged

by SAFEX commodity derivatives to protect the entity against adverse commodity price movements.

6.3.5 Measurement or valuation of inventory

As was indicated earlier, the agribusinesses and processors do carry grain inventory, either for their “own use” or for grain trading, which is hedged against commodity price risk with entities entering into commodity derivative contracts. It is common practice for these commodity derivative contracts to be traded on SAFEX. As highlighted in the literature review on the scope of IAS 39 (refer paragraph 3.3.2, page 77), inventory purchased or sold for “own use” falls outside the scope of IAS 39 if three conditions are met. The inventory falling outside the scope of IAS 39 falls within the scope of IAS 2, the IFRS statement dealing with inventories. This statement differentiates between two types of inventories, namely inventory held for “own use” i.e. for the normal usage or sale requirement *and* inventory held by commodity broker-traders (refer page 79). The IFRS statement specifies that inventory held for “own use” should be measured at the lower of cost or net realisable value. Inventory held by commodity broker-traders can be measured at fair value. According to the representatives of the technical departments of the audit firms that partook in the study, the application of IAS 2 namely to fair value grain inventory held for trading, is an election and not mandatory. Fair value is defined in Chapter 3 (refer paragraph 3.3.1, page 75). An entity can therefore elect whether to fair value the grain inventory held for commodity trading or measure the inventory at the lower of cost or net realisable value. The preferred valuation method for grain inventory held for commodity trading should be applied consistently and should form part of an entity’s accounting policy on inventory.

The recommendations that can therefore be made include the following:

- Based on majority industry practice, an entity holding grain for trading should fair value it. This will enhance the comparability of financial statements between industry members. However, based on the interpretation of IAS 2, commodity broker-traders can elect to value the grain held for trading at either the lower of cost or net realisable value or at fair value. Therefore, when an entity makes an

election in terms of the measurement of inventory, such election should be applied consistently as part of the entity's accounting policy on inventory.

Since an agribusiness can hold both grain inventory for "own use" and grain inventory for trading, the following recommendations can be made in this context:

- When an entity holds both grain inventory for "own use" and inventory for grain trading, a clear distinction between these inventories should be made so that it is separately identifiable.
- When these two categories of inventories are held by a single company, it should be managed separately. Even if a single trader is responsible for both categories of inventory, the trades should still be managed and accounted for separately.

6.3.6 Derivatives

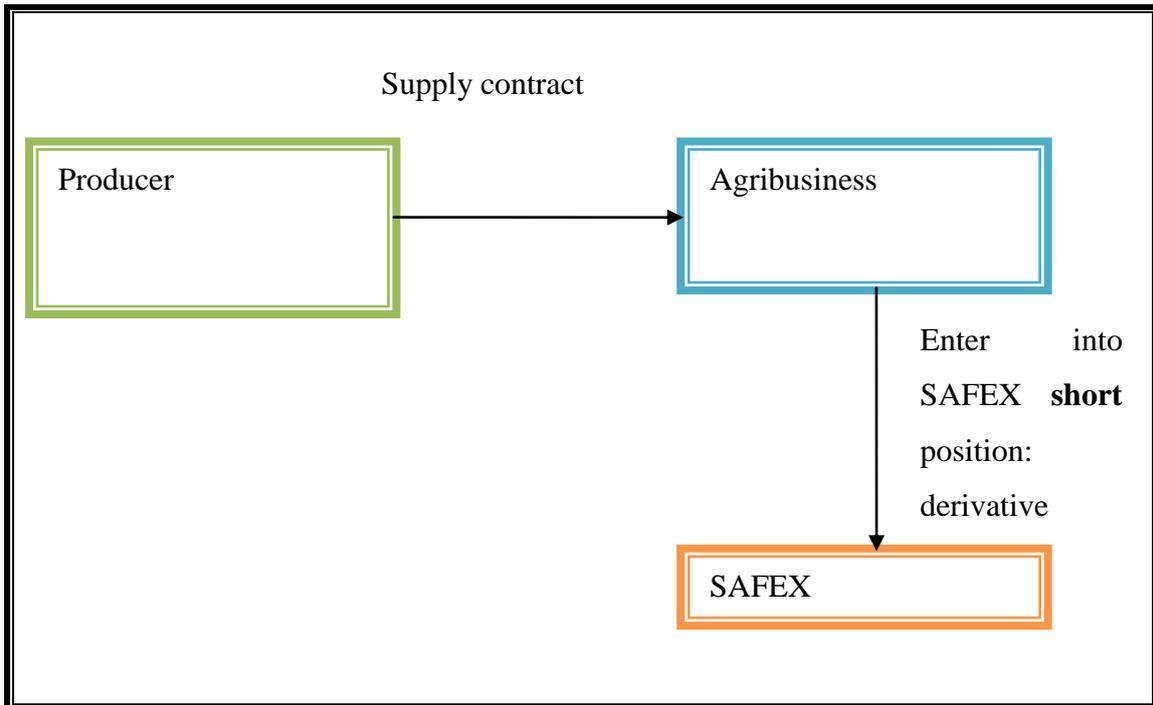
In certain circumstances, contracts can be classified as derivative contracts with the characteristics readily identifiable. In other circumstances, whether transactions can be classified as derivative contracts or not, they are open for interpretation. An example of when a transaction can easily be classified as a derivative, is a SAFEX futures contract (refer page 34) with the following characteristics:

- The value of the contract changes based on the "underlying" commodity price;
- the initial amount required is the initial margin requirement which is significantly less than the investment required; and
- the contract is settled at a future date.

An example of when a transaction cannot be easily classified as a derivative can be found in transaction type 1 (refer page 131) of the nine transaction types identified for purposes of this study. The supply contract with the producer (refer Diagram 6.1) should have the following characteristics:

- The purchase price payable to the producer is fixed when the contract is entered into;
- there is no initial investment requirement; and
- the contract is settled at a future date.

Figure 6.1: Transaction type 1 - Pre-season fixed price contract



Source: (Author)

During the interviews with the respondents three different accounting treatments of the same transaction occurred, each with different circumstances. The conclusion can therefore be drawn that the same transaction can be accounted for differently based on whether an entity applies hedge accounting or not and what the entity's intention is for purchasing inventory. If an entity's intention is to purchase inventory for their normal usage requirement, the accounting treatment will differ from when inventory is purchased to be sold within a short period of time to another party, for example a processor.

The question that now arises is which accounting treatment is correct and whether alternative accounting treatments can be justified based on a different interpretation of IAS 39? Before the question can be answered, other aspects to consider (highlighted in italics) include:

Aspect 1: Derivative contracts

If an agribusiness is able to “link” the supply contract of the producer (as in transaction type 1) with the SAFEX derivative transaction and the SAFEX position is “closed out” before the producer has delivered the grain due to adverse market price movements. How does that, if at all, affect the categorisation of a derivative contract?

The classification of the supply contract as a derivative contract is not affected. There will however be a mismatch between the profit or loss recorded on the movement in the fair value of the SAFEX derivative and the profit or loss recorded on the movement of the fair value of the supply contract. When the SAFEX position is “closed out” before the grain has been received, only the profit or loss on the fair value movement of the supply contract will be recorded.

Source: (Author)

Aspect 2: Derivative contracts

The purchase price payable to the producer (as in transaction type 1) is fixed and it can be argued that it should be accounted for as a normal supply contract. On the other hand it can also be argued that the value of the commodity is changing and therefore the supply contract should be mark-to-marketed or fair valued.

The first question to be asked is whether the “own use” exemption applies. If the “own use” exemption applies, the contract falls outside the scope of IAS 39 and can be regarded as a normal supply contract. The inventory will then be valued at the lower of cost or net realisable value. If the “own use” exemption does not apply, it should be considered whether the contract can be net settled (refer page 79). The criteria for net settlement require that the contracts requires i) are *contractually* settled net in cash or by exchanging another financial instrument, ii) that it is common *practice* in the entity to settle similar contracts net in cash, iii) it is common practice in the entity to take delivery of the non-financial item and *selling it within a short period of time* in order to benefit from the short-term price fluctuations or a dealer’s

margin, or iv) the non-financial item is *readily convertible to cash*. In agribusinesses it is practice to take delivery of the maize from the producer and selling it to a processor within a short period of time in order to benefit from a dealer's margin. Also, the maize is readily convertible to cash. Therefore the supply contract can be net settled and falls within the scope of IAS 39 and should be classified as a derivative.

Source: (Author)

Aspect 3: Derivative contracts

Another aspect to consider is whether the inventory is purchased for an entity's "own use" requirement. IAS 39 is very specific about purchases or sales of "own use" inventory (refer page 79). These purchases or sales fall outside the scope of IAS 39 (refer page 79).

If the "own use" exemption applies, the contract falls outside the scope of IAS 39. The inventory will be valued at the lower of cost or net realisable value.

Source: (Author)

Aspect 4: Derivative contracts

Whether the entity applies hedge accounting also has an impact on the accounting treatment of the transaction.

According to IAS 39 Implementation Guidance paragraph F.2.1, a *derivative* cannot be designated as a hedged item (IASB, 2008b:2245). An unrecognised firm commitment (refer page 93) can however be designated as a hedged item, with a firm commitment being regarded as a binding agreement for the exchange of a specified quantity of resources at a specified price on a specified future date (IASB, 2008b:2001; Vorster *et al.*, 2008:631). According to IAS 39 paragraph 93 when an unrecognised firm commitment is being designated as a hedged item, the firm commitment and the hedging instrument should both be fair valued with a corresponding gain or loss recognised in profit or loss (IASB, 2008b:2023).

Source: (Author)

A detailed discussion on the opinions of the representatives of the technical departments of the partaking audit firms can be found in Chapter 5 (refer paragraph 5.4, page 155).

With reference to the three different accounting treatments identified, as well as other aspects considered, the following recommendations can be made:

- Entities **that do not** apply hedge accounting and intend to purchase grain from a producer with the practice of taking delivery of the grain and selling it within a short period of time in order to generate a profit from a dealer's margin, should classify the supply contract with the producer (as defined in a pre-season fixed price contract) as a derivative.
- Entities **that do not** apply hedge accounting and classify the supply contract with the producer (as defined in a pre-season fixed price contract) as a derivative contract, should fair value (mark-to-market) the contract based on the relevant SAFEX-based price.
- Entities **that do** apply hedge accounting cannot designate the supply contract with the producer (as defined in a pre-season fixed price contract) as a hedged item due to the interpretation provided in IAS 39 Implementation Guidance F.2.1 that derivatives cannot be designated as hedging items.
- Entities **that do** apply hedge accounting should classify the supply contract with the producer (as defined in a pre-season fixed price contract) as a derivative and fair value the derivative. Hedge accounting would then not be applicable but an economic hedge will be achieved. Alternatively, entities **that do** apply hedge accounting can designate a firm commitment as a hedged item with the firm commitment being fair valued. The supply contract with the producer (as defined in a pre-season fixed price contract) can therefore be designated as a hedged item and fair valued (mark-to-marketed).
- Entities that purchase grain inventory for their normal usage requirement should recognise the inventory when it is physically received and the inventory should be valued at the lower of cost or net realisable value.

6.3.7 Fair value measurement

Fair value is defined as the amount for which an asset could be exchanged, or a liability settled, between knowledgeable and willing parties in an arm's length transaction (refer paragraph 3.3.1, page 75). Furthermore, financial instruments classified as held-for-trading should always be valued at fair value (refer page 84). Derivatives fall within the held-for-trading financial instrument category (refer page 84) and should therefore be fair valued. In the previous chapter it was noted that all seven of the agribusiness and processor respondents used the SAFEX-based price as the quoted price to fair value inventory or SAFEX open positions. These entities *could*, at financial year-end, have three different classifications of inventory *or derivatives* to value:

- Inventory held for own use;
- inventory held for grain trading; and
- SAFEX open positions (derivatives).

According to IAS 2, an entity that operates as a commodity broker-trader can elect to value the inventory held for trading at fair value or at the lower of cost or net realisable value (refer recommendation regarding the measurement or valuation of inventory on page 179).

IAS 39 Application Guidance paragraph 71 refers to quoted prices in an active market. This paragraph specifies that a financial instrument is regarded as quoted in an active market when quoted prices are readily and regularly available from an exchange, dealer, broker, etc. When published price quotations exist, as in the case of SAFEX, the Application Guidance suggests that it is the best evidence of fair value (IASB, 2008b:2060). When considering the basis for determining fair value, it can be concluded that the SAFEX-based price should be the basis for the valuation. Considering the above, it is therefore recommended that based on IAS 39's interpretation and best practices:

- The SAFEX-based price be utilised to fair value derivatives.

- The SAFEX-based price be utilised to fair value the inventory held by commodity-broker traders, should the inventory valuation method be elected as part of the entity's accounting policy on inventory.

The SAFEX open positions (derivatives) can either be valued at the quoted price of grain for the contract month or at the SAFEX spot price of the relevant grain as at the financial year-end. Generally all the respondents have SAFEX positions that are still “open”, i.e. the contracts have not expired yet or have not been off-set yet. These contracts are for positions entered into for future months. Quoted prices for future month contracts are readily available from SAFEX. When considering the valuation of the SAFEX derivative contracts that are still “open” at the financial year-end, it can be concluded that the SAFEX quoted price for the month that the position is contracted for, should be used. It is therefore recommended that in line with IAS 39 and best practices:

- SAFEX quoted prices should be used for valuation purposes of “open” positions.
- SAFEX quoted prices for the contracted months should be used for valuation purposes of “open” positions.

6.3.8 Hedge accounting

Hedge accounting can only be applied if the strict criteria as set out by IAS 39 are met. Hedge accounting aims to avoid the mismatch in the timing of gains or losses on hedging. The literature on hedge accounting is found in Chapter 3 (refer page 81 onwards). Three of the seven respondents (42.8%) apply hedge accounting, while the four remaining respondents provided the reasons listed in Chapter 5 (refer page 147) for not applying hedge accounting. One of the key reasons for not applying hedge accounting was that due to the large volumes of grain handled it was not practical to “link” every contract with a SAFEX derivative and therefore the overall net position was hedged. Lopes (2007a:238) highlighted that the hedging of an **overall** net position does not qualify for hedge accounting.

The advantage that hedge accounting provides as opposed to not applying hedge accounting is discussed in the topic of whether a transaction can be classified as a derivative (refer page 180).

6.3.9 Option valuation

Option contracts are sometimes utilised by agribusinesses, producers and processors as a tool to minimise commodity price exposure by providing either a minimum price, maximum price or a band width between which a commodity price can move. Depending on the underlying commodity price movement, option contracts are not always exercised. Option contracts however, do require an option premium to be paid for the privilege of the additional risk coverage (refer page 38). One of the products offered by agribusinesses to producers for the marketing of their grain is a pre-season minimum-price contract (refer page 131) that requires the purchasing of a put option contract. Agribusinesses enter into these option contracts on behalf of the producers.

Option contracts are also marked-to-market as in the case of futures contracts. SAFEX prescribes a method to follow when mark-to-marketing the option contracts (refer Chapter 2, page 44). The agribusinesses utilise the mark-to-market figures of options contracts that SAFEX publishes daily to record the fair value of the option contracts. One exception was found of a respondent not recording the fair value movement of the option contracts in their accounting records, indicating that the profit or loss on the option contract is for the account of the producer. The respondent does however enter into the option contract with SAFEX on behalf of the producer. An option contract falls within the scope of a financial instrument and is classified as a derivative. IAS 39 requires derivatives to be fair valued. Considering the above and based on industry practice, the following recommendation can therefore be made:

- Option contracts entered into on behalf of the producer (with reference to a pre-season minimum-price contract) should be fair valued with the fair value movement recorded in the accounting records of the agribusiness.

In Chapter 5, Example 5.1 (refer page 151) was utilised to explain the accounting entries when marking-to-market the option contracts. When considering the accounting for option contracts, the business practices that the respondents follow have an impact on how it is accounted for in the accounting records. Business practices regarding the following aspects differ between agribusinesses:

- The funding of the initial margin requirement: either as an advance transferred to an interest-bearing account or the producer is required to pay an initial deposit to cover the initial margin requirement.
- Payment of the option premium: either it is charged immediately to a producer's loan account or only when the maize is physically received.
- Accounting for the mark-to-market movement on option contracts: either as a profit or loss in the accounting records of the agribusiness or recorded as a "cash flow" movement between the agribusiness and the producer without affecting the profit or loss account of the agribusiness.
- Recording of the mark-to-market movement on option contracts: either it is transferred to a producer's loan account on a daily basis or when the producer physically delivers the maize.

When considering the last two aspects listed above, the question remains whether the profit or loss on the movement of the option contracts can be accounted for in the Statement of Comprehensive Income of the agribusiness as a profit or a loss? The opinion of the auditors (refer page 162) is that the option contract is taken out by the agribusiness on behalf of the producer and the risk and reward then lie with the agribusiness. In order to mitigate the risk for the agribusiness, there is a contract in place between the producer and the agribusiness transferring the risk from the agribusiness to the producer. The agribusiness therefore cannot reflect the fair value movement of the option contract as their profit or loss in the Statement of Comprehensive Income. Based on the above discussion, the following recommendations can be made:

- The fair value movement on the option contracts taken out on behalf of the producer by an agribusiness (with reference to a pre-season minimum-price contract) should not be reflected in the agribusiness's accounting records as a profit or loss.
- The fair value movement on the option contracts taken out on behalf of the producer by an agribusiness (with reference to a pre-season minimum-price contract) should be transferred to the relevant producer's loan account.

6.4 BUSINESS PRACTICES

The fourth and fifth secondary objectives of whether agribusinesses are changing their business operations to comply with IFRS and to consider the primary purpose of financial statements, especially in the context of decision making in the agricultural industry (refer Chapter 1, page 9) was addressed. The developed questionnaire (refer Appendix 3) highlighted four areas where IAS 39 impacted business practices, namely the development of a new IT system, appointment of new administrative staff, training of existing staff and decision making in the entity. The findings in Chapter 5 (refer paragraph 5.5, page 163) indicated that IAS 39 did impact business practices, especially when considering the development of a new IT system and training of existing staff.

Entities should consider the impact of the *replacement* of the current IAS 39 on areas such as appointing of new administrative staff, training of existing staff and whether it will be necessary to develop a new IT system or make changes to the current IT system. Therefore, considering the fact that the current IAS 39 is in the process of being replaced, the following recommendations are advisable to respondents regarding business practices:

- Agribusinesses and processors should carefully consider and plan the impact of the replacement of IAS 39 on current business practices in terms of impact on the current IT systems, necessity to employ additional staff members, training of current staff members and impact on the decisions made by the company. An agribusiness and processor should incorporate these requirements in their budget.

6.5 REPLACEMENT OF IAS 39

The *sixth* secondary objective of whether the financial managers in the agribusinesses and processors are up to date with respect to the IFRS requirements for derivatives were addressed by Section 6 of the questionnaire.

Both the IASB and FASB are in the process of replacing the current IAS 39 and SFAS 133 (refer paragraph 3.6, page 105). The literature on the replacement of IAS 39 can be found in Chapter 3 (refer paragraph 3.6, page 105). The findings in

Chapter 5 (refer paragraph 5.6, page 168) indicate that the financial managers in the agribusinesses are up to date in respect of the IFRS requirements for derivatives with 71.4% being aware that IAS 39 is in the process of being replaced. Two respondents indicated that they would probably comply early with the new requirements. Considering the above, the following recommendation can be made:

- The financial managers employed by the agribusinesses and processors should seriously consider the deeper impact of the replacement of IAS 39 on the accounting treatment of commodity derivatives including such impacts on the business operations of their respective entities.

6.6 CONCLUSIONS AND CONTRIBUTIONS

This concluding chapter provided conclusions and recommendations based on the research objectives set out in Chapter 1. The recommendations made can be summarised as follows:

Entities carrying “own use” inventory and applying hedge accounting, can elect to apply the base adjustment to “own use” inventory by applying it consistently as part of their accounting policy on the valuation of inventory. On the other hand, an entity holding grain for trading should, based on industry practice, value the grain inventory at fair value and as such it will increase the comparability of financial statements between industry members. Alternatively, based on the interpretation of IAS 2, commodity broker-traders can elect to value the grain held for trading at either the lower of cost or net realisable value or at fair value. When an entity makes an election in terms of the measurement of inventory, that election should be applied consistently as part of the entity’s accounting policy on inventory. If an entity holds both grain inventory for “own use” and inventory for grain trading, a clear distinction between these inventories should be made so that it is separately identifiable and when these two categories of inventories are held in one company, it should consistently be managed separately. If one trader is responsible for both categories of inventory, the trades should still be managed and accounted for separately.

Entities **not applying** hedge accounting with the intent to purchase grain from a producer, with the practice of taking delivery of the grain and selling it within a short

period of time in order to generate a profit from a dealer's margin, should classify the supply contract with the producer (as defined in a pre-season fixed price contract) as a derivative. Also, entities **not applying** hedge accounting and classifying the supply contract with the producer (as defined in a pre-season fixed price contract) as a derivative contract, should fair value (mark-to-market) the contract based on the relevant SAFEX-based price. On the other hand, entities **that do apply** hedge accounting cannot designate the supply contract with the producer (as defined in a pre-season fixed price contract) as a hedged item due to the interpretation provided in IAS 39 Implementation Guidance F.2.1 that derivatives cannot be designated as hedging items. Also, entities **that do apply** hedge accounting should classify the supply contract with the producer (as defined in a pre-season fixed price contract) as a derivative and fair value the derivative. Hedge accounting will then not be applicable but an economic hedge will be achieved. Alternatively, entities **that do apply** hedge accounting can designate a firm commitment as a hedged item with the firm commitment being fair valued. The supply contract with the producer (as defined in a pre-season fixed price contract) can therefore be designated as a hedged item and fair valued (marked-to-market).

Entities purchasing grain inventory for their normal usage requirement should recognise the inventory when it is physically received and the inventory should be valued at the lower of cost or net realisable value. Based on industry practice and guidance by IAS 39, the SAFEX-based price should be utilised to fair value derivatives and to fair value the inventory held by commodity-broker traders, should the inventory valuation method be elected as part of the entity's accounting policy on inventory. SAFEX-quoted prices should also be used for valuation purposes of "open" positions and the SAFEX-quoted prices for the contracted months should be used for valuation purposes of "open" positions. The fair value movement on the option contracts taken out on behalf of the producer by an agribusiness (with reference to a pre-season minimum-price contract) should not be reflected in the agribusiness's accounting records as a profit or loss, but should be transferred to the relevant producer's loan account.

Entities should pro-actively consider and plan the impact of the replacement of IAS 39 on current business practices in terms of impact on the current IT systems,

necessity to employ additional staff members, training of current staff members and impact on the decisions made by the company. An entity should incorporate these requirements in their budget. The financial managers employed by the agribusinesses and processors should consider the impact of the replacement of IAS 39 on the accounting for commodity derivatives in their respective entities.

Entities implementing these recommendations will increase the comparability of financial statements with regard to financial instruments. This can lead to optimal decision-making by all stakeholders regarding financial instruments.

The contributions made by this research as per Chapter 1 (refer page 8) include that nine different transaction types utilising commodity derivative contracts unique to South African agribusinesses and processors were identified. The accounting treatment of these nine transaction types was determined and it was established that IAS 39 pertaining to commodity derivatives were interpreted and applied differently. A standard interpretation and methodology on the accounting standards on specifically commodity derivatives traded in South African agribusinesses and processors were developed. This can serve as a benchmark and best practice to South African agribusinesses, processors and auditors. This methodology will enable investors, portfolio managers, competitors and auditors to compare financial statements, calculate financial ratios and even determine the risk profile in terms of commodity derivatives for South African agribusinesses and processors.

6.7 LIMITATIONS OF THE RESEARCH

This research study focused on obtaining findings on the accounting treatment of commodity derivatives in the agricultural sector. Each company has its own risk management strategy which should be considered when investigating the accounting treatment of derivatives. These were not obtained due to the sensitive nature of the information. Even though the findings of this study were based on interviews conducted with representatives from the sampled case studies, their annual financial statements were not analysed and compared. The findings found and conclusions reached were based on the knowledge and interpretation of the interviewees and the disclosure practices as required by IAS 32 were not considered. Even though the largest agribusiness was included in the study, the study remains limited in the sense

that not all relevant companies have been included and as such it may limit the validity of generalisations.

Finally the imminent replacement IAS 39 is looming on the horizon, which can be considered a possible limitation of this study, the primary contribution of this research (refer Chapter 1, paragraph 1.2.1) is not on the technical interpretation of the standard, but rather on the potential implications of commodity derivatives (financial instruments) on the business operations of the agribusinesses and processors and the level of comparability within the agricultural sector.

6.8 AREAS FOR FURTHER RESEARCH

The following areas for further research were identified during the study:

- During the course of this study, the IASB and FASB have issued new statements on the treatment of financial instruments for example IFRS 9, which deals with the recognition and measurement of financial instruments. The effects of these new accounting standards have not been taken into account in this research study. Areas for further research could include investigating the accounting treatment of commodity derivatives taking into account these new statements.
- A comparative study between the accounting standard on financial instruments issued by IASB and FASB could be conducted to identify varying accounting treatments.
- An international comparison with the South African agribusiness industry could be conducted.
- Another topic for further research could investigate the impact of these new standards on the *business practices* of entities.
- The annual financial statements of entities could be analysed and compared to ensure a consistent disclosure of financial instruments.

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10 March 2009

Appendix 1

To Whom It May Concern:

REQUEST: RESEARCH IN FULFILLMENT OF PhD IN ACCOUNTANCY

You are invited to partake in an academic research study in fulfillment of the requirements of a PhD in Accountancy. A key objective of the research is to consider the recognition, measurement, presentation and disclosure of financial instruments in the agricultural sector, by comparing a number of companies' and co-operatives' financial statements in order to determine how each entity recognizes and discloses relevant financial instruments. As part of the study, I would require an interview with a representative from each entity in order to obtain the required information.

The following should be noted:

No names of entities will be disclosed and each participant will remain anonymous. I am prepared to sign a confidentiality agreement with each entity.

No actual financial figures of entities will be published. Figures are adjusted by multiplying or dividing with factors.

The findings will be used for academic purposes.

The findings of the research will be made available to each entity's management team upon request.

Please contact Mrs. Sanlie Middelberg at (018) 299 4428 or 084 867 0355 if you have any questions.

I think the topic of the proposed research is a dynamic one with even auditors not agreeing on the application of the different relevant accounting statements on financial instruments. I hope you will consider this request favorably.

Yours sincerely

Sanlie Middelberg

Study leader: Prof. Pieter Buys

Appendix 2



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Appendix 3

2 November 2009

QUESTIONNAIRE FOR EMPIRICAL RESEARCH

To whom it may concern:

The accounting treatment of financial instruments has since the implementation of IAS 39 been a controversial issue. Still today it remains an issue high on the agenda of two key standard-setting bodies, the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB). A key objective of this research is to consider the recognition, measurement, presentation and disclosure of financial instruments in the agricultural sector, by comparing a number of companies' and co-operatives' financial statements in order to determine how each entity recognises and discloses relevant financial instruments, as well as to gauge how the "accounting standard" might impact their operational procedures.

This questionnaire will be discussed during structured interviews with each respondent. Participation to this project is entirely voluntary and you can withdraw at anytime. I hereby kindly request that you spare a few minutes to read through these questions to give you an indication of the topics to be discussed during the interview scheduled with you.

The questionnaire is divided into six sections:

- Section 1: General information
- Section 2: Services
- Section 3: Financial instruments
- Section 4: Accounting treatment
- Section 5: Business practices
- Section 6: Replacement of IAS 39

All information provided by you will be treated as confidential and aggregated. It will therefore not be possible to identify individual companies in the report.

Your cooperation is highly appreciated.

Kind regards

Sanlie Middelberg

Study leader: Prof Pieter Buys

Will you be interested in receiving feedback on the findings and recommendations arising from this research?

Yes	
No	

Company name: _____

Interviewee: _____

Date of interview: _____

SECTION 1: General

1. What type of business form is your entity?	
Co-operative	
Private company	
Non-listed public company	
Listed public company	
Other (specify) _____	

2. What is the date of your financial year-end? _____	
--	--

3. Name your external auditors.	
PricewaterhouseCoopers	
Deloitte	
KPMG	
Ernst & Young	
Other (specify) _____	

4. Please indicate your compliance with IFRS based on a scale of 1 to 7, where 1 = non-compliance and 7 = fully compliant.

1	2	3	4	5	6	7

5. If you are complying with IFRS, at what date did you convert to IFRS? _____

SECTION 2: Services

For the questions below, please rank the services offered to your customers based on the following scale:

1	2	3	4	5	6	7
Daily	Twice a week	Weekly	Monthly	Quarterly	Annually	Never

6. Please indicate the frequency of services you render to your customers.	
Financing	
Risk management services	
Market advisory services	
Storage facilities	
Other (specify) _____	

SECTION 3: Financial instruments

7. Do you trade only on SAFEX?	
Yes	
No	

If yes, answer the following question by ranking it.

1	2	3	4	5	6	7
Daily	Twice a week	Weekly	Monthly	Quarterly	Annually	Never

8. How do you trade on SAFEX?	
Own seat	
Own screen and execute own deals	
Own screen and broker execute deals	
Not a screen and broker execute deals	

9. Are you an OTC option writer?	
Yes	
No	

10. Do you trade OTC options?	
Yes	
No	

11. Do you trade SAFEX options?	
Yes	
No	

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5	6	7
Daily	Twice a week	Weekly	Monthly	Quarterly	Annually	Never

12. Which derivatives do you trade?	
Futures	
Options	
Forward contracts	
Foreign exchange	
Interest rate swaps	
Other (specify) _____	

13. Indicate the reasons for trading these derivatives?	
Hedging price risk	
Speculation	
Off-setting	
A combination of all three above	
Other (specify) _____	

14. Which derivatives do you use?	
Futures	
Options	
Forward contracts	
Foreign exchange	
Interest rate swaps	
Other (specify) _____	

15. Indicate the reasons for using these derivatives?	
Hedging price risk	
Speculation	
Off-setting	
A combination of all three above	
Other (specify) _____	

SECTION 4: Accounting treatment

I have developed a flow diagram, using IAS 39 as guidance, to assist in determining the accounting treatment of various transaction types. Each transaction type will be analysed **separately** by utilising the flow diagram. The flow diagram can be found on the last page.

The instructions are as follows:

- Start with the question: do you have a contract to buy / sell a commodity.
- If yes, is this contract going to lead to BOTH physical delivery AND for your entity's own use?
- If your answer indicates A, answer the relevant questions pertaining to A. If your answer indicates B, answer the relevant questions pertaining to B.
- If you answered A for the first transaction and you have completed section A's questions, move to the next transaction on the list.
- If you answered B, answer the subsequent questions and follow the arrows indicating which sections you should complete.
- After you have completed the relevant sections, the whole process commences again pertaining to the next transaction.

LIST OF TRANSACTIONS

CONTRACTS WITH PRODUCERS / FARMERS

Transaction type 1: Obligated delivery contract (“verpligte leweringskontrak”)

This transaction represents a pre-season contract to purchase grain at a fixed price.

Transaction type 2: Fixed-price purchase contract

(“vaste-prys aankoop kontrak”)

This transaction refers to cash purchases of a commodity at a SAFEX price.

Transaction type 3: Minimum-price contract

This transaction refers to a contract with a producer with a minimum price. A call option is purchased with a strike price equal to the minimum price. When the final price is agreed with the producer, the entity enters into a short futures position on SAFEX.

Transaction type 4: Un-priced contract (“Ongepryste kontrak”)

A producer / processor enter into a supply contract with an entity with the option of setting or determining the price later.

Transaction type 5: Delayed-price contract (advance)

(“Uitgestelde prys kontrak”)

This contract is similar to an un-priced contract but with an option to sell. This option makes it possible to set a minimum price. A cash advance is based on the import / export parity differential and the minimum price.

DELIVERY CONTRACTS

Transaction type 6: Mill-door contract

This transaction represents a mill-door contract.

Transaction type 7: Un-priced delivery contract

This contract represents a contract with a buyer of a commodity with the option of pricing the commodity within a specified period.

Transaction type 8: Priced delivery contract

This contract represents a contract with a buyer of a commodity with the buyer setting the price in advance.

Transaction type 9: Other delivery contracts

This contract represents basis trading where contracts are entered into for the purpose of optimising the transport location differential.

CONTRACTS WITH PRODUCERS / FARMERS

Transaction type 1: Obligated delivery contract (“verpligte leveringskontrak”)

This transaction represents a pre-season contract to purchase grain at a fixed price.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

16. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify)_____	

17. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify)_____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

18. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

19. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify) _____	

20. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify) _____	

21. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

22. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

23. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

24. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

25. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 25 is no, answer the questions in Section E. If your answer to Question 25 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

26. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

27. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

28. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 29, rank from 1 to 4, where 1 = the main reason.

29. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

30. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 30 is cash-flow hedge, go to Section G. If your answer to Question 30 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 30 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

31. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 31 is yes, please continue.

32. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

33. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

34. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

35. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

36. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

37. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

CONTRACTS WITH PRODUCERS / FARMERS

Transaction type 2: Fixed-price purchase contract

(“vaste-prys aankoop kontrak”)

This transaction refers to cash purchases of a commodity at a SAFEX price.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

38. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify) _____	

39. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify) _____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

40. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

41. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify) _____	

42. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify) _____	

43. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

44. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

45. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

46. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

47. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 47 is no, answer the questions in Section E. If your answer to Question 47 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

48. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

49. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

50. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 51, rank from 1 to 4, where 1 = the main reason.

51. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

52. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 52 is cash-flow hedge, go to Section G. If your answer to Question 52 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 52 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

53. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 53 is yes, please continue.

54. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

55. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

56. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

57. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

58. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

59. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

CONTRACTS WITH PRODUCERS / FARMERS

Transaction type 3: Minimum-price contract

This transaction refers to a contract with a producer with a minimum price. A put option is purchased with a strike price equal to the minimum price. When the final price is agreed with the producer, the entity enters into a short futures position on SAFEX.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

60. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify) _____	

61. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify) _____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

62. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

63. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify)_____	

64. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify)_____	

65. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

66. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

67. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

68. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

69. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 69 is no, answer the questions in Section E. If your answer to Question 69 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

70. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

71. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

72. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 73, rank from 1 to 4, where 1 = the main reason.

73. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

74. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 74 is cash-flow hedge, go to Section G. If your answer to Question 74 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 74 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

75. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 75 is yes, please continue.

76. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

77. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

78. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

79. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify) _____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

80. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

81. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

CONTRACTS WITH PRODUCERS / FARMERS

Transaction type 4: Un-priced contract (“Ongepryse kontrak”)

A producer / processor enter into a supply contract with an entity with the option of setting or determining the price later.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

82. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify)_____	

83. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify)_____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

84. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

85. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify)_____	

86. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify)_____	

87. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

88. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

89. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

90. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

91. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 91 is no, answer the questions in Section E. If your answer to Question 91 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

92. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

93. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

94. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 95, rank from 1 to 4, where 1 = the main reason.

95. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

96. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 96 is cash-flow hedge, go to Section G. If your answer to Question 96 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 96 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

97. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 97 is yes, please continue.

98. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

99. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

100. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

101. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

102. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

103. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

CONTRACTS WITH PRODUCERS / FARMERS

Transaction type 5: Delayed-price contract (advance)

(“Uitgestelde prys kontrak”)

This contract is similar to an un-priced contract but with an option to sell. This option makes it possible to set a minimum price. A cash advance is based on the import / export parity differential and the minimum price.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

104. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify) _____	

105. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify) _____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

106. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

107. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify)_____	

108. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify)_____	

109. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

110. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

111. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

112. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

113. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 113 is no, answer the questions in Section E. If your answer to Question 113 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

114. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

115. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

116. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 117, rank from 1 to 4, where 1 = the main reason.

117. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

118. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 118 is cash-flow hedge, go to Section G. If your answer to Question 118 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 118 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

119. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 31 is yes, please continue.

120. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

121. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

122. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

123. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

124. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

125. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

CONTRACTS WITH PRODUCERS / FARMERS

DELIVERY CONTRACTS

Transaction type 6: Mill-door contract

This transaction represents a mill-door contract.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

126. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify)_____	

127. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify)_____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

128. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

129. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify) _____	

130. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify) _____	

131. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

132. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

133. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

134. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

135. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 135 is no, answer the questions in Section E. If your answer to Question 135 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

136. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

137. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

138. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 139, rank from 1 to 4, where 1 = the main reason.

139. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

140. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 140 is cash-flow hedge, go to Section G. If your answer to Question 140 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 140 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

141. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 141 is yes, please continue.

142. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

143. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

144. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

145. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

146. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

147. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

DELIVERY CONTRACTS

Transaction type 7: Un-priced delivery contract

This contract represents a contract with a buyer of a commodity with the option of pricing the commodity within a specified period.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

148. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify)_____	

149. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify)_____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

150. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

151. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify) _____	

152. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify) _____	

153. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

154. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

155. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

156. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

157. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 157 is no, answer the questions in Section E. If your answer to Question 157 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

158. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

159. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

160. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 161, rank from 1 to 4, where 1 = the main reason.

161. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

162. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 162 is cash-flow hedge, go to Section G. If your answer to Question 162 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 162 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

163. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 163 is yes, please continue.

164. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

165. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

166. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

167. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

168. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

169. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

DELIVERY CONTRACTS

Transaction type 8: Priced delivery contract

This contract represents a contract with a buyer of a commodity with the buyer setting the price in advance.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

170. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify) _____	

171. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify) _____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

172. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

173. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify)_____	

174. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify)_____	

175. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

176. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

177. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

178. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

179. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 179 is no, answer the questions in Section E. If your answer to Question 179 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

180. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

181. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

182. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 183, rank from 1 to 4, where 1 = the main reason.

183. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

184. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 184 is cash-flow hedge, go to Section G. If your answer to Question 184 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 184 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

185. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 185 is yes, please continue.

186. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

187. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

188. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

189. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

190. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

191. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

DELIVERY CONTRACTS

Transaction type 9: Other delivery contracts

This contract represents basis trading where contracts are entered into for the purpose of optimising the transport location differential.

A

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

192. How do you recognise the own use inventory?	
As inventory	
As financial instruments	
Other (specify)_____	

193. How do you measure the own use inventory?	
Net realisable value	
At cost	
As lower of cost or net realisable value	
At fair value	
Other (specify)_____	

B

You should complete Section B if you have a contract to buy or sell a commodity and this contract will either not lead to the physical delivery of that commodity or is not for purposes of own use. The contract will be settled by exchanging or settling financial instruments.

For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

194. Rank the situations that are applicable when settling / exchanging financial instruments:	
- The contract permits it	
- Your entity has a practice of settling similar contracts net in cash or another financial instrument	
- Your entity has a practice of settling similar contracts by exchanging financial instruments (either by entering into offsetting contracts or selling contract before its exercises or lapses)	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from short-term fluctuations in the price</i>	
- Your entity has a practice of taking delivery of the underlying and selling it within a short period of time after delivery for the purpose of <i>generating a profit from dealer's margin</i>	
- The non-financial item is readily convertible to cash	
- It is a written option contract	
- Other (specify) _____	

C

Not one of the situations described in B are applicable for net settlement of financial instruments. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

195. How do you recognise the contract to buy / sell a commodity?	
As inventory	
As financial instruments	
Other (specify) _____	

196. If you recognise it as inventory, how do you measure (value) the inventory?	
At cost	
At net realisable value	
At lower of cost or net realisable value	
At fair value	
Other (specify) _____	

197. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

D

One or more of the situations described in B are applicable for **net settlement** of the contract. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

198. Do you classify the contract to buy / sell a commodity as a derivative?	
Yes	
No	

199. If yes, how do you measure (value) the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

200. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

201. Do you apply hedge accounting?	
Yes	
No	

If your answer to Question 201 is no, answer the questions in Section E. If your answer to Question 201 is yes, answer the questions in Section F.

E

You have indicated that you do not apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

202. Under which classification of financial instruments do you classify the derivative?	
Fair value through profit or loss: Held for trading	
Fair value through profit or loss: Designated	
Held-to-maturity investments	
Loans and receivables	
Available-for-sale financial assets	
Other (specify) _____	

203. Based on the question above, how do you measure the derivative?	
At cost	
At amortised cost	
At fair value	
Other (specify) _____	

204. If you measure (value) the inventory at fair value, how do you define fair value (at which date do you measure fair value)?	

For Question 205, rank from 1 to 4, where 1 = the main reason.

205. What is the reason for not applying hedge accounting?	
Too complicated	
Too much work	
Requires extensive paperwork	
Requires radical changes in IT systems	
Other (specify) _____	

F

You have indicated that you do apply hedge accounting. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

206. How do you classify the transaction?	
Fair-value hedge of a firm commitment	
Fair-value hedge of a recognised asset / liability	
Cash-flow hedge	
Other (specify) _____	

If your answer to Question 206 is cash-flow hedge, go to Section G. If your answer to Question 206 is fair-value hedge of a firm commitment, go to Section H. If your answer to Question 206 is fair-value hedge of a recognised asset / liability, go to Section I.

G

You have indicated that you classify the transaction as a cash-flow hedge. Indicate, for the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

207. Do you measure the effectiveness of the hedge?	
Yes	
No	

If your answer to Question 31 is yes, please continue.

208. How do you recognise the gain / loss of the effective portion on hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

209. How do you recognise the portion of the gain / loss on the hedging instrument that is not an effective hedge?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

H

You have indicated that you classify the transaction as a fair-value hedge of a firm commitment. For the questions below, please indicate the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

210. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify)_____	

211. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify)_____	

I

You have indicated that you classify the transaction as a fair-value hedge of a recognised asset / liability. Please indicate, based on the questions below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

Definitions

Hedging instrument: An instrument (usually a derivative) that is designated by the entity to hedge (protect) another instrument. For example: a SAFEX future

Hedged item: The other instrument that is hedged by the hedging instrument. For example: physical maize

212. How do you recognise the gain / loss on the re-measurement of the hedging instrument ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Other (specify) _____	

213. How do you recognise the gain / loss on the re-measurement of the hedged item ?	
Profit or loss in statement of comprehensive income	
Other comprehensive income	
Corresponding creation of asset / liability	
Other (specify) _____	

SECTION 5: Business practices

This section will measure how IAS 39 has impacted your business practices.

Please indicate, based on the question below, the frequency of each, based on the following scale:

1	2	3	4	5
Always	Most of the time	Sometimes	Rarely	Never

214. IAS 39 has had an impact on the following:	
Development of new IT system	
Appointment of new administrative staff	
Training of staff	
Decision-making	
Other (specify)_____	

SECTION 6: Replacement of IAS 39

215. Are you aware that IAS 39 will be replaced soon?	
Yes	
No	

216. If no, what do you anticipate will your entity's actions be?	217.

Please rank Question 217 based on the following scale:

1	2	3	4	5
No consideration	Considered, but no action taken yet	Discussions have taken place	Action taken	Project plan in place

218. If yes, have you considered how it will impact your business?	
Not at all	
Considered, but no action taken yet	
Action taken	

219. Do you intend to comply early with the new requirements?	
Yes	
No	

Thank you for your participation in this study.

Appendix 2: Flow diagram: Accounting treatment of contracts to buy / sell a non-financial item

