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UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

POST GRADUATE DIPLOMA IN INVESTIGATIVE AND FORENSIC ACCOUNTING

	Surname	First name	Present employer	Books Paid
1	Annandale	Buks	National Dept Public Works	R1 290
2	Binnekade	Carol	UNISA	R1 290
3	Booi	Xolisile	MBM Financial Services	
4	Botha	Christo R	Rooth & Wessels Attorneys	R1 290
6	Botha	Cornelius E	Self employed	R1 290
5	Botha	Leon	RAF	R 1290
7	Botha	Martin	Self	
8	De Jager	Ansie	RAF	Deel met Jaco
9	De Jager	Ferdie	Gauteng Gambling Board	R1 290
10	De Jager	Jacobus	RAF	R1 290
11	De Wet	Cobus	Forensic Consultants (Pty) Ltd	R1 290
12	Dlavane	Abbey	Self employed	R 1290
13	Du Toit	Jacques	Deloitte & Touche	R1 290
14	Ehlers	Janet	Self employed	R1 290
15	Ellis	Charmaine	RAF	R1 290
16	Engelbrecht	Anarie	De Graaf (Pty) Ltd	Deel met Gerdi
17	Engelbrecht	Gerdi	RAF	R 1290
18	Erasmus	Monty	Self employed	R1 290
19	Hlungulu	Mvelisi	Dept Trade & Industry	
20	Klopper	Hannes	Self	R1 290
21	Koch	Francois	Gordon & Partners Inc	
22	Louw	Stephanus	Umed	R1 290
23	Maritz	Eksteen	Competition Commission	R1 290
24	Minnaar	Pieter	SBV Services	R1 290
25	Moima	Mosa	RAF	R 1290
26	Moroko	Henry	Self employed	R450 (Fraud)
27	Mothle	Johannes	RAF	R1 290
28	Naudé	Adrian	Savage, Jooste & Adams Inc	Deel boeke
29	Nhleko	Sam	GDE	R700
30	Noko	Mokate	Self	R1 290
31	Nteo	Molotsi	KMMT Inc	R1 290
32	Ogunronbi	Sunday	Vista University	R1 290
33	Pretorius	Christo	SITA (PTY) LTD	R1 290
34	Prinsloo	Jacolene	Weavind & Weavind Prok	
35	Ronne	Tim	Finvest Trust	R1 290
36	Rossouw	Arno	Dept of Justice	R1 290
37	Schlenther	Bernd	SARS	R1 290
38	Sharp	Richard	Dyason Attorneys Inc	R1 290
39	Shibambo	Steven	Lesedi Private Hospital	R1 290
40	Smith	Anneline	Sithole AB & T Inc	R1 290
41	Ströh	Johann	Self	Self aankoop (Leen)
42	Swanepoel	Liesl	RAF	R1 290
43	V d Westhuizen	Gideon	Macrobert Inc	R1 290
44	Van Dyk	Dewald	Willemse & Benade Prokureurs	
45	Van Schalkwyk	Riaan	SA National Defence Force	
46	Van Wyk	Deon	Self employed	R1 290
47	Venter	Lindie	Gouws Prokureurs	R1 290
48	Vermaak	Johannes	SA Pharmacy Council	R1 290
49	Vorster	Andries	Safrich Financial Services	R1 290
50	Wiid	Anton	SBV Services	R1 290
51	Yarrow	John	SA National Defence Force	R1 290

APPENDIX A

ILLUSTRASTION OF THE WORKING OF THE MARKETING DECISION SUPPORT SYSTEM FOR GRAIN PRODUCERS IN SOUTH AFRICA

Farmer Brown has a farm in the Free State Province where he grows white maize, yellow maize and sunflower seed. Farmer Brown farms on a cash basis and does not use any production loans or bank overdraft facilities. The current return that Farmer Brown earns on investments is 12.5% per year. Farmer Brown is able to meet all margin calls if he chooses to use futures contracts as a marketing instrument.

Table A1 indicates how many hectares were planted with each type of crop, as well as the expected yield for Farmer Brown for the 1998/1999-marketing season.

Table A1: Hectares planted, expected yields and expected harvest dates

	White maize	Yellow maize	Sunflower seed
Hectares planted	800	300	400
Expected yield (tons/Ha)	4.6	4.4	1.7
Expected harvest date	20 June	15 June	10 April

During the marketing season, Farmer Brown incurred the following costs:

- Pre-harvest variable cost per hectare: Pre-harvest variable costs normally include items such as seed, fertilizer, weedicides, pesticides, labour, transport, fuel and repairs. It is basically the input cost that Farmer Brown had to carry in the planting of the crop.

- Harvest cost per hectare: Harvest costs per hectare usually include costs such as fuel, repairs, labour and contract work when the crop is harvested. These costs are not affected by crop yield. The reason for treating these

costs separately from pre-harvest variable costs is the possibility that the crop may not be harvested, due to crop failure.

- Harvest cost per ton: Harvesting costs per ton includes cash costs for items such as drying, transport and contract work. The reason for treating these costs separately from harvest costs per hectare is that harvest cost per ton is sensitive to crop yield.

Contract work refers to work done by additional labour on a contract basis. The contract worker can either be paid per hectare or per ton, and therefore contract work forms part of the harvest cost per hectare or harvest cost per ton. Farm expenses, such as short-term asset insurance, which are not affected by crop yield levels should not be included as a cost. The pre-harvest variable cost and the harvest costs of the various crops planted by Farmer Brown are set out in Table A2.

Table A2: Pre-harvest variable cost and harvest costs per crop

	White maize (R)	Yellow maize (R)	Sunflower seed (R)
Pre-harvest variable cost per hectare	1 300	1 150	1 000
Harvest cost per hectare	63.71	63.71	73.89
Harvest cost per ton	50.02	50.02	53.00

Farmer Brown took the following marketing actions during the 1998/1999-marketing season:

- On 27 October 1998, he entered into a forward contract to deliver during harvest 1 000 tons of white maize at a price of R580/ton, and 400 tons of yellow maize at a price of R630/ton.

- On 17 December 1998, he entered into two (200 tons) yellow maize July short futures contracts at a price of R650/ton. He paid R14 000 into his margin account.
- On 10 January 1999, he entered into a forward contract to deliver 500 tons of sunflower seed during harvest at a price of R1 000/ton.
- On 19 January 1999, he bought five July white maize put contracts with a strike price of R640/ton.
- On 17 February 1999, he entered into a white maize July short futures position for 1 000 tons at a price of R680/ton. He paid R70 000 into his margin account.
- On 26 June 1999, his white maize put option contract expired worthless.
- On 6 July 1999, he closed his short futures position by buying 10 long futures white maize July contracts at a price of R843/ton, and he closed his two yellow maize short futures contracts at a price of R813/ton.
- He sold the rest of his crop (except 500 tons of white maize) on the spot market. He received R600/ton for white maize, R615/ton for yellow maize and R1 050/ton for sunflower seed.
- Farmer Brown stored the 500 tons of white maize until 1 March 2000, and sold it on the spot market for a price of R740/ton on 1 March 2000. The storage cost was R0.21 per day.

Farmer Brown paid a total of R2 commission per marketing action. Total handling charges amounted to R25/ton. Farmer Brown also indicated that he could not engage in futures positions for more than 2 500 tons for white maize and he could not enter into any futures position after harvest. The integer linear programme compared the returns generated by Farmer Brown's marketing actions and those of the MDSS. In order to determine the net cash flows, **no rounding** was done until the net return was determined. The net cash flows of Farmer Brown's marketing actions as indicated above were determined by the following calculations:

Pre-harvest marketing stage

Farmer Brown entered into forward contracts, futures contracts and options on futures contracts during the pre-harvest marketing stage. The net cash flow for forward contracts was determined using Equation 6.6 of the MDSS:

$$NCF_{fwh} = Cf_{s/in} - CF_{Input} \quad (6.6)$$

For white maize:

NCF_{fwh} = (580*1000) - {(1300/4.6) + (63.71/4.6) + 50.02}1000

= 233 521.30 Line 2

For yellow maize:

NCF_{fwh} = (400*630) - {(1150/4.4) + (63.71/4.4) + 50.02}400

= 121 654.73 Line 2

For sunflower seed:

NCF_{fwh} = (500*1000) - {(1000/1.7) + (73.89/1.7) + 53}500

= 157 650 Line 2

On 17 December 1998, Farmer Brown entered into short July futures positions for yellow maize and on 17 February 1999 for white maize. Farmer Brown could maintain all margin calls. The **cash inflow** from futures sales at a discount rate equal to the investment rate of 12.5% was determined as follows:

$$CF_{fut/in} = PV(FP*Q) + (i*Mar) \quad (6.8)$$

For white maize:

$CF_{fut/in}$ = PV(680*1000) + (12.5%*70000) = 675 337.73

For yellow maize:

$CF_{fut/in}$ = PV(650*200) + 12.5%*14000) = 129 535.57

Where:

$CF_{fut/in}$ = cash inflow from futures sales

FP = futures price per ton
i = interest rate per day
Mar = initial margin

The futures contracts were discounted from the harvest time to the expiry date of the futures contract. For yellow maize, the length of time was 45 days and 40 days for white maize.

The **cash outflow** was determined using Equation 6.9:

$$CF_{fut/out} = (TC*n) \quad (6.9)$$

For white maize

$CF_{fut/out}$ = (234.20*10) = 2342

For yellow maize

$CF_{fut/out}$ = (234.2*2) = 468.40

Where:

$CF_{fut/out}$ = cash outflows resulting from futures contracts
TC = total transaction cost per contract

TC comprised of the following costs:

(1) commission fees of R2 per ton (R2*100 tons per contract); and
(2) SAFEX charges amounting to R34.20.

These SAFEX costs were fixed at R34.20 for white and yellow maize, wheat and Cape wheat, but for sunflower seed it amounted to R17.10.

Equation 6.10 was used to determine the **net cash flow** from futures sales:

$$NCF_{fut} = CF_{fut/in} - CF_{fut/out} - PV(A*Q) - CF_{Input} \quad (6.10)$$

For white maize

NCF_{fut} = 675 337.73 - 2343 - PV(83400) - {(1300/4.6) + (63.71/4.6) + 50.02}1000 = 244 267.17 Line 3

For yellow maize

NCF_{fut} = 129 535.57 - 468.4 - PV(16680) - {(1150/4.4) + (63.71/4.4) + 50.02}200 = 47 266.35 Line 3

Where:

NCF_{fut} = net cash flow from futures contract sales

A = area differential cost

A consists out of:

(1) an area differential cost of R47/ton for white and yellow maize and R65/ton for sunflower seed;

(2) handling charges of R25/ton; and

(3) any other costs relating to the transport of the crop from the local silo to Randfontein.

Farmer Brown entered into a put option contract on 19 January 1999 and paid a premium of R53.43/ton. In the pre-harvest marketing stage, it was assumed that Farmer Brown would exercise his put option contract and deliver on the contract. The net cash flow from the put option was determined using Equation 6.17:

$$NCF_{put/ex} = PV\{(P*Q) - (A*Q)\} - (TC*n) - (Prem*Q) - CF_{input} \quad (6.17)$$

For white maize:

$NCF_{put/ex}$ = PV{(640*500) - (56.26*500)} - (2.17*500) - (53.43*500) - 173240 = 90 222.83 Line 4

Where:

$NCF_{put/ex}$ = net cash flow from put option contracts exercised and delivered

Prem = premium per ton

Harvesting marketing stage

Firstly, the cash inflow from spot sales for Farmer Brown was calculated using Equation 6.1:

$$Cf_{s/in} = P*Q \quad (6.1)$$

For white maize:

$Cf_{s/in}$ = 600*2180 = 1 308 000

For yellow maize:

$Cf_{s/in}$ = 615*920 = 565 800

For sunflower seed:

$Cf_{s/in}$ = 1050*180 = 189 000

Then, the input cost of the various crops was determined using Equation 6.2:

$$CF_{input} = \{(PHVC/Y) + (HCPHe/Y) + HCPU\}Q \quad (6.2)$$

For white maize:

CF_{input} = {(1300/4.6) + (63.71/4.6) + 50.02}2180 = 755 323.56

For yellow maize:

CF_{input} = {(1150/4.4) + (63.71/4.4) + 50.02}920 = 299 794.13

For sunflower seed:

CF_{input} = {(1000/1.7) + (73.89/1.7) + 53}180 = 123 246

The combination of Equations 6.1 and 6.2 resulted in the net cash flow from spot sales as calculated using Equation 6.3:

$$NCF_{spot} = Cf_{s/in} - CF_{Input} \quad (6.3)$$

For white maize:

NCF_{spot} = 1 308 000 - 755 323.56 = 552 676.44 Line 5

For yellow maize:

NCF_{spot} = 565 800 - 299 794.13 = 266 005.87 Line 5

For sunflower seed:

NCF_{spot} = 189 000 - 123 246 = 65 754 Line 5

The put option contract expired worthless. The net cash flow from the put option contract was determined by means of Equation 6.19:

$$NCF_{put/nex} = -\{(TC*n) + (Prem*Q)\} \quad (6.19)$$

For white maize:

$NCF_{put/nex}$ = -{(217.10*2) + (53.43*200) = -27 800.50 Line

Where:

$NCF_{put/nex}$ = Net cash flow from put option contracts not exercised

The short futures white maize position was closed out at a price of R843/ton and the yellow maize short futures position was closed out at a price of R813/ton. The net cash flow was calculated as follows:

$$NCFs_{futcl} = PV(FPs - FPl)*Q - (TC*n) \quad (6.13)$$

For white maize:

$NCFs_{futcl}$ = PV(680-843)1000 - (468.4*10) = -166 781.11 Line 7

For yellow maize

$NCFs_{futcl}$ = PV(650-813)200 - (468.4*2) = -33 300 Line 7

Where:

$NCFs_{futcl}$	=	net cash inflow of short futures position closed out
FPs	=	short futures price per ton
FPl	=	long futures price per ton

Post-harvest marketing stage

To determine the net income from storage, Equation 6.4 was used to determine the cost associated with the storage alternative:

$$CF_{store/out} = PV\{(S*T)Q\} \quad (6.4)$$

For white maize:

$CF_{store/out}$ = PV{(0.21*251)500} = 25 235

The discount rate used was 12.5% per annum. After the cost associated with the storage alternative had been determined, the net cash flow from the storage alternative was determined by means of Equation 6.5:

$$Net_{store} = PV(P*Q) - CF_{Input} - CF_{store/out} \quad (6.5)$$

For white maize:

Net_{store} = PV(500*740) - {(1300/4.6) + (63.71/4.6) + 50.02}500 - 25235 = 140 649.49 Line 7

Table A3 indicates the pricing instruments, percentage of crop sold and the net cash flow generated by the marketing actions at every stage. The percentage crop sold was determined by calculating the percentage sold over the total number of tons produced of the relevant crop. Farmer Brown sold 1 000 tons of white maize on a forward contract. These 1 000 tons represented 27.2% {1000/(800*4.6)} of the total white maize production of Farmer Brown. The percentage of the crop that Farmer Brown sold with forward contracts is depicted by Line 1 in Table A3.

The net return generated by the producer is the sum of Lines 2 to 8 and is indicated by Line 9 in Table 3. The producer generated a total net return over all his crops to the value of R1 310 030.23.

Table A3: Net cash flow of Farmer Brown's marketing strategies

	Line	White maize	Yellow maize	Sunflower seed
Pre-harvest stage				
Pricing instrument and % sold	1	Forward (27.2%) Futures (27.2%) Put (13.6%)	Forward (30.3%) Futures (15.2%)	Forward (73.5%)
Net cash flow - Forward	2	233 521.30	121 654.73	157 650.00
Net cash flow - Futures	3	244 267.17	47 266.35	
Net cash flow - put option	4	90 222.83		
Net cash flow – pre-harvest		**568 011.30**	**168 921.08**	**157 650.00**
Harvesting stage				
Pricing instrument and % sold		Spot market (59.2%)	Spot market (69.7%)	Spot market (26.5%)
Net cash flow - spot	5	552 676.44	266 005.87	65 754.00
Net cash flow - put	6	-27 800.50		
Net cash flow - Futures	7	-166 781.11	-33 300.00	
Net cash flow – harvest		**358 094.53**	**232705.87**	**65 754.00**
Post-harvesting stage				
Pricing instrument and % sold		Storage (13.6%)		
Net cash flow - storage	8	140 649.49		
Net cash flow – post-harvest		**140 649.49**		
Net return	9	**732 265.63**	**354 360.60**	**223 404.00**

In testing the integer linear programme, the following procedure was followed: Firstly, the information pertaining to Farmer Brown was entered into the programme. Every time Farmer Brown made a decision, the result was compared to the actual payoffs from the marketing strategies the model proposed. From there on, the decisions suggested by the integer linear programme were taken into consideration in future decisions. For instance, when the programme suggested that Farmer Brown should engage in a short futures position, the futures position had to be reflected in the next set of decisions. All option contracts suggested by the model were at-the-money. Also, one month prior to harvest, the integer linear programme was run again to sell a total of about 80% of Farmer Brown's crop. The primary reason for this action was that spot prices during harvest normally tend to be lower during harvest than prior to harvest. One month prior to harvest, the expected yield was more certain and Farmer Brown's yield risk decreased.

The optimal marketing strategy combination for the pre-harvest stage was determined first, then the harvesting stage marketing combinations and finally the storage stage marketing combinations were calculated. Farmer Brown took the first decision on 27 October 1998. This was also the first date that the integer linear programme used in determining the optimal combination of marketing alternatives. The integer linear programme based the optimization on the optimal combination of marketing strategies by taking the net cash flow per ton of each strategy into account. The net cash flow per ton was then used to determine the optimal number of tons to be allocated to the different marketing alternatives.

Pre-harvest marketing stage

The net cash flow per ton of all the marketing instruments available had to be determined. On 27 October 1998, Farmer Brown entered into a forward contract at a price of R580/ton for white maize and R630/ton for yellow maize. At the same time the net cash flow of the other marketing instruments had to be

determined. The futures price used was the closing futures price of a July contract and the option price was an at-the-money option based on the closing prices of the July futures contracts. All futures price data were obtained from SAFEX. The option premium was determined by means of an option calculator, downloaded from the SAFEX website (www.safex.co.za). The net cash flow from all the marketing instruments available for white maize and yellow maize on 27 October 1998 were determined.

On 17 December, Farmer Brown sold a further 200 tons of yellow maize by engaging in a short July futures position at a price of R650/ton. The MDSS determined the net cash flows per ton of futures contracts and options contracts and determined an optimal combination, indicated by Line 2 in Table A4. There were no forward contracts available on 17 December 1998. The net cash flow per ton from the futures position was R233.87 and the net cash flow per ton from a put option contract was R219.92. An at-the-money strike price of R640 was chosen and the premium payable on the put option contract was R32.51.

On 10 January 1999 Farmer Brown entered into a forward contract to deliver 500 tons of sunflower seed at a price of R1 000/ton. The MDSS determined the net cash flows per ton of the forward contract, the futures contract and the options contract and determined an optimal combination, indicated by Line 3 in Table A4. The net cash flow per ton from the forward contract was R315.30, the net cash flow per ton from the futures position (with a price of R1 100/ton) was R297.60 and the net cash flow per ton from a put option contract was R276.10. An at-the-money strike price of R1 100 was chosen and the premium payable on the put option contract was R55.00 per ton.

On 19 January 1999, Farmer Brown bought five July white maize put contracts at a strike price of R640/ton. The MDSS determined the net cash flows per ton of futures contracts and options contracts and determined an optimal combination, indicated by Line 4 in Table A4. There were no forward contracts available. The

net cash flow per ton from the futures position (at a price of R607/ton) was R189.96, and the net cash flow per ton from a put option contract was R164.00. An at-the-money strike price of R600 was chosen and the premium payable on the put option contract was R29.96.

On 17 February 1999, Farmer Brown sold a further 1 000 tons of white maize by engaging in a short July futures position at a price of R680/ton. The MDSS determined the net cash flows per ton of futures contracts and options contracts and determined an optimal combination, indicated by Line 5 in Table A4. There was a forward contract available to deliver 1 000 tons of white maize during harvest at price of R620/ton and the net cash flow from the forward contract was calculated at R273.52. The net cash flow per ton from the futures position was R248.81 and the net cash flow per ton from a put option contract was R239.81. An at-the-money strike price of R680 was chosen and the premium payable on the put option contract was R33.98.

Every time that Farmer Brown sold a percentage of his crop, the MDSS was run again to determine the suggested combination of marketing alternatives. The assumption was made in the study that one month prior to harvest, the MDSS had to sell 80% of the expected crop. One month prior to the harvesting of the white and yellow maize, the MDSS was therefore run again. A total of 440 tons of white maize and 336 tons of yellow maize had to be sold to secure the 80% level. In the case of sunflower seed, no more of the expected crop was sold one month prior to harvesting. The primary reason was that only 44 tons (680*0.8-500) of sunflower seed was available to secure the 80% selling level. Futures traded at R905/ton for white maize and R810/ton for yellow maize. An at-the-money put option with a strike price of R900/ton for white maize and R800/ton for yellow maize was chosen. The premium amounted to R19.88 per ton for white maize and R16.63 per ton for yellow maize. The net cash flows per ton were:

- R477.91 for white maize futures contract;
- R391.39 for yellow maize futures contract;

- R456.49 for white maize put option; and
- R378.26 for yellow maize put option.

The optimal combination is indicated in Table A4 by Line 6 for white maize and by Line 7 for yellow maize. Although the highest return per ton was from the short futures, no more futures contracts could be purchased. The total number of contracts that the producer could buy, had already been bought. The net returns for white maize, yellow maize and sunflower seed is indicated by Line 8 in Table A4.

Harvesting stage

In this example, no optimization could occur during the harvesting stage. The put option contract on white maize had been exercised and the maize had been delivered. The short futures positions for white maize and yellow maize had been closed out and the rest of the crop (except for 500 tons of white maize) had been sold on the spot market.

On 6 July 1999, Farmer Brown stored 500 tons of white maize until March 2000. He sold the maize on the spot market, receiving R740/ton. The MDSS determined the net cash flows per ton of futures contracts and options contracts and determined an optimal combination, indicated by Line 9 in Table A4. March white maize futures traded at R920/ton. The net cash flow per ton from the storage decision was R331 and the net cash flow per ton from a put option contract was R331.67. An at-the-money strike price of R920 was chosen and the premium payable on the put option contract was R58.46 per ton. The option contract was exercised and closed out. The maize was sold on the spot market at a price of R740/ton.

Table A 4: Net cash flow generated by MDSS

	Line	White maize	Yellow maize	Sunflower seed
Pre-harvest stage				
27/10/98				
Pricing instrument and % sold		Short futures (27.2%)	Forward (30.3%)	
Net cash flow - futures	1	R251 206.59	R121 654.73	
17/12/98				
Pricing instrument and % sold			Short futures (30.3%)	
Net cash flow - forward	2		R121 654.73	
10/01/99				
Pricing instrument and % sold				Forward (73.5%)
Net cash flow - forward	3			R157 650
19/01/99				
Pricing instrument and % sold		Short futures (13.6%)		
Net cash flow - futures	4	R93 478.22		
17/02/99				
Pricing instrument and % sold		Forward (27.2%)		
Net cash flow - forward	5	R273 521.30		
17/05/99				
Pricing instrument and % sold			Short futures (22.7%)	
	6		R117 418.09	
Net cash flow - Futures				
20/05/99				
Pricing instrument and % sold		Put option (9.2%)		
Net cash flow - put	7	R182 596.01		
Net return - pre-harvest stage	8			
Harvesting stage				
Pricing instrument and % sold		Long futures (40.8%) Spot (48.4%)	Long futures (37.9%) Spot (84.8%)	Spot (26.5%)
Net cash flow - spot		R451 267.92	R323 833.24	R65 754.00
Net cash flow - futures		(R289 026)	(R33 536.80)	
Net return - harvesting stage		**R162 241.92**	**R290 296.44**	**R65 754.00**
Post-harvesting stage				
Pricing instrument and % sold		Put (13.6%)		
Net cash flow - put		R237 597.50		
Net return - post-harvesting stage		**R237 597.50**		
Total net return		**R673 360.72**	**R411 951.17**	**R223 404.00**
% improvement		-8.3%	16.3%	0%

The same principles apply where one is determining the net cash flows of the various marketing instruments for wheat and for soybeans. The only difference is that for soybeans there are no derivative contracts.

APPENDIX B

QUESTIONNAIRE

1. BASIC FARM INFORMATION AND INPUT COSTS

In which district is the farm situated?.....

Number of hectares planted per crop and expected harvest dates

Crop	Number of hectares	Expected harvest date
Maize: White Yellow		
Sunflower seed		
Soybeans		
Wheat		

Crop yield:

Indicate average yield for the past five years and indicate expected yield for the 1998/99 marketing season.

	White Maize	Yellow maize	Sunflower seed	Soybeans	Wheat
Year 1					
Year 2					
Year 3					
Year 4					
Year 5					
Expected					

INPUT AND HARVEST COSTS

Indicate the various costs **per hectare** for the crops you planted. The average input costs and harvest cost for your region is given as an indication. Please change if not correct.

	White		Yellow		Sunflower seed		Soybeans		Wheat	
	Ave	**Yours**	**Ave**	**Yours**	**Ave**	**Yours**	**Ave**	**Yours**	**Ave**	**Yours**
Input cost per Ha										
Total per Ha	927.28		927.28		704.91		1408.41		846.92	
Harvest cost per Ha										
Total per Ha	63.71		63.71		73.89		120.89		80.45	
Harvest cost per ton										
Total per ton	50.02		50.02		53.00		88.67		46.25	

Input cost includes items such as seed, fertilizer, fuel, pesticides, weedicides, lubrication, repairs, crop insurance, labour and interest on production loans.

Harvest cost per hectare includes items such as fuel, transport, labour and contract work if paid per hectare.

Harvest cost per ton includes items such as pick-up labour, drying cost, transport and contract work if paid per ton.

STORAGE COST

If your crop is stored, please indicate with an (X):

1. how storage cost is determined; and
2. the cost per ton that you pay.

1. Per day	.....	Per month	.....	Per season	.....
2. Cost (R)	.....	Cost (R)	.....	Cost (R)	.....

2. PERSONAL INFORMATION

Indicate the average time you spend per week on determining crop prices and crop price movements:.....Hours

Indicate the source you use the most to obtain crop prices and crop price movements. Rank from high to low, with (1) the most frequently used.

Co-operatives	
Traders	
Internet	
Agricultural magazines	
Agri-businesses	
Consultants	

Identify areas or services where you need more information in the marketing of your crop.....

INTEREST RATES

Indicate only the rate(s) that is/are applicable to your crop production. If you do not use a production loan or an overdraft facility, please give the interest rates on your fixed deposits.

	%
Production loan (Co-operative)	
Overdraft facility	
Interest earned on fixed deposit	

MARGINS

If you use futures contracts, can you maintain all the margin calls? Indicate with an (X)

Yes..... No.....

3. MARKETING ALTERNATIVES

The following questions refer to the particular marketing alternatives that you used during the 1998/99 marketing season for summer crops, and during the 1999/2000 marketing season for wheat.

	White maize	Yellow maize	Sunflower seed	Soybeans	Wheat
Spot market during harvest: Average price per ton Quantity sold					
Forward contracts: Price per ton Quantity sold Date contract entered into Date of delivery					
Storage Price per ton Quantity sold Date of delivery					
Futures contracts **Contract 1** Short or Long Contract price Number of contracts Date contract entered into Expiry month of contract Contract closed out? Yes/No If yes, date If yes, price					
Futures contracts **Contract 2** Short or Long Contract price Number of contracts Date contract entered into Expiry month of contract Contract closed out? Yes/No If yes, date If yes, price					
Option contracts **Contract 1** Put or Call Strike price Number of contracts Date contract entered into Expiry month Premium Contract exercised? Yes/No If yes, date If yes, price Contract delivered? If yes, date					

	White maize	Yellow maize	Sunflower seed	Soybeans	Wheat
Option contracts **Contract 2** Put or Call Strike price Number of contracts Date contract entered into Expiry month Premium Contract exercised? Yes/No If yes, date If yes, price Contract delivered? If yes, date					

4. MARKETING COST

Indicate the cost associated with futures and option contracts.

	Futures contracts	Option contracts
Commission fees		
Handling costs		
Area differential		
Other costs		