



LOCAL ENTERPRISE AUTHORITY

ONION ENTERPRISE BUDGETS

Prepared as part of

'The study on the Botswana Horticulture Value Chain mapping and Analysis'

(A study Commissioned by Local Enterprise Authority)

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1. INTRODUCTION

This report was prepared as part of the study on the Botswana Horticulture Value Chain Mapping and analysis. The study required the preparation of enterprise budgets for the five selected crops (enterprises) namely; cabbage, tomato, potato, onion and rape. This report contains the enterprise budgets for the Onion enterprise. The purpose of the Onion enterprise budgets is to measure the efficiency and relative profitability of the onion enterprise in various Districts selected for enterprise budgeting during the study.

2. APPROACH AND METHODOLOGY

In preparing the enterprise primary data was collected from farmers in various districts, randomly sampled from the list of farmers identified for the study. A standard questionnaire –enterprise budget data collection tool, was designed and administered to the respondents. The questionnaire was designed to collect data on the actual yield, unit selling price of produce, variable costs for the each crop considered in this report.

The variable costs were standardized and organized into distinctive cost centres, namely; planting material, fertilizers, agro chemicals, labour costs, and other pre-harvest costs, harvest and distribution costs, and other variable costs directly attributable to production. The study did not collect data on the overheads (operational expenses) incurred at each farm, but rather focused only on prime costs. I.e. variable production costs incurred for each enterprise. The decision not to include the overheads is that they are usually incurred at the business level and not crop level.

The gross margins and gross margin percentages (%) were computed for each enterprise budget. The sensitivity analysis was also carried out for each enterprise budget. Sensitivity analysis is a financial model which predicts the outcomes given a specific range of variables. In this report, the model assumes the changes in revenue and variable costs given the changes in the yield achieved by the farmer. The model give scenarios for revenue and total variable costs are different levels of output.

Lastly, the study also considered the common constraints to production experienced by farmers who responded to the questionnaire for enterprise budgets. The respondents were asked to share the constraints to production of Onions in the Districts covered during enterprise budgeting. The constraints to production are documented in Table 28- Common constraints / challenges in production of the five selected crops.

3. ENTERPRISE BUDGET FRAMEWORK

The study adopted a standard format for preparation of enterprise budgets. Extract 1 indicate the format used and followed during preparation of enterprise budgets. Below the extract are the terms, definitions and explanations of items included in the budgets;

Extract 1: Standard format for the enterprise budget

		BWP /HA	Unit basis
1	REVENUE (R) (yields * unit selling price)	xxx	xxx
2	LESS TOTAL VARIABLE COSTS (TVC)		
2.1	Planting material	xxx	xxx
2.2	Fertilizers	xxx	xxx
2.3	Agrochemicals-Pesticides, fungicides, etc	xxx	xxx
2.4	Labour costs	xxx	xxx
2.5	Other pre-harvest costs*	xxx	xxx
2.6	Harvest and distribution costs	xxx	xxx
2.7	Other variable costs attributable to production	xxx	xxx
	Total Variable Costs (TVC)	xxx	xxx
3	GROSS MARGIN	xxx	xxx
4	GROSS MARGIN%	Xxx%	Xxx%

Terms and definitions used in the enterprise budget:

a) Revenue – Revenue represents gross inflows of cash generated from the sale of produce, computed as yield multiplied by the unit selling price.

b) Variable costs –Variable costs are costs directly attributable to production of each selected crop from the planting stage throughout to maturity, harvest and sale to the market. The variable costs are grouped standard cost centres namely; planting material, fertilizers, agro chemicals, labour costs, and other pre-harvest costs, harvest and distribution costs, and other variable costs directly attributable to production.

c) Fixed costs –Fixed costs are all other costs not directly attributable to production. The fixed costs do not vary with the level of production. I.e. they remain constant throughout production and the cropping season.

d) Gross margin –The gross margin is the resulting return from production and sale of produce. It is the difference between the revenue and total variable costs. The gross profit margin is a performance metric which measures the profitability of an enterprise, after taking into account all production costs.

e) Gross margin %- The gross margin percentage (%) is the gross margin expressed as percentage of revenue.

f) Net profit margin –Net profit margin is the resulting profit after deducting total production costs and operating expenses (overheads) from revenue. The net profit margin was not computed since the overheads were not considered during the study. The overheads are non production costs incurred in the ordinary course of running the farming business.

g) Whole farm budget –Is the budget prepared for all farm operations .i.e. considering all enterprises and other revenue streams, together with the farm operational costs.

h) Sensitivity analysis – Sensitivity analysis is a financial model which predicts the outcomes given a specific range of variables. In this report, the model assumes the changes in revenue and costs given the changes in the yield achieved by the farmer. The model give scenarios for revenue and total variable costs are different levels of output.

i) Breakeven price –Is computed as total variable costs divided by the output or (yield). This is the price at which when produce is sold to the market, the revenue generated will fully cover the total variable costs and result in a nil or zero profit.

4. SAMPLING OF RESPONDENTS

The respondents to enterprise budgets were sampled randomly from various districts in the country. Table 1 below; indicate the districts in which respondents for Onion enterprise budgeting were selected;

Onion
Kgatleng District
North East District
Central District
South East District
Ngami District
Kweneng District

5. LIMITATIONS TO ENTERPRISE BUDGETING

a. The enterprise budgets are prepared using the historical data collected from the sampled farmers. The data on yields, revenue and costs shared by the farmers may not be a true reflection of the actual results realized by the farmer.

b. The allocation of costs such as fertilizers, agro-chemicals and labour to a single enterprise may not be accurate since it is spread to multiple enterprises, in instances where a farmer produce other enterprises alongside the selected crop. The failure to allocate and apportion costs accurately has the potential to distort the bottom line gross margins presented in each enterprise budget.

c. Other costs relating to production may have been omitted by the farmers during the study, thereby distorting the gross margins.

d. The farmers were not able to provide data on the crops they had no prior production experience on. It was difficult therefore difficult to source information on all the crops from one farmer. The study had to approach a sizeable number of farmers to collect data. For example; in most Districts, the majority of farmers did not have production data for potatoes.

e. Other respondents were reluctant to share their revenue and costs, citing confidentiality as the main reason for non response.

f. Time factor may have played a role in the study not being able to collect data for all crops in all districts.

6. ONION ENTERPRISE BUDGETS

The current budgets for the onion enterprise were established from the data collected from farmers in various districts.

6.1 Onion Enterprise Budget –Kgatleng District

Total costs of production;

Total costs of production for Onions include planting material, fertilizers, agro chemicals, direct labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs. Table 2; below indicate the total cost of production for onions amounted to P16, 906.

Table 2: Total production costs for onions –Kgatleng District

	BWP/HA	% of total costs
Planting material	1,564.00	9%
Fertilizers	6,192.00	37%
Agrochemicals	-	0%
Labour costs	4,450.00	26%
Other pre-harvest costs*	1,200.00	7%
Harvest and distribution costs	2,900.00	17%
Other variable costs	600.00	4%
	16,906.00	100%

Distribution of production costs for onion production Figure 1 indicate that fertilizers make up the largest percentage of the total production costs at 37%, while planting material, agro chemicals, labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 9%, 0%,26%,7%,17%,23% and 4% of the total production costs respectively;

Figure 1: Distribution of production costs for onions-Kgatleng District

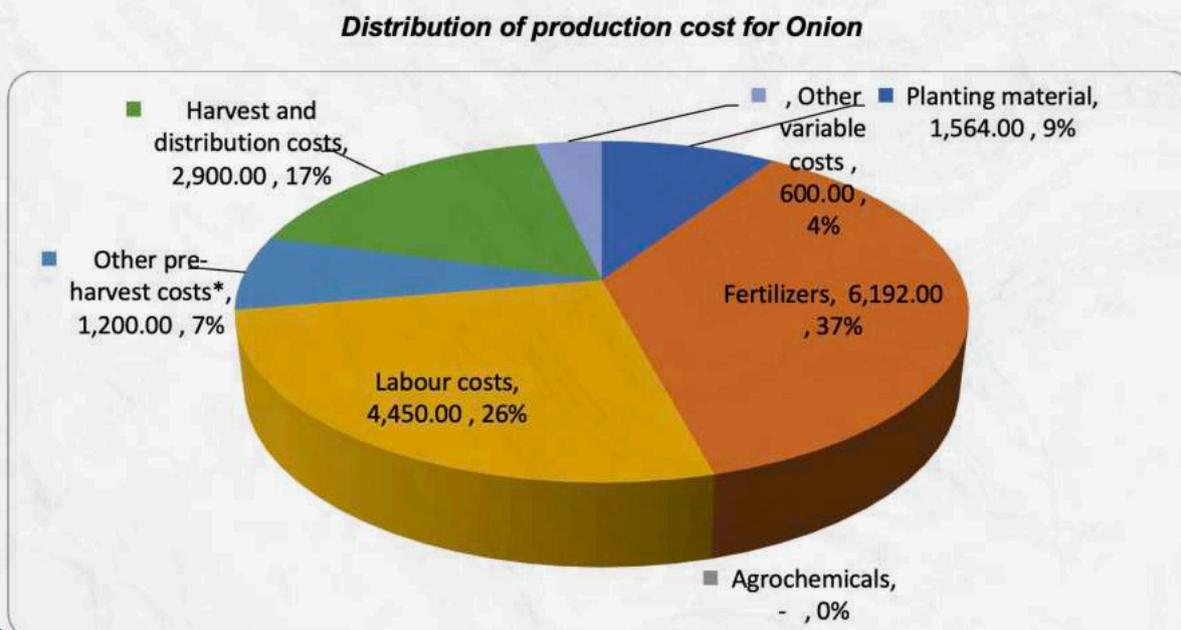


Figure 2: Detailed enterprise budget for onion in Kgatleng District;

Onion enterprise BUDGET		Kgatlung District (Malotwana)					Unit value /
Sr.no	Cropping Area-1 HA-Open Field					Per HA	
	Cropping in months	3 months					
	Item description	Unit	Output	Output	Unit SP	Value	Yield
		basis	bags	bags	P/bag	in BWP	BWP / unit
1	Revenue from produce Onions sold in (10 Kg bags)	Bags	500.00	500.00	80.00	40,000.00	80.00
2	VARIABLE COSTS (VC)		Quantity	Unit cost		Total cost	Cost / unit
2.1	PRODUCTION COSTS						
2.1.1	Planting material						
	Seeds - 5000 Seed	Packets	2	782.00		1,564.00	3.13
						-	-
2.1.2	Fertilizers						
i	Urea	50Kg	1	1,700.00		1,700.00	3.40
ii	Calcium Nitrate	50Kg	1	960.00		960.00	1.92
iii	Potassium Nitrate	50Kg	1	532.00		532.00	1.06
iv	Blad buff (BB5)	5 litres	1	900.00		900.00	1.80
v	Kraal Manure	1 tonne	0.5	2,400.00		1,200.00	2.40
v	Alex Pro	1 litre	1	900.00		900.00	1.80
2.1.3	Permanent farm workers						
	Direct Labour	Per month	7	550.00		3,850.00	7.70
2.1.4	Casual labour						
	Labour planting	5 md*4				-	-
	Labour fertilization and chemicals	man days				-	-
	Labour weeding	4*1md	4	150.00		600.00	1.20
	Labour irrigation set up and management	man days				-	-
2.1.5	Other Pre Harvest costs						
	Transport of inputs to the farm	per trip	1	600.00		600.00	1.20
	Land preparation	Tractor hire	1	600.00		600.00	1.20
	TOTAL PRE-HARVEST COSTS					13,406.00	26.81
3	POST HAVERST COSTS (VC)						
3.1	Harvest and distribution costs						
	Packaging material -100 bags (10kg)	100	250	5.60		1,400	2.80
	Transport to the market	per trip	3	500.00		1,500.00	3.00
3.2	Other variable costs						
	Airtime	Per	3	200.00		600.00	1.20

		month					
	TOTAL POST HAVERST COSTS					3,500.00	7.00
4	TOTAL VARIABLE COSTS (VC)					16,306.00	32.61
5	OTHER VARIABLE COSTS					600.00	1.20
6	GROSS MARGIN					23,094.00	46.19
7	GROSS MARGIN %					58%	58%

Key Assumptions

- The yield is approximately 500 bags of 10 kg bags in a cropping area of one (1) hectare (HA). The yield, has taken into account the normal and abnormal losses / wastage experienced during production.
- The farmer had planted 10,000 plants as indicated under the planting material costs.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established to be P80 / bag. This is the price at which produce is sold to the market.
- The gross margin is calculated by subtracting the variable costs from the revenue. The gross margin % is the gross margin expressed as percentage of revenue.
- Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- The yields, revenue, variable costs and fixed costs vary from one farmer to the other in the district.
- The yields are dependent on other variables such as climatic conditions in each ecological zone, farming practices, and the choice of inputs (fertilizers and agro chemicals) applied.
- The gross profit margin for onion enterprise is approximately 58%, as indicated in the enterprise budget.
- It is important to note that overheads or other operational costs are not included in the budget. These costs should be accounted for when compiling the whole farm budget. Examples of overheads include costs such as; depreciation of assets, interests / finance charges, bank charges, stationery, salaries of non production employees, etc.

Sensitivity analysis: Below is the sensitivity analysis for the actual output of onions for an enterprise budget in figure 2.

		Revenue			Actual	Increase (+)			
		Decrease (-)				Price	10.0%	20.0%	30.0%
		Output	-56.00	-64.00	80.00	88.00	96.00	104.00	
Revenue at different levels of output									
MINUS	30%	350.00	-19,600.00	-22,400.00	-25,200.00	28,000.00	30,800.00	33,600.00	36,400.00
	20%	400.00	-22,400.00	-25,600.00	-28,800.00	32,000.00	35,200.00	38,400.00	41,600.00

	10%	450.00	-25,200.00	-28,800.00	-32,400.00	36,000.00	39,600.00	43,200.00	46,800.00
	Revenue	500.00	-28,000.00	-32,000.00	-36,000.00	40,000.00	44,000.00	48,000.00	52,000.00
PLUS	10.0%	550.00	-30,800.00	-35,200.00	-39,600.00	44,000.00	48,400.00	52,800.00	57,200.00
	20.0%	600.00	-33,600.00	-38,400.00	-43,200.00	48,000.00	52,800.00	57,600.00	62,400.00
	30.0%	650.00	-36,400.00	-41,600.00	-46,800.00	52,000.00	57,200.00	62,400.00	67,600.00

		Total Variable Costs (TVC)							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	cost	10.0%	20.0%	30.0%	
		Total Variable costs at different levels of output							
		Output	-23.67	-27.05	-30.43	33.81	37.19	40.57	43.96
MINUS	30.0%	350.00	-8,283.94	-9,467.36	-10,650.78	11,834.20	13,017.62	14,201.04	15,384.46
	20.0%	400.00	-9,467.36	-10,819.84	-12,172.32	13,524.80	14,877.28	16,229.76	17,582.24
	10.0%	450.00	-10,650.78	-12,172.32	-13,693.86	15,215.40	16,736.94	18,258.48	19,780.02
	Total Cost	500.00	-11,834.20	-13,524.80	-15,215.40	16,906.00	18,596.60	20,287.20	21,977.80
PLUS	10.0%	550.00	-13,017.62	-14,877.28	-16,736.94	18,596.60	20,456.26	22,315.92	24,175.58
	20.0%	600.00	-14,201.04	-16,229.76	-18,258.48	20,287.20	22,315.92	24,344.64	26,373.36
	30.0%	650.00	-15,384.46	-17,582.24	-19,780.02	21,977.80	24,175.58	26,373.36	28,571.14

6.2 Onion Enterprise Budget –North East District

Total costs of production;

Total costs of production for Onions include planting material, fertilizers, agro chemicals, direct labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs. Table 3; below indicate the total cost of production for onions amounted to P27, 167.

Table 3 Total production costs for onions –North East District

	BWP/HA	% of total costs
Planting material	8,800.00	32%
Fertilizers	5,920.00	22%
Agrochemicals	-	0%
Labour costs	5,800.00	21%
Other pre-harvest costs*	2,300.00	8%
Harvest and distribution costs	3,672.00	14%
Other variable costs	675.00	2%
	27,167.00	100%

Distribution of production costs for onion production; Figure 3 indicate that planting material make up the largest percentage of the total production costs at 32%, while fertilizers, agro chemicals, labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 22%, 0%,21%,8%,14% and 2% of the total production costs respectively;

Distribution of production cost for Onion

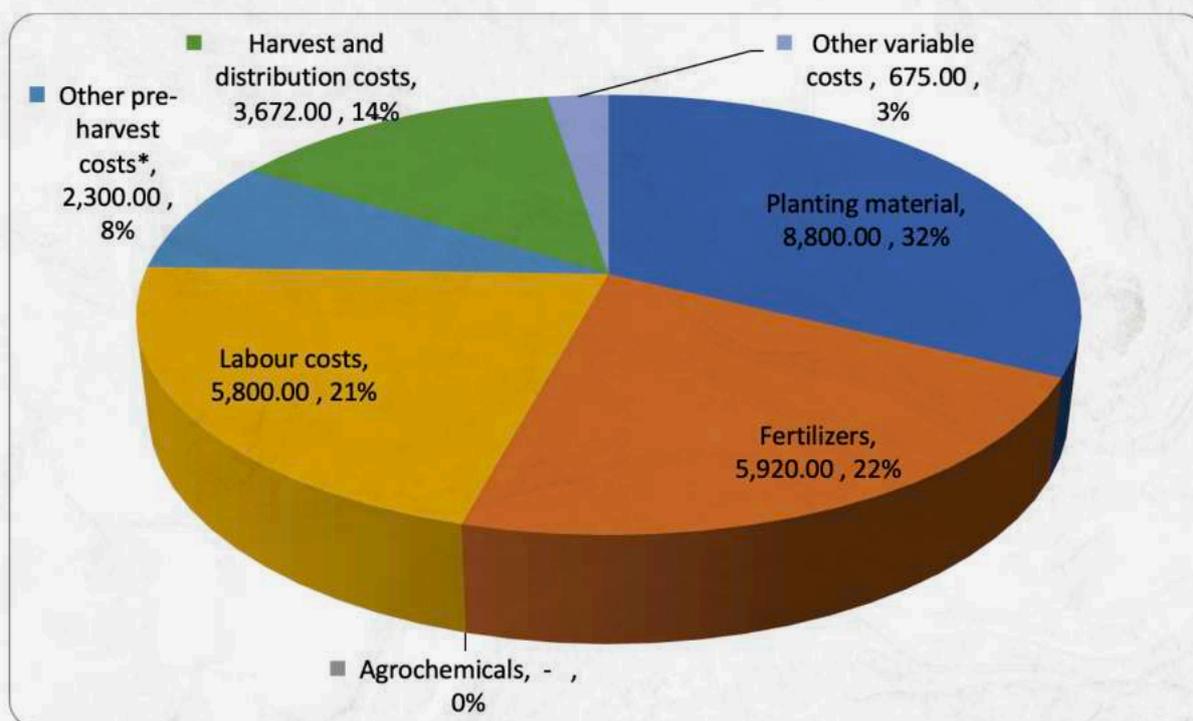


Figure 4: Detailed enterprise budget for onion in North East District;

Onion enterprise BUDGET		North East District - Ditladi					Unit value /
Sr.no	Cropping Area - 1 HA-Open Field					Per HA	
	Cropping in months	3 months					
	Item description	Unit	Output	Output	Unit SP	Value	Yield
		basis	Bags	Bags	P/bag	in BWP	BWP / unit
1	Revenue from produce Sold in 10Kg bags @P80 each	Bags	768.00	768.00	90.00	69,120.00	90.00
2	VARIABLE COSTS (VC)		Quantity	Unit cost		Total cost	Cost / unit
2.1	PRODUCTION COSTS						
2.1.1	Planting material						
	Seeds -2,000 seeds in a packet	Packets	8	1,100.00		8,800.00	11.46
2.1.2	Fertilizers						

i	Urea	50Kg	8	580.00		4,640.00	6.04
ii	Chicken Manure	50Kg	320	4.00		1,280.00	1.67
2.1.3 Permanent farm workers							
	Direct Labour	<i>Per month</i>	8	425.00		3,400.00	4.43
2.1.4 Casual labour							
	Labour planting	5 md*4				-	-
	Labour fertilization and chemicals					-	-
	Labour weeding	3*5md	15	160.00		2,400.00	3.13
	Labour irrigation set up and management					-	-
2.1.5 Other Pre Harvest costs							
	Transport of inputs to the farm	<i>per trip</i>	1	800.00		800.00	1.04
	Land preparation	<i>Tractor hire</i>	1	1,500.00		1,500.00	1.95
TOTAL PRE-HARVEST COSTS						22,820.00	29.71
3 POST HAVERST COSTS (VC)							
3.1 Harvest and distribution costs							
	Packaging material -100 bags (10kg)	<i>100 bags</i>	768	4.00		3,072	4.00
	Transport to the market	<i>per trip</i>	3	200.00		600.00	0.78
3.2 Other variable utilities							
	Airtime	<i>Per month</i>	3	225.00		675.00	0.88
TOTAL POST HAVERST COSTS						4,347.00	5.66
4 TOTAL VARIABLE COSTS (VC)						26,492.00	34.49
5 OTHER VARIABLE COSTS						675.00	0.88
6 GROSS MARGIN						41,953.00	54.63
7 GROSS MARGIN %						61%	61%

Key Assumptions

- The yield is approximately 768 bags of 10 kg bags in a cropping area of one (1) hectare (HA). The yield, has taken into account the normal and abnormal losses / wastage experienced during production.
- The farmer has planted 16,000 plants as indicated under the planting material costs.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established to be P90 / bag. This is the price at which produce is sold to the market.
- The gross margin is calculated by subtracting the variable costs from the revenue. The gross margin % is the gross margin expressed as percentage of revenue.
- Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- The yields, revenue, variable costs and fixed costs vary from one farmer to the other in the district.

g. The yields are dependent on other variables such as climatic conditions in each ecological zone, farming practices, and the choice of inputs (fertilizers and agro chemicals) applied.

h. The gross profit margin for onion enterprise is approximately 61%, as indicated in the enterprise budget.

i. It is important to note that overheads or other operational costs are not included in the budget. These costs should be accounted for when compiling the whole farm budget. Examples of overheads include costs such as; depreciation of assets, interests / finance charges, bank charges, stationery, salaries of non production employees, etc.

Sensitivity analysis: Below is the sensitivity analysis for the actual output of onions for an enterprise budget in figure 4.

		Revenue							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	Price	10.0%	20.0%	30.0%	
	Output	-63.00	-72.00	-81.00	90.00	99.00	108.00	117.00	
Revenue at different levels of output									
MINUS	30%	537.60	-33,868.80	-38,707.20	-43,545.60	48,384.00	53,222.40	58,060.80	62,899.20
	20%	614.40	-38,707.20	-44,236.80	-49,766.40	55,296.00	60,825.60	66,355.20	71,884.80
	10%	691.20	-43,545.60	-49,766.40	-55,987.20	62,208.00	68,428.80	74,649.60	80,870.40
	Revenue	768.00	-48,384.00	-55,296.00	-62,208.00	69,120.00	76,032.00	82,944.00	89,856.00
PLUS	10.0%	844.80	-53,222.40	-60,825.60	-68,428.80	76,032.00	83,635.20	91,238.40	98,841.60
	20.0%	921.60	-58,060.80	-66,355.20	-74,649.60	82,944.00	91,238.40	99,532.80	107,827.20
	30.0%	998.40	-62,899.20	-71,884.80	-80,870.40	89,856.00	98,841.60	107,827.20	116,812.80

		Total Variable Costs (TVC)							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	cost	10.0%	20.0%	30.0%	
	Output	-24.76	-28.30	-31.84	35.37	38.91	42.45	45.99	
Total Variable costs at different levels of output									
MINUS	30.0%	537.60	-13,311.83	-15,213.52	-17,115.21	19,016.90	20,918.59	22,820.28	24,721.97
	20.0%	614.40	-15,213.52	-17,386.88	-19,560.24	21,733.60	23,906.96	26,080.32	28,253.68
	10.0%	691.20	-17,115.21	-19,560.24	-22,005.27	24,450.30	26,895.33	29,340.36	31,785.39
	Total Cost	768.00	-19,016.90	-21,733.60	-24,450.30	27,167.00	29,883.70	32,600.40	35,317.10
PLUS	10.0%	844.80	-20,918.59	-23,906.96	-26,895.33	29,883.70	32,872.07	35,860.44	38,848.81
	20.0%	921.60	-22,820.28	-26,080.32	-29,340.36	32,600.40	35,860.44	39,120.48	42,380.52
	30.0%	998.40	-24,721.97	-28,253.68	-31,785.39	35,317.10	38,848.81	42,380.52	45,912.23

6.3 Onion Enterprise Budget –Central District

Total costs of production;

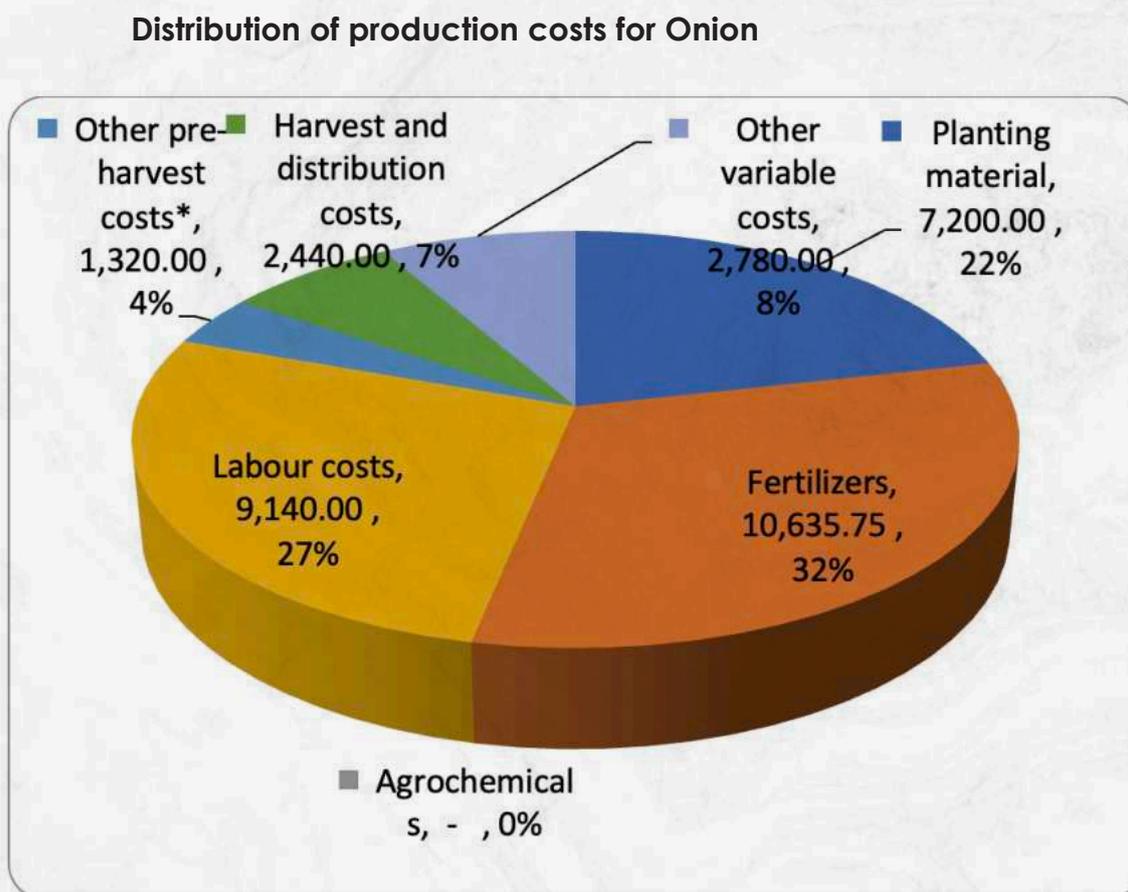
Total costs of production for Onions include planting material, fertilizers, agro chemicals, direct labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs. Table 4; below indicate the total cost of production for onions amounted to P33, 515.75.

Table 4: Total production costs for onions –Central District

	BWP/HA	% of total costs
Planting material	7,200.00	21%
Fertilizers	10,635.75	32%
Agrochemicals	-	0%
Labour costs	9,140.00	27%
Other pre-harvest costs*	1,320.00	4%
Harvest and distribution costs	2,440.00	7%
Other variable costs	2,780.00	8%
	33,515.75	100%

Distribution of production costs for onion production Figure 5 indicate that fertilizers make up the largest percentage of the total production costs at 32%, while planting material, agro chemicals, labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 22%, 0%,27%,4%,7% and 8% of the total production costs respectively;

Figure 5: Distribution of production costs for onions-Central District



Sr.no	Cropping Area - 1 HA-Open Field					Per HA	Unit value /
	Cropping in months	3 months					
	Item description	Unit	Output	Output	Unit SP	Value	Yield
		basis	Bags	Bags	P/bag	in Pula	Pula / unit
1	Revenue from produce	10 Kg	1,200.00	1,200.00	65.00	78,000.00	65.00
	Sold in 10Kg bags						
2	VARIABLE COSTS (VC)		Quantity	Unit cost		Total cost	Cost / unit
2.1	PRODUCTION COSTS						
2.1.1	Planting material						
	Seeds 1 Kg	1KG	8	900.00		7,200.00	6.00
2.1.2	Fertilizers						
i	2;3;4	50Kg	12	167.08		2,004.90	1.67
ii	Magnesium sulphate	25Kg	4	666.80		2,667.20	2.22
iii	Calcium Nitrate	25Kg	8	69.23		553.82	0.46
iv	MAP (33)	50Kg	5	151.59		757.94	0.63
v	Nutriplex	25Kg	4	134.11		536.45	0.45
vi	Potassium Sulphate	25Kg	12	104.34		1,252.05	1.04
vii	Amonium Sulphate	50Kg	4	142.35		569.40	0.47
viii	Potassium Nitrate	25Kg	4	181.66		726.64	0.61
ix	Urea	50Kg	4	197.80		791.20	0.66
x	Copper oxychloride	2Kg	1	145.75		145.75	0.12
xii	P Max	20 Litres	2	221.45		442.90	0.37
Xiii	Grow fast	5 litres	5	37.50		187.50	0.16
2.1.3	Permanent farm workers						
	Direct Labour	Per month	6	1,200.00		7,200.00	6.00
2.1.4	Casual labour						
	Labour planting	4*2md	8	85.00		680.00	0.57
	Labour fertilization and chemicals	man days				-	-
	Labour weeding	3*5md				-	-
	Labour irrigation set up and management	man days				-	-
	Labour harvesting	6*3md	18	70.00		1,260.00	1.05
2.1.5	Other Pre Harvest costs						
	Transport of inputs to the farm	per trip	1	700.00		700.00	0.58
	Land preparation	Tractor hire	1	620.00		620.00	0.52
	TOTAL PRODUCTION COSTS					28,295.75	23.58
3	POST HAVERST COSTS (VC)						

	Packaging material -1000kg	1000	1,200	1.20		1,440	1.20
	Transport to the market	per trip	2	500.00		1,000.00	0.83
3.2	Other variable costs						
	Airtime	Per month	3	100.00		300.00	0.25
	Fuel for booster pump - jerry can	per month	8	310.00		2,480.00	2.07
	TOTAL POST HAVERST COSTS					2,740.00	2.28
4	TOTAL VARIABLE COSTS (VC)					30,735.75	25.61
5	OTHER VARIABLE COSTS					2,780.00	2.32
6	GROSS MARGIN					44,484.25	37.07
7	GROSS MARGIN %					57%	57%

Key Assumptions

- The yield is approximately 1,200 bags of 10 kg bags in a cropping area of one (1) hectare (HA). The yield, has taken into account the normal and abnormal losses / wastage experienced during production.
- It is not clear how many plants were grown for this production. The farmer has purchased eight (8) packets of 1Kg seeds.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established to be P65 / bag. This is the price at which produce is sold to the market.
- The gross margin is calculated by subtracting the variable costs from the revenue. The gross margin % is the gross margin expressed as percentage of revenue.
- Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- The yields, revenue, variable costs and fixed costs vary from one farmer to the other in the district.
- The yields are dependent on other variables such as climatic conditions in each ecological zone, farming practices, and the choice of inputs (fertilizers and agro chemicals) applied.
- The gross profit margin for onion enterprise is approximately 57%, as indicated in the enterprise budget.
- It is important to note that overheads or other operational costs are not included in the budget. These costs should be accounted for when compiling the whole farm budget. Examples of overheads include costs such as; depreciation of assets, interests / finance charges, bank charges, stationery, salaries of non production employees, etc.

Sensitivity analysis: Below is the sensitivity analysis for the actual output of onions for an enterprise budget in figure 6.

		Revenue			Actual	Increase (+)			
		Decrease (-)				Price	10.0%	20.0%	30.0%
		30.0%	20.0%	10.0%	Output				
			-45.50	-52.00	-58.50	65.00	71.50	78.00	84.50
Revenue at different levels of output									
MINUS	30%	840.00	-38,220.00	-43,680.00	-49,140.00	54,600.00	60,060.00	65,520.00	70,980.00
	20%	960.00	-43,680.00	-49,920.00	-56,160.00	62,400.00	68,640.00	74,880.00	81,120.00
	10%	1,080.00	-49,140.00	-56,160.00	-63,180.00	70,200.00	77,220.00	84,240.00	91,260.00
	Revenue	1,200.00	-54,600.00	-62,400.00	-70,200.00	78,000.00	85,800.00	93,600.00	101,400.00
PLUS	10.0%	1,320.00	-60,060.00	-68,640.00	-77,220.00	85,800.00	94,380.00	102,960.00	111,540.00
	20.0%	1,440.00	-65,520.00	-74,880.00	-84,240.00	93,600.00	102,960.00	112,320.00	121,680.00
	30.0%	1,560.00	-70,980.00	-81,120.00	-91,260.00	101,400.00	111,540.00	121,680.00	131,820.00

		Total Variable Costs (TVC)			Actual	Increase (+)			
		Decrease (-)				cost	10.0%	20.0%	30.0%
		30.0%	20.0%	10.0%	Output				
			-19.55	-22.34	-25.14	27.93	30.72	33.52	36.31
Total Variable costs at different levels of output									
MINUS	30.0%	840.00	-16,422.72	-18,768.82	-21,114.92	23,461.02	25,807.13	28,153.23	30,499.33
	20.0%	960.00	-18,768.82	-21,450.08	-24,131.34	26,812.60	29,493.86	32,175.12	34,856.38
	10.0%	1,080.00	-21,114.92	-24,131.34	-27,147.76	30,164.17	33,180.59	36,197.01	39,213.42
	Total Cost	1,200.00	-23,461.02	-26,812.60	-30,164.17	33,515.75	36,867.32	40,218.90	43,570.47
PLUS	10.0%	1,320.00	-25,807.13	-29,493.86	-33,180.59	36,867.32	40,554.05	44,240.79	47,927.52
	20.0%	1,440.00	-28,153.23	-32,175.12	-36,197.01	40,218.90	44,240.79	48,262.68	52,284.57
	30.0%	1,560.00	-30,499.33	-34,856.38	-39,213.42	43,570.47	47,927.52	52,284.57	56,641.61

6.4 Onion Enterprise Budget –South East District

Total costs of production;

Total costs of production for Onions include planting material, fertilizers, agro chemicals, direct labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs. Table 5; below indicate the total cost of production for onions amounted to P42, 646.40.

Table 5: Total production costs for onions –South East District

	BWP/HA	% of total costs
Planting material	5,200.00	12%
Fertilizers	14,126.40	33%
Agrochemicals	900.00	2%
Labour costs	6,900.00	16%
Other pre-harvest costs*	4,840.00	11%
Harvest and distribution costs	8,480.00	20%
Other variable costs	2,200.00	5%
	42,646.40	100%

Distribution of production costs for onion production Figure 7 indicate that fertilizers make up the largest percentage of the total production costs at 33%, while planting material, agrochemicals, labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 12%, 2%,16%,11%,20% and 5% of the total production costs respectively;

Figure 7: Distribution of production costs for onions-South East District

Distribution of production costs for Onion

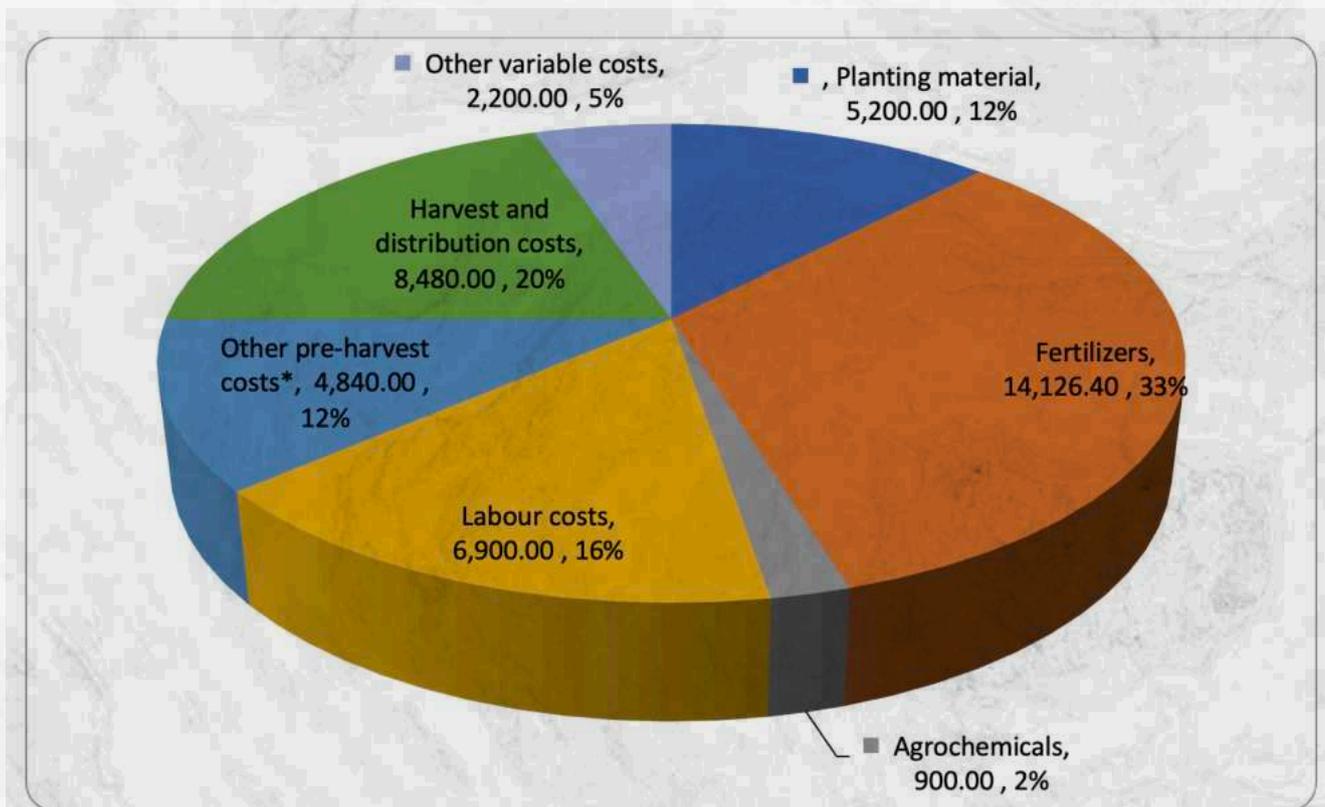


Figure 8: Detailed enterprise budget for onion in South East District;

Onion enterprise BUDGET			South East District - Mekgatsheng				Unit value /
Sr.no	Cropping Area - 1 HA-Open Field					Per HA	
	Cropping in months	3 months					
	Item description	Unit	Output	Output	Unit SP	Value	Yield
		basis	Bag	Bag	P/bag	in BWP	BWP / unit
1	Revenue from produce	10 Kg	900.00	900.00	120.00	108,000.00	120.00
	Sold in 10Kg bags						
2	VARIABLE COSTS (VC)		Quantity	Unit cost		Total cost	Cost / unit
2.1	PRODUCTION COSTS						
2.1.1	Planting material						
	Seeds 1.5 Kg	1.5 KG	2	2,600.00		5,200.00	5.78
2.1.2	Fertilizers						
i	Easy grow	3kg	2	205.00		410.00	0.46
ii	Nitrogen Phosphate	25 Kg	2	600.00		1,200.00	1.33
iii	Nutriplex	25Kg	2	900.00		1,800.00	2.00
iv	Nitrogen Phosphate - Map	25kg	2	607.00		1,214.00	1.35
v	Potassium Nitrate	25Kg	2	272.10		544.20	0.60
vi	Nutriplex	25Kg	2	900.00		1,800.00	2.00
vii	N:P:K /2;3;2	50Kg	2	572.00		1,144.00	1.27
viii	Calcium nitrate	25Kg	2	568.00		1,136.00	1.26
ix	Magnesium Sulphate	25 Kg	2	272.00		544.00	0.60
x	LAN	50Kg	2	595.00		1,190.00	1.32
xi	Potassium Sulphate	25Kg	2	272.10		544.20	0.60
xii	Grow fast	25 Litres	2	450.00		900.00	1.00
Xiii	Enhancer	25 Litres	2	850.00		1,700.00	1.89
						-	-
2.1.3	Permanent farm workers						
	Direct Labour	Per month	2	1,200.00		2,400.00	2.67
2.1.4	Casual labour						
	Labour planting	6*11md	132	15.00		1,980.00	2.20
	Labour fertilization and chemicals					-	-
	Labour weeding					-	-
	Labour irrigation set up and management					-	-
	Labour harvesting	6*3md	36	70.00		2,520.00	2.80
2.1.5	Other Pre Harvest costs						
	Transport of inputs to the farm	per trip	6	600.00		3,600.00	4.00
	Land preparation	Tractor hire	2	620.00		1,240.00	1.38
	TOTAL PRODUCTION COSTS					31,966.40	35.52

3	POST HAVERST COSTS (VC)						
3.1	Harvest and distribution costs						
	Packaging material -Sacks	10kg	2,400	2.70		6,480	7.20
	Transport to the market	per trip	4	500.00		2,000.00	2.22
3.2	Other variable costs						
	Airtime	Per month	1	200.00		200.00	0.22
	Fuel for water pumping	per month	2	1,000.00		2,000.00	2.22
	TOTAL POST HAVERST COSTS					8,680.00	9.64
4	TOTAL VARIABLE COSTS (VC)					40,446.40	44.94
5	TOTAL VARIABLE COSTS					2,200.00	2.44
6	GROSS MARGIN					65,353.60	72.62
7	GROSS MARGIN %					61%	61%

Key Assumptions

- The yield is approximately 900 bags of 10 kg bags in a cropping area of one (1) hectare (HA). The yield, has taken into account the normal and abnormal losses / wastage experienced during production.
- It is not clear how many plants were grown for this production. The farmer has purchased two (2) packets of 1.5Kg seeds.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established to be P120 / bag. This is the price at which produce is sold to the market.
- The gross margin is calculated by subtracting the variable costs from the revenue. The gross margin % is the gross margin expressed as percentage of revenue.
- Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- The yields, revenue, variable costs and fixed costs vary from one farmer to the other in the district.
- The yields are dependent on other variables such as climatic conditions in each ecological zone, farming practices, and the choice of inputs (fertilizers and agro chemicals) applied.
- The gross profit margin for onion enterprise is approximately 61%, as indicated in the enterprise budget.
- It is important to note that overheads or other operational costs are not included in the budget. These costs should be accounted for when compiling the whole farm budget. Examples of overheads include costs such as; depreciation of assets, interests / finance charges, bank charges, stationery, salaries of non production employees, etc.

Sensitivity analysis: Below is the sensitivity analysis for the actual output of onions for an enterprise budget in figure 8

		Revenue							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	Price	10.0%	20.0%	30.0%	
	Output	-84.00	-96.00	-108.00	120.00	132.00	144.00	156.00	
Revenue at different levels of output									
MINUS	30%	630.00	-52,920.00	-60,480.00	-68,040.00	75,600.00	83,160.00	90,720.00	98,280.00
	20%	720.00	-60,480.00	-69,120.00	-77,760.00	86,400.00	95,040.00	103,680.00	112,320.00
	10%	810.00	-68,040.00	-77,760.00	-87,480.00	97,200.00	106,920.00	116,640.00	126,360.00
	Revenue	900.00	-75,600.00	-86,400.00	-97,200.00	108,000.00	118,800.00	129,600.00	140,400.00
PLUS	10.0%	990.00	-83,160.00	-95,040.00	106,920.00	118,800.00	130,680.00	142,560.00	154,440.00
	20.0%	1,080.00	-90,720.00	-103,680.00	116,640.00	129,600.00	142,560.00	155,520.00	168,480.00
	30.0%	1,170.00	-98,280.00	-112,320.00	126,360.00	140,400.00	154,440.00	168,480.00	182,520.00

		Total Variable Costs (TVC)							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	cost	10.0%	20.0%	30.0%	
	Output	-33.17	-37.91	-42.65	47.38	52.12	56.86	61.60	
Total Variable costs at different levels of output									
MINUS	30.0%	630.00	-20,896.74	-23,881.98	-26,867.23	29,852.48	32,837.73	35,822.98	38,808.22
	20.0%	720.00	-23,881.98	-27,293.70	-30,705.41	34,117.12	37,528.83	40,940.54	44,352.26
	10.0%	810.00	-26,867.23	-30,705.41	-34,543.58	38,381.76	42,219.94	46,058.11	49,896.29
	Total Cost	900.00	-29,852.48	-34,117.12	-38,381.76	42,646.40	46,911.04	51,175.68	55,440.32
PLUS	10.0%	990.00	-32,837.73	-37,528.83	-42,219.94	46,911.04	51,602.14	56,293.25	60,984.35
	20.0%	1,080.00	-35,822.98	-40,940.54	-46,058.11	51,175.68	56,293.25	61,410.82	66,528.38
	30.0%	1,170.00	-38,808.22	-44,352.26	-49,896.29	55,440.32	60,984.35	66,528.38	72,072.42

6.5 Onion Enterprise Budget –Ngami District

Total costs of production;

Total costs of production for Onions include planting material, fertilizers, agro chemicals, direct labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs. Table 6; below indicate the total cost of production for onions amounted to P25, 746.98.

Table 6: Total production costs for onions –Ngami District

	Pula/HA	% of total costs
Planting material	9,800.00	38%
Fertilizers	8,088.00	31%
Agrochemicals	2,594.00	10%
Labour costs	1,999.98	8%
Other pre-harvest costs*	200.00	1%
Harvest and distribution costs	2,240.00	9%
Other variable costs	825.00	3%
	25,746.98	100%

Distribution of production costs for onion production Figure 9 indicate that planting material make up the largest percentage of the total production costs at 38%, while fertilizers, agro chemicals, labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 31%, 10%,8%,1%,9% and 3% of the total production costs respectively;

Figure 9: Distribution of production costs for onions-Ngami District

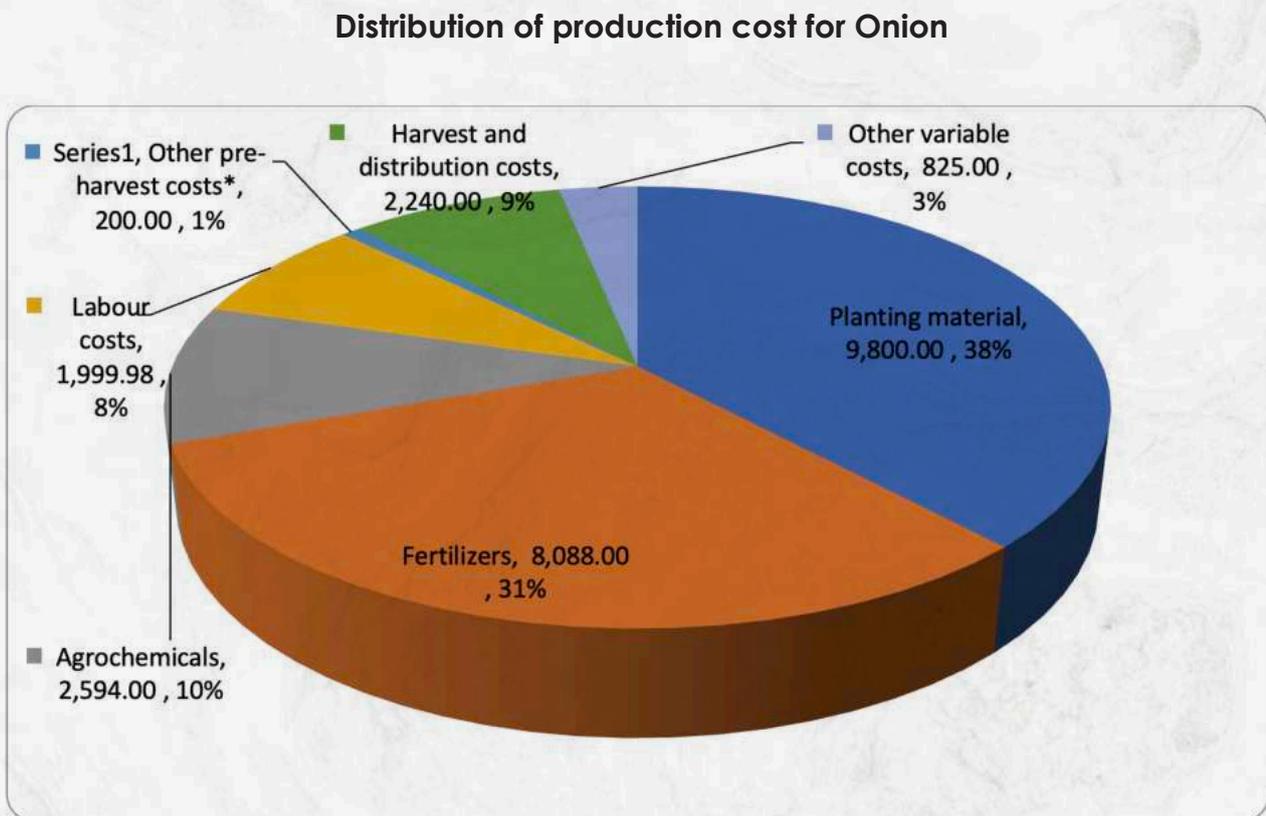


Figure 10: Detailed enterprise budget for onion in Ngami District

Onion enterprise BUDGET		Ngami East District - Maun					Unit value /
Sr.no	Cropping Area - 1 HA-Open Field					Per HA	
	Cropping in months	4 Months					
	Item description	Unit	Output	Output	Unit SP	Value	Yield
		basis	bags	bags	P/bag	in Pula	Pula / unit
1	Revenue from produce	10 Kg	1,076.80	1,076.80	75.00	80,760.00	75.00
	Sold in 10kg bags						
2	VARIABLE COSTS (VC)		Quantity	Unit cost		Total cost	Cost / unit
2.1	PRODUCTION COSTS						
2.1.1	Planting material						
	Seeds 1 kg	1 Kg	2	700.00		1,400.00	1.30
	Germination mix	25kg	60	140.00		8,400.00	7.80
2.1.2	Fertilizers						
i	2;3;4	50Kg	6	640.00		3,840.00	3.57
ii	LAN	50Kg	4	399.00		1,596.00	1.48
iii	Urea	50Kg	4	428.00		1,712.00	1.59
iv	Sulphur	50Kg	2	470.00		940.00	0.87
2.1.3	Fungicides						
i	Ventax	1kg	6	299.00		1,794.00	1.67
ii	Copper count	5 Litres	2	400.00		800.00	0.74
2.1.4	Permanent farm workers						
	Direct Labour	Per month	6	333.33		1,999.98	1.86
2.1.5	Other Pre Harvest costs						
	Transport of inputs to the farm	per trip	1	200.00		200.00	0.19
	Land preparation					-	-
	TOTAL PRE-HAVERST COSTS					22,681.98	21.06
3	POST HAVERST COSTS (VC)						
3.1	Harvest and distribution costs						
	Packaging material - 300 bags	10 kg bags	1,200	1.20		1,440	1.34
	Transport to the market	Per trip	4	200.00		800.00	0.74
3.2	Other variable utilities						
	Airtime	Per month	3	75.00		225.00	0.21
	Electricity to pump water	per month	1	600.00		600.00	0.56
	TOTAL POST HAVERST COSTS					2,465.00	2.29
4	TOTAL VARIABLE COSTS (VC)					24,921.98	23.14
5	OTHER VARIABLE COSTS					825.00	0.77
6	GROSS MARGIN					55,013.02	51.09
7	GROSS MARGIN %					68%	68%

Key Assumptions

- The yield is approximately ~1,077 bags of 10 kg bags in a cropping area of one (1) hectare (HA). The yield, has taken into account the normal and abnormal losses / wastage experienced during production.
- It is not clear how many plants were grown for this production. The farmer has purchased two (2) packets of 1 Kg seeds.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established to be P75 / bag. This is the price at which produce is sold to the market.
- The gross margin is calculated by subtracting the variable costs from the revenue. The gross margin % is the gross margin expressed as percentage of revenue.
- Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- The yields, revenue, variable costs and fixed costs vary from one farmer to the other in the district.
- The yields are dependent on other variables such as climatic conditions in each ecological zone, farming practices, and the choice of inputs (fertilizers and agro chemicals) applied.
- The gross profit margin for onion enterprise is approximately 68%, as indicated in the enterprise budget.
- It is important to note that overheads or other operational costs are not included in the budget. These costs should be accounted for when compiling the whole farm budget. Examples of overheads include costs such as; depreciation of assets, interests / finance charges, bank charges, stationery, salaries of non production employees, etc.

Sensitivity analysis: Below is the sensitivity analysis for the actual output of onions for an enterprise budget in figure 10.

		Revenue			Actual	Increase (+)			
		Decrease (-)				Price	10.0%	20.0%	30.0%
		Output	-52.50	-60.00	-67.50	75.00	82.50	90.00	97.50
Revenue at different levels of output									
MINUS	30%	753.76	-39,572.40	-45,225.60	-50,878.80	56,532.00	62,185.20	67,838.40	73,491.60
	20%	861.44	-45,225.60	-51,686.40	-58,147.20	64,608.00	71,068.80	77,529.60	83,990.40
	10%	969.12	-50,878.80	-58,147.20	-65,415.60	72,684.00	79,952.40	87,220.80	94,489.20
	Revenue	1,076.80	-56,532.00	-64,608.00	-72,684.00	80,760.00	88,836.00	96,912.00	104,988.00
PLUS	10.0%	1,184.48	-62,185.20	-71,068.80	-79,952.40	88,836.00	97,719.60	106,603.20	115,486.80
	20.0%	1,292.16	-67,838.40	-77,529.60	-87,220.80	96,912.00	106,603.20	116,294.40	125,985.60
	30.0%	1,399.84	-73,491.60	-83,990.40	-94,489.20	104,988.00	115,486.80	125,985.60	136,484.40

		Total Variable Costs (TVC)								
		Decrease (-)			Actual	Increase (+)				
		30.0%	20.0%	10.0%	cost	10.0%	20.0%	30.0%		
		Total Variable costs at different levels of output								
		Output	-16.74	-19.13	-21.52	23.91	26.30	28.69	31.08	
MINUS	30.0%	753.76	-12,616.02	-14,418.31	-16,220.60	18,022.89	19,825.17	21,627.46	23,429.75	
	20.0%	861.44	-14,418.31	-16,478.07	-18,537.83	20,597.58	22,657.34	24,717.10	26,776.86	
	10.0%	969.12	-16,220.60	-18,537.83	-20,855.05	23,172.28	25,489.51	27,806.74	30,123.97	
	Total Cost	1,076.80	-18,022.89	-20,597.58	-23,172.28	25,746.98	28,321.68	30,896.38	33,471.07	
PLUS	10.0%	1,184.48	-19,825.17	-22,657.34	-25,489.51	28,321.68	31,153.85	33,986.01	36,818.18	
	20.0%	1,292.16	-21,627.46	-24,717.10	-27,806.74	30,896.38	33,986.01	37,075.65	40,165.29	
	30.0%	1,399.84	-23,429.75	-26,776.86	-30,123.97	33,471.07	36,818.18	40,165.29	43,512.40	

6.6 Onion Enterprise Budget –Kweneng District

Total costs of production;

Total costs of production for Onions include planting material, fertilizers, agro chemicals, direct labour costs, other pre-harvest costs, harvest and distribution costs and other variable costs. Table 7; below indicate the total cost of production for onions amounted to P15, 323.80.

Table 7: Total production costs for onions –Kweneng District

	BWP	% of total costs
Planting material	1,600.00	10%
Fertilizers	1,450.00	9%
Agrochemicals	220.00	1%
Labour costs	1,900.00	12%
Other pre-harvest costs*	1,250.00	8%
Harvest and distribution costs	2,738.80	18%
Other variable costs	6,165.00	40%
	15,323.80	100%

Figure 11: Distribution of production costs for onions-Kweneng District

Distribution of production costs for Onion

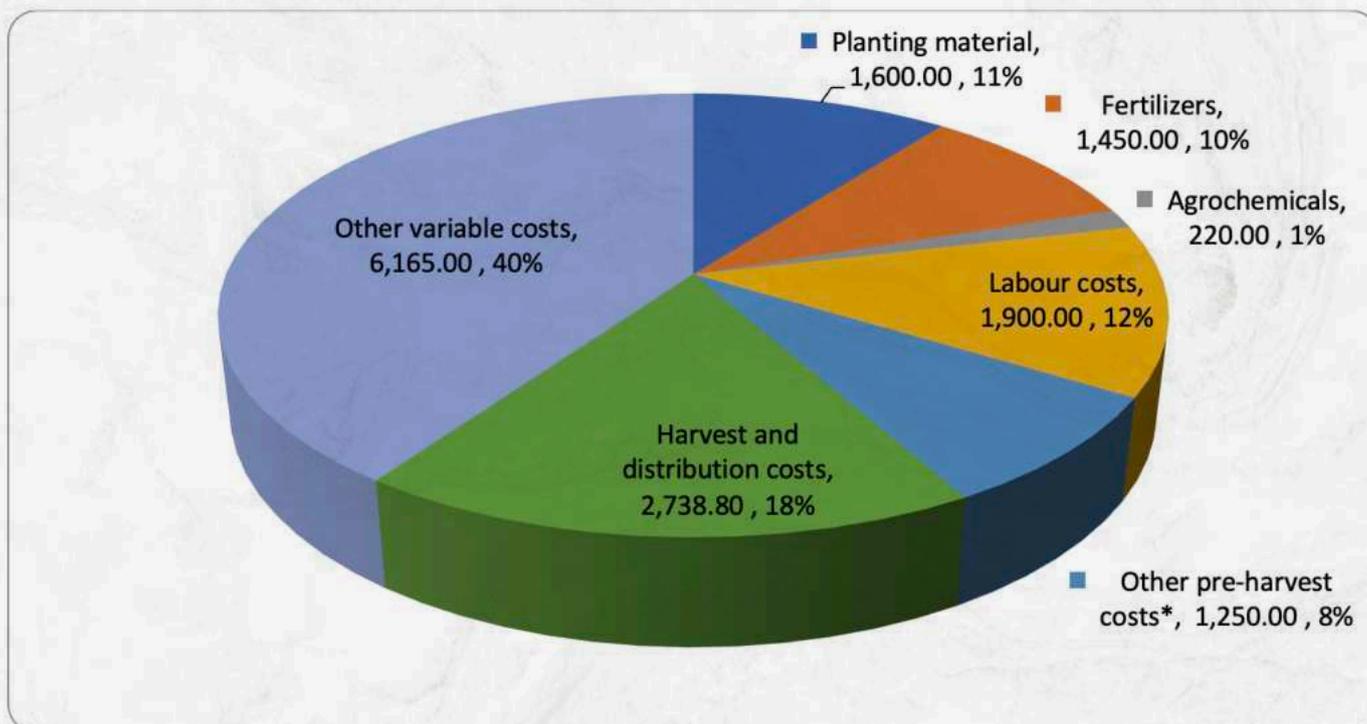


Figure 12: Detailed enterprise budget for onion in Kweneng District;

Onion enterprise BUDGET		Kweneng District - Mmutle					Unit value /
Sr.no	Cropping Area - 1 HA-Open Field					Per HA	
	Cropping in months	3 months					
	Item description	Unit	Output	Output	Unit SP	Value	Yield
1	Revenue from produce	basis bundles	bundles 9,388.00	bundles 9,388.00	bundle 6.00	in BWP 56,328.00	BWP/unit 6.00
	Sold in bundles mainly to hawkers						
2	VARIABLE COSTS (VC)		Quantity	Unit cost		Total cost	Cost / unit
2.1	PRODUCTION COSTS						
2.1.1	Planting material						
	Seeds 1 Kg	1 Kg	2	800.00		1,600.00	0.17
2.1.2	Fertilizers						
i	2:3:2 basal dressing	50 kg	1	450.00		450.00	0.05

ii	Kraal manure	loads	4	250.00		1,000.00	0.11
2.1.3	Pesticides Insecticides						
i	Cytametrine	1 litre	1	220.00		220.00	0.02
2.1.4	Permanent farm workers						
	Direct Labour	Per month	2	750.00		1,500.00	0.16
	Labour harvesting	4md*2	8	50.00		400.00	0.04
2.1.5	Other Pre Harvest costs						
	Land preparation	Tractor hire	1	1,250.00		1,250.00	0.13
	TOTAL PRE-HAVERST COSTS					6,420.00	0.68
3	POST HAVERST COSTS (VC)						
3.1	Harvest and distribution costs						
	Rubber bands	10kg	9,388	0.10		939	0.10
	Transport to the market	per trip	4	450.00		1,800.00	0.19
3.2	Other variable utilities						
	Airtime	Per month	3	375.00		1,125.00	0.12
	Diesel -Borehole	per week	12	420.00		5,040.00	0.54
	TOTAL POST HAVERST COSTS					3,863.80	0.41
4	TOTAL VARIABLE COSTS (VC)					9,158.80	0.98
5	OTHER VARIABLE COSTS					6,165.00	0.66
6	GROSS MARGIN					41,004.20	4.37
7	GROSS MARGIN %					73%	73%

Key Assumptions

- The yield is approximately 9,388 bundles of onions in a cropping area of one (1) hectare (HA). The yield, has taken into account the normal and abnormal losses / wastage experienced during production.
- It is not clear how many plants were grown for this production. The farmer had purchased two (2) packets of 1 Kg seeds.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established to be P6/ bundle. This is the price at which produce is sold to the market. The farmer indicated that almost all produce was sold to hawkers.
- The gross margin is calculated by subtracting the variable costs from the revenue. The gross margin % is the gross margin expressed as percentage of revenue.
- Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- The yields, revenue, variable costs and fixed costs vary from one farmer to the other in the district.
- The yields are dependent on other variables such as climatic conditions in each ecological zone, farming practices, and the choice of inputs (fertilizers and agro chemicals) applied.
- The gross profit margin for onion enterprise is approximately 73%, as indicated in the enterprise budget.

i. It is important to note that overheads or other operational costs are not included in the budget. These costs should be accounted for when compiling the whole farm budget. Examples of overheads include costs such as; depreciation of assets, interests / finance charges, bank charges, stationery, salaries of non production employees, etc.

Sensitivity analysis: Below is the sensitivity analysis for the actual output of onions for an enterprise budget in figure 12.

		Revenue			Actual	Increase (+)			
		Decrease (-)				Price	10.0%	20.0%	30.0%
		30.0%	20.0%	10.0%					
		Output	-112.00	-128.00	-144.00	160.00	176.00	192.00	208.00
Revenue at different level of output									
MINUS	30%	56.00	-6,272.00	-7,168.00	-8,064.00	8,960.00	9,856.00	10,752.00	11,648.00
	20%	64.00	-7,168.00	-8,192.00	-9,216.00	10,240.00	11,264.00	12,288.00	13,312.00
	10%	72.00	-8,064.00	-9,216.00	-10,368.00	11,520.00	12,672.00	13,824.00	14,976.00
	Revenue	80.00	-8,960.00	-10,240.00	-11,520.00	12,800.00	14,080.00	15,360.00	16,640.00
PLUS	10.0%	88.00	-9,856.00	-11,264.00	-12,672.00	14,080.00	15,488.00	16,896.00	18,304.00
	20.0%	96.00	-10,752.00	-12,288.00	-13,824.00	15,360.00	16,896.00	18,432.00	19,968.00
	30.0%	104.00	-11,648.00	-13,312.00	-14,976.00	16,640.00	18,304.00	19,968.00	21,632.00

		Total Variable Costs (TVC)			Actual	Increase (+)			
		Decrease (-)				cost	10.0%	20.0%	30.0%
		30.0%	20.0%	10.0%					
		Output	-178.52	-204.03	-229.53	255.03	280.54	306.04	331.54
Total Variable costs at different level of output									
MINUS	30.0%	56.00	-9,997.34	-11,425.54	-12,853.73	14,281.92	15,710.11	17,138.30	18,566.49
	20.0%	64.00	-11,425.54	-13,057.75	-14,689.97	16,322.19	17,954.41	19,586.63	21,218.85
	10.0%	72.00	-12,853.73	-14,689.97	-16,526.22	18,362.47	20,198.71	22,034.96	23,871.21
	Total Cost	80.00	-14,281.92	-16,322.19	-18,362.47	20,402.74	22,443.02	24,483.29	26,523.56
PLUS	10.0%	88.00	-15,710.11	-17,954.41	-20,198.71	22,443.02	24,687.32	26,931.62	29,175.92
	20.0%	96.00	-17,138.30	-19,586.63	-22,034.96	24,483.29	26,931.62	29,379.95	31,828.28
	30.0%	104.00	-18,566.49	-21,218.85	-23,871.21	26,523.56	29,175.92	31,828.28	34,480.63

7. Constraints to production of onions.

Table 8; indicate the constraints to production of the crops presented in the budgets as shared by farmers interviewed for the enterprise budgets in each District.

Table 8: Constraints / challenges to production for the five selected crops in each budget District;

Name of crop	Constraints to production for selected crops per District	
Onion	Kgatleng District	<ul style="list-style-type: none"> Excessive heat affects the onion springs, making them to dry up before maturity. During harvest, when there is rainfall or cloudy, the onion takes time to dry and end developing fungus.
	North East District	<ul style="list-style-type: none"> Excess rain fall is cited as one of the constraints in production. The respondent indicated excess rainfall leads to flooding thereby creating an opportunity for fungal infestations. Unavailability of water for irrigation – The farmer depends on flowing river water, which sometimes dries out thus affecting production.
	Central District	<ul style="list-style-type: none"> Unfavorable weather conditions greatly affect produce Shortage of labour
	South East District	<ul style="list-style-type: none"> Too much heat affects produce and yields.
	Ngami District	<ul style="list-style-type: none"> Pests are the main challenge.
	Kweneng District	<ul style="list-style-type: none"> Unfavorable weather conditions.

ANNEXURE 1: Enterprise Budget Data collection tool

Name of respondent	
Farm Location	
District	
Name of crop / vegetable	
Months taken from planting to harvest	

A.1 Collect data on quantities sold for a 1 HA production and the unit selling price for the product;

					Unit SP
		<i>basis</i>	<i>in Tonnes / heads/ bundles</i>	<i>in Kgs/ heads/ bundle</i>	<i>P/ Kg , head, bundles, etc</i>
1.					

B. Collect data on cost of seeds, fertilizers, pesticides and labour for 1 HA production

2	VARIABLE COSTS (VC)	<i>Basis</i>	<i>Quantity</i>	<i>Unit cost</i>
2.1	PRODUCTION COSTS			
2.1.1	Planting material			
	Seed / seedlings			
2.1.2	Fertilizers			
i				
ii				
iii				
iv				
v				
2.1.3	Herbicides			
i				
ii				
iii				
iv				
2.1.4	Pesticides Insecticides			
i				
ii				
iii				
iv				
2.1.5	Fungicides			
i				
ii				
iii				
iv				
2.1.6	Permanent farm workers			
	Direct Labour	<i>man days</i>		
2.1.7	Casual labour			
	Labour planting	<i>man days</i>		
	Labour fertilization and chemicals	<i>man days</i>		
	Labour weeding	<i>man days</i>		
	Labour irrigation set up and management	<i>man days</i>		
3	Marketing and distribution costs			
	Transport to market	<i>Per trip / fuel cost</i>		
	Airtime used	<i>Per month</i>		
	Packaging materials used			
4	Other variable costs			
	Diesel for borehole engine (if any)			
	Transporting inputs to farm			
	Other costs _____ list them			

Notes:

a. Enquire on the rate for casual labour

C. Constraints to production

Ask the farmer on constraints to production, affecting the production and yields.
(Production related challenges only)

