



LOCAL ENTERPRISE AUTHORITY



# CABBAGE ENTERPRISE BUDGETS

**Prepared as part of**

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

*(A study Commissioned by Local Enterprise Authority)*

**DATE:** March 2024

# TABLE OF CONTENTS

<b>1. INTRODUCTION</b>	<b>Page(s)</b> <b>1</b>
<b>2. APPROACH AND METHODOLOGY</b>	<b>1-2</b>
<b>3. ENTERPRISE BUDGET FRAMEWORK</b>	<b>2-3</b>
<b>4. SAMPLING OF RESPONDENTS</b>	<b>3</b>
<b>5. LIMITATIONS TO ENTERPRISE BUDGETING</b>	<b>3-4</b>
<b>6. CABBAGE ENTERPRISE BUDGETS</b>	<b>4-24</b>
<b>7. CONSTRAINTS TO PRODUCTION OF CABBAGE</b>	<b>24-26</b>

## LIST OF TABLES;

Table 1	Districts selected for enterprise budgeting
Table 2	Total production costs for cabbage –Kgatleng District
Table 3	Total production costs for cabbage –Ngami District
Table 4	Total Production costs for cabbage –Kweneng District
Table 5	Total production costs for cabbage –Boteti District
Table 6	Total production costs for cabbage –Central District
Table 7	Constraints to production of Cabbage

## LIST OF FIGURES;

Figure 1	Distribution of production costs for cabbage –Kgatleng District
Figure 2	Detailed Enterprise Budget for Cabbage –Kgatleng District
Figure 3	Distribution of production costs for cabbage –Ngami District
Figure 4	Detailed Enterprise Budget for cabbage –Ngami District
Figure 5	Distribution of production costs for cabbage –Kweneng District
Figure 6	Detailed Enterprise Budget for cabbage –Kweneng District
Figure 7	Distribution of production costs for cabbage –Boteti District
Figure 8	Detailed Enterprise Budget for cabbage –Boteti District
Figure 9	Distribution of production costs for cabbage –Central District
Figure 10	Detailed Enterprise Budget for cabbage –Central District

## ANNEXURES:

Annexure 1	Enterprise Budget Data Collection tool ( Sample Questionnaire)	Page 24-26
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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 crops (enterprises) namely; cabbage, tomato, potato, onion and rape. This report contains the enterprise budgets for the cabbage enterprise. The purpose of the cabbage enterprise budgets is to measure the efficiency and relative profitability of cabbage as shared by farmers in various Districts considered during the enterprise budgeting.

## 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 cabbage during the enterprise budgeting exercise. The constraints to production of cabbage as shared by the farmers are documented in Table 7- Common constraints / challenges in production of cabbage.

### 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	<b>REVENUE ( R )</b> ( yields * unit selling price)	xxx	xxx
2	<b>LESS TOTAL VARIABLE COSTS (TVC)</b>		
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
	<b>Total Variable Costs (TVC)</b>	xxx	xxx
3	<b>GROSS MARGIN</b>	xxx	xxx
4	<b>GROSS MARGIN%</b>	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 crop type and the districts in which respondents were selected;

Table 1: Districts selected for enterprise budgeting

Cabbage
Kgatleng District
Ngami District
Kweneng District
Boteti District

## 5. LIMITATIONS TO ENTERPRISE

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. CABBAGE ENTERPRISE BUDGETS

### 6.1 Cabbage Enterprise Budget –Kgatleng District

Total costs of production; Total costs of production for cabbage 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 cabbage amounted to P51, 020.50

**Table 2: Total production costs for cabbage - Kgatleng District**

	<b>BWP / HA</b>	<b>% of total costs</b>
Planting material	7,800.00	15%
Fertilizers	8,846.00	17%
Agrochemicals-Pesticides, fungicides, etc	12,800.00	25%
Labour costs	6,000.00	12%
Other pre-harvest costs*	1,400.00	3%
Harvest and distribution costs	12,299.50	24%
Other variable costs	1,875.00	4%
<b>Total production costs</b>	<b>51,020.50</b>	<b>100%</b>

Distribution of production costs for cabbage; Figure 5 indicate that planting material costs make up the largest percentage of the total cost of production at 22%, while fertilizers, agro chemicals, direct labour, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 17%,16%,13%,9%,14% and 9% of the total production cost respectively;

Figure 5: Distribution of production costs for cabbage-Kweneng District

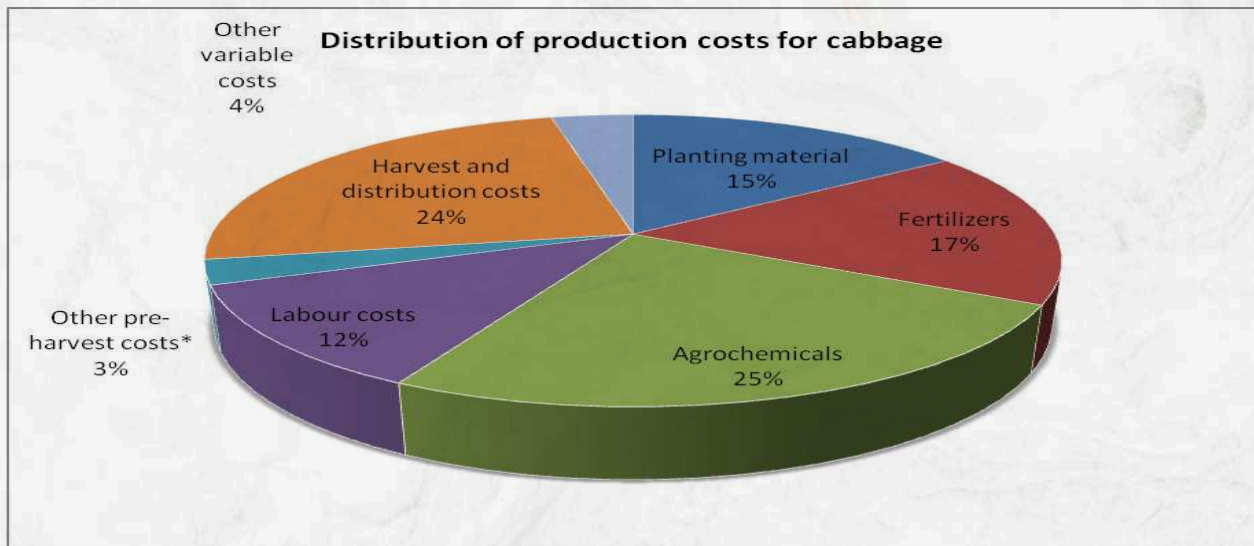


Figure 2: Detailed enterprise budget for cabbage in the Kgatleng district;

Cabbage enterprise BUDGET-Open Field		Kgatleng District (Malotwana)					
Sr.no	Cropping Area-1 HA-open field					Per HA	
Cropping in months		3 months					
Item description		Unit	Output	Unit SP	Value	Unit value	
		basis	heads	Per head	in BWP	BWP / unit	
1	Revenue from produce	Heads	-	9,600.00	10.00	96,000.00	10.00
2	<b>VARIABLE COSTS (VC)</b>		<b>Quantity</b>	<b>Unit cost</b>		<b>Total cost</b>	<b>Cost / unit</b>
2.1	<b>PRODUCTION COSTS</b>						
2.1.1	<b>Planting material</b>						
	Seeds-1,000 in a packet	Packets	10	780.00		7,800.00	0.81
2.1.2	<b>Fertilizers</b>						
i	Multi feed	5kg	4	575.00		2,300.00	0.24

ii	Basal-dressing 2:3:2 / 3:2:1	50Kg	4	560.00		2,240.00	0.23
iii	Top dressing 5:3:2	50Kg	4	750.00		3,000.00	0.31
iv	Urea	25Kg	1	526.00		526.00	0.05
v	Potassium	25Kg	1	780.00		780.00	0.08
<b>2.1.3</b>	<b>Pesticides</b>						
i	Platoon	5 litres	8	1,070.00		8,560.00	0.89
ii	Steward (insecticide)	1 litre	2	1,340.00		2,680.00	0.28
iii	Savage (350)	1 litre	2	780.00		1,560.00	0.16
						-	-
<b>2.1.4</b>	<b>Permanent farm workers</b>						
	Direct Labour	Per month	3	2,000.00		6,000.00	0.63
<b>2.1.5</b>	<b>Casual labour</b>						
<b>2.1.6</b>	<b>Other Pre Harvest costs</b>						
	Transport of inputs to the farm	per trip	1	400.00		400.00	0.04
	Land preparation	Tractor hire	1	1,000.00		1,000.00	0.10
	<b>TOTAL PRE-HARVEST COSTS</b>					<b>36,846.00</b>	<b>3.84</b>
<b>3</b>	<b>POST HARVEST COSTS ( VC)</b>						
<b>3.1</b>	<b>Harvest and distribution costs</b>						
	Casual labour @ 3 people @50 /day	man days	6	150.00		900.00	0.09
	Packaging material -10kg bags	1,111 bags	1,111	4.50		5,000	0.52
	Transport to the market	per trip	8	800.00		6,400.00	0.67
<b>3.2</b>	<b>Other Variable costs</b>						
	Electricity -borehole	Per month	3	250.00		750.00	0.08
	Fuel -Booster pump	Per week	12	75.00		900.00	0.09
	Airtime	Per month	3	75.00		225.00	0.02
	<b>TOTAL POST HARVEST COSTS</b>					<b>14,174.50</b>	<b>1.48</b>
<b>4</b>	<b>TOTAL VARIABLE COSTS (VC)</b>					<b>49,145.50</b>	<b>5.12</b>
<b>5</b>	<b>OTHER VARIABLE COSTS</b>					<b>1,875.00</b>	<b>0.20</b>
<b>6</b>	<b>GROSS MARGIN</b>					<b>44,979.50</b>	<b>4.69</b>
<b>7</b>	<b>GROSS MARGIN %</b>					<b>47%</b>	<b>47%</b>

### Key assumptions;

- The yield is approximately 15,300 heads 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 18,000 plants as indicated in the budget. This means, there was a loss of approximately 2,700 plants during production.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established as P10 per head of cabbage. This is the price at which produce is sold to the market.



d. 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.

e. Net profit margin is calculated by subtracting the fixed costs from the gross margin.

f. 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 cabbage enterprise is approximately 65%, 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 cabbage for an enterprise budget in figure 6.

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

		Revenue (R)							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	Price	10.0%	20.0%	30.0%	
	<b>Output</b>	-7.00	-8.00	-9.00	10.00	11.00	12.00	13.00	
<b>Revenue at different levels of output</b>									
MINUS	<b>30%</b>	6,720.00	-47,040.00	-53,760.00	-60,480.00	67,200.00	73,920.00	80,640.00	87,360.00
	<b>20%</b>	7,680.00	-53,760.00	-61,440.00	-69,120.00	76,800.00	84,480.00	92,160.00	99,840.00
	<b>10%</b>	8,640.00	-60,480.00	-69,120.00	-77,760.00	86,400.00	95,040.00	103,680.00	112,320.00
	<b>Revenue</b>	9,600.00	-67,200.00	-76,800.00	-86,400.00	<b>96,000.00</b>	105,600.00	115,200.00	124,800.00
PLUS	<b>10.0%</b>	10,560.00	-73,920.00	-84,480.00	-95,040.00	105,600.00	116,160.00	126,720.00	137,280.00
	<b>20.0%</b>	11,520.00	-80,640.00	-92,160.00	103,680.00	115,200.00	126,720.00	138,240.00	149,760.00
	<b>30.0%</b>	12,480.00	-87,360.00	-99,840.00	112,320.00	124,800.00	137,280.00	149,760.00	162,240.00

		Total Variable Costs (TVC)							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	Cost	10.0%	20.0%	30.0%	
<b>Total Variable costs (TVC) at different levels of output</b>									

		Output	-3.72	-4.25	-4.78	5.31	5.85	6.38	6.91
MINUS	30.0%	6,720.00	-25,000.05	-28,571.48	-32,142.92	35,714.35	39,285.79	42,857.22	46,428.66
	20.0%	7,680.00	-28,571.48	-32,653.12	-36,734.76	40,816.40	44,898.04	48,979.68	53,061.32
	10.0%	8,640.00	-32,142.92	-36,734.76	-41,326.61	45,918.45	50,510.30	55,102.14	59,693.99
	<b>Total Cost</b>	9,600.00	-35,714.35	-40,816.40	-45,918.45	<b>51,020.50</b>	56,122.55	61,224.60	66,326.65
PLUS	10.0%	10,560.00	-39,285.79	-44,898.04	-50,510.30	56,122.55	61,734.81	67,347.06	72,959.32
	20.0%	11,520.00	-42,857.22	-48,979.68	-55,102.14	61,224.60	67,347.06	73,469.52	79,591.98
	30.0%	12,480.00	-46,428.66	-53,061.32	-59,693.99	66,326.65	72,959.32	79,591.98	86,224.65

## 6.2 Cabbage Enterprise Budget –Ngami District

### Total costs of production;

Total costs of production for cabbage 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 cabbage amounted to P46, 163.

Table 3: Total production costs for cabbage –Ngami District

<b>Table 3: Total production costs</b>	<b>BWP / HA</b>	<b>% of total costs</b>
Planting material	2,760.00	6%
Fertilizers	7,564.00	16%
Agrochemicals	7,704.00	17%
Labour costs	18,935.00	41%
Other pre-harvest costs*	1,500.00	3%
Harvest and distribution costs	2,000.00	4%
Other variable costs	5,700.00	12%
	<b>46,163.00</b>	<b>100%</b>

**Distribution of production costs for cabbage;** Figure 3 indicate that direct labour costs make up the largest percentage of the overall costs at 41%, while planting material, fertilizers, agro chemicals, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 6%,17%,17%,3%,4% and 12% of the total production cost respectively;

### Figure 3: Distribution of production costs for cabbage-Ngami District

### Distribution of production costs for cabbage

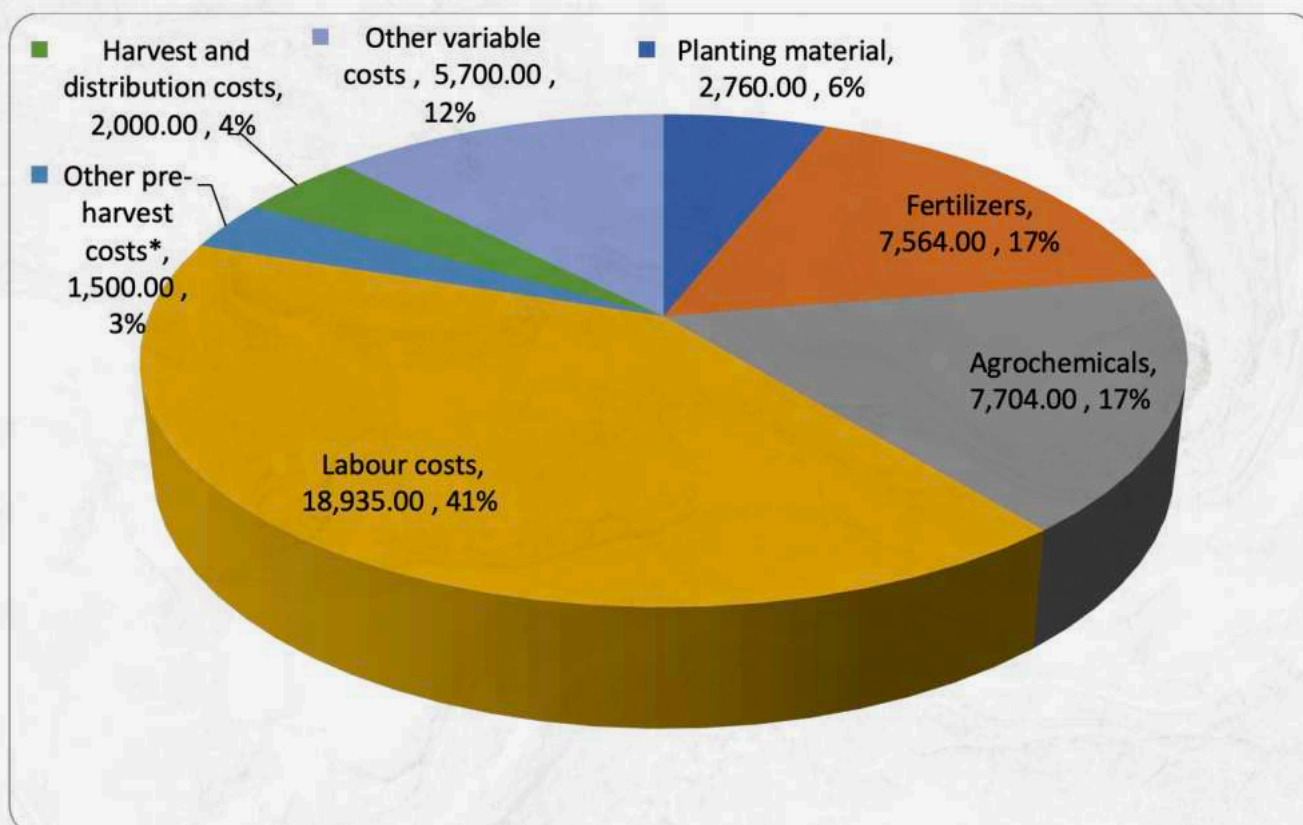


Figure 4: Detailed enterprise budget for cabbage in the Ngami district;

Cabbage enterprise BUDGET		Ngami District (Maun)					
Sr.no	Cropping Area-1 HA-open field					Per HA	
	Cropping in months	3 months					
	Item description	Unit		Output	Unit SP	Value	Yield
		basis		heads	Per head	in BWP	BWP / unit
1	Revenue from produce	Heads	-	10,000.00	12.00	120,000.00	12.00
<b>2</b>	<b>VARIABLE COSTS (VC)</b>		<b>Quantity</b>	<b>Unit cost</b>		<b>Total cost</b>	<b>Cost / unit</b>
<b>2.1</b>	<b>PRODUCTION COSTS</b>						
<b>2.1.1</b>	<b>Planting material</b>						
i	Seeds-12,000 in a packet	Seeds	12,000	0.08		960.00	0.10
ii	Coco Peat ( blocks)	Blocks	15	120.00		1,800.00	0.18
<b>2.1.2</b>	<b>Fertilizers</b>						
i	Multi feed	1 Kg	5	230.00		1,150.00	0.12
ii	Fertilizer -2:3:4	50Kg	4	640.00		2,560.00	0.26
iii	Calcium	25Kg	1	400.00		400.00	0.04
iv	Kelp	20 Litres	1	800.00		800.00	0.08
v	Urea	50 Kg	2	428.00		856.00	0.09
vi	Chicken manure	Tonne	1	500.00		500.00	0.05

vii	Goat manure	Tonne	1	500.00		500.00	0.05
viii	LAN	50Kg	2	399.00		798.00	0.08
<b>2.1.3</b>	<b>Pesticides Insecticides</b>						
i	Curetta	5Kg	3	499.00		1,497.00	0.15
ii	Methomax	1 Kg	4	500.00		2,000.00	0.20
iii	Savage	5 Litres	1	1,800.00		1,800.00	0.18
iv						-	-
<b>2.1.4</b>	<b>Fungicides</b>						
i	Ventex	1 Kg	3	299.00		897.00	0.09
ii	Benolin	1 Kg	3	370.00		1,110.00	0.11
iii	Copper count	5 Litres	1	400.00		400.00	0.04
						-	-
<b>2.1.5</b>	<b>Permanent farm workers</b>						
i	Direct Labour	Per month	5	3,667.00		18,335.00	1.83
<b>2.1.6</b>	<b>Casual labour</b>						
i	Weeding	4*3md	12	50.00		600.00	0.06
						-	-
<b>2.1.7</b>	<b>Other Pre Harvest costs</b>						
i	Transport of inputs to the farm	per trip	1	1,500.00		1,500.00	0.15
						-	-
	<b>TOTAL PRE-HARVEST COSTS</b>					<b>38,463.00</b>	<b>3.85</b>
<b>3</b>	<b>POST HARVEST COSTS ( VC)</b>						
<b>3.1</b>	<b>Harvest and distribution costs</b>						
i	Packaging ( sold loose as heads)	0	-	-		-	-
ii	Transport to the market	per trip	10	200.00		2,000.00	0.20
<b>3.2</b>	<b>Other variable costs</b>						
i	Electricity	Per month	3	1,200.00		3,600.00	0.36
ii	Fuel motor vehicle for delivery	Per month	3	400.00		1,200.00	0.12
iii	Airtime and internet	Per month	3	300.00		900.00	0.09
	<b>TOTAL POST HARVEST COSTS</b>					<b>7,700.00</b>	<b>0.77</b>
<b>4</b>	<b>TOTAL VARIABLE COSTS (VC)</b>					<b>40,463.00</b>	<b>4.05</b>
<b>5</b>	<b>OTHER VARIABLE COSTS</b>					<b>5,700.00</b>	<b>0.57</b>
<b>6</b>	<b>GROSS MARGIN</b>					<b>73,837.00</b>	<b>7.38</b>
<b>7</b>	<b>GROSS MARGIN %</b>					<b>62%</b>	<b>62%</b>

### Key Assumptions:

- The yield is approximately 10,350 heads 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 11,500 plants as indicated in the budget. This means, there was a loss of approximately 1,150 plants during production.

- c. The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established as P15 per head of cabbage. This is the price at which produce is sold to the market.
- d. 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.
- e. Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- f. 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 cabbage enterprise is approximately 55%, 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 cabbage for an enterprise budget in figure 8.

		Revenue (R)							
		Decrease (-)			Price	Increase (+)			
		30.0%	20.0%	10.0%	12.00	10.0%	20.0%	30.0%	
		Output	-8.40	-9.60	-10.80		13.20	14.40	15.60
		Revenue at different level of output							
MINUS	30%	7,000.00	-58,800.00	-67,200.00	-75,600.00	84,000.00	92,400.00	100,800.00	109,200.00
	20%	8,000.00	-67,200.00	-76,800.00	-86,400.00	96,000.00	105,600.00	115,200.00	124,800.00
	10%	9,000.00	-75,600.00	-86,400.00	-97,200.00	108,000.00	118,800.00	129,600.00	140,400.00
	Revenue	10,000.00	-84,000.00	-96,000.00	108,000.00	120,000.00	132,000.00	144,000.00	156,000.00
PLUS	10.0%	11,000.00	-92,400.00	105,600.00	118,800.00	132,000.00	145,200.00	158,400.00	171,600.00
	20.0%	12,000.00	100,800.00	115,200.00	129,600.00	144,000.00	158,400.00	172,800.00	187,200.00
	30.0%	13,000.00	109,200.00	124,800.00	140,400.00	156,000.00	171,600.00	187,200.00	202,800.00

		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	-4.68	-5.35	-6.02	6.69	7.36	8.03	8.70
MINUS	30.0%	7,245.00	-33,931.20	-38,778.51	-43,625.82	48,473.14	53,320.45	58,167.77	63,015.08
	20.0%	8,280.00	-38,778.51	-44,318.30	-49,858.08	55,397.87	60,937.66	66,477.45	72,017.23
	10.0%	9,315.00	-43,625.82	-49,858.08	-56,090.35	62,322.61	68,554.87	74,787.13	81,019.39
	<b>Total Cost</b>	10,350.00	-48,473.14	-55,397.87	-62,322.61	<b>69,247.34</b>	76,172.07	83,096.81	90,021.54
PLUS	10.0%	11,385.00	-53,320.45	-60,937.66	-68,554.87	76,172.07	83,789.28	91,406.49	99,023.70
	20.0%	12,420.00	-58,167.77	-66,477.45	-74,787.13	83,096.81	91,406.49	99,716.17	108,025.85
	30.0%	13,455.00	-63,015.08	-72,017.23	-81,019.39	90,021.54	99,023.70	108,025.85	117,028.00

### 6.3 Cabbage Enterprise Budget –Kweneng District

#### Total costs of production;

Total costs of production for cabbage 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 cabbage amounted to P54, 096.65.

**Table 4: Total production costs for cabbage –Kweneng District**

	BWP /HA	% of total costs
Planting material	11,700.00	22%
Fertilizers	9,491.00	18%
Agrochemicals	8,665.05	16%
Labour costs	7,000.00	13%
Other pre-harvest costs*	5,100.00	9%
Harvest and distribution costs	7,500.00	14%
Other variable costs	4,640.00	9%
	<b>54,096.05</b>	<b>100%</b>

**Distribution of production costs for cabbage;** Figure 5 indicate that planting material costs make up the largest percentage of the total cost of production at 22%, while fertilizers, agro chemicals, direct labour, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 17%,16%,13%,9%,14% and 9% of the total production cost respectively;

**Figure 5: Distribution of production costs for cabbage-Kweneng District**

## Distribution of production costs for cabbage

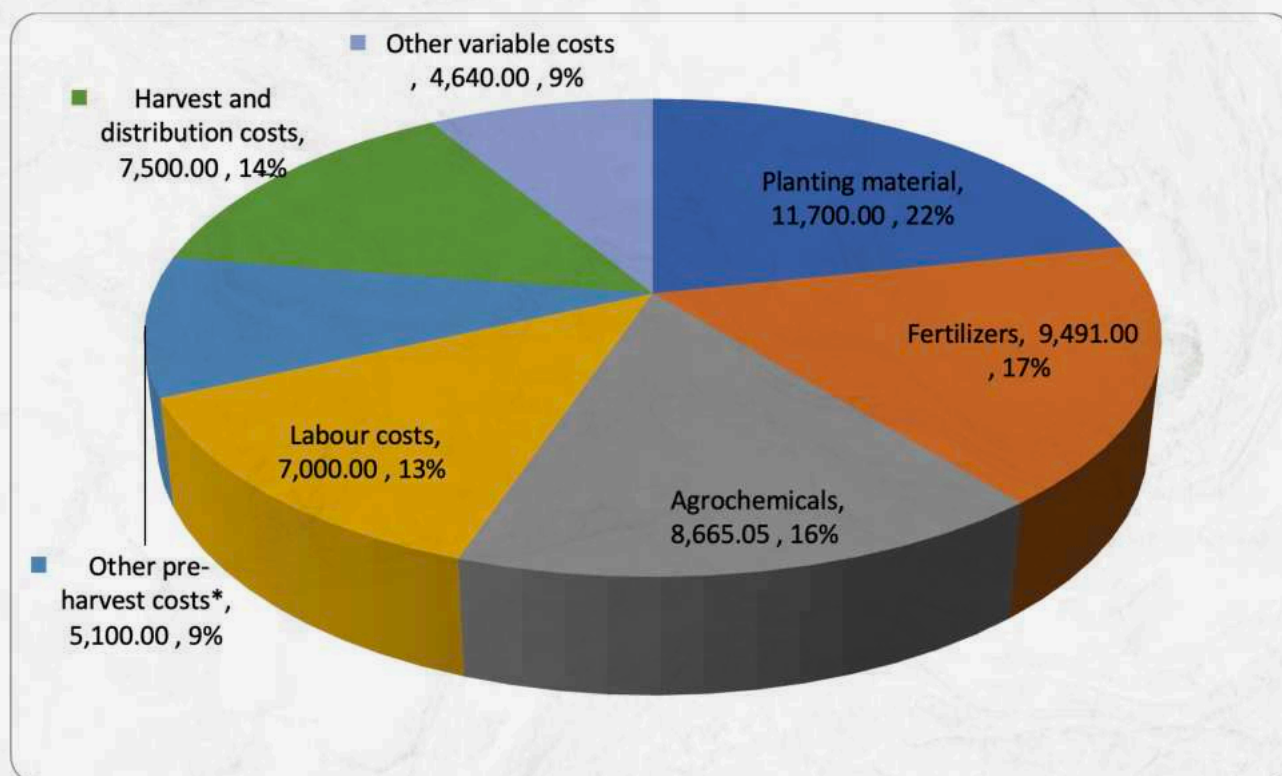


Figure 6: Detailed enterprise budget for cabbage in the Kweneng district;

Cabbage enterprise BUDGET			Kweneng District ( Takatokwane)				
Sr.no	Cropping Area-1 HA-open field					Per HA	
	Cropping in months	3 months					
	Item description	Unit		Output	Unit SP	Value	Yield
		basis		heads	Per head	in BWP	BWP / unit
1	Revenue from produce	Heads	-	15,300.00	10.00	153,000.00	10.00
<b>2</b>	<b>VARIABLE COSTS (VC)</b>		<b>Quantity</b>	<b>Unit cost</b>		<b>Total cost</b>	<b>Cost / unit</b>
<b>2.1</b>	<b>PRODUCTION COSTS</b>						
<b>2.1.1</b>	<b>Planting material</b>						
<b>i</b>	Seeds	Seeds	18,000	0.65		11,700.00	0.76
						-	-
<b>2.1.2</b>	<b>Fertilizers</b>						
<b>i</b>	NPK	50 kg	4	594.00		2,376.00	0.16
<b>ii</b>	Potassium Phosphate	25Kg	3	935.00		2,805.00	0.18
<b>iii</b>	Calcium Nitrate	25kg	3	310.00		930.00	0.06
<b>iv</b>	LAN	50kg	2	498.00		996.00	0.07
<b>v</b>	MAP	25kg	2	955.00		1,910.00	0.12
<b>vi</b>	Magnesium Sulphate	25kg	2	237.00		474.00	0.03
						-	-
<b>2.1.3</b>	<b>Pesticides Insecticides</b>						

i	Cypermethrin 200EC	1 Litre	1	165.00		165.00	0.01
ii	Villa Judo 50EC	1 Litre	1	124.70		124.70	0.01
	Villa Prime 50EC	1 Litre	1	279.56		279.56	0.02
	Villa Tamron	1 Litre	1	1,263.76		1,263.76	0.08
<b>2.1.4</b>	<b>Fungicides</b>						
	Agrizor Tebucure	1 Litre	1	480.62		480.62	0.03
	Villa Trinosad 480SC	1 Litre	1	4,713.17		4,713.17	0.31
	Allbuff	5 litres	1	210.00		210.00	0.01
	Copstar	1 Litre	1	125.62		125.62	0.01
	Orosop	5 litres	1	1,182.00		1,182.00	0.08
	Fighter	1 Litre	1	120.62		120.62	0.01
<b>2.1.5</b>	<b>Permanent farm workers</b>						
i	Direct Labour	per month	3	1,100.00		3,300.00	0.22
<b>2.1.6</b>	<b>Casual labour</b>						
i	Labour planting	2md	2	500.00		1,000.00	0.07
	Labour fertilization and chemicals	2md	2	350.00		700.00	0.05
	Labour weeding	2md	2	1,000.00		2,000.00	0.13
	Labour irrigation and set up management	0				-	-
<b>2.1.7</b>	<b>Other Pre Harvest costs</b>						
i	Fuel to purchase inputs	fuel	200	17.50		3,500.00	0.23
ii	Land preparation	Tractor	1	1,600.00		1,600.00	0.10
	<b>TOTALPRE-HARVEST COSTS</b>					<b>41,956.05</b>	<b>2.74</b>
<b>3</b>	<b>POST HARVEST COSTS ( VC)</b>						
<b>3.1</b>	<b>Harvest and distribution costs</b>						
						-	-
i	No packaging ( sold in loose heads)					-	-
ii	Transport to the market	per trip	10	750.00		7,500.00	0.49
<b>3.2</b>	<b>Other variable costs</b>						
i	Diesel for borehole	litres	80	13.00		1,040.00	0.07
						-	-
ii	Airtime and internet	Per month	3	1,200.00		3,600.00	0.24
	<b>TOTAL POST HARVEST COSTS</b>					<b>12,140.00</b>	<b>0.79</b>
<b>4</b>	<b>TOTAL VARIABLE COSTS (VC)</b>					<b>49,456.05</b>	<b>3.23</b>
<b>5</b>	<b>OTHER VARIABLE COSTS</b>					<b>4,640.00</b>	<b>0.30</b>
<b>6</b>	<b>GROSS MARGIN</b>					<b>98,903</b>	<b>6.46</b>
<b>7</b>	<b>GROSS MARGIN %</b>					<b>65%</b>	<b>65%</b>



## Key assumptions;

- The yield is approximately 15,300 heads 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 18,000 plants as indicated in the budget. This means, there was a loss of approximately 2,700 plants during production.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established as P10 per head of cabbage. 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 cabbage enterprise is approximately 65%, 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 cabbage for an enterprise budget in figure 6.**

		Revenue ( R )			Actual	Increase (+)			
		Decrease (-)				Price	10.0%	20.0%	30.0%
		Output	30.0%	20.0%	10.0%	10.00	11.00	12.00	13.00
		Revenue at different levels of output							
MINUS	30%	10,710.00	-74,970.00	-85,680.00	-96,390.00	107,100.00	117,810.00	128,520.00	139,230.00
	20%	12,240.00	-85,680.00	-97,920.00	-110,160.00	122,400.00	134,640.00	146,880.00	159,120.00
	10%	13,770.00	-96,390.00	-110,160.00	-123,930.00	137,700.00	151,470.00	165,240.00	179,010.00
	<b>Revenue</b>	15,300.00	-107,100.00	-122,400.00	-137,700.00	<b>153,000.00</b>	168,300.00	183,600.00	198,900.00
PLUS	10.0%	16,830.00	-117,810.00	-134,640.00	-151,470.00	168,300.00	185,130.00	201,960.00	218,790.00
	20.0%	18,360.00	-128,520.00	-146,880.00	-165,240.00	183,600.00	201,960.00	220,320.00	238,680.00
	30.0%	19,890.00	-139,230.00	-159,120.00	-179,010.00	198,900.00	218,790.00	238,680.00	258,570.00

		Total Variable Costs (TVC)				Actual cost	Increase (+)		
		Decrease (-)			10.0%		20.0%	30.0%	
		30.0%		20.0%		10.0%			
Total Variable costs at different levels of output									
		Output	-2.47	-2.83	-3.18	3.54	3.89	4.24	4.60
MINUS	30.0%	10,710.00	-26,507.06	-30,293.79	-34,080.51	37,867.24	41,653.96	45,440.68	49,227.41
	20.0%	12,240.00	-30,293.79	-34,621.47	-38,949.16	43,276.84	47,604.52	51,932.21	56,259.89
	10.0%	13,770.00	-34,080.51	-38,949.16	-43,817.80	48,686.45	53,555.09	58,423.73	63,292.38
<b>Total Cost</b>		15,300.00	-37,867.24	-43,276.84	-48,686.45	<b>54,096.05</b>	59,505.66	64,915.26	70,324.87
PLUS	10.0%	16,830.00	-41,653.96	-47,604.52	-53,555.09	59,505.66	65,456.22	71,406.79	77,357.35
	20.0%	18,360.00	-45,440.68	-51,932.21	-58,423.73	64,915.26	71,406.79	77,898.31	84,389.84
	30.0%	19,890.00	-49,227.41	-56,259.89	-63,292.38	70,324.87	77,357.35	84,389.84	91,422.32

## 6.4 Cabbage Enterprise Budget –Boteti District

### Total costs of production;

Total costs of production for cabbage 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 cabbage amounted to P69, 247.34.

Table 5: Total production costs for cabbage –Boteti District

	BWP/HA	% of total costs
Planting material	6,900.00	10%
Fertilizers	11,078.45	16%
Agrochemicals	8,136.39	12%
Labour costs	27,600.00	40%
Other pre-harvest costs*	5,200.00	8%
Harvest and distribution costs	9,732.50	14%
Other variable costs	600.00	1%
	<b>69,247.34</b>	<b>100%</b>

**Distribution of production costs for cabbage;** Figure 7 indicate that labour costs make up the largest percentage of the total cost of production at 40%, while planting material, fertilizers, agro chemicals, other pre-harvest costs, harvest and distribution costs and other variable costs constitute 10%,16%,12%,7%,14% and 1% of the total production cost respectively;

### Figure 7: Distribution of production costs for cabbage-Boteti District

## Distribution of production costs for cabbage

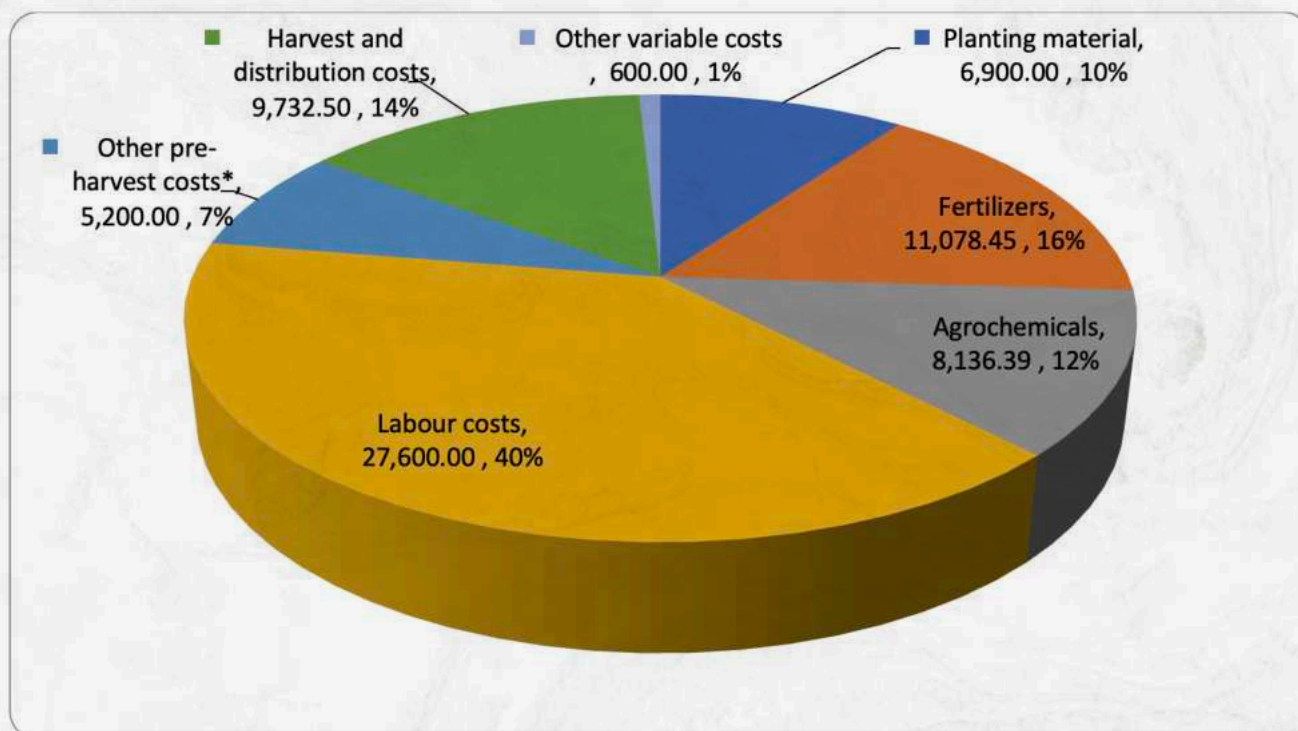


Figure 8: Detailed enterprise budget for cabbage in the Boteti district;

Cabbage enterprise BUDGET			Boteti District ( Letlhakane)				
Sr.no	Cropping Area-1 HA-open field					Per HA	
	Cropping in months	3 months					
	Item description	Unit		Output	Unit SP	Value	Yield
		basis		heads	Per head	in BWP	BWP / unit
1	Revenue from produce	Heads	-	10,350.00	15.00	155,250.00	15.00
<b>2</b>	<b>VARIABLE COSTS (VC)</b>		<b>Quantity</b>	<b>Unit cost</b>		<b>Total cost</b>	<b>Cost / unit</b>
<b>2.1</b>	<b>PRODUCTION COSTS</b>						
<b>2.1.1</b>	<b>Planting material</b>						
i	Seedlings	Seedlings	11,500	0.60		6,900.00	0.67
<b>2.1.2</b>	<b>Fertilizers</b>						
i	Ammonium	50 kg	4	848.65		3,394.60	0.33
ii	Calcium	25Kg	4	648.75		2,595.00	0.25
iii	Potassium	25kg	4	275.65		1,102.60	0.11
iv	Magnesium	25Kg	5	434.25		2,171.25	0.21
v	2:3:2 (Basal)	50kg	3	726.00		1,815.00	0.18
<b>2.1.3</b>	<b>Herbicides</b>						

i	Glyphos	5 litres	1	630.00		630.00	0.06
ii	Ridomil Gold	5 litres	1	919.30		919.30	0.09
<b>2.1.4 Pesticides Insecticides</b>							
i	Agromectin	1 Litre	1	729.89		729.89	0.07
ii	Aphiguard	10 litres	1	1,459.20		1,459.20	0.14
	Cypermethrin	5 Litres	1	498.00		498.00	0.05
	Attacke	5 litres	1	2,090.00		2,090.00	0.20
<b>2.1.5 Fungicides</b>							
	Benomyl	6 kg	1	1,224.00		1,224.00	0.12
	Chloroflo 500SC	5 litres	1	586.00		586.00	0.06
						-	-
<b>2.1.6 Permanent farm workers</b>							
i	Direct Labour	per month	3	8,200.00		24,600.00	2.38
<b>2.1.7 Casual labour</b>							
i						-	-
						-	-
	Labour weeding	10 md	10	300.00		3,000.00	0.29
	Labour irrigation and set up management	0				-	-
<b>2.1.8 Other Pre Harvest costs</b>							
i	Fuel to purchase inputs	fuel	2	2,000.00		4,000.00	0.39
ii	Land preparation	Tractor	1	1,200.00		1,200.00	0.12
<b>TOTAL PRE-HARVEST COSTS (VC)</b>						<b>58,914.84</b>	<b>5.69</b>
<b>3 POST HARVEST COSTS ( VC)</b>							
<b>3.1 Harvest and distribution costs</b>							
						-	-
i	Packaging material	bags	1,150	4.55		5,233	0.51
ii	Transport to the market	per trip	9	500.00		4,500.00	0.43
<b>3.2 Other variable costs</b>							
i	Airtime and internet	Per month	3	200.00		600.00	0.06
<b>TOTAL POST HARVEST COSTS</b>						<b>10,332.50</b>	<b>1.00</b>
<b>4 TOTAL VARIABLE COSTS (VC)</b>						<b>68,647.34</b>	<b>6.63</b>
<b>5 OTHER VARIABLE COSTS</b>						<b>600.00</b>	<b>0.06</b>
<b>6 GROSS MARGIN</b>						<b>86,002.66</b>	<b>8.31</b>
<b>7 GROSS MARGIN %</b>						<b>55%</b>	<b>55%</b>

## Key Assumptions:

- The yield is approximately 10,350 heads 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 11,500 plants as indicated in the budget. This means, there was a loss of approximately 1,150 plants during production.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established as P15 per head of cabbage. 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 cabbage enterprise is approximately 55%, 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 cabbage for an enterprise budget in figure 8.**

		Revenue ( R )							
		Decrease (-)			Actual	Increase (+)			
		30.0%	20.0%	10.0%	Price	10.0%	20.0%	30.0%	
		Output	-10.50	-12.00	-13.50	15.00	16.50	18.00	19.50
		Revenue at different levels of output							
MINUS	30%	7,245.00	-76,072.50	-86,940.00	-97,807.50	108,675.00	119,542.50	130,410.00	141,277.50
	20%	8,280.00	-86,940.00	-99,360.00	-111,780.00	124,200.00	136,620.00	149,040.00	161,460.00
	10%	9,315.00	-97,807.50	-111,780.00	-125,752.50	139,725.00	153,697.50	167,670.00	181,642.50
Revenue		10,350.00	-108,675.00	-124,200.00	-139,725.00	<b>155,250.00</b>	170,775.00	186,300.00	201,825.00
PLUS	10.0%	11,385.00	-119,542.50	-136,620.00	-153,697.50	170,775.00	187,852.50	204,930.00	222,007.50
	20.0%	12,420.00	-130,410.00	-149,040.00	-167,670.00	186,300.00	204,930.00	223,560.00	242,190.00
	30.0%	13,455.00	-141,277.50	-161,460.00	-181,642.50	201,825.00	222,007.50	242,190.00	262,372.50

		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	-4.68	-5.35	-6.02	6.69	7.36	8.03	8.70
MINUS	30.0%	7,245.00	-33,931.20	-38,778.51	-43,625.82	48,473.14	53,320.45	58,167.77	63,015.08
	20.0%	8,280.00	-38,778.51	-44,318.30	-49,858.08	55,397.87	60,937.66	66,477.45	72,017.23
	10.0%	9,315.00	-43,625.82	-49,858.08	-56,090.35	62,322.61	68,554.87	74,787.13	81,019.39
	<b>Total Cost</b>	10,350.00	-48,473.14	-55,397.87	-62,322.61	<b>69,247.34</b>	76,172.07	83,096.81	90,021.54
PLUS	10.0%	11,385.00	-53,320.45	-60,937.66	-68,554.87	76,172.07	83,789.28	91,406.49	99,023.70
	20.0%	12,420.00	-58,167.77	-66,477.45	-74,787.13	83,096.81	91,406.49	99,716.17	108,025.85
	30.0%	13,455.00	-63,015.08	-72,017.23	-81,019.39	90,021.54	99,023.70	108,025.85	117,028.00

## 6.5 Cabbage Enterprise Budget –Central District

### Total costs of production;

Total costs of production for cabbage 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 cabbage amounted to P64, 658.03.

**Table 6: Total production costs for cabbage – Central District**

	BWP/HA	% of total costs
Planting material	17,177.78	27%
Fertilizers	13,748.00	21%
Agrochemicals	12,468.67	19%
Labour costs	10,587.81	16%
Other pre-harvest costs*	2,945.00	5%
Harvest and distribution costs	3,000.00	5%
Other variable costs	4,730.77	7%
	<b>64,658.03</b>	<b>100%</b>

**Distribution of production costs for cabbage;** Figure 9 indicate that planting material cost make up the largest percentage of the total cost of production at 27%, while fertilizers, agro chemicals, labour costs , other pre-harvest costs, harvest and distribution costs and other variable costs constitute 21%,19%,16%,5%,5% and 7% of the total production cost respectively;

**Figure 9: Distribution of production costs for cabbage-Central District**

## Distribution of production costs for cabbage

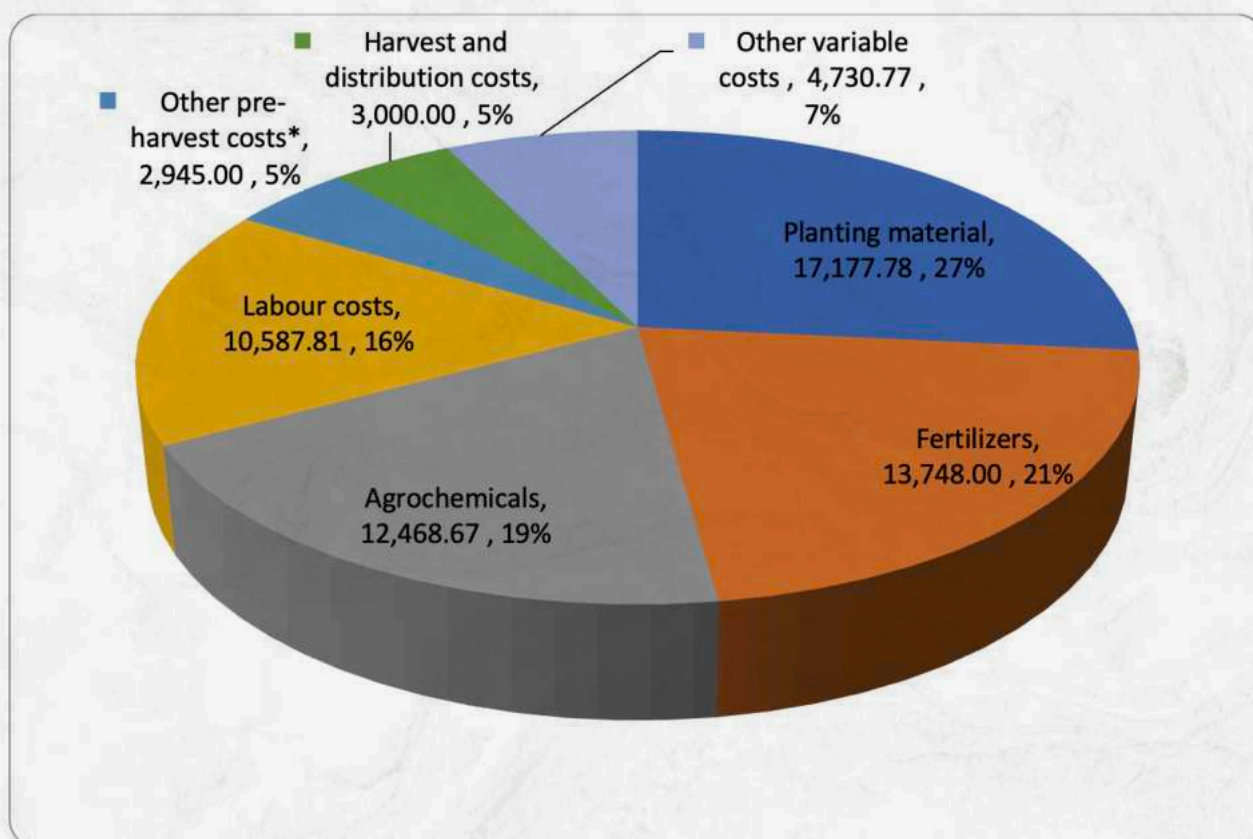


Figure 10: Detailed enterprise budget for cabbage in the Central district;

Cabbage enterprise BUDGET		Central District ( Mahalapye)					
Sr.no	Cropping Area-1 HA-open field					Per HA	
	Cropping in months	3 months					
	Item description	Unit		Output	Unit SP	Value	Yield
		basis		heads	Per head	in BWP	BWP / unit
1	Revenue from produce	Heads	-	17,000.00	10.00	170,000.00	10.00
<b>2</b>	<b>VARIABLE COSTS (VC)</b>		<b>Quantity</b>	<b>Unit cost</b>		<b>Total cost</b>	<b>Cost / unit</b>
<b>2.1</b>	<b>PRODUCTION COSTS</b>						
<b>2.1.1</b>	<b>Planting material</b>						
i	Seedlings-20,000 per HA for R992/1000	Seedlings	20,000	0.73		14,696.30	0.86
	<b>ZAR translated at Ex. rate of 1.35 to BWP</b>					-	-
ii	Transportation of seedlings	per trip	1	1,000.00		1,000.00	0.06
iii	Soil sampling -in RSA	per test	1	1,481.48		1,481.48	0.09
<b>2.1.2</b>	<b>Fertilizers</b>						
i	Fertilizer -2:3:2	50kg	5	720.00		3,840.00	0.23
ii	Ammonium Sulphate	50kg	2	490.00		980.00	0.06
iii	LAN	50kg	8	560.00		4,480.00	0.26
iv	Potassium Nitrate	50kg	8	556.00		4,448.00	0.26

<b>2.1.3</b>	<b>Pesticides Insecticides</b>						
i	Curator	8kg	1	766.67		766.67	0.05
ii	Chlorifos	3 litres	1	300.00		300.00	0.02
iii	Ambligo	1 litre	1	2,000.00		2,000.00	0.12
iv	Aphiguard	1.5 litres	1	957.00		957.00	0.06
v	Steward	1.5 litres	1	2,250.00		2,250.00	0.13
vi	Cutworm bait combat	10kg	1	800.00		800.00	0.05
<b>2.1.4</b>	<b>Fungicides</b>						
i	Belt	5 litres	1	1,700.00		1,700.00	0.10
ii	Bravo	5 litres	1	2,100.00		2,100.00	0.12
iii	Defanozim	5 litres	1	1,595.00		1,595.00	0.09
<b>2.1.5</b>	<b>Permanent farm workers</b>						
i	Direct Labour @ 15 employees	per month	3	2,769.23		8,307.69	0.49
<b>2.1.6</b>	<b>Casual labour</b>						
i	Planting	8md	8	60.00		480.00	0.03
ii	Labour weeding	14md	14	128.58		1,800.12	0.11
<b>2.1.7</b>	<b>Other Pre Harvest costs</b>						
i	Fuel to purchase inputs	per month	3	615.00		1,845.00	0.11
ii	Land preparation-Diesel tractor	Tractor	1	1,100.00		1,100.00	0.06
	<b>TOTAL PRODUCTION COSTS</b>					<b>56,927.26</b>	<b>3.35</b>
<b>3</b>	<b>POST HAVERST COSTS ( VC)</b>						
<b>3.1</b>	<b>Harvest and distribution costs</b>						
						-	-
i	Sold in loose heads	nil				-	-
ii	Transport to the market	per trip	3	1,000.00		3,000.00	0.18
<b>3.2</b>	<b>Other variable costs</b>						
i	Electricity	per month	3	1,076.92		3,230.77	0.19
ii	Airtime and internet	Per month	3	500.00		1,500.00	0.09
	<b>TOTAL POST HAVERST COSTS</b>					<b>7,730.77</b>	<b>0.45</b>
<b>4</b>	<b>TOTAL VARIABLE COSTS (VC)</b>					<b>59,927.26</b>	<b>3.53</b>
<b>5</b>	<b>TOTAL FIXED COSTS ( FC)</b>					<b>4,730.77</b>	<b>0.28</b>
<b>6</b>	<b>GROSS MARGIN</b>					<b>105,341.97</b>	<b>6.20</b>
<b>7</b>	<b>GROSS MARGIN %</b>					<b>62%</b>	<b>62%</b>

### Key Assumptions:

- The yield is approximately 17,000 heads 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 20,000 plants as indicated in the budget. This means, there was a loss of approximately 3,000 plants during production.
- The gross revenue is calculated by multiplying the yield with the farm gate price. The farm gate price was established as P10 per head of cabbage. This is the price at which produce is sold to the market.



- d. 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.
- e. Net profit margin is calculated by subtracting the fixed costs from the gross margin.
- f. 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 cabbage enterprise is approximately 62%, 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 cabbage for an enterprise budget in figure 10.**

		Revenue (R)				Actual	Increase (+)			
		Decrease (-)			Price		10.0%	20.0%	30.0%	
		30.0%	20.0%	10.0%						
		Output	-7.00	-8.00	-9.00	10.00	11.00	12.00	13.00	
Revenue at different levels of output										
MINUS	30%	11,900.00	-83,300.00	-95,200.00	-107,100.00	119,000.00	130,900.00	142,800.00	154,700.00	
	20%	13,600.00	-95,200.00	-108,800.00	-122,400.00	136,000.00	149,600.00	163,200.00	176,800.00	
	10%	15,300.00	-107,100.00	-122,400.00	-137,700.00	153,000.00	168,300.00	183,600.00	198,900.00	
		Revenue	17,000.00	-119,000.00	-136,000.00	-153,000.00	<b>170,000.00</b>	187,000.00	204,000.00	221,000.00
PLUS	10.0%	18,700.00	-130,900.00	-149,600.00	-168,300.00	187,000.00	205,700.00	224,400.00	243,100.00	
	20.0%	20,400.00	-142,800.00	-163,200.00	-183,600.00	204,000.00	224,400.00	244,800.00	265,200.00	
	30.0%	22,100.00	-154,700.00	-176,800.00	-198,900.00	221,000.00	243,100.00	265,200.00	287,300.00	

		Total Variable Costs (TVC)				Actual	Increase (+)			
		Decrease (-)			cost		10.0%	20.0%	30.0%	
		30.0%	20.0%	10.0%						
		Output	-2.66	-3.04	-3.42	3.80	4.18	4.56	4.94	
MINUS	30.0%	11,900.00	-31,682.43	-36,208.49	-40,734.56	45,260.62	49,786.68	54,312.74	58,838.80	
	20.0%	13,600.00	-36,208.49	-41,381.14	-46,553.78	51,726.42	56,899.06	62,071.70	67,244.35	
	10.0%	15,300.00	-40,734.56	-46,553.78	-52,373.00	58,192.22	64,011.45	69,830.67	75,649.89	
		Total Cost	17,000.00	-45,260.62	-51,726.42	-58,192.22	<b>64,658.03</b>	71,123.83	77,589.63	84,055.43
PLUS	10.0%	18,700.00	-49,786.68	-56,899.06	-64,011.45	71,123.83	78,236.21	85,348.59	92,460.98	
	20.0%	20,400.00	-54,312.74	-62,071.70	-69,830.67	77,589.63	85,348.59	93,107.56	100,866.52	
	30.0%	22,100.00	-58,838.80	-67,244.35	-75,649.89	84,055.43	92,460.98	100,866.52	109,272.06	

## 7. Constraints to production of cabbage.

**Table 7;** indicate the constraints to production of Cabbage as shared by farmers interviewed for the cabbage enterprise budgets in each District.

**Table 7: Constraints / challenges to production of Cabbage in each budget District;**

Name of crop	Constraints to production of Cabbage per District	
Cabbage	Kgatlung District	<ul style="list-style-type: none"> <li>In summer time, there are high incidences of Diamond Black Moth. This pest usually hosts the plant and destroys the crop.</li> <li>Costs incurred in controlling pests and diseases are cited as a major cost component in production. These costs end up affecting the relative profitability and efficiency of the crops.</li> </ul>
	Ngami District	<ul style="list-style-type: none"> <li>There are high incidences of crop destruction from wild animals.</li> </ul>
	Kweneng District	<ul style="list-style-type: none"> <li>Unfavorable weather conditions –This greatly affect production and yields.</li> </ul>
	Boteti District	<ul style="list-style-type: none"> <li>Weather conditions –Too much heat affect crop development. Cabbage requires a lot of water, and if very hot it wilts and dries before maturity.</li> <li>The cabbage crop is highly susceptible to Diamond Black Moth. The pest host inside the developing head of cabbage, and affects its growth and development.</li> </ul>
	Central District	<ul style="list-style-type: none"> <li>Salinity stress - (<i>salty borehole water</i>) -Salty water from the borehole is cited as one of the constraints to production. The salty water affects both the crops and drip pipes. The farmer often has to replace blocked pipes and thus incurring additional costs on repairs and maintenance.</li> <li>Unfavorable weather conditions –It is either too hot or too cold for the crops.</li> <li>Diamond Black Month is very common. This pest contributes to low yields, if not well treated.</li> </ul>

### ANNEXURE 1: Enterprise Budget Data collection tool

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

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

	Item description (vegetable)	Unit	Output	Output	Unit SP
		basis	in Tonnes / heads/ bundles	in Kgs/ heads/ bundle	P/ Kg , head, bundles, etc
1.					

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

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

