

VEGETABLE ENTERPRISE GUIDELINE

BACKGROUND

Vegetables production plays an important role in human diet. In Botswana the inclusion of Vegetables in agriculture is an important undertaking because unlike other agriculture commodities, it has been realized that it can be practiced profitably at both large and small scale. Over and above its potential for being a profitable commodity, horticulture production plays an important role in socio-economic development as it alleviates the current unemployment status by creating jobs to the surrounding communities.

The guideline will be confined to the common vegetables of Botswana which are grown mostly under open cultivation. It provides minimum requirements for establishing a sustainable and profitable Vegetable project. Project requirements vary depending on the botanical characteristics, climatic requirements, with size, location, inputs used, as well as other variables. However the success of any project is determined by the way inputs are combined and the quality of decisions regarding production, investment, and financing, marketing and human relations aspects.

It is important for project promoters to be conversant with these input-output relationships to be able to establish viable and sustainable projects. The financial estimates and projections will be based on one (1) hectare.

These guidelines will be confined to vegetable groupings:

- Group 1: Leafy (cabbage, spinach, rape, chomolliar, broccoli, lettuce and cauliflower).
- Group 2: Fruit Vegetables (tomatoes, green peppers, eggplants, garden egg)
- Group 3: Root/Bulb Vegetables (onion, carrots, garlic, beetroots)
- Group 4: Leguminous (garden peas, green beans).

PREREQUISITES

To establish a viable vegetable project, there are certain essential production resources and requirements that must be available. These are:

Water

Vegetables require large quantities of water and they can only thrive under adequate soil moisture conditions. There must be an established and reliable water source (perennial) from a borehole, river, dam or any other available source. The quality of the water will also dictate the type of vegetables to be grown. While some vegetables prefer acidic conditions, others will thrive on neutral to alkaline environments. It is therefore important to strike a balance between the water and soil conditions to facilitate optimum production for the chosen crops.

Irrigation System

Where the water is not adequate, a reservoir could be constructed and used as a buffer in a case where inflow into a reservoir is less than out flow or withdrawal. Various pumping units are used for

Green pepper

a)	Revenue			
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce (30 Tonnes)	6000*5kg	4.00	24 000
Variable costs (VCs)				
a) Production Costs				
	Item	Quantity	Unit cost	Total Cost
2	Seed	300g	500.00	1 500.00
3	Fertilizer; 2:3:1 Potassium Phosphate	10*50kg 3*50kg	180.00 260.00	2000.00 780.00
4	Pesticides (Various)			1200.00
5	Ploughing			500.00
6	Labour: Seedling production Land preparation Irrigation Staking Transplanting Weeding Pest control Top dressing	45md 64md 22md 60md 26md 72md 15md 4md	20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	360.00 760.00 380.00 1 200.00 520.00 940.00 280.00 200.00
7	Total production costs(2+3+4+5+6)			12 320.00
b) Marketing Costs				
8	Labour: Harvesting	235 Mhrs	4.00	940.00
9	Empty boxes	3000 boxes	3.00	6000.00
10	Transport to market	2000 bags @ P 3.00/Bag		6000.00
11	Total marketing costs(8+9+10)			12 940.00
12	Total VC (7+11)			25 260.00
13	Gross margin(1-12)			25 140.00
14	Breakeven price			P0.84/kg
15	Break even yield			31575kg

Md = Man Days (Assuming a 10 hr duration)

drawing and pressurizing water into the system. The most commonly used are submissible, mono, and centrifugal pumps. Assuming there is an existing borehole, the cost of a complete set drip and sprinkler irrigation systems are estimated at P120 000 and P80 000 respectively. Applicants are strongly advised to consult with irrigation officers for proper design of systems before purchasing irrigation equipment. The amount of water required per day will vary considerably with location, soil types, crops to be grown and the type of irrigation system and time of year in use.

Land

The conventional method is when planting is done on the open land, the common areas under production range from 0.25-2 hectares of land, but for a viable project the area should be at least one (1) hectare.

Labor

Labour availability in the locality is crucial; this is because vegetable production is labour intensive and as such requires adequate manpower for all operations. Four (4) permanent workers are required per hectare, but during peak periods (planting, weeding and harvesting) the demand increases warranting use of casual workers.

Market

All successful business initiatives is market led, therefore soliciting a market for the business prior to production is essential. This should be done at the business conceptual stage before drafting either a business or a cropping plan. This will guide all the farm operations, these include but not limited to:

- Types of crops to grow
- When to grow

- How much to grow
- The resources needed for production.

Availability of reliable markets outlets within the vicinity of the farm/project will go a long way in ensuring its success as transport costs would be reduced considerably.

Finance

Access to finance is important in acquisition of farm equipment and inputs to effectively run a profitable vegetable project. It therefore requires that a potential funding source be identified when the project is being conceived.

Basic farming skills and experience

Vegetable production is a very labour intensive enterprise which requires both dedication and skill to effectively undertake it. Basic training in agronomic principles or experience in the same field is very crucial; some managerial skill is important and can enhance business competitiveness. In the absence of this, the applicant together with the workforce should be prepared to undertake training in horticulture production principles and farm business concepts.

MANAGEMENT/AGRONOMIC PRACTICE

Maturity period

Vegetables comprise different varieties and cultivars with a range of maturity indexes as reflected in table 4. It is therefore essential to determine the different maturity indexes of the crops to be planted in order to make a proper schedule of operations for all the enterprises. However Integrated Pest management (IPM) control system will be ideal to minimize dependence on use of pesticides, most of which are hazardous to humans, animals and the environment in general.

Beetroot

a) Revenue				
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce(15tonnes)	30000*1kg	2.00	30 000.00
Variable costs (VCs)				
a) Production Costs				
	Item	Quantity	Unit cost	Total Cost
2	Seed	14 kg	1200.00	3 600.00
3	Fertilizer; 2:3:2 Amon	525kg 9*50kg	2000.00 210.00	2 100.00 1 890.00
4	Sulphate			
	Pesticides (Various)			280.00
5	Ploughing			500.00
6	Land preparation	101md	20.00	2 020.00
	Irrigation	24md	20.00	480.00
	Thinning	40md	20.00	800.00
	Weeding	215md	20.00	4 300.00
	Pest control	14md	20.00	280.00
	Top dressing	10md	20.00	200.00
7	Total production costs(2+3+4+5+6)			16 450.00
b) Marketing Costs				
8	Harvesting	300000 bundles		1 500.00
9	Plastic Bags			1 200.00
10	Transport to market	P0.10/bundle		3 000.00
11	Total marketing costs(8+9+10)			5 700.00
12	Total VC (7+11)			22 150.00
13	Gross margin (1-12)			7 850.00
14	Breakeven price			P1.48/kg
15	Breakeven yield			11075kg

md=Man Days (Assuming a 10 hr duration)

Carrot

a)				
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce(30tonnes)	3000*10kg	12.00	36 000.00
Variable costs (VCs)				
a) Production Costs				
	Item	Quantity	Unit cost	Total Cost
2	Seed	6* 100g	200.00	1200.00
3	Fertilizer; 2:3:1 Amon	10*50kg	200.00	2000.00
	Phosphate	2*50kg	210.00	420.00
4	Pesticides (Various)			000.00
5	Ploughing			500.00
6	Labour: Seedling production	18md	20.00	360.00
	Land preparation	38md	20.00	760.00
	Irrigation	19md	20.00	380.00
	Transplanting	26md	20.00	520.00
	Weeding	47md	20.00	940.00
	Pest control	14md	20.00	280.00
	Top dressing	10md	20.00	200.00
7	Total production costs(2+3+4+5+6)			12 390.00
b) Marketing Costs				
8	Harvesting	235 Mhrs	4.00	940.00
9	Empty bags	2000 bags	3.00	6000.00
10	Transport to market	2000 bags @ P 3.00/Bag		6000.00
11	Total marketing costs(8+9+10)			12 940.00
12	Total VC (7+11)			25 330.00
13	Gross margin (1-12)			10 670.00
14	Break even price			P0.84/kg
15	Break even yield			21108kg

md=Man Days (Assuming a 10 hr duration)

Table 1: Crop maturity and yield

Crop	Days to maturity	Yield(tons)
Cabbage	105-135	50-75
Rape	120	50-75
Kale	120	50-75
Spinach		16-20
Tomato	135	60-75
Green-pepper	120	
Onion	150	40-60
Carrots	120	20-30 root 30-50 leaves
Butternuts		18-22
Potatoes		30
Green Mealies	150	25
Beetroot	90	25-35
Water melon	150	16

Common Pests and diseases in Botswana

Vegetables are susceptible to any disorder or disturbance in their physiological development; they have varied pests and diseases which can attack a wide range of crops. The pest and diseases infestation is more prevalent in summer when the temperatures are high, with a significant reduction in occurrences in winter when the temperatures become unfavourable for their multiplication. The common pests and diseases are varied and

their infestation intensity is season specific. Table 1 provides a list of the common types.

Table 2: Common pest and diseases of vegetables in Botswana

Crop	Pests	Control	Diseases	Control
Cabbage Kale Rape Cauliflower Broccoli	Diamond Back Moth, Cabbage Aphid, Bagrada bug, American bollworm, Cutworm	Curator, Carbofuran, Diclovors, Dimethoate Chlorpyrifos Cypermethrin,	Black rot, Downy mildew	Cypermethrin, Copper Oxychloride Mervinphos
Tomato Green-pepper	Red Spider mite, American Ballworm, Nematodes	Copper oxychloride, Nemaicur, Cypermethrin, Dicofol	Bacterial spot, Blossom end rot Canker, Fusarium wilt, Curly due to virus	Cypermethrin and Deltamethrin
Onion	Thrips, Aphids	Endosulfan, Deltamethrin, Trichlorofon	Fusarium rot, Purple blotch	Mancoze
Spinach Beetroots	Nematodes, Caterpillars	Nemaicur, Alphemethrin, Mevinphos, Malathion 50%, Chloroprifos	Leaf spot	Captan dust
Butternut	Red spider mite, Aphids Rootknot nematodes	Metasystox, Dimethoate 40EC Omite	Fusarium wilt, Anthracnose, Mosaic, Powdery and Downy mildews	MZ72WP, Copperoxychloride
Carrots	Nematodes, Aphid, Mole rats	Nemaicur, Dimenton-s-methyl, Alumminium phosphate, Mancozeb/Dithane M45	Bacterial soft rot, Leaf blight	Crop rotation, use of certified seed
Potato	Fruit fly, Aphids,	Dimenton-s-methyl, Dimethoate	Black scurf, Leaf Roll Virus, Soft Rot Fusarium Dry Rot, Early & Late Blights	Benodanil, Mancozeb, Chlorthalonil
	Fruit fly			
Greenmealies	Stalk Borer, Aphids, American Ball Worm	Dipterex, Curator, Endosulfan	Maize Streak Virus,	Early planting, rotation
Cucumber Watermelon	Red spider mite, Aphids Rootknot nematodes	Metasystox, Dimethoate 40EC Omite	Fusarium wilt, Anthracnose, Mosaic, Powdery and Downy mildews	MZ72WP, Copperoxychloride

Onion

a)	Revenue			
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce(40tonnes)	4000*10kg	P 10.00	40 000.00
Variable costs (VCs)				
a) Production Costs				
	Item	Quantity	Unit cost	Total Cost
2	Seed	3 kg	300.00	900.00
3	Fertilizer; 2:3:2 Amon Phosphate	500 kg 2:3:2 450 kg	200.00 200.00	2 000.00 1 800.00
4	Pesticides (Various)			200.00
5	Ploughing			500.00
6	Labour: Seedling production Land preparation Irrigation Transplanting Weeding Pest control Top dressing	23md 102md 22md 201md 105md 5md 11md	20.00 20.00 20.00 20.00 20.00 20.00	460.00 2 040.00 440.00 4 020.00 2 100.00 100.00 220.00
7	Total production costs(2+3+4+5+6)			14 780.00
b) Marketing Costs				
8	Harvesting	80md	20.00	1 600.00
9	Empty bags	4000	1.00	4 000.00
10	Transport to market	4000	0.50/bag	2 000.00
11	Total marketing costs(8+9+10)			7 600.00
12	Total VC (7+11)			22 380.00
13	Gross margin (1-12)			17 620.00
14	Breakeven price			P0.56/kg
15	Break even yield			22380 kg

md=Man Days (Assuming a 10 hr duration)

Spinach

a) Revenue				
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce (10Tonnes)	20 000*500g	2.00	40 000.00
Variable costs (VCs)				
a) Production Costs				
No	Item	Quantity	Unit cost	Total Cost
2	Seed	1*5kg	130.00	650.00
3	Fertilizer; 2:3:1 LAN	500kg 5*50kg	180.00 260.00	1800.00 1300.00
4	Pesticides (Various)		80.00	280.00
5	Ploughing			500.00
6	Labour: Seedling production Land preparation Irrigation Transplanting Weeding Pest control Top dressing	3md 101md 29md 47md 114md 33md 12md	20.00 20.00 20.00 20.00 20.00 20.00 20.00	60.00 2 020.00 580.00 940.00 2 280.00 660.00 240.00
7	Total production costs(1+2+3+4+5)			11 310.00
b) Marketing Costs				
8	Harvesting	300000 bundles		1 500.00
9	Plastic Bags			1 200.00
10	Transport to market	P0.10/bundle		3 000.00
11	Total marketing costs(7+8+9)			5 700.00
12	Total VC (6+10)			17 010.00
13	Gross margin(1-12)			22 990.00
14	Breakeven price			P1.70/kg
15	Breakeven yield			4252.5 kg

md=Man Days (Assuming a 10 hr duration)

Record management

All farm operations should be documented to facilitate trekking of enterprise performance. Such an undertaking will ultimately assist in decision making for whole farm.

The following records should be adequately kept:

- Total area planted
- Total variables bought
- Total variables used
- Yield
- Diseases and causes

MARKETING ISSUES

Most vegetables are perishable in nature and have a short shelf life. To prolong their usefulness, adherence to all production principles will ensure freshness at harvest and even storage periods. When picked, it is essential that proper grading and sorting be done to ensure product value. Harvesting should be done when the crop has reached physiological maturity to ensure that it does not shrivel in storage due to excessive moisture loss. The common outlets include, fresh produce markets, wholesalers, retailers hotels, institutions (schools, hospitals, government offices), hawkers and individuals.

The materials used for packaging should also be appropriate and should conform to the prescribed specifications e.g. tomatoes, green pepper and brinjal be packaged in boxes, potatoes in brown bags, cabbages, onions and butternuts in perforated bags.

FIXED ASSETS

Key fixed assets required in horticulture are listed in table 3 below.

Table 3: Fixed Costs for establishing a 1 ha vegetable plot

No.	Item	Quantity
1.	Land	1 hectare
2.	Permanent Water Source	1 Borehole
3.	Irrigation Equipment	Set
4.	Reservoir	20 000 liters
5.	Fencing	Set
6.	Store room/office	1
7.	Net Shade	2 rolls
8.	Protective Clothing	4 pairs
9.	Garden Tools	Assorted
10.	Permanent Labour	4

Machinery

Ideally no heavy machinery is required for a hectare of vegetables; the few that is used for land preparation could be hired out, these common ones include: tractor, planter, harrow and rotovator. Unless the proprietor already has a vehicle, the project is located away from good roads and reliable transport source, a vehicle is not advisable as this will increase the capital outlay.

Fencing Materials

Fence with small animal proof material (Diamond Mesh or Veld-span wire) can be used to keep out small animals. The choice of fence will depend on the location of the project. Most materials in

Tomato

a)	Revenue			
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce (30 Tonnes)	4200*7kg	12.00	50 400.00
Variable costs (VCs)				
a) Production Costs				
	Item	Quantity	Unit cost	Total Cost
2	Seed	160g	2000.00	3200.00
3	Fertilizer; 2:3:1 Potassium Phosphate	10*50kg 3*50kg	180.00 260.00	2000.00 780.00
4	Pesticides (Various)			1200.00
5	Ploughing			500.00
6	Labour: Seedling production Land preparation Irrigation Staking Transplanting Weeding Pest control Top dressing	45md 64md 22md 60md 26md 72md 15md 4md	20.00 20.00 20.00 20.00 20.00 20.00 20.00 20.00	360.00 760.00 380.00 1 200.00 520.00 940.00 280.00 200.00
7	Total production costs(2+3+4+5+6)			12 320.00
b) Marketing Costs				
8	Labour: Harvesting	235 Man hrs	4.00	940.00
9	Empty boxes	3000 boxes	3.00	6000.00
10	Transport to market	2000 bags @ P 3.00/Bag		6000.00
11	Total marketing costs(8+9+10)			12 940.00
11	Total VC (7+11)			25 260.00
	Gross margin(1-12)			25 140.00
12	Breakeven price			P0.84/kg
13	Breakeven yield			14771.93 kg

md=Man Days (Assuming a 10 hr duration)

Annex 3: Crop Budgets for 1 hectare (HA)

Cabbage				
a)	Revenue			
No	Item	Quantity	Unit Price (P)	Total Revenue(P)
1	Produce(40tonnes)	2000*20kg	20.00	40 000.00
Variable costs (VCs)				
a) Production Costs				
	Item	Quantity	Unit cost	Total Cost
2	Seed	3* 100g	1200.00	3600.00
3	Fertilizer; 2:3:1	10*50kg	180.00	1800.00
	LAN	5*50kg	210.00	1050.00
4	Pesticides (Various)			2000.00
5	Ploughing			500.00
6	Labour: Seedling production	18md	20.00	360.00
	Land	38md	20.00	760.00
	preparation	19md	20.00	380.00
	Irrigation	26md	20.00	520.00
	Transplanting	47md	20.00	940.00
	Weeding	14md	20.00	280.00
	Pest control	10md	20.00	200.00
	Top dressing			
7	Total production costs(2+3+4+5+6)			12 390.00
b) Marketing Costs				
8	Harvesting	235 Man hrs	4.00	940.00
9	Empty bags	2000 bags	3.00	6000.00
10	Transport to market	2000 bags @ P 3.00/Bag		6000.00
11	Total marketing costs(8+9+10)			12 940.00
12	Total VC (7+11)			25 330.00
13	Gross margin (1-12)			14 670.00
14	Breakeven price			P0.63/kg
15	Breakeven yield			25 330 kg

md=Man Days (Assuming a 10 hr duration)

Table 4 below may be purchased from hardwares and other equipment from suppliers. Also see annex 1.

Table 4: List of fencing materials for 1 hectare

No	Item	Type	Number
1	Fence Wire	Diamond Mesh or Veld span	14 rolls @ 30m 5 rolls @ 100m
2	Wire Steel		1 Roll @1650m
3	Wire (Anchor)	8 Gauge	1 roll
4	Binding Wire	Soft	1 Roll
5	Gate	Double (3.6 * 1.2m)	1
6	Poles	Standards	85
7	Poles	Corner	6
8	Poles	Droppers	470
9	Wire Strainer	Wire Strainer	1
10	Labour	60 mandays	40

Buildings

Vegetable under open cultivation on a hectare does not require sophisticated buildings except for a, net-shade, store-room, packaging shed.

Equipment and tools

Protective clothing

It is advisable that people working under such conditions be provided with protective clothes for safety purposes.

Garden tools

These are basic tools for general agronomic operations and are listed under **annexure 2**.

INFRASTRUCTURE (Electricity, roads, market, telephones)

Vegetables by nature are very perishable and they require reaching the market through the most reliable and prompting methods. The basic requirements of good roads to transport the commodity, a reliable market for quick disposal, good telephone to contact clients are essential for a successful project. Electricity is also very important because it can be used for both water pumping, for use in cooling facilities and farm amenities like lighting.

Variable Inputs

Variable inputs needed in vegetable production are pesticides, seeds, herbicides, fertilizers, protective clothing and packaging materials. Other variable inputs are found under financial projection. Some of the variable inputs in Table 5 below can be sourced from stores specializing in selling agricultural products.

Annex 2: Garden Tools and Protective Clothing

Category	Item	Qty	Unit Cost (BWP)	Total Cost (BWP)
Garden Tools				
1	Wheel barrow	2	350.00	700.00
2	Spade	2	100.00	400.00
3	Digging fork	3	80.00	240.00
4	Garden rake	3	80.00	240.00
5	Watering can	2	120.00	240.00
6	Weeding hoe	3	70.00	210.00
7	Hand trowel	3	10.00	30.00
8	Hand fork	3	10.00	30.00
9	Tensiometer	2	Not available locally	
10	Hose pipe	1	300.00	300.00
Totals				2 340.00
Protective Clothing				
1	Gum-boots	4	105.00	420.00
2	Hand gloves	4	30.00	120.00
3	Goggles	4	20.00	80.00
4	Overall (2 piece)	4	150.00	600.00
5	Dustcoats	4	120.00	480.00
6	Rain-coats	4	100.00	400.00
7	Safety boots	4	100.00	400.00
	Facemasks (boxes)	2	50.00	100.00
	Respirators	4	50.00	200.00
Totals				2 800.00

md=Man Days (Assuming a 10 hr duration)

ANNEXTURES

Annex 1: Fencing materials

No	Item	Type	Number	*Unit Cost (BWP)	Total Cost (BWP)
1	Fence Wire	Diamond Mesh	14 rolls @ 30m	600.00	8400.00
		Veld span	5 rolls @ 100m	900.00	4500.00
2	Wire Steel		1 Roll @1650m	850.00	850.00
3	Wire (Anchor)	8 Gauge	1 roll	750.00	750.00
4	Binding Wire	Soft	1 Roll	650.00	650.00
5	Gate	Double (3.6 * 1.2m)	1	1500.00	1500.00
6	Poles	Standards	85	20.00	1700.00
7	Poles	Corner	6	40.00	240.00
8	Poles	Droppers	470	10.00	4700.00
9	Wire Strainer	Wire Strainer	1	300.00	300.00
10	Labour	60 mandays	40	100.00	4 000.00
		Totals			27590.00

Table 5: Input requirement, Maturity Index yield estimates

Crop	Seeds	Fertilizers			
		NP K	LA N	Ammonium Phosphate	Potassium Phosphate
Cabbage	300g	500	250	-	-
Rape	500g	500	250	-	-
Kale	300g	500	250	-	-
Spinach	14kg	500	250	-	-
Tomato	200g	500	-	-	150
Green-pepper	500g	500	-	-	150
Onion	3kg	500			
Carrots	6kg	500	-	150	-
Butternuts	2-3kg	500	-	150	-
Potatoes	600kg	500	-	350	-
Green Mealies	25kg	300	-	-	150
Beetroot	14kg	500	-	450	
Water melon	2-3kg	300	-	-	100

Fertilizers: The nutrient status of the soil must be analyzed before fertilizer is added so as to determine the right quantities to be applied, this is essential for optimal yield. Generally Botswana soils are said to be deficient of phosphorus, application of fertilizers largely with phosphorus sources are recommended in case of non analysis. Horticultural crops have different fertilizer requirements.

Organic Manure: Organic manure adds nutrients and also improves the structure of the soil. Organic manure includes crop residues left in the field after harvest, organic wastes such as farmyard manure, slurry, sewage sludge and compost.

Seeds: Vegetable seeds comprise both open pollinated and hybrids, for commercial use, hybrids are best as they are quick maturing, high yielding and tolerant to most pests and diseases. Seeds are available in a range of quantities and varieties.

CAPITAL REQUIRED

Establishing and running a project requires finance from owners and/or various financial institutions and government programs. This guideline had assumed acquisition of a loan from Citizen Entrepreneurial Development Agency (CEDA) at 7.5% interest rate payable over 7 years. The principal amount covers the entire project establishment and running costs for 1 hectare for a period not exceeding 12 months. The initial capital outlay can be up to **BWP 40 000 per enterprise**. The guideline assumes the availability of land as owner's contribution. The key assumptions of production could vary from project to project due to location, size, production level, costs, loan and prices.

The financial analysis of the project is based on an average of 1 hectare and would break even at average yield of approximately 28 tonnes. See **annex 3** for individual crop budgets. These calculations were based on Variable Costs and may not necessarily reflect the real actual situation. Breakeven points were not calculated based on Total Fixed Costs as Fixed Costs were lumped up for all the 7 enterprises making it difficult to differentiate and separate the costs according to individual enterprises and overhead costs have not been captured.

The average total revenue for the enterprises is **BWP 37 200** against average production expenditure of **BWP 32 388.00**. The gross margin (Average Total Revenue – Average Variable Costs) estimated per hectare for the enterprises is positive at **BWP 17 226.00** and profit after subtracting fixed costs is projected at **BWP 17 226 .00 – BWP 12 390.00 = BWP 4 866.00**

NB: It should be noted that the crop budgets provided below are guides only. Therefore, users should alter them to meet their needs, for movements in crop and input prices, changes in seasonal conditions and the farm characteristics.