

Botswana Cactus Pear Agro-Processing Programme

5 ha Pilot Commercial Fodder Value Chain Investment Model

Prepared for: Gola Ventures Botswana Cactus Cluster

Prepared by: Terence Unterpertinger

May 2026



**Cactus as
Strategy:
Botswana's
Unlikely
Answer to a
Fodder Crisis**

Botswana's livestock economy, long hailed as the country's "second diamond," is being quietly undermined by a single weakness: feed. With nearly 90% of fodder imported, the sector is exposed, expensive, and constrained. Now, an unlikely contender, cactus, is emerging not just as an alternative crop but as a potential reset button for the entire agricultural value chain.

Strictly Confidential

Disclaimer

The financial projections and assumptions presented are indicative and intended for strategic planning and feasibility discussion purposes only. Actual results may vary based on market conditions, climatic factors, operational performance, input costs, policy changes, and implementation capacity. All stakeholders are advised to conduct independent technical, financial, and commercial due diligence prior to investment or implementation decisions.

Strictly Confidential

Executive Summary

Botswana has a strategic opportunity to establish a scalable cactus pear agro-processing and livestock support industry aligned to its national priorities.

The proposed programme introduces a **5-hectare pilot cactus production and feedlot model** designed for Botswana's arid and semi-arid conditions, with potential for phased national replication. The model combines:

- Livestock fodder production
- Feedlot integration
- Fruit oil processing
- Nursery propagation
- Agro-processing value chains

Key financial indicators from the pilot model include:



Initial capital requirement of approximately **BWP 516,600**



Year 2 revenue potential exceeding **BWP 2.5 million** under the sales-focused model



Expansion model scaling from **5 ha to 23 ha within 5 years**



Projected Year 5 revenue potential of approximately **BWP 9.4 million** under internal expansion

Modelling Assumptions

- **Key Highlights:**

- Initial CAPEX: BWP 516,600
- Two models: Sales Model and Internal Expansion Model
- Cost of goods sold (COGS) includes weaner purchases and 70% supplementary feed (*cactus replaces 30% of diet*)



Indicator	Details
Budget currency:	BWP (Botswana Pula)
Corporate Tax:	22%
Exchange rate used:	1 ZAR ≈ 0.82 BWP
Land Allocation (Base 5 ha):	4.0 ha Fodder/Feedlot + 0.3 ha Nursery + 0.7 ha Fruit Oil
Feedlot:	310 cows on 4 ha, 90 kg weight gain per cow
Nursery (Model 1):	BWP 73,800 base (starts Year 2)
Fruit Oil:	BWP 103,320 base starting Year 2
Revenue:	Mature levels from Year 2 with 3% annual increase

Business Model / Revenue Streams

This model focuses on generating revenue from a stable 5-hectare operation through:

- Feedlot and fodder production (primary revenue source)
- Nursery/cladode sales from Year 2
- Fruit oil processing from Year 2

The model prioritises:

- Early cash generation
- Stable operational performance
- Commercial product sales
- Lower expansion risk

Model 1 – Sales Focus (Fixed 5 ha Model)



This model reinvests cactus planting material to expand cultivated land from 5 ha to 23 ha over five years. Revenue growth is driven by:

- Expanded feedlot and fodder production
- Increased fruit oil production
- Progressive land expansion using internally generated cladodes

The model prioritises:

- Long-term scalability
- Higher profitability growth
- Expanded production capacity
- National replication potential

Model 2 – Internal Expansion Model



**CAPEX
BUDGET –
Initial
Investment
for First 5
ha**

Item	Amount (BWP)
Land preparation & clearing	32,800
Planting material	164,000
Fencing & basic infrastructure	123,000
Irrigation (Bulk system)	98,400
Tools, vehicles & PPE	41,000
Initial labor & misc.	57,400
Total Initial CAPEX	516,600

Strictly Confidential

OPEX MODEL 1: SALES FOCUS (Fixed 5 ha)

Cost Item	Year 1	Year 2	Year 3	Explanation
Salaries & Wages	147,600	164,000	168,920	Farm staff salaries
Administration & Office	32,800	36,900	38,007	Admin overhead
Maintenance & Repairs	28,700	41,000	42,230	Equipment & irrigation
Fuel & Vehicle Costs	24,600	36,900	38,007	Transport
Marketing & Selling	12,300	20,500	21,115	Sales costs
Insurance & Permits	16,400	20,500	21,115	Insurance
Miscellaneous	16,400	16,400	16,891	Utilities
Total OPEX	279,000	336,000	346,000	Slight annual increase

Strictly Confidential

OPEX MODEL 2: INTERNAL EXPANSION (Growing ha)

Cost Item	Year 1	Year 2	Year 3	Year 4	Year 5	Explanation
Salaries & Wages	147,600	262,400	377,200	492,000	606,800	More staff for expanded farm
Administration & Office	32,800	49,200	65,600	82,000	98,400	Scales with size
Maintenance & Repairs	28,700	57,400	86,100	114,800	143,500	Larger area maintenance
Fuel & Vehicle Costs	24,600	45,100	65,600	86,100	106,600	Increased transport
Marketing & Selling	12,300	24,600	36,900	49,200	61,500	Higher sales volume
Insurance & Permits	16,400	24,600	32,800	41,000	49,200	Covers more land
Total OPEX	279,000	475,000	672,000	869,000	1,066,000	Scales with expansion

Strictly Confidential

COGS: MODEL 1: SALES FOCUS (Fixed 5 ha)

Cost Item	Year 1	Year 2	Year 3	Explanation
Weaner Purchase (310 cows)	254,200	508,400	523,652	~BWP 1,640 per weaner
Supplementary Feed (70% of diet)	147,600	262,400	270,272	Cactus replaces 30%
Harvesting & Handling Labor	65,600	114,800	118,244	Field operations
Transportation & Loading	32,800	73,800	76,014	Logistics
Other Direct Costs	32,800	90,200	92,918	Misc. costs
Total COGS	533,000	1,050,000	1,081,500	~42-45% of Revenue

Strictly Confidential

COGS: MODEL 2: INTERNAL EXPANSION (Growing ha)

Cost Item	Year 1	Year 2	Year 3	Year 4	Year 5	Explanation
Weaner Purchase	254,200	1,016,800	1,525,200	2,033,600	2,542,000	Scales with fodder area
Supplementary Feed (70%)	147,600	295,200	442,800	590,400	738,000	70% purchased feed
Harvesting & Labor	65,600	114,800	164,000	213,200	262,400	Increases with ha
Transportation & Other	65,600	90,200	123,000	155,800	188,600	Larger operation costs
Total COGS	533,000	1,517,000	2,173,000	2,829,000	3,485,000	Scales with expansion

Strictly Confidential

Summary Notes: Operating Expenses

- Operating Expenses are lower relative to revenue in cactus farming due to its low-maintenance nature.
- Labor (Salaries & Wages) is the biggest component in both models.
- In Model 2, expenses grow with land expansion but at a slower rate than revenue, improving profitability over time.
- 3% annual increase is applied from Year 2 onwards for inflation and minor scaling.

INCOME STATEMENT – MODEL 1: SALES FOCUS (Nursery Sales from Year 2)

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	1,066,000	2,501,000	2,576,030	2,653,311	2,732,910
- Feedlot / Fodder	902,000	1,968,000	2,027,040	2,087,851	2,150,487
- Nursery Sales	0	73,800	76,014	78,294	80,643
- Fruit Oil	0	103,320	106,420	109,612	112,901
COGS / Direct Costs	533,000	1,050,000	1,081,500	1,114,000	1,146,900
Gross Profit	533,000	1,451,000	1,494,530	1,539,311	1,586,010
Operating Expenses	279,000	336,000	346,000	356,500	367,000
EBITDA	254,000	1,115,000	1,148,530	1,182,811	1,219,010
Depreciation	45,000	45,000	45,000	45,000	45,000
Operating Profit	209,000	1,070,000	1,103,530	1,137,811	1,174,010
Taxes (22%)	0	235,400	242,777	250,318	258,282
Profit After Tax	209,000	834,600	860,753	887,493	915,728

Strictly Confidential

INCOME STATEMENT – MODEL 2: INTERNAL EXPANSION (Reinvest Cladodes)

Item	Year 1	Year 2	Year 3	Year 4	Year 5
Total Planted Area	5.0 ha	9.5 ha	14.0 ha	18.5 ha	23.0 ha
Revenue	1,066,000	3,838,000	5,699,000	7,560,000	9,422,000
- Feedlot Revenue	902,000	3,444,000	5,166,000	6,888,000	8,610,000
- Fruit Oil Revenue	0	177,120	250,920	324,720	398,520
COGS / Direct Costs	533,000	1,517,000	2,173,000	2,829,000	3,485,000
Gross Profit	533,000	2,321,000	3,526,000	4,731,000	5,937,000
Operating Expenses	279,000	475,000	672,000	869,000	1,066,000
EBITDA	254,000	1,846,000	2,854,000	3,862,000	4,871,000
Depreciation	45,000	78,000	111,000	144,000	177,000
Operating Profit	209,000	1,768,000	2,743,000	3,718,000	4,694,000
Taxes (22%)	0	388,960	603,460	817,960	1,032,680
Profit After Tax	209,000	1,379,040	2,139,540	2,900,040	3,661,320

Strictly Confidential

Closing & Recommendations

Proposed Government Partnership & Implementation Roadmap

Strictly Confidential

Investment Analysis

Strategic Recommendation

- **Model 1** is suitable for pilot implementation, validation, and lower-risk commercial entry.
- **Model 2** provides the strongest long-term economic impact and national scaling potential once the pilot phase is successfully established.

Indicator	Model 1 – Sales Focus	Model 2 – Internal Expansion
Initial CAPEX	BWP 516,600	BWP 516,600
Operating Model	Fixed 5 ha	Expansion from 5 ha to 23 ha
Year 2 Revenue	~BWP 2.5 million	~BWP 3.8 million
Year 5 Revenue	~BWP 2.7 million	~BWP 9.4 million
Year 5 Profit After Tax	~BWP 916,000	~BWP 3.66 million
EBITDA Growth	Stable and predictable	High-growth scaling model
Scalability	Moderate	Very high
Risk Profile	Lower operational risk	Higher growth with expansion risk
Strategic Benefit	Early cash generation	Long-term commercial expansion

Investment Strengths

- Low-water, drought-resilient agricultural model
- Reduced livestock feeding costs through cactus fodder integration
- Multiple revenue streams improve resilience and sustainability
- Strong alignment with Botswana food security and agro-processing objectives
- Scalable community and commercial replication potential
- Increasing profitability as operations expand

Strictly Confidential

Proposed Implementation Roadmap

1

Phase 1 – Pilot Demonstration (0–12 Months)

- Establish initial 5 ha pilot farm and feedlot
- Validate Botswana-specific agronomic and livestock performance
- Develop nursery propagation capability
- Train local farmers, youth and extension personnel
- Finalise market and off-take partnerships

2

Phase 2 – Cluster Expansion (Year 2–3)

- Expand production through community clusters and commercial partnerships
- Integrate feed processing and agro-processing opportunities
- Develop regional propagation hubs
- Support SME participation and rural enterprise development

3

Phase 3 – National Commercialisation (Year 3–5)

- Scale integrated cactus value chains nationally
- Promote export-oriented processed products
- Strengthen food security and drought mitigation programmes
- Position Botswana as a Southern African centre for climate-smart dryland agriculture

Proposed Government Partnership

The Botswana cactus pear initiative represents more than an agricultural project – it is a strategic platform for:

- Economic diversification
- Rural transformation
- Climate resilience
- Livestock sustainability
- Inclusive agro-industrial growth

With coordinated public-private collaboration, Botswana can establish a high-impact, scalable model for sustainable agriculture in arid regions across the country.

Key Government Support Areas

- Strategic land allocation
- Pilot programme facilitation
- Research and extension collaboration
- Infrastructure and irrigation support
- Public-private investment mobilisation
- Export and agro-processing incentives