

DEVELOPMENT OF AGRO INDUSTRIAL COMPLEX

**MAXIMIZING
POSTHARVEST
EFFICIENCY AND QUALITY**

**A Phase 1 Paddy Handling, Storage and
Milling Business Plan**

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agricom

01 Our Company





02 About the Project

In a Nutshell

Sponsor Agricom Africa Limited

Location Melela, Morogoro

Aim

To maximize postharvest efficiency and quality of food grains through improved storage technologies and processing efficiency.

Objective

To develop integrated agro-industrial complex for paddy rice handling, storage and milling.

10,000 MT

Storage Capacity

160 TPD

Milling Capacity

Development Goal



To improve the livelihoods of
10,000

smallholder farmers and traders in
the rice value chain

USD 7.356 MILLION

Total Investment Cost

IRR 16.11%

4.6

Years

Payback Period

Financing Plan



Equity

15% - 85%



Debt

Maturity

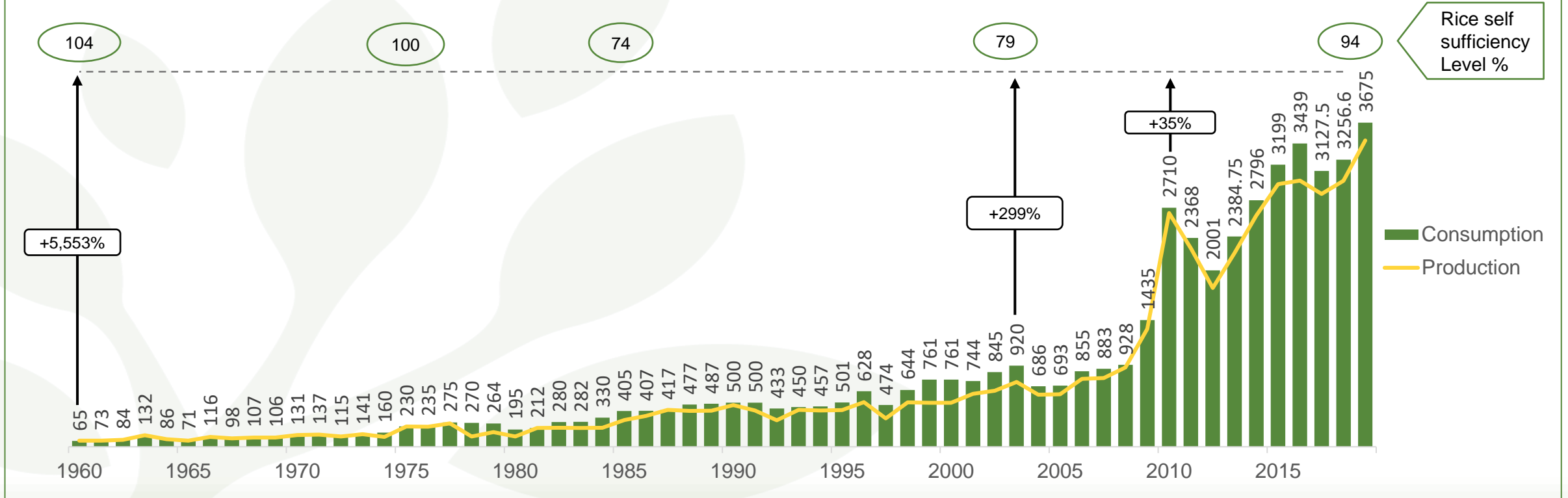
5 Years (2021 – 2026)



03 Situation Analysis

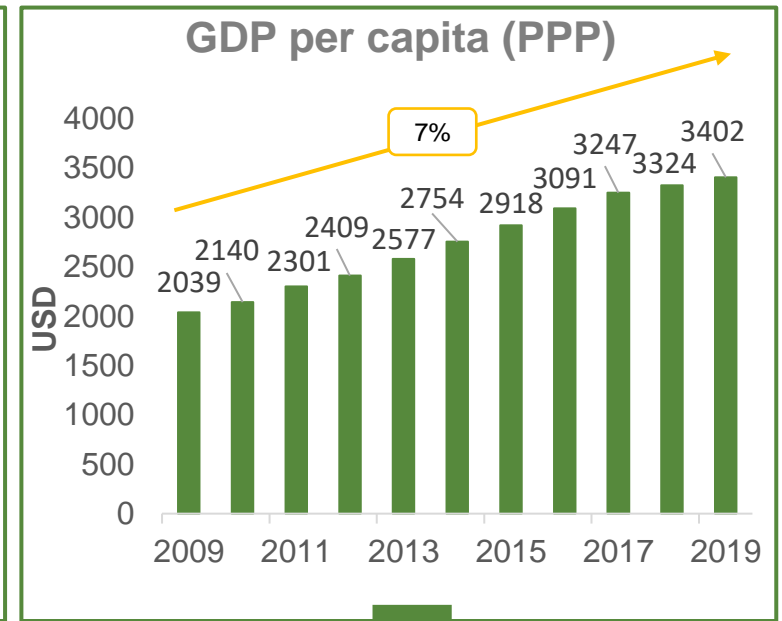
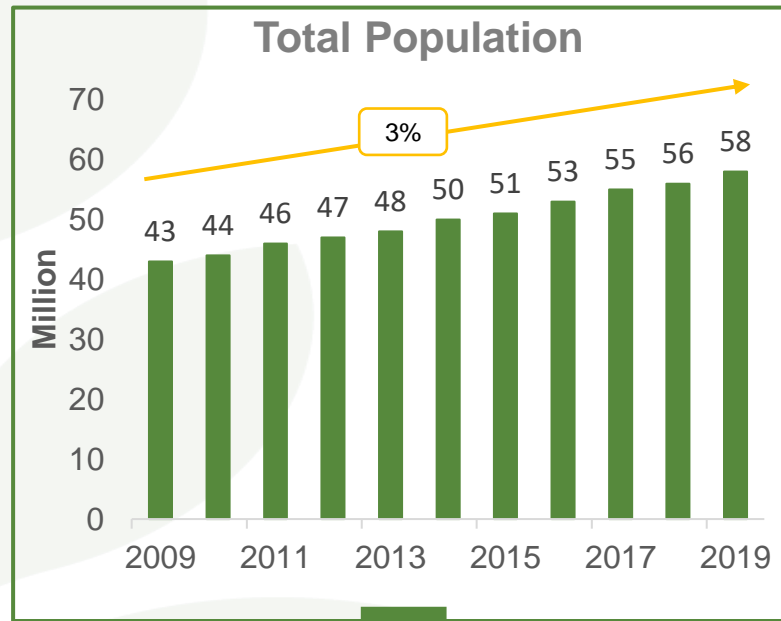
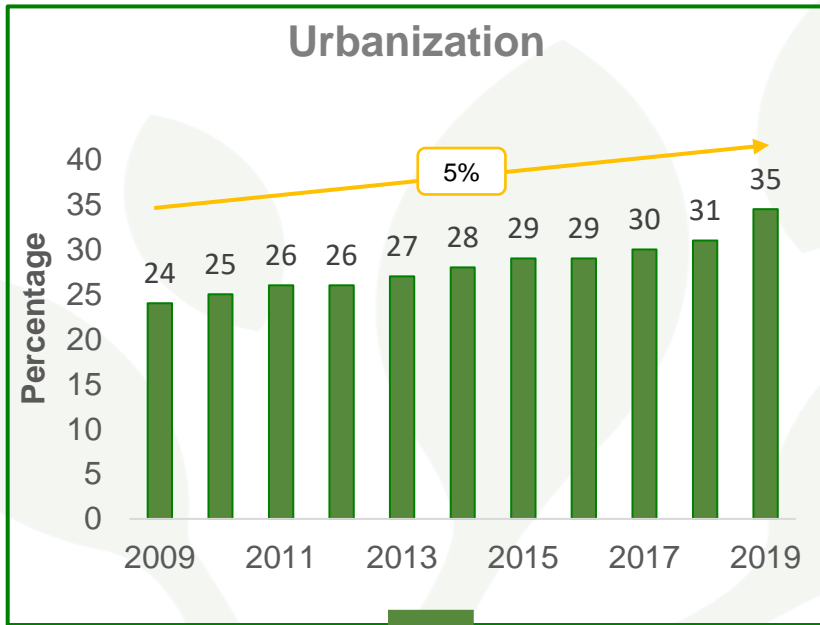
Tanzania rice industry has seen substantial growth over the last 60 years, and is largely self sufficient

Tanzania Rice Consumption and Production 1960 – 2019 ('000, MT)



Source: USDA, FAO

Demand growth has been driven in part by increasing urbanization, population and incomes



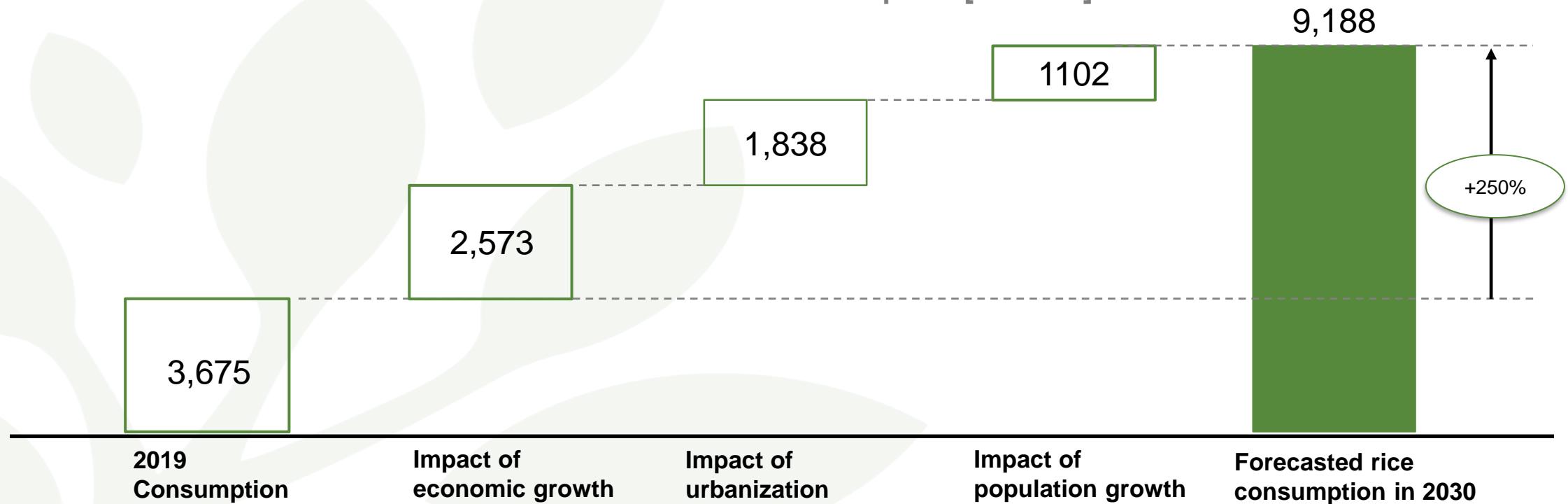
■ Rice is popular in urban areas; it symbolizes status, and it is quick to prepare

■ Rapid population growth has led to increased demand for cereals

■ Rising income has made rice more affordable and preferred over maize

Thus, rice demand is expected to triple over the next decade as the population grows and becomes richer and more urbanized

Forecasted rice Consumption ['000 MT] **

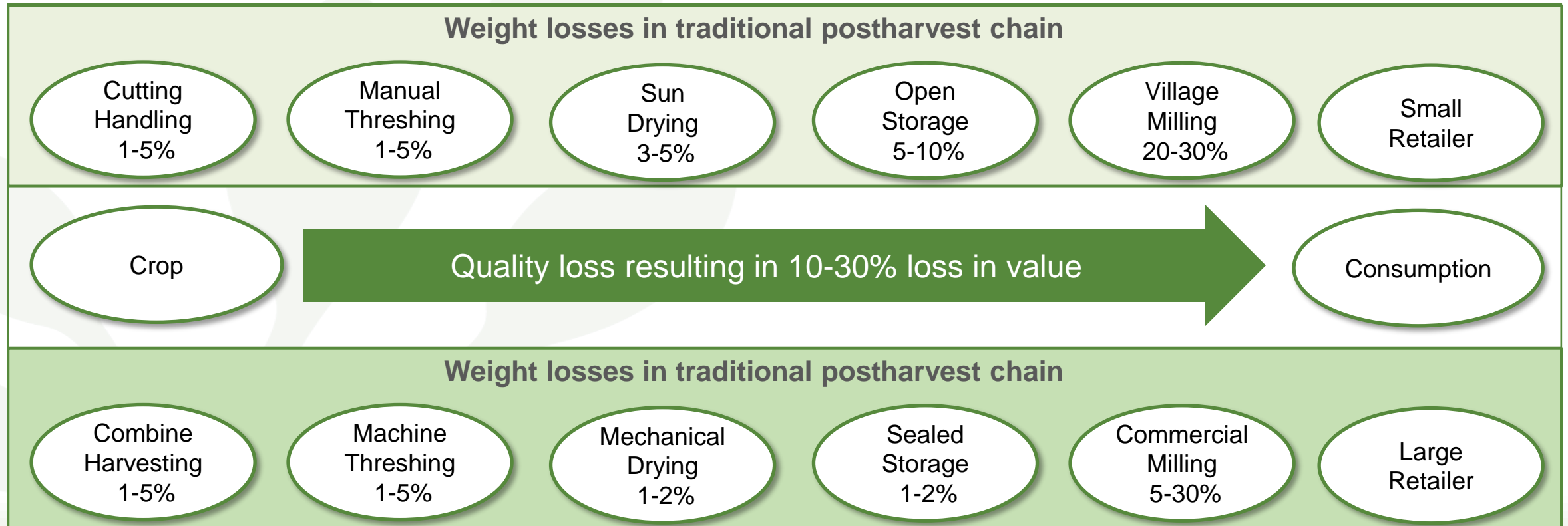


**Assumes economic growth continues at 7% p.a, urbanization at 5% p.a, and population at 3% p.a

Source: National Bureau of Statistics Tanzania, USDA

Despite the exponential growth, an average of 40% of annual production is lost due to Post Harvest Losses (PHL)

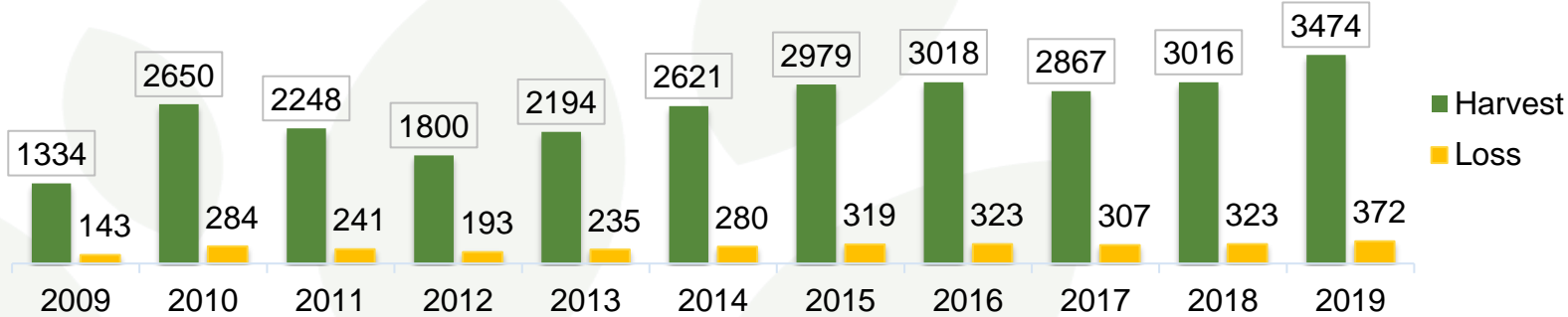
Rates of Value Losses in Postharvest Chain



Source: National Postharvest Management Strategy, 2019-2029

Tanzania smallholder rice farmers lose up to 10.7% of annual rice harvests due to PHLs

Trend of PHLs of Rice, 2009 – 2019 ('000, MT)



Weaknesses in Rice Postharvest Chain

- ⇒ Limited use of postharvest handling and storage technologies.
- ⇒ Lack of facilities for optimized rice processing.

Average Annual Economic Value Loss of Rice due to PHLs 2009 - 2019

Crop	Average (000' Metric Tons)		Average Monetary Value TZS (000')	
	Production	Loss	Value Retained	Value Lost
Rice	2,563	274	3,317,763,582	397,146,012

**Assumes market price for paddy is TZS 1,449,438 per Metric Ton

Source: National Postharvest Management Strategy, 2019-2029

The potential for improving rice postharvest value chain in Tanzania is still largely unexploited

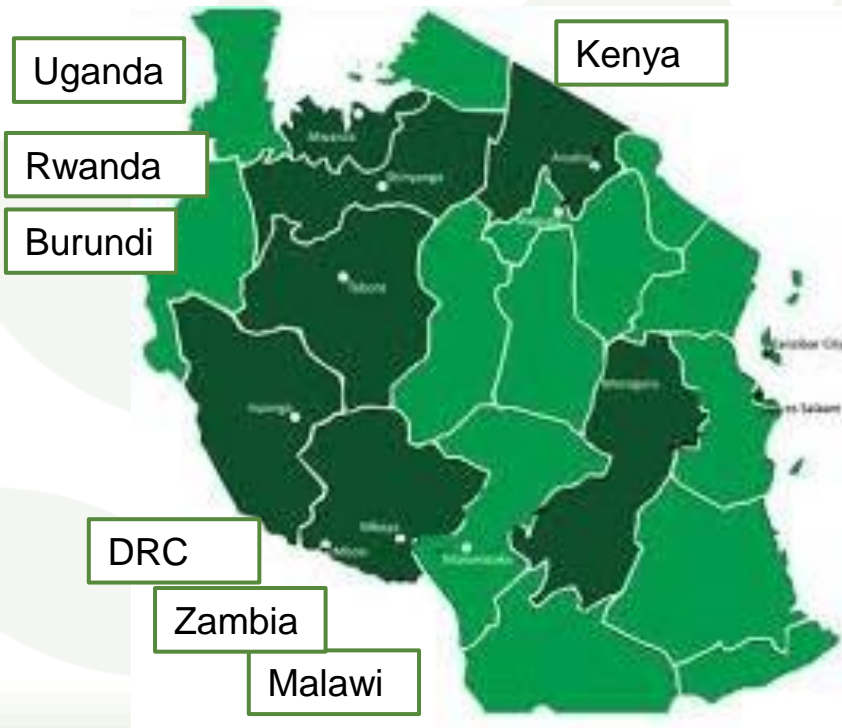
Ongoing Interventions in the Rice Industry in Tanzania

Project	Cost/Source	Expected Results
1. Supporting Rice Industry Development (Tanrice II (2018))	¥ 950 million (US\$ 9 million) JICA and GOT	<ul style="list-style-type: none"> ▪ Deliver 2 million tons of rice ▪ Exceed 25% productivity of 120 schemes (3,600 rice farmers)
2. Expanding Rice Production Project (ERPP) 2020	US\$ 22.9 million World Bank	<ul style="list-style-type: none"> • US\$ 2.37 million. Construct W/Hs (total 8,400 MT) in 5 villages in Morogoro • US\$ 3.38 million. Enhance use of rice varieties • US\$ 14.4 million. Improve productivity through irrigation
3. SAGCOT	€4.5 million (US\$ 5 million) FAO,MOA,HELVETAS	<ul style="list-style-type: none"> • Improve postharvest value chain in Morogoro and Iringa
4. ASDP Basket Fund, Sasakawa Global	-	<ul style="list-style-type: none"> • Construct 1,689 W/Hs (250-500MT)
5. NMC, DASIP,	- GOT	<ul style="list-style-type: none"> • Construct 2,175 W/Hs (200-21,000MT)

Source: National Postharvest Management Strategy, 2019-2029

Morogoro and Mbeya present the strong business case for rice investment due to presence of developed chain of market players

Tanzania



Paddy Production, 2019 ['000 MT]

Market Scoping

Attractiveness

Tabora

654

- Very fragmented market of smallholders, small-scale processors and local traders. No commercial player.
- Export potential: **Kenya, Rwanda, Burundi, DRC**



Morogoro

571

- An Agri-hub with 2 major commercial players: **Kilombero Plantation Limited, MW Rice Milling Limited**
- Caters to **Dar es Salam** market
- Connected with **SGR**



Mbeya

571

- 3 major commercial players: **Kapunga Plantation Limited, Mbarali Rice Farm & Mbuyuni Irrigation Scheme.**
- Caters to Dar es Salaam market.
- Export potential: **Zambia, Malawi & DRC**



Mwanza

493

- Very fragmented market of smallholders, small-scale processors and local traders. No commercial player
- No commercial player
- Export potential: **Kenya, Uganda, Rwanda & Burundi**



Source: Own Findings



04 Technology and Infrastructure

Modern Rice Processing Plant Facilities

- Paddy Intake station (Dumping Pit)
- Paddy Cleaning System
- Weighing
- Paddy Drying System
- 10,000 MT long-term storage Silos

Cleaning & Storage



- Pre-cleaning System
- Grinding
- Whitening
- Polishing
- Sorting
- Blending & Packaging
- Automation Control System

8TPH Paddy Milling



- Admin Block (Test Lab, Store, Kitchen, Control Room, Wash Room)
- Internal Roads & Truck Parking
- Electronic Weighbridge

Auxiliary Infrastructure



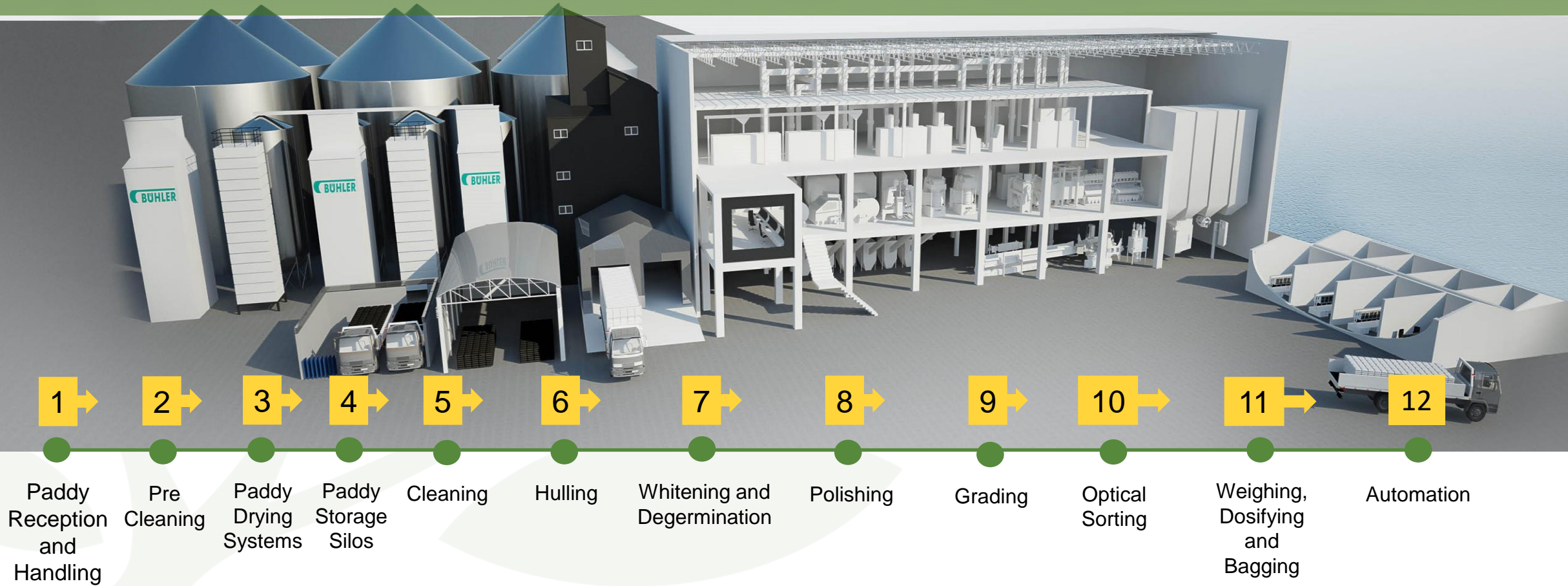
Design Scope

Indicative Layout of Modern Rice Processing Plant View



Design Scope

Indicative Optimized Rice Processing Flow View



Design Specifications

Intake, Pre-Cleaning and Storage

Intake Capacity	25Tons/Hour
Reception	12 Hours/Day
Pre-cleaning capacity	300 Tons/Day
Moisture	18 – 21%
Impurities	Max 0.5% by Volume
Storage capacity	4 Silos @2,500 Tons
Connected Load	65kWh



Design Specifications

Harvest Drying

Drying Capacity	10Tons/Hour i.e. 200 Tons/Day at 20/Hours/Day Basis
Input Moisture	22 – 21%
Output Moisture	12 – 13%
Type	Continuous Dryer
Connected Load	70kWh



Design Specifications

Mill Plant

Paddy Rice Variety	Medium Grain
Paddy Rice Condition	Raw
Paddy Rice Bulk Density	525 - 550 Kg/cu.m
Plant Operation	20 Hours/Day
Processing Volume	8MT/Hour, i.e. 160MT/Day
Optimum Performance	At Input Moisture of 12% and Bulk Density of 525Kg/cu.m
Connected Load	635kWh



Location Scope

Melela, Morogoro (24Ha/ 60 Acres)

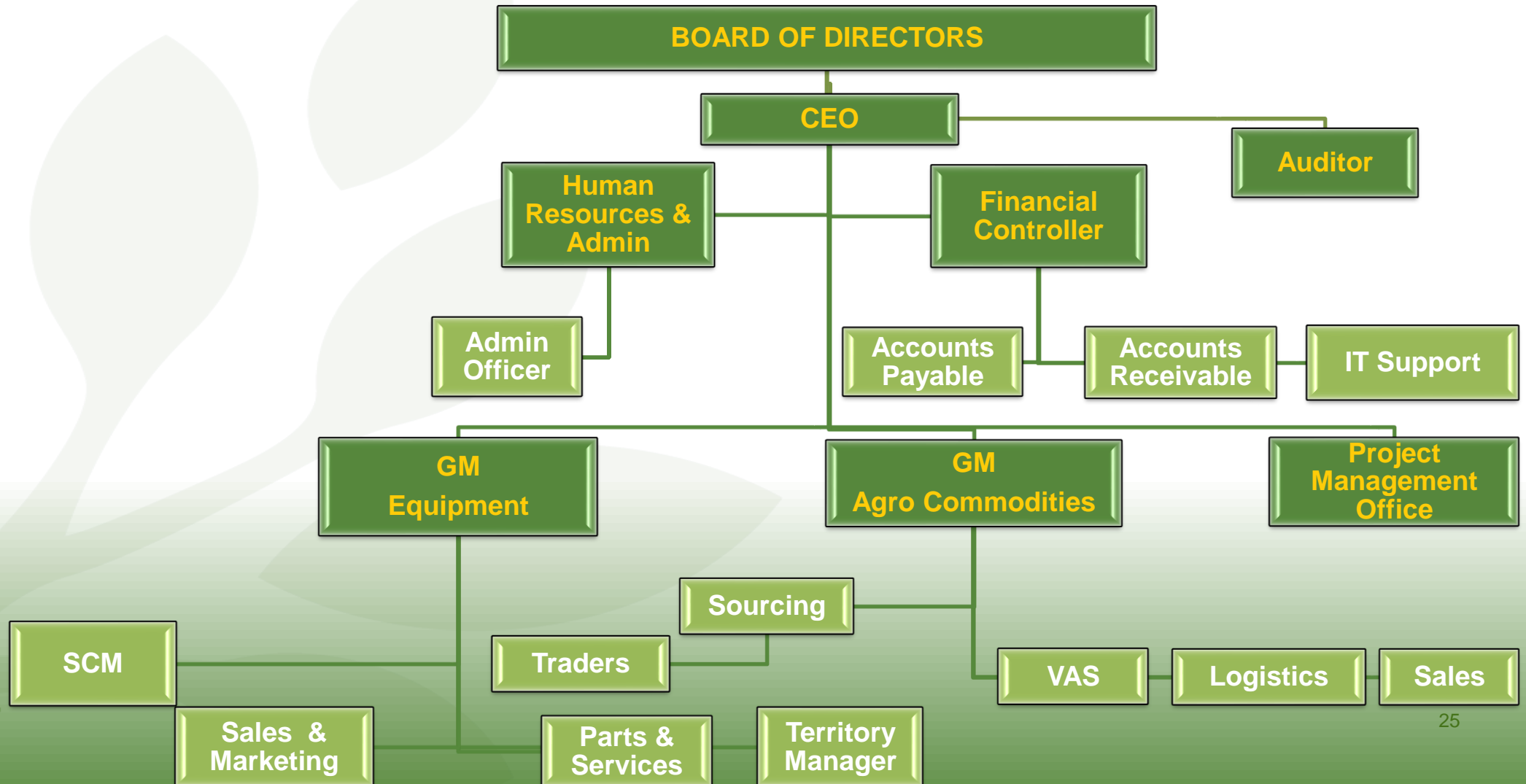
- Availability of sufficient surplus rice volumes.
- Site is familiar with rice producers.





05 Organization and Management

Proposed Structure



06 Project Implementation

A red irrigation nozzle is watering a small green plant that is growing out of a stack of coins. The scene is set on dark soil, and the background is a blurred green field. The text '07 Investment Budget' is overlaid on the image.

07 Investment Budget

Project Budget Summary

No.	Description	Amount USD	Amount TZS
1	Preoperative Expenses (Incl. Architectural, Legal and EIA fees)	25,000	57,975,000
2	Land Acquisition and Preparation 2 Ha (20,000 Sqm.)	129,370	300,009,030
3	Buildings and Civil Works (Incl. Warehouses, Office, Truck Parking and Boundary Wall)	1,720,000	3,988,680,000
4	Machinery and Equipment (Incl. Cleaner, Dryer, Silos, Mill, Weighbridge, Transformer & Generator)	3,779,500	8,764,660,500
5	Vehicles	342,000	793,098,000
6	Furniture and Fittings (Incl. Local installation Labour, Installation & Supervisors upkeep)	63,200	146,560,800
7	Working Capital for 1 Month	1,296,661	3,006,956,859
	TOTAL	7,355,731	17,057,940,189

08 Financing Plan

Means of finance

No.	Description	Percentage	Amount TZS
1	Sponsor Equity Contribution	15%	2,558,691,028
2	Long Term Debt	85%	14,499,249,161
	TOTAL	100%	17,057,940,189

Potential financing partners

In dotted box have requested for submission of our 3 years Audited accounts and Business plan for Export Financing consideration



Assumptions

Mode of Project financing	15% Equity & 85% Debt	Depreciation factor	20 years
Interest on debt	14% p.a.	Debt maturity period	7 years, 12 months grace period
Maintenance cost	3% of total depreciation	Corporate Tax	30%
USD Exchange rate	TZS 2,319	Insurance cost	1% of total depreciation
Annual cumulative price increase	1.32%	Price of 1kWh of electricity	TZS 236.73 or USD 0.102
Annual cumulative inflation	3.7%	Payments are made without delay	No Receivables or Payables

Income Statement

Amount in TZS MIn

Income	FY- 2023	FY- 2024	FY- 2025	FY- 2026	FY-2027
Handling, Storage and milling Service Charges	1,228	1,244	1,277	1,328	1,398
Rice Trading	40,000	40,528	41,598	43,245	45,529
Total Income	41,228	41,772	42,875	44,573	46,926
Cost of Goods Sold	(34,000)	(34,449)	(35,358)	(36,758)	(38,699)
Gross Profit	7,228	7,323	7,517	7,814	8,227
Operating Expenses	(665)	(689)	(729)	(785)	(863)
EBITDA	6,563	6,634	6,788	7,030	7,364
Depreciation	(858)	(889)	(921)	(953)	(985)
EBIT	5,705	5,744	5,867	6,077	6,380
Interest	(1,775)	(1,469)	(1,120)	722	269
Earnings before tax	3,931	4,276	4,747	5,355	6,111
Tax	(1,179)	(1,283)	(1,424)	(1,606)	(1,833)
Net Profit	2,751	2,993	3,323	3,748	4,278

Balance Sheet

Amount in TZS Mln

	FY- 2023	FY- 2024	FY- 2025	FY- 2026	FY- 2027	FY- 2028
ASSETS						
Cash	3,007	6,616	6,889	7,251	7,708	8,269
Prepaid expenses	58	58	58	58	58	58
Land and Buildings	4,289	4,289	4,289	4,289	4,289	4,289
Machinery and Equipment	9,704	9,704	9,704	9,704	9,704	9,704
Depreciation	-	(858)	(889)	(921)	(952)	(984)
Total Assets	17,058	19,809	20,051	20,381	20,806	21,336
FUNDING						
Debt	14,499	14,499	14,499	14,499	14,499	14,499
Equity	2,559	2,559	2,559	2,559	2,559	2,559
Retained Earnings	-	2,751	2,993	3,323	3,748	4,278
Total Funding	17,058	19,809	20,051	20,381	20,806	21,336

Cash Flow

Amount in TZS Mln

		FY- 2023	FY- 2024	FY- 2025	FY- 2026	FY- 2027	FY- 2028	FY- 2029
Total Capacity	10,000 MT							
Revenues								
Service Charge - Storage	Tshs. 1,500 / 100 Kgs	-	300	304	312	324	341	364
Service Charge - Handling	Tshs. 1,000 / 100 Kgs	-	200	203	208	216	228	242
Service Charge - Milling	Tshs. 3,000 / 100 Kgs	-	600	608	624	649	683	728
Service Charge - Logistics	Tshs. 500 / 100 Kgs	-	100	101	104	108	114	121
By-products (Bran, & Husk)	Tshs. 700 / Kgs		28	28	29	30	32	34
Milled rice trading	Tshs. 2,000,000/Ton		40,000	41	41,598	43,245	45,529	48,533
Cost of Goods Sold	Tshs. 1,700,000/Ton	-	(34,000)	(34,449)	(35,358)	(36,758)	(38,699)	(41,253)
Operating Expenses			(665)	(689)	(740)	(823)	(944)	(1,977)
EBIT			6,563	6,634	6,776	6,992	7,283	6,793
Capital Expenditure		(17,058)						
Net Cash Flow		(17,058)	6,563	6,634	6,776	6,992	7,283	6,793
Cumulative Cash Flow		(17,058)	(10,495)	(3,861)	2,915	9,907	17,190	23,983
Internal Rate of Return		16.11%						
Payback Period (Years)		4.6						

10 Risk Assessment

Overall Risk Assessment

Risk Category	Sub-Category	Frequency	Impact	Potential Risk Mitigating Measures
Construction	Delay	Frequent	High	<ul style="list-style-type: none"> • Sound project preparation (permits and licenses) • Supply of technology by one supplier (max two)
	Cost overrun	Frequent	High	<ul style="list-style-type: none"> • Adherence to predetermined time schedule
Operations	Damage and heft	Regular	High	<ul style="list-style-type: none"> • Continuous site security to be arranged
	Technical performance	Regular	High	<ul style="list-style-type: none"> • Installation of high quality (imported) silos and equipment, and milling plant
Financial	Total debt amount	Regular	Moderate	<ul style="list-style-type: none"> • Financiers to demand a minimum of 15-25% equity investments
	Interest rate	Regular	Moderate	<ul style="list-style-type: none"> • Reasonable long-term interest rates in the range of 12-16% p.a.
	Exchange rate	Regular	Moderate	<ul style="list-style-type: none"> • Fix the exchange rate with financier or with supplier
	Maturity	Regular	Moderate	<ul style="list-style-type: none"> • Long repayment period with lifetime up to 25 years
Force Majeure	Natural disasters	Seldom	High	<ul style="list-style-type: none"> • Appropriate insurance of assets

Contact us:
www.agricom.co.tz

Thank You