



Department
for International
Development



Monitor **Deloitte.**

Developing Agricultural Investment Opportunities in Northern Ghana

Rice and Grain Aggregator with Embedded Services

5th April 2016



Purpose of This Document

This document outlines the salient features of an investment opportunity in a rice and grain aggregator located in Northern Ghana

Objectives

- To present a brownfield investment opportunity in a rice and grain aggregator in Northern Ghana outlining:
 - The business environment in Ghana
 - The market potential of the rice sector
 - A suitable business model for rice and grain aggregation
 - The opportunity’s investment requirements and financial projections
 - Systemic, business model and financial constraints the opportunity is susceptible to and potential mitigations for these constraints

Intended Audience

- Market Development for Northern Ghana (MADE) Team
- Regional and international investors who are looking for strategic or financial agribusiness investments in Sub-Saharan Africa (SSA)
- Agricultural Private Sector Role Players in Ghana

Opportunity Description

- A locally based aggregator and producer of rice, maize and soya is seeking a Ghana Cedi (GHS) 7.8 million (m) investment to supplement existing fixed assets
- The investment includes the purchase of a warehouse, warehousing and farming equipment and delivery trucks, with the intention of increasing production yields on existing activities
- Investment can take the form of debt or equity and has the potential to be paid back within four years

• **Executive Summary**

- Doing Business in Ghana
- Market Opportunity
- Business Model
- Financial Analysis
- Constraints and Mitigations
- Appendix

Executive Summary (1 of 2)

A good business environment in Ghana makes it easier to take advantage of a large investment opportunity in the high growth rice sector with its tailored business model

Executive Summary	
Doing Business in Ghana	<ul style="list-style-type: none"> • Ghana's economy ranks among the top four largest economies in West Africa alongside Nigeria, Cameroon and Cote d'Ivoire and is SSA's 7th largest economy • Favourable macroeconomic conditions and the highest Ease of Doing Business ranking amongst its peers in the Economic Community of West African States (ECOWAS) positions Ghana well as an ideal investment destination in the region • Where investors are able to overcome infrastructural and interest rate constraints, opportunities in Ghana flourish due to the stable operating environment • The agricultural sector remains the largest employer in the economy imbuing it with a significant role in overall economic development; therefore various government policies have been developed to support it
Market Opportunity	<ul style="list-style-type: none"> • A USD 689 m rice production opportunity exists in the rice sector in light of high consumption levels and demand growth rates, which far exceed local production capacity and growth in supply • Based on consumption patterns, the large overall market gap predominantly stems from the premium straight milled and aromatic varieties • Very large demand, a strong competitive position, policy incentive support and minimal barriers to entry make this opportunity an attractive prospect
Business Model	<ul style="list-style-type: none"> • The business currently engages in four key activities, namely, seed and crop production on its own nucleus farm, out-grower management and traditional aggregation activities; and seeks to expand existing operations • As a well-established, trusted business partner, market maker and provider of quality produce; this business serves various farmer segments, institutional buyers and direct consumers • Customers gain access to the products and services directly on farm sites, through collection at a storage warehouse or via direct delivery from the business • The majority of revenue is generated through the sale of grains (88%). Other streams include the sale of improved seeds and provision of mechanisation and extension services

Sources: Monitor Deloitte Analysis based on sources cited throughout the document

Executive Summary (2 of 2)

With an internal rate of return (IRR) of 58%, the investment opportunity is likely to generate solid returns provided that the constraints identified can be effectively mitigated

Executive Summary	
Financial Analysis	<ul style="list-style-type: none"> • A total investment requirement of GHS 7.86m is expected to generate net present value (NPV) of GHS 9.6m over the five year period with an IRR of 58% and a payback period of 4 years • Earnings before interest, tax, depreciation and amortisation (EBITDA) during the period is flat despite the high 25% revenue growth due predominantly to commensurate expenditure growth • Sound working capital management practices such as maintaining minimum cash balances and early payment discounts are required to reduce the cash cycle and overall working capital requirements • Net margins in the business are expected to take a 2% drop initially due to the increased depreciation charge, however this is offset by an increasing gross margin over time • Under the existing cost structure the business is able to generate positive cash flows from year one which contributes to the relatively swift payback period of four years
Constraints and Mitigation	<ul style="list-style-type: none"> • Poor agronomic practices and the low adoption of improved seeds can be mitigated by the provision of appropriate training, monitoring and evaluation (M&E) activities (site inspections, yield tracking, etc) and the amendment of contractual terms • The lack of appropriate mechanisation services can be mitigated by providing the necessary mechanisation services directly, making arrangements with original equipment manufacturers (OEMs) and demand planning • Contracting with a large number of small holder farmers (SHFs) who may be far apart can be mitigated by focused M&E efforts, contracting on a block basis and price adjustments to compensate for distance • The high cost of local debt and working capital constraints can be mitigated by obtaining alternative funding sources and employing sound financial management techniques

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Doing Business in Ghana

Country Comparative

Ghana's economy ranks among the top four largest economies in West Africa alongside Nigeria, Cameroon and Cote d'Ivoire and is the 7th largest economy in sub-Saharan Africa

Senegal	
GDP* ¹	\$ 15 bn**
GDP per capita ¹	\$ 1067
ODA ² % GNI ³	6.7%
Competitiveness	110/140
SSA Rank (GDP)	16/47

Mali	
GDP ¹	\$ 12 bn
GDP per capita ¹	\$ 705
ODA ² % GNI ³	13.5%
Competitiveness	127/140
SSA Rank (GDP)	25/47

Cote d'Ivoire	
GDP ¹	\$ 34 bn
GDP per capita ¹	\$ 1545
ODA ² % GNI ³	4.2%
Competitiveness	91/140
SSA Rank (GDP)	8/47



Cameroon	
GDP ¹	\$ 32 bn
GDP per capita ¹	\$ 1275
ODA ² % GNI ³	2.5%
Competitiveness	114/140
SSA Rank (GDP)	10/47

Burkina Faso	
GDP ¹	\$ 12 bn
GDP per capita ¹	\$ 713
ODA ² % GNI ³	8.7%
Competitiveness	NA
SSA Rank (GDP)	24/47

Ghana	
GDP ¹	\$ 38 bn
GDP per capita ¹	\$ 1441
ODA ² % GNI ³	2.9%
Competitiveness	119/140
SSA Rank (GDP)	7/47

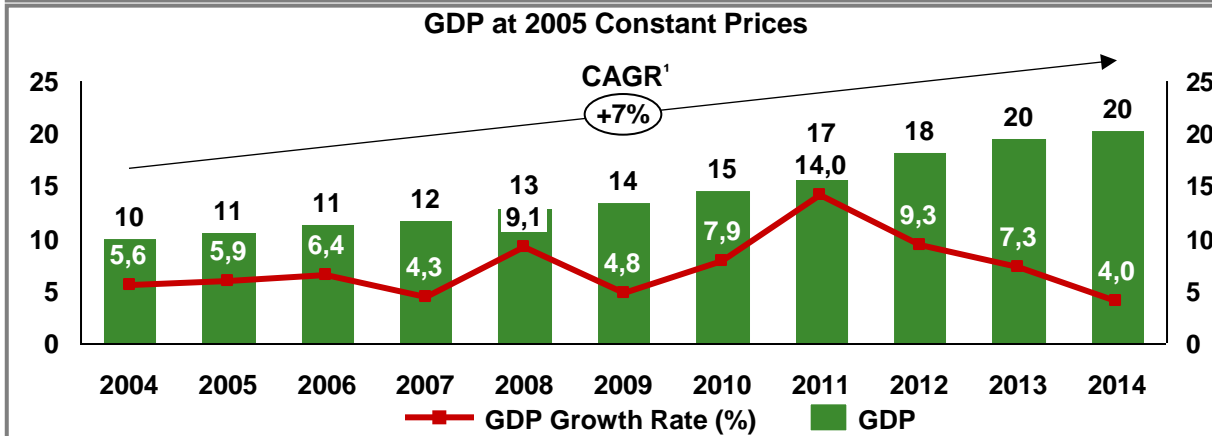
Nigeria	
GDP ¹	\$ 568 bn
GDP per capita ¹	\$ 3203
ODA ² % GNI ³	0.5%
Competitiveness	124/140
SSA Rank (GDP)	1/47

Note: *Gross Domestic Product (GDP); ** billion (bn); ¹GDP and GDP per Capita at current prices (USD dollars), ²Overseas Development Assistance (ODA), ³Gross National Income (GNI). Sources: World Economic Forum (WEF) Competitiveness Report 2015; World Bank (WB) Doing Business Report 2015; WB Development Indicators 2015; Monitor Deloitte Analysis

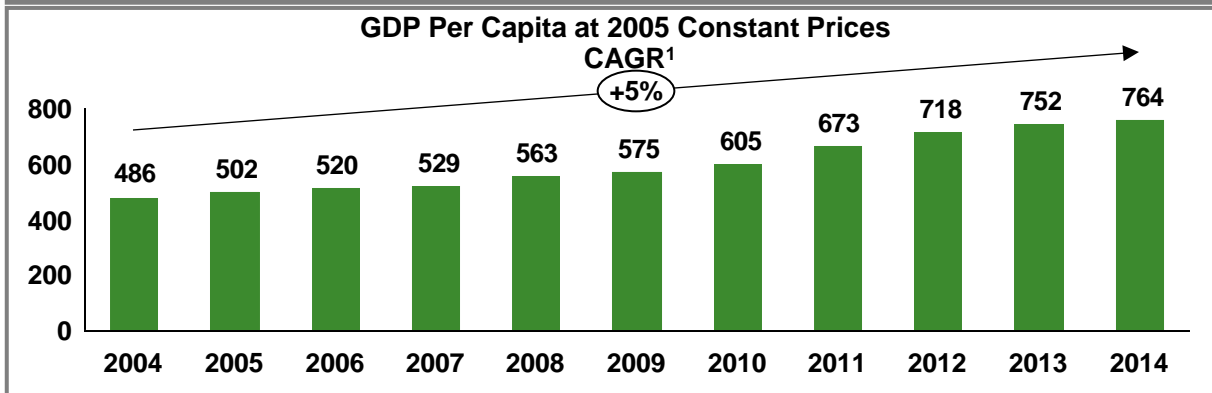
Ghana's Economic Landscape

Ghana's steady GDP growth and rising per capita income has contributed to increased buying power and a shift in consumer preferences towards premium tier goods and services

Ghana GDP (USD¹ Billions) and Growth, 2004-2014



Ghana GDP Per Capita, 2004-2014



Notes

- Ghana has experienced steady 7% growth in GDP over last decade
- Declines in growth rates in recent years can largely be attributed to the impact of the decline in commodity prices, predominantly gold and cocoa
- Nonetheless, incomes have been rising throughout the period providing a burgeoning middle class with newfound buying power
- The increased income levels have led to a change in consumer preferences in favour of premium tier, higher quality goods and services

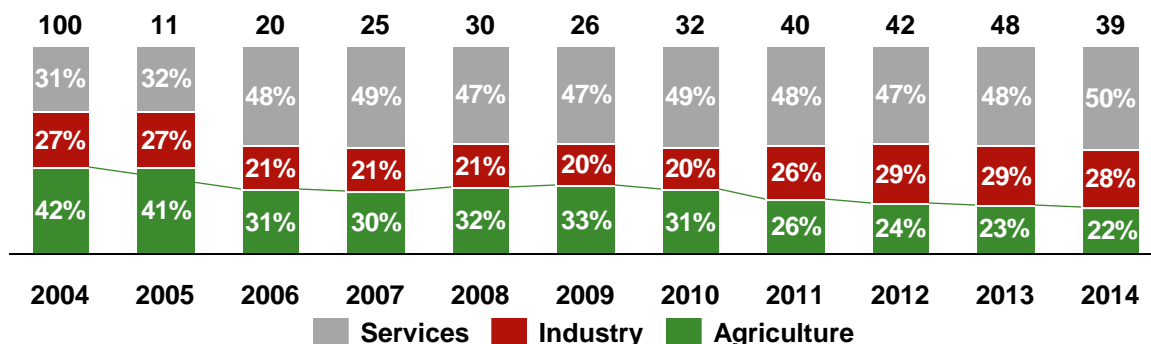
Note: ¹Compound Annual Growth Rate

Sources: Monitor Deloitte Analysis; World Bank Economic Indicators 2016; World Economic Outlook Database; World Bank Forecasts and Analysis, MADE Market Diagnostics, 2014

Despite its declining share of GDP, the agricultural sector remains the largest employer in the economy imbuing it with a significant role in overall economic development

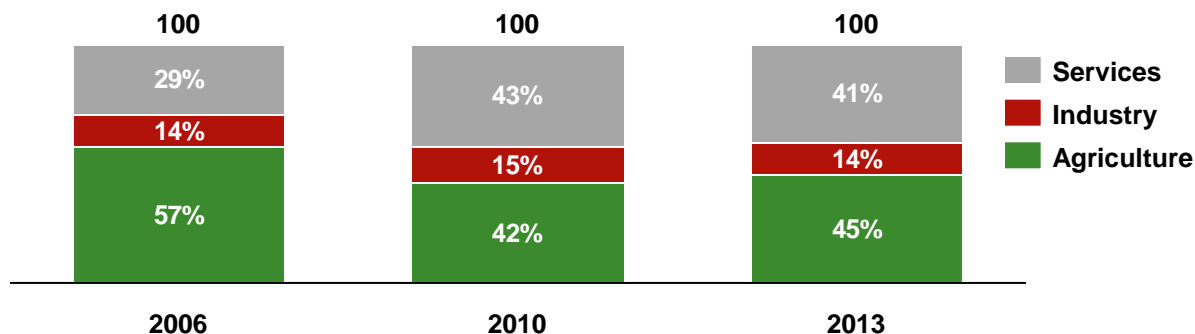
GDP Distribution by Sector, 2004-2014

GDP Distribution by Sector, Percent (2004-2014)



Employment Distribution by Sector, 2006-2013

Employment Distribution by Sector, 2006-2013



Notes

- Agriculture's share of GDP has been steadily declining over the period 2004-2014
- Contrary to the 7% growth rate of GDP over the period, the agricultural sector has contracted by 6%, predominantly driven by the economy's structural shift towards a more advanced economy
- Despite this structural shift, the agricultural sector has remained the largest employer
- The sector is characterised by a large amount of smallholder farmers producing on a small to medium scale

Doing Business in Ghana

Agriculture Sector Policy Support

In recognition of the importance of agriculture, the Government of Ghana has developed a set of policies intended to foster growth and development in the agricultural sector

Policy Summary

- Despite the agriculture sector's declining contribution to GDP over the past decade, the Government of Ghana (GoG) recognises the sector's role in achieving sustained economic growth and development in the country,
- Various policy objectives and investment incentives exist to foster agricultural led growth, many of which are geared towards attracting private sector investment in the sector

Policy Objectives

Ministry of Food and Agriculture



Republic of Ghana

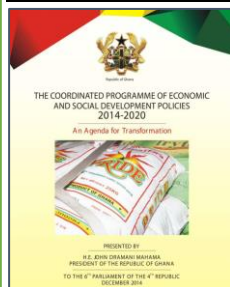
Food and Agriculture Sector Development Policy
(FASDEP II)

Food and Agriculture Sector Development Policy I and II

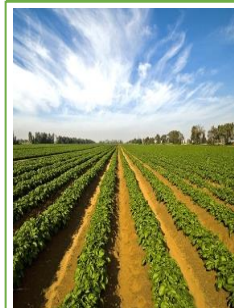
- Increasing growth in incomes
- Improving competitiveness of sector and better integrating it into domestic and international markets
- Promoting science and technology in food and agriculture development

Private Sector Development Strategy

- Improving the productivity and efficiency of Ghana's economy and building a thriving private sector
- Increasing rural incomes by 20%, particularly in Northern and central Ghana, through more productive and efficient agriculture



Investment Incentives



Production

- Custom duty exemptions on imports of agricultural plant, machinery and equipment
- 5-10 year tax holidays on cash crop production
- Income tax exemptions for select farming activities and ~90% corporate tax exemptions for farmers outside of Accra



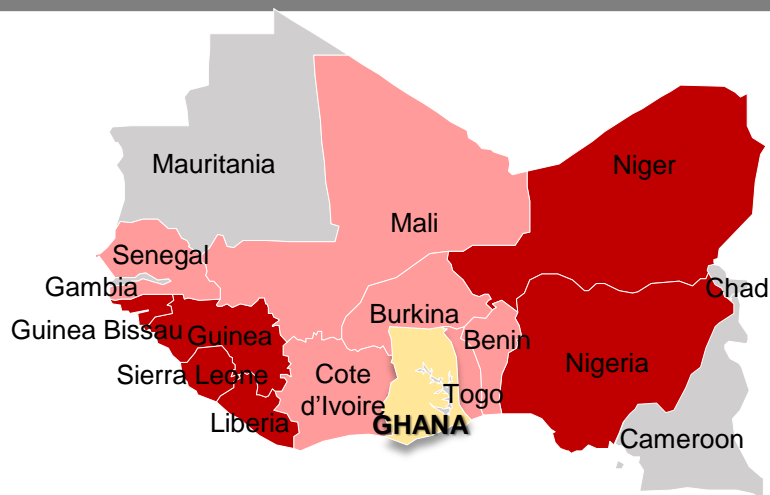
Agro-Processing

- 5-year tax holiday from the establishment of the business and a 3-year corporate tax freeze
- 50% tax rebates for agro-processing and manufacturing industries located in regional capitals and districts outside of Accra

Ease of Doing Business and FDI

Favourable macroeconomic conditions and the highest ease of doing business ranking in ECOWAS positions Ghana well as an ideal investment destination in the region

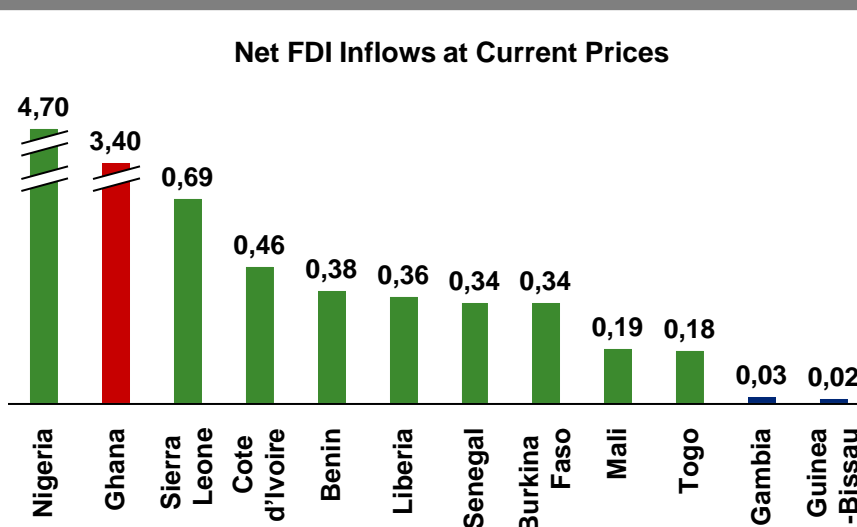
Ease of Doing Business Ranking, 2014



Ranking ¹	0 - 38	39 - 76	77 - 114	115 - 152	153 - 183
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- Ranked 114, Ghana has the most favourable Ease of Doing Business score amongst its peers in ECOWAS
- The ranking remains middle tier due to issues concerning contract enforceability, access to electricity and international trade

ECOWAS FDI Net Inflows (USD Billions), 2014








- Stable GDP growth, rising incomes and a good ease of doing business score all contribute to Ghana being the second largest attractor of foreign direct investment (FDI) among ECOWAS member states
- The amount of FDI Ghana is able to attract is particularly significant considering the size of Ghana's economy vis-à-vis that of Nigeria

Notes: ¹183 countries, globally, are ranked according to the relative favourability of their business environments.

Sources: Monitor Deloitte Analysis; World Bank Ease of Doing Business Study, World Bank Development Indicators, 2016

Operating Environment Assessment

Where investors are able to overcome infrastructural and interest rate constraints, opportunities in Ghana flourish due to the overall stable operating environment

Operating Environment Assessment	
Political and Legal 	<ul style="list-style-type: none"> • Ghana is a relatively peaceful and stable country owing to: <ul style="list-style-type: none"> - A track record of largely free and fair elections - A strong constitutional framework - A history of broad policy continuity
Economic 	<ul style="list-style-type: none"> • The country has a high prime lending rate driven by large budget deficits and a central bank with limited autonomy when it comes to monetary policy setting and implementation • Despite these structural weaknesses, local oil production is likely to reduce the risks of macroeconomic instability (due to reliance of oil imports) and provide a substantial boost to growth over the long term through associated export and fiscal revenues
Social 	<ul style="list-style-type: none"> • With rising incomes, demand for premium and processed food is increasing • If supply does not increase at the same pace, an increase in imports is likely • It is challenging to process food within Ghana due to deficient transport links and power constraints, particularly in rural areas
Technological 	<ul style="list-style-type: none"> • Though agricultural production remains highly labour intensive, GoG realises the need to drive agricultural productivity and growth through mechanised production • To this end the government has established agricultural mechanisation service centres nationally and distributed combined harvesters and tractors to SHFs • Ghana has relatively fast internet connectivity due to its connection to the high speed SEACOM cable
Agricultural Investment Incentives 	<ul style="list-style-type: none"> • Various policy objectives and investment incentives exist to foster growth of the sector and to attract private sector investment to industries in the sector • Incentives include three to ten year tax holiday's, specific tax exemptions and significant rebates and subsidies on machinery in key product sectors

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Overall Rice Production Market Gap

High consumption levels and demand growth rates which far exceed current supply capacity and supply growth rates result in an overall USD 689m market opportunity in the rice sector

Market Dynamics



Demand Dynamics

- Ghana's rice consumption has been growing at an average rate of 11.8% per annum (p.a.) driven by rising incomes and changing consumer preferences
- Per capita rice consumption has increased from 17.5kg to in 1999 to 38kg in 2008 and is estimated to reach 63kg by 2018
- Total rice consumption is estimated to be 862 875 metric tons (MT)

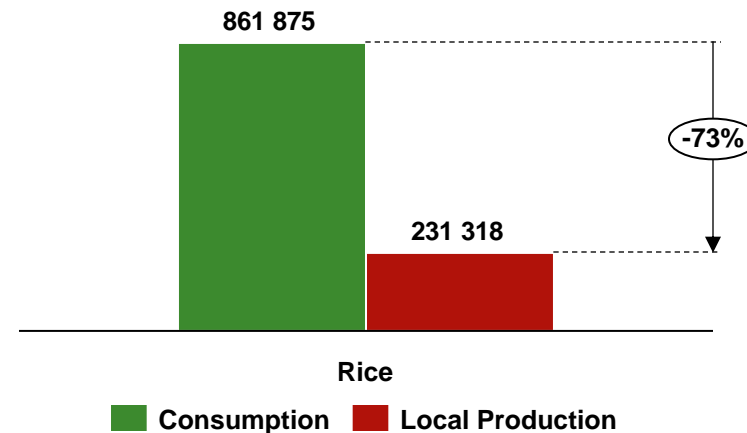


Supply Dynamics

- Despite rice production growing at 9% p.a. (one of the fastest major crop growth rates in Ghana), it is unable to match the demand growth
- Local rice production across all types is estimated at 231 318 MT
- This results in the majority of local consumption being imported
- Lower costs of production and high tariffs allow local producers to compete favourably with imports

Market Gap

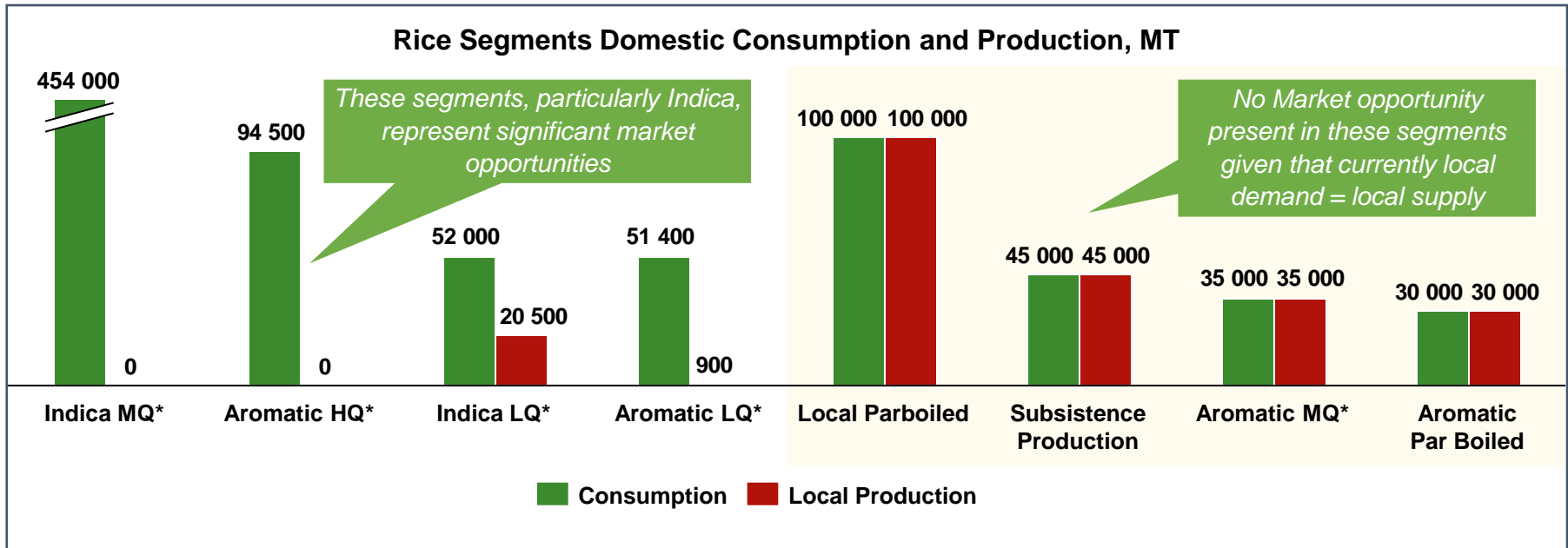
Rice Domestic Consumption and Production, MT



- The current local supply gap of 630 557 MT represents 73% of total consumption
- The gap has persisted despite a 71% increase in production between 2000 and 2012, predominantly due to low yields achieved by local farmers
- Assuming that the requisite quality can be produced and a weighted average (based on varieties imported), wholesale cost per ton of USD 1094, the total value of the supply deficit is approximately USD 689m

Rice Market Segmentation Gaps

Consumption patterns have indicated that the large overall rice production market gap stems predominantly from the premium straight milled and aromatic varieties



Notes

- The rice market in Ghana, as in all countries, is highly segmented by variety, type of processing, grain quality and source of production
- Ghanaian consumer preferences are fairly predictable - they prefer straight milled over parboiled, and aromatic over non-aromatic varieties. These preferred varieties are considered to be premium tier
- There is very little substitution across segments by consumers, though some consumer preferences are based on price sensitivity
- Significant opportunities exist in Indica (straight milled) and aromatic varieties

Note*: LQ, MQ and HQ refer to low, medium and high quality with respect to % breakage in the paddy

Sources: Monitor Deloitte Analysis; Stakeholder Interviews 2016; MADE Northern Ghana Market Diagnostics, 2014; The Market for Maize, Rice, Soy, and Warehousing, USAID, 2012

Despite the large feasible scale based on overall market demand, the scale of this opportunity will be limited to 31 000 MT based on land, machinery and equipment constraints

Drivers of Scale



Identified Demand

- 630 000 MT total market gap
- Avnash processor in Tamale is seeking 150 000 MT of white milled high quality paddy
- This business seeks to scale up from current production of 22 000 MT to 50 000 MT



Economies of Scale

- The machinery and equipment requested for funding is only able to sustain a maximum 43% increase in production, i.e., from current 22 000 MT to 31 000 MT
- This can be achieved by focusing on yield increases on existing land



Market Structure

- Rice is an established staple food therefore the full 630 000 MT could be absorbed if produced
- Market supply is dominated by SHFs producing less than 1000 MT
- Scale is therefore be restricted by access to sufficient land and SHFs



Complexity

- Increasing scale requires adding additional smallholder farmers to the out-grower scheme, this adds complexity and costs
- Expansion should be done in small tranches to reduce the complexity required and overall costs

Opportunity Scale

- The major constraints to scale are based on machinery, equipment and land requirements, the scale will therefore be limited to 31 000 MT with no additional land purchased and a focus on yield improvements
- Market demand dynamics indicate an upper bound of 630 000 MT for production and direct demand for 150 000 MT, neither of these is likely to be supplied by any single business given the current scale of the majority of suppliers
- Business complexity and costs increase as scale increases given dependence on SHFs, therefore the business will minimise the number of SHFs contracted for expansion through a focus on yields and larger farmers

Opportunity Attractiveness

Very large demand, a strong competitive position, policy incentive support and minimal barriers to entry make this opportunity an attractive prospect

Opportunity Attractiveness		
Key Criteria	Rating	Rationale
Overall Market Potential		<ul style="list-style-type: none"> • Very large, fast growing market based on demand for a staple food • Supply unable to meet demand • Gap is widening due to slower growth in supply
Potential Margins		<ul style="list-style-type: none"> • Net margins are expected to take an initial 2% dip from 16% to 14%, however are expected to recover over time through yield improvements
Potential Competitive Advantage		<ul style="list-style-type: none"> • Upstream value chain integration with embedded services to ensure requisite quality standards are met • Trusted supplier to large out-grower network with innovative management model
Incentives		<ul style="list-style-type: none"> • The company has access to a limited tax exemption under the Internal Revenue Service (IRS) Act 200, however this is not likely to apply in the future and therefore has not been included in any investment financial analysis • Large tariffs are charged on imports to make local supply more competitive
Policy Support		<ul style="list-style-type: none"> • The National Rice Development Strategy (NRDS) has made little impact on its objectives to double rice production by 2018
Barriers to Entry		<ul style="list-style-type: none"> • Given that this is a brownfield investment, certification for seed production has already been obtained • Yield management processes are required where yields are below achievable

Sources: Monitor Deloitte Analysis; Stakeholder Interviews 2016; MADE Northern Ghana Market Diagnostics, 2014

Legend: Attractive Unattractive

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